

Darwin Plus: Overseas Territories Environment and Climate Fund Annual Report

To be completed with reference to the "Project Reporting Information Note"
(<https://dplus.darwininitiative.org.uk/resources/information-notes/>).

It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

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Darwin Plus Project Information

Project reference	DPLUS126
Project title	Advancing Falklands and region-scale management of globally important whale populations
Territory(ies)	Falkland Islands
Lead partner	Falklands Conservation
Project partner(s)	National Oceanic and Atmospheric Administration, Instituto Aqualie, British Antarctic Survey, Aarhus Institute of Advanced Studies, Sea Mammal Research Unit, Happy Whale, Falkland Islands Government
Darwin Plus grant value	£499,991.00
Start/end dates of project	1 July 2021 to 30 June 2024
Reporting period (e.g. Apr 2021-Mar 2022) and number (e.g. Annual Report 1, 2)	1 July 2021 to 31 March 2022, Annual Report 1
Project Leader name	Andrew Stanworth and Caroline Weir
Project website/blog/social media	https://www.facebook.com/FalklandsWhale
Report author(s) and date	Caroline Weir, 6 May 2022

1. Project summary

The Falklands marine environment supports globally significant populations of baleen whales. Endangered sei whales (*Balaenoptera borealis*: Figure 1A) use the region as a feeding ground during the summer and autumn, with inner shelf waters being recognised as a globally-important site for the species in 2021 with the announcement of the *Falkland Islands Inner Shelf Waters Key Biodiversity Area*. During the austral winter, aggregations of southern right whales (*Eubalaena australis*: Figure 1B) occur along the north-east coast of the Falklands for mating and socialising.

While much has been learnt about the distribution and ecology of these two species during coastal boat survey work that commenced in 2017 (including DPLUS082 fieldwork carried out from 2019 to 2021), many uncertainties remain. Amongst these are some key data deficits relevant to the conservation and management of baleen whales around the Falklands, including:

- How both species move around the Falklands and use the available habitats, including potential movements between inshore waters and offshore, pelagic habitats;
- Which other countries or ocean regions are used by Falklands' whales;
- How whales use the water column, with regard to their foraging behaviour and the proportion of time spent in surface waters where they might encounter vessels;

- With regard to southern right whales, whether the wintering aggregations observed in the north-east of the Falklands are also found throughout the Islands, and what kind of numbers are involved; and
- Data on the overall health and body condition of whales in the Falklands.

Additionally, ongoing investigations of the population structure and diet of whales around the Falklands requires larger sample sizes and multi-year datasets.

(a)



(b)

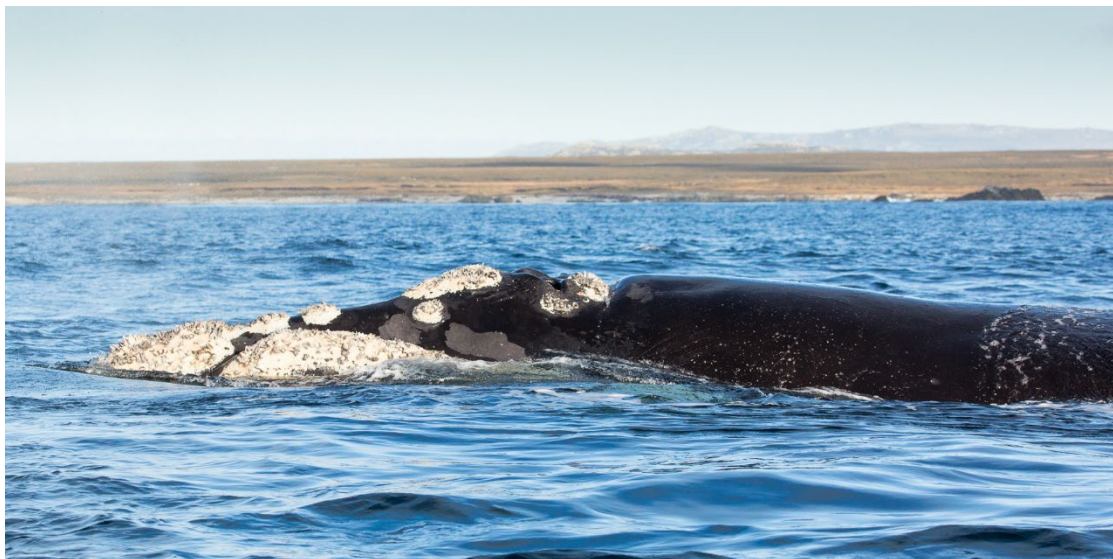


Figure 1. Project study species in the Falkland Islands: (a) sei whale and (b) southern right whale.

DPLUS126 aims to address some of these critical questions, including the first attempt to carry out satellite telemetry on whales in the Falklands, which will provide detailed fine-scale data on the movements and depth profiles of whales in, and potentially beyond, Falklands' waters. A winter aerial survey will be carried out to assess southern right whale abundance in regions adjacent to the north-east Falklands, and calibrated Unmanned Aerial Vehicles (UAVs) will measure the body size parameters of right whales via photogrammetry to assess their health. This suite of work will be carried out over two field seasons (2022 and 2023) using aerial and boat platforms. Boat surveys will focus on the coastal waters of the north-east Falklands, particularly Berkeley Sound during summer and the coastline north to MacBride Head during winter (Figure 2).

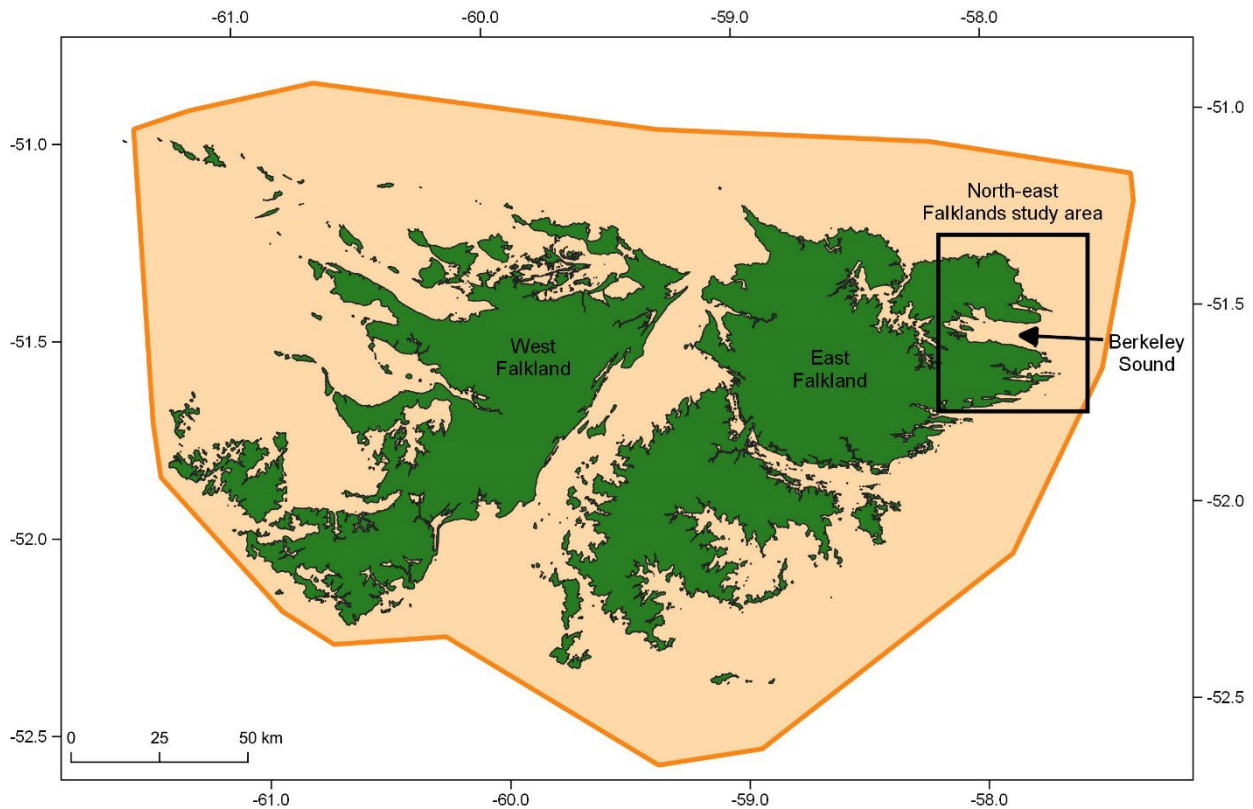


Figure 2. The Falkland Islands, showing the location of the core study area for boat-based survey work and the location of the Falkland Islands Inner Shelf Waters Key Biodiversity Area for sei whales (orange area).

The data collected during this project will provide a solid evidence base on which Falkland Islands Government will be able to incorporate vulnerable baleen whales into Marine Spatial Planning (MSP) and other management tools in the Falklands. The marine environment supports a significant part of the Islands' economy, notably the well-established and thriving fishing industry. The hydrocarbon industry has explored and drilled in Falklands' waters, and may be further developed in future. Additionally, the port facility in Stanley is being modernised and expanded, to cater for increased commercial and tourist-related vessel traffic. Many of these activities occur within the *Falkland Islands Inner Shelf Waters Key Biodiversity Area* for sei whales, and overlap with the areas used by right whales for mating activities. Potential direct impacts from these activities on whales include vessel strikes, entanglement in moorings, habitat loss, and noise disturbance. Indirect impacts may also occur if important prey species are affected.

This project will increase understanding of the potential overlap between whales and human activities, providing insight into the most effective methods for industry to evaluate and mitigate interactions. The winter right whale abundance estimate should facilitate a Key Biodiversity Area assessment for that species, which, if it qualifies, would represent a 'key site' for conservation under the Falkland Islands Ecoregions, Habitats, Species and Sites Strategy (2016–2020). A draft Species Action Plan for endangered sei whales will be produced (given their likely inclusion as priority species on a revised National Red List), addressing currently incomplete goals of the Falkland Islands Biodiversity Framework. In combination, these outputs will be available for use by a range of stakeholders (notably industry and government) to guide threat mitigation and facilitate continued population recovery of baleen whales around the Falklands and in the wider south-west Atlantic region.

2. Project stakeholders/partners

The project stakeholders (who comprise key decision-makers, landowners adjacent to Berkeley Sound, local research organisations, and marine commercial and recreational users) and the project partners (who also comprise the steering group) have been engaged with the project during Year 1 as follows:

Stakeholders:

An update on the progress of DPLUS126 was emailed to all stakeholders (see Annex 7.5 for the stakeholder list) on 16 December 2021 (see Annex 7.2).

Regular updates on the project fieldwork during March 2022 were posted on the dedicated Falkland Islands Whale Project Facebook page (<https://www.facebook.com/FalklandsWhale>) and frequently shared (evidenced in Annex 4.7). A short introduction to DPLUS126 was also provided in an article in the FC magazine in November 2021 (Annex 7.3).

Significant stakeholder engagement is scheduled for Year 2, following completion of the first field season.

Project partners:

The project partners comprise an international team of specialists (listed in Annex 7.6). Due to their time constraints and the remote and varied locations of the partners, most engagement to date has been via online video calls with each partner being involved in their particular area of expertise. This has included:

Alex Zerbini (NOAA): Alex is the satellite tagging collaborator on the project, and has provided advice and support via multiple meetings over Skype/Zoom between August 2021 and March 2022, some of which are evidenced in Annexes 8.1 to 8.6. That advice has included discussions regarding choice of tags for each species, ordering of tags, sterilisation, deployment methods, personnel, and tag programming, and has been integral to the success of deploying Limpet tags on sei whales during Year 1. Latterly, in March 2022, there have also been email discussions regarding the organisation of the forthcoming southern right whale season (July/August 2022), with regard to available tagging personnel and travel arrangements.

Jen Jackson (BAS): Jen's contribution to DPLUS126 has been: (1) provision of five tags for use on southern right whales; and (2) provision of photo-identification images/data on southern right whales from South Georgia. Both have progressed on schedule, with the tags being shipped to the Falklands on the BAS vessel and received during January 2022 (Annex 8.7), and the photo-identification data having been shared with CW on 7 October 2021 (Annex 4.7). CW will commence the matching between the South Georgia and Falklands catalogues in Year 2, and it is expected that there will be communications with Jen throughout that process.

Rachel Cooper (FIG): A meeting was held with Rachel Cooper and Mike Jervois of FIG on 4 April 2022 (following a postponement from March), with the main aim of discussing the sei whale Species Action Plan (SAP) that will be developed as part of DPLUS126. The minutes of that meeting are provided in Annex 3.

Phil Hammond (SMRU): Phil is providing guidance on the mark-recapture photo-identification component of DPLUS126. Some initial email exchanges occurred in November 2021 regarding the photo-identification project goals and some of the envisaged challenges specific to sei whales. It is expected that this project component will be a key focus of Year 2.

Fredrik Christiansen (Aarhus Institute of Advanced Studies): Discussions were held with Fredrik during November 2021, with regard to an update on project progress and planning for the Unmanned Aerial Vehicle (UAV) work on southern right whales. Since this component is not scheduled until July/August 2023, it is expected that discussions and fieldwork planning for the UAV work will occur from late Year 2 into early Year 3. Fredrik also provided example risk assessments for UAV work with whales, which contributed to the development of the Falklands' risk assessments.

Ted Cheeseman (Happy Whale): The main collaboration with HappyWhale for DPLUS126 is to provide images of well-marked whales to their online citizen science website to raise awareness facilitate matching with marked sei whales from other geographic regions. The fieldwork and photo-identification of sei whales in Year 1 only commenced at the end of the year in mid-March, and consequently this matching will occur during Years 2 and 3. In the meantime, there have

been ongoing discussions with Ted regarding the development of an algorithm for automated computer matching of cetaceans, including sei whales.

A general update to the steering group will be provided at the end of the sei whale season in May 2022.

3. Project progress

3.1 Progress in carrying out project Activities

Output 1. Data on whale distribution and movements are collected and used to identify and assess national and global key sites.

Activities under Output 1 are mostly progressing to schedule as outlined by the time-bound indicators in the Annex 1 logframe. During Year 1, a substantial amount of time was spent in late 2021 and early 2022 organising the logistics for the first sei whale season (Activity 1.1), in particular with regard to ordering and shipping the new boat, satellite tags and other equipment. Despite numerous challenges (see Section 9), a successful sei whale season was carried out in March/April 2022. As noted in Annex 1, the booking of international travel for the southern right whale season in July/August of Year 2 did not occur on schedule, due to ongoing uncertainties about flights related to COVID-19. However, it is expected that the travel will be booked in good time for the right whale season. Activities 1.2 to 1.5 and 1.8 are all progressing on schedule (see Annex 1), and the remaining Activities are planned for Years 2 and 3. Evidence for all activities is detailed in Annex 1 and Annex 4.

Output 2. Photo-identification mark-recapture analysis carried out to generate site-specific abundance estimates and seasonal/annual fidelity data to demonstrate persistent use of sites to fulfil protected area criteria (e.g. for KBAs).

All of the Activities under Output 2 for Year 1 progressed to schedule, as outlined by the time-bound indicators in the Annex 1 logframe. Evidence for the Indicators and Activities under Output 2 is provided in Annexes 4.32 and 5, and is summarised point-by-point in the Annex 1 logframe.

Output 3. A draft evidence-based Species Action Plan is produced for endangered sei whales in Falklands' waters and recommended to FIG.

All of the Activities under Output 3 for Year 1 progressed to schedule, as outlined by the time-bound indicators in the Annex 1 logframe. Most Activities under Output 2 are scheduled for the final year of the project when the draft SAP will be produced and reviewed. However, the initial meeting was held with FIG to discuss scope of the SAP (Annex 3), and it is expected that discussions will continue during Year 2.

Output 4. Awareness of whales, and support for their conservation and management, is increased within local and international communities via dissemination of research outputs.

Only Activities 4.1, 4.4 and 4.5 were scheduled for Year 1, and all have progressed to schedule according to the time-bound indicators in the Annex 1 logframe. Evidence is provided in Annex 7, and is summarised point-by-point in the Annex 1 logframe.

3.2 Progress towards project Outputs

Output 1. Data on whale distribution and movements are collected and used to identify and assess national and global key sites.

The baseline situation for Output 1, was that a single extensive Key Biodiversity Area (KBA) had been successfully designated for sei whales in 2021 during a previous project (DPLUS082), spanning the inshore waters around the Islands to the 100 m depth isobath. However, it remained unclear whether or not sei whales used the entire KBA consistently (or whether the area should be refined), and whether they also routinely forage in Falklands' waters deeper than 100 m. Additionally, an island-wide assessment to identify key sites for southern right whales has not yet been carried out. One of the key goals of DPLUS126 was therefore to collect data on the movements of whales through satellite tags, and to conduct vessel and aerial surveys to assess distribution. Year 1 of DPLUS126 focussed primarily on logistics and establishing the project,

and fieldwork only commenced in mid-March at the end of the financial year. However, good progress has been made towards this goal, with the deployment of five satellite tags on sei whales during March/April (<https://falklandsconservation.com/sei-whale-tracking/>). The results are showing extensive movements around the Falklands by sei whales and those data will feed directly into marine management and the identification of important sites. Evidence for Output 1 is provided in Annex 4. We expect that Output 1 will be achieved by the close of the project, and the current Indicators are considered appropriate.

Output 2. Photo-identification mark-recapture analysis carried out to generate site-specific abundance estimates and seasonal/annual fidelity data to demonstrate persistent use of sites to fulfil protected area criteria (e.g. for KBAs).

The baseline situation for Output 2, is that previous work in the Falkland Islands (including under DPLUS082) has yielded: (1) five seasons of photo-identification data on sei whales, 2017–2021; and (2) two full seasons of photo-identification data on southern right whales (2019 and 2020), along with two smaller partial datasets (2017 and 2021). Additionally, photo-identification data will be collected on sei whales and right whales during 2022 and 2023 as part of DPLUS126. It is expected that these combined datasets should prove sufficiently large to support a robust mark-recapture analysis, that would provide an estimate of how many animals are using the study sites. These data are needed for the identification of significant sites for conservation and management at local and international scales. Mark-recapture work incorporates several stages, including identifying the natural marks suitable for recognising individuals, quality-rating the images to determine which should be included in the analysis, and assessing individual distinctiveness (including the proportion of ‘unmarked’ animals). While most of this Output will be achieved in Year 3, Indicators 2.1 to 2.3 commenced during Year 1. Indicators 2.1 and 2.3 are progressing on schedule (see Annex 1). Indicator 2.2 has fallen behind schedule due to the significant time taken up by project logistics in Year 1; however, we expect to complete Indicator 2.2 during Year 2, and its delay will not affect the overall timeframe for delivering Output 2. Indicators are considered appropriate.

Output 3. A draft evidence-based Species Action Plan is produced for endangered sei whales in Falklands’ waters and recommended to FIG.

The baseline condition for Output 3, is that a Cetacean Species Action Plan (SAP) was adopted by Falkland Islands Government (FIG) from 2008 to 2018, but has not been renewed. Currently, therefore, there are no SAP’s in place for any cetacean species in the Falkland Islands. It was considered that at least the sei whale, a globally Endangered species for which Falklands’ waters comprise an internationally-important feeding area, would warrant a SAP. The delivery of a draft SAP is scheduled for Year 3 of the project, but progress has been made towards it during Year 1 with the completion of Indicator 3.1 (Annex 3). This comprised the initial meeting with FIG to discuss the scope and criteria for the SAP. As documented in the meeting minutes, there is no official FIG guidance in place to develop a SAP, and so there will likely be several more meetings during Year 2 and Year 3 as the process develops. We expect that Output 3 will be achieved by the close of the project, and the current Indicators are considered appropriate.

Output 4. Awareness of whales, and support for their conservation and management, is increased within local and international communities via dissemination of research outputs.

The baseline situation for Output 4 is that local awareness of whales in the Falklands has grown considerably due to the outputs of DPLUS082. However, there is a high turnover of the local community in the Islands, and we believe that continued highlighting of whales is critical to achieving ongoing support for their conservation. This is aptly illustrated by recent public consultations on salmon farming and Marine Management Areas in the Falklands, where awareness of whales (and other wildlife) has played a fundamental part in feedback. International recognition of the Falklands as a whale ‘hotspot’ was greatly increased by the achievement of the sei whale KBA during DPLUS082, but similar recognition has yet to be realised for southern right whales. Most of the Indicators under Output 4 are scheduled for Years 2 and 3 of the project, since they rely on the results of the field seasons. However, we have made good progress with Indicator 4.1 through the development of the sei whale tracking page and its associated outreach via the project Facebook page, and with Indicator 4.4 regarding project social media posts (see

Annex 7.1). We expect that Output 4 will be achieved by the close of the project, and the current Indicators are considered appropriate.

3.3 Progress towards the project Outcome

The main stated project Outcome is '*The conservation of two baleen whale species in the Falkland Islands and South Atlantic Ocean is better understood and management recommendations made to help secure their future.*'

The deliverables for Outcome Indicators 0.1 to 0.3 are not due until the final year of the project. However, data collection on sei whales commenced during Year 1, which is intended to support all of the Outcome Indicators. Additionally, progress was made towards Indicator 0.2 (production of a draft sei whale Species Action Plan) via a meeting with FIG in early April to discuss the scope and structure of the SAP (see Annex 3).

At this stage, the Indicators seem appropriate and we are on track to achieve the Outcome by the project completion.

3.4 Monitoring of assumptions

We identified a number of Important Assumptions in our project logframe (see Annex 2), and these are summarised below. The project includes a significant fieldwork component that is heavily influenced by weather conditions and by the logistical constraints of operating in relatively remote areas and with limited resources. Evidence for these comments is provided throughout the log frame in Annex 1.

Outcome

Assumption 1: Government recognises KBAs as a tool within the marine spatial planning process, and thus develops appropriate future management of those areas for whales.

Comments: This risk holds true. However, it has been mitigated to some extent by the inclusion of FIG as a project partner on DPLUS126 and repeated promotion of the first sei whale KBA in local outreach such that its existence is well-known.

Assumption 2: The IWC (and IWC-SORP) are willing to incorporate the Falkland Islands into the IWC-CMP for southern right whales.

Comments: This risk holds true, particularly given geo-political challenges within the south-west Atlantic region. However, project partner Jen Jackson is Chair of the Southern Hemisphere whales sub-committee of the IWC and can help to optimise this possibility.

Output 1

Assumption 1: Tags will be successfully deployed on whales and will operate correctly to transmit data.

Comments: This risk holds true, especially with regard to sei whales which are challenging to approach to sufficient proximity to tag. Nevertheless, the use of experienced tag personnel and the new boat (which is quiet) have allowed close approaches to the animals, and five tags were deployed during the sei whale 2022 season.

Assumption 2: Tags will remain attached for sufficiently long duration to provide the intended data on movements and migration routes.

Comments: This risk holds true. In practice, two of the five tags deployed on sei whales during March/April 2022 have yielded very little data. The reasons for that are unclear, although at least one of the tags appeared to have a damaged antenna when photographs were taken of the animal a few days after the deployment. An additional two tags were deployed in suboptimal locations on the animal and were not expected to stay on for more than a few days; however, those tags are both still transmitting. These suboptimal deployments were considered to be the result of the wrong Dan Inject model having been sent to the Falklands (see Section 9). A lot was learnt during the 2022 season, and we anticipate having five much better tag deployments on sei whales in 2023.

Assumption 3: Assumes that all (or most) fieldwork is achieved. Possible constraints include weather, platform availability and breakages (e.g. engine faults), and unforeseen circumstances such as global pandemics.

Comments: This risk holds true. However, the first field season was successful despite numerous logistical challenges with getting equipment and personnel to the Islands, and it is likely that subsequent field seasons will be more straightforward, especially with the resumption of the commercial airlink with South America later in 2022. The purchase of the new boat provided complete flexibility to operate around weather, and removed one constraint that had affected survey coverage during previous years.

Output 2

Assumption 1: Assumes that there will be a sufficient number of photographic recaptures of whales between years following quality control to support a robust mark-recapture analysis.

Comments: This risk holds true. The dataset of sei whale images collected during 2022 will be smaller than in previous years (which had longer field seasons) which could potentially be a limitation. However, this will be assessed during Year 2.

Output 3

Assumption 1: Sufficient data exist on species occurrence and threats to develop a robust SAP.

Comments: This risk holds true. However, in the Falklands, the sei whale is the cetacean species for which the most extensive dataset exists, and so it is expected that a SAP will be achievable. The scope/criteria of the SAP are still to be decided, and ongoing meetings will be held between FC and FIG in that respect (see Annex 3).

Output 4

Assumption 1: Tag-related outputs (e.g. whale track web page) are dependent on tags being deployed on whales and transmitting successfully.

Comments: This risk holds true. The project has already successfully deployed tags on sei whales (<https://falklandsconservation.com/sei-whale-tracking/>) and so tag-related outreach remains feasible.

Assumption 2: Improved knowledge and awareness leads to increased support for the conservation and management of whales.

Comments: This risk holds true. Previous experience in the Falklands indicates a high level of community support for whales, and that support is increasing annually as outreach continues. We will therefore continue to focus on promoting the whale research in a conservation and management context, to optimise the likelihood of support remaining high.

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, which 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 our current project on whales.

Year 1 of DPLUS126 focussed on establishing the project, including comprehensive logistics in mobilising field equipment and tagging personnel. However, we did also commence data collection on sei whales during March 2022, including the deployment of satellite tags. Consequently, the project is progressing well towards addressing uncertainty and lack of information on key whale species, including data on spatial and temporal distribution, photo-identification, diet (via faecal sampling), genetics (via biopsy sampling), and movements and behaviour (via satellite tagging). These data form the basis for significant awareness-raising campaigns (especially the real-time map of tagged whale movements), and will be available to underpin future conservation and management of whales in the Falklands.

The relevance of DPLUS126 with respect 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 tagging data acquired during Year 1 will enhance understanding of how to assess the potential impacts of such developments on whales. For example, those data are showing how much time whales spend in particular areas, how they move around the Islands, and how much time they spend in different parts of the water column (for example, in the upper 5 m where they may be more vulnerable to ship strike). This can directly inform assessments of spatial and temporal overlap with a range of human activities, and inform mitigation decisions.

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 sei whale, and the Strategy specifically notes the requirements for Ecoregion plans for the nearshore environment and species action plans for priority species. The Falkland Islands priority species list is due to be updated, but it is likely that the sei whale would qualify given its global IUCN conservation status as an Endangered species. DPLUS126 will directly support this process, by working with FIG to produce a draft SAP for the sei whale which could be adopted into policy in future. 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. While a sei whale KBA was achieved by DPLUS082, the satellite tracking data acquired during DPLUS126 may result in amendments to the current KBA boundaries to better reflect how sei whales are using habitats. DPLUS126 also aims to carry out the first KBA assessment in the Falklands for the southern right whale, a species for which the south-west Atlantic population has been highlighted as being of conservation concern. The identification of spatial tools such as KBAs, is expected to directly influence subsequent consideration of Marine Protected Areas and Marine Management Areas.

5. OPTIONAL: Consideration of gender equality issues

There are no specific barriers to gender equality or social inclusion within DPLUS126.

The Project Leaders at Falklands Conservation consist of one male and one female. Falklands Conservation currently employs 8 female and 6 male part- or full-time staff. We also have both female and male leads at our Project Partner Organisations.

While our tagging team personnel (boat driver and tag operator) for the 2022 sei whale season were both male, the roles were advertised widely in local media and were open to all.

6. Monitoring and evaluation

The project logframe (Annexes 1 and 2) provides a clear set of Indicators and Outputs against which DPLUS126 can be continuously monitored and evaluated over time.

The Outputs and Activities of the project clearly contribute to the overall project Outcome, since the project Outcome (better understanding of the conservation and management of two baleen whale species) is based on the collection of a robust evidence base (e.g. by completing distribution/abundance surveys and satellite-tracking) to underpin KBA assessments, the production of a draft Species Action Plan for the sei whale (in collaboration with FIG), and the highlighting of important whale populations around the Falkland Islands at the International Whaling Commission. The four project Outputs and their associated Activities therefore all feed directly into achieving the project Outcome. All Activities and Indicators within the logframe are SMART, making it straightforward to evaluate their success. The Indicators relate either to clear markers of progress (e.g. increasing the number of catalogued whales by 50 animals for each species), or to the project end deliverables (e.g. delivery of the SAP).

There have been no changes to the M&E plan over Year 1.

Falklands Conservation is leading on DPLUS126, and there are two project Co-Leads which provides scope for exchange of ideas and M&E discussions. Given the multi-faceted nature of

the project, the project partners are each involved in very specific components and therefore input primarily on their own specialities. For example, during Year 1, there have been extensive Skype/Zoom discussions with Alex Zerbini regarding the establishment of the whale tagging component, and email exchanges with Jen Jackson with regard to the provision of southern right whale tags and the South Georgia right whale catalogue. Partners are involved in delivering various components to budget; for example, project deliverables and budgetary considerations have been discussed extensively with Alex Zerbini with regard to the tagging component (see Annexes 8.1 to 8.6).

It is expected that since many of the initial logistical challenges of the project have been addressed and overcome in Year 1, there will be a higher amount of dialogue with partners during Year 2 as we begin to focus on the analysis of the tag and photo-identification datasets. Following the field seasons, a project update will be distributed to project partners to outline the success of the completed season, and the goals and responsibilities for the next season.

7. Lessons learnt

The main lesson learnt during Year 1, was that we under-estimated the amount of time it would take to initiate the project with regard to logistics and acquiring new equipment (particularly the new survey boat). In fact, there was a substantial run-in to the project where one of the Project Leads focussed almost exclusively on these logistics between October 2021 and January 2022, and had allowed what we considered to be ample time to achieve everything even in light of COVID-19 delays and the slow shipping times to the Falkland Islands. However, there were so many unexpected and unfortunate challenges with the boat, tags, tagging gun and personnel which were outside of our control and could not have been reasonably mitigated for (see Section 9 of this report for details), that ultimately it hung in the balance whether or not everything would come together in time to complete the 2022 sei whale season (we had already discussed various backup plans). It is difficult to know how we could do this differently next time, because there was only limited time between confirmation of funding from Darwin Plus and the start of the fieldwork, given the marked seasonality of whales in the Falklands which dictates timings. Additionally, there were a lot of factors at the start of DPLUS126 that we probably would not encounter simultaneously again. For example, we do not expect to order and ship a new boat again, and nor do we expect the ongoing challenges with international haulage and freight (related to COVID-19 disruption) to continue indefinitely, or tags to be manufactured incorrectly etc (see Section 9). However, the experience that we had at the start of DPLUS126 has re-emphasised the need for long run-in times at the start of ambitious projects like this, and we would certainly highlight that to colleagues running similar projects.

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

Not applicable as this is the first annual report produced for this project.

9. Other comments on progress not covered elsewhere

We encountered numerous, unforeseen, challenges with the purchase and shipping of the equipment needed for DPLUS126. The majority of time spent on DPLUS126 during Q3 and Q4 of Year 1 was dealing with the extensive communications and trouble-shooting around these logistics, particularly the boat build, and boat-related equipment, safety coding, registration, and shipping. Many of these challenges were the result of specificities of UK legalities (not encountered previously by our tagging partner in the USA), the continued impacts of the COVID pandemic (affecting availability of goods, and shipping – including no resumption of the LATAM flights from South America on which DHL usually arrives), and a series of unfortunate circumstances that were outside of our control (such as incorrect tag manufacturer, loss of the tagging gun by FedEx, over-booking of space on the MoD vessel etc.). Some of the key events are summarised below.

Dan Inject rifle

We began enquires about purchasing a Dan Inject rifle for the tagging work on 21 October 2021, but were subsequently passed from the USA to Denmark and finally to a UK supplier due to restrictions with flying it (exacerbated by the lack of commercial flights to the Falklands due to

COVID-19). The UK supplier reported that, under UK law, he could only sell to someone with a Section 5 firearm certificate, which was not something that our tagging partner (who has tagged whales in numerous countries) had ever encountered before. We subsequently communicated with Falkland Islands Government and the Royal Falkland Islands Police in order to acquire a firearms import and use licence, and we could not purchase or ship the Dan Inject until that licence was obtained on 20 November 2021 (Annex 4.12). Unfortunately, the Dan Inject then became indefinitely stuck at Stansted airport during shipping, due to issues at FedEx with a scanner. Eventually, a new replacement Dan Inject had to be provided, and the seller drove to Bristol himself to deliver it to RJI on their deadline for receiving cargo (17 December 2021).

During the whale tagging fieldwork in the Falklands, it emerged that the Dan Inject rifle that had been shipped to the Falklands was not the model that had been requested. It had a pressure rating of 16 bar, whereas we had asked for a 25 bar model. Since the Dan Inject had only arrived into the Falklands on 5 March, and was not cleared by Customs and available for collection until several days later, there was no time to assess the rifle before the fieldwork commenced. Consequently, the fact that the wrong model had been shipped was not discovered until during the tagging work, when several missed tag deployments occurred and the tag operator realised that there was a problem. Given the remoteness of the Falklands and the lengthy shipping times currently (2+ months), there was no possibility to return the rifle and replace it during the sei whale season. Rather, the tagging efforts continued, but it became very difficult for the tag operator to use the rifle – amendments were made to try and increase the pressure, but this resulted in a series of air leaks that meant that using it in the field was difficult and put a lot of stress on the operator. Consequently, we deployed fewer tags than we might have done with the correct model of Dan Inject, and at least two of the tag deployments were suboptimal with regard to penetration and their location on the animals. We are now liaising with the seller, the police and shipping agents, to try and get everything in place to return the incorrect model and get the correct model shipped ahead of the 2023 sei whale season.

Boat delivery to the Falklands

We understood from the outset that building and shipping the new boat to the Falklands was likely to take many months, and therefore the boat build was initiated as soon as the DPLUS126 funding was confirmed (Annex 4.26). Two options had been identified for shipping the boat to the Falklands, of which shipping with Kuehne+Nagel (K+N) on the bi-monthly MoD service was the more affordable. In November 2021, we proceeded with booking both the boat and the pallet containing the tagging platform onto the K+N sailing that was due to depart the UK on 14 January 2022 and had an ETA in the Falklands of 17 February 2022 (Annex 4.28). This was the first available K+N sailing that allowed sufficient time for the completion of the boat build and coding by Island RIBs (estimated for end December 2021) and still arrived in time for us to carry out a sei whale season (peak month for the whales is March, and we were therefore originally planning to work for 6 weeks from the last week of February through to early April). The bookings for the boat and pallet were confirmed by K+N on 2 December 2021 (Annexes 4.27 and 4.28).

Unfortunately, we were informed on 14 December 2021 that the K+N voyage was overbooked, and that the MoD would be prioritising their own cargo and there was a possibility of our booking being cancelled (Annex 4.29). This cancellation was confirmed by K+N on 15 December 2021, and they were unable to offer an alternative solution apart from booking it onto their next voyage in April, which would not arrive in the Falklands until 22 May 2022 and after most sei whales have migrated away from Falklands' waters (Annex 4.29). By 17 December 2021, it became clear that neither K+N nor the MoD were able to confirm that the boat would definitely be shipped on the April/May voyage either (see Annex 4.29 and Annex 4.30). The MoD were contacted directly by a FC Trustee to request assistance to try and get the boat onto the January voyage, but it simply wasn't possible in light of all the other cargo that the MoD were committed to shipping (Annex 4.30).

Seafast Logistics were the other potential option for shipping the boat to the Falklands, using the SAAS vessel. We requested a quote for the boat to come on V475, which should originally have arrived into the Falklands on 12 February 2022 (Annex 4.31). Their quote (Annex 4.27) was approx. [REDACTED] more than the K+N quote that we had originally budgeted for in our Darwin Plus application; however, they confirmed that they would be able to fit us onto the January sailing

(V475) which would allow us to carry out the 2022 sei whale season. A booking confirmation was provided by Seafast Logistics on 22 December 2021 (Annex 4.33); in this confirmation it was apparent that the ETA in the Falklands had already slipped and was now given as 21 February 2021.

On 6 January 2022, FC received an update from SAAS that V475 was further delayed to an ETA of 28 February 2022, due to ongoing cargo disruption related to COVID (Annex 4.27). At this point, we looked into the possibility of delaying the flights for the two tagging personnel coming to Stanley. We were able to reschedule their international flights (and associated domestic travel, accommodation and permits) from 21 Feb to 28 Feb; since they were required to quarantine for 5 days on arrival then this new timeframe included a few days contingency in case of further delays to V475. This contingency was needed, due to subsequent additional delays to the ETA for V475, comprising one issued on 10 Feb 2022 (ETA delayed to 2 March 2022: Annex 4.27), and one issued on 28 Feb 2022 (ETA delayed to 5 March 2022: Annex 4.27). By this point, the tagging personnel were already travelling to the Falklands and it wasn't possible to further delay or cancel their arrival.

We were able to collect our boat from the container on 7 March 2022, almost a full month later than had been indicated at the time of booking. However, in the meantime, the two personnel that had arrived in the Falklands for the sei whale season both tested positive for COVID-19 during their quarantine (see Section 12), and tagging work could not therefore commence until at least 14 March. We were able to carry out the first boat survey soon afterwards, on 16 March.

Satellite tag manufacture and shipments

Multiple challenges were encountered with the satellite tag orders. We contacted the tag manufacturer, Wildlife Computers in the USA, in October 2021 to place the orders for the 10 Limpet tags for sei whales and 5 implantable tags for the southern right whales (Annexes 4.22, 4.23 and Annex 4.34). Under normal circumstances, this would have allowed ample time for shipping.

On 4 November, Wildlife Computers emailed us to say that, unfortunately, the sei whale Limpet tag anchors had been incorrectly manufactured with the wrong materials (Annex 4.35). They had to be manufactured again, leading to a delay in their shipping until late December. This meant that the anchors missed the DHL shipping deadline to get them to the Falklands in time for the field season, and an alternative route had to be found. Finally, they were shipped direct to our boat driver in the UK on 12 January 2022, who then hand-carried them to the Falklands. However, because the tags had to go via Europe, VAT was charged which was an expense that had not been budgeted for.

On 10 December 2021, Wildlife Computers emailed us to say that the sei whale Limpet tags that had been posted to the Falklands the previous day, had been returned to sender by DHL (Annex 4.36). This was due to restrictions on the number of Lithium batteries per package, which in turn DHL said was the result of certain commercial air freight routes not running as usual due to COVID-19. Wildlife Computers had spoken with DHL before sending the parcel to check that there wouldn't be any such problems, so the return of the package was unexpected. It was discussed whether the package should go to the UK and then be carried by the tagging personnel when they travelled to the Falklands; however, the VAT would have been over [REDACTED] and we had not budgeted for that. We therefore decided to still send them direct to the Falklands, but as multiple separate packages that each contained no more than two tags to satisfy the lithium battery restrictions (Annex 4.37). Extra shipping for the multiple packages of sei whale tags was covered by Wildlife Computers as a goodwill gesture (Annex 4.37). However, we subsequently also had to send the southern right whale tags as three small packages with DHL instead of a single large one (Annex 4.38), and this incurred additional expense. Fortunately, the sei whale and the right whale tags have all arrived in the Falklands in time for their respective field seasons.

On a positive note...

While we encountered extensive and largely unexpected logistical challenges between October 2021 and March 2022, we did succeed in getting everything to the Falklands in time to carry out a sei whale field season. The arrival of the new boat, the Dan Inject rifle, and the two tagging

personnel into the Falklands, all occurred during the same week in March, and we managed to collect and coordinate everything in time to start fieldwork from the 14th March (following the personnel COVID-19 quarantine – Section 12). While this was nine days later than had been originally planned, and therefore reduced the total amount of time available for boat survey work, it still provided a 33 day window for fieldwork to occur (around available weather). Ultimately, we did manage to deploy five tags on sei whales despite the reduced duration of the field season and problems with the Dan Inject rifle, and this is considered a huge success under the circumstances. It is not expected that we will encounter such widespread logistical challenges again, since the new boat is now here and most of the equipment needed for the remainder of the project has also arrived.

10. Sustainability and legacy

Since DPLUS126 began in July 2021, the project has been promoted primarily on the project's Facebook site (<https://www.facebook.com/FalklandsWhale>) from which it has been widely shared both locally and internationally; most posts have reached well over 1,000 people, and some over 10,000 (Annex 7.1). There has been particular publicity associated with the new survey boat, and the deployment of the satellite tags on sei whales.

Given that the project only commenced in July, the Cetacean Ecologist/ Project Co-Lead has only been in position since October, and the fieldwork only commenced in mid-March, DPLUS126 is at a relatively early stage; it is expected that opportunities to promote the work will increase greatly during Year 2 when we will have tagging data from both whale species and will be undertaking many of the stated outreach deliverables reported in the logframe. Interest in whales is widespread in the Falklands, both amongst the community and amongst decision-makers including FIG and industry. A general overview of the previous whale work in the Falklands, and specifically around DPLUS126 was provided to FIG in Year 1 (Annex 3), and is likely to form the basis for ongoing discussions about the management of whales in the region.

The capacity of Falklands Conservation to be able to continue with whale research in the future has been greatly enhanced by the purchase of a dedicated new survey boat as part of DPLUS126. This boat will also form an important legacy element for the Islands, especially since it complies with strict maritime health and safety regulations which are likely to develop over the next year. The international collaborations being established around the whale tagging component will likely continue for years to come, and extend beyond DPLUS126, especially since the Falklands is located in an important geographic location with regard to southern right whales and provides links between feeding and breeding areas that are important to understand for region-wide management of the species.

The project is due to complete at the end of June 2024, and will leave behind long-lasting legacy elements that include:

- (1) A robust two-season scientific dataset on whale occurrence in (and beyond) the Falklands that will be available for future evidence-based management;
- (2) A draft Species Action Plan for sei whales which will form the basis for their ongoing management in the Falklands;
- (3) Key Biodiversity Area assessments for sei whales and southern right whales, that will potentially highlight important sites for global and local conservation that will be submitted for consideration as full status KBAs if appropriate;
- (4) Highlighting Falklands' southern right whales both internationally and regionally (south-west Atlantic), and thus emphasising the need to include the Falkland Islands in regional management plans (e.g. International Whaling Commission); and
- (5) A local awareness of, and interest in, whales, that will be fostered during school visits, public talks and boat trips, and is expected to ensure long-term buy-in to whale conservation in the Islands.

11. Darwin identity

There is already a good understanding of the Darwin Initiative within the Falkland Islands, as they have funded several previous projects including some of Falklands Conservation's earlier whale work (DPLUS082).

DPLUS126 has been publicised using the same social media page (<https://www.facebook.com/FalklandsWhale>) as a previous Darwin (DPLUS082), because the latter had already built a solid following that we wanted to maintain. However, DPLUS126 was clearly announced on the page as a new entity with funding from Darwin Plus (Annex 7.1). The Darwin Initiative logo is fully visible on the banner image for the page. The logo is also included on documents that have been distributed to the stakeholders (Annex 7.2) and in the FC magazine article (Annex 7.3). We believe the frequent mentions of Darwin Initiative in our outreach (including tags on social media posts – Annex 7.1) and the use of the logo where possible, have identified the Darwin-funded whale work as a clearly distinct project.

As mentioned in the previous section, DPLUS126 is at a relatively early stage and we expect significant promotion of Darwin Plus and use of the logo during the many outreach activities that are scheduled for Years 2 and 3.

12. Impact of COVID-19 on project delivery

The main ways that COVID-19 has affected DPLUS126 to date, and our approaches to managing it, include:

Travel and personnel

When we submitted our Stage 1 application for DPLUS126 in September 2020, there was little realisation that the COVID-19 pandemic would be continuing to affect everyday life in 2022. Because we hoped to build links with colleagues in South America and establish collaborative work on whales in the south-west Atlantic, we had developed our project tagging component around the use of a South American tag operator (from Brazil) and budgeted for direct flights between South America and the Falklands with the only commercial airline that offers a once-weekly link - LATAM. Although LATAM flights were suspended at the time of submitting our proposal, indications were that they would resume in 2021 and the Falkland Islands Government (FIG) was carrying out regular reviews to that effect. However, this turned out not to be the case, and the LATAM links to South America have remained suspended throughout 2021 and continue to be so.

We had expected to make travel arrangements for the tag operator and the coxswain for the sei whale season in Q2 of Year 1, but due to continued uncertainty about LATAM then this was delayed for as long as possible. Eventually, we decided that there was no option but to look at an alternative, if we wanted the sei whale season to go ahead. We therefore also needed to find a European-based tagger, because at the time of booking travel then Brazil was still on the UK Red List and consequently we could not fly someone from that country into the UK to then travel south on the MoD-operated airbridge. This change in personnel and travel route has incurred additional expense and logistics, but was unavoidable considering the continued restrictions. Our only other option would have been cancelling the sei whale season altogether or trying to squeeze it in at the end of the project which would have been very challenging budget- and time-wise. Ultimately, the amended plan worked out, and we were able to fly Rui Prieto from the Azores to tag the whales.

We had expected that LATAM may resume ahead of the southern right whale season (July/August 2022), for which we were scheduled to book travel in Q4 of Year 1. However, the situation has remained very uncertain and a press release from Falkland Islands Government on 2 February 2022 (Annex 4.9) was non-committal about when it may happen. A further press release issued by FIG on 7 April 2022 (Annex 4.9) indicated that the LATAM flight to/from Chile may resume on 2 July 2022, with the Brazil link reopening in November 2022. However, discussions are ongoing, and there continues to be uncertainty about the exact timeframe when LATAM will resume. Consequently, we did not feel confident to book the right whale season travel in Year 1, and will instead book it during Year 2 depending on how the situation evolves. If, as

seems likely, the tag operator for the right whale season has to fly via the UK in order to travel from South America to the Falklands, then there would be implications for budget and carbon footprint.

Haulage and shipping

As detailed in Section 9, the COVID-19 pandemic has continued to affect the availability of equipment, and global haulage and shipping. The lack of the commercial LATAM link meant that equipment that would have flown to the Falklands within a week or two pre-pandemic, now required a lead-in time of 2–3 months for shipping by sea. Additionally, the changes to international flights incurred unforeseen restrictions, such as the lithium battery situation for shipping the satellite tags (see Section 9). Disruptions to shipping lines were cited as a core reason why voyage V475 (bringing the new boat and Dan Inject rifle to the Falklands) was late into the Falklands (Annex 4.39).

Personnel in quarantine due to COVID-19

The two personnel (coxswain and tag operator) required for the first sei whale season, flew down to the Falklands on 28 February 2022. However, on arrival the coxswain, Steve Truluck, felt unwell, and was positive for COVID-19 when tested by the hospital the following day on 1 March 2022. This necessitated an extended period of 10 days in quarantine. On 4 March, the tag operator, Rui Prieto, also felt unwell and tested positive for COVID-19. The hospital in the Falklands advised that they had to wait until they had four consecutive days without symptoms, and then pass a negative test, before they would be released – the earliest this could happen would be 10th March for Steve and 13th March for Rui. In the end, the personnel were not available for work until 14 March, which was over a week later than they should have been if they had not contracted COVID-19. This directly impacted on the 6-week period that had been allocated for boat survey work, meaning that the total time remaining for the sei whale season was less than five weeks. Fortunately, we had relatively good weather over the fieldwork period, and were able to complete a reasonable number of survey days and get five satellite tags deployed; consequently, while we may well have achieved more with the extra week of fieldwork, the overall project delivery was not affected by this situation.

Conclusions

In conclusion, COVID-19 has continued to affect several aspects of DPLUS126, but we have been able to mitigate everything to date and will continue to be as adaptive as possible to implement the project successfully in the face of ongoing uncertainties.

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 in place specific policies for Safeguarding, Code of Conduct for staff and volunteers, Harassment and Bullying, and Whistleblowing, copies of which were provided with our Darwin Plus application and are available on request from the organisation. No concerns have been raised relating to these matters with regard to DPLUS126 in this financial year.

14. Project expenditure

A change request was submitted on 22 March 2022, and was approved by Darwin Plus the following day. The change request was to reallocate some money between budget lines, and did not affect the total expenditure for Year 1. The values agreed in the change request are those presented in Table 1. All expenditure was +/- 10% of each budget line.

Table 1: Project expenditure during the reporting period (1 April 2021 – 31 March 2022)

Project spend (indicative in this financial year)	2021/22 D+ Grant (£)	2021/22 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs	██████████	██████████	██████	–
Consultancy costs	██████	██████	██████	–
Overhead Costs	██████████	██████████	██████	–
Travel and subsistence	██████████	██████████	██████	–
Operating Costs	██████████	██████████	██████	–
Capital items	██████████	██████████	██████	–
Others (Please specify)	██████████	██████████	██████	–
TOTAL	████████████████████	████████████████████		

15. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

I agree for the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

Despite numerous logistical challenges with equipment and personnel, we managed to complete a first sei whale field season for DPLUS126 and were successful in deploying five satellite tags.

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	Y
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 – Annexes provided in Dropbox folder
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.	