Darwin Plus:
Overseas Territories Environment and Climate Fund
Annual Report

To be completed with reference to the "Writing a Darwin/IWT Report" Information Note: (https://dplus.darwininitiative.org.uk/resources/reporting-forms-change-request-forms-and-terms-and-conditions/). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2021

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 2021-08-31
Reporting period (e.g. Apr 2020-Mar 2021) and number (e.g. Annual Report 1, 2)	1 April 2020 to 31 March 2021 AR 3
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, 5 May 2021

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 Falklands 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 whale-watching. 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 address existing 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: (a) sei whale and (b) southern right whale.*

The 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 baleen whales in the Falkland Islands. The approach includes:

1. Boat surveys at two study sites that were identified as potential future Key Biodiversity Areas due to anecdotally-evidenced high whale densities (see 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; and
4. An increase in local awareness, engagement and capacity in the Falkland Islands with regard to sei and southern right whales, through media releases, stakeholder meetings and capacity-building.

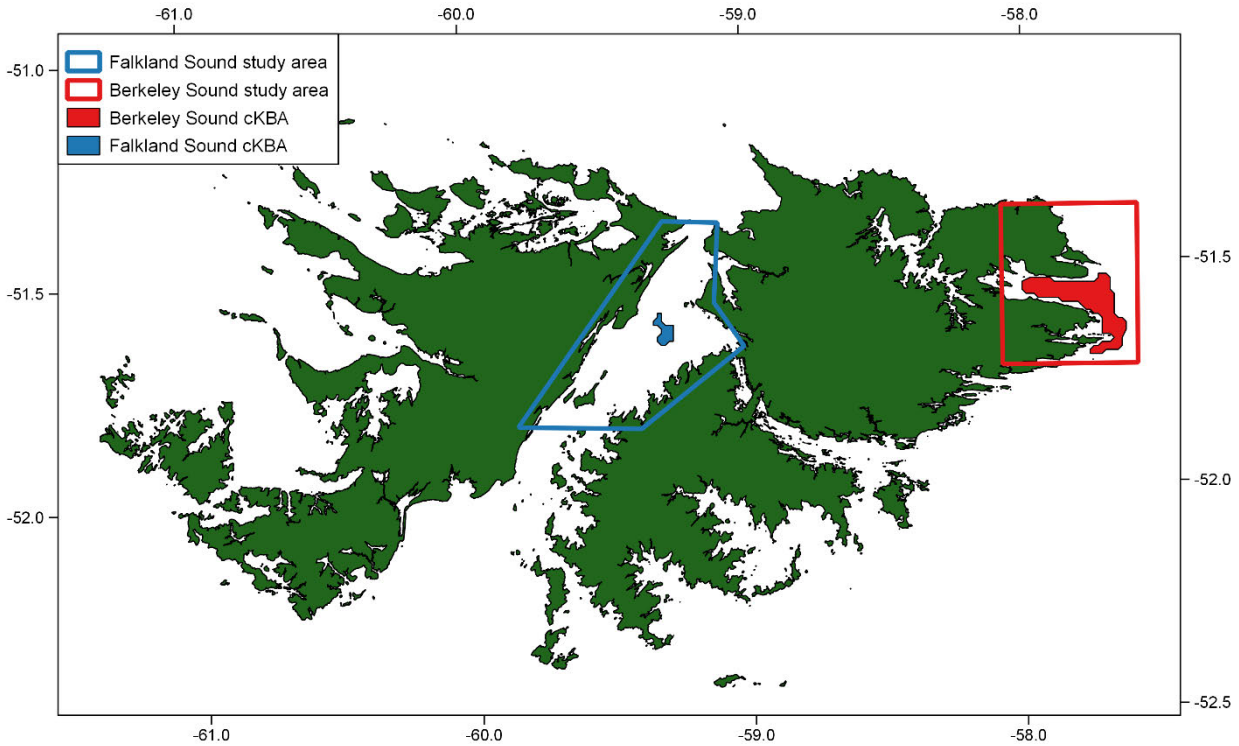

Figure 2. *Location of two coastal candidate Key Biodiversity Areas (cKBAs) for sei whales, comprising the core project study sites in the Falkland Islands: (1) Berkeley Sound and (2) Falkland Sound. Southern right whales are studied only in the Berkeley Sound study area.*

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 engaged in Year 3 of the project as follows:

Project partners:

- **All project partners**: the project partners comprise an international group of scientists distributed across multiple countries and time zones. Most communications with project partners this year have therefore been via email and Skype discussions, particularly given the added complexity of the COVID-19 restrictions preventing travel. Bi-annual steering group meetings were held via Skype on 15 September 2020 and 24 February 2021, to which all project partners were invited. Attendees of the meetings discussed the progress of all ongoing project components. For those partners who were unable to attend, a copy of the meeting minutes and a full project update were circulated by email following both meetings (evidenced in Annex 3.1 to 3.4).
- **Shallow Marine Survey Group (SMSG)**: have provided boat support to the project throughout the Year 3 field seasons to date (evidenced in Annex 6.2). Communications between the FC Project Officer (PO), Caroline Weir, and SMSG regarding survey planning have occurred several times per week during the fieldwork seasons to discuss weather and logistics for boat work.
- **British Antarctic Survey (BAS)**: the PO has had regular contact with Jen Jackson (JJ) at BAS during Year 3 via email and Skype calls. These have been particularly in relation to the impacts of COVID-19 on the genetic and isotope analyses being carried out on the whale samples by BAS, resulting in an extension to the project and alterations to the payment schedule for work completed which were incorporated into the two Year 3 change requests to Darwin Plus (see Annexes 3.1-3.4 and Section 14). JJ has sent updates on sample analysis progress to the PO during the early stage of the analysis carried out in March 2021 (evidenced in Annex 9). Communications have also been extensive with Mike Dunn at BAS regarding the acquisition of CITES permits to ship the

2020 right whale samples to the UK for analysis (completion of CITES permits evidenced in Annex 9).

- **Happy Whale**: The PO and Ted Cheeseman of HappyWhale submitted an article to the local newspaper in the Falklands (Penguin News) to request images of whales as part of their collaborative citizen science project (evidenced in Annex 4.13). Images of distinctive sei whales taken during 2020 were also uploaded to the HappyWhale website to further support this collaboration (evidenced at https://happywhale.com).
- **New England Aquarium (NEA)**: The PO and Sal Cerchio (SC) of NEA have been in regular contact regarding the acoustic analyses and deployment schedule. In Year 3, batches of acoustic data were sent to SC in June and December 2020. The analysis work by SC during Year 3 has been impacted by COVID-19 lab restrictions, and consequently communications have also been regular with regard to revised schedule and budgeting for delivery of that work which were incorporated into the two change requests to Darwin Plus (see updates in Annexes 3.1-3.4, and info in Section 14).
- **Sea Mammal Research Unit (SMRU)**: The PO received guidance from project partner Phil Hammond (SMRU) throughout 2020 and early 2021 to complete a sei whale abundance estimate, with the final manuscript being published in Marine Mammal Science in February 2021 (evidenced in Annex 4.14). While the fieldwork for that paper originates prior to the current Darwin project, the finalised abundance estimate comprised a fundamental part of the Key Biodiversity Area application which is a major component of the DPLUS082 core outcome.
- **University of California Santa Cruz (UCSC)**: The PO has been in regular contact with Ari Friedlaenders's team regarding the inclusion of the sei whale tagging data into three scientific manuscripts, which will make the data accessible to the international community. The first manuscript was accepted for publication in the Journal of Experimental Biology on 26 March 2021 (evidenced in Annex 4.11).

Stakeholder engagement:

- **All stakeholders**: Documents providing summary updates of the progress of the project were distributed via email to all identified local stakeholders in September 2020 and February 2021 (evidenced in Annexes 4.1 and 4.2), including an open invitation to stakeholders to accompany the PO on boat surveys to observe the work first-hand.
- **Falkland Islands Government (FIG) Members of the Legislative Assembly (MLAs)**: The FC Conservation Manager Andy Stanworth met with MLAs Leona Roberts and Teslyn Barkman on 9 July 2020 (evidenced in Annex 3.6), and the FC CEO Esther Bertram met with the MLAs again on 21 January 2021 (evidenced in Annex 3.8). Both meetings included an update on the project progress particularly with regard to KBAs.
- **FIG**: A presentation on the sei whale KBA was provided to the Environment Committee on 19 June 2020 (evidenced in Annex 3.5), including MLAs and representatives of core stakeholders including FIG, conservation organisations, community members, and industry. A meeting was held between Andrea Clausen (FIG Director of Natural Resources) and Esther Bertram on 21 January 2021 (evidenced in Annex 3.9) which provided a further update on the KBA.
- **KBA engagement**: Stakeholders were invited to a KBA webinar held online (as it occurred during the COVID-19 lockdown) on the 8 May 2020 (evidenced in Annex 6.6). A copy of the KBA application and Technical Report were also distributed to all stakeholders for comment ahead of the formal application to the KBA committee (evidenced in Annexes 6.7 and 6.8).
- **Marine Management Area (MMA) engagement**: The PO and Ander De Lecea, the project manager for the Marine Management Areas project (DPLUS071), met on 10 March 2021 to discuss overlap between the proposed sei whale KBA and the MMA work in the Falklands (evidenced in Annex 3.7).

- **Local and international community**: 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 4.7). As of the 19 April 2021, the page had 2,403 followers and posts regularly reach several thousand people (evidenced in Annex 4.6).
- **Local and international community**: Articles on the project were published in:
    1. the Falklands Conservation magazine in May 2020 (sei whale acoustics: Annex 4.3) and September 2020 (sei whale and southern right whale survey roundup: Annex 4.4);
    2. the Falklands Conservation newsletter in July 2020 (project update; Annex 4.5);
    3. the Darwin Initiative newsletter in June 2020, featuring the sei whale KBA (evidenced in Annex 4.15);
    4. the Penguin News in May 2020 (sei whale movement from the Falklands to Brazil: Annex 4.8) and in October 2020 (whale research update: Annex 4.9), which would have reached the majority of the Falkland Islands community.
- **Local and international community**: A 15 minute 'mini-documentary' was produced on the work with sei and southern right whales, and was uploaded to You Tube on 9 December 2020 (viewable at: https://www.youtube.com/watch?v=3kdjxjjDhBI&t). As of 19 April 2021, it has received over 1,500 views. The documentary was also aired on Falkland Islands TV from Friday 12th March until Friday 19th March (evidenced in Annex 4.10).

3. Project progress

We submitted a change request to Darwin on 16 September 2020 which included a revised project logframe to incorporate an extension of the project into Year 4 (see Section 14). That revised logframe is used in Annexes 1 and 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. During Year 3, the PO has liaised with FC's Communications and Marketing Officer (CMO) to maximise local media outputs (Activity 1.1), including publishing project articles in the FC magazine and newsletters, and several articles in the Penguin News. Additionally, a mini-documentary was produced on the project (viewable at: https://www.youtube.com/watch?v=3kdjxjjDhBI&t) and aired on You Tube and FITV. Bi-annual stakeholder updates (Activity 1.2) and regular social media updates (Activity 1.3) have been published. International effort has been raised through correspondence with project partner Ted Cheeseman, including a joint Penguin News article and an upload of sei whale images to the HappyWhale website (Activity 1.4). Progress has been made on several scientific papers during Year 3 (Activity 1.5), including an abundance estimate manuscript with Phil Hammond (in support of the KBA), several collaborative papers with Ari Friedlaender's team on suction-cup tagging of sei whales, publication of a habitat modelling paper with Mick Baines, and the drafting of manuscripts on sei whale calls (with Sal Cerchio) and sei whale diet (with BAS). These activities have been comprehensively evidenced in Annex 4 and are summarised point-by-point in the Annex 1 logframe. Activity 1.6 is scheduled for production and delivery during Year 4 of the project, and is currently 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 3, volunteer opportunities were advertised in local media (Activity 2.1), and nine people participated in surveys (Activity 2.3) despite reduced opportunities

due to the COVID-19 restrictions. Activities 2.2 and 2.5 were completed in Year 2. Activity 2.4 is progressing on schedule, with an equipment inventory completed in September 2020 and another due on completion of the 2021 field season. 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, Activity 3.1 has been affected by the COVID-19 lockdown, which caused the loss of 6.5 weeks of the sei whale field season and has resulted in an extension of the project into Year 4 to provide an additional field season (see Section 12). Further challenges have occurred in relation to achieving boat survey coverage at Falkland Sound (see Section 9). Activity 3.2 is progressing on schedule. Activities 3.3 and 3.4 have largely been completed in Year 3, well ahead of schedule and with a more solid outcome than anticipated since we have progressed the KBA almost to acceptance rather than simply assessing feasibility and producing a draft application. The formal acceptance of the KBA is expected early in Year 4. 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. Activities 4.1 to 4.3 have continued throughout Year 3, as evidenced by steering group minutes and boat charter invoices. The risk assessment (Activity 4.2) was completed in Year 2. The two years of acoustic deployments in Berkeley Sound were completed in Year 3; however, additional challenges occurred with the Falkland Sound deployments (Section 9). The latter is not considered likely to impact the achievability of Output 3, since the high success of the Berkeley Sound deployments has provided abundant data towards achieving the goal. The timeframes for Activities 4.4 and 4.5 have been extended in relation to the COVID-19 pandemic affecting laboratory access to the automated detectors, and that is detailed in Sections 12 and 14. It is expected that these Activities will be completed within the revised project timeframe. 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 3, but the number of samples acquired was affected by the COVID-19 lockdown. However, the project extension into Year 4 (see Section 12) is allowing the collection of additional samples during 2021 which should compensate to some extent. Activity 5.4 is progressing on schedule, and export permits were acquired whenever it was plausible to ship samples north on the BAS vessel (in Year 3 that occurred in April 2020). Activity 5.5 was affected by laboratory closures related to the COVID-19 pandemic (see Section 12); however, the project extension has allowed more time for those analyses to be achieved and it has been indicated by BAS that results should be expected within the revised project timeframe. 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 1. Activities 6.2 and 6.3 have occurred throughout Year 3, but the collection of sei whale samples was impacted by the COVID-19 lockdown in the Falklands (that did not affect the southern right whale season). Activity 6.4 is progressing on schedule, and CITES export permits have been acquired whenever it was plausible to ship tissue samples north on the BAS vessel (in Year 3 that was in April 2020 and February 2021). Under the revised (extended) project timeframe due to COVID-19, Activity 6.5 is now scheduled for delivery during Year 4, and most of the analyses should be completed on time (see Section 12 for additional details). 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. Awareness of the project has been achieved internationally via collaborations with international partner organisations which are resulting in many potential scientific manuscripts and an international online presence via HappyWhale. The project Facebook page has achieved over 2,400 followers by the end of Year 3, most of which are international. The most popular posts have reached several thousand people. All outputs have mentioned Darwin, and almost all have included the Darwin project logo. Evidence for Output 1 is provided in Annex 4. It is expected that both local and international awareness of the project will be high by project close.

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 onset of this project, but knowledge has steadily increased over the duration of the project through the participation of volunteers with the boat surveys, provision of a cetacean training course in Year 2, continued outreach, and collaboration with local landowners on sampling dead whales which has greatly increased interest and knowledge about whale research in the Islands. The project has overlapped in time with an apparent increase in whale numbers and species diversity around the Islands, which has meant it was timely with respect to local interest having also naturally grown over this timeframe. The project has guided three local boat drivers to be able to operate safely around whales. A large amount of equipment will remain in the Falklands at the end of the project for use in future research, and inventories of that 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 had been identified during 2016 in Berkeley Sound and Falkland Sound respectively based on anecdotal data (see Figure 2), and had been highlighted as priorities for research to determine whether they might qualify for full KBA status. This project has made reasonable progress towards that assessment during Year 3, with the completion of boat surveys at both sites; however, coverage during the sei whale season in Year 3 was impacted by COVID-19 restrictions (see Section 12). Although both boat survey and acoustic coverage at Falkland Sound have continued to be problematic during Year 3 (see also AR2), this has not affected the overall project goal of assessing the region for whale KBAs, since it was established during Year 2 through habitat modelling and the production of the whale KBA Technical Report (Annex 6.8) that a more appropriate approach for sei whales would comprise a single, larger-scale KBA instead of the six small sites that were suggested in 2016. Output 3 is consequently progressing well ahead of schedule, since not only have the KBAs been assessed and the approach modified to comprise a single larger area, but the project has been able to progress a KBA application for "*Falkland Islands Inner Shelf Waters*" to completion; we expect a formal announcement on its acceptance early in Year 4. Evidence for Output 3 is provided in Annex 6. We expect that Output 3 will be achieved within the project timeframe concurrent with significant media outreach, 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 in the region over months/years, 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 ever since, and the two-year monitoring period was successfully concluded in December 2020. The method has succeeded beyond our expectations at Berkeley Sound, with all three devices operating and being recovered successfully with minimal data gaps. As such, the validity of the approach has been confirmed. The validity of the data analysis to inform temporal presence and offer a long-term monitoring option is still to be assessed; the extension of the project into Year 4 allows more time for the analysis phase which has been hindered by COVID-19 restrictions. However, indications are that Output 4 will be fully achieved by the end of the project. As described in Section 9, we have experienced significant glitches in the acoustic monitoring at Falkland Sound, most of which could not have been mitigated for; however, this does not invalidate the technique or the achievability of Output 4. 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 TDR 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 to 4, 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. The collection of faecal samples in Year 3 has been hindered by the COVID lockdown, but the extension of the project into Year 4 allows for another season of sample collection and also addresses the challenges that project partner BAS has had with restricted access to labs for analysis. Three of the five Indicators for Output 5 relate to the data analysis and reporting stages, and it is expected that all of these will still be delivered on schedule by the revised project completion (31 August 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 3 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 stranded animals. The COVID-19 pandemic affected biopsy sampling during the sei whale season; however, more biopsies of that species have been collected during the 2021 season than in the previous years, which will compensate to some extent. We again had good success with the biopsy sampling of southern right whales during Year 3, which 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 until the end of May in Year 4. Two of the three Indicators for Output 6 relate to the data analysis and reporting stages by project partner BAS. Despite the COVID-19 pandemic causing problems with laboratory access, our extended project timeframe is expected to allow enough time to analyse most of the samples collected during 2019 and 2020.

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 3 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 Annexes 3.1 to 3.4).
- 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 3.6 and 3.8).
- Collection of field data, cataloguing of whales, liaison with project partners, provisional data coding and mapping of data have continued throughout Year 3 (evidenced throughout Annexes 3 to 9), in preparation for the production of the final project Technical Report and GIS metadata deliverables (Indicators 0.3 and 0.4) which are due at the end of the project in Year 4.
- Better understanding of whales and support for a KBA application by decision-makers (Indicator 0.5) has been progressed during Year 3 by:
    - MLA meetings (see previous point);
    - Meetings with FIG Heads of Department: (1) Andrea Clausen (Director of Natural Resources) on 21 January 2021 (Annex 3.9); and (2) presentation at the Environment Committee meeting on 19 June 2020 (Annex 3.5);
    - Bi-annual stakeholder updates on the project including invitations to participate with boat work (Annexes 4.1 and 4.2);
    - The KBA stakeholder webinar and electronic consultation held in May 2020 (Annex 6.6), which provided opportunities for questions from, and feedback to, decision-makers and stakeholders;
    - Distribution of the draft KBA application and KBA Technical Report to decision-makers and stakeholders during May 2019 for their information and comment (Annex 6.7 and 6.8);
    - Meeting with the MMA project (DPLUS071) to discuss overlap and better understand how the sei whale KBA can feed into the MMA process (Annex 3.7).

In combination, progress towards achieving the project outcome is considered to be very good, with key decision-makers and stakeholders voicing their support of the sei whale KBA application during the consultation period. This has increased both overall knowledge of whale occurrence in the Falklands, and knowledge of what a KBA is and how it might fit into wider marine management in the Falkland Islands. On the back of this work, including both the data collection/analysis to address the KBA criteria and the widespread stakeholder support, it has been indicated that the *Falkland Islands Inner Shelf Waters KBA* for sei whales will be confirmed during the early part of Year 4 and well within the project timeframe, fulfilling the main project outcome.

3.4 Monitoring of assumptions

We identified a number of Important Assumptions in our project logframe (see Annex 2), and they 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 at the project outset, which was the cessation of fieldwork due to the COVID-19 outbreak (see Section 12).

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 Annexes 3.1 and 3.3). However, we have distributed electronic updates to those members who could not attend (evidenced in Annex 3.2 and 3.4). Meetings with local decision-makers have also been influenced by availability, but nevertheless several such meetings were held during Year 2 (evidenced in Annex 3.5 to 3.9).

Assumption 0.3: Decision makers and community representatives will utilise data provided to make evidence-based decisions.
Comments: This risk holds true. However, we received good support during the consultation for our sei whale KBA proposal, and that was accompanied by several letters of support (including FIG). The KBA has progressed almost to completion, suggesting that evidence-based work does receive good recognition.

Assumption 1.5: Submission of peer reviewed papers depends on field results and timeframe for analysis.
Comments: This risk holds true. However, we have succeeded during Year 3 in having the habitat modelling paper published and a suction-cup tag paper accepted for publication. Several other papers are at the draft stage.

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 3 we have managed to take nine people out on boat surveys despite the COVID-restrictions. Local desire to assist with whale-related work remains very high.

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. We have been fortunate to have had good whale occurrence throughout the project period. Nevertheless, the logistics of working in the Falkland Islands have continued to affect boat survey work, especially at the remote Falkland Sound site. Adverse weather also prevented boat work for a 3.5 week period during the peak of the southern right whale season in July/August 2020. We can do little to mitigate for weather or logistics, since these are simply the known risks of working in this region. Additionally, in Year 3 we had the added circumstances of the loss of a 6.5 week period of fieldwork due to the COVID-19 lockdown (see Section 12), which was beyond our control and could not have been reasonably anticipated. Despite these challenges, our dataset is sufficient to achieve the overall project outcome.

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 significant 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. Our KBA Technical Report (Annex 6.8) has considered all of the available local and global sei whale population data and provided a careful assessment against the KBA criteria which has worked well to provide a rationale argument for the justification for a KBA despite the absence of good data on sei whales in many regions worldwide. The progress of our KBA application towards almost completion during Year 3 is evidence that this assumption has been addressed as well 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, with the exception of one faulty device at Falkland Sound (see Section 9), we have had great success with all of our deployments and they have worked far better than expected, producing datasets of high signal-to-noise ratio and containing many whale calls.

Assumption 4.2: Acoustic analysis will be completed on schedule.
Comments: This risk holds true. The COVID-19 pandemic has affected this analysis due to the closure of the laboratory where the automated detectors for sei whales are maintained. It is also apparent that the detectors designed for North Atlantic sei whales have a lower efficacy for South-west Atlantic sei whales, and miss many calls (although they also do detect many calls!). Sal Cerchio is hoping to improve the detectors to make them more applicable to south-west Atlantic sei whales, but this may not be achievable within the project timeframe. However, even without further customizing the detectors, an assessment of temporal occurrence should be possible at a coarser scale. The extension to the project timeframe is expected to allow sufficient time for the sei whale acoustic analysis to be completed.

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 TDR 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, since the availability of faecal material is outside of our control and entirely dependent on the whales, and we have had several surveys days with lots of sei whales but not a single faecal event observed. The collection of samples in Year 3 was also affected by the COVID-19 pandemic resulting in the loss of 6.5 weeks of the sei whale field season. However, including the Year 4 field season then we have achieved the target of 50 faecal samples for sei whales.

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. Please see Section 12 for a discussion of how the COVID-19 pandemic has affected sample export. At this time, we expect that all samples from 2019 and 2020 will be included in the project analysis, but it is not considered likely that our 2021 samples can reach the UK in time for inclusion. This should not significantly affect the project Outputs.

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 elusive behaviour. However, around 100 samples have been acquired from southern right whales to date. 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 3 of the project towards addressing uncertainty and lack of information on key whale species. Despite the COVID-19 lockdown in the Falklands, we achieved ~5.5 months of boat survey data and completed our two years of acoustic deployments during Year 3, providing robust data 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, stakeholder updates and consultations, a project 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 (but growing) whale-watching tourism sector. Assessment of the acoustic data and boat survey data generated during Year 3 will enhance understanding of how to assess potential impacts of such developments on whales.

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 3 of the project significant progress has been towards achieving a sei whale KBA, with the formal submission of an application to recognise the *Falkland Islands Inner Shelf Waters KBA*. That has included discussion with KBA authorities, the production of a Technical Report to outline how the Falklands meet the global criteria for a sei whale KBA, and the successful implementation of stakeholder consultations. There is now good awareness of the whale KBA in the Falklands, and it is expected to directly influence subsequent consideration of MPAs and MMAs.

5. OPTIONAL: Consideration of gender equality issues

Falklands Conservation (FC) currently employs 11 female and 5 male part- or full-time staff. The FC Project Officer delivering DPLUS082 is female. The FC Conservation Manager (project lead) and the boat skippers (three people have skippered the boat during the surveys) are male. We have both female and male project partner leads.

There are no specific barriers to gender equality in the project activities. Media outputs, school presentations and consultations are open to all genders and members of the community. Volunteer opportunities to assist the PO with boat-based cetacean surveys are, by necessity (due to health and safety), limited to adults without significant disabilities, but are otherwise open to all genders, ethnicities and nationalities.

Of the nine people who have assisted the PO with boat surveys in Year 3 (FC staff and volunteers), seven were female and two were male. Of the 28 people that have been taken on boat surveys by the PO since the start of DPLUS082 (including FC staff, project partners and volunteers), 16 were female and 12 were male.

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 continuously monitored and evaluated over time. The logframe has undergone several revisions over the full duration of the project (approved by Change Requests to Darwin) to ensure that the M&E is up-to-date and realistic, and that the project is progressing to a clear schedule.

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 Year 3, with the exception of the revision of some of the Indicator timeframes in association with the project extension into Year 4.

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 British Antarctic Survey 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. There have been extensive Skype discussions with key partners regarding the final project deliverables, specifically Sal Cerchio regarding the acoustic analysis and Jen Jackson regarding sample export and analysis. These discussions have led directly to two change requests submitted to Darwin to amend the project timeframe and budget for Year 3 and Year 4 to ensure that FC and partners can optimise the delivery of the project.

7. Lessons learnt

The fieldwork and analysis components of the project were impacted in Year 3 by the COVID-19 pandemic, which have affected project deliverables and necessitated the extension of the project into a Year 4 (see Section 12). The global pandemic has been a lesson that even with the best planning in the world then sometimes things happen that are completely outside of our control.

We experienced a faulty acoustic device during May 2020, which took a significant amount of shipping time to return to the manufacturer to assess, repair, and return to the Falklands. We also experienced lengthy shipping times for equipment in Year 1 and 2, and so this did not come as a surprise. However, the cessation of international commercial flights to/from the Falklands during the COVID-19 pandemic made this particular shipment many weeks slower, and reiterated the need to allow more time than expected for shipping goods during future project planning.

The difficulties with conducting boat at more remote sites within the Falklands have been evident throughout this project (see Section 9), and represent a learning curve. In future projects we would recommend focussing on a single site in order to be able to acquire full seasons of coverage.

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

The reviewer of the annual report for Year 2 made three comments, which are addressed below.

Comment 1. *Please supply pdfs of technical reports rather than screengrabs: the latter are difficult/impossible to read because of low resolution (no response needed).*
Apologies, we did send on the relevant PDFs last year after receiving this request from the reviewer. This year, I have supplied an extensive array of PDF documents as evidence for AR3, which hopefully should address this issue.

Comment 2. *This may indicate a lack of imagination on the part of the Reviewer, but it would be interesting to read about the practicalities of collecting whale faecal samples (no response needed).*
We have actually included some of this process in the mini-documentary that has been produced for the project (https://www.youtube.com/watch?v=3kdjxjjDhBI&t&ab). In the video you can see what the whale faecal plume looks like, and also how we go about collecting it with the net. There is also some discussion of the reasoning behind why we collect these samples. Additionally, in

Annex 8 I have provided some better photos and descriptions to clarify how we go about this sampling method.

Comment 3. *Perhaps provide a brief summary in the Final Report on the interaction and outcome of inputs of this project to the DPLUS project working on Marine Management Areas (DPLUS071).*
Thanks for this suggestion. Ahead of our Final Report (which is due after project completion on 31 August 2021), I have had another meeting with Ander de Lecea who leads DPLUS071 to touch base on the overlap between our projects before DPLUS071 completes at the end of March. I have provided a summary of that meeting in Annex 3.7, which we will also incorporate into the Final Report for DPLUS082.

9. Other comments on progress not covered elsewhere

The COVID-19 lockdown during April and May 2020 affected several project components, and resulted in a Change Request to Darwin to extend the project into a fourth financial year to optimise delivery. These issues are covered fully in Section 12. However, the project has in general progressed well, with notable achievements during Year 3 including:

- The completion of a full second southern right whale season between June and September 2020;
- The progression of the KBA application almost to completion (as of the 31 March 2021 it was accepted by the KBA Committee, but not formally announced);
- The completion of the full two-year acoustic dataset in Berkeley Sound in December 2020;
- Two successful shipments of genetic/faecal samples north to the UK for analysis;
- Completion of the 2019 and 2020 sei whale cataloguing, revealing multiple within-year and between-year matches; and
- Significant outreach work, including social media, magazine and newspaper articles, several scientific papers, and the production of the mini documentary.

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

Survey coverage at the two focal sites

In AR1 and AR2, we reported that a lower amount of the planned survey coverage had been achieved at Falkland Sound compared with Berkeley Sound. The survey coverage achieved at the two focal sites during the project to date is summarised in Table 1.

As reported in previous ARs, the coverage achieved at Falkland Sound in Year 3 has been significantly lower than planned (Table 1). This was due to the COVID-19 lockdown and the difficult logistics at that site, primarily the adverse weather conditions and the lowered ability to take advantage of short ‘weather windows’ because of the long drive (2-3 hr) to the site along gravel roads while towing the boat. The coverage in Berkeley Sound/NE Falklands was also a little lower than planned, and that was primarily the result of the COVID-19 pandemic lockdown in April/May 2020. Less coverage was achieved in that area during March 2021 than planned, because the priority for the 2021 work has been placed on the Falkland Sound site and favourable weather days were focussed there. In general, throughout the project then the planned survey effort in Berkeley Sound/NE Falklands has been mostly achieved, whereas the planned survey effort in Falkland Sound has been difficult to realise in practice.

Table 1. Summary of planned and achieved small boat surveys in the North-east Falklands (Berkeley Sound to Cow Bay) and Falkland Sound. The total numbers of planned surveys are now higher than originally stated in the project proposal, since the project extension has moved some unused budget from Q1 of Year 3 into an additional field season in Year 4 (see Section 12).

Site	Yr 1: Jan–Mar 2019		Yr 2: Apr–Aug 2019		Yr 2: Jan–Mar 2020		Yr 3: Apr–Sep 2020		Yr 3: Jan–Mar 2021		Project total	
	Planned	Achieved	Planned	Achieved	Planned	Achieved	Planned	Achieved	Planned	Achieved	Planned	Achieved
NE Falklands	12	14	20	22	12	11	20	16	7	4	71	67
Falkland Sound	10	3	10	4	10	0	10	1	5	3	45	11
Total	**22**	**17**	**30**	**26**	**22**	**11**	**30**	**17**	**12**	**7**	**116**	**78**

Failure of acoustic equipment

As reported in AR2, we deployed an additional acoustic device in Falkland Sound in October 2019, in an effort to try and increase the amount of data on sei whales at that site given the difficulties with completing boat work there. Due to weather conditions in March 2020, we were unable to recover that device prior to the COVID-19 restrictions being implemented in the Falklands. We visited Falkland Sound on the first good weather day following the lifting of restrictions on 11 May. It was collected on 15 May after seven months in the water; however, the device was found to have leaked and the data recording had stopped in October 2019 only five days into the deployment.

The device was returned to the manufacturer in New Zealand, but this took a long time due to the cessation of commercial international flights to/from the Falklands because of COVID. After an examination, the manufacturer confirmed that they would replace it. The replacement device was deployed again in Falkland Sound in December 2020, and is scheduled for recovery in early May 2021 (Year 4). Due to these delays, it is not certain whether or not this first batch of acoustic data from Falkland Sound will be analysed within the timeframe of the project. However, FC has committed to collecting a full year of data at the site at cost to the organisation, and will work hard to fulfil that commitment.

In general, it was to be expected that some challenges would arise during a two-year acoustic deployment involving multiple devices at two sites. It is considered to be a great success that the project has acquired a continuous two year dataset involving three devices at Berkeley Sound, and the combined challenges with Falkland Sound deployments described in AR 2 and AR3 are considered unfortunate circumstances rather than something that we could have realistically mitigated for.

10. Sustainability and legacy

As described in Section 2 and Annex 4, the whale project has been extensively promoted within the Falkland Islands during Year 3, including via three articles in the Penguin News that reach the majority of the Falklands' population, several meetings with the FIG MLAs, bi-annual stakeholder updates, 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 driving out to Cape Pembroke to look for them. We have noticed a steady growth in the number of local people following the Falkland Islands Whale Project social media page over the last few months, due to widespread sharing of the posts by the community including volunteers, project partners and one FIG MLA. Additionally, the holding of the stakeholder consultation for the proposed *Falkland Islands Inner*

Shelf Waters KBA during May 2020 resulted in a great deal of interest and a subsequent invitation to present the project at the Environment Committee meeting. A significant amount of local and international outreach is planned around the KBA launch, once it is confirmed early in Year 4.

Volunteers have been actively encouraged to participate in boat surveys; demand for places always far outstrips supply. Volunteers have 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 both received training from the tagging specialist during March 2019.

Following the extended project timeframe due to COVID-19, a full Technical Report and associated datasets will be produced by 31 August 2021 and will be available to inform ongoing management and conservation decisions in the Falklands. 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, the legacy will now include a confirmed KBA for endangered sei whales, which will highlight the Falkland Islands as a site of global importance for that 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 a local 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 during Year 3, notably in the FC magazine articles (Annex 4.3 and 4.4), on the KBA Technical Report (Annex 6.8), and in social media on the Falkland Islands Whale Project banner image (https://www.facebook.com/FalklandsWhale). Additionally, we have regularly linked Darwin Initiative in our posts on the Facebook Falkland Islands Whale Project page (Annex 4.7), and the posts have sometimes been 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 (Annexes 3.1 to 3.4, and 4.1 to 4.2). We believe the frequent mentions of Darwin Initiative in our outreach (including the Penguin News articles, e.g. Annex 4.8 and 4.9) and the use of the logo where possible, have identified the Darwin-funded whale work as a clearly distinct project. We expect significant outreach and mentions of Darwin Plus in association with the forthcoming KBA launch in early Year 4.

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

12. Impact of COVID-19 on project delivery

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, which required non-essential workers to remain at home (Annex 6.1). As a result, both Falklands Conservation and boat charter partner SMSG (see Annex 6.13), were required to cease fieldwork activities from the 27 March.

In AR2, we reported that this lockdown did not affect many of the Year 2 deliverables, since it was only implemented late in March at the end of that financial year and some fieldwork planning had already altered in anticipation that it might occur. However, the FIG lockdown continued for 6.5 weeks, and non-essential workers were only allowed to resume activities on 11 May 2020

(see: https://fig.gov.fk/covid-19/public-updates/66-01-may-2020-government-easing-some-covid-19-restrictions). This lockdown resulted in the loss of 6.5 weeks of the core part of the sei whale season in the Falklands, including the entirety of survey work planned for April 2020 at the start of Year 3. Additionally, lengthy and ongoing restrictions related to the pandemic in other parts of the world has impacted the delivery of outputs for several project partners. Consequences of the COVID-19 pandemic for DPLUS082, and our efforts to counteract those to optimise delivery of the project, are summarised in Table 2.

Table 2. Impacts of the COVID-19 pandemic on DPLUS082 and associated mitigation.

Activity	Impact	Response
Boat survey work	The lockdown resulted in no boat survey coverage for the entirety of April 2020 and half of May 2020; this affected the sei whale season (i.e. photo-identification, acquisition of genetic and faecal samples, and volunteer participation in the project). Much of the data analysis was based on achieving two full seasons of data on sei whales, and the loss of this 6.5 week period in the core season was therefore detrimental to project deliverables.	The lockdown affected a key part of the sei whale season of 2020. Consequently, we submitted a Change Request to Darwin in September 2020, to carry over unspent funds to run an additional sei whale season from February through May in 2021, which included an overall extension to the project timeframe into a Year 4 (to 31 August 2021). The Change Request was granted, and a 2021 sei whale field season is currently underway.
Acoustic analysis	Project Partner Sal Cerchio reported that access to the NOAA laboratories in the USA was restricted and he was unable to access the automated detectors needed for the whale acoustic analysis. As of the last steering group meeting (Annex 3.4), laboratory access was still problematic.	The Change Request to Darwin in September 2020 acknowledged the delayed laboratory access for project partners, and was factored into the newly-extended project timeframe to the 31 August 2021. This should provide more time for lab access. During the latest steering group meeting on 24 February 2021 (Annex 3.4), Sal Cerchio confirmed that the analysis should be possible within the extended project timeframe. His delivery deadline has therefore been extended to 31 July 2021.
Genetic / isotope analysis	Project Partner Jen Jackson of BAS reported that the BAS laboratories had been closed or heavily restricted in access for most of 2020, and that she had therefore fallen behind the original project delivery schedule (Annex 3.4).	The Change Request to Darwin in September 2020 acknowledged the delayed laboratory access for project partners, and was factored into the newly-extended project timeframe to the 31 August 2021. This should provide more time for lab access. During the latest steering group meeting on 24 February 2021 (Annex 3.4), Jen provided an update and had managed to book lab access for March/April 2021. A return to the lab will likely be needed in May/June 2021 to complete the genetic analyses. The sample analysis is therefore now underway, and it is anticipated that at least some of the analyses will be completed within the extended project timeframe. There has been a commitment from BAS to complete any outstanding analyses after the project completion date.
Sample shipments	Genetic and faecal samples need to be transported in a frozen state. The only method of achieving that is via the BAS vessel which departs from Stanley to the UK once per year, usually in May. However, because of COVID-19 there	The unexpected early port call on 15 April 2020 occurred during the middle of the COVID-19 lockdown in the Falklands; the PO received a dispensation from FC to come into the office the previous week in order to prepare samples, sort and sign off the CITES permits with Customs, and hand the samples to BAS for loading onto the vessel. These activities were conducted with face

Activity	Impact	Response
	were changes to the vessel schedule which affected two shipments: (1) samples collected from May 2019 to April 2020 were scheduled to depart for the UK in May 2020, but the port call was brought forward by over a month due to COVID; and (2) the 2021 Antarctic season was shorter than usual due to COVID-19, and the BAS vessel duly called several months earlier than planned in February 2021 rather than May 2021.	masks, gloves, social distancing and hand sanitiser throughout. The very early port call in February 2021 had been anticipated, and the PO had already packed the tissue samples collected from May to August 2020, prepared the CITES permits, and delivered the samples to the BAS office in September 2020 so that they were ready in advance for any possible early arrival of the ship. The Customs check was completed on 24 February 2021, and the samples were loaded onto the ship. This early port call has in some respects worked in the projects favour, since the right whale samples collected from June to August 2020 might now arrive in the UK in time to be analysed within the extended project timeframe which was previously considered unlikely (see Annex 3.4). However, it also has introduced a disadvantage, since the samples (faecal and tissue) collected during the 2021 field season would normally have been shipped north during May; due to the much earlier port call in 2021 these cannot now be shipped to the UK until ~May 2022, and will not therefore be available for inclusion in the final project analysis.
Acoustic work	We experienced a faulty acoustic device during May 2020, which needed to be returned to the manufacturer in New Zealand for repair. Due to COVID-19, all commercial flights between the Falklands and South America were terminated, and DHL were therefore sending/receiving parcels by ship. This meant that no deployment in Falkland Sound could be achieved until after the replacement device was received.	No mitigation was possible for this impact. The device was finally deployed in December 2020.
KBA consultation	The lockdown in March-May 2020 occurred at the time that the stakeholder consultation was scheduled for the KBA application. The consultation could not therefore occur in person as had been originally planned.	Delaying the consultation would have resulted in delays to the KBA application and affected its delivery within the project timeframe. At the time it was also unclear how long the lockdown would continue for. Consequently, it was decided to run the stakeholder consultation online. A webinar was held with presentations and a Q&A session, and the application was also emailed to all stakeholders to request their feedback (Annex 6.6). This approach, while not optimal, was sufficient to ensure that the KBA application could progress on schedule.

Despite many different aspects of DPLUS082 having been affected by COVID-19, we expect that the majority of the project will be delivered thanks to the extension of the project timeframe to the end of August 2021 which allows FC and project partners extra time to fulfil most of the commitments.

13. Safeguarding

Please tick this box if any safeguarding violations have occurred during this financial year. ☐

If you have ticked the box, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

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 staff are aware of these important issues. 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.

14. Project expenditure

Two project change requests were submitted to Darwin over the course of Year 3, both of which were approved:

(1) 16 September 2020: a budget line change request (which included amendments to the project logframe) was submitted to ask for:

a. An extension to the project duration into a fourth financial year (2021/2022), with a proposed new project completion date of 31 August 2021; and

b) A carry-over of unspent funding from 2020/21 into 2021/22 to support an additional season of fieldwork in lieu of time lost to COVID-19.

That request was approved by Darwin on 24 September 2020.

(2) 1 March 2021: a shift of funds was requested between Years 3 and Year 4 to address continued delayed laboratory access for two of our project partners related to COVID-19 restrictions. This was approved by Darwin on 16 March 2021.

The final amended values following these two change requests are used in the first column of Table 3. The values provided in Table 3 are provisional - please see actual finance claim forms as the final accounting for funds.

Table 3: Project expenditure during the reporting period (1 April 2020 – 31 March 2021)

Project spend (indicative) in this financial year	**2020/21 D+ Grant (£)**	**2020/21 Total actual D+ Costs (£)**	**Variance %**	**Comments (please explain significant variances)**
Staff costs	[redacted]			
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 2020-2021 – if applicable

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
Impact Baleen whale populations and their key habitats in the Falkland Islands are sustained over future decades via evidence-based management decisions.		An application to have the *Falkland Islands Inner Shelf Waters* confirmed as a global Key Biodiversity Area (KBA) for sei whales was progressed fully during Year 3, including a consultation, review and final submission to the KBA Committee on 2 February 2021. The KBA is accepted, but formal announcement will occur in Year 4.	
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 August 2021, a Technical Report is delivered, and subsequently provided to the FIG Environmental Committee during 2021. 0.4 By the end of October 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 Steering Group meetings were held in September 2020 and February 2021. Minutes and project updates are provided in Annexes 3.1 to 3.4. 0.2 A KBA presentation occurred at the Environment Committee meeting (attended by FIG, MLAs etc) on 19 June 2020 (Minutes in Annex 3.5). A meeting was held between FC and FIG MLAs on 9 July 2020 and 21 January 2021 (Minutes in Annexes 3.6 and 3.8). FC also met with Andrea Clausen (Director of Natural Resources) on 21 January 2021, including an update on the whale KBA (Annex 3.9). 0.3 Not due until project completion. 0.4 Project data have been collected throughout Year 3 and coded into spreadsheets. The IMS-GIS metadata summary sheets will be completed at project completion. 0.5 The KBA process has now been completed (see Output 3 for evidence), and included a full consultation period with decision-makers and	0.1. No further Steering Group meetings are planned, since the project completes in August 2021. 0.2. A final update to FIG MLAs will be scheduled for Year 4, but exact timings will be dependent on availability. 0.3. Technical Report (TR) to be produced and delivered by project completion (31 August 2021). TR to be disseminated at FIG EC following completion. 0.4. IMS-GIS metadata submitted at project completion (31 August 2021). 0.5. The KBA application process has been completed (see Output 3). Formal announcement is

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
		stakeholders, and a presentation at the Environment Committee meeting. Full support was provided for the KBA application (see Output 3). A meeting was held on 10 March 2021 with the SAERI project manager for DPLUS071, to discuss overlap between the KBA and MMA processes in the Falklands (Annex 3.7).	expected during Year 4, with associated media outputs.
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 Falkland Sound) are made aware of the whale project at the start (2018), during (2019, 2020 and 2021), and following project completion (by 15 September 2021). 1.2 Project information included in Falklands Conservation media, including 4 articles in FC magazine (one each by December 2018, 2019, 2020 and 2021) and 2 in the FC Newsletter (one each by July 2019 and January 2021). 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. 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	1.1 Progressing on schedule. During Year 3, stakeholder updates were disseminated at the end of the 2020 field season (in September 2020) and early in the 2021 field season (in February 2021) to ensure that stakeholders were up to date with project progress (evidenced in Annex 4.1 and 4.2 respectively). 1.2 Progressing on schedule. Articles were published in the FC magazine in May 2020 (whale acoustics, Annex 4.3) and September 2020 (whale project roundup, Annex 4.4). An article was also published in the FC newsletter in July 2020 (Annex 4.5). 1.3 Progressing on schedule. The project social media page (https://www.facebook.com/FalklandsWhale) was established in Year 1, and as of the 19 April 2021 the page had 2,403 followers and posts were regularly reaching several thousand people (Annex 4.6 and 4.7). 1.4 Progressing on schedule. For Year 3 the time-bound indicators included: (1) a Penguin News article by Dec 2020; and (2) a TV feature by August 2021. Both have been delivered, with Penguin News articles published in May (Annex 4.8) and October (Annex 4.9). A 15 minute documentary was produced on the work with sei and southern right whales, and was uploaded to You Tube on 9 December 2020 (viewable at: https://www.youtube.com/watch?v=3kdjxjjDhBI&t). As of 19 April 2021, it has received over 1,500 views. The documentary was also aired on Falkland Islands TV from Friday 12th March until Friday 19th March (Annex 4.10). 1.5 A paper on habitat modelling of sei whales and other cetaceans which incorporated the DPLUS082 dataset (in support of the KBA application) was published in the journal PlosONE in December 2020 and can be viewed open access	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
	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 August 2021 published on local television channels and to the international community via the internet. 1.5 Raise awareness of Falklands sei whales amongst the international scientific community by submitting 2 papers to peer reviewed online journals by 31 August 2021. 1.6 By 31 Jan 2020, 31 Jan 2021, and 31 Aug 2021, submit a selection of each season's sei whale photo-identification data to HappyWhale.com to increase local and international access and awareness. 1.7 By 31 August 2021, a final Technical Report is produced, and subsequently made available for download.	(https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0244068). A paper on the suction-cup TDR tagging of sei whales was accepted for publication by the Journal of Experimental Biology on 26 March 2021 (Annex 4.11). Additionally, a paper on southern right whales was submitted to the scientific committee of the International Whaling Commission for presentation during their 2021 meeting (Annex 4.12). 1.6 Images of a total of 36 of the most distinctive sei whales that were photographed in Berkeley Sound and Falkland Sound during the 2020 field season were sent to Ted Cheeseman of HappyWhale.com on 1 March 2021 to be added to the HappyWhale website. A full search of the animals can be carried out at: https://happywhale.com 1.7 Scheduled for project completion in Year 4.	
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.		Communications have been maintained regarding potential media outlets. Media outputs are all progressing on schedule, with multiple examples provided in Annex 4.	During Year 4, it is planned that a FC magazine article and a Penguin News article will be produced on the KBA launch.
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, and a radio interview was provided in Year 1.	A final project update will be disseminated to stakeholders and steering group at project completion in August 2021. Opportunities will be taken to carry out at least one additional school visit during Year 4.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
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 4.6 and 4.7). The Darwin Initiative is frequently tagged and also share these posts to their own page.	Social media updates will continue throughout Year 4 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 sent images of distinctive sei whales from the 2020 season to Ted Cheeseman of HappyWhale on 1 March 2021, and they can be viewed on the HappyWhale.com website (https://happywhale.com). The PO and Ted also collaborated to produce a short Penguin News article in March 2021 to request additional whale images from Falklands' waters to be submitted to HappyWhale to the benefit of both projects (Annex 4.13).	Communications will be maintained with HappyWhale. An additional selection of images of distinctive sei whales from the 2021 season (currently in progress) will be submitted to HappyWhale by project completion on 31 August 2021.
Activity 1.5. Liaise with project partners regarding the planning and production of potential scientific submissions to journals.		A collaborative paper with Ari Friedlaender's team on the suction-cup TDR tagging of sei whales was accepted for publication by the Journal of Experimental Biology on 26 March 2021 (Annex 4.11). Communications have been maintained throughout the drafting, review and proof stages of that manuscript. Discussions have also been maintained with Sal Cerchio regarding the production of an acoustic paper (see discussion in Steering Group minutes, Annex 3.1 and 3.3).	Continued work by Sal Cerchio and the PO on a draft manuscript on sei whale acoustics. The PO and Jen Jackson are also in communication about potential outputs from the genetic and dietary analyses, but those will not now be completed within the project timeframe due to lab access delays associated with the COVID pandemic.
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 project completion in Year 4.	The TR is scheduled for delivery by project completion (31 August 2021). Much of July and August will be dedicated to this deliverable.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
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 and 2020, with a final equipment catalogue produced at the end of the 2021 field season, informing the capacity for future cetacean survey work in the Islands. 2.5 Training of two FC staff in deployment and recovery of suction-cup time-depth-recorder (TDR) tags during March 2019.	2.1 This indicator has been completed, with 56 people responding to adverts for volunteering on whale surveys during 2020, and 25 confirming their interest after receiving additional information and being signed up as FC volunteers. In addition, in response to the confirmed project extension then a further call for volunteers was issued in February 2021 for volunteering opportunities during the 2021 field season (Annex 5.1). A total of 27 volunteers signed up after that call. Volunteer opportunities were also advertised to stakeholders via the bi-annual project updates (Annex 4.1 and 4.2). 2.2 This indicator was completed in Years 1 and 2. However, in Year 3, a further nine people including volunteers and FC staff have assisted with the fieldwork season (Annex 5.2), despite the loss of fieldwork time associated with the COVID-19 pandemic lockdown. It is expected that some additional volunteers will accompany the PO on boat surveys in Year 4; the final numbers of volunteers across the project will be reported on in the Final Report to Darwin in August 2021. 2.3 This indicator was completed in Year 2. 2.4 An interim equipment inventory was carried out at the end of the 2020 field season in September 2020 and is evidenced in Annex 5.3. 2.5 This indicator was completed during Year 1 (March 2019).	
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.		Four community volunteers accompanied the PO on boat surveys between April and August 2020, following volunteer advertisement in January 2020. This attendance was lower than previous years, because of the loss of over six weeks of the field season due to the COVID-19	The PO will continue to vet any additional volunteers who sign up during the remainder of the 2020 field season.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
		lockdown. Opportunities for the 2021 field season were advertised in February 2021, and one volunteer accompanied the PO on several boat surveys during February and March 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 5.4). 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.	
Activity 2.2. Risk assessments will be produced to ensure the well-being of volunteer participants on the project boat surveys.		Risk assessments were produced during earlier years of the project to cover volunteers and FC staff both during small boat surveys and the acoustic deployments, and continued to apply throughout Year 3. These are evidenced in Annex 5.5 and 5.6.	N/A – These will remain applicable during the Year 4 field season.
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 the volunteers on field techniques, including photo-identification and faecal sampling (as opportunities arise).		Instruction was provided to volunteers on the boat, depending on whether whales were encountered and the nature of those encounters. All volunteers had an attempt with the photo-identification camera (evidenced in Annex 5.2) and with general spotting and tracking of the whales. Some also assisted with faecal sampling when that opportunity arose.	Volunteer assistance with fieldwork will continue for the remainder of the 2021 field season.
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 (see AR2).	N/A. This Activity was completed in Year 2.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
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 September 2020, on completion of the 2020 field season (see Annex 5.3).	A full inventory of equipment will be produced on completion of the 2021 field season.
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, and in Feb–May 2021. 3.2 By 31 August 2021, cetacean sighting data will be analysed to produce distribution maps and habitat assessments. 3.3 By 31 August 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 criteria to determine potential KBA status.	3.1 Progressing on schedule since June 2020, however surveys achieved in April and May 2020 were impacted by the local lockdown due to the COVID-19 pandemic which terminated all fieldwork for 6.5 weeks and resulted in no boat surveys at all during April 2020 (Annex 6.1; see Section 12). In relation to the Year 3 reporting period, the project has completed: 4 surveys in May 2020, 4 surveys in Jun 2020, 4 surveys in Jul 2020, 4 surveys in Aug 2020, 2 surveys in Sep 2020, 2 surveys in Feb 2021 and 5 surveys in Mar 2021. Examples of invoices to evidence the boat surveys are provided in Annex 6.2. 3.2 Distribution mapping is scheduled for production/completion during Year 4 after completion of all fieldwork. However, some habitat predictive modelling was carried out using the 2019 Darwin Plus boat data set (together with earlier datasets) to inform the KBA process, and that resulted in the publication of a manuscript in the journal PlosONE in December 2020: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0244068. 3.3 Cataloguing is underway. Examples of catalogue pages from the 2020 sei whale catalogue for Berkeley Sound, the 2020 sei whale catalogue for Falkland Sound, and the 2019 southern right whale catalogue are provided in Annexes 6.3 to 6.5. Cataloguing is not scheduled for completion until Year 4, following completion of all fieldwork. 3.4 The draft KBA application and accompanying Technical Report (KBA TR) which assessed sei whale occurrence in the Falklands against the global KBA criteria were completed in March 2020 and sent to David Díaz (KBA co-Regional Focal Point for Latin America and Caribbean) for initial review. A stakeholder consultation was carried out in May 2020 (Annex 6.6), after which the application (Annex 6.7) and KBA TR (Annex 6.8) were finalised and then submitted to David Díaz for external review in July 2020. Unfortunately, the external review process took substantially longer than had been indicated, and feedback was not received from the reviewers until January 2021. However, the final submission of the KBA application still occurred within Year 3 during	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
		February 2021. A formal decision of the KBAs acceptance was originally expected by the end of Year 3, but is now expected early in Year 4.	
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.		Texts and phone calls between the PO and SMSG have occurred almost daily during the field seasons, to coordinate field work around weather. Boat surveys have been carried out whenever weather has allowed (evidenced by invoices in Annex 6.2). Limitations to the survey coverage are discussed fully in Section 9 (with regard to the two sites) and Section 12 (with regard to COVID-19). In light of the pandemic, the project was extended into a Year 4 to allow a third sei whale field season to be run, requiring additional coordination with SMSG. Field methods followed successful survey work in 2017 (outlined in Weir, C.R. 2017. Developing a site-based conservation approach for sei whales Balaenoptera borealis at Berkeley Sound, Falkland Islands. Falklands Conservation report. Version 1.0, September 2017. 115 pp.).	Fieldwork in Year 4 will continue until (at least) the 31 May. That will mark the end of the boat survey work for DPLUS082, which completes on 31 August 2021.
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.		All field data have been entered into separate spreadsheets for effort and sightings (evidenced in Annex 6.9 and 6.10), usually within 48 hr of each survey. Databases have also been completed for faecal and biopsy samples (evidenced in Annex 6.11 and 6.12). The 2019 and 2020 photo-identification catalogues for sei whales have been produced and the southern right whale cataloguing is well underway (see Annexes 6.3 to 6.5). Some QGIS mapping and	Field data for Year 4 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. QGIS will be used to produce maps of species distribution and effort for the final project Technical Report due on 31 August 2021.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
		habitat modelling of the 2019 dataset was completed and published in a manuscript to support the KBA: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0244068.	
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.		The draft KBA Technical Report was completed, and received several revisions following the stakeholder consultation and external review. This activity has progressed ahead of schedule with the final KBA TR being produced and submitted to the KBA Committee with the KBA application in July 2020. The KBA TR is evidenced in Annex 6.8.	Completed. We are awaiting a formal decision on the KBA designation, which is now expected early in Year 4.
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 has continued to liaise with David Díaz and Charlotte Boyd (Chair, KBA Standard and Appeals Committee) during Year 3, culminating in both of them reviewing the final KBA application and supporting its formal acceptance. Evidence of these communications is available on request but not included here due to privacy.	Completed. We are awaiting a formal decision on the KBA designation, which is now expected early in Year 4.
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.	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. 4.2 Acoustic data analysis carried out to assess the temporal variation of sei whales at the two sites by 31 August 2021.	4.1 Progressing on schedule. During Year 3 we completed the following: (1) recovery of the three devices on 12 August 2020 that had been deployed in Berkeley Sound on 26 March 2020; (2) redeployment of the three Berkeley Sound devices on 19 and 23 August 2020; and (3) final recovery of the three Berkeley Sound devices on 10 December 2020. This final recovery marked the completion of the two full years of acoustic data. We additionally recovered the device in Falkland Sound on 15 May 2020 following the easing of lockdown restrictions, but unfortunately the device proved to have been faulty and no data resulted (see Section 9). Following replacement of the device by the manufacturer, an additional deployment occurred in Falkland Sound on 14 December 2020 and has not yet been recovered. Evidence for the acoustic deployments as	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
	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.	photographs and screengrabs of the acoustic data is provided in Annex 7. Updates on deployment discussions during Year 3 can also be found in the steering group updates (Annexes 3.1 to 3.4). 4.2 Progressing according to the revised timeframe that extended the project into a Year 4 to allow more time for laboratory access for partners including for acoustic analysis (see Section 12). This output delivery has been delayed by COVID, but is still expected within the project timeframe. 4.3 Scheduled for production/completion during Year 4 at project completion.	
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.		Communications between FC and Sal have been extensive throughout the project. Discussions regarding deployment plans and the revised schedule for acoustic analysis due to COVID-19 restrictions are documented in the steering group updates (Annexes 3.1 to 3.4).	Year 4 will focus on the analysis of the two-year dataset acquired from Berkeley Sound, and this is scheduled for completion by 31 August 2021 when the project concludes.
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.		Communications have been ongoing regarding boat charter for acoustic work (evidenced by successful deployments/recoveries and a copy of an invoice in Annex 7).	Due to numerous challenges (documented in AR2 and AR3) the Falkland Sound deployment is ongoing during Year 4, and communications will be maintained with SMSG until the conclusion of the deployment (and likely beyond the project timeframe).
Activity 4.3. A method of transferring sound files to Sal Cerchio for analysis will be identified.		Sound files have been posted to Sal after each of the first two deployments on portable hard drives. This will be evidenced by the inclusion of those data in the final report.	Completed – all data from the two years of acoustic monitoring in Berkeley Sound have been successfully received by Sal and are ready for analysis.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
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.		Due to COVID delays (see Section 12), this activity is now scheduled for production/completion during Year 4. Please see the steering group updates (Annexes 3.1 to 3.4) for updates regarding the automated classifiers.	This activity will be conducted during Year 4 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 4.	This activity will be conducted during Year 4 and completed by the end of the project.
Output 5 An assessment of the foraging ecology, trophic role and diet of sei whales in the Falklands.	5.1 Deployment of short-term suction-cup time-depth-recorder (TDR) tags on whales in March 2019 to monitor foraging behaviour. 5.2 Collection of a combined total of 50 whale faecal samples over both seasons (2019 and 2020). 5.3 Between August 2020 and August 2021, DNA-based identification of whale diet using PCR-amplification and Illumina sequencing, followed by identification of prey using DNA databases. 5.4 Between August 2020 and August 2021, stable isotope analysis of tissue samples conducted to investigate trophic level. 5.5 By project completion, whale foraging behaviour in the Falkland Islands described.	5.1 Completed during Year 1 (March 2019). 5.2 The COVID pandemic restrictions affected this activity during Year 3, due to the loss of 6.5 weeks fieldwork during the peak of the sei whale season. However, the extension of the project to allow a fourth fieldwork season has compensated in part. To date, across the entire project, we have now collected: (1) one sample from December 2018 (donated); (2) 21 samples from fieldwork in Feb to May 2019; (3) 12 samples in Feb/Mar 2020 (prior to lockdown); and (4) 16 samples from Feb to May 2021 (to date). This reaches our intended total of 50 samples for the project. Evidence of faecal sampling is provided in the mini-documentary (https://www.youtube.com/watch?v=3kdjxjjDhBI&t&ab) and in the spreadsheet (Annex 6.12). Faecal events were only seen from southern right whales on one survey, and it unfortunately proved impossible to collect them due to their occurrence in the middle of a socialising group of animals. 5.3 to 5.5 Now scheduled to be completed during Year 4 due to delays due to COVID (see Section 12). Please see the steering group updates (Annexes 3.1 to 3.4) for updates regarding the timeframe/plans for these analyses, which are on target for completion before the end of the project.	
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 AR2, 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.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
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.		The PO sterilises any of the used faecal sampling equipment after each survey and subsamples every faecal sample to store it in various storage mediums/ways that will optimise their use for analysis – see Annex 8 for evidence. Evidence of faecal sampling is also provided in the mini-documentary (https://www.youtube.com/watch?v=3kdjxjjDhBI&t&ab) and in the spreadsheet (Annex 6.12). Every effort is made to collect faecal samples, though sometimes when they occur at distance or in adverse weather then they are too dissipated to warrant collection (they are still recorded in the spreadsheet).	Faecal sampling will continue for the remainder of the 2021 field season, with sterilisation protocols being followed.
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.		A shipment of the faecal samples collected between May 2019 and March 2020 was scheduled to depart for the UK at the end of May 2020. However, due to COVID-19, the BAS vessel port call was brought forward by over a month (see Section 12). FIG export permits were acquired for the faecal samples (evidenced in Annex 8) and those samples left Stanley on the ship on 15 April 2020.	Unfortunately, due to the changes in BAS vessel schedule related to COVID-19 (see Section 12), the shipment of samples collected during 2021 will not now be possible during the project timeframe. Consequently, it is unlikely that the 2021 samples can be shipped until early 2022, and won't therefore be included in the project analysis.
Activity 5.5. Analyses of prey species identification and tissue stable isotope analysis conducted by BAS, with results and interpretation		Due to COVID delays (see Section 12), this activity is now scheduled for production/completion during Year 4. Please see	This activity will be conducted during Year 4 and completed by the end of the project.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
(including conservation/management implications) reported to FC for inclusion in the project Technical Report.		the steering group updates and minutes (Annexes 3.1 to 3.4) for updates regarding sample shipment and analysis from project partner Jen Jackson of BAS.	
Output 6 Clarify the population identity, structure and genetic diversity of Falkland whales.	6.1 Genetic material acquired from live whales (aim of 50 samples per species) and stranded animals in the Falklands during 2019 and 2020. 6.2 Between August 2020 and August 2021, DNA extraction of samples, and laboratory analyses to identify the sex, mitochondrial DNA diversity and individual identity using microsatellite loci. 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).	6.1 During Year 3, we have acquired: (1) three biopsy samples from humpback whales; (2) six biopsy samples from sei whales; and (3) 47 biopsy samples from southern right whales. Evidence of the biopsy sampling is provided in Annex 9. 6.2 to 6.3 Scheduled to be completed during Year 4.	
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.		Completed in Year 1.	N/A. This Activity was completed in Year 1.
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.		The occurrence of small boat surveys was evidenced in Annex 6, and biopsy sampling of sei, humpback and southern right whales is evidenced in Annex 9. Biopsy equipment has been maintained and sterilised by the PO throughout the Year 3 fieldwork season (evidenced in Annex 9).	The project was extended into a Year 4 due to the COVID-19 pandemic (see Section 12), and therefore small boat work and biopsying will continue until (at least) the 31 May 2021.

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	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 at home on the same date that they are collected, since they need to be immediately frozen to preserve DNA (evidenced in Annex 9).	Processing and storage of samples will continue until the end of the field season in Year 4.
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.		See Section 12 for a detailed discussion of shipment and permit arrangements/communications, since the schedule of these had to be altered in response to the COVID-19 pandemic; however, two shipments were successfully achieved, one in April 2020 and another in February 2021. On boat occasions, the relevant CITES permits were acquired with the assistance of Mike Dunn (BAS) and FIG Customs (evidenced in Annex 9).	Given that the 2021 BAS vessel departed several months earlier than usual (i.e. February rather than May), it will not prove possible to export the faecal/tissue samples collected during the 2021 field season until the next BAS vessel heads north in 2022. Although that is beyond the DPLUS082 timeframe, we are committed to achieving CITES permits for those samples and undertaking their analysis next year. The samples will be prepared for shipment prior to the PO finishing the project, to ensure that everything is in place for CITES applications.
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.		Due to COVID delays (see Section 12), this activity is now scheduled for production/completion during Year 4. Please see the steering group updates and minutes (Annexes 3.1 to 3.4) for updates regarding sample shipment and analysis from project partner Jen Jackson of BAS.	This activity will be conducted during Year 4 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 August 2021, a Technical Report is delivered, and subsequently provided to the FIG Environmental Committee during 2021. 0.4 By the end of October 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, 2020 and 2021), and following project completion (by 15 September 2021). 1.2 Project information included in Falklands Conservation media, including 4 articles in FC magazine (one each by December 2018, 2019, 2020 and 2021) and 2 in the FC Newsletter (one each by July 2019 and January 2021).	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
	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. 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 August 2021 published on local television channels and to the international community via the internet. 1.5 Raise awareness of Falklands sei whales amongst the international scientific community by submitting 2 papers to peer reviewed online journals by 31 August 2021. 1.6 By 31 Jan 2020, 31 Jan 2021, and 31 Aug 2021, submit a selection of each season's sei whale photo-identification data to HappyWhale.com to increase local and international access and awareness. 1.7 By 31 August 2021, a final Technical Report is produced, and subsequently made available for download.	1.4 Copies of articles and links to media outputs, photos of presentations at public talk and school visit. 1.5 URLs for publishers sites. 1.6. URL to sei whale images on HappyWhale. 1.7 Copy of final Technical Report (open access).	
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),	2.1 Database file stored at FC. 2.2 Copies of participation photos and record of attendance. Copy of volunteer-led magazine article.	2.1 to 2.3. Volunteers will have availability and desire to attend fieldwork sessions and outreach activities.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	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 and 2020, with a final equipment catalogue produced at the end of the 2021 field season, informing the capacity for future cetacean survey work in the Islands. 2.5 Training of two FC staff in deployment and recovery of suction-cup time-depth-recorder (TDR) tags during March 2019.	2.3 Copies of training material, attendees list and photos. 2.4 Copy of final equipment catalogue at project completion. 2.5 Receipts from field visit by tagging expert and documentation of training.	
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, and in Feb–May 2021 3.2 By 31 August 2021, cetacean sighting data will be analysed to produce distribution maps and habitat assessments. 3.3 By 31 August 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 criteria to determine potential KBA status.	3.1 and 3.2 A copy of the final project Technical Report (open access) documenting the methods, data analysis and results. 3.3 Electronic copies of photo-identification catalogues. Images available at online portal HappyWhale. Re-sighting analysis included in final Technical Report. 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.	3.1 to 3.3 Weather, availability and logistics will not interrupt boat-based survey work. 3.1 to 3.3 Whales are present in the sites during the fieldwork periods. 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.

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	the sex, mitochondrial DNA diversity and individual identity using microsatellite loci. 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).	6.2 Receipts from BAS of analysis costs; results presented in the final Technical Report. 6.3 Receipts of submission into the genetic data platform.	6.2 Samples are exported to BAS in adequate time for analysis.

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)

Output 1. Increased awareness of the project

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.

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.

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.

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.

1.5. Liaise with project partners regarding the planning and production of potential scientific submissions to journals.

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.

Output 2. Increased local capacity for whale research

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.

2.2. Risk assessments will be produced to ensure the well-being of volunteer participants on the project boat surveys.

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).

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.

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.

Output 3. KBA Assessment

Project summary	Measurable Indicators	Means of verification	Important Assumptions
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. 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. 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. 3.4. Communications will be established and maintained with relevant international KBA personnel, to guide the process and ensure any application is optimal. **Output 4. Acoustic monitoring** 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. 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. 4.3. A method of transferring sound files to Sal Cerchio for analysis will be identified. 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. 4.5. Acoustic results and interpretation (including conservation/management implications) will be reported to FC for inclusion in the project Technical Report. **Output 5. Foraging ecology assessment** 5.1. Appropriate permits acquired from Falkland Islands Government for the tagging work. 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. 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. 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. 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. **Output 6. Genetic analysis** 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.			

Project summary	Measurable Indicators	Means of verification	Important Assumptions
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. 6.3. Processing and storage of tissue samples at a suitable facility in the Falkland Islands. 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. 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.			

Additional Annexes (see separate documents)

Annex 3: Evidence to support progress against the project Outcome.

Annex 4: Evidence to support progress against Output 1: Awareness of the project within local and international communities.

Annex 5: Evidence to support progress against Output 2: Increased capacity for cetacean research.

Annex 6: Evidence to support progress against Output 3: KBA Assessment.

Annex 7: Evidence to support progress against Output 4: Passive Acoustic Monitoring study.

Annex 8: Evidence to support progress against Output 5: Whale foraging ecology.

Annex 9: Evidence to support progress against Output 6: Whale genetic diversity study.

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.	N
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.	Y
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
Do you have hard copies of material you need 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.	N
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Y
Do not include claim forms or other communications with this report.	