
DPR10S2\1034

Improving identification of fish bycatch in the Antarctic krill fishery

Fish bycatch is a global problem requiring accurate information to develop conservation and management strategies. Within the Antarctic krill fishery, fish and larval fish are regularly observed as bycatch. Improved understanding of where, when and which fish are caught is essential. This project will develop enhanced identification material for scientists on board fishing vessels and refine our knowledge of fish species distributions at different life stages. It will translate into improved fisheries management for the benefit of BAT and GSGSSI.

Section 1 - Contact Details

PRIMARY APPLICANT DETAILS

Title Dr
Name Philip
Surname Hollyman
Tel (Work) [REDACTED]
Email (Work) [REDACTED]
Address [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

GMS ORGANISATION

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

Section 2 - Title, Dates & Budget Summary

Q3. Project title

Improving identification of fish bycatch in the Antarctic krill fishery

What was your Stage 1 reference number? e.g. DPR10S1\1123

DPR10S1\1022

Q4. UKOT(s)

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

- British Antarctic Territory (BAT)
- 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

Q4b. In addition to the UKOTs you have indicated, will your project directly benefit any other Territories or

country(ies)?

No

Q5. Project dates

Start date:

01 October 2022

End date:

31 March 2025

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

2 years, 6 months

Q6. Budget summary

Year:	2022/23	2023/24	2024/25	Total request
Darwin funding request (Apr - Mar)	£66,931.00	£116,184.00	£125,148.00	£308,263.00

Q6a. Do you have proposed matched funding arrangements?

Yes

What matched funding arrangements are proposed?

In-kind match funding has been confirmed from BAS, Newcastle University, the Scottish Association for Marine Science (SAMS) and the Government of South Georgia and the South Sandwich Islands (GSGSSI) in the form of reduced overheads, totalling [REDACTED] over the course of the 2.5 year proposal.

We also have in-kind match funding from BAS in the form of salary costs for Martin Collins and the King Edward Point (KEP) biologist ([REDACTED]). Likewise we have in-kind match funding from the Government of South Georgia and the South Sandwich Islands (GSGSSI) for Susan Gregory's staff time ([REDACTED]).

Total matched funding: [REDACTED]

Q6b. Proposed matched funding as % of total project cost (total cost is the [REDACTED] Darwin request plus other funding required to run the project).

Q6c. If you have a significant amount of unconfirmed matched funding, please clarify how you fund the project if you don't manage to secure this?

No Response

Section 3 - Project Summary and Conventions

Q7. Summary of Project

Please provide a brief summary of your project, its aims, and the key activities you plan to undertake. Please note that if you are successful, this wording may be used by Defra in communications.

Please write this summary for a non-technical audience.

Fish bycatch is a global problem requiring accurate information to develop conservation and management strategies. Within the Antarctic krill fishery, fish and larval fish are regularly observed as bycatch. Improved understanding of where,

when and which fish are caught is essential. This project will develop enhanced identification material for scientists on board fishing vessels and refine our knowledge of fish species distributions at different life stages. It will translate into improved fisheries management for the benefit of BAT and GSGSSI.

Q8. Environmental Conventions, Treaties and Agreements

Please detail how your project will contribute to the aims of the agreement(s) your project is targeting. What key OT Government priorities and themes will it address and how? You should refer to Articles or Programmes of Work here. 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.

The spatial effort of krill fisheries under the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is currently managed with conservation measure 51-07, which designates the trigger level (i.e. the amount of krill taken within a season before the fishery is closed) for each of the three fished subareas (48.1, 48.2 and 48.3). BAT and GSGSSI maritime waters cover these fished subareas and there is a strong desire within CCAMLR to move to finer scale spatial management and take fish by-catch into consideration in managing the krill fisheries. This constitutes a considerable amount of ongoing work to develop new management measures led by UK organisations such as BAS and Cefas (Centre for Environment, Fisheries and Aquaculture science). The ongoing work has resulted in part from the 2021 CCAMLR working groups, Fish Stock Assessment (WG-FSA) in September 2021 and Ecosystem Monitoring and Management (WG-EMM) in July 2021.

Key to managing at a finer spatial scale is improved understanding of the distribution, monitoring and identification of larval and juvenile bycatch fish. This has been highlighted as an important research requirement by CCAMLR (WG-FSA-2021), in GSGSSI's Research and Monitoring Plan 2020-21 and 2019 Krill Fisheries Management Plan. Improvements will be achieved by developing and releasing identification and training materials for international observers and through increased understanding of the spatial and temporal dimensions to fish bycatch at specific life history stages.

The outputs from this project will lay the foundations for developing a risk assessment framework for fish communities. As part of this improved management, a risk assessment framework for krill higher predators (e.g. penguins and seals) has been developed for subarea 48.1 (led by BAS Ecosystems scientists), with a desire to develop similar frameworks for subareas 48.2 and 48.3 and to incorporate a fish data layer.

The proposal addresses Darwin Plus R10 objectives: to increase the area of coverage, effectiveness and condition of protected areas in pursuit of global targets, and the implementation of National Biodiversity or Environment Action Plans. The research will contribute towards research needs in Themes 2, 6 and 7 of GSGSSI's Research and Monitoring Plan and MPA objectives covering biodiversity and sustainable fisheries management. The Government of the British Antarctic Territory (GBAT) have strategic goals to protect the environment such as: 'To develop a better understanding of the BAT environment' and 'To identify rare flora and fauna and/or special areas across the BAT and development of protection and conservation measures' which this proposal will directly support. The environmental protection and stewardship practised by GBAT directly supports the 1991 Antarctic Treaty Protocol in Environmental Protection which aims to provide: "...comprehensive protection of the Antarctic environment and dependent and associated ecosystems".

The results are expected to feed directly into GSGSSI MPA independent review and help underpin GBAT and GSGSSI sustainable management of maritime waters inline with CCAMLR conservation measures. The work will contribute towards SDG 14 (life below water).

Section 4 - Project Partners

Q9. Project Partners

Please list all the partners involved (including the Lead Partner) and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development.

This section should illustrate the capacity of partners to be involved in the project. Please provide Letters of Support

for the lead partner and each partner or explain why this has not been included.

N.B: There is a file upload button at the bottom of this page for the upload of a cover letter and all letters of support.

Lead Partner name: British Antarctic Survey

Website address: <https://www.bas.ac.uk/>

Details (including roles and responsibilities and capacity to engage with the project): British Antarctic Survey (BAS) is a component of the Natural Environment Research Council (NERC). NERC is part of UK Research and Innovation (www.ukri.org). BAS's skilled science, logistical and support staff deliver world-leading interdisciplinary polar research addressing issues of global importance. BAS facilitates access to polar research for national and international science communities via extensive scientific and logistical infrastructure, both at BAS Cambridge and at stations throughout the Antarctic and sub-Antarctic.

BAS will be responsible for overall project management, leading on key outputs and coordinating all aspects of the work. The BAS team is composed of several experienced scientists: Dr Philip Hollyman (Project Lead, marine ecologist), Prof. Martin Collins (KEP science manager, BAS CCAMLR lead scientist, ex-GSGSSI CEO), Dr Mari Whitelaw (scientific data manager, Polar Data Centre) and a KEP biologist. BAS will appoint a PDRA to undertake important aspects of the work (laboratory work, data analysis, reporting etc.) and support the PL. Dr Hollyman. Prof. Collins will provide links to the wider BAS Ecosystems Team, CCAMLR and King Edward Point (KEP) science programmes.

BAS be responsible for shipment of samples to BAS Cambridge where the all samples will be held and where all laboratory work will be undertaken.

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

Have you provided a cover letter to address your Stage 1 feedback? Yes

Do you have partners involved in the Project?

Yes

1. Partner Name: Newcastle University

Website address: <https://www.ncl.ac.uk/>

Details (including roles and responsibilities and capacity to engage with the project):

Newcastle University has an established track record in developing sustainable environmental practices through its University research theme ONE Planet. The Modelling, Evidence and Policy research group within the School of Natural and Environmental Sciences, has a strong track record in modelling complex biological systems in order to provide evidence to support policy making decisions.

Dr William Reid (Lecturer in Marine Biology and Biological Modelling) has researched the fish fauna across all life history stages in the Southern Ocean, undertaken integrative taxonomic investigations and has experience of analysing complex biological data sets in time and space using advanced statistical methodologies. He will design the methodological approach and oversee the systematic review of the life history stages of fish caught in GSGSSI and BAT waters with the assistance of BAS (Output 2). He will lead the statistical modelling of the spatial and temporal data sets used in the proposed research with the assistance of BAS and MRAG (Output 3). He will assist in the development of training materials (Output 4).

Have you included a Letter of Support from this organisation?

Yes

2. Partner Name:

Scottish Association for Marine Science (SAMS)

Website address:

<https://www.sams.ac.uk/>

Details (including roles and responsibilities and capacity to engage with the project):

The Scottish Association for Marine Science (SAMS) is Scotland's largest and oldest independent marine science organisation. It delivers marine science to underpin policy and societal actions that aim to secure productive and sustainably managed marine environments.

Dr William Goodall-Copestake (Lecturer in Biological Oceanography) has an extensive track record of successfully applying genetics tools to address ecological questions, including experience of integrative (DNA and morphology based) taxonomic analysis of Antarctic fish. He will develop the genetic methodological approach for this project and lead on the application of this to identify the fish species present in GSGSSI and BAT waters (Output 1). The wet laboratory aspects of this genetics work will be carried out at BAS. With over 12 years of previous experience as a BAS geneticist, Will has the capacity to successfully engage with BAS staff and train the PDRA where appropriate to deliver the genetics outputs. He will also contribute towards the working group papers generated from Outputs 1 and 3, the updated species identification materials (Output 4), and apply insight from a recently gained project management qualification to assist with project delivery as needed.

Have you included a Letter of Support from this organisation?

Yes

3. Partner Name: MRAG

Website address: <https://mrag.co.uk/>

Details (including roles and responsibilities and capacity to engage with the project): MRAG has supplied observers to krill trawlers operating around CCAMLR subareas 48.1, 48.2 and 48.3 since 2006. During this time, MRAG has been responsible for the successful deployment of multiple observers each fishing season, including training, logistical arrangements and quality control of reporting and data outputs, as well as ongoing development of the observer programmes. This includes a continuous commitment to improving and expanding identification guides in order to maximise the scientific value of data gathered. MRAG has also forged close links with the vessel operators such as Aker.

The role of Dr Steven Young (Senior Fisheries Consultant) and Mr Joe Chapman (Fisheries Consultant) within the proposed project is to train scientific observers and liaise with them throughout each deployment, develop field sampling protocols and manage sample custody and logistics. They will also collaborate with other partners to develop identification guides and training materials, and to support the aforementioned modelling exercise.

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

4. Partner Name: Government of South Georgia and the South Sandwich Islands (GSGSSI)

Website address: <https://www.gov.gs/>

Details (including roles and responsibilities and capacity to engage with the project): GSGSSI is responsible for all activities that take place within the Territory, including the Maritime Zone, and is committed to evidence-based, precautionary and sustainable environmental management. Through their fisheries licensing regime they can ensure that sample collection is a priority task on vessels, and as the key user of the project outputs they will have responsibility for integrating outcomes into management.

Susan Gregory (Marine Environment and Fisheries Manager) has spent over a decade working on South Georgia fisheries research and management and has extensive experience in a variety of roles including fisheries ecologist, resident on-island field scientist, and scientific observer on commercial vessels, and is a member of the UK CCAMLR delegation. In her current role as Marine Environment and Fisheries Manager for GSGSSI she is responsible for the day-to-day management of South Georgia's fisheries and has strong relationships with operators, vessel managers, crews, observer providers, observers and scientists.

Susan will be the main GSGSSI point of contact on the project and will liaise with BAS staff, MRAG and the observers, as well as participating in stakeholder meetings and provide feedback on project reports and papers.

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

5. Partner Name: *No Response*

Website address: *No Response*

Details (including roles and responsibilities and capacity to engage with the project): *No Response*

Have you included a Letter of Support from this organisation? Yes No

6. Partner Name: *No Response*

Website address: *No Response*

Details (including roles and responsibilities and capacity to engage with the project): *No Response*

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

If you require more space to enter details regarding Partners involved in the Project, please use the text field below.

No Response

Please provide a cover letter responding to feedback received at Stage 1 if applicable and a combined PDF of all Letters of Support.

 [Hollyman Cover letter FINAL](#)
 10/01/2022
 17:38:10
 pdf 315.24 KB

 [Combined letters of support](#)
 10/01/2022
 17:31:29
 pdf 2.49 MB

Section 5 - Project Staff

Q10. Project Staff

Please identify the key staff on this project, their role and what % of their time they will be working on the project. Further information on who should be classified as key project staff can be found in the guidance.

Please provide 1 page CVs for these staff, or a 1 page job description or Terms of Reference for roles yet to be filled. These should match the names and roles in the budget spreadsheet. If your team is larger than 12 people please review if they are key project staff, or whether you can merge roles (e.g. 'admin and finance support') below, but provide a full table based on this template in the PDF of CVs you provide.

Name (First name, Surname)	Role	Organisation	% time on project	1 page CV or job description attached?
Philip Hollyman	Project Leader	British Antarctic Survey	15	Checked
TBC	Postdoctoral researcher	British Antarctic Survey	100	Checked
William Reid	Co-Investigator	Newcastle University	10	Checked
William Goodall-Copstake	Co-Investigator	SAMS	10	Checked

Do you require more fields?

Yes

Name (First name, Surname)	Role	Organisation	% time on project	1 page CV or job description attached?
Steven Young	Co-Investigator	MRAG	10	Checked
Joe Chapman	Co-Investigator	MRAG	10	Checked
Susan Gregory	Co-Investigator	GSGSSI	3	Checked
Martin Collins	Co-Investigator	British Antarctic Survey	2	Checked
Mari Whitelaw	Data Scientist	British Antarctic Survey (Polar Data Centre)	2	Checked
King Edward Point Marine Biologist	Researcher	British Antarctic Survey	2	Checked
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>	0	Unchecked
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>	0	Unchecked

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

Ensure the file is named clearly, consistent with the named individual and role above.

 [Combined CV and Jobs Descriptions](#)

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 pdf 5.11 MB

Have you attached all Project staff CVs?

Yes

Section 6 - Background & Methodology

Q11. Problems the project is trying to address

Please describe the problem your project is trying to address in terms of environment and climate issues in the UKOTs.

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 these problems? How will your proposed project help?

Please cite the evidence you are using to support your assessment of the problem (references can be listed in your additional attached PDF document which can be uploaded at the bottom of the page).

Fish bycatch is a global problem requiring accurate information to develop conservation and management strategies to preserve ecosystems. Bycatch can occur at different life history stages and spatial and temporal scales, meaning the risk of bycatch is not uniform across a species life or distributional range. The Antarctic krill fishery operates within British Antarctic Territory and South Georgia maritime waters and catches fish as bycatch. This fish bycatch is often hard to identify to species level, which may influence the accuracy of taxonomic reporting by fisheries observers. Understanding which fish life history stages interact with the fisheries and making sure there is accurate identification of species is important for the successful implementation of ecosystem management measures by GSGSSI and CCAMLR.

Developing conservation and management measures that limit bycatch of non-target species by commercial fishing operations requires robust data. An ongoing management priority for CCAMLR and GSGSSI, is minimising the impact fisheries have on krill dependent predators. The krill fishery operates in the waters surrounding British Antarctic Territory (CCAMLR statistical sub-areas 48.1 and 48.2) and the South Georgia (48.3) maritime zone, and harvested some of the largest catches on record in 2020. Current management measures primarily aim to reduce the risk to land-based predators (e.g. seals and penguins) and do not take into consideration fish bycatch. All life stages of fish (i.e. eggs, larvae, juveniles and adults) are regularly caught by krill fishing vessels and it was noted during the 2021 CCAMLR WG-FSA meeting that catches of icefish during the previous krill season exceeded the targeted fishery for this species at South Georgia in the same year. Fish bycatch within this fishery has become an issue of such importance that the CCAMLR secretariat produce an annual summary of the reported bycatch within a fishing season (e.g. WG-FSA-2021 paper 5). Early life history stages are hard to identify to species level, hampering the development of relevant fish bycatch measures and risk assessments. The krill fishery spatial effort moves seasonally depending on sea ice extent, starting at the Antarctic Peninsula and moving north to South Georgia by early winter. Over the course of the year, different life history stages of fish are at risk of being caught meaning that the risk to a particular life history stage may not be equal across the areas fished. There is a requirement to develop appropriate life history stage specific identification materials, underpinned by molecular techniques, for the international observer programme to enable accurate identification of bycatch species. This will feed into CCAMLR reporting and develop spatial and temporal understanding of the interaction between krill fishing operations and fish species at different life history stages to inform management decisions.

This project aims to identify which fish species and life stages are caught using integrative taxonomy methods; assess the spatial distribution of fish bycatch to understand which, where and when each species is caught; and use this information to establish a baseline assessment for fish by-catch and produce identification and training tools for international fisheries observers.

Q12. Methodology

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

- How you have analysed historical and existing initiatives and are building on or taking work already done into account in project design. Please cite evidence where appropriate.
- The rationale for carrying out this work and a justification of your proposed methodology.
- How you will undertake the work (materials and methods).
- How you will manage the work (role and responsibilities, project management tools etc.)

(This may be a repeat from Stage 1 but you may update or refine as necessary)

The proposal will build on and work collaboratively with a series of historical and existing initiatives to maximise success. The proposal will use larval samples collected as part of a long-term fish larvae time-series operating at King Edward Point, South Georgia, which is administered by BAS (PL coordinates). In addition, archived summer finfish samples which have been collected by BAS during their long-term monitoring of krill density in the Western Core Box (South Georgia) have been secured for the research. The research will utilise finfish samples collected as part of the Darwin Plus funded research project "Resolving ecosystem effects of the South Georgia winter krill fishery"(DPLUS149), which will provide winter stage samples. New material will be collected through the international krill fisheries observer programme, for which MRAG train and deploy observers.

This proposal will include 5 interconnecting outputs. Responsibility for generating these outputs will sit with the different suites of partners as listed below. The free to use software Trello will be used to support project management

Output 1: SAMS, BAS and MRAG

Integrative (morphological and molecular) taxonomic analysis will be conducted using the in-house samples (fish eggs, larvae, juveniles, adults) from BAS and new collections by krill fisheries observers and DPLUS149. Morphological identifications will include trialling double staining using alcian blue and alizarin red as a tool to aid identification and photographs will be taken as media for output 4. A subsample of up to 1000 individuals will be used for molecular genetic analysis to allow for morphology-molecular cross referencing. The standard mitochondrial barcoding gene cox1 will be sequenced, and in addition, the considerably more variable mitochondrial control region that is currently underused but

has great potential for distinguishing closely related fish. Comparisons will be made with the most similar DNA records held on public databases (e.g. GenBank) which contains cox1 barcodes for 86% of the species that we anticipate to be found within bycatch but for which only 39% have control region data. Data generated for Output 1 will be uploaded to open public databases including GBIF (Global Biodiversity Information Facility) and GenBank (part of the International Nucleotide Sequence Database Collaboration).

Outputs 2 & 3: Newcastle University, BAS, MRAG

A systematic review on early life history stages of bycatch species will provide baseline information on timings, duration, growth and spatial extent of egg, larval and juvenile fish stages in South Georgia and BAT waters (output 2). The review will have defined targets, a protocol for maintaining its focus and will search for articles across a series of databases (e.g. Web of Science, Google Scholar). This will mean the review will be objective, transparent and avoid publication bias which are prerequisites for evidence synthesis for decision-making in policy. The systematic review will help place in context the statistical analysis (output 3) which will examine where and when each species is caught in the fishing season in BAT and GSGSSI waters. Existing data held by BAS, and krill fisheries bycatch data requested from CCAMLR, will be used to undertake the statistical analyses. Statistical modelling will be used to determine the spatial and temporal distribution of fish bycatch and predict the relationship between location characteristics (e.g. temperature, water depth) and fishing activity (e.g. depth of fishing, time of day) and the incidence of bycatch species. The combination of the systematic review and the statistical analysis results will be integrated and used to assess which, where and when life history stages overlap with the krill fishery to establish a baseline risk of capture. Global dissemination will be achieved through a peer reviewed publication, submitted within the timeframe of this project.

Output 4: BAS, SAMS, Newcastle University and MRAG

Consolidation of outputs 1 – 3, and targeted dissemination at the management and global levels. Identification materials for fisheries observers will be developed using multiple life history stage photographs assigned to taxonomic designations confirmed by genetics (collected during Output 1). Results from Outputs 1, 2 and 3 will be presented to fishery and ecosystem managers at CCAMLR meetings and as grey literature to CCAMLR and GSGSSI.

Output 5: MRAG and BAS

MRAG operational procedures will be leveraged to incorporate newly developed identification materials (output 4) into routine annual observer training events and for reference whilst at sea. The first training event will occur at the end of the project but this dissemination will occur each year following this after the end of the project through an existing working relationship between MRAG and BAS.

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

No Response

Section 7 - Stakeholders and Beneficiaries

Q13. 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.

The principal stakeholders are GSGSSI, GBAT and MRAG. All three have been consulted throughout the development of this proposal and have provided letters of support. MRAG and GSGSSI are both partners on the project. GSGSSI has pledged staff time in-kind, agreed to provide input to annual project meetings, and provide feedback on written outputs developed throughout the project. Along with employing and training observers, MRAG will have an active role in this project with varying levels of input to all listed outputs.

There are several important commercial stakeholders within the krill fishing industry who have all provided letters of support, including: Association of Responsible Krill harvesting companies (ARK), Aker Biomarine (MSC certified operator) and Pesca Chile (MSC certified operator). These MSC certified operators have a vested interest in the sustainability of this fishery. MRAG routinely deploy fisheries observers on Aker Biomarine and Pesca Chile vessels and have discussed the proposed work with them. The observers aboard these operators' vessels will collect samples that will constitute a significant portion of the samples used for this work.

Additional stakeholders with an interest in the environment, management and conservation of South Georgia waters include the World Wildlife Foundation (who provided a letter of support), South Georgia Heritage Trust and South Georgia Association. Their members will be kept informed about the research through their respective newsletters. Both CCAMLR and Cefas play pivotal roles in the management of southern ocean fisheries and will be regularly updated on the progress of this work at CCAMLR meetings.

Q14. Institutional Capacity

Describe the Lead Partner's capacity (and that of partner organisations where relevant) to deliver the project.

BAS have five decades of history delivering polar science and logistics on and around Antarctica. The logistics infrastructure includes a cutting edge research ship (which will provide sample transport) and five research stations, of which KEP will be directly involved in this project. KEP has a 20-year record of identifying fish larvae from GSGSSI waters and cold storage facilities to hold fish samples before shipping north.

There are approximately 40 science staff in the Ecosystems team, within which this project will reside. The team's aim is to understand the combined impacts of global climate-driven change and commercial fishing on polar marine ecosystems. The team has a strong track record of delivering science to inform policy and management decisions within both GSGSSI and BAT waters. They have been key contributors to CCAMLR since its inception in 1980.

BAS headquarters has ample science facilities to undertake this project with dedicated sample storage, microscopy and molecular genetics laboratories that contain all the necessary equipment. Sample archives contain pre-collected samples that will be utilised for the project, access to which is supported by dedicated BAS facilities staff. The Polar Data Centre, at BAS headquarters, has well established procedures and support staff to ensure the long term archiving of data generated.

Project partner MRAG has a strong track record for successfully sourcing, training and deploying fisheries observers on krill fisheries vessels. MRAG's logistical expertise in this area will be relied upon to deliver newly collected samples and to help turn project outputs into successful outcomes.

Q15. Project beneficiaries

Who will your project benefit? You should consider the direct benefits as a result of your project as well as the broader indirect benefits which may come about as a result of your project achieving its Outputs and Outcome. The measurement of any benefits should be included in your project logframe.

GSGSSI and BAT will directly benefit from the outputs through improved understanding and monitoring of bycatch within the krill fisheries. The fisheries operator stakeholders will also benefit through better fish bycatch reporting which is important for their MSC certification. The identification of bycatch species will result in repositories of genetic and morphological information that will be available to the wider scientific community (Output 1), leading to improved identification materials (Output 4) that will help observers accurately record bycatch.

The systematic review and statistical analyses (Outputs 2 and 3) will provide spatial and temporal context to the species and life history stages observed as bycatch which will inform future management decisions. CCAMLR will be a direct beneficiary through improved understanding and monitoring of krill fishery bycatch. Progress will be reported to CCAMLR periodically (actions 1.5.1, 2.1.5, 3.1.4 and 4.2.1). The scientific community will benefit through baseline life history and genetic information on bycatch species, allowing assessments of future changes in the distribution and timings of life history stages in relation to changing environmental conditions. MRAG and the scientific observers will benefit from updated identification materials (Output 4), along with annual training events extending beyond the timespan of this project (Output 5).

Section 8 - Gender and Change Expected

Q16. Gender (optional)

How is your project working to reduce inequality between persons of different gender? At the very least, you should be able to provide reassurance that your proposed work is not increasing inequality. Have you analysed the context in which you are working to see how gender and other aspects of social inclusion might interact with the work you are

proposing?

BAS is part of a community of international polar organisations, national science bodies and leading employer organisations working together to make Polar science more diverse and inclusive. BAS policies will ensure that there are equal opportunities during recruitment for the PDRA position. BAS aims to embrace diversity in all its forms and are committed to equality, diversity and inclusion (see <https://www.bas.ac.uk/jobs/working-for-bas/our-cultural-values-equality-and-diversity/>). They aim to provide staff with a sense of belonging regardless of their characteristics, culture, experience, education or economic background. Women represent more than a third of the workforce at BAS from station leaders and scientists to pilots and engineers. BAS has been a member of the Athena Swan Charter since 2014. Athena Swan is used across the globe to support and transform gender equality within higher education and research, and BAS is proud to hold an Athena Swan Bronze Award.

As a line manager within BAS, the PL has undergone unconscious bias training along with specific training for conducting panel interviews. This training will be utilised when leading the recruitment panel for the PDRA.

Q17. Change expected

Detail the expected changes this work will deliver. You should identify what will change and who will benefit a) in 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.

The project will benefit a range of stakeholders including GSGSSI, GBAT, CCAMLR and the wider fisheries science community by collating existing information and analysing newly collected and archived material in order to provide a clearer and more highly resolved understanding of the life history stages of different species of fish caught as bycatch in krill fisheries.

Short-term

1. Higher resolution estimates of species richness of fish bycatch, using integrative taxonomic approaches to inform managers of GSGSSI and BAT waters, and more broadly, CCAMLR.
2. A synthesis of existing information and new data into a spatio-temporal understanding of the ecological context of when fish are at risk of being caught (what life history stage, where and when). This will inform GSGSSI and CCAMLR krill fisheries management, provide information for the GSGSSI MPA independent review and be integrated in the GSGSSI Krill Fisheries Management Plan. This information will also be useful for the integration of fish data into the ongoing krill fishery risk assessment framework to ensure the best available data for ecosystem based management of the fishery.
3. Morphological and molecular data generated during the project will be used to develop new identification materials, which will benefit fisheries observers operating in the krill fishery.

Long-term

1. High resolution fish bycatch identification data reported to CCAMLR, will benefit krill fisheries management through the development of guides and training materials for international fisheries observers to effectively monitor fish bycatch. These will be used beyond this project via training provided by MRAG.
2. Higher resolution (taxonomic and life history) fish bycatch data will provide a temporal baseline that will benefit future assessments of fisheries and climate change impacts by the scientific community.
3. The scientific community will benefit from archived biodiversity and genetic data as a resource within publicly available databases (GBIF, GenBank, PDC).

Q18. Pathway to change

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.

The research project addresses key questions in krill fisheries management related to the interactions between early life history stages of fish and the fisheries, and the development of improved mechanisms for identifying fish bycatch to enhance reporting to CCAMLR. The research is timely because the krill fisheries are expanding yet there are key gaps in our

understanding of early life history stages of bycatch species of fish, and fish are currently not covered in krill risk assessment management. The project team will use archived and new fish samples (underpinned by morphological and molecular analyses) and data from existing sources to understand the spatiotemporal dimensions to fish bycatch in the krill fisheries, understand what, when and where the risk to bycatch occurs and develop tools for improved monitoring into the future. The results will be published in peer-reviewed scientific literature, presented to CCAMLR working groups and GSGSSI through existing marine science management meetings and stakeholder events. The longevity of the project will be maintained through the development of improved fish bycatch guides and new training materials for fisheries observers. The results are expected to feed into CCAMLR and GSGSSI management of the krill fisheries.

Q19. Exit strategy

State how the project will reach a stable and sustainable end point, and explain how the outcomes will be sustained, either through a continuation of activities, funding and support from other sources or because the activities will be mainstreamed in to “business as usual”. Where individuals receive advanced training, for example, what will happen should that individual leave?

This project has a clear endpoint with the development and dissemination of the updated observer identification materials. These materials will be incorporated into the standard (business as usual) training for fishery observers by MRAG, which the PL has historically helped to deliver and will continue to do so (Output 5). In the event that the PL or partner staff at MRAG should leave, the training materials will be available for use by any staff in these roles. The identification materials will be available to all observers within CCAMLR following their dissemination at working groups (Output 4).

The peer-reviewed paper of spatial and temporal patterns in larvae will be open access and freely available to all stakeholders and the wider public (Output 3). Any underlying data which may be useful for informing fisheries management will be included in the open access publication as supplementary data, which will also be freely available.

The project will generate data and sample repositories which will be archived and publicly available indefinitely (Output 1). Molecular data will be uploaded to Genbank, species presence data will be uploaded to GBIF and all sample and meta-data will be stored with the PDC (specific funding allocated for this).

Q20. Ethics

Outline your approach to meeting Darwin’s key principles for ethics as outlined in the guidance note. Additionally, are there any human rights and/or international humanitarian law risks in relation to your project? If there are, have you carried out an assessment of the impact of those risks, and of measures that may be taken in order to mitigate them?

There are no permanent residents living in either of the two overseas territories engaged with this project. However, both GSGSSI and GBAT have been engaged and consulted throughout the development of this proposal. GSGSSI are also a project partner and have pledged staff time in kind (of Susan Gregory) to participate in the project. BAS has a long history of collaboration with both GSGSSI and GBAT from extensive research conducted throughout both territories. BAS also operates KEP on behalf of GSGSSI and the Foreign, Commonwealth and Development Office (FCDO) of the United Kingdom. As a result of these activities, BAS has a well established process to address any ethical, legal and environmental obligations which may arise. We will continue to work closely with representatives from both OTs to ensure that all of our activities comply with any relevant requirements, and that all necessary permits are obtained.

To uphold the highest international scientific standards, all data produced by this project as well as all identification materials produced for observers will be made publicly available, through online databases and accessible repositories. We also have planned dissemination activities to share our outputs with the wider stakeholder community, and have costed in funds to publish our findings in an open access scientific journal.

We will engage with the BAS Health and Safety department and laboratory managers to ensure that the safety of all participating staff members is fully considered, producing approved risk assessments for activities as necessary.

Section 9 - Budget, Risk Management & Funding

Q21. Budget

Please complete the appropriate Excel spreadsheet, which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet. Note that there are different budget templates for grant requests under £100,000 and over £100,000.

- [Budget form for projects under £100,000](#)
- [Budget form for projects over £100,000](#)

Please refer to the [Finance Guidance](#) for more information.

Please ensure you include any co-financing figures in the Budget spreadsheet to clarify the full budget required to deliver this project.

NB: Please state all costs by financial year (1 April to 31 March) and in GBP. Darwin Plus cannot agree any increase in grants once awarded.

 [FINAL Second Stage Budget-over-100K-Hollyman](#)
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Q22. Financial Risk Management

This question considers the financial risks to the project. Explain how you have considered the risks and threats that may be relevant to the successful financial delivery of this project. This includes risks such as fraud, bribery or corruption, but may also include the risk of fluctuating foreign exchange, delays in procurement or recruitment and internal financial processes such as storage of financial data.

A large proportion of funds associated with this project will be for salaries and associated overheads and so will be controlled through the UKRI Shared Business Services Centre (SBS). Any equipment and consumable purchases will be within the strict UK government procurement rules, controlled through the UKRI SBS ordering system, which requires initial quotations and payment of invoices upon receipt of goods, minimising the risk of fraud. Travel and subsistence costs are for staff attending meetings. These claims will also be made through the SBS system which requires all employee and non-employee claims to be submitted with receipts, minimising the risk of fraud.

Q23. Funding

Q23a. Is this a new initiative or a development of existing work (funded through any source)?

New initiative

Please provide details:

This is a new initiative

Q23b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for similar work?

No

Section 10 - Finance

Q24. Financial Controls

Please demonstrate your capacity to manage the level of funds you are requesting. Who is responsible for managing the funds? What experience do they have? What arrangements are in place for auditing expenditure?

BAS/NERC will control finances through the fully audited UKRI Shared Business Services Centre (SBS). A separate budget cost centre will be created for the project. The Project Leader, Dr Hollyman, will manage the overall budget. Dr Hollyman currently has similar responsibility for DPLUS109 as PL.

BAS/NERC also employs staff within a dedicated Finance Department. These staff will provide support for the management of the overall budget, monitor spend to ensure that the budget is managed appropriately, provide quarterly account statements, and additional statements on request. The Finance Department will liaise with Darwin Plus over Finance and Auditing.

Funds have been requested in Y3 to cover the costs of audit. BAS finance have experience of managing and reporting on numerous Darwin Plus projects.

Q25. Balance of budget spend

Defra are keen to see as much Darwin Plus funding as possible directly benefiting OT 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.

As neither GSGSSI nor BAT have permanent local residents it will not be possible to benefit the local economy through the employment of staff. However, we will utilise field staff already at KEP and have agreed an in-kind contribution for their time. We also have an agreed in-kind contribution from GSGSSI for Susan Gregory's staff time. All developed material will be specific to GSGSSI and BAT waters and will be available indefinitely to aid in the monitoring of the krill fisheries in these OTs. The increased understanding of the dynamics of fish bycatch within the krill fishery will also benefit the management of these fisheries. Fisheries revenue constitutes the majority of the revenue of GSGSSI, therefore by increasing the sustainability and longevity of their fisheries, the capacity for financial benefit to GSGSSI is also increased over time.

Q26. 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 capital items requested for this project

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.

This project brings together a multidisciplinary team with a proven track record of working together in the area of study. BAS have considerable experience working in GSGSSI and BAT waters, and already have extensive sample collections of fish and larval fish which will be utilised at no cost to this project. With MRAG and GSGSSI as project partners and support from several commercial fishing companies, the collection of samples by fisheries observers will also come at no cost to the project. Use of commercial fishing vessels as sampling platforms allows multiple locations to be sampled at once and negates the requirement for expensive scientific ship time. Shipment of samples to the UK will utilise BAS logistics at no extra cost.

BAS has well-established laboratory facilities which will require no additional set-up costs aside from project consumables.

BAS has an award winning communications team who will help with public dissemination of the proposed work on the BAS website with a project-specific page; where outputs, reports and papers will be uploaded along with general information about the work. The staff costs associated with the project will cover the cost of a full time PDRA who will only be working on this project for the full 2.5 years. The recruitment of the PDRA will use the resources within BAS.

Only a single in-person meeting per year has been costed into the project. Virtual meetings will be used to keep more regular contact and engage proactively with stakeholders in lieu of costly in-person meetings.

Q28. Outputs of the project and Open Access

All outputs from Darwin Plus projects should be made available on-line and free to users whenever possible. Please outline how you will achieve this and detail any specific costs you are seeking from Darwin Plus to fund this.

Those data generated from this project will be made available on-line or archived in appropriate on-line databases. The genetic data will be archived with Genbank. Photographs of fish used for the development of identification material along with associated meta-data will be archived with UKRI Polar Data Centre and will have a unique DOI. To account for this process we have costed 2% of Dr Whitelaw's time in the Polar Data Centre. Where appropriate, fish larval and juvenile samples will be linked to or up-loaded to the GSGSSI data portal and GBIF (Global Biodiversity Information Facility).

Scientific outputs from the project will be published in open access journals and made available through online archives. We will make use of the institutional agreements with publishers (e.g. Wiley, Springer), which will allow us to publish open access without charges or at reduced rates. We have requested [REDACTED] to cover this in the budget. All papers with BAS authors are added to the NERC Open Research Archive (NORA) which is an institutional repository. If more than one peer reviewed paper is produced during the course of this project and funds are not available for open access, we will make an alternative version (i.e. the accepted manuscript) publicly available via NORA.

We will disseminate additional outputs through public and special interest group talks, conference presentations and websites which will reach scientific and public audiences. National and international conference attendance has been costed in for Dr Hollyman, Dr Reid, Dr Goodall-Copestake and the PDRA.

Section 11 - Safeguarding

Q29. Safeguarding

Projects funded through Darwin Plus must fully protect vulnerable people all of the time, wherever they work. In order to provide assurance of this, projects are required to have appropriate safeguarding policies in place. Please confirm the lead organisation has the following policies in place and that these are available on request:

Please upload the lead partner's Safeguarding Policy as a PDF on the certification page.

We have a safeguarding policy, which includes a statement of our commitment to safeguarding and a zero tolerance statement on bullying, harassment and sexual exploitation and abuse	Checked
We have attached a copy of our safeguarding policy to this application	Checked
We keep a detailed register of safeguarding issues raised and how they were dealt with	Checked
We have clear investigation and disciplinary procedures to use when allegations and complaints are made, and have clear processes in place for when a disclosure is made	Checked
We share our safeguarding policy with downstream partners	Checked

We have a whistle-blowing policy which protects whistle-blowers from reprisals and includes clear processes for dealing with concerns raised

Checked

We have a Code of Conduct in place for staff and volunteers that sets out clear expectations of behaviors - inside and outside of the work place - and make clear what will happen in the event of non-compliance or breach of these standards

Checked

Please outline how you will implement your policies in practice and ensure that downstream partners apply the same standards as the lead organisation.

As BAS is a part of UKRI we will adhere to the UKRI Safeguarding Policy found at <https://www.ukri.org/wp-content/uploads/2020/10/UKRI-081020-SafeguardingPolicy.pdf>. This policy and guidance will be shared with all partners at the start of the project and embedded in all practices.

Section 12 - Logical Framework

Q30. Logical Framework

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

- [Stage 2 Logframe Template](#)

Please complete your full logframe in the separate Word template and upload as a PDF using the file upload below – **please do not edit the template structure other than adding additional Outputs if needed as a logframe submitted in a different format may make your application ineligible**. Copy your Impact, Outcome and Output statements and your activities below - these should be the same as in your uploaded logframe.

Please upload your logframe as a PDF document.

 [Hollyman Log Framework FINAL](#)
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Impact:

The ecosystem-based management and conservation of biodiversity within SGSSI and BAT waters is enhanced by an improvement in the precision of reporting of Antarctic krill fishery bycatch.

Outcome:

Improved understanding of where, when and which fish are caught as bycatch in the krill fisheries, translating into improved species monitoring practice for the benefit of SGSSI and BAT

Project Outputs

Output 1:

Identification of which life history stages of which fish species are present in SGSSI and BAT waters and potentially caught by the krill fishery

Output 2:

Baseline information assembled for fish life history stages caught as bycatch during krill fishery operations.

Output 3:

Statistical analysis of CCAMLR bycatch and BAS larval and juvenile fish data and assessment of overlap between fish life history stages and krill fishing operations

Output 4:

Updated species identification materials for fisheries observers, vessel operators and other end users

Output 5:

Training event for identification materials end users

Do you require more Output fields?

It is advised to have less 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 and 1.3 are contributing to Output 1.

1.1 Collation and cataloguing of all currently archived fish and larval fish samples held at BAS by Dr Hollyman, Prof. Collins and the PDRA.

1.1.1 Training of PDRA in morphological identification of available fish material by Dr Hollyman and Prof. Collins.

1.1.2 Development of mitochondrial DNA genetic identification toolbox for fish bycatch species by Dr Goodall-Copestake with training for PDRA.

1.1.3 DNA extraction from tissue sub-samples by PDRA and Dr Goodall-Copestake also providing training as required.

1.1.4 Amplification, cleaning, sequencing and quality editing of mitochondrial DNA by PDRA and Dr Goodall-Copestake (providing training as required).

1.1.5 DNA sequence database cross referencing and species assignment by PDRA and Dr Goodall-Copestake (providing training as required).

1.1.6 Collation of sample morphological and meta- data, formatting and submission for archiving in the Polar Data Centre by PDRA, Dr Hollyman, Dr Goodall-Copestake.

1.2 Collection of new fish and larval fish samples by observers within the krill fishery, observers to be briefed via MRAG.

1.2.1 Collation and cataloguing of all newly collected fish samples from the krill fishery by PDRA and KEP Biologist.

1.2.2 All unidentified specimens identified to the finest taxonomic level by Dr Hollyman and the PDRA.

1.2.3 Trialling of double staining using alcian blue and alizarin red as a tool to aid identification by PDRA and Dr Hollyman.

1.2.4 Photographs of all available specimens from 1.1 and 1.2 will be taken for activity 4.1 by PDRA and Dr Hollyman.

1.2.5 DNA extraction of samples by PDRA and Dr Goodall-Copestake.

1.2.6 Mitochondrial DNA amplification-cleaning-sequencing-editing by PDRA and Dr Goodall-Copestake.

1.2.7 DNA sequence database cross referencing and species assignment by PDRA and Dr Goodall-Copestake.

1.2.8 Collation of sample images (from 1.2.4), morphological and meta- data, formatting and submission for archiving in the Polar Data Centre by PDRA, Dr Hollyman, Dr Whitelaw and Dr Goodall-Copestake.

1.3 Samples used in activities 1.1.4 and 1.2.6 will be archived to produce a DNA bank by PDRA and Dr Goodall-Copestake.

1.4 Genetic data and metadata formatted for Genbank, and species identification and metadata formatted for GBIF by PDRA and Dr Goodall-Copestake.

1.4.1 Genetic data submitted to Genbank by PDRA and Dr Goodall-Copestake.

1.4.2 Species distribution data submitted to GBIF by PDRA and Dr Hollyman.

1.4.3 Submission of data collated in 1.2.8 submitted to the Polar Data Centre by Dr Whitelaw and the PDRA

1.5 Paper on fish bycatch diversity prepared for CCAMLR working groups by Dr Hollyman, Dr Goodall-Copestake, Prof. Collins and PDRA.

1.5.1 Papers submitted to and presented at WG-EMM (Y3) and WG-FSA (Y3) by Dr Hollyman.

2.1 Systematic review of all available literature (grey and peer-reviewed) focussed on early life history stages of known bycatch species within the krill fishery in order to make a baseline assessment of information by Dr Reid, Dr Hollyman and PDRA.

2.1.1 Define objectives and write protocol for systematic review by Dr Reid, Dr Hollyman and PDRA.

- 2.1.2 Search for scientific papers using a series of bibliographic databases by PDRA.
- 2.1.3 Collate relevant scientific papers and read by Dr Reid, Dr Hollyman and PDRA.
- 2.1.4 Extract information on larval hatching timings, larval duration, growth rates and spatial distribution of larvae and juvenile fish and create database to store data by Dr Reid, Dr Hollyman and PDRA.
- 2.1.5 Write review for CCAMLR working group (WG-FSA) by Dr Reid, Dr Hollyman and PDRA.

- 3.1 Statistical modelling of fish bycatch and fish larval data from CCAMLR and BAS archives by Dr Reid, Dr Hollyman and PDRA
 - 3.1.1 Request fish bycatch and associated metadata data from CCAMLR by Dr Hollyman.
 - 3.1.2 Extract fish larval and juvenile data from BAS databases by Dr Phil Hollyman and PDRA.
 - 3.1.3 Undertake spatial and temporal modelling of CCAMLR fish bycatch data and BAS larval and juvenile data in association with other key variables including sea surface temperature, fishing depth, seafloor depth, season, time of day and catch location by Dr Reid.
 - 3.1.4 Write CCAMLR working group paper Dr Reid, Dr Hollyman, Dr Young, Mr Chapman and PDRA.

- 3.2 Integrate data generated during Output 1 into the systematic review database generated during activity 2.1 by PDRA.
 - 3.2.1 Use results of modelling exercise and systematic review to assess overlap of timings and life history stage of fish with krill fisheries operation to understand which species are at risk of being caught, when and at what stage by Dr Reid, Dr Hollyman, Prof. Collins and MRAG.
 - 3.2.2 Write peer reviewed publication, Dr Reid assisted by all other team members.

- 4.1 Production of identification materials for fisheries observers. PDRA, assisted by all other team members
 - 4.1.1 Visual identification aids developed by synthesising the information generated from all previous activities. These identification materials will cover the various early life history stages of each available fish, the location and month when fish may be found and subtleties of distinguishing between similar species that are often confused. PDRA, assisted by all other team members.

- 4.2 Paper summarising newly developed identification materials prepared for CCAMLR working groups by PDRA assisted by all investigators.
 - 4.2.1 Papers submitted to and presented at WG-FSA (Y3) by PDRA and Dr Hollyman.

- 5.1 Deliver training on newly developed identification guides to observers at annual pre-season observer training at MRAG London. by Dr Young, Mr Chapman and Dr Hollyman
 - 5.1.1 Production of training summary report by MRAG.

Section 13 - Implementation Timetable

Q31. Provide a project implementation timetable that shows the key milestones in project activities

Provide a project implementation timetable that shows the key milestones in project activities. Complete the Word template as appropriate to describe the intended workplan for your project, and upload as a PDF.

[Implementation Timetable Template](#)

Please add/remove columns to reflect the length of your project. For each activity (add/remove rows as appropriate) indicate the number of months it will last, and fill/shade only the quarters in which an activity will be carried out.

-  [Hollyman Implementation FINAL](#)
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Section 14 - Monitoring and Evaluation

Q32. Monitoring and evaluation (M&E)

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

Darwin Initiative projects are expected 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](#)).

Overall project progress and monitoring will be the responsibility of the PL. Weekly meetings will be held between the PL and PDRA to assess progress and risks (threats and opportunities) to ensure that these are understood and to manage them proactively, with monthly virtual meetings on the same proactive theme between the main project partners at which actions can be established and monitored as required.

The PDRA will work with activity leads for major components of work to prepare brief progress reports every three months to be discussed at the next monthly meeting. The content of these reports will vary according to the type of work conducted and measurable indicator(s) that the work contributes to. We have also costed for annual in-person meetings between BAS, Newcastle University, SAMS and MRAG. These meetings will be used to discuss project progress and advance ongoing activities. For Dr Hollyman, Dr Reid, Dr Goodall-Copestake and the PDRA, we have also costed in national and international conference attendance. This will provide an opportunity to solicit unbiased external evaluation of the project for consideration by the project partners at subsequent monthly virtual meetings.

There will be several CCAMLR working group papers produced through the course of the project. These papers will be produced in Outputs 1, 3, 4 and 5 and will have different members of the team responsible for each (activity 1.5: Dr Hollyman, activity 2.1.5 & 3.1.3: Dr Reid, activity 4.2: PDRA). The peer reviewed paper (activity 3.2.2) will be led by Dr Reid. All Working group papers submitted to CCAMLR along with peer reviewed publication(s) will ensure unbiased external evaluation of the project.

Annual virtual stakeholder meetings will be organised by the PDRA to report the overall progress of the project. Any working group or peer reviewed papers produced over the preceding year will be presented at these meetings. On a more regular basis, outputs such as 6-month and annual Darwin Plus reports, and the working group and peer reviewed papers will be shared with GSGSSI and GBAT at the time of completion. By having GSGSSI as a partner with in-kind staff time, they will be asked to provide input to papers and reports before submission.

The PL will work closely with BAS finance to monitor spending and arrange an audit (costed for year 3).

Total project budget for M&E in GBP (this may include Staff, Travel and Subsistence costs)

██████████

Number of days planned for M&E

██

Percentage of total project budget set aside for M&E (%)

██

Section 15 - Lead Partner Track Record

Q33. Lead Partner track record

Has your organisation been awarded a Darwin Initiative award before (for the purposes of this question, being a partner does not count)?

Yes

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

Reference No	Project Leader	Title
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DPLUS149	Prof. Martin Collins	Resolving ecosystem effects of the South Georgia winter krill fishery
DPLUS109	Dr Philip Hollyman	Initiating monitoring support for the SGSSI-MPA Research and Monitoring Plan
DPLUS120	Dr Victoria Warwick-Evans	Spatial segregation and bycatch risk of seabirds at South Georgia
DPLUS092	Prof. Richard Phillips	Seabird sentinels: mapping potential bycatch risk using bird-borne radar
DPLUS057	Dr Jennifer Jackson	Where are they now? Right whales in South Georgia waters
DPLUS069	Dr Susie Grant	Building data resources for management of SGSSI MPA

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

If yes, please upload these on the certification page. Note that this is not required from Government Agencies.

Yes

Section 16 - Certification

Certification

On behalf of the

company

of

British Antarctic Survey

I apply for a grant of



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 have enclosed CVs for project key project personnel, letters of support, budget and project implementation timetable (uploaded at appropriate points in application).
- Our last two sets of signed audited/independently verified accounts and annual report are also enclosed.

Checked

Name

Margaret Clark

Position in the organisation

Head of Finance

Signature (please upload e-signature)

 [Margaret Clark Signature](#)
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Date

10 January 2022

Please upload the Lead Partner's Safeguarding Policy as a PDF.

 [UKRI-081020-SafeguardingPolicy](#)
 10/01/2022
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 pdf 111.65 KB

Please attach the requested signed audited/independently examined accounts.

 [UKRI-200721-AnnualReport2020-2021](#)
 10/01/2022
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 pdf 683.09 KB

Section 17 - Submission Checklist

Checklist for submission

	Check
I have read the Guidance documents, including the "Guidance Notes for Applicants" 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 this proposed project.	Checked
I have provided a budget based on UK government financial years i.e. 1 April - 31 March and in GBP.	Checked
I have checked that the budget is complete, correctly adds up and I have included the correct final total at the start of the application.	Checked
The application has been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).	Checked
I have attached my completed logframe and timeline as a PDF using the templates provided.	Checked
I have included a 1 page CV or job description for all the Project staff identified at Question 11, including the Project Leader, or provided an explanation of why not.	Checked
I have included a letter of support from the Lead Partner and main partner organisation(s) identified at Question 10, or an explanation of why not.	Checked

I have included a cover letter from the Lead Partner, outlining how any feedback at Stage 1 has been addressed where relevant.	Checked
I have included a signed copy of the last 2 years annual report and accounts for the Lead Partner, or provided an explanation if not.	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, Darwin Plus 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 this application form, including personal data, will be used by Defra as set out in the latest copy of the Privacy Notice for Darwin, Darwin Plus and the Illegal Wildlife Trade Challenge Fund available [here](#). This Privacy Notice must be provided to all individuals whose personal data is supplied in the application form. Some information, but not personal data, may be used when publicising the Darwin Initiative including project details (usually title, lead partner, location, and total grant value) on the GOV.UK and other websites.

Information relating to the project or its results may also be released on request, including under the 2004 Environmental Information Regulations and the Freedom of Information Act 2000. However, Defra will not permit any unwarranted breach of confidentiality nor will we act in contravention of our obligations under the General Data Protection Regulation (Regulation (EU) 2016/679).