
DPR12S2\1008

Creating a sustainable framework for monitoring whales at South Georgia

This project helps the UKOT government take management actions to improve environmental quality for recovering whales in South Georgia (SG) waters. The project will: (i) build a sustainable framework for long-term monitoring of whales at South Georgia (focused in high vessel-traffic areas) using acoustic detections and data-gathering partnerships to measure inter-annual whale density patterns; (ii) provide management guidance to minimise impacts from vessels (collision risk and underwater noise) in key whale habitats; (iii) identify environmental drivers influencing whale densities.

PRIMARY APPLICANT DETAILS

Title Dr
Name Jennifer
Surname Jackson
Organisation British Antarctic Survey
Website (Work) [REDACTED]
Tel (Mobile) [REDACTED]
Email (Work) [REDACTED]
Address [REDACTED]
[REDACTED]
[REDACTED]

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Section 1 - Contact Details

PRIMARY APPLICANT DETAILS

Title	Dr
Name	Jennifer
Surname	Jackson
Organisation	British Antarctic Survey
Website (Work)	[REDACTED]
Tel (Mobile)	[REDACTED]
Email (Work)	[REDACTED]
Address	[REDACTED]

GMS ORGANISATION

Type	Organisation
Name	British Antarctic Survey
Phone (Work)	[REDACTED]
Email (Work)	[REDACTED]
Address	[REDACTED]

Section 2 - Title & Summary


Q3. Title:


Creating a sustainable framework for monitoring whales at South Georgia


What was your Stage 1 reference number? e.g. DPR12S1\1123

DPR12S1\1055

Please attach a cover letter as a PDF document.

 [Sustmon covering letter v3](#)

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Q4. Summary of project

Please provide a brief non-technical summary of your project: the problem/need it is trying to address, its aims, and the key activities you plan on undertaking.

Successful Darwin Plus Main projects must demonstrate substantial measurable outcomes in at least one of the themes of Darwin Plus either by the end of the project's implementation or via evidenced mechanisms for post-project delivery.

Preference will be given to discrete projects implementing existing identified environmental solutions on the ground.

The broad themes of Darwin Plus Main are:

- **Biodiversity:** improving and conserving biodiversity, and slowing or reversing biodiversity loss and degradation;
- **Climate change:** responding to, mitigating and adapting to climate change and its effects on the natural environment and local communities;
- **Environmental quality:** improving the condition and protection of the natural environment;
- **Capability and capacity building:** enhancing the capacity within UKOTs to support the environment in the short- and long-term.

This project helps the UKOT government take management actions to improve environmental quality for recovering whales in South Georgia (SG) waters. The project will: (i) build a sustainable framework for long-term monitoring of whales at South Georgia (focused in high vessel-traffic areas) using acoustic detections and data-gathering partnerships to measure inter-annual whale density patterns; (ii) provide management guidance to minimise impacts from vessels (collision risk and underwater noise) in key whale habitats; (iii) identify environmental drivers influencing whale densities.

Section 3 - UKOT(s), Dates & Budget Summary

Q5. UKOT(s)

Which UK Overseas Territory(ies) will your project be working in?

- South Georgia and The South Sandwich Islands (SGSSI)

* if you have indicated a territory group with an asterisk, please give detail on which territories you are working on here:

No Response

In addition to the UKOTs you have indicated, will your project directly benefit any other Territories or country(ies)?

- No

Q6. Project dates

Start date:

01 October 2024

End date:

31 March 2027

Duration (e.g. 2 years, 3 months):

2 years, 6 months

Q7. Budget summary

Year:	2024/25	2025/26	2026/27	Total request
Amount:	£59,830.00	£158,737.00	£185,333.00	£403,900.00

Q8. Do you have matched funding arrangements?

Yes

Please ensure you clearly outline your matched funding arrangement in the budget.

Q9. If you have a significant amount of unconfirmed matched funding, please clarify how you will fund the project if you don't manage to secure this?

Unconfirmed matched funding has been indicated by South Georgia Heritage Trust and Friends of South Georgia Island of [REDACTED] towards topside acoustic equipment for retrieving moorings. If this funding is not available, we will borrow this equipment from collaborators until we are able to secure our own equipment via a small grant.

Q10. Have you received, applied for or plan to apply for any other UK Government funding for the proposed project or similar?

No

Section 4 - Problem statement

Q11. Problem the project is trying to address

Please describe the problem your project is trying to address in the UKOTs, relating to at least one of the themes of Darwin Plus:

For example, what are the specific threats to the environment that the project will attempt to address? Why are they relevant, for whom? How did you identify the need for your project? Please cite the evidence you are using to support your assessment of the problem.

It was recently estimated that >30,000 whales visit SG in summer [1], making SG the highest-density UK hotspot for recovering whales, including critically-endangered Antarctic blue whales [2]. The majority are humpback

whales [1], currently the most abundant species at SG. Whale abundance has increased rapidly at SG in recent decades. However Antarctic blue and southern right whales remain far from recovery and substantial population increases are projected, doubling current numbers [3,4].

Because of their previous rarity, whales were not explicitly considered in SG's conservation management planning until recently. With rapid abundance increases there is an urgent need to explicitly consider them in future management. This project investigates the main vulnerabilities that may influence whale recovery at SG: vessel-strikes, underwater noise and climate change, and provides conservation management guidance to mitigate their impact.

Globally, whale population growth is at risk from strikes caused by increasing vessel traffic. Strikes caused by large vessels can go largely unnoticed or unreported so best practice is to estimate risk rather than measuring it with observed incidents [5]. Areas of dense ship traffic around SG were recently assessed to be a high ship-strike risk, particularly in summer (IWC Strategic Plan to Mitigate the Impacts of Ship Strikes on Cetacean Populations [6]). While overall vessel traffic is relatively low, high strike risk occurs where high densities of whales overlap with vessel traffic in a concentrated area. Analysis of SG whale density and ship-speeds estimated potential lethal ship-strikes from vessels in summer 2020, assuming no vessel or whale avoidance, at 28 humpbacks and 1.5 Antarctic blue whales annually [7]. These findings highlight the importance of SG for whales, and vulnerability of recovering populations to vessel impacts. In addition, underwater noise at vessel hotspots can disrupt whale communication (acoustic-masking) and foraging behaviour [8]. However, there is currently no capacity for GSGSSI to monitor whale occurrence, acoustic disturbance or ship-strike risk at SG [9].

Southwest Atlantic whale population dynamics have been linked to krill occurrence and high-latitude global climate signals [10,11,12] but the influence of climate on SG whale abundance and distribution has not been investigated. In contrast population dynamics and climate drivers of other krill-predators at SG are well studied [13,14]. We will compare population trajectories and diet variation of other krill predators, notably consumption of krill, together with physical environment indices, with multi-annual whale occurrence to understand the relationship between whale occurrence and climate at SG.

This project creates a sustainable framework for GSGSSI to monitor multi-season whale occurrence in relation to shipping, climate-change and other environmental indices in the SG MPA, by:

- Producing annual estimates of summer whale density (a density index);
- Monitoring year-round whale occurrence, vessel traffic, underwater noise and acoustic-masking using passive acoustic monitoring (PAM) in Cumberland Bay;
- Developing risk-reduction protocols relating to ship-speed and noise regulations, to improve environmental quality in important whale habitats, summarised in a SG Baleen whale Action Plan;
- Identifying environmental drivers of whale occurrence for potential GSGSSI and CCAMLR management action in relation to quota-setting for the krill fishery.

Section 5 - Environmental Conventions, Treaties and Agreements

Q12. Environmental Conventions, Treaties and Agreements

Please detail how your project will contribute to the aims of the national and/or international agreement(s) your project is targeting. What key UKOT Government priorities and themes will it address and how? You should also consider local, territory specific agreements and action plans here. Letters of support from UKOT Government partners/stakeholders should also make clear reference to the agreements/action plans your project is contributing towards.

This project closely aligns with GSGSSI's guiding values of environmental protection, evidence-based decision making and sustainability. Linking whale abundance to climate-related environmental indices, this project

addresses GSGSSI stewardship Marine Protection priority: “How are ocean ecosystems around SGSSI changing in response to multiple pressures from climate change and what are the implications for conservation and sustainable management of the marine protected area?”. The project also supports the GSGSSI MPA Objective to “conserve and protect the inshore foraging areas of marine predators” and addresses their high-priority research requirement to obtain population abundance and distribution data for cetaceans. Research on cetacean abundance, distribution and recovery has been identified as a key research need within the MPA Research and Monitoring Plan. Baleen whales are also priority species’ under the UK Biodiversity Action Plan.

SG was recently designated as an Important Marine Mammal Area by the IUCN*, formally recognizing this as an important area for marine mammals which may merit place-based protection and/or monitoring. This project will strengthen this designation by instigating a long-term monitoring scheme for cetaceans as well as developing explicit policies protecting cetaceans using SG waters. The project will also strengthen the recent designation of SG as a Key Biodiversity Area**.

Reducing ship-strike risk addresses stated concerns by the International Whaling Commission, which has identified SG as a high-risk area for ship strikes. IAATO submits whale-strike reports to the IWC, but this is not currently required of other visiting vessels.

Multi-year whale density estimates can be used in the upcoming CCAMLR Krill Risk Assessment (Subarea 48.3) in 2024-2026 as well as for the GSGSSI monitoring MPA efficacy in their 5-year reviews.

*<https://www.marinemammalhabitat.org/portfolio-item/scotia-arc/>

** <https://www.keybiodiversityareas.org/site/factsheet/47229>

Section 6 - Method, Project Stakeholders, Gender, Change Expected, Pathway to Change & Exit Strategy

Q13. Methodology

Describe the methods and approach you will use to achieve your intended Outcome and contribute towards your Impact. Provide information on:

- how you reflected on and incorporated **evidence and lessons learnt** from past and present similar activities and projects in the design of this project.
- the specific approach you are using, supported by **evidence** that it will be effective, and **justifying why you expect it will be successful** in this context.
- how you will undertake the work (activities, materials and methods).
- how the **main activities** will be and where these will take place.
- how you will **manage the work** (governance, roles and responsibilities, project management tools, risks etc.).

Project design

-DPLUS057 estimated high whale densities at SG [1] and identified high ship-strike risk [5]. SG is listed as a high-risk area where mitigation measures should be considered (IWC Strategic Plan to Mitigate the Impacts of Ship Strikes on Cetacean Populations [7]).

-Recent surveys (DPLUS149) suggest SG is also a significant winter habitat for whales, motivating the need for year-round monitoring in areas of concentrated whales and ship-traffic (summer expedition vessels, winter fishery vessels). PAM is the most practical, low-footprint approach.

-In the absence of re-routing options, speed-reductions have been identified as the most effective measure to reduce ship-strike risk [15]. While alternative approaches such as visual detection may possibly help vessels

avoid ship-strikes, this is very challenging to implement in SG weather conditions; reduced speeds have additional environmental benefits with reduced GHG emissions and underwater-noise. Speed-reduction measures have been adopted by IAATO around the Antarctic Peninsula* to reduce ship-strike risk, providing a roadmap for similar measures at SG.

- ORCA have extensive experience using citizen-science to generate high-quality, multi-year cetacean sightings for management [e.g.,16,17]. A recent Antarctic study used cruise-ship sighting-rates, similar to those at SG, to estimate whale density trends, demonstrating the approach feasibility [18]. ORCA has already secured cruise-ship agreements required to deliver this project at SG.

- Long-term deployment of small-scale arrays of hydrophones can be used to assess noise pollution impacts, such as auditory-masking [19], and assess success of management actions such as vessel slowdowns to reduce collision risks [20,21]. PAM allows long-term monitoring during times when visual surveys are unsuitable (e.g., winter), and assessment of how noise may impact populations, informing management and mitigations [22,23]. Project partners responsible for delivery of each output are indicated, with overall management coordinated by Martin.

WP1:Measuring whale densities and population drivers

- A whale survey protocol will be devised for experienced observers deployed on cruise ships visiting SG (~4 expeditions during November-March 2024/25 and 2025/26, Babey/Leaper).

- A spatial-modelling approach will be used to combine data from dedicated surveys covering larger spatial areas [1,5] with sightings data from cruise ships, deriving a summer whale density index (Leaper).

- A density measurement and reporting system will be developed (Leaper/Babey/GSGSSI), providing a long-term annual density-index to GSGSSI which will be provided to the CCAMLR krill risk assessment.

- Systematic land-based point counts will be undertaken at Bird Island (west SG) to develop localised understanding of cetacean occurrence in this area (Bennison).

- Whale density estimates from all surveys [1,2] will be used to investigate inter-annual relationships with krill biomass, climate indices and other krill-predators (Forcada).

WP2:PAM of a high-traffic area

- Three passive acoustic moorings (containing 5 SoundTraps) will be deployed from March 2024 in Cumberland Bay (two interior, one at the entrance). Moorings will be deployed by GSGSSI Fishery Vessels, with servicing and data-retrieval every 6 months by BAS scientists at SG. SoundTraps will identify and locate vocalising whales and vessel traffic, providing relative measurements of underwater sound levels (Jackson/Collins).

- Whale detections will be used to develop automated acoustic detectors for locally-common species, enabling long-term low-cost monitoring of Cumberland Bay whales in relation to underwater noise (Calderan/Risch).

- Masking occurs when noise interferes with an animals' ability to perceive sounds and can disrupt communication and foraging. Acoustic data will be used to evaluate levels of acoustic masking for humpback, Antarctic blue and southern right whales around Cumberland Bay and recommend mitigations (e.g. vessel speeds, numbers) if strong levels of masking are identified (Calderan/Risch).

WP3:Mitigation and compliance

- Ship-speed (Automatic Identification System, AIS) data will be reviewed to measure vessel compliance with ship-speed reductions and compared with whale densities to assess overall ship-strike risk and effectiveness of existing speed-reduction measures in summer and winter. Comparison between AIS data [2], underwater-noise and estimates of whale density along main vessel routes will allow quantitative estimates of reduction in ship-strike risk and sound exposure achieved by mitigation measures (Leaper).

- Risk-reduction levels and actions will be agreed with GSGSSI (e.g. <50% risk-reduction from 2019/20 base-case). Scenarios may include vessel slowing, re-routing, local limits on vessel numbers or types. Risks will be annually reviewed at a multi-stakeholder workshop.

Martin, project partners and stakeholders will develop a SG Baleen Whale Action Plan, combining baseline whale occurrence and densities from DPLUS057 and DPLUS149 with risks identified and proposed mitigations.

Public engagement

Happywhale will enhance outreach materials to engage the public and tourists about whale recovery and encourage citizen-science activities at SG (whale sighting reporting, photo-ID). Citizen-science activities will be promoted by ORCA's expedition team, and on IAATO expedition vessels via Polar Citizen Science Collective (Cheeseman/Lynnes/Jones).

*<https://iaato.org/blog/were-slowng-down-for-whales-heres-why/>

Q14. Project Stakeholders

Who are the stakeholders for this project and how have they been consulted (include local or host government support/engagement where relevant)? Briefly describe what support they will provide and how the project will engage with them

-GSGSSI helped to develop this project and are project partners. Their positive engagement with the ship-strike issue is evidenced by them already implementing an advisory speed-limit for vessels using SG shelf waters from 2022/23. They will provide ship support for biannual retrieval of Cumberland Bay moorings for servicing. The project will deliver the GSGSSI: (1) annual whale density measures to support MPA biodiversity monitoring; (2) annual reports on ship-strike risk and vessel-speeds, supporting GSGSSI decision-making in relation to agreed risk-reduction scenarios, and aligning with its MPA research priorities (Q11).

-IAATO represent the biggest source of SG vessel traffic and will participate in ship-strike risk discussions. IAATO have a positive track record on this topic, having previously implemented speed restrictions on the Antarctic Peninsula. The project will enhance engagement materials targeted at SG visitors, encouraging reporting of sightings and photo-ID collection. Project outcomes will be reported regularly to IAATO members and field staff, including at IAATO's annual meeting. Fishery representatives including the Association of Responsible Krill Harvesting companies will also be invited to engage via annual stakeholder meetings.

-The IWC has expressed concern over ship-strike risks at SG. Project partner Leaper is a Scientific Committee sub-committee chair (Human-Induced Mortality) so is well placed to report project outcomes to the Scientific Committee and to respond to further IWC recommendations.

-CCAMLR are planning to conduct a krill risk assessment in SG waters (Area 48.3). The project will generate whale density data supporting this assessment, and will report this via UK CCAMLR lead scientist Collins.

Q15. Gender equality and social inclusion

All applicants must consider whether and how their project will contribute to promoting equality between persons of different gender and social characteristics. Explain your understanding of how individuals may be excluded from equal participation within the context of your project, and how you seek to address this. You should consider how your project will proactively contribute to ensuring individuals achieve equitable outcomes and how you will engage participants in a meaningful way.

BAS is committed to creating a workplace that is fair and inclusive and welcomes diversity, with a strong commitment to Equality, Diversity and Inclusion (<https://www.bas.ac.uk/jobs/working-for-bas/our-cultural-values-equality-and-diversity/>). Since 2015, BAS has been a member of the Athena Swan Charter and is proud to hold an Athena Swan Silver Award.

Marine mammal observers working with ORCA are majority female (85%); ORCA has an Equal Opportunities policy to treat all employees and job applicants fairly and equally regardless of gender and other aspects of social inclusion.

Project partner decisions are based on expertise and the project team is very balanced in terms of gender diversity and includes a number of female scientists, including the PI (Jackson, Calderan, Gregory, Risch, Babey, Gregory, Lynnes, Martin). We will rotate meeting times to accommodate partners in different time zones

BAS is a member of the ENEI ("Employers Network for Equality and Inclusion) network. We will use inclusive communications that consider audience diversity, cultural differences and accessibility on the project website, social media posts, in workshops and meetings. During all meetings to establish equal participation, other inclusive techniques including acknowledging contributions, inviting feedback and asking open-ended questions will be used. We will encourage all stakeholders to use inclusive communications in their project work.

Q16. Change expected

Detail the expected changes this work will deliver. You should identify what will change and who will benefit a) in the short-term (i.e. during the life of the project) and b) in the long-term (after the project has ended). Please describe the changes for the environment and, where relevant, for people in the OTs, and how they are linked.

When talking about how people will benefit, please remember to give details of who will benefit, differences in benefits by gender or other layers of diversity within stakeholders, and the number of beneficiaries expected. The number of communities is insufficient detail - number of households should be the largest unit used.

Currently, SG has no whale monitoring framework, despite their high numbers and potential for lethal ship-strikes by a growing number of visiting vessels.

Short-term, we will:

- Develop an annual whale density index using sightings from cruise ships.
- Develop an annual whale sighting index using land-based observers at Bird Island, SG.
- Create new and enhance existing outreach materials with Happywhale, working with IAATO, ORCA and the Polar Citizen Science Collective to strengthen citizen-science engagement with SG whales (identifying species, collecting photo-ID).
- Use multi-year whale density index to investigate correlations with climate indices and other krill predators, and investigate whale sensitivity to measurable indicators of environmental change.
- Add a whale strike reporting procedure to GSGSSI's vessel operation requirements.
- Develop acoustic detectors to automatically identify whale species using SG waters year-round.
- Recommend mitigations for underwater noise levels around Cumberland Bay, if significant acoustic masking or potential for disturbance is identified.
- Work with GSGSSI to develop a Baleen Whale Action Plan for SG whales, including best-practice management recommendations to minimize threats to recovering whales using results above.

Long-term, we will:

- Create a framework whereby vessels routinely take whale observers onboard to generate sightings data, in partnership with stakeholders including ORCA, IAATO, and GSGSSI, delivering a density index for MPA monitoring, identifying whale population changes, abundance hotspots and climate impacts. BAS will support long-term analysis of these data through their Ecosystems program; ORCA have a strong track-record of delivering long-term sightings data through cruise ship partnerships (at no cost to GSGSSI).
- Create a monitoring framework combining the density index with vessel speed monitoring via AIS, to rapidly assess ship-strike risk so GSGSSI can take precautionary actions where necessary. Work to be conducted by GSGSSI with support from BAS, ORCA, IAATO and IFAW.
- BAS and GSGSSI will continue supporting moorings in Cumberland Bay and whale sighting efforts on Bird Island after project close.

Q17. Pathway to change

Please outline your project's expected pathway to change. This should be an overview of the overall project logic and outline why and how you expect your Outputs to contribute towards your overall Outcome and, in the longer term, your expected Impact.

This project addresses an urgent issue, which is a rapidly increasing number of whales, some of which are critically endangered, at a site where they were relatively uncommon until recently. Hence there was no framework in place for monitoring their numbers, and as SG is a site of increasing vessel traffic, there is strong potential for lethal injury and sublethal effects arising from injury or behavioural disturbance.

Monitoring whales with dedicated line-transect surveys is crucial to understand broader habitat-use patterns, but too costly to be regularly practical at SG. This project aims to address the challenge by creating a long-term sightings and acoustic-based whale monitoring framework which delivers interannually comparable density estimates, is sustainable through stakeholder engagement, and of minimal cost to maintain. Project partners include international experts in these approaches, combined with cruise industry stakeholders and GSGSSI officers to ensure results feed directly into management.

The project will work with GSGSSI to enhance management guidance on vessel behaviour, to address risks to whales from increasing vessel traffic. This will be done through regular engagement with project stakeholders via virtual meetings, periodic workshops with multiple stakeholders including industry experts, and will produce a SG baleen whale action plan (BAP).

Q18. Sustainable benefits

How will the project reach a sustainable point and continue to deliver benefits post-funding? Will the activities require funding and support from other sources, or will they be mainstreamed in to "business as usual"? How will the required knowledge and skills remain available to sustain the benefits? If relevant, how will your approach be scaled? How will you ensure your data and evidence will be accessible to others?

-The project aims to develop a "business as usual" framework for whale monitoring at SG, through long-term collaborations between BAS, GSGSSI, ORCA and IAATO vessels to collect high-quality sightings data, underpinned by self-sustaining partnerships between ORCA and the cruise-ship industry (offering berths to observers), and passive acoustic monitoring of whale sounds at Cumberland Bay.

-Providing whale density estimates will require a small annual cost in terms of personnel time, which we anticipate to mainstream within BAS core work in future.

-Acoustic monitoring will also have a small annual personnel cost which we anticipate covering through support from SAMS and local grants. The acoustic recorders used in this project, SoundTraps, are commonly used worldwide to deliver long-term, low-cost monitoring programmes similar to that which is proposed here. As such the hardware, software, and analysis protocols are known to be well-suited to providing and processing consistent data over long periods. Moorings are anticipated to last ~10 years, with periodic parts replacement achieved through small grants.





-SG waters have been included in the list of High Risk Areas in the International Whaling Commission's Ship Strike Strategic Plan. This facilitates a regular situation review by the IWC and encourages funding for updated analyses. Project Partner IFAW has indicated that they anticipate providing ongoing support to this analysis. New ship-strike reporting requirements will be part of long-term GSGSSI strategy for monitoring whale-human interactions in its MPA.

-Project datasets will be made publicly available through ORCA website, GSGSSI data portal and BAS Polar Data Centre.

-The final workshop will plan for the following ten years of monitoring and agree the best approach to continue whale-strike reporting.

-Enhanced citizen-science engagement will provide long-term (sightings and photo-ID) data and learning opportunities. This aligns with GSGSSI's priority to facilitate sustainable visits and inspire SG ambassadors.

If necessary, please provide supporting documentation e.g. maps, diagrams, references etc., as a PDF using the File Upload below:

-  [References sustmon 270923](#)
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Section 7 - Risk Management

Q19. Risk Management

Please outline the 6 key risks to achievement of your Project Outcome and how these risks will be managed and mitigated, referring to the Risk Guidance. This should include at least one Fiduciary, one Safeguarding, and one Delivery Chain Risk.

Risk Description	Impact	Prob.	Inherent Risk	Mitigation	Residual Risk
<p>Fiduciary (Financial)</p> <p>Misuse of funds for tasks or expenditures not related to Darwin Plus, or for personal gain by project funding beneficiaries. Corrupt procurement of goods or services from favoured parties not offering best value for money.</p>	Moderate	Rare	Minor	<p>BAS Finance Department will maintain oversight of expenditure and time-sheets, which will be subject to independent audit at the project close. BAS adheres to UKRI rules on open, competitive procurement.</p> <p>BAS partners will provide evidence of expenditure on their designated activities which will be submitted for audit at project close.</p>	Minor
<p>Safeguarding</p> <p>Discrimination, bullying and harassment by staff who are part of the project, or by colleagues from outside the project.</p>	Moderate	Rare	Minor	<p>The PI and Project Coordinator will be vigilant for safeguarding issues within BAS and across partner organisations through regular project meetings and 1:1 discussions. Any issues will be referred to BAS HR for further advice and action.</p>	Minor

<p>Delivery Chain</p>	<p>The advised level of ship-strike risk reductions may require significant enforcement and policy actions to be taken by GSGSSI (currently ship speed reduction measures are voluntary). Policy advice from project may not be taken up and conservation outcomes not realised.</p>	Moderate	Possible	Major	<p>Project-members provide high-calibre evidence at regular workshops, formalising recommendations in BAP. Regular communication with GSGSSI and IAATO throughout project provides multiple opportunities to review/agree mitigations and collective approach to compliance. We cannot guarantee recommendations are actioned, but recognise the imperative for this risk to be managed for these stakeholders</p>	Moderate
<p>Risk 4</p>	<p>Because expedition vessels follow similar, highly coastal routes along the South Georgia coast, the whale sightings data they collect may not deliver enough information to effectively measure whale density across the South Georgia shelf.</p>	Major	Likely	Major	<p>The coastal waters have highest ship-strike risk, so surveying this area is most important despite survey limitations. Sighting data will be enhanced using habitat-use models from broader SG surveys [1,2]. Opportunistic sightings from other areas by the GSGSSI Fishery Patrol Vessel will be used to supplement annual datasets.</p>	Moderate
<p>Risk 5</p>	<p>Failure or loss of PAM mooring equipment during deployment or retrieval, or adverse environmental conditions (e.g. iceberg presence) means that the underwater environment cannot be monitored at South Georgia.</p>	Moderate	Possible	Major	<p>Use of five PAM devices reduces negative impact of single-device failure, creating redundancy. BAS engineers extensively experienced with designing Southern Ocean moorings. Three-Soundtrap array is trialed ahead of deployment. KEP scientists provided detailed operating instructions plus close contact with acousticians. Moorings deployed to depths below typical keel-depths of SG icebergs.</p>	Minor

Risk 6	Pandemic and/or global economic crisis reduces visitor numbers to SG and expedition vessel availability (in terms of berth space) to support monitoring work	Moderate	Possible	Major	Impact unlikely to be immediate; expedition vessel numbers are increasing and SG is an in-demand location for visitors, many of whom are very wealthy. IAATO and ORCA will monitor uptake of ORCA personnel and review operational model at project close, suggest other adaptations in future if necessary.	Moderate
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Q20. Project sensitivities


Please indicate whether there are sensitivities associated with this project that need to be considered if details are published (detailed species location data that would increase threats, political sensitivities, prosecutions for illegal activities, security of staff etc.). Please note your response to this question won't influence the outcome of your application.

No


Section 8 - Workplan


Q21. Workplan


Provide a project workplan that shows the key milestones in project activities. Complete the Word template as appropriate to describe the intended workplan for your project.

 [BCF-Implementation-Timetable-2023-Sustmon v](#)

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Section 9 - Monitoring and Evaluation (M&E)

Q21. Monitoring and evaluation (M&E) plan

Describe how the progress of the project will be monitored and evaluated, making reference to who is responsible for the project's M&E.

Darwin Plus projects will need to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact.

Additionally, please indicate an approximate budget and level of effort (person days) to be spent on M&E (see Finance Guidance).

Project progress will be monitored with monthly meetings to which all project partners are invited, with annual partner and stakeholder meetings to review progress on overall goals.

Four workshops (group events involving industry experts or relevant stakeholders) will be held over the project period to receive feedback and progress key goals (see Logframe). These include two annual stakeholder and partner reviews of SG ship strike risk in July each year (2025, 2026), and one final in-person workshop (with hybrid attendance model) involving partners and stakeholders in August 2026 to summarise the progress made over the project period, discuss the Baleen Whale Action Plan, and agree a five-year plan for continuance of the visual and acoustic monitoring, and ship strike risk monitoring.

We will also schedule two annual consultation meetings with GSGSSI and JNCC to progress the Baleen Whale Action Plan over the project period.

Monitoring of tourist engagement with outreach material will be collected through page views on relevant websites (e.g. Happywhale), numbers of expedition vessels uptaking outreach material provided by the Polar Citizen Science Collective, and monitoring numbers of whale sighting reports and numbers of photo-IDs uploaded to Happywhale.





Project coordinator Stephanie Martin will minute project meetings, feed back relevant discussions to stakeholders, organise online and in-person workshops, and is responsible for M&E throughout the project (10% of time).

Total project budget for M&E (£)	[REDACTED]
(this may include Staff and Travel and Subsistence Costs)	
Total project budget for M&E (%)	5
Number of days planned for M&E	43

Section 10 - Logical Framework

Q23. Logical Framework (logframe)

Darwin Plus projects will be required to monitor and report against their progress towards their Outputs and Outcome. This section sets out the expected Outputs and Outcome of your project, how you will measure progress against these and how we can verify this.

-  [BCF-2023-St2-Logical-Framework-Template_Sust mon v5](#)
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Impact:

A long-term whale monitoring program at SG is used to reduce anthropogenic risk, leading to protection and conservation measures that enable full local recovery of baleen whale populations following whaling.

Outcome:

Long-term conservation outlook for recovering whales at South Georgia improved through a framework for monitoring whale numbers and identifying and managing lethal and sub-lethal risks to whales.

Project Outputs

Output 1:

Interannual whale density index at South Georgia, used to identify ship-strike risks and environmental drivers, sustained in the long-term by stakeholder partnerships

Output 2:

Year-round whale occurrence monitored at Cumberland Bay, providing measure of whale co-occurrence with vessel traffic.

Output 3:

GSGSSI ship strike risk reduction measures used to reduce and maintain estimated risk of whale strikes by >50% compared to 2019/20 baseline assessment.

Output 4:

Baleen whale Action Plan published for South Georgia.

Output 5:

Engage visitors to South Georgia and members of the public through whale related citizen science projects including whale sightings reporting and photo-ID collection.

Do you require more Output fields?

It is advised to have fewer than 6 Outputs since this level of detail can be provided at the Activity level.

No

Activities

Each activity is numbered according to the Output that it will contribute towards, for example, 1.1, 1.2, 1.3 are contributing to Output 1.

1.1.1 Agreements between ORCA and cruise ships to deploy ORCA observers onboard (prior to project start, November 2023).

1.1.2 ORCA marine mammal observers use Distance sampling protocols to collect whale sightings data in SG shelf waters (Dec-March) in 2024/25, 2025/26 and 2026/27.

1.1.3 Sightings data compiled by ORCA data manager and provided to PP Leaper for density analysis (April) in 2025, 2026 and 2027.

1.2.1 Land-based whale sighting protocol designed for Bird Island (Oct-Dec 2024)

1.2.2 Bird Island scientists implement whale sightings protocol and report sightings by season and species (Jan 2025 - Jan 2027)

1.2.3 Bird Island sightings data published on BAS website every six months (December and June)

1.3.1 A spatial modelling approach will be used to combine data from 2018/19 and 2019/20 surveys covering larger spatial areas, with the cruise ship sightings data to derive an overall whale density index (April-May) in 2025 and 2026.

1.3.2 Density index will be described in a report to the GSGSSI which will be published on the GSGSSI Data Portal (June 2025) and updated in June 2026 and annually thereafter.





- 1.3.3 Habitat use model will be reported in a paper to the IWC Scientific Committee (May 2026).
 - 1.3.4 Provide whale density data to Area 48.3 Krill Risk Assessment as data layers (May 2026).
 - 1.4.1 Whale density estimates from surveys in 2018/19, 2019/20, 2022/23, 2023/24, 2024/5 and 2025/26 will be used to investigate inter-annual interactions between whale occurrence and krill biomass, climate indices and other krill-predators at SG (Oct-Dec 2026).
 - 1.4.2 Report on correlates with whale density made to the IWC Scientific Committee Ecosystem Modelling Working Group (Jan-Mar 2027).
- 2.1.0 Five Soundtraps deployed on three moorings (one array of three Soundtraps and two single Soundtraps) in Cumberland Bay at ~2nm distance from one another. Deployment done by GSGSSI Fisheries Patrol Vessel in March 2024.
 - 2.1.1 Soundtraps start collecting acoustic data on baleen whales and ship noise on deployment. Batteries and memory cards changed every six months (June/December each year) by Fisheries Patrol Vessel with assistance from KEP scientists, and data hand-carried to UK on hard drives.
 - 2.1.2 Acoustic data from Soundtraps will be analysed to (i) identify and (ii) locate vocalising whales (January 2025 onwards)
 - 2.1.3 Seasonal occurrence of whales at Cumberland Bay over 18 months reported to IWC Scientific Committee (March 2027) and GSGSSI Data Portal.
 - 2.2.1 Relative levels of underwater sound will also be described for Cumberland Bay from winter 2024-2026 onwards (analysis conducted April-Sept 2025 and 2026)
 - 2.2.2 Summary report to GSGSSI of 18 months of whale sounds in relation to underwater noise including any relevant recommendations on managing anthropogenic underwater noise from shipping, published on GSGSSI Data Portal (February 2027).
- 3.1.1 High-resolution AIS data collated on vessel speeds at South Georgia (November 2024 onwards)
 - 3.1.2 Whale densities estimated under Activity 1.1.3 combined with Activity 3.1.1 to measure ship-strike risk along main vessel routes
 - 3.1.3 Annual ship strike risk compared with 2019/20 baseline risk to measure relative risk, and reported to GSGSSI (risk report available on GSGSSI website) (May 2025 and 2026)
 - 3.2.1 One-day virtual workshop with GSGSSI, project partners and stakeholders held to review annual ship strike risk and propose potential mitigations if necessary (July-Aug 2025, 2026).
 - 3.2.2 Workshop report available on BAS website and GSGSSI Data Portal (Sept 2025, 2026).
- 4.1.1 Baleen whale action plan structure agreed with GSGSSI and JNCC (April 2025) and annually reviewed as it develops.
 - 4.1.2 Baleen whale action plan drafted by project coordinator and circulated to stakeholders (May-July 2026).
 - 4.1.3 Draft Baleen whale action plan reviewed and finalised at meeting workshop (August 2026). This contains information about whale distribution, abundance, habitat use, threats and anthropogenic interactions in SG waters.
 - 4.2 Baleen whale action plan published on GSGSSI website (November 2026)
 - 4.3 Action plan elements incorporated into GSGSSI's MPA Research and Management Plan (February 2027).
- 5.1.1 Communications plan to coordinate outreach activities and outputs, including presenting the project at IAATO's annual meeting, agreed by the project team (October 2024)
 - 5.1.2 Communications plan published on BAS project website and updated quarterly (November 2024)
 - 5.2.1 Happywhale will enhance outreach materials provided to IAATO vessels, to encourage more visitor engagement with reporting whale sightings and photo-identifying cetaceans (October 2024-January 2025).
 - 5.2.2 A one-day virtual workshop will be held with Happywhale, IAATO, ORCA, PCSC and other relevant stakeholders to review proposed materials (April 2025)
 - 5.3.1 ORCA data portal and app annual maintenance and upgrade work (to accommodate updates to app OS)
 - 5.3.2 Educational materials for seafarers regarding project outputs, ship strike risk and mitigation measures added into the app

- 5.3.3 Add any necessary survey functionality to improve data collection process within ORCA app.
- 5.4.1 Outreach materials circulated to vessel operators, field staff, SG visitors and the public via IAATO and PCSC (April-July 2025).
- 5.4.2 Outreach materials distributed on cruise vessels during 2025/26 and 2026/27 austral summer seasons.
- 5.5.1 Happywhale match all available humpback fluke photo-IDs from the South Atlantic with those from South Georgia to provide an up-to-date view of South Georgia connectivity to other areas (Nov 2024-Feb 2025).
- 5.5.2 Happywhale publish stories about whales at South Georgia and their movements on their website, with a particular focus on learning about whale movements from matches of humpback whale flukes between South Georgia and other areas (April 2025 onwards).
- 5.6.1 Impact of outreach material will be monitored through monthly submission of sightings and photo-IDs to Happywhale (October 2024 onwards), uptake of enhanced outreach material offered by PCSC, page views and social media shares of South Georgia whale stories.
- 5.6.2 Project coordinator will coordinate final report on visitor engagement with outreach materials over project period (January 2027).
- 5.7 Public presentations given in online and in-person formats to stakeholders, the public and other scientists
- 5.8 Articles published for a general audience on BAS and stakeholder workshops

Section 11 - Budget and Funding

Q24. Budget

Please complete the appropriate Excel spreadsheet which provides the Budget for this application and ensure the Summary page is fully completed. Some of the questions earlier and below refer to the information in this spreadsheet.

-  [NEB2371_BCF-Budget-St2_2023_Sustmon_FINAL](#)
-  02/10/2023
-  20:59:25
-  xlsx 98.36 KB

Q25. Alignment with other funding and activities

This question aims to help us understand how familiar you are with other work in the geographic/thematic area, and how this proposed project will build on or align with this to avoid any risks of duplicating or conflicting activities.

Q25a. Is this new work or does it build on existing/past activities (delivered by anyone and funded through any source)?

- Development of existing work

Please provide details:

This initiative was initially developed in 2021. Following an unsuccessful Darwin Plus proposal, a significant element of the initial project (the construction of passive acoustic moorings for deployment at Cumberland Bay) was funded by the Blue Belt initiative in March 2022 (██████████). These funds have enabled the construction of the infrastructure to support the current project, but do not cover the funds required to analyse the resulting acoustic data, to identify and localise whales and other underwater sounds, and build automatic detectors.

ORCA have conducted significant previous work placing experienced marine mammal observers on vessels of

opportunity to collect high-quality sightings data for abundance measurement. Through their relationships with expedition vessels, they receive offers of free bed and board for their observers. The observers travel and subsistence is therefore paid for by expedition vessels (at a cost per person of [REDACTED]). ORCA already has put experienced marine mammal observers onto three cruises to South Georgia in 2022/23, collecting high quality sightings data for this project. They will also train up expedition staff members ("Ocean conservationists") to collect Distance Sampling data during three additional expeditions across the summer season.

Q25b. Are you aware of any current or future plans for work in the geographic/thematic area to the proposed project?

No

Q26. Balance of budget spend

Defra are keen to see as much Darwin Plus funding as possible directly benefiting UKOT communities and economies. While it is appreciated that this is not always possible every effort should be made for funds to remain in-Territory.

Explain the thinking behind your budget in terms of where Darwin Plus funds will be spent. What benefits will the Territory/ies see from your budget? What level of the award do you expect will be spent locally? Please explain the decisions behind any Darwin Plus funding that will not be spent locally and how those costs are important for the project.

South Georgia is not a permanently inhabited island so opportunities to spend locally in this Territory are limited. However, this project is very Territory-centred. Most of the budget supports personnel time to generate and analyse data collected in the Territory, to enhance outreach materials to visitors to the Territory and to develop policy-relevant guidance for the Territory using those data. Funding directly to the Territory is to support the time of the Fishery Patrol Vessel to deploy and retrieve acoustic moorings. The remaining budget is travel for personnel to attend workshops relating to developing Territory guidance

Q27. Value for Money

Please describe why you consider your application to be good value for money including justification of why the measures you will adopt will secure value for money.

Regular monitoring of whale numbers is usually very costly due to the need to charter appropriate survey vessels and contract experienced personnel to collect data. This project aims to provide regular monitoring at SG at low cost relative to traditional monitoring, through development of sustained, multi-way relationships between IAATO expedition ships (platforms of opportunity for survey), whale observers (supported by ORCA), scientists who can analyse sightings data, and GSGSSI, who need these results to monitor how whales are doing in their MPA. With this model, expedition ships provide access to berths at no cost, in exchange for enhanced on-board citizen science opportunities generated for their passengers by ORCA observers. ORCA's mission is to generate high-quality cetacean sightings data for marine management, making this project's aims a good fit to their purpose. ORCA share their data freely, and this project develops a working framework for turning regular sightings into a quantitative measure of whale density.

As mentioned in Q23, funds for the infrastructure for passive acoustic monitoring at South Georgia have already been secured, so most costs for this element are already covered, leaving only costs for personnel for data analysis and developing automatic acoustic detectors.

The central aim of this project is to develop a sustained framework of stakeholder relationships and data collection and delivery that will deliver relevant, quantitative information about SG whale occurrence in relation

to vessels in the long-term, long past the lifetime of the project. This in itself also makes the project good value for money.

Q28. Capital items

If you plan to purchase capital items with Darwin Plus funding, please indicate what you anticipate will happen to the items following project end. If you are requesting more than 10% capital costs, please provide your justification here.

No

Section 12 - Safeguarding and Ethics

Q29. Safeguarding

All projects funded under the Biodiversity Challenge Funds must ensure proactive action is taken to promote the welfare and protect all individuals involved in the project (staff, implementing partners, the public and beneficiaries) involved in the project from harm. In order to provide assurance of this, projects are required to have specific procedures and policies in place.

Please upload the following required policies:

- **Safeguarding Policy:** including a statement of commitment to safeguarding and a zero tolerance statement on bullying, harassment and sexual exploitation and abuse.
- **Whistleblowing Policy:** which details a clear process for dealing with concerns raised and protects whistle blowers from reprisals.
- **Code of Conduct:** which sets out clear expectations of behaviours – inside and outside the workplace – for all involved in the project and makes clear what will happen in the event of non-compliance or breach of these standards.

If any of these policies are integrated into a broader policy document or handbook, please upload just the relevant or equivalent sub-sections to the above policies, with (unofficial) English translations where needed.

Please outline how (a) beneficiaries, the public, implementing partners, and staff are made aware of your safeguarding commitment and how to confidentially raise a concern, (b) safeguarding issues are investigated, recorded and what disciplinary procedures are in place when allegations and complaints are upheld, (c) you will ensure project partners uphold these policies.

If your approach is currently limited or in the early stages of development, please clearly set out your plans address this.

UKRI (of which BAS is a component) has detailed policy and guidance on Safeguarding in International Development Research. This guidance will be shared with all partners at the outset of the project and will be included as an Agenda item in monthly meetings so that any issues can be raised. Project Partner ORCA also has a Safeguarding policy and Code of Conduct which is reviewed by all staff members prior to field deployment

Q30. Ethics

Outline your approach to meeting the key principles of good ethical practice, as outlined in the guidance.

In delivery of this project we will adhere to the BAS Research Ethics policy and its associated principles (<https://www.bas.ac.uk/about/about-bas/our-organisation/our-policies/ethics-policy/>). The Territory Government

will be consulted throughout the project implementation and are included as a Project Partner to ensure project benefits are shared with the Territory.

IAATO represents virtually all vessels in Antarctic waters operating under the International Convention for the Safety of Life at Sea (SOLAS) and as such they must comply with the IMO's International Code for Ships Operating in Polar Waters (Polar Code). All tour vessels participating in this project are members of IAATO and therefore have to comply with IAATO's mission to advocate, promote the practice of safe, environmentally responsible Antarctic travel, with SG included in its areas of operation.

Section 13 - Project Staff

Q31. Project staff

Please identify the core staff (identified in the budget), their role and what % of their time they will be working on the project.

Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
Jennifer Jackson	Project Leader	10	Checked
Stephanie Martin	Project Coordinator	90	Checked
Martin Collins	SG Policy guidance	3	Checked
Jaume Forcada	Investigating biological correlates with whale densities	15	Checked

Do you require more fields?


Yes


Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
Ash Bennison	Implementing whale sightings protocol at Bird Island	3	Checked
Denise Risch	Acoustic analysis of whales and underwater noise	10	Checked
Susannah Calderan	Acoustic analysis of whales and underwater noise	10	Checked
Russell Leaper	Developing whale density index	9	Checked
Ted Cheeseman	Developing whale outreach materials	2	Checked
Lucy Babey	Collecting sightings data	6	Checked


Steve Jones	Developing expedition vessel collaborations	6	Checked
Data manager	Compiling sightings data	6	Checked

Please provide 1 page CVs (or job description if yet to be recruited) for the project staff listed above as a combined PDF.

 [AllCV data_manager_job_description](#)

 02/10/2023

 20:30:48

 pdf 1.88 MB

Have you attached all project staff CVs and job descriptions?

Yes

Section 14 - Project Partners

Q32. Project partners

Please list all the Project Partners (including the Lead Partner who will administer the grant and coordinate delivery of the project), clearly setting out their roles and responsibilities in the project including the extent of their engagement so far.

This section should demonstrate the capability and capacity of the Project Partners to successfully deliver the project. Please provide Letters of Support for all project partners or explain why this has not been included.

Lead partner name: British Antarctic Survey

Is the Lead Partner based in a UKOT where the project is working? No

Please explain why this project is led from outside the UKOT The territory is not permanently inhabited.

BAS is a component of the Natural Environment Research Council (NERC). NERC is part of UK Research and Innovation www.ukri.org.

BAS delivers and enables world-leading interdisciplinary research in the Polar Regions. Its skilled science and support staff work together to deliver research that uses the Polar Regions to advance our understanding of Earth as a sustainable planet. Through its extensive logistic capability and experience BAS facilitates access for the British and international science community to the UK polar research operation.

BAS will be responsible for overall project leadership and management.

Why is this organisation the Lead Partner, and what value to they bring to the project? (including roles, responsibilities and capabilities and capacity):

Project lead Jen Jackson (marine ecologist, previous lead on two SG cetacean projects) will manage the project, lead report delivery and co-draft the Baleen Whale Action Plan.

Jaume Forcada (higher predator biologist) will analyse whale density patterns in relation to climate and other higher predator dynamics.

Martin Collins (marine ecologist, SG science manager, ex-GSGSSI CEO) will advise on policy documents and mitigations in SG waters.

Ash Bennison (spatial ecologist, Bird Island science manager) will develop a whale observation protocol for Bird Island.

BAS will appoint Project Coordinator Stephanie Martin (former Antarctic Expedition Leader, whale biologist) to oversee project and workshop delivery and co-draft the Baleen Whale Action Plan.

Allocated budget (proportion or value):



Representation on the Project Board (or other management structure)

Yes

Have you included a Letter of Support from the Lead Partner?

Yes

Do you have partners involved in the Project?

Yes

1. Partner Name:

Government of South Georgia & the South Sandwich Islands

Website address:

www.gov.gs

The Government of South Georgia & South Sandwich Islands (GSGSSI) are based in Stanley, Falkland Islands, where they report to the Commissioner (who is also the Governor of the Falklands). GSGSSI has a small team mostly based in Stanley, but with some staff working remotely from the UK. GSGSSI are responsible for the management of the Territory.

What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity): Through project partner Sue Gregory (GSGSSI Fisheries Officer) we will receive advice and give feedback to GSGSSI at each stage of the project (i) developing the annual density index; (ii) acoustic monitoring at Cumberland Bay; (iii) including whale strike reporting in GSGSSI permit requirements; (iv) advising on ship strike risk; (v) developing the Baleen Whale Action Plan.

GSGSSI will also support the project by retrieving and re-deploying the acoustic moorings in Cumberland Bay every six months from the Fisheries Patrol Vessel in order for BAS King Edward Point scientists to replace batteries and SD cards.

UKOT-based/other Partner	<input checked="" type="radio"/> UKOT-based
Allocated budget (proportion or value):	██████████
Representation on the Project Board (or other management structure)	<input checked="" type="radio"/> Yes
Have you included a Letter of Support from this organisation?	<input checked="" type="radio"/> Yes

2. Partner Name: International Fund for Animal Welfare (IFAW)

Website address: <https://www.ifaw.org>

What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity): IFAW is a global non-governmental organization that specializes in animal rescue, rehabilitation and release, as well as in restoring and protecting their natural habitats. As part of this project, Russell Leaper (IFAW, UK) will develop a whale density index from sighting data collected by ORCA and integrate this with ship movement data to measure annual ship strike risk at South Georgia. Russell Leaper is also chair of the Human Induced Mortality Working Group at the IWC and will lead in communicating South Georgia ship-strike risk to the IWC Scientific Committee and transmitting feedback to the GSGSSI.

UKOT-based/other Partner	<input checked="" type="radio"/> Other
Allocated budget (proportion or value):	██████████
Representation on the Project Board (or other management structure)	<input checked="" type="radio"/> Yes

Have you included a Letter of Support from this organisation? Yes

3. Partner Name: International Association of Antarctica Tour Operators (IAATO)

Website address: www.iaato.org

IAATO is an international organisation comprised of more than 100 companies and organisations from across the world. IAATO's mission is to advocate and promote the practice of safe, environmentally responsible Antarctic tourism while creating a corps of ambassadors for Antarctica's protection.

This project will require in-kind support by the Secretariat, led by Amanda Lynnes, Director of Environment & Science Coordination. IAATO will contribute by:

- Contributing to discussions on ship strike risk;
- Review existing and develop outreach materials with Happywhale to enhance citizen-science engagement with SG whales (identifying species, collecting photo-ID);
- Communicating project objectives and outcomes to IAATO members and field staff, including at IAATO's annual meeting.
- In agreement with other project partners, communicating project objectives, outcomes and participation to the media and public as required.

The project also involves opt-in IAATO member operators who allocate berths to observers and allocate staff time to delivering citizen science projects on board.

UKOT-based/other Partner £0.00

Allocated budget (proportion or value): Other

Representation on the Project Board (or other management structure) Yes

Have you included a Letter of Support from this organisation? Yes

4. Partner Name: Happywhale

Website address: <https://happywhale.com>

What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity):

Happywhale's mission is to increase global understanding and caring for marine environments through creating high quality conservation science and education. Happywhale co-founder and Director Ted Cheeseman will contribute to this project by creating new outreach and engagement materials, for dissemination on IAATO expedition ships, and for visitors to the happywhale website. He will also update the Happywhale photo-ID matching archive for the South Atlantic and upload all outstanding photo-IDs to improve understanding of migratory connections between humpbacks at South Georgia and nearby breeding areas in Brazil and South Africa. He will also coordinate the collection of opportunistic sightings across IAATO platforms. In turn the project will provide more stories for Happywhale to share with the public, to help increase engagement in whales at South Georgia, and increase photo-ID contributions to the website.

UKOT-based/other Partner Other

Allocated budget (proportion or value):



Representation on the Project Board (or other management structure)

Yes

Have you included a Letter of Support from this organisation?

Yes

5. Partner Name:

ORCA


Website address:

<https://orcaweb.org.uk/>

What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity):

ORCA is a conservation charity that is dedicated to studying and protecting cetaceans in UK waters. They have many years of expertise in identifying and protecting critical whale and dolphin habitats in UK waters and beyond. ORCA specialises in combining accessible marine education with conservation activities in order to give ordinary people opportunities to take an active role in marine science and conservation.


For this project, ORCA will work in partnership with the Antarctic expedition cruise industry to put trained marine mammal observers on expedition cruises travelling to South Georgia, to use Distance sampling protocols to collect high quality whale sightings data that can be used to measure whale density. A partnership with Hurtigruten cruises is already confirmed (see Letters of Support), providing a minimum of three cruises with experienced observers every summer season (Dec-March). In their role on the project, Head of Science and Conservation Lucy Babey will develop and implement a whale sightings protocol for use on participating vessels, training observers to a high level. Participating observers will conduct data collection and an experienced ORCA data manager will compile the sightings data. Head of Partnerships Steve Jones will liaise with the expedition cruise industry to facilitate data collection.

UKOT-based/other Partner	<input checked="" type="radio"/> Other
Allocated budget (proportion or value):	
Representation on the Project Board (or other management structure)	<input checked="" type="radio"/> Yes
Have you included a Letter of Support from this organisation?	<input checked="" type="radio"/> Yes





6. Partner Name:	Scottish Association for Marine Science
Website address:	https://www.sams.ac.uk/

What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity):

The Scottish Association for Marine Science (SAMS) is a non-profit science organisation which conducts research into all aspects of the marine environment. Key science areas include ocean systems (fundamental science), dynamic coasts (research relevant to marine management and studies of human impacts) and the blue economy (applied science relating to human industries, including aquaculture and fisheries). SAMS scientists Denise Risch and Susannah Calderan are experts in using passive acoustic monitoring to understand how cetaceans use the marine environment and in the impact of underwater sound on cetaceans. As part of this project, Risch and Calderan will oversee the deployment of three PAM moorings at Cumberland Bay, South Georgia, and use the resulting data to analyse whale temporal occurrence and density, as well as measuring levels of underwater noise.

UKOT-based/other Partner	<input checked="" type="radio"/> Other
Allocated budget (proportion or value):	
Representation on the Project Board (or other management structure)	<input checked="" type="radio"/> Yes
Have you included a Letter of Support from this organisation?	<input checked="" type="radio"/> Yes

Please provide a combined PDF of all letters of support.

-  [LoS sustmon 2023 DPLUS](#)
-  02/10/2023
-  16:07:03
-  pdf 1.17 MB

Section 15 - Lead Partner Capability and Capacity

Q33. Lead Partner Capability and Capacity

Has your organisation been awarded Biodiversity Challenge Funds (Darwin Plus, Darwin Initiative or Illegal Wildlife Trade Challenge Fund) funding before?

Yes

If yes, please provide details of the most recent awards (up to 6 examples).

Reference No	Project Leader	Title
DPLUS189	Rachel Cavanagh	Evaluating climate change risks to Patagonian and Antarctic toothfish
DPLUS188	Jennifer Jackson	Hungry humpbacks: measuring seasonal foraging intensity at South Georgia
DPLUS187	Peter Fretwell	Using satellite technology to monitor seabird populations at South Georgia
DPLUS186	Norman Ratcliffe	Evidence-based conservation of biodiversity in the South Sandwich Islands
DPLUS179	Cecilia Liszka	Characterising pelagic biodiversity at South Georgia through novel sampling methods
DPLUS149	Phil Hollyman	Improving identification of fish bycatch in the Antarctic krill fishery

Have you provided the requested signed audited/independently examined accounts?

Yes

Section 16 - Certification

Certification

On behalf of the

Company

of

British Antarctic Survey

I apply for a grant of





£403,900.00

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.


(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)

- I enclose CVs for key project personnel, a cover letter, letters of support, a budget, logframe, Safeguarding and associated policies, and project workplan.
- Our last two sets of signed audited/independently verified accounts and annual report (covering three years) are also enclosed.





Checked

Name	Justin Smith
Position in the organisation	Head of Finance
Signature (please upload e-signature)	 Signature Darwin Jennifer Jackson 02102023  02/10/2023  17:06:15  pdf 72.97 KB
Date	02 October 2023

Please attach the requested signed audited/independently examined accounts.

 BAS accounts 22-23  02/10/2023  15:51:31  pdf 3.34 MB	 BAS accounts 21-22  02/10/2023  15:49:56  pdf 3.72 MB
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Please upload the Lead Partner's Safeguarding Policy as a PDF

 UKRI-081020-CodeOfConduct safeguarding  02/10/2023  15:50:51  pdf 218.17 KB

Section 17 - Submission Checklist

Checklist for submission

	Check
I have read the Guidance, including the "Guidance Notes for Applicants", "Monitoring Evaluation and Learning Guidance", "Standard Indicator Guidance", "Risk Guidance", and "Finance Guidance".	Checked
I have read, and can meet, the current Terms and Conditions for this fund.	Checked
I have provided actual start and end dates for the project.	Checked
I have provided my budget based on UK government financial years i.e. 1 April – 31 March and in GBP.	Checked
I have checked that our budget is complete, correctly adds up and I have included the correct final total at the start of the application.	Checked
The application been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).	Checked

I have attached the below documents to my application:	
• a cover letter from the Lead Partner, outlining how any feedback received at Stage 1 has been addressed where relevant and referencing any potential conflicts of interest, as a single PDF.	Checked
• my completed logframe as a PDF using the template provided and using "Monitoring Evaluation and Learning Guidance" and "Standard Indicator Guidance".	Checked
• my budget (which meets the requirements above) using the template provided.	Checked
• a signed copy of the last 2 annual report and accounts for the Lead Partner, or provided an explanation if not.	Checked
• my completed workplan as a PDF using the template provided	Checked
• a copy of the Lead Partner's Safeguarding Policy, Whistleblowing Policy and Code of Conduct (Question 28).	Checked
• 1 page CV or job description for each of the Project Staff identified at Question 30, including the Project Leader, or provided an explanation of why not, combined into a single PDF.	Checked
• a letter of support from the Lead Partner and partner(s) identified at Question 31 and relevant OT Governments, or an explanation of why not, combined into a single PDF.	Checked
My additional supporting evidence is in line with the requested evidence, amounts to a maximum of 5 sides of A4, and is combined as a single PDF.	Checked
(If copying and pasting into Flexi-Grant) I have checked that all my responses have been successfully copied into the online application form.	Checked
I have checked the Darwin Plus website immediately prior to submission to ensure there are no late updates.	Checked
I have read and understood the Privacy Notice on the Darwin Plus website.	Checked

We would like to keep in touch!

Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under the Darwin Initiative and our sister grant scheme, the IWT Challenge Fund. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share our quarterly project newsletter. You are free to unsubscribe at any time.

Checked

Data protection and use of personal data

Information supplied in the application form, including personal data, will be used by Defra as set out in the **Privacy Notice**, available from the [Forms and Guidance Portal](#).

This **Privacy Notice must be provided to all individuals** whose personal data is supplied in the application form. Some information may be used when publicising the Darwin Initiative including project details (usually title, lead partner, project leader, location, and total grant value).

Project Title: **Creating a sustainable framework for monitoring whales at South Georgia**

	Activity	No. of months	Year 1 (24/25)		Year 2 (25/26)				Year 3 (26/27)					
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1	Interannual whale density index at South Georgia, used to identify ship-strike risks and environmental drivers, sustained in the long-term by stakeholder partnerships													
1.1	Marine mammal observers collect sightings data at South Georgia	8												
1.2	Land-based whale occurrence data published for Bird Island, west South Georgia	4												
1.3	Estimate whale density along shipping routes, report to GSGSSI and IWC Scientific Committee (from Activity 1.2)	6												
1.4	Provide whale density data to Area 48.3 Krill Risk Assessment	2												
1.5	Estimate inter-annual correlates between whale densities and other biological timeseries, report to IWC Scientific Committee	3												
Output 2	Year-round whale occurrence monitored at Cumberland Bay, providing measure of whale co-occurrence with vessel traffic													
2.1.1	SoundTrap battery changes and data retrieval	4												
2.1.2	Acoustic data analysis to identify and locate vocalising whales	5												
2.1.3	Results reported to IWC Scientific Committee, GSGSSI Data Portal	2												
2.2.1	Relative levels of underwater sound described	5												
2.2.2	Report to GSGSSI	2												
Output 3	Ship strike reduction measures used to reduce and maintain risk of whale strikes by <50% relative to 2019/20 baseline assessment													

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	Activity	No. of months	Year 1 (24/25)				Year 2 (25/26)				Year 3 (26/27)			
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3.1	Estimate ship strike risk using whale density estimates along main vessel routes combined with vessel speeds.	3												
3.2	Report risk to GSGSSI and IWC SC (see Activity 1.3) at annual stakeholder ship strike review meeting	1												
Output 4	Baleen whale action plan (BAP) published for South Georgia													
4.1.1	Consultation meetings with JNCC and GSGSSI	1												
4.1.2	Draft BAP under review	4												
4.1.3	Whale monitoring progress & future planning workshop	1												
4.2	Finalise and publish BAP	1												
4.3	Action plan incorporated into GSGSSI MPA management plan	1												
Output 5	Engage visitors to South Georgia through whale related citizen science projects including sightings and photo-ID													
5.1	Develop comms plan to coordinate outreach	2												
5.2.1	Happywhale enhance outreach material provided to IAATO vessels	1												
5.2.2	Virtual workshop to review outreach materials	1												
5.3	Whale sightings collated and educational materials distributed by ORCA app	4												
5.4	Disseminate outreach materials to IAATO vessels and other operators in South Georgia	4												
5.5	Happywhale matches all South Atlantic humpback flukes; publishes South Georgia stories and migratory linkages on website	6												

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	Activity	No. of months	Year 1 (24/25)				Year 2 (25/26)				Year 3 (26/27)			
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
5.6	Monitoring and reporting on outreach impact (# happywhale photo-ID submissions, sighting reports to SG museum, visitor engagement statistics)	2												
5.7	Public talks (virtual and online) by project partners	30												
5.8	Articles published for general audience by project partners	30												

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Project Summary	SMART Indicators	Means of Verification	Important Assumptions
<p>Impact: A long-term whale monitoring program at SG is used to reduce anthropogenic risk, leading to protection and conservation measures that enable full local recovery of baleen whale populations following whaling. (Max 30 words)</p>			
<p>Outcome: Long-term conservation outlook for recovering whales at South Georgia improved through a framework for monitoring whale numbers and identifying and managing lethal and sub-lethal risks to whales.</p>	<p>0.1 Annual whale density index delivered to GSGSSI (June 2024, 2025 and 2026) and included in the SGSSI MPA Research and Monitoring Plan (one policy instrument) by project close [DI-D03]. [DI-A07] enhanced biodiversity awareness within GSGSSI</p>	<p>0.1 Report summarising density estimates submitted to GSGSSI Data portal (accessible at www.gov.gs) and also accessible through BAS project website by August 2025 and 2026.</p>	<p>0.1 Adequate sampling for the density index will be achieved assuming that vessel operators are not too adversely impacted by global economic factors.</p>
	<p>0.2 Management actions recommended to reduce whale disturbance/injury, including guidance related to ship-speeds and underwater noise, summarised in Baleen Whale Action Plan (December 2026). [DI-C01], one publication.</p>	<p>0.2 Baleen Whale Action Plan published on GSGSSI website (www.gov.gs) by March 2027. Updated MPA Management plan and (any) changes to legislation enacted following next GSGSSI Marine Protected Area review in 2028.</p>	
<p>Outputs: 1. Interannual whale density index at South Georgia, used to identify ship-strike risks and</p>	<p>1.1 Whale sightings data collected by ORCA marine mammal observers during minimum of three expeditions across main feeding season</p>	<p>1.1 Written confirmation by cruise ship partners (Hurtigruten, at this point) available for review by Darwin Plus. ORCA are named partner on Hurtigruten webpage: https://www.hurtigruten.co.uk/uk/partners/orca/</p>	<p>1.1 ORCA are able to access cruise ships to support this project at no cost. ORCA have secured an agreement with</p>

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<p>environmental drivers, sustained in the long-term by stakeholder partnerships</p>	<p>(November to March) in 2023/24, 2024/25 and 2025/26 in South Georgia waters. [DI-C07], minimum of six projects providing summer-only evidence towards biodiversity conservation during project period.</p>	<p>Raw sightings data are publicly available from ORCA on request. Sighting summaries will be published on ORCA website by the 31st May following each survey season (www.orcaweb.org.uk).</p>	<p>Hurtigruten vessels to send observers on their SG vessels from Nov 2023-March 2024 onwards for this project at no cost to Darwin.</p> <p>1.1 Low numbers of sightings per trip will make density estimates imprecise. Multiple repeat journeys across the season will help increase precision. Local habitat use models will be used to help fit the data and measure density.</p>
	<p>1.2 Cetacean occurrence database from Bird Island (BI), South Georgia constructed using systematic, land-based point counts carried out by BI scientists (year-round, 2024-2026). [DI-C07], one project providing year-round evidence towards biodiversity conservation during project period. [DI-C16] two years of sighting records published in accessible database.</p>	<p>1.2 Sightings data published in open-access BAS Polar Data Centre and linked to on BAS project website (August 2025, August 2026).</p>	
	<p>1.3 Paper to IWC summarising density estimates along main shipping routes for each month derived from sightings data combined with spatial</p>	<p>1.3 Habitat use model will be provided in a paper to IWC Scientific Committee in May 2026 to allow for any feedback to be included. Report is open-access at www.iwc.int and will also be linked through BAS project website.</p>	

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	habitat models (report, May 2026) [DI-CO3], [DI-C16] five summer whale density estimates published on GSGSSI Data Portal.	Density estimates will be provided to GSGSSI Data Portal (data then openly accessible at www.gov.gs from July 2025 and July 2026).	
	1.4 Whale density data included in CCAMLR Sub-Area 48.3 krill risk assessment [DI-B12] one CCAMLR policy document.	1.4 Density estimates provided to the CCAMLR Working Group on Ecosystem Monitoring and Management for the Krill Risk Assessment. The data will be summarised in a report to CCAMLR WG-EMM which will be accessible via the BAS project website (September 2026).	
	1.5 Correlations between whales and other krill predators and local climate indices measured using summer whale density estimates from 2018/19, 2019/20, 2022/23, 2023/24, 2024/25 and 2025/26 (report December 2026) [DI-C19, one report] [DI-C05]	1.5 Report available to GSGSSI in advance at project close and published on BAS website (March 2027). Will become a peer reviewed paper and be presented at IWC Scientific Committee after the project lifetime.	1.5 Whale density time series (6 years) may not be long enough to identify relationships with climate variables. If so, this question will be revisited two years later following two further years of data collection.
2. Year-round whale occurrence monitored at Cumberland Bay, providing measure of whale co-occurrence with vessel traffic.	2.1 Whale occurrence in Cumberland Bay described over 2024-2026, [DI-C07, DI-C19] one report.	2.1 Report to the IWC Scientific Committee in May 2026 (18 months of acoustic monitoring). Report is open-access at www.iwc.int and will also be linked through BAS project website.	2.1 Soundtrap breakage/failure to record. This is mitigated by the deployment of 5 soundtraps to localise sounds, where a minimum of 3 are necessary.
	Automatic acoustic detectors developed for most common whale species (May 2025, May 2026) [DI-C16] acoustic dataset published.	A summary of acoustic detections (both biological and anthropogenic) will be accessible through the BAS Polar Data Centre from January 2026.	
	2.2 Vessel noise described and assessed in relation to	2.2 Report to GSGSSI including recommendations for managing	

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	potential impacts on marine life (including acoustic masking) (June 2026). [DI-C05] one report	anthropogenic underwater noise from shipping. Report submitted to GSGSSI Data portal (accessible at www.gov.gs).	
3. GSGSSI ship strike risk reduction measures used to reduce and maintain estimated risk of whale strikes by >50% compared to 2019/20 baseline assessment.	3.1 Annual stakeholder virtual workshop scheduled in June 2025 and 2026 in order to review ship strike risk metrics and discuss mitigations, including a minimum of 5 stakeholders (GSGSSI, IAATO, the SG fishing industry, local NGOs South Georgia Heritage Trust and Friends of South Georgia Island). [DI-C14]	3.1 Workshop reports available on BAS project webpage in July 2025 and 2026.	3.1 Not all members may be able to attend. A recording will be shared with those who can't attend and minutes shared with all members and stakeholders.
	3.2 Ship-strike risk estimated annually (published in August 2025 and 2026), using whale density estimates along main expedition vessel routes combined with vessel speeds monitored by AIS, and compared with 2019/20 baseline; Mitigations proposed to maintain ship strike risk at less than 50% of baseline levels [DI-C03] two reports (one per year) assessing conservation action needs relating to ship strike risk.	3.2 Ship strike risk reports to GSGSSI submitted to GSGSSI Data portal (accessible at www.gov.gs) and also accessible through BAS project website by August 2025 and 2026. Also see Output 6.4 for stakeholder annual review.	Assumptions from Output 1 apply.
4. Baleen whale Action Plan published for South Georgia.	4.1 Four day online workshop covering (i) density index development (ii) project	4.1 Workshop report available on BAS project website and GSGSSI portal (January 2027)	4.1 Not all members may be able to attend. Members will be sent the agenda and

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	<p>results; (iii) Baleen whale Action Plan final draft; (iv) 5-year forward planning for continued monitoring of whales at South Georgia (December 2026). GSGSSI and IAATO (key stakeholders, two decision-makers) to participate, along with expedition vessel representatives, stakeholders from the SG fishing industry, local NGOs South Georgia Heritage Trust and Friends of South Georgia Island. [DI-C14]</p>		<p>meeting documents in advance and provided opportunity to comment <i>in absentia</i>.</p> <p>4.1 Sustained positive engagement from expedition vessels. To help we will provide regular feedback about project outcomes and the value of the work for South Georgia via close partnership with ORCA, IAATO and Happywhale. ORCA have an excellent track record of developing long-term partnerships with cruise ships to sustain observations long-term.</p>
	<p>4.2 A Baleen whale Action Plan is published (contributing to the overall SG Biodiversity Action Plan), co-developed with GSGSSI (December 2026). [DI-B01] one report</p>	<p>4.2 Baleen Whale Action Plan published on GSGSSI website (www.gov.gs) once it has been endorsed.</p>	
	<p>4.3 SGSSI MPA Management and Order updated (if required) following review of risks to whales [DI-B12] one policy. The GSGSSI reviews their MPA every five years (next review 2028) so any update would be made by December 2028.</p>	<p>4.3 Updated MPA Management plan published on GSGSSI website and (any) changes to legislation enacted.</p>	

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<p>5. Engage visitors to South Georgia and members of the public through whale related citizen science projects including whale sightings reporting and photo-ID collection.</p>	<p>5.1 Project team develops a communications plan to promote the work to internal and external audiences (reviewed quarterly during project meetings) [DI-C12] (engagement by # followers and shares on social media)</p>	<p>5.1 Communications plan available on BAS project website and updated quarterly where changes have been made (see 6.3). Plan summarises outputs under 5.2-5.6, including social media impressions, website visits, visitor interactions, uptake of outreach material, media news stories and presentations to the general public and to visitors to South Georgia.</p>	
	<p>5.2 Happywhale enhance outreach materials in collaboration with SG stakeholders, aiming to increase annual SG whale sightings reports to the South Georgia museum by individuals by 50% on 2018/19 (23 reports Feb 2018-Jan 2019) virtual workshop October 2024 [DI-B05]</p>	<p>5.2 Workshop report available on BAS project website by December 2024. Web submissions monitored and reported in Item 5.6.</p>	<p>5.2 Reduced visitor numbers to SG, due to unforeseen circumstances, may mean access to expedition vessels is limited in some years.</p>
	<p>5.3 <i>Ad hoc</i> whale sightings data collection supported by the ORCA app, also incorporating educational materials regarding SG ship strike (aimed at both the public and seafarers), updated every year. Anticipating 500 new app users per year and an increase in whale survey effort (hours) vs 2022/23 of 100% in year 1, 200% in year</p>	<p>5.3 ORCA app available for download via Google Play and iOS App store.</p>	

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	2 and 350% in year 3 [DI-B05]		
	5.4 Dissemination of outreach and visitor engagement materials to stakeholders including operators, field staff, SG visitors and the public, including in person to expeditioners and PCSC. Uptake of materials by at least 15 expedition vessels per season (Nov 2024-March 2025, Nov 2025-March 2026, Nov 2026-March 2027) [DI-A03]	5.4 Visitor engagement materials will be publicly available online, with various resources hosted at Happywhale, IAATO, ORCA and the BAS project websites from March 2025.	
	5.5 Improve Happywhale functionality to build SG stories into visitor experience and enhance photo-ID submissions from SG region by 50% (October 2024-March 2026). [DI-C11]	5.5 Happywhale South Georgia stories available to view online at www.happywhale.com , site visitors will be monitored.	
	5.6 Final report on outreach impact produced (visitor interaction with Happywhale materials, submission of whale sightings and photo-IDs) (June 2025) [DI-C19], one report	5.6 Report available on BAS project website.	
	5.7 Project team regularly give public presentations about the work including in online formats, to	5.7 Presentations publicly advertised/available online. Darwin Plus acknowledged as funding source. Presentations given are tracked under Item 6.2.	

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	stakeholders, the public and other scientists (3-5 times/year). [DI-C15]		
	5.8 Articles published for general audience (2 per year) on BAS and stakeholder websites. [DI-C19]	5.8 Records of all articles kept and Darwin Plus acknowledged. Articles written are tracked under Item 6.2.	
<p>Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1. Each activity should start on a new line and be no more than approximately 25 words.)</p> <p>1.1.1 Agreements between ORCA and cruise ships to deploy ORCA observers onboard (prior to project start, November 2023).</p> <p>1.1.2 ORCA marine mammal observers use Distance sampling protocols to collect whale sightings data in SG shelf waters (Dec-March) in 2024/25, 2025/26 and 2026/27.</p> <p>1.1.3 Sightings data compiled by ORCA data manager and provided to PP Leaper for density analysis (April) in 2025, 2026 and 2027.</p> <p>1.2.1 Land-based whale sighting protocol designed for Bird Island (Oct-Dec 2024)</p> <p>1.2.2 Bird Island scientists implement whale sightings protocol and report sightings by season and species (Jan 2025 - Jan 2027)</p> <p>1.2.3 Bird Island sightings data published on BAS website every six months (December and June)</p> <p>1.3.1 A spatial modelling approach will be used to combine data from 2018/19 and 2019/20 surveys covering larger spatial areas, with the cruise ship sightings data to derive an overall whale density index (April-May) in 2025 and 2026.</p> <p>1.3.2 Density index will be described in a report to the GSGSSI which will be published on the GSGSSI Data Portal (June 2025) and updated in June 2026 and annually thereafter.</p> <p>1.3.3 Habitat use model will be reported in a paper to the IWC Scientific Committee (May 2026).</p> <p>1.3.4 Provide whale density data to Area 48.3 Krill Risk Assessment as data layers (May 2026).</p> <p>1.4.1 Whale density estimates from surveys in 2018/19, 2019/20, 2022/23, 2023/24, 2024/5 and 2025/26 will be used to investigate inter-annual interactions between whale occurrence and krill biomass, climate indices and other krill-predators at SG (Oct-Dec 2026).</p> <p>1.4.2 Report on correlates with whale density made to the IWC Scientific Committee Ecosystem Modelling Working Group (Jan-Mar 2027).</p> <hr/> <p>2.1.0 Five Soundtraps deployed on three moorings (one array of three Soundtraps and two single Soundtraps) in Cumberland Bay at ~2nm distance from one another. Deployment done by GSGSSI Fisheries Patrol Vessel in March 2024.</p> <p>2.1.1 Soundtraps start collecting acoustic data on baleen whales and ship noise on deployment. Batteries and memory cards changed every six months (June/December each year) by Fisheries Patrol Vessel with assistance from KEP scientists, and data hand-carried to UK on hard drives.</p> <p>2.1.2 Acoustic data from Soundtraps will be analysed to (i) identify and (ii) locate vocalising whales (January 2025 onwards)</p> <p>2.1.3 Seasonal occurrence of whales at Cumberland Bay over 18 months reported to IWC Scientific Committee (March 2027) and GSGSSI Data Portal.</p>			

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2.2.1	Relative levels of underwater sound will also be described for Cumberland Bay from winter 2024-2026 onwards (analysis conducted April-Sept 2025 and 2026)
2.2.2	Summary report to GSGSSI of 18 months of whale sounds in relation to underwater noise including any relevant recommendations on managing anthropogenic underwater noise from shipping, published on GSGSSI Data Portal (February 2027).
3.1.1	High-resolution AIS data collated on vessel speeds at South Georgia (November 2024 onwards)
3.1.2	Whale densities estimated under Activity 1.1.3 combined with Activity 3.1.1 to measure ship-strike risk along main vessel routes
3.1.3	Annual ship strike risk compared with 2019/20 baseline risk to measure relative risk, and reported to GSGSSI (risk report available on GSGSSI website) (May 2025 and 2026)
3.2.1	One-day virtual workshop with GSGSSI, project partners and stakeholders held to review annual ship strike risk and propose potential mitigations if necessary (July-Aug 2025, 2026).
3.2.2	Workshop report available on BAS website and GSGSSI Data Portal (Sept 2025, 2026).
4.1.1	Baleen whale action plan structure agreed with GSGSSI and JNCC (April 2025) and annually reviewed as it develops.
4.1.2	Baleen whale action plan drafted by project coordinator and circulated to stakeholders (May-July 2026).
4.1.3	Draft Baleen whale action plan reviewed and finalised at meeting workshop (August 2026). This contains information about whale distribution, abundance, habitat use, threats and anthropogenic interactions in SG waters.
4.2	Baleen whale action plan published on GSGSSI website (November 2026)
4.3	Action plan elements incorporated into GSGSSI's MPA Research and Management Plan (February 2027).
5.1.1	Communications plan to coordinate outreach activities and outputs, including presenting the project at IAATO's annual meeting, agreed by the project team (October 2024)
5.1.2	Communications plan published on BAS project website and updated quarterly (November 2024)
5.2.1	Happywhale will enhance outreach materials provided to IAATO vessels, to encourage more visitor engagement with reporting whale sightings and photo-identifying cetaceans (October 2024-January 2025).
5.2.2	A one-day virtual workshop will be held with Happywhale, IAATO, ORCA, PCSC and other relevant stakeholders to review proposed materials (April 2025)
5.3.1	ORCA data portal and app annual maintenance and upgrade work (to accommodate updates to app OS)
5.3.2	Educational materials for seafarers regarding project outputs, ship strike risk and mitigation measures added into the app
5.3.3	Add any necessary survey functionality to improve data collection process within ORCA app.
5.4.1	Outreach materials circulated to vessel operators, field staff, SG visitors and the public via IAATO and PCSC (April-July 2025).
5.4.2	Outreach materials distributed on cruise vessels during 2025/26 and 2026/27 austral summer seasons.
5.5.1	Happywhale match all available humpback fluke photo-IDs from the South Atlantic with those from South Georgia to provide an up-to-date view of South Georgia connectivity to other areas (Nov 2024-Feb 2025).

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- 5.5.2 Happywhale publish stories about whales at South Georgia and their movements on their website, with a particular focus on learning about whale movements from matches of humpback whale flukes between South Georgia and other areas (April 2025 onwards).
- 5.6.1 Impact of outreach material will be monitored through monthly submission of sightings and photo-IDs to Happywhale (October 2024 onwards), uptake of enhanced outreach material offered by PCSC, page views and social media shares of South Georgia whale stories.
- 5.6.2 Project coordinator will coordinate final report on visitor engagement with outreach materials over project period (January 2027).
- 5.7 Public presentations given in online and in-person formats to stakeholders, the public and other scientists
- 5.8 Articles published for a general audience on BAS and stakeholder workshops