

Darwin Plus Main: Annual Report

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

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

Submission Deadline: 30th April 2024

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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 September 2024
Reporting period (e.g. Apr 2023-Mar 2024) and number (e.g. Annual Report 1, 2)	1 April 2023 to 31 March 2024, Annual Report 3
Project Leader name	Caroline [REDACTED] and Andrew S [REDACTED]
Project website/blog/social media	https://www.facebook.com/FalklandsWhale
Report author(s) and date	Caroline Weir, 30 April 2024

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 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 age composition and health. This suite of work will be carried out between 2022 and 2024 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).

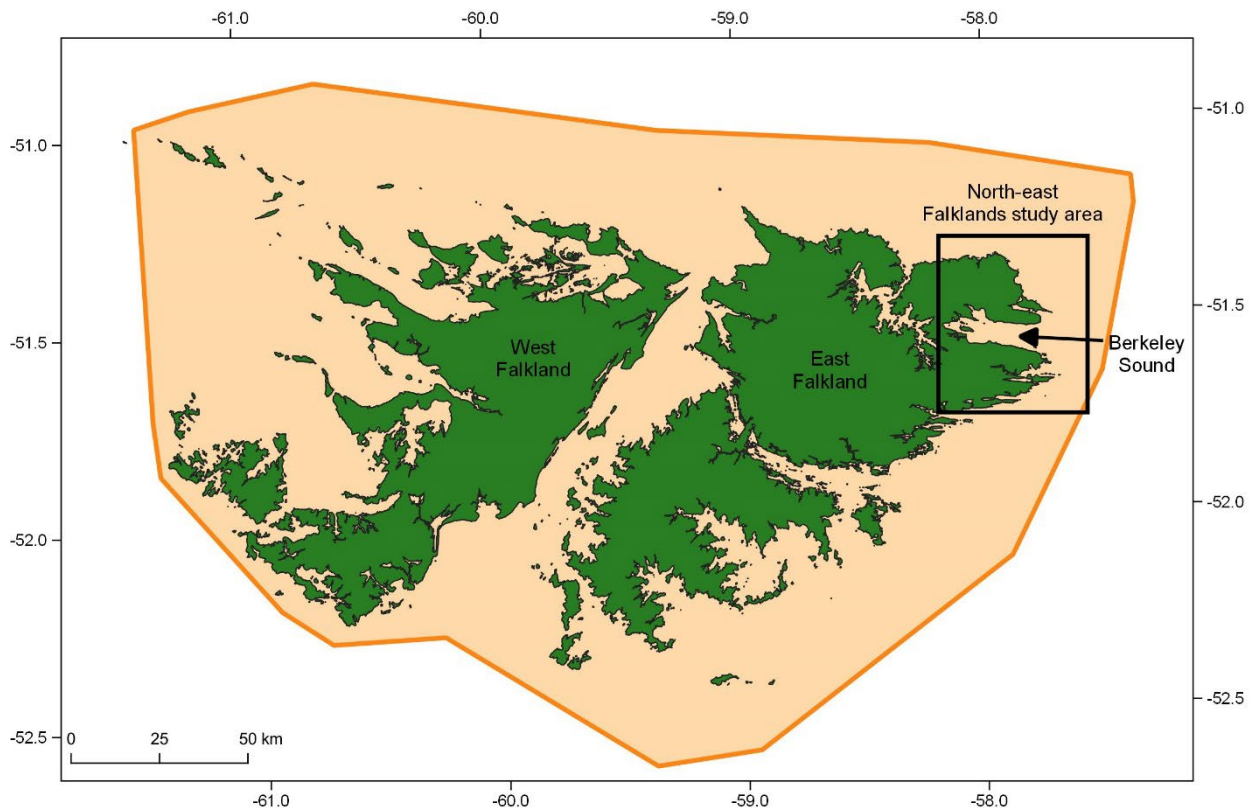


Figure 2. The Falkland Islands, showing the location of the core study area for boat-based survey work and the location of the Falkland Islands Inner Shelf Waters Key Biodiversity Area for sei whales (orange area).

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 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

Project partners:

The DPLUS126 partners comprise an international team (also the project steering group) who are distributed across several countries. Due to the remote and varied locations of the partners, and the highly specialised nature of their areas of expertise, communications between the FC

Cetacean Ecologist (CE) and each partner have primarily been via online video calls and email exchanges. Additionally, bi-annual project updates have been circulated to all project partners (Annexes 8.11 and 8.13) to ensure that everyone is aware of the varied avenues of work being carried out. During Year 3, correspondence has included:

Alex Zerbini (Instituto Aqualie): Alex is the satellite tagging collaborator on DPLUS126. Additionally, he is currently the Chair of the Scientific Committee of the International Whaling Commission (IWC) and is also able to assist with promoting the Falklands work in that capacity (i.e., Indicator 0.3). During Year 3, there have been regular Zoom calls between Alex and the CE regarding: (1) the production of a paper on the satellite tracking work to present at the 2024 IWC meeting (culminating in a submitted paper, evidenced in Annex 4.2); (2) the drafting of a scientific manuscript on the same dataset for submission to a peer-reviewed paper (paper in prep, copy available on request); and (3) locating suitable replacement tagging personnel for the 2024 sei whale season (see Section 14).

Jen Jackson (British Antarctic Survey): Jen's contribution to DPLUS126 includes: (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. The five tags provided by BAS were deployed on right whales in Year 2 (see AR2), and the final one ceased transmitting in April 2023. Jen has been away on maternity leave for a large portion of Year 3 and has therefore not had significant input into DPLUS126 over that period. However, she has remained in regular contact with the CE, including approving submission of the collaborative IWC paper and organising the sexing of the biopsy samples collected from the tagged whales for inclusion in the journal manuscript.

Head of Environment, Falkland Islands Government: Mike Jervois replaced Rachel Cooper as the Head of Environment for FIG during Year 3 of the project. Mike had been aware of DPLUS126 since the project outset and was present at a previous meeting held in April 2022 to discuss the sei whale Species Action Plan (see AR2). Another meeting was held in May 2023 (Annex 4.1) to further develop the scope of the SAP, and an additional meeting occurred on 27 February to discuss challenges with the nomenclature of the Islands for DPLUS126-related outputs (see Section 14). The CE is in regular contact with FIG about Darwin projects, cetacean strandings, research permits and sample shipments. It is expected that communications with FIG will be maximised during Year 4, when the main management-related project outputs are produced (i.e., draft SAP, KBA assessment etc; Indicators 0.1 and 0.2).

Phil Hammond (Sea Mammal Research Unit): During November 2023, Phil provided guidance to the CE in the generation of the abundance estimates from the June and August 2023 aerial surveys of right whales (see Annex 5.4). This work is continuing in Year 4, since the July aerial survey is now scheduled to take place in July 2024 due to poor weather experienced in 2023 (see Section 7), after which the final estimates will be produced. The CE and Phil will also be using the dive data from the satellite tags to produce a correction factor to account for submerged animals in the final estimates.

Fredrik Christiansen (Aarhus Institute of Advanced Studies): During Year 3 Fredrik travelled to the Falklands to carry out the UAV work on southern right whales (see evidence provided in Annex 5.5). The UAV component was successfully completed with 71 southern right whales flown over and 69 measured. Training was provided to the CE in flying the UAV for this purpose. Fredrik also provided a public talk on the UAV work in Stanley (Annex 8.2). The CE and Fredrik are currently working together on a draft scientific manuscript for peer-reviewed publication (in prep). In April 2024 Fredrik passed through the Falklands en route back to Europe from a South Georgia whale study, and met with the CE to discuss that paper. It is expected that communications will continue with Fredrik during Year 4 as that paper nears publication and with regard to a Round 12 Darwin Plus project on which Fredrik is again a partner.

Ted Cheeseman (Happy Whale): Communications between the CE and Ted during Year 3 have focussed on: (1) submission of sei whale images to HappyWhale in January 2024 (see Annex 8.8); and (2) preparation of papers relating to the use of cetacean images from the Falklands (sei whale and Commerson's dolphin) in the HappyWhale algorithm. The paper

submitted to 'Methods in Ecology and Evolution' on 5 February 2023 was accepted and published during Year 3 (<https://doi.org/10.1111/2041-210X.14167>), and an additional paper titled "Evaluating tradeoffs between automation and bias in population assessments relying on photo-identification" has been drafted and is almost ready for submission.

Stakeholders:

The DPLUS126 stakeholders comprise key decision-makers (e.g., FIG MLAs, Dept of Mineral Resources), landowners with farms adjacent to Berkeley Sound, local research organisations (e.g., SAERI), and a range of marine commercial and recreational users (e.g., fishing companies, launch companies, FIG maritime department). Engagement with stakeholders during Year 3 has included the following:

- Updates on project work were circulated via email in August 2023 and March 2024 (Annexes 8.10 and 8.12);
- Provision of public talks on project work in April 2023 and August 2023 (Annex 8.2);
- Regular updates on the dedicated Falkland Islands Whale Project Facebook page (<https://www.facebook.com/FalklandsWhale>) which is followed and shared by many of the local community including at least one FIG MLA (Annex 8.6);
- Articles in the FC magazine (Annexes 8.4 and 8.5), Penguin News (Annex 8.3), FITV (see links provided in the Annex 1 logframe) and on Falkland Islands Radio Service (Annex 8.7), which in combination will have reached most stakeholders and local community members; and
- In person communications between the CE and local landowners during visits to farms to sample dead whales and informally at local social events.

3. Project progress

A Change Request was submitted to Darwin Plus in October 2023 and approved in November 2023 (see Section 14), resulting in some minor changes (predominantly in timeframe) to the project logframe provided in Annexes 1 and 2 compared to that reported against in AR2.

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 all progressing to schedule. **Activities 1.2, 1.3 and 1.10** were all completed during Years 1 and 2 (see AR1 and AR2). Logistics for personnel (**Activity 1.1**) have mostly gone to plan (but see also Section 14): Rui Prieto (2023 sei whale tagger) departed the Falklands on 7 April 2023 as planned, while Steve Truluck (coxswain) departed on 18 April 2023. The only additional international travel arrangements in Year 3 have been for the UAV operator Fredrik Christiansen to fly to the Falklands in July and August 2023 for the right whale work. Evidence for those travel bookings is provided in Annex 5.7. Additionally, local logistics were completed for the aerial surveys in June and August 2023, and an example of email correspondence to organise surveys is provided in Annex 5.8.

Equipment inventories (**Activity 1.4**) were completed in August 2023 on completion of the second southern right whale season (Annex 5.10). Orders for items that needed purchasing were then placed, for example including sampling equipment and spare parts for the survey boat (see Annex 5.10).

The planning and execution of fieldwork (**Activity 1.5**) and the associated coding and mapping of datasets (**Activity 1.8**) went largely to plan around the constraints of weather and logistics (but see Section 14). Evidence of those activities, including a list of completed survey dates for Year 3, is provided in Annex 5.2. Our social media updates (<https://www.facebook.com/FalklandsWhale>) provide clear evidence of all boat survey work undertaken during Year 3.

Two of the three planned aerial surveys (**Activity 1.6**) were completed during Year 3, and evidence is provided in Annexes 5.3, 5.4 and 5.8. We were unable to complete the July survey due to weather, despite repeated planning attempts (Annex 5.8) and a Change Request was submitted to Darwin Plus in October 2023 to move the unspent money across to Year 4 to allow the completion of the final survey to occur in July 2024.

The UAV study (**Activity 1.7**) was successfully implemented during Year 3 (evidenced in Annex 5.5). UAV fieldwork was carried out on seven dates between 11 July and 9 August 2023. A total of 37 flights and 10.53 hr of video clips were recorded over the seven days, involving 26 sightings of southern right whale individuals or groups. Analysis of the callosity patterns indicated that 71 individual whales were present in the UAV videos, and a report of the results is well underway.

Activities 1.9 and 1.11 are scheduled for project completion. However, analyses of aerial data (Annex 5.4), UAV data (Annex 5.5) and aerial data (Annex 5.6) have all commenced during Year 3 and will provide the evidence-base for those deliverables.

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).

Activities under Output 2 are all progressing to schedule. **Activity 2.1** was completed in Year 2 (see AR2). Photo-identification images of both sei whales and southern right whales were collected throughout Year 3 (**Activity 2.2**), with evidence abundant on the project social media page (<https://www.facebook.com/FalklandsWhale>). Cataloguing and matching of images has been carried out throughout Year 3 (**Activities 2.3 and 2.4**; see Annex 7.1), although the sheer volume of images collected during DPLUS126 has created some backlog. The mark-recapture analysis (**Activity 2.4**) will be a focus of work in Year 4.

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

Activities under Output 3 are all progressing to schedule. An initial meeting was held with FIG to discuss the sei whale Species Action Plan (**Activity 3.1**) on 4 April 2022 (see AR1), and another update meeting was held during Year 3 on 15 May 2023 (Annex 4.1). **Activity 3.2** is scheduled for Year 4 of the project; however, the fieldwork carried out on sei whales during Year 3 will contribute to completing that Activity. **Activity 3.3** was completed in Year 1 (see AR1).

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

Activities under Output 4 are all progressing to schedule. **Activities 4.1 to 4.3** and **Activity 4.5** were completed during Years 1 and 2 (see AR1 and AR2). In Year 3 we have completed the following project community outreach activities (**Activity 4.4**): a Penguin News article was published in October 2023 (Annex 8.3); FC magazine articles were published in May 2023 (Annex 8.5) and November 2023 (Annex 8.4); public talks on cetaceans were provided by visiting whale team members in April and August 2023 (Annex 8.2); and social media updates were provided throughout the field seasons (see Annex 8.6 and <https://www.facebook.com/FalklandsWhale>). We also provided information on our Darwin Plus projects for an article in The Marine Biologist magazine produced by the Marine Biological Association (Annex 4.17). These outreach outputs for **Activity 4.4** have exceeded those stated for Year 3 of DPLUS126. Two educational posters were produced and distributed (**Activity 4.6**): one on the range of whale research activities carried out by FC (Annex 8.14) and one on the whale Code of Conduct which was requested by a fishing company for use on vessels and produced in both English (Annex 8.15) and Spanish (Annex 8.16). All posters have included the Darwin Plus logo and are also available as PDFs for sharing with visiting expedition ships. An IWC paper (**Activity 4.7**) was produced and submitted in March 2024 (Annex 4.2) for the forthcoming 2024 IWC meeting.

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 sei whales used the entire KBA consistently (or whether the area boundaries should be refined), and whether they also routinely forage in Falklands' waters deeper than 100 m. Additionally, an assessment to identify key sites for southern right whales had 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 the distribution of both species. Year 3 of DPLUS126 has continued to focus on carrying out the fieldwork that will support the KBA assessments, including focussing on deploying additional sei whale tags (Indicator 1.1), collecting boat-based distribution data (Indicator 1.3), carrying out the aerial abundance surveys of southern right whales (Indicator 1.4), and successfully completing the UAV study (Indicator 1.5) that will inform the age composition of right whales in the Islands (a critical part of the KBA assessment). All of these components directly inform the identification of KBAs and other important sites. We were unable to complete a July 2023 aerial survey due to weather, but this has already been mitigated through a Change Request to carry out that survey in July 2024 instead (see Section 14). Analysis of satellite tracking data is well underway for the southern right whale (Annex 4.2), and has already been used to inform the identification of an Important Marine Mammal Area for that species (see Section 14). We expect that Output 1 will be fully achieved by the close of the project, and the current Indicators are considered appropriate. Even if we do not manage to deploy the remaining sei whale tags, the data collected so far should be adequate to inform whether or not the existing KBA boundaries for that species remain 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 was that previous work in the Falkland Islands (including under DPLUS082) had 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 those 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 of each species, quality-rating the images to determine which should be included in the analysis, and assessing individual distinctiveness (including the proportion of 'unmarked' animals). Indicators 2.1 and 2.2 were completed in earlier parts of DPLUS126. During Year 3 we have continued to collect photo-identification images during fieldwork on both species (see our social media site) and have carried out cataloguing and matching of images whenever time has allowed (examples in Annex 7.1); we fully expect that the DPLUS126 fieldwork will expand the existing catalogues by at least 50 individuals of each species (Indicator 2.3). Initial preparation of the data for mark-recapture analysis (Indicator 2.4) commenced towards the end of Year 3 and will be a primary focus of work in Year 4. We expect that Output 2 will be fully achieved by the close of the project.

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 SAPs 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. During Year 3, we held an additional meeting with FIG to define the scope of the SAP (Indicator 3.1; Annex 4.1) and continued to collect data on sei whales (including attempted tag deployments) that would inform a SAP. The drafting of the SAP is scheduled for completion in August 2024 (Indicator 3.2) and

the final version to be produced by project completion (Indicator 3.3). We expect that Output 3 will be achieved by the close of the project.

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 high turnover amongst the local community in the Islands, and continued highlighting of whales is therefore critical to achieving ongoing support for their conservation. 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. We have fulfilled all of the stated Indicators for delivery during Year 3, and evidence for this is provided in detail in the Annex 1 logframe and in Annex 8. We have very high confidence that Output 4 will be fully achieved by the end of the project, and the Indicators are considered to be appropriate.

3.3 Progress towards the project Outcome

The main stated project Outcome for DPLUS126 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 project completion, which has been extended to September 2024 following our Year 3 Change Request (see Section 14). However, data collection and preliminary analysis has been carried out throughout Year 3, and those datasets will underpin the achievement of all of these Indicators. In particular, the KBA assessment for the southern right whale (Indicator 0.1) relies upon updated information on the abundance and proportion of mature animals using the area, which we are achieving via the aerial abundance survey and the UAV work respectively; both of those components were significantly progressed during Year 3. Indicator 0.1 has already been achieved to some extent through the final recognition of two IMMAs in the Falklands for sei whales and southern right whales respectively (see Annex 6 and Section 14), which were not included in the original project proposal (because the scheduling of the regional workshops used to identify IMMAs are outside of our control).

The sei whale SAP (Indicator 0.2) will incorporate mark-recapture estimate and satellite-tracking results, and the data collected during Year 3 will therefore directly inform the draft SAP. We have also made good progress towards Indicator 0.3 with the submission of a paper on the southern right whale telemetry results to the 2024 IWC meeting (Annex 4.2). We expect to deliver all of the Indicators by the end of the project, and therefore to successfully achieve the project Outcome.

3.4 Monitoring of assumptions

We identified a number of Important Assumptions in our project logframe at the start of DPLUS126 (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 marine areas and with limited resources. Evidence for the comments below is provided throughout the logframe 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 (see Section 14). However, project partners Alex Zerbini (current Chair of the Scientific Committee) and Jen Jackson (previous Chair of the Southern Hemisphere sub-committee) are very involved in 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. As expected, we have had very different experiences with sei whales and southern right whales during the tagging work. Not only are the sei whales significantly more difficult to approach, but the tags being used on sei whales require a much greater degree of precision in their deployment to ensure they are located high on the dorsal fin and able to make optimal contact with the satellites (see more on this in Section 7). Consequently, while we have only been able to deploy six tags so far on sei whales across two field seasons (2022 and 2023), we were able to deploy all 10 of the southern right whale tags within a three-week period in 2022. We also had more challenges with reliably receiving data from the sei whale tags than from the right whale tags. Nevertheless, the deployment of six tags on sei whales is considered a huge achievement and will provide a much-improved knowledge of the movements and behaviour of that data-deficient species in the Falklands and globally.

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, we have experienced some challenges with the longevity and quality of data transmission from some of the sei whale tags, due to technical glitches and suboptimal deployments. While some of this was attributed to incorrect tagging equipment being shipped to the Falklands by suppliers (see AR1), the remainder is considered simply to be inherent to the difficulty of the ambitious work being carried out. Deploying tags on specific body parts of a whale (in the case of sei whales, into the dorsal fin) requires calm weather, very close whale encounters, and high accuracy of shooting. All of these things are difficult to achieve during the Falklands project, due to lack of calm weather, the elusiveness of sei whales, and the fact that both platform and whale are moving at the time that shots are taken. We have learnt some lessons along the way and amended some aspects of the tagging work (for example, amending the float attachment to reduce potential entanglement with the tag antenna – see Section 7), but it remains very challenging with sei whales. However, the southern right whale tags have generated considerable data on long-range movements and dive behaviour as well as on their movements within the Falklands. We believe that the data that have been acquired so far on both species will make a huge contribution to better understanding their habitat use and movements in the Falklands, and will largely fulfil the goals that we set out to achieve in DPLUS126.

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, and led to an additional Change Request in Year 3 to carry out additional fieldwork to compensate for some project components affected by poor weather in 2023 (namely the tagging and the aerial surveys, see Section 14). However, we have had reasonable success with the fieldwork carried out so far on the project, and the flexibility of Darwin Plus in allowing us to move money between financial year to reschedule some fieldwork has been critical to optimising the project Outputs. A lot of project time is allocated to maintaining (i.e., de-salting, repairs, checks) the field equipment and servicing the boat engines to ensure that breakages are kept to a minimum.

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 whale images collected during 2022 and 2023 will potentially be smaller than in previous years (which had longer field seasons), but based on the total number of images acquired then it is expected that the data will be adequate to support mark-recapture analysis.

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. Considerable new data have been acquired during DPLUS126, and the compilation and analysis of all available data on sei whales for the SAP will commence as soon as the 2024 sei whale season completes.

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. However, the project has succeeded in deploying tags on both whale species and the tracking pages have been successfully established and used extensively so far in social media outputs (see AR2).

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 3 of DPLUS126 has again focussed predominantly on carrying out the fieldwork and associated data management (database entry, QGIS mapping and photo-identification work) that will form the robust database needed to address data gaps and manage human impacts. 'Natural Resource Use' in the Falklands (and elsewhere) includes several human activities that have the potential to impact whales, for example hydrocarbon extraction, fisheries, and coastal construction. Understanding how whales use the marine environment and identifying critical habitats that support their feeding, breeding, resting and migratory behaviours are therefore important to assessing spatial and temporal overlap with human activities. The datasets generated in DPLUS126 help to address knowledge gaps and provide evidence on which mitigation approaches can be developed to address potential impacts from Natural Resource Use. The relevance of DPLUS126 with respect to 'Visitor/Tourism' is in deriving data to provide guidance to a small (but growing) whale-watching tourism sector and managing potential impacts from the well-established cruise/expedition ship industry.

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 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 and the importance of the Falkland Islands as a feeding ground for this 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. Good progress was made towards this assessment during Year 3, including completion of two of the three planned aerial abundance surveys and successful completion of the UAV study. The identification of spatial tools such as KBAs, is expected to directly influence subsequent consideration of Marine Protected Areas and Marine Management Areas.

In addition to stated deliverables on KBAs as spatial management tools, DPLUS126 has also had the opportunity to progress another complementary spatial marine management tool for whales in the Falklands – Important Marine Mammal Areas (IMMAs), developed by the IUCN. We have been directly involved in the proposal of three IMMAs in the Falklands since the south-west Atlantic IMMA workshop in December 2022, and during Year 3 all three of those IMMAs were finalised and are now highlighted on the IMMA website. Most pertinent to DPLUS126, they include an island-wide inshore sei whale feeding ground and a coastal winter mating area for southern right whales (see Annex 6 and Section 14 for more information). The delineation and proposal of the latter site was based largely on the satellite data obtained in Year 2 of DPLUS126. The identification of IMMAs and KBAs in the Falklands will serve to highlight important areas for whales that can be incorporated into marine spatial planning, and used by industry and other stakeholders to mitigate potential impacts.

5. Gender Equality and Social Inclusion (GESI)

There are no specific barriers to gender equality or social inclusion within DPLUS126. The Project Leaders for DPLUS126 at Falklands Conservation consist of one female and one male, with the female Cetacean Ecologist leading most of the implementation and delivery of the project. Of the 11 staff currently based in the Stanley office of Falklands Conservation, there is an even sex ratio (six females, six males). We also have both female and male leads at our Project Partner organisations. Our core fieldwork team consists of one female (Cetacean Ecologist) and one male (Coxswain), and thus also has an even sex ratio.

Outreach activities, including Watch Group and school presentations, have engaged participants of both sexes and are organised on a 'first-come, first-served basis' when spaces are limited, or provided to entire classes irrelevant of sex ratios (i.e. school presentations).

We believe that DPLUS126 falls into the 'Empowering' category of the GESI scale, because it does not create or exacerbate inequality. Moreover, the Cetacean Ecologist is female and has overall responsibility for the projects successful implementation despite working in a capacity that has been traditionally male dominated (i.e., marine boat fieldwork).

Please quantify the proportion of women on the Project Board ¹ .	The Project Leaders comprise one female and one male respectively, resulting in a proportion of 0.5.
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women ² .	Of the six project partners listed in Section 2, one is a woman resulting in a proportion of 0.17. That there was a change in personnel at FIG during Year 3, with our project partner at the Head of Environment being a woman when the project commenced, and replaced by a male during Year 3.

¹ A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

² Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

	Consequently, this ratio has reduced compared with AR2.
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GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	X
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

6. Monitoring and evaluation

The project logframe provided in Annexes 1 and 2 provides a clear set of Indicators and Outputs against which DPLUS126 can be continuously monitored and evaluated over time. A Change Request was submitted to Darwin Plus in October 2023 (see Section 14) which extended the M&E period from the original project deadline of 30 June 2024 to a new revised deadline of 30 September 2024, and included some minor amendments to the project logframe with regard to the timing of some Indicators and Activities. This revised logframe has been used in AR3 and now forms the basis for the project M&E.

The Outputs and Activities of DPLUS126 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).

Falklands Conservation is the lead organisation for 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 (as described in Section 2), including related budgeting and logistical concerns. This approach has worked very successfully over the duration of DPLUS126, as indicated by the on-budget implementation of all fieldwork components in all respects apart from uncontrollable weather limitations. While the Cetacean Ecologist has overall responsibility for the project expenditure, FC has three Office Admin staff to ensure that all project finances are properly logged and accounted for.

7. Lessons learnt

Our lessons learnt fall under three main categories and are described below.

Weather affecting project fieldwork

Two fieldwork components of DPLUS126 that were scheduled for Year 3 were not completed due to adverse weather conditions. This included: (1) insufficient field days or conditions during the sei whale season to deploy the remaining satellite tags; and (2) insufficient weather to facilitate a July aerial abundance survey for southern right whales (the surveys in June and August were completed as planned). These project components were discussed in the Change Request approved by Darwin Plus in November (see more in Section 14), and it was agreed to move underspend from Year 3 to Year 4 and to extend the overall project deadline to provide the opportunity for both fieldwork components to be completed.

2023 was the seventh consecutive year in which Falklands Conservation has carried out whale research in the Falklands, and the organisation has therefore developed high capacity to plan, and successfully complete, fieldwork around weather and other inherent limitations of working in a remote subantarctic environment. However, 2023 was the worst year for weather encountered thus far (perhaps associated with the 2023/24 El Niño), with lower-than-average numbers of fieldwork days completed in both the sei whale season and the southern right whale season (and many of those days were carried out in very marginal conditions that affected data collection). We were aware of this risk from project outset, with weather being highlighted as an Important Assumption for Output 1. However, we could not have reasonably predicted that the weather conditions this year would be worse than ever encountered before during our whale research, and since both boat work and aerial survey work are very costly and risky (in terms of health and safety) undertakings then we were not able to push the weather limits further than we did. We cannot realistically mitigate for this, but the flexibility from Darwin Plus in allowing our Change Request was appreciated and vital to the completion of DPLUS126.

We also built a relatively long run-in at the tail end of DPLUS126 to allow sufficient time for data analysis and manuscript preparation, but this also facilitated contingency for carrying fieldwork over into Year 4 should we need to do so which has ended up being very beneficial to project delivery.

Sei whale tagging

The reviewer of AR2 asked us to provide commentary on lessons learnt that can inform sei whale tagging in the future. Overall, our experiences with the tagging met our expectations from previously working on this species – sei whales are a particularly sensitive and skittish species of baleen whale, and we knew that it would prove challenging to deploy satellite tags due to the difficulties with approaching them to sufficient proximity and at a good (perpendicular) angle to the tagger (the whales tend to turn away from approaching boats so that their bodies are angled to the tagger). The challenges are enhanced when using Limpet tags rather than implantable tags, since the former have to be placed specifically on the dorsal fin whereas the latter can be deployed into the animal's body and therefore provide more opportunities for deployment. However, we selected Limpet tags due to ethical concerns with deploying implantable tags on sei whales which have a much thinner blubber layer than some other species (e.g., southern right whales). The combination of a skittish species and a requirement for specific tag placement, meant that the tagging of sei whales was always expected to be much harder than the right whale tagging, and this was proven to be correct. However, our deployment of five tags in 2022 did demonstrate that the tagging was indeed possible and could have realistically been achieved over the two seasons of fieldwork if circumstances had been different (i.e., more favourable weather and whale numbers in 2023). We were also aware from the outset that if certain circumstances coincided then we would have an excellent chance to deploy multiple tags – this would be on calm, overcast days when sei whales sometimes exhibit surface feeding, during which they spend more time at the surface and are a lot less sensitive to approaching boats (as shown during our previous suction-cup tagging work on this species in 2019). Unfortunately, we did not experience surface feeding in Berkeley Sound at all in 2022 or 2023, and have encountered it only once so far in 2024. Perhaps the biggest lesson learnt was that there is no

point in taking risks in deploying the tags on sei whales – we lost one tag in 2023 after it missed the whale and fell into the sea, and this was partly the result of a hasty tagging attempt on the last trip of the season. Patience is the single biggest criterion needed for sei whale tagging, and there is a lot of pressure on tagging personnel when working with a difficult species like the sei whale that presents so few opportunities. Additionally, when working with an avoidant and shy species then missed deployments are to be expected, and devising a tag recovery system that works to stop any missed tags from sinking and being lost to the project is crucial in allowing the tagger a bit more flexibility in taking a shot. We learnt in season 1 that attaching a float to the tag can serve this purpose, but it comes with at least two potential costs: (1) reduced streamlining that might affect the flight of the dart; and (2) the attachment line can tangle with the tags antenna and cause the tag to cease working. We have continued to trial different methods to attach a recovery float to the tag in case of misses, but the take home message really has been to not take the shot at all unless conditions are optimal (the animal is close and perpendicular), even if that means having very few opportunities in a season.

Timing of annual reporting

As experienced during DPLUS082 and continuing throughout DPLUS126, we encounter an inherent challenge each year in the fact that the project financial year ends right in the middle of our peak sei whale field season (March/April), such that our exact expenditure cannot be accurately forecast due to uncertainties about weather and how many boat survey days will be achieved at sea by the end of March. While we cannot do anything to amend the overlap between this deadline and our field season (since the whales are not flexible in their occurrence!), we would certainly advise others to consider the financial year deadline in the planning of their own field activities, such that if they have the flexibility to plan their fieldwork to avoid that financial year deadline then it will be much easier to manage the budget and submit any change requests well ahead of time.

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

The Reviewer of AR2 made two comments, both of which are addressed below.

Comment 1. Significant progress was made towards achieving the target 1.1, which aims for a 'total of 10 tags deployed on sei whales... over two field periods in Feb-April 2022 and 2023'. Achieving 6 tags over two seasons in challenging conditions is a great achievement. As a small clarification: are there any plans to conduct further field work in early 2024 with the aim of tagging a further four sei whales? In the next Annual Report, please provide commentary on the lessons that can be taken from both field seasons and which can inform future sei whale tagging endeavours.

Thank you for the positive feedback. Yes, we made plans to incorporate a 2024 field season for the purpose of deploying the remaining tags on sei whales – this was one of the key topics of the Change Request submitted to Darwin Plus in October 2023. Unfortunately, the whale tagger (Rui Prieto) that we had used in 2022 and 2023 had to unexpectedly pull out of the 2024 field season due to family illness and we were unable to find a replacement, and so the tagging effort has been undertaken by the Project Leader Caroline Weir who had been trained by Rui last year but had never deployed satellite tags before. Sei whales are one of the most difficult species to approach closely for tagging anyway, and combined with the taggers inexperience this has meant that the 2024 tagging effort has not been optimal. Some commentary on lessons learnt from the sei whale tagging has been provided in Section 7.

Comment 2. The level of community engagement has been excellent in Year 2, particularly with local schools. Perhaps of note here was the 'first-come, first serve' policy for the watch group boat trips. Were there any efforts made to provide spaces for, or ensure the participation of children from more disadvantaged backgrounds?

Glenn Welch, FC's Community Outreach Officer responds: To ensure that all children who wanted to go on the whale watching boat trips were able to attend two separate trips were organised. This meant that no child who expressed an interest in attending was denied a place.

No charge was made to the children for the boat trips meaning that children from disadvantaged backgrounds would still be able to attend.

9. Risk Management

DPLUS126 commenced before the requirement for the project risk register was introduced. We have not experienced any new risks in the last 12 months that had not been previously accounted for in our Important Assumptions (Section 3.4) or existing project risk assessments. We have therefore not made any significant adaptations to project design in light of new risks.

10. Sustainability and legacy

DPLUS126 has a good profile within the Falkland Islands, and the community within the Islands is well-aware of the whale research that has evolved from DPLUS082. We endeavour to highlight the project in all potential avenues of local media, and in Year 3 that has included articles in the Penguin News, the Falklands Conservation magazine, on Falkland Islands Radio, two public talks by the tagging personnel, and with FITV (see Annex 8 outputs). A lot of outreach also occurs informally while talking to community members around town, and in particular we regularly liaise with landowners about cetacean strandings which provides opportunity for questions about the wider project. There is (informal) evidence that awareness is growing, as indicated by increasing numbers of people reporting cetacean strandings to the Cetacean Ecologist or contacting her with questions about sightings of cetaceans around the coast. In Year 3 we have also had increasing expedition ship guides contacting us with images of sei whales and killer whales, and interested in matching with our catalogues.

Since DPLUS126 began in July 2021, it has been heavily promoted on the project's Facebook site (<https://www.facebook.com/FalklandsWhale>) from which posts have been widely shared both locally and internationally, including regular shares by one of the FIG MLAs. Additionally, the Coxswain used for whale research since June 2023 is a local Falklander and has also routinely shared social media posts, which has further increased interest and awareness of the project amongst the wider community and has longer-term potential benefits with regard to capacity for future cetacean work.

The international profile of the project has continued to grow during Year 3. Falklands Conservation is now a member of the Southern Right Whale Consortium (<https://southernrightwhaleconsortium.org/partners/>), and the satellite-tracking and UAV work carried out in Years 2 and 3 of the project have had high-profile collaborators that will help with achieving higher recognition of the Falkland Islands as an important site for right whales. Similarly, the process in getting the IMMAs recognised around the Falklands will raise the profile of the whale work in the Islands.

We have also had very good international interaction with many of our social media posts. This has led directly to contact from other scientists interested in the Falklands work and potential collaborations. In Year 3 this has included approaches:

- Regarding additional satellite-tracking of right whales in the Falklands;
- For collaborative studies of microplastics in whale tissues;
- For collaborative work on the genetics of Peale's dolphins;
- By Brazilian scientists interested in photo-ID matching of sei and right whales between our study areas; and
- For collaborative work on the genome and isotopes of false killer whales;

Many of these studies will provide opportunity to acknowledge Darwin Plus funding, and all will raise the profile of cetacean research in the Falkland Islands. We expect that local and international promotion of the project will increase during Year 4, as we start to deliver the key project outputs including the Technical Report, the SAP, the KBA assessment, and several scientific manuscripts.

Post-project, the capacity of Falklands Conservation (and other local organisations) to continue with future whale research 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 maritime health and safety regulations which continued to develop over 2023. The international collaborations that have been established during DPLUS126 will likely continue for years to come, 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 relevant to region-wide management of the species.

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

- (1) A robust three-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 (i.e. across the 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 has been 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 Plus identity

There is already a good understanding of the Darwin Initiative and Darwin Plus within the Falkland Islands, as this is one of the main sources of funding for environmental projects in the Islands, including some of Falklands Conservation's earlier whale work (DPLUS082).

DPLUS126 has primarily been publicised using the same social media page (<https://www.facebook.com/FalklandsWhale>) that was established during a previous Darwin (DPLUS082), because the latter had already built a solid following that we wanted to maintain. However, DPLUS126 was clearly announced as a new entity at the start of the project. Over the course of Year 2, Darwin Plus changed their logo and we amended the banner at the top of the social media page to incorporate the new logo. Similarly, we have used the new logo in many outputs since it was updated, specifically including in Year 3:

- Public talk advertisements (Annex 8.2), and Darwin Plus was also mentioned as the funder during the talks themselves;
- FC Magazine articles (Annex 8.5);
- Stakeholder updates (Annex 8.10 and 8.12);
- Steering Group updates (Annex 8.11 and 8.13); and
- Three educational posters (Annexes 8.14 to 8.16).

We have also had the Darwin Plus logo (unfortunately the old version, since it was acquired at the start of the project and prior to the logo change) visible on the console of our research boat Elinor during DPLUS126 fieldwork (see Annex 5.2). Acknowledgement of Darwin Plus as the funder of our current whale research has additionally been made in:

- A Penguin News article (Annex 8.3);
- FC magazine articles (Annexes 8.4 and 8.5);
- The article by the Marine Biological Association (Annex 8.17); and

- Our paper submission to the International Whaling Commission (Annex 4.2), which also included recognition of the UK Government.

We have tagged the Biodiversity Challenge Fund in many of our social media posts (see Annex 8.6 for examples).

12. Safeguarding

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.

Has your Safeguarding Policy been updated in the past 12 months?	No. Last update was in Feb 2022
Have any concerns been reported in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes – Glenn [REDACTED], Community Outreach Officer – [REDACTED]
Has the focal point attended any formal training in the last 12 months?	No
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 87% [13] Planned: 13% [2]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months?	No.
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.	No.
Please describe any community sensitisation that has taken place over the past 12 months; include topics covered and number of participants.	N/A.
Have there been any concerns around Health, Safety and Security of your project over the past year? If yes, please outline how this was resolved.	No.

13. Project expenditure

A change request was submitted to Darwin Plus in October 2023, and was approved on the 6 November. That change request included the reallocation of [REDACTED] of funding from Year 3 to Year 4 in response to Year 3 underspend and the need to conduct additional field seasons in Year 4 (see Section 14), and it also included some minor changes between budget lines. The values agreed with Darwin Plus following the October change request are those presented in Table 1. Most expenditure was +/- 10% of each budget line. However, we had greater than 10% underspend against two of the budget lines which is explained in Section 14. Overall, the third financial year of DPLUS126 had a [REDACTED] underspend.

Table 1: Project expenditure during the reporting period (1 April 2023 – 31 March 2024)

Project spend (indicative in this financial year)	2023/24 D+ Grant (£)	2024/25 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				Please see Section 14.
Operating Costs				
Capital items				
Others (Please specify)				Please see Section 14.
TOTAL	£131,042.33	£130,992.05		

Table 2: Project mobilised or matched funding during the reporting period (1 April 2023 – 31 March 2024)

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)			FC equipment, tagging equipment from AZ, UAV equipment and time by FC, satellite tags, genetic sexing of samples and time by JJ, time provided for abundance estimates by PH, time provided by TC for HappyWhale uploads, time provided by FIG for SAP discussions
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)			

14. Other comments on progress not covered elsewhere

Change Request

In October 2023 we submitted a Change Request to Darwin Plus that incorporated the following:

- (1) Reallocation of £30,020.00 of funding from Year 3 into Year 4 to facilitate two pieces of fieldwork: (1) the second half of the proposed 2024 sei whale season (i.e., April 2024) to provide opportunity to deploy the four remaining satellite tags; and (2) the aerial survey missed in July 2023 (due to adverse weather), which would be carried out in July 2024 instead.

- (2) Changes in amount of some budget lines in Year 3 and Year 4 to reflect underspend in some budget lines due to fieldwork limitations; and
- (3) Extension of the overall project end date from the original date of 30 June 2024 to a new date of 30 September 2024 to allow completion (and analysis) of a July 2024 aerial survey.

These amendments also resulted in changes to the project logframe provided in Annexes 1 and 2. This Change Request was intended to address some of the difficulties encountered earlier in DPLUS126, primarily weather-related, that had prevented some of the key fieldwork components from being completed, and to address feedback from Reviewer 2 on AR2 regarding continued efforts to deploy the remaining satellite tags. We were optimistic that the Change Request would offer the best solution to deliver all components of DPLUS126 as optimally as possible. Unfortunately, unforeseen circumstances (next section) have affected the tagging component and associated finances to date, although efforts to tag the sei whales are still underway.

Tagging personnel

At the time that our Change Request was submitted to Darwin Plus in 2023, we had received confirmation from Rui Prieto (our sei whale tagger in 2022 and 2023) that he would be happy to return to the Falklands in 2024 for an additional season to attempt to deploy the four remaining tags. Part of our Change Request therefore related to expenditure to carry out the Feb/Mar portion of an additional (Year 4) sei whale season, including money allocated to booking international flights for Rui (Travel & Subsistence) and money allocated to tag data downloads (Other Costs).

Unfortunately, due to unexpected personal circumstances, Rui was subsequently unable to travel to the Falklands. During January 2024, Rui attempted to find a suitable replacement but nobody was available to come to the Falklands for more than 10 days (which is not cost-effective, considering weather limitations). We also contacted project partner Alex Zerbini to attempt to find a replacement tagger for the sei whale season, but to no avail. Consequently, by February it became clear that the only remaining option was for the Cetacean Ecologist to attempt to deploy the remaining sei whale tags. This was certainly suboptimal, as she had no previous experience of deploying whale tags apart from observing the tagging operations conducted in 2022 and 2023 as part of DPLUS126, and commencing a tagging learning curve with the sei whale (which is one of the most difficult species to work with, see Section 7) was a big ask. Furthermore, the local coxswain for the 2024 season was not experienced with approaching sei whales for tagging purposes, although he had worked with southern right whales. As a result, none of the four satellite tags had been deployed on sei whales by the end of March 2024. However, attempts to tag will continue into April and May 2024, for as long as the sei whales remain in the study area. (N.B. Although beyond the reporting timeframe of AR3, we are pleased to say that we have managed to deploy one more tag in April!).

A side-effect of the personnel situation is that while our overall Year 3 project spend aligned with the Change Request budget for 2023/34, two of the budget lines incurred more than 10% variance (see Section 13). This was because of underspend in the Travel & Subsistence and Other Cost budget categories because of the lack of international travel of the tagging personnel and the lack of tagging costs (primarily data downloads). By the time we concluded that no expert tagging personnel was available to come to the Falklands for the sei whale season (i.e., in February) then it was too late to issue another Change Request to Darwin Plus to formally adjust these budget lines so that the variance would be within 10%, and we still hoped to deploy some tags in Feb/Mar which would have incurred some additional expenditure in the tag data downloads. This again reflects the complications of running a project where the fieldwork is weather-dependent and unpredictable, and where the field season spans the end of the financial year (see Section 7).

Important Marine Mammal Areas (IMMAs)

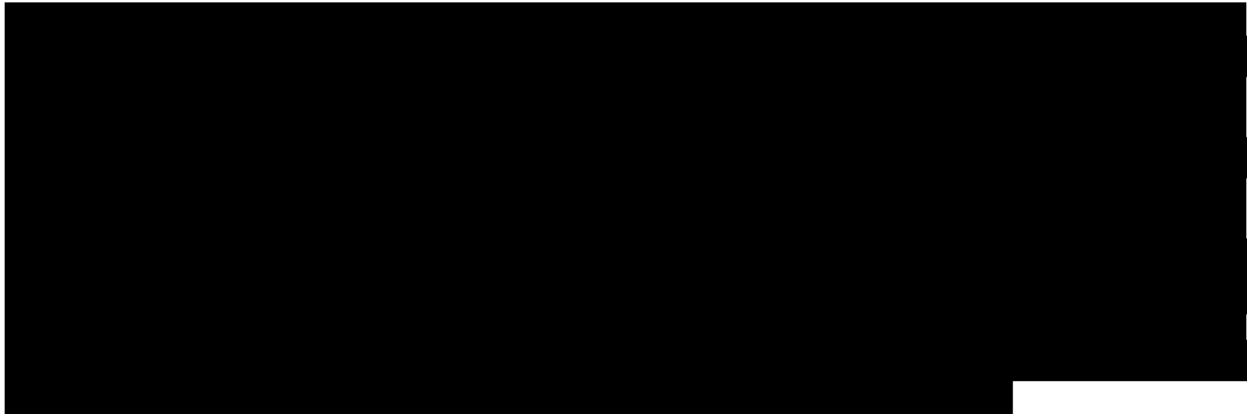
In AR2 it was reported that some of the DPLUS126 results had been used to propose three candidate IMMAs (cIMMA) in the Falklands that focussed on cetaceans during a IMMA

workshop for the south-west Atlantic workshop held in Brazil in December 2022. During Year 3, these IMMAs have been progressed to full status, and in February and March 2024 the fact sheets for each of them were finalised and added to specific pages on the IMMA website:

1. Falkland Islands Inner Shelf Waters IMMA (Annex 6.1) - <https://www.marinemammalhabitat.org/factsheets/falkland-islands-malvinas-inner-shelf-waters-imma/>
2. North-east Falklands Right Whale Wintering Area IMMA (Annex 6.2) - <https://www.marinemammalhabitat.org/factsheets/north-east-falklands-malvinas-right-whale-wintering-area-imma/>
3. Sea Lion Islands Group IMMA (Annex 6.3) - <https://www.marinemammalhabitat.org/factsheets/sea-lion-islands-group-imma/>

The Falkland Islands Inner Shelf Waters IMMA and the North-east Falklands Right Whale Wintering Area IMMA draw heavily on data collected during DPLUS082 and DPLUS126 respectively, with the satellite telemetry data collected on right whales during DPLUS126 being fundamental to the recognition and delineation of the latter site.

GIS files of the IMMAs (available to download from the IMMA website) have been shared with Falkland Islands Government and are expected to serve as a useful spatial tool for assessing overlap with human activities and marine management areas.



15. OPTIONAL: Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes.

I agree for the Biodiversity Challenge Funds to edit and use the following for various promotional purposes.

One of the main Year 3 achievements of DPLUS126 was seeing the fruition of our work to identify important marine areas for baleen whales in the waters around the Falkland Islands, which can be incorporated into marine management in the Islands. In Year 2 we were invited to participate in an IUCN workshop to identify Important Marine Mammal Areas (IMMAs) in the South-West Atlantic Ocean Region. Two of the candidate areas that we proposed for whales at that workshop were accepted as finalised IMMAs during Year 3 and the factsheets and GIS files for both areas were recently made available on the IMMA website. The Falkland Islands Inner Shelf Waters IMMA largely overlaps with the Key Biodiversity Area (KBA) that was recognised for Endangered sei whales in April 2021 during a previous Darwin Plus project (DPLUS082), but the IMMA also

qualified due to supporting a high biodiversity of marine mammal species including coastal dolphins, right whales, humpback whales, and several species of pinniped. The North-east Falklands Right Whale Wintering Area IMMA extends to ~10 km offshore along the north coast of East Falkland and is a high-use wintering habitat for mating and socialising southern right whales that was identified primarily using the satellite-tracking data collected during Year 2 of DPLUS126. The conclusion of the process to identify these IMMAs fulfils a large component of our DPLUS126 Outcome, since they result in the importance of Falklands' waters for baleen whales being recognised not only locally but also regionally and globally, and provide a spatial tool that can be incorporated into marine management approaches.

File Type (Image / Video / Graphic)	File Name or File Location	Caption, country and credit	Online accounts to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
Image - Jpg	Sei_whale_CW_FC_DP LUS126	Sei whale surfacing in Berkeley Sound, Falkland Islands (Photo: Caroline Weir / Falklands Conservation)	https://www.facebook.com/FalklandsWhale	N/A
Image - Jpg	Right_whale_CW_FC_D PLUS126	Southern right whale in the Falkland Islands (Photo: Caroline Weir / Falklands Conservation)	https://www.facebook.com/FalklandsWhale	N/A

Images are provided in Annex 9 of AR3.

Annex 1: Report of progress and achievements against logframe for Financial Year 2023-2024. Please note that the timeframes reported in this logframe are the amended ones following our Change Request in October 2023.

Project summary	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
<p>Impact</p> <p>Long-term recovery of baleen whale populations is achieved through protection of key habitats, improved understanding of migratory movements, and implementation of management measures in the Falklands and wider south-west Atlantic.</p>	<p>The third year of DPLUS126 has been focussed on carrying out the fieldwork that will underpin the deliverables and achievement of the project outcome in the final year of the project. This has included the completion of the 2023 sei whale season (April 2022), the completion of a second southern right whale season in July/August 2023, and the commencement of the 2024 sei whale season in February and March 2024.</p>	
<p>Outcome</p> <p>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.</p>		
<p>Outcome indicator 0.1: By project completion important marine areas for two baleen whale species have been identified in Falklands' waters, assessed against Key Biodiversity Area (KBA) criteria (if not already), and submitted to a FIG and stakeholder consultation phase.</p>	<p>N/A, scheduled for project completion. However, analysis of satellite data and UAV components are well underway and those results will support the KBA Assessment for right whales. Additionally, two Important Marine Mammal Areas were identified for whales in 2023 (see AR2).</p>	<p>Complete analysis of telemetry and UAV datasets. A southern right whale KBA assessment will be completed and submitted to the IUCN by project completion.</p>
<p>Outcome indicator 0.2: By project completion, FIG decision-makers and key stakeholders including industry will have access to a robust evidence-base regarding the occurrence of sei and southern right whales in the Falkland Islands, and a draft Species Action Plan (SAP) will be produced and recommended for the endangered sei whale.</p>	<p>A meeting was held with FIG on 15 May to discuss the SAP (Annex 4.1). The final draft of the SAP is scheduled for project completion.</p>	<p>Complete the 2024 sei whale season. A draft SAP will then be produced for the sei whale in the Falklands and recommended to FIG by project completion.</p>
<p>Outcome indicator 0.3: By project completion regional conservation management agencies, specifically including the International Whaling Commission (IWC), are made aware of the status of sei and southern right whales in the Falkland Islands, and of connectivity with other regions within (and beyond where applicable) the south-west Atlantic.</p>	<p>N/A, scheduled for project completion. However, on 22 March 2024 a draft manuscript (Annex 4.2) on the southern right whale tagging work was submitted to the IWC meeting (SC69B) scheduled to take place from 22 April – 3 May 2024 in Bled, Slovenia.</p>	<p>The right whale telemetry work will be presented at the 2024 meeting of the IWC, and at least one peer-reviewed scientific paper published.</p>
<p>Output 1. Data on whale distribution and movements are collected and used to identify and assess national and global key sites.</p>		

<p>Output indicator 1.1: A total of 10 tags deployed on sei whales and associated metadata recorded over three field periods in Feb-Apr of 2022, 2023 and 2024.</p>	<p>Progressing on schedule. The 2024 sei whale fieldwork is well underway, with the Cetacean Ecologist attempting to deploy the remaining four satellite tags on sei whales between February and May 2024 (evidenced in Annex 5.1 and Annex 5.2). The tracks of sei whales tagged in 2022 and 2023 can be viewed on the Falklands Conservation website at: https://falklandsconservation.com/sei-whale-tracking/</p>	<p>The sei whale fieldwork will continue until April/May 2024, and continued tag deployment attempts and recording of metadata will occur throughout.</p>
<p>Output indicator 1.2: A total of 10 tags deployed on southern right whales and associated metadata recorded over two field periods in Jun-Aug of 2022 and 2023.</p>	<p>Completed in 2022 (see AR2). The tracks of the tagged right whales can be viewed on the Falklands Conservation website at: https://falklandsconservation.com/southern-right-whale-tracking/</p>	<p>Analysis of tagging dataset will be completed by project end.</p>
<p>Output indicator 1.3: Whale sighting data collected in the field during 2022, 2023 and 2024 fieldwork periods and analysed with existing visual datasets and telemetry data to compile spatio-temporal GIS layers for both species by project completion.</p>	<p>Progressing on schedule. Standardised survey data were collected throughout Year 3, and the data were entered into spreadsheets immediately following each survey. The vessel tracks and cetacean sightings positions have been cross-referenced, quality-controlled and then mapped in QGIS. Evidence of the database and GIS work carried out to date is provided in Annex 5.2.</p>	<p>Data will be collected until boat-based fieldwork for DPLUS126 completes in Apr/May 2024, and then the entire 2022-2024 dataset will be analysed and mapped in GIS to produce a chapter for the project Technical Report.</p>
<p>Output indicator 1.4: A winter aerial survey conducted for southern right whales by 31 August 2024.</p>	<p>Progressing on schedule. A protocol was produced ahead of the aerial surveys, describing methods and transect design (Annex 5.3). Aerial surveys of the Important Marine Mammal Area (IMMA) for southern right whales were conducted in June and August 2023 (evidenced in Annex 5.4); however, due to adverse weather we were unable to complete the July 2023 survey which should represent peak numbers of right whales in the IMMA. This has now been rescheduled for July 2024 (approved by Darwin Plus in our October change request).</p>	<p>The final aerial survey will be carried out in July 2024. Analysis of the aerial dataset will be completed by project end.</p>
<p>Output indicator 1.5: A pilot unmanned aerial vehicle (UAV) study carried out on southern right whales by 31 August 2023.</p>	<p>The UAV study was successfully completed in July and August 2023 (evidenced in Annex 5.5). Work has commenced on a draft manuscript outlining the results.</p>	<p>Analysis of the UAV dataset will be completed by project end, through collaboration with Fredrik Christiansen.</p>
<p>Output indicator 1.6: An assessment of the occurrence of the southern right whale in the Falkland Islands against global KBA criteria is completed by project completion including GIS layer of a potential site.</p>	<p>N/A – This Indicator is scheduled for project completion. However good progress has been made towards it during Year 3, including the completion of the UAV study (Annex 5.5) and partial completion of the aerial abundance estimates</p>	<p>A southern right whale KBA assessment will be completed and submitted to the IUCN by project completion.</p>

	(Annex 5.4) which are both critical to the KBA assessment. Additionally, the <i>North-east Falklands Right Whale Wintering Area</i> IMMA was progressed during Year 3 (see Annex 6) and should further validate the KBA application.	
Output indicator 1.7: An assessment of the fine-scale movements of sei whales around the Falklands in relation to their potential management via protected sites (especially with respect to any occurrence shown beyond the boundaries of the proposed Falkland Islands Shelf Waters KBA) is completed by project completion.	N/A – this Indicator is scheduled for delivery by project completion. However, the successful tagging of six sei whales during the fieldwork in 2022 and 2023 provides the data needed to support this assessment, and efforts to deploy the remaining tags are continuing during Year 4 (see Indicator 1.1).	Sei whale tagging attempts will continue until Apr/May 2024. An analysis of the movements of sei whales will be completed and included as a chapter in the project Technical Report by project completion.
Output indicator 1.8: An assessment of region-wide movements of southern right whales is carried out by telemetry (by June 2024) and photo-identification matching with South Georgia (by Dec 2022).	Ten southern right whales were successfully tagged in July 2022 and have provided a lot of information on spatial movements within the south-west Atlantic (see https://falklandsconservation.com/southern-right-whale-tracking/). The final tag ceased transmitting on 11 April 2023. Analysis of that dataset is well underway (evidenced in Annex 5.6), with an IWC paper produced (Annex 4.2) and a provisional draft paper completed and expected submission to a journal before June 2024. Matching of the Falklands and South Georgia right whale catalogues was completed in Year 3 (see AR2).	Complete telemetry data analysis, including drafts of movement and dive behaviour papers and the Technical Report chapter.
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).		
Output indicator 2.1: All existing catalogue entries for sei and southern right whales in the Falkland Islands (2017–2020) are ranked separately for image quality and individual animal distinctiveness by Jan 2022.	Completed, and evidenced in AR1.	Continue to quality grade the whale images collected during 2024.
Output indicator 2.2: An evaluation is completed by Jan 2022 of the suitability of existing datasets (and of the expected 2022/2023 data) to carry out a robust mark-recapture abundance analysis.	This evaluation was completed in Year 2 and was evidenced in AR2.	N/A
Output indicator 2.3: Falkland Islands catalogues of both species are expanded by at least 50 animals respectively, using photo-identification collected alongside telemetry boat surveys during 2022 and 2023.	Progressing on schedule. In Year 3, a total of 26,669 images were taken of sei and southern right whales, comprising: 4,918 images of sei whales in April 2023; 11,459 images of right whales in May to September 2023; and 10,292 images of sei whales in February and March 2024. Evidence of	Photo-identification of sei whales will continue alongside tagging attempts until Apr/May 2024.

	photo-identification work can be seen throughout the project social media pages at https://www.facebook.com/FalklandsWhale , and some examples are also provided in Annex 7.1. The processing and cataloguing of those images is underway and ongoing, and it is certain that 50 individuals of each species will be added to the catalogues from DPLUS126.	
Output indicator 2.4: A mark-recapture analysis is completed for sei whales for at least one site of highest anthropogenic overlap (Berkeley Sound) by project completion.	N/A – this Indicator is scheduled for Year 4.	Carry out the mark-recapture analysis.
Output 3. A draft evidence-based Species Action Plan is produced for endangered sei whales in Falklands’ waters and recommended to FIG.		
Output indicator 3.1: Species Action Plan (SAP) scope and criteria established via a meeting/workshop with relevant FIG personnel by May 2022.	A SAP meeting was held with the FIG Environment Department on 15 May 2023 (Annex 4.1), during which an outline scope was established and has been developed into a Table of Contents for which content will be added during Year 4.	Contact with the FIG Environment Department will continue during the production of the draft SAP to encourage their input and feedback.
Output indicator 3.2: Draft SAP completed for sei whales and disseminated for FIG/stakeholder review by Aug 2024.	This Indicator is scheduled for completion in Year 4. However, much of the fieldwork carried out for Year 3 of the project will contribute directly to this SAP, e.g., the telemetry, photo-identification, and faecal sampling.	The Draft SAP will be completed and distributed to FIG for feedback.
Output indicator 3.3: SAP finalised and recommended to FIG by project completion.	This Indicator is scheduled for completion in Year 4.	The Draft SAP will be reviewed by FIG and a final version produced by project completion.
Output 4. Awareness of whales, and support for their conservation and management, is increased within local and international communities via dissemination of research outputs.		
Output indicator 4.1: Web page showing real-time whale tracks receives >500 local and international visits by project completion (Sep 2024).	Web pages were established in Year 1 for the tracking data for sei whales and southern right whales respectively: https://falklandsconservation.com/sei-whale-tracking/ https://falklandsconservation.com/southern-right-whale-tracking/ From 10 March 2023 to 10 March 2024 there were 147 views of the sei whale tracking page and 140 views of the southern right whale tracking page (Annex 8.1A). An additional 40 and	We will review the statistics again as part of the final project reporting.

	<p>25 views respectively occurred in the one month from 10 March to 10 April 2024 (Annex 8.1B). However, these statistics relate to a period after all satellite tags had stopped sending data and we had therefore stopped highlighting the pages on social media – page visits during the peak of the tagging work in Year 2 were undoubtedly higher.</p> <p>Unfortunately, our Communications and Marketing Officer discovered that our website statistics would not allow us to look back further than one year (see Annex 8.9 for discussion); this has since been remedied, and we expect to be able to demonstrate 500 views by project completion.</p>	
<p>Output indicator 4.2: At least 25% of children from one school in Stanley have been engaged in the whale project by Sep 2023.</p>	<p>This Indicator was completed in Year 2 (see AR2).</p>	<p>N/A</p>
<p>Output indicator 4.3: At least 50% of the local community of ~3,000 people is informed of the project goals and results (twice) by Dec 2022 and Dec 2023 respectively.</p>	<p>The community has been kept informed of the project throughout Year 3, including by three public talks (Annex 8.2), a Penguin News article (Annex 8.3), two FC magazine articles (Annexes 8.4 and 8.5), social media posts on the project website (Annex 8.6), an interview with Falkland Islands Radio Station (FIRS) in February 2024 (Annex 8.7), and interviews for FITV in August 2023 (https://www.youtube.com/watch?v=tFSQVUnpEdE) and in October 2023 (https://www.youtube.com/watch?v=g3Xxorf9CzQ). These combined avenues of disseminating project updates will have reached the vast majority of the Falklands' ~3,300 population.</p>	<p>While this Indicator has been completed, we plan to issue additional media outputs (including at least a FC magazine article and a Penguin News article) during Year 4.</p>
<p>Output indicator 4.4: An average of over 1,000 people are shown to engage with the project social media page posts between Jan 2022 and Sep 2023.</p>	<p>Social media posts in Year 3 have regularly engaged more than 1,000 people, and sometimes significantly higher - see Annex 8.6 and the social media site at: https://www.facebook.com/FalklandsWhale.</p>	<p>Social media updates will continue regularly during the Year 4 fieldwork, and intermittently thereafter until project completion.</p>
<p>Output indicator 4.5: Over 1,000 international scientists are aware of the project and its key findings for whale management via at least one scientific publication (by Jun 2024).</p>	<p>N/A – this Indicator is scheduled for Year 4. However, we have commenced this international outreach with a submission of a paper on the right whale telemetry results to the IWC meeting in 2024 (see Annex 4.2).</p>	<p>During Year 4 we will present at the 2024 IWC meeting in April/June and will submit at least one scientific publication on the southern right whale telemetry. Several other manuscripts are also in preparation and may be</p>

		published within the project timeframe. These papers will be publicised on the project social media page and via the MARMAM listserv to optimise outreach.
Output indicator 4.6: Images of all sei whales (total number unknown at this stage) taken during the project fieldwork and classified as 'highly distinctive' individuals will be shared to the HappyWhale website by Dec 2022 and Dec 2023 respectively to generate interest among the public and expedition leaders.	The list of sei whale images contributed to HappyWhale to date can be found at: https://happywhale.com/org/392 . During January 2024, images of 27 highly distinctive sei whales were uploaded to HappyWhale (Annex 8.8).	N/A.
Output indicator 4.7: Project updates and the final Technical Report are disseminated to local community stakeholders including industry representatives on a bi-annual basis in 2022 and 2023, with a final update at completion of the project in September 2024.	Project updates were disseminated to stakeholders and the steering group twice during Year 3, in August 2023 (Annex 8.10 and 8.11) and in March 2024 (Annex 8.12 and 8.13).	Final stakeholder and steering group updates will be produced at the end of the project in September 2024. A link to the final project Technical Report will also be distributed.

Annex 2: Project’s full current logframe as presented in the application form (unless changes have been agreed). Please note that the timeframes reported in this logframe are the amended ones following our Change Request in October 2023.

Project summary	SMART Indicators	Means of verification	Important Assumptions
Impact: Long-term recovery of baleen whale populations is achieved through protection of key habitats, improved understanding of migratory movements, and implementation of management measures in the Falklands and wider south-west Atlantic.			
<p>Outcome:</p> <p>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.</p>	<p>0.1 By project completion important marine areas for two baleen whale species have been identified in Falklands’ waters, assessed against Key Biodiversity Area (KBA) criteria (if not already), and submitted to a FIG and stakeholder consultation phase.</p> <p>0.2 By project completion, FIG decision-makers and key stakeholders including industry will have access to a robust evidence-base regarding the occurrence of sei and southern right whales in the Falkland Islands, and a draft Species Action Plan (SAP) will be produced and recommended for the endangered sei whale.</p> <p>0.3 By project completion regional conservation management agencies, specifically including the International Whaling Commission (IWC), are made aware of the status of sei and southern right whales in the Falkland Islands, and of connectivity with other regions within (and beyond where applicable) the south-west Atlantic.</p>	<p>0.1 Copies of KBA Assessment reports, and of correspondence from FIG and other stakeholder consultations.</p> <p>0.2 Copy of Project Technical Report, and evidence of its presentation to FIG. Metadata catalogue entries on IMS-GIS centre website. Copy of minutes from meeting with FIG re. SAP.</p> <p>0.3 Copy of scientific manuscript and/or project Technical Report submitted to the IWC (including the IWC-SORP right whale programme), with a letter requesting recognition of the Falkland Islands in the current IWC Conservation Management Plan (IWC-CMP) for south-west Atlantic right whales.</p>	<p>Government recognises KBAs as a tool within the marine spatial planning process, and thus develops appropriate future management of those areas for whales. Mitigation: FIG are included as a project partner and are already engaged in whale KBA discussions.</p> <p>The IWC (and IWC-SORP) are willing to incorporate the Falkland Islands into the IWC-CMP for southern right whales. Mitigation: Project partner Jen Jackson is Chair of the Southern Hemisphere whales sub-committee of the IWC and can help to optimise this possibility.</p>
<p>Output 1</p> <p>Data on whale distribution and movements are collected and used to identify and assess national and global key sites.</p>	<p>1.1 A total of 10 tags deployed on sei whales and associated metadata recorded over three field periods in Feb-Apr of 2022, 2023 and 2024.</p> <p>1.2 A total of 10 tags deployed on southern right whales and associated</p>	<p>1.1 & 1.2 Photographs and dates of tag deployments; Copies of travel receipts; Links to real-time tracking data on project website.</p> <p>1.3 Copies of metadata and GIS layers available from FC, and all data</p>	<p>Tags will be successfully deployed on whales and will operate correctly to transmit data. Mitigation: use of experienced tag personnel; proven abundance of whales in the Falklands</p>

Project summary	SMART Indicators	Means of verification	Important Assumptions
	<p>metadata recorded over two field periods in Jun-Aug of 2022 and 2023.</p> <p>1.3 Whale sighting data collected in the field during 2022, 2023 and 2024 fieldwork periods and analysed with existing visual datasets and telemetry data to compile spatio-temporal GIS layers for both species by project completion.</p> <p>1.4 A winter aerial survey conducted for southern right whales by 31 August 2024.</p> <p>1.5 A pilot unmanned aerial vehicle (UAV) study carried out on southern right whales by 31 August 2023.</p> <p>1.6 An assessment of the occurrence of the southern right whale in the Falkland Islands against global KBA criteria is completed by project completion including GIS layer of a potential site.</p> <p>1.7 An assessment of the fine-scale movements of sei whales around the Falklands in relation to their potential management via protected sites (especially with respect to any occurrence shown beyond the boundaries of the proposed Falkland Islands Shelf Waters KBA) is completed by project completion.</p> <p>1.8 An assessment of region-wide movements of southern right whales is carried out by telemetry (by June 2024) and photo-identification matching with South Georgia (by Dec 2022).</p>	<p>summarised in project Technical Report (available to download).</p> <p>1.4 Copy of aircraft charter receipts, project Technical Report (available to download).</p> <p>1.5 Photographs of UAV work; Copies of travel receipts; Analysis included in final project Technical Report (available to download).</p> <p>1.6 Copy of KBA assessment report, and copy of email correspondence with KBA regional representative.</p> <p>1.7 and 1.8 Assessments included in the project Technical Report (available to download).</p>	<p>including successful biopsy work on both species.</p> <p>Tags will remain attached for sufficiently long duration to provide the intended data on movements and migration routes. Mitigation: use of experienced tag personnel; choice of appropriate tag type for each species.</p> <p>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. Mitigation: purchase of a suitable platform is included in the project budget; number of fieldwork days based on previous experience of weather at the site(s).</p>

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>Output 2</p> <p>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).</p>	<p>2.1 All existing catalogue entries for sei and southern right whales in the Falkland Islands (2017–2020) are ranked separately for image quality and individual animal distinctiveness by Jan 2022.</p> <p>2.2 An evaluation is completed by Jan 2022 of the suitability of existing datasets (and of the expected 2022/2023 data) to carry out a robust mark-recapture abundance analysis.</p> <p>2.3 Falkland Islands catalogues of both species are expanded by at least 50 animals respectively, using photo-identification collected alongside telemetry boat surveys during 2022 and 2023.</p> <p>2.4 A mark-recapture analysis is completed for sei whales for at least one site of highest anthropogenic overlap (Berkeley Sound) by project completion.</p>	<p>2.1 Copy of spreadsheet containing all image quality and distinctiveness values for catalogued animals.</p> <p>2.2 Copy of report detailing the evaluation.</p> <p>2.3 Copies of photo-identification catalogues for both species for the 2022/2023 field seasons.</p> <p>2.4 Mark-recapture methods and resulting abundance estimate, and details of site fidelity, will be presented in the final project Technical Report (available to download) in a protected area context.</p>	<p>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. Mitigation: Unknown factor, but mark-recapture analysis is planned for FC's longest running site and largest photo-identification dataset to optimise the likelihood of success.</p>
<p>Output 3</p> <p>A draft evidence-based Species Action Plan is produced for endangered sei whales in Falklands' waters and recommended to FIG.</p>	<p>3.1 Species Action Plan (SAP) scope and criteria established via a meeting/workshop with relevant FIG personnel by May 2022.</p> <p>3.2 Draft SAP completed for sei whales and disseminated for FIG/stakeholder review by Aug 2024.</p> <p>3.3 SAP finalised and recommended to FIG by project completion.</p>	<p>3.1 Copy of minutes from FIG meeting.</p> <p>3.2 Copy of draft SAP and review feedback.</p> <p>3.3 Copy of final SAP submission and recommendations.</p>	<p>Sufficient data exist on species occurrence and threats to develop a robust SAP. Mitigation: Unknown factor, but sei whales have the largest available dataset on which to optimise the likelihood of success of an AP.</p>
<p>Output 4</p> <p>Awareness of whales, and support for their conservation and management, is</p>	<p>4.1 Web page showing real-time whale tracks receives >500 local and</p>	<p>4.1 Copy of web analytics showing visitor hits.</p>	<p>Tag-related outputs (e.g. whale track web page) are dependent on tags being deployed on whales and transmitting successfully. Mitigation: use of</p>

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>increased within local and international communities via dissemination of research outputs.</p>	<p>international visits by project completion (Sep 2024).</p> <p>4.2 At least 25% of children from one school in Stanley have been engaged in the whale project by Sep 2023.</p> <p>4.3 At least 50% of the local community of ~3,000 people is informed of the project goals and results (twice) by Dec 2022 and Dec 2023 respectively.</p> <p>4.4 An average of over 1,000 people are shown to engage with the project social media page posts between Jan 2022 and Sep 2023.</p> <p>4.5 Over 1,000 international scientists are aware of the project and its key findings for whale management via at least one scientific publication (by Jun 2024).</p> <p>4.6 Images of all whales (total number unknown at this stage) taken during the project fieldwork and classified as 'highly distinctive' individuals will be shared to the HappyWhale website by Dec 2022 and Dec 2023 respectively to generate interest among the public and expedition leaders.</p> <p>4.7 Project updates and the final Technical Report are disseminated to local community stakeholders including industry representatives on a bi-annual basis in 2022 and 2023, with a final update at completion of the project in September 2024.</p>	<p>4.2 Copies of whale naming competition entries and outreach work photographs including whale boat trip (aimed at equal gender opportunity).</p> <p>4.3 Copies of media outputs, including newspaper articles, copies of presentations and photographs, and a copy of educational poster/leaflet.</p> <p>4.4 Copies of web analytics showing engagement figures.</p> <p>4.5 Copies of draft manuscript(s)</p> <p>4.6 Availability of images on HappyWhale website (link provided).</p> <p>4.7 Copies of stakeholder updates and circulation list.</p>	<p>experienced tag personnel; choice of appropriate tag type for each species.</p> <p>Improved knowledge and awareness leads to increased support for the conservation and management of whales.</p>

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>Activities</p> <p><u>Output 1.</u></p> <p>1.1 Recruit personnel, acquire relevant work permits, and make travel arrangements ahead of field seasons.</p> <p>1.2 Ensure relevant research permits are in place for small boat, UAV and telemetry work.</p> <p>1.3 produce risk assessment for small boat, aerial, UAV and telemetry work.</p> <p>1.4 Complete list of project equipment requirements and ensure equipment is ordered and shipped in advance of fieldwork seasons. Produce equipment inventories on completion of field seasons.</p> <p>1.5 Plan and execute small boat survey work at suitable sites in the Falkland Islands and around key considerations of platform availability, weather, and logistical constraints.</p> <p>1.6 Plan and execute aerial survey, including transect survey design, equipment and aircraft availability planning.</p> <p>1.7 Plan and execute UAV pilot study, including equipment and travel for personnel.</p> <p>1.8 Develop and maintain spreadsheets of effort and sighting databases, photo-identification catalogues/databases, and QGIS mapping layers.</p> <p>1.9 Produce a Technical Report that assesses southern right whale data against the global KBA criteria, and if sufficient to support and application then circulate to decision-makers, stakeholders and the IUCN KBA partnership for consultation.</p> <p>1.10 Conduct a photographic comparison using side-on images of southern right whales taken during boat surveys in the Falkland Islands and South Georgia (the latter dataset managed by BAS).</p> <p>1.11 Produce a final project Technical Report with relevant project partners, to include details of telemetry work, aerial abundance estimate, photo-identification and mark-recapture results, distribution maps, and recommendations for developing protected areas and related management.</p> <p><u>Output 2.</u></p> <p>2.1 Standardised protocols for assigning criteria for image quality and animal distinctiveness are developed for sei whales (dorsal fin and flank) and southern right whales (side-on head images) respectively.</p> <p>2.2 Photo-identification images are collected during all boat-based surveys in 2022 and 2023 alongside the telemetry deployment work and on days when tag deployments are not possible.</p> <p>2.3 Photo-identification images from each boat survey in 2022 and 2023 are assigned to individual animals. Each individual is cross-checked with other whales from within the same year, and if new then it is entered into the catalogue for that year.</p> <p>2.4 Matching of individual animals from 2022 and 2023 is carried out with existing catalogues from 2017–2020. Mark-recapture analysis completed.</p> <p><u>Output 3.</u></p> <p>3.1 Organise meeting with FIG personnel in person or via Skype to define the scope and criteria of a FIG-adopted AP for a cetacean species.</p>			

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>3.2 Compile relevant information on the occurrence and status of sei whales in the Falkland Islands, including distribution maps, abundance, and threats, and produce a draft AP.</p> <p>3.3 Establish a list of key stakeholders to provide feedback on the draft AP.</p> <p><u>Output 4.</u></p> <p>4.1 A web page is developed (and publicised) that allows viewers to see the real-time tag locations of all sei whales and right whales that are tagged during the project.</p> <p>4.2 Materials are developed for school engagement with the telemetry project including developing a naming competition for the tagged whales.</p> <p>4.3 A school or Watch Group boat trip is organised to take children to see whales with educational commentary.</p> <p>4.4 Engage in local outreach, including publishing both Penguin News and FC magazine articles in 2022 and 2023, a public talk in Stanley by the whale tag expert, and (at least) bi-monthly social media updates over the field seasons.</p> <p>4.5 Establish list of local stakeholders and steering group members to whom project updates should be disseminated.</p> <p>4.6 An educational poster and/or leaflet is produced on sei whales and southern right whales and distributed to the school, tourist board, whale-watch launches and other key community recipients.</p> <p>4.7 Write and submit an IWC paper on tagging outputs by project completion.</p>			

Annex 3: Standard Indicators

Table 1 Project Standard Indicators

DPLUS Indicator number	Name of indicator	Units	Disaggregation	Yr 1 Total	Yr 2 Total	Yr 3 Total	Yr 4 Total	Total to date	Total planned during the project
DPLUS-A01	Number of staff and volunteers from Falklands Conservation who attended training on (1) satellite tag deployment; and (2) aerial survey data collection.	People	None	0	0	3	–	3	3
DPLUS-A03	Number of local organisations with improved cetacean capacity.	Number of organisations	None	0	0	1	–	1	1
DPLUS-A07	FIG Environment Department having increased understanding of cetacean biodiversity in Falklands waters and management implications	Government institutions	Govt. Organisation Type	0	0	0	–	0	1
DPLUS-B02	Number of draft Species Action Plans produced	Number	Species	0	0	0	–	0	1
DPLUS-B11	Number of Key Biodiversity Area and/or Important Marine Mammal Areas delineated and proposed	Area	Habitat	0	0	3	–	3	3
DPLUS-C01	Number of Technical Reports produced on cetacean datasets as evidence for marine management	Number	Knowledge	0	0	0	–	0	2
DPLUS-C07	Number of EIAs, mitigation plans or other consultations in the Falklands that cetacean data collected during DPLUS126 have been used to inform	Number	National	0	1	0	–	1	2
DPLUS-C08	Number of Key Biodiversity Area and/or Important Marine Mammal Areas delineated and proposed	Area	Habitat	0	0	3	–	3	3
DPLUS-C12	Number of engagements with the Falkland Islands Whale Project page on Facebook	Number of reaches per post	Metric	>1000 reaches	>1000 reaches	>1000 reaches	–	>1000 reaches	Average of 1000 reaches per post

DPLUS Indicator number	Name of indicator	Units	Disaggregation	Yr 1 Total	Yr 2 Total	Yr 3 Total	Yr 4 Total	Total to date	Total planned during the project
DPLUS-C15	Number of Penguin News articles, FC magazine articles, talks, Radio interviews, TV interviews, and international media articles that specifically relate to DPLUS126.	Number		2	8	6	–	18	5
DPLUS-C17	Number of unique papers submitted to peer reviewed journals	Number	Journal	0	2	0	–	2	1
DPLUS-C18	Number of papers published in peer reviewed journals	Number	Journal	0	0	3	–	3	1
DPLUS-C19	Number of other publications produced	Number	IWC paper	0	0	1	–	1	1

Table 2 Publications

Title	Type (e.g. journals, best practice manual, blog post, online videos, podcasts, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
A deep learning approach to photo-identification demonstrates high performance on two dozen cetacean species	Journal	Patton et al. (2023)	Male	USA	Methods in Ecology and Evolution	https://doi.org/10.1111/2041-210X.14167
Swimming across the pond: First documented transatlantic crossing of a female southern right whale	Journal	Vermeulen, E., Germishuizen, M., Kennedy, A., Wilkinson, C, Weir, C.R., and Zerbini, A. (2024)	Female	South African	Marine Mammal Science	https://doi.org/10.1111/mms.13071

Title	Type (e.g. journals, best practice manual, blog post, online videos, podcasts, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Peale's dolphins (<i>Lagenorhynchus australis</i>) are acoustic mergers between dolphins and porpoises	Journal	Martin, M.J., Torres Ortiz, S., Wahlberg, M. and Weir, C.R. (2024).	Female	USA	Journal of Experimental Marine Biology and Ecology	https://doi.org/10.1016/j.jembe.2023.151977
Movements and dive behaviour of southern right whales (<i>Eubalaena australis</i>) satellite tagged in the Falkland Islands during 2022	Journal	Weir, C.R. et al. (2024)	Female	UK	International Whaling Commission	Will be available online after the 2024 IWC meeting in Apr/May 2024. Also provided in Annex 4.2 to AR3.
Right whale aerial surveys, winter 2023	Manual	Weir, C.R. (2023)	Female	UK	Falklands Conservation, Stanley	Available from Falklands Conservation, Jubilee Villas, Ross Road, Stanley, Falkland Islands. Also provided as Annex 5.3 to AR3.

Supplementary material

Evidence for the progression of DPLUS126 is provided in the following additional supplementary Annexes:

Annex 4: Evidence to support progress against the Project Outcome.

Annex 5: Evidence to support progress against Output 1: Data on whale distribution and movements are collected and used to identify and assess national and global key sites.

Annex 6: Factsheets produced for the final Important Marine Mammal Areas.

Annex 7: Evidence to support progress against 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).

Annex 8: Evidence to support progress against Output 4: Awareness of whales, and support for their conservation and management, is increased within local and international communities via dissemination of research outputs.

Annex 9: Photos provided for Section 15.

All of these Annexes are provided in a Dropbox folder at the following link:



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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
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