DPLUS009

Darwin Plus: Overseas Territories Environment and Climate Fund
Project Application Form

Submit by Monday 7 January 2013

Please read the Guidance Notes before completing this form

Information to be extracted to the database is highlighted in blue

Basic Data

1. Project Title	Antarctic and Sub-Antarctic Marine Protected Areas: using penguin tracking data to identify candidate areas
2. OT(s) covered by proposal	British Antarctic Territory, South Georgia and the South Sandwich Islands (with benefits also for the Falkland Islands and Tristan da Cunha).
3. Start Date:	1 July 2013
4. End Date:	31 March 2015
5. Duration of project (cannot be longer than 24 months)	21 months

Summary of Costs	2013/14	2014/15	2015/16	**Total**
6. Budget requested	£48,512	£70,869	£22,795	£142,176
7. Total value of Co-funding	£69,620	£82,620	£62,620	£214,860
8. Total Project Budget (all funders)	£118,132	£153,489	£85,415	£357,036
9. Names of Co-funders	British Antarctic Survey (BAS), BirdLife International			

10. Lead applicant organisation (who will be responsible for delivering outputs, reporting and managing funds)	British Antarctic Survey, Natural Environment Research Council
11. Project Leader name	Dr Philip N. Trathan
12. Email address	p.trathan@bas.ac.uk
13. Postal address	British Antarctic Survey, Natural Environment Research Council, Madingley Road, Cambridge CB3 0ET
14. Contact details: Phone/Fax/Skype	

15. Type of organisation of Lead applicant. Place an x in the relevant box.												
OT GOVT		UK GOVT	X	UK NGO		Local NGO		International NGO		Commercial Company		Other (e.g. Academic)	

16. Principals in project. Please identify and provide a one page CV for each of these named individuals. You may copy and paste this table if you need to provide details of more personnel or more than one main, or other, project partner.

Details	Project Leader	Project Partner 1 - Main	Project Partner 2
Surname	Trathan	Lascelles	Hindell
Forename(s)	Philip	Ben	Mark
Post held	Head of Conservation Biology, British Antarctic Survey	Marine Important Bird Area Coordinator	Chair of the SCAR Expert Group on Birds and Marine Mammals
Institution (if different to above)	British Antarctic Survey	BirdLife International	University of Tasmania, Hobart, Australia
Department	Ecosystems Programme	Global Seabird Programme	Institute for Marine and Antarctic Studies
Telephone/Skype			
Email	.		

17. Has your organisation received funding under the Darwin Initiative before? If so, please provide details of the most recent (up to 3 examples).

Reference No	Project Leader	Title
EIDCF013	David Barnes	2012-2013 South Atlantic wilderness: assessment of Tristan da Cunha's seabed biodiversity
EIDCF005	Iain Staniland	2010-2011 Darwin Southern Sea Lion Programme
18019	David Barnes	2010-2012 Mapping benthic biodiversity of the South Georgia continental shelf and slope

18. If your answer to question 17 was no, provide details of 3 contracts previously held by your institution that demonstrate your credibility as an implementing organisation. These contacts should have been held in the last 5 years and be of a similar size to the grant requested in this application.

Contract 1 Title	OTEP: Identifying important and vulnerable marine areas for conservation at South Georgia
Contract Value	£162,495.38
Contract Duration	2010-2013
Role of institution in project	Lead Partner
Brief summary of the aims, objectives and outcomes of the contract.	This project identified important and vulnerable marine habitats at South Georgia that required conservation in order to better preserve the unique characteristics of this fragile ecosystem. Based on this information, the Lead Partner liaised with GSGSSI and the FCO PRU, NGOs and fishing companies, to develop a representative and comprehensive network of Marine Protected Areas. This work allowed GSGSSI to declare the world's largest sustainably managed MPA, enabling it to conserve important habitats and species in the context of climate variability and change, and pressures from local, sustainable fisheries and tourism.
Reference contact details (Name, e-mail, phone number).	Dr Martin Collins, Chief Executive Officer, South Georgia Government. T: + 500 282 14; E: ceo@gov.gs

Contract 2 Title	OTEP: Identifying important and vulnerable marine areas for conservation in British Antarctic Territory
Contract Value	£62,376.35
Contract Duration	2009-2011
Role of institution in project	Lead Partner
Brief summary of the aims, objectives and outcomes of the contract.	This project provided scientific and technical support for the design of the first Marine Protected Area in coastal and high seas waters off the British Antarctic Territory. The project led to the Commission for the Conservation of Antarctic Marine Living Resources adopting the South Orkney Islands southern shelf Marine Protected Area in 2009, the first MPA located entirely within the High Seas, anywhere in the world.
Reference contact details (Name, e-mail, phone number)	Jane Rumble, Head of the Polar Regions Department, FCO. T: 020 7008 2610; E: Jane.Rumble@fco.gov.uk

Project Details

19. Project Outcome Statement: Describe what the project aims to achieve and what will change as a result. (100 words max)
The creation of a regional database of penguin tracking data and analysis/modelling that will: a) define candidate sites/areas for special protection within a region-wide input to the CCAMLR MPA process; b) underpin new marine spatial planning to generate MPAs for BAT; c) identify key penguin coastal/inshore foraging areas within the SGSSI MPA; d) allow easy and rapid future delineation of candidate MPAs for the Falkland Islands and Tristan/Gough, including via interoperability with a longstanding analogue database for pelagic seabirds; e) allow future addition of marine mammal data; f) provide pioneer Antarctic candidate input to the CBD global marine MPA (EBSA) process.

20. Background: (What is the current situation and the problem that the project will address? How will it address this problem? What key themes will it address? (200 words max)
Despite the UK's pioneering and leadership role within CCAMLR (plus for the SGSSI MPA) in establishing the first MPA in the Antarctic Treaty area, CCAMLR's development of a representative network of MPAs has stalled (largely due to the politics relating to the Ross Sea and East Antarctica). To enable progress in the key area of West Antarctica, UK (BAT) proposes a fully consultative marine spatial planning approach for marine managed areas (including candidate MPAs) in the Scotia and Weddell Seas. Arguably the most critical data for delineating key habitats in coastal and inshore areas will be information from penguin foraging. These data urgently need compiling and analysing in a customised database (interoperable with BirdLife's Global Procellariiform Tracking Database (internationally recognised for its role in bycatch management by RFMOs (tuna commissions) and as the main global data input for pelagic marine species to the CBD's candidate MPA process). A penguin database would allow analogous analyses to provide a suite of candidate sites whose protection and management will be fundamental and high priority for regional MPAs within BAT (and CCAMLR). The same process would provide input for revising coastal/inshore protection for penguins within the SGSSI MPA; with future application to the UKOTs of Falkland Islands and Tristan/Gough.

21. Methodology: Describe the methods and approach you will use to achieve your intended outcomes and impact. Provide information on how you will undertake the work (materials and methods) and how you will manage the work (roles and responsibilities, project management tools etc). Give details of any innovative techniques or methods. (500 words max)

The proposed penguin relational tracking database will be developed from the BirdLife Global Procellariiform Tracking Database (GPTD). Petrels and albatrosses principally forage at the ocean surface, whereas penguins dive to feed, with some species sometimes reaching 500m; thus, penguins search for prey in three dimensions. The GPTD provides an ideal data archive and analysis framework for horizontal foraging and migration movements, as it allows telemetry data to be integrated from a variety of tracking devices. However, the GPTD does not provide for the integration of depth which provides critical information on penguin habitat and feeding requirements. To provide this:

a) Our database will be developed from the GPTD but will be extended to include the third dimension of movement. It will be populated with foraging information from the international penguin researcher community. This will require careful negotiation with data holders to facilitate data access; also when data are used, especially collectively, proper recognition must be given to the data originators. BirdLife developed a template for GPTD data access and use; the PL and PPs will use this template to engage with researchers, including within the CCAMLR community, through SCAR, and through the International Penguin Conference (the PL is on the steering committee for IPC8) to ensure data are assembled, collated and standardised.
b) The penguin tracking database will enable us to determine where and when penguins forage, including their most important depth zones. BirdLife have developed a set of computer routines to identify which areas of the ocean are selected by tracked birds, by applying further statistical analyses these routines report whether these areas are representative for all birds in the originating population and are therefore important. We will refine these routines to account for depth.
c) Tracking data are only available from some colonies. Therefore to ensure we identify a representative network of sites, we will relate known foraging distributions to environmental correlates so we can estimate the location of foraging areas for colonies where no tracking data exist. Such modelling approaches are complex; however, we have achieved good predictive power in the past. BirdLife recently hosted a workshop to bring together the World's tracking experts to develop best-practice approaches (e.g. Wakefield et al, 2011; Louzao et al, 2011; BirdLife International, 2012).
d) Identifying such areas (as part of this project, and in the future) will allow us to delineate marine Important Bird Areas; BirdLife have developed a standardised set of data-driven criteria to identified IBAs, and these have proved a useful tool to focus conservation action. IBAs have strong links with other international policy mechanisms including Ecologically or Biologically Significant Areas (EBSAs). In some cases mIBAs or EBSAs can form a shadow list for potential Marine Protected Areas.

Project leadership and management will be carried out through a steering committee, chaired by the PL, but comprising the PPs and others in the penguin and conservation communities. Budget management will be through the BAS/NERC finance system. The first policy forum for engagement will be CCAMLR where the PL already has a strong record in engagement and leadership.

22. How does this project:
a) Deliver against the priority issues identified in the assessment criteria
b) Demonstrate technical excellence in its delivery
c) Demonstrate a clear pathway to impact in the OT(s)
(500 words max)

a) This proposal will deliver: 1) information about species habitat utilisation, facilitating both species management and conservation; this information will be used initially within CCAMLR which has developed an internationally respected framework for sustainable fisheries management within an ecosystem-based context; together with 2) the development of tools for environmental management, that are exportable to other policy forums and to other ecosystems and areas, including some of the UKOTs in the South Atlantic.

b) The penguin tracking database and its analytical and visualisation tools will be based on BirdLife's Global Procellariiform Tracking Database, the latest version of which was used to generate the global electronic Atlas of Marine Important Bird Areas (www.birdlife.org/datazone/marine). The GPTD was

developed with the support and supervision of North American, European and Australasian experts in the field and had a steering committee representing 6 nationalities. The system is more advanced and manages data ownership in a better way than any other parallel database; several other bird and non-bird groups have approached BirdLife to use the software behind the system. Over the past five years the number of BirdLife Partner countries engaged in the programme has risen to over 40, primarily as a result of a range of regional and national capacity building workshops. These workshops have also brought together experts and through a participatory approach BirdLife has developed cutting edge technological approaches to tracking data analyses. These will be published in early 2013 as a high impact refereed journal paper. The penguin tracking database therefore has a preeminent pedigree of technical development providing for nationally, regionally and internationally important conservation outcomes.

c) The outputs will contribute directly to the process for BAT described in the Background section above (Q.20). The engagement process with stakeholders will involve technical workshops and subsequent development of the relevant marine spatial planning processes, leading to multi-stakeholder proposals for appropriate management measures (including candidate MPAs). It is envisaged that this process will be introduced to CCAMLR and endorsed by the CAMLR Commission. Input to the ongoing development of the SGSSI MPA by GSGSSI will be direct (through collaborators involved in this project). Potential input to plans for MPA development around the Falklands islands and Tristan/Gough would be straightforward, simply requiring input of existing penguin tracking data from these two areas.

d) The computer routines developed by BirdLife may also be developed as standalone systems which could be established locally in the UKOTs, thereby establishing capacity in the UKOTs to undertake updates of this work into the future.

23. 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. (250 words max)

Marine Spatial Planning (MSP) is a process that allows users of the ocean to work together to make informed and coordinated decisions about how to use marine resources. The intended result of MSP is a more sustainable approach to ocean use – ensuring that marine resources and ecosystem goods and services are utilised, but within clear environmental limits to ensure ecosystems remain healthy and biodiversity is conserved. Our stakeholders are therefore diverse and include CCAMLR and fishing companies, Antarctic tourist operators, SCAR and individual scientists, Non-Governmental Organisations and conservation lobby groups, and regional Governments, including UKOTs.

We have met informally with UK government officials responsible for both BAT and SGSSI and who are all extremely supportive of this proposal. Within the Antarctic the CCAMLR debate on MSP has stalled and needs to be revitalised through a collaborative approach that better involves fishing nations and conservation-minded nations. The Deputy Commissioner for the British Antarctic Territory has developed a strategy for this engagement, and sees the penguin tracking database as a scientific prerequisite for helping further this strategy. The debate in CCAMLR will remain stalled without the right sort of scientific impetus.

The Government of SGSSI has recently enjoined in MSP to deliver the South Georgia MPA. New provisions within the MPA provide adequate protection for penguins at South Georgia, but further developments need to be considered for the South Sandwich Islands.

Both BAT and SGSSI are engaged in the MSP process and are providing financial support (£500k) for other elements in the developing strategy.

24. Institutional Capacity: Describe the implementing organisation's capacity (and that of partner organisations where relevant) to deliver the project.
(500 words max)

BAS/NERC has a long history of working in the Antarctic. More specifically, the PL specialises in penguin and ecosystem research and leads a research team that involves other penguin specialists. The PL has a high profile internationally and is a member of the steering committee for the 8th International Penguin Conference; he is also part of the discussion team liaising with the IUCN Species Survival Commission to set up a penguin specialist group. Consequently, the PL has a wide network of contacts that will help facilitate engagement with the penguin research community.

The PL also has extensive firsthand experience of negotiating MPAs in national and international environments. He was the lead scientist working on the development of the South Georgia MPA and the lead scientist working on the UK's proposal to establish the world's first High Seas MPA within CCAMLR waters. The PL has been involved with CCAMLR for over 20 years and is a senior adviser to the UK delegation to CCAMLR. He has extensive experience of working with multiple stakeholders, including fishing companies and NGOs. CCAMLR relies on member contributions, but has asked the PL to liaise with experts in predator tracking to facilitate the development of research tools that will benefit ecosystem management and monitoring. The proposed penguin tracking database would fulfil this requirement.

BirdLife has unparalleled experience of integrating information on birds, often derived from many disparate sources, and of setting up large scale, multi-sourced tracking databases, including of negotiating data access and data use. More specifically the PP has wide ranging experience of designing and implementing relational databases and user interfaces. The PP also has very extensive experience of delivering impactful conservations outputs from these tools. Including providing white-paper reports to Regional Fisheries Management Organisations and hotspot analyses to feed into national and international marine spatial planning and MPA exercises, including the Convention on Biological Diversity's EBSA process.

SCAR is charged with initiating, developing and coordinating high quality international scientific research in the Antarctic; it is part of the International Council for Science (ICSU). More specifically the PP is the SCAR Chair for the Expert Group on Birds and Marine Mammals. EG-BAMM is tasked with providing expert knowledge on birds and mammals in the Antarctic, and to support research that will quantify the role of birds and marine mammals in Antarctic ecosystems. EG-BAMM also contributes to the conservation and management of Antarctic and Sub-Antarctic birds and marine mammals through the appropriate utilisation and interpretation of currently available scientific data. A recent development is to consider ecosystem structure and dynamics, as these air-breathing predators provide an integrated signal of ecosystem change. The PP, through his role in SCAR, therefore has the mandate and the ability to coordinate across much of the Antarctic research community, including engagement with the penguin tracking and research community.

25. Expected Outputs

Output (*what will be achieved e.g. capacity building, action plan produced, alien species controlled)*	Indicators of success *(how we will know if its been achieved e.g. number of people trained/ trees planted)*	Status before project/baseline data *(what is the situation before the project starts?)*	Source of information *(where will you obtain the information to demonstrate if the indicator has been achieved?)*
1. Collate all existing penguin tracking data into a centralised database.	1500 tracks added to database from 6 species, Adélie, chinstrap, gentoo, macaroni, rockhopper and king penguins.	No database system currently exists for sharing tracking data in the penguin community. Individual research institutes have individual archives for their data, and researchers outside	A centralised tracking database will provide summary statistics about its status, including about the number of species, the number of birds, the number of colonies and

Output (*what will be achieved e.g. capacity building, action plan produced, alien species controlled)*	Indicators of success *(how we will know if its been achieved e.g. number of people trained/ trees planted)*	Status before project/baseline data *(what is the situation before the project starts?)*	Source of information *(where will you obtain the information to demonstrate if the indicator has been achieved?)*
		the main institutes have lower levels of data security, sometimes data collected by PhD students can be lost.	the different years and times of year for which tracking data are available.
2. Analyse all available tracking data to define candidate foraging sites and moulting areas for special protection.	Tracking analyses will be developed and applied to all datasets made available in output 1. Candidate sites will be identified for each dataset but the number and extent of these will be moderated by reference to the actual behavioural ecology present in the data. It is therefore not feasible to estimate numbers or target area coverage at present. When feasible, we will consult with regional experts and species specialists to ensure ecological coherence for sites.	Outputs from the GPTD have already been provided to CCAMLR for some albatross, petrel and shearwater species, showing the value of these in the CCAMLR MPA process. However, only a small number of penguin tracks have been used in the CCAMLR MPA process, and these were only from a small number of sites.	We will develop scientific submissions to CCAMLR, based on the outputs of the penguin tracking database. We will submit these through the UK delegation to CCAMLR, so that they achieve the greatest level of influence possible, for helping develop the CCAMLR MPA process.
3. Underpin new Marine Spatial Planning processes in CCAMLR to generate new MPAs within BAT, and through the Antarctic Treaty Committee for Environmental Protection to generate new Antarctic Specially Managed Areas and new Antarctic Specially Protected Areas within BAT.	Tracking data will be integrated to provide analytical outputs and identified core foraging areas, as appropriate to the CCAMLR MPA process and the CEP ASMA and ASPA process for all datasets available following output 1. Inputs to CCAMLR and CEP will be delivered through the respective UK delegations, led by the FCO Polar Regions Department.	The CCAMLR MPA process has relied heavily upon the location of known penguin breeding colonies combined with an estimated foraging radius around each colony. This information is not complete and not accurate. Using tracking data to refine habitat usage will ensure areas of potential resource conflict between penguins and fishermen will be properly delineated; this is not currently feasible.	We will develop scientific submissions to CCAMLR, based on the outputs of the penguin tracking database. We will submit these through the UK delegations to CCAMLR and CEP, so that they achieve the greatest level of influence possible, for helping develop the CCAMLR MPA process and the CEP ASMA and ASPA process. Ultimately the level of success will be the number of MPAs and ASMAs and ASPAs adopted.

26. Expected Outcomes: How will each of the outputs contribute to the overall outcome of the project? (100 words max)

Tracking data are logistically and financially expensive to collect, and are seldom accessible to researchers other than those in the data originators group. Despite this, many researchers wish their data to be more freely available. Therefore, developing a database system is an important step for making data available whilst maintaining ownership rights for data originator. Rigorous scientific analysis is critical for identifying important habitats; however, links between the original data and any derived analytical product must be maintained and is essential for end user buy-in. The penguin tracking database will therefore engage both scientists and policymakers so that penguin habitats may be protected.

27. Main Activities Activities or tasks to be done to deliver the outputs. Include activities on information sharing and collaboration with other OTs	
Output 1	Collate all existing penguin tracking data into a centralised database.
1.1	Initiate workshop at the 8th International Penguin Conference in Bristol, October 2013 to discuss data sharing. Develop meta-data list of all penguin tracking data collected to date.
1.2	Develop a PostGreSQL relational database capable of integrating available penguin tracking data, this will be enabled with analytical tools to standardise formats and make data comparable.
1.3	Collaborate with penguin researchers and data originators to collate tracking datasets into the database system. Work with them to ensure data ownership is protected.
Output 2	Analyse all available tracking data to define candidate foraging sites and moulting areas for special protection.
2.1	Data will be amalgamated into groups representing each unique combination of species, population and breeding stage and the BirdLife computer routines for the GPTD will be reviewed and applied to each individually.
2.2	Develop habitat modelling analyses to predict habitat preferences in order to better understand the drivers of each species distribution (i.e. whether it is located in relation to static ecosystem features or dynamic oceanographic features). Determine whether boundaries of candidate sites are locally and regionally representative.
2.3	Consult through the project steering committee made up of species and regional experts to understand any gaps in the process.
Output 3	Underpin new Marine Spatial Planning processes in CCAMLR and CEP.
3.1	Engage with BAT and SGSSI to identify UK policy requirements.
3.2	Develop scientific papers for delivery to CCAMLR and CEP via the appropriate UK delegation.
3.3	Engage internationally within CCAMLR/CEP to explain the conservation imperatives within the UK delegation papers and to advocate appropriate conservation measures.

28. Risks			
Description of the risk	Likelihood the event will happen (H/M/L)	Impact of the event on the project (H/M/L)	Steps the project will take to reduce or manage the risk
Penguin tracking community are not willing to allow project access to data.	L	H	BirdLife and BAS have already been in discussion with many members of the penguin tracking scientific community. Both also have good relationships with other institutions around the world that have collected these data and have their support. BirdLife's experience with the GPTD provides a sound basis for trust in the proposed system.
Sample sizes of available data are insufficient to allow conclusive sites to be identified.	L	M	Although some species and regions may be poorly surveyed, the PL and PPs have extensive knowledge of what data exists and believe there is sufficient to identify a representative network of sites. This is particularly true within the BAT waters.
No clear habitat preferences are evident in the tracking data or detectable by current habitat modelling approaches.	M	L	This will only impact the accuracy of distributional predictions for untracked populations. Various other statistical tests exist that may allow us to explain the environmental niche occupied by the tracked populations and this would allow a more direct extrapolation which may be useful to the MPA process.
Computer power is inadequate to resolve the habitat models.	M	L	Habitat models can require intensive computational effort and/or considerable statistical support in order to resolve habitat requirements. We will therefore work with our existing network of experts, statisticians and other modelling contacts to minimise any potential impacts of this on our delivery of candidate areas.
Incomplete knowledge of distribution of penguin colonies for habitat modelling.	M	L	Remote sensing methods are rapidly providing a new baseline for penguin breeding distribution in the Antarctic.

29. Sustainability: How will the project ensure benefits are sustained after the project has come to a close? If the project requires ongoing maintenance or monitoring, who will do this? (200 words max)

BirdLife have managed the GPTD for the past 8 years. Throughout this period the system has been supported through BirdLife core funds, and where necessary, through additional money from external agencies and foundations. The penguin tracking database will require similar maintenance considerations, and BirdLife have already agreed to make the commitment that they will maintain the penguin system in an analogous manner into the future.

During the initial database development period, all efforts will be made to future-proof the system and ensure minimal maintenance and as little day-to-day management as maybe required. Computer software routines for data standardisation will be developed so that data are processed automatically by the database.

The analytical methods and computer routines will be published as part of the project's submission to CCAMLR and also in the peer-reviewed scientific literature. The routines themselves will also be made available as open-source code so localised systems can be established in the supporting UKOTs, with the offer to make them available to other UKOTs as appropriate. This will allow updates to be readily undertaken by responsible bodies as new data become available, and for the impacts of conservation measures to be monitored as new tracking data describing penguin foraging effort and location are collected.

30. Monitoring & Evaluation: How will the project be monitored and who will be responsible? Will there be any independent assessment of progress and impact? When will this take place, and by whom? (250 words max)

A project steering committee will be created that will include (i) all project staff including the PL and PPs; (ii) a specialist expert in the conservation status of penguin species; (iii) a specialist expert in penguin tracking; (iv) and a stakeholder able to represent the project beneficiaries, possibly a member of the UK CCAMLR delegation from the Polar Regions Department. The project steering committee will convene as soon as is feasible after the project commences. They will develop a detailed implementation plan with specific and detailed project objectives, timelines and project outputs, building upon the brief details described in Q.19 and Q.27, and below. During this first meeting the steering committee will define clear milestones and delivery dates for implementation.

A project implementation group comprising the PL and PPs will convene every three months to monitor project delivery. To save costs we will use the videoconference facilities at BAS so that the SCAR PP can participate. During these formal meetings we will review outputs, outstanding goals and any obstacles or challenges to delivery. We will also review the detailed spend and remaining budget.

The project steering committee will reconvene at the end of each year, again saving costs by use of the videoconference facilities at BAS. This meeting will review progress and examine the project milestones and delivery dates. Members of the steering committee who are not PPs will assess progress and decide whether the implementation plan needs to be re-evaluated.

The project completion report is **due <u>up to</u> 3 months** after the project is over and is linked to the final payment.

31. Use of information: If your application is successful, the information in this form may be published on the internet or used in publications. If there are any parts of the application which you do not want to be used in this way, please indicate them in the box below.

In the interests of open and transparent project implementation we are happy that the full form can be published.

32. Financial controls: (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 RCUK Shared Services Centre (SSC). A separate budget cost centre will be created for the project. The project steering committee will oversee the strategic spending of funds, with day-to-day oversight and authorisation by the PL who will be ultimately accountable for managing the budget.

The PL has successfully managed budgets for both BAS/NERC projects and externally funded project for over 15 years. Some of these budgets have been considerably larger than the budget requested for this project.

Please complete the separate Excel spreadsheet which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet.

NB: Please state all costs by financial year (1 April to 31 March) and in GBP. **Budgets submitted in other currencies will not be accepted.** Use current prices – and include anticipated inflation, as appropriate, up to 3% per annum. The Darwin Initiative cannot agree any increase in grants once awarded.

33. Value for Money

Please explain how you worked out your budget and how you will provide value for money through managing a cost effective and efficient project.

You should also discuss any significant assumptions you have made when working out your budget.

This project represents exceptional value for money as we shall be benefitting from use of systems and analyses that have already been expertly developed by BirdLife. In doing so, we shall be avoiding considerable start-up costs and development costs, as we will be using the existing and already proven systems developed by BirdLife for the GPTD. The cost of this existing development work by BirdLife is far in excess of £125k.

The penguin tracking database platform will be built so that other web-based front-end user nodes may be fitted to it. For example, if the penguin tracking database evolves into a generic diving predator database in the future, the beneficial audience for the project will increase, reflecting this wider interest group. Each additional taxonomic group may wish to develop their own front-end user node. Hence, the penguin tracking database may provide a much broader conservation benefit facilitating tracking work, conservation and outreach in other UKOTs, including for cormorants, gannets, seals etc. By avoiding development costs for the database platform, each such specialist taxonomic group will benefit considerably.

Telemetry data are very costly to collect and in addition require considerable logistic effort. However, the costs associated with collecting these data have already been expended. For example, BAS has almost certainly spent over £400k on penguin tracking data in the past decade. This project therefore proposes to make use of data already collected, adding value to these data in ways not envisaged when originally collected. Other research institutes have similar historical data archives. Collating these resources represents considerable value for money and will benefit greatly international conservation initiatives.

By amalgamating these tracking data, validating them and treating them in a standard way, this project will be adding further value and achieving something that the individual datasets could not do on their own; that is they will become an extremely valuable resource for Marine Spatial Planners. Data such as these will provide a unique data layer for helping define Marine Protected Areas.

In developing our budget we have made a number of assumptions, including the continuing commitment of BAS staff to the CCAMLR Scientific Committee and its Working Groups. BAS engagement in CCAMLR is therefore already accounted for through other budgets. Similarly, BAS engagement in SCAR and in the IPC8 is already covered. These existing commitments will greatly reduce project costs, potentially by over £55k per annum, including for travel and subsistence. We have assumed that the PL will expend a variable amount of time on the project; more time will be needed during the start-up phase, and more time at the end whilst identifying Important Bird Areas. The main role of the PL will be to liaise and coordinate with data originators and to liaise with CCAMLR. As part of his core scientific work on penguins and as part of his work with CCAMLR, the PL will assist with the intellectual development of habitat use determination routines and development of Marine Spatial Planning processes.

We assume that the BirdLife PP will be fully committed to the project over the life of the project. The BirdLife PP will develop specific analytical routines associated with integrating penguin dive data and tracking data. This will include validation, standardisation and habitat use determination. The BirdLife PP will also oversee a consultant to develop a web interface for the penguin tracking database. We envisage that travel funds will be needed for the BirdLife PP to attend the SCAR Biology Conference in July 2013 and the 8th International Penguin Conference in September 2013.

We assume that the SCAR PP will only expend small amounts of time on the project, mainly to provide liaison with data originators and for coordination with members of the EG-BAMM group. We envisage that the SCAR PP will require funds to attend the 8th International Penguin Conference in September 2013.

We propose two workshops to engage with data originators and to develop routines for processing data. These are tentatively scheduled for 2012 and 2013. We have made the assumption that these workshops will be funded through other external sources (as yet unsecured). As of the date of project submission the Royal Society for the Protection of Birds (RSPB) has expressed a strong desire to be involved in the project and they are exploring options for funding one or both workshops.

We recognise that penguins are charismatic species which have the potential to facilitate public education and outreach. If funded, we will engage with others to secure additional funding to develop further projects that will add value to this foundation project.

Provide a project implementation timetable that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project (Q1 starting April 2013)

	Activity	No of Months	Year 1 – 2013/14				Year 2 – 2014/15				Year 3 – 2015/16			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1	Collate all existing penguin tracking data into a centralised database.	31		X	X	X	X	X						
1.1	Initiate discussions at the SCAR Biology meeting in Barcelona and the International Penguin Conference in Bristol to explore data sharing. Develop meta-data list of all penguin tracking data collected to date.	1		X										
1.2	Develop a PostGreSQL relational database capable of integrating available penguin tracking data, this will be enabled with analytical tools to standardise formats and make data comparable.	9			X	X	X							
1.3	Collaborate with penguin researchers and data originators to collate tracking datasets into the database system. Work with them to ensure data ownership is protected.	9				X	X	X						
Output 2	Analyse all available tracking data to define candidate foraging sites and moulting areas for special protection.	22					X	X	X	X	X			
2.1	Data will be amalgamated into groups representing each unique combination of species, population and breeding stage and the BirdLife computer routines for the GPTD will be reviewed and applied to each individually.	9					X	X	X					
2.2	Develop habitat modelling analyses to predict habitat preferences in order to better understand the drivers of each species distribution (i.e. whether it is located in relation to static ecosystem features or dynamic oceanographic features). Determine whether boundaries of candidate sites are locally and regionally representative.	12						X	X	X	X			
2.3	Consult through the project steering committee made up of species and regional experts to understand any gaps in the process.	1									X			
Output 3	Underpin new Marine Spatial Planning processes in CCAMLR and CEP.	14		X	X	X	X	X	X	X	X	X	X	
3.1	Engage with BAT and SGSSI to identify UK policy requirements.	2	X				X				X			
3.2	Develop scientific papers for delivery to CCAMLR and CEP via the appropriate UK delegation.	6	X	X			X	X			X	X		
3.3	Engage internationally within CCAMLR/CEP to explain the conservation imperatives within the UK delegation papers and to advocate appropriate conservation measures.	6			X				X				X	

CERTIFICATION 2013/14

On behalf of the British Antarctic Survey, a constituent part of the Natural Environment Research Council

(*delete as appropriate)

I apply for a grant of £142,176 in respect of **all expenditure** to be incurred during the lifetime of this project based on the activities and dates specified in the above application.

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 lead institution to submit applications and sign contracts on their behalf.)*

I enclose CVs for project principals and letters of support. Our most recent audited/independently verified accounts and annual report can be found at (delete as appropriate): See BAS Business Plans for 2010 and 2011 at:

www.antarctica.ac.uk/about_bas/publications/business_plan_2010.pdf

www.antarctica.ac.uk/about_bas/publications/bas_business_plan_2011_external.pdf

Name (block capitals)	Ian Briggs
Position in the organisation	Head of Finance

Signed | **Date:** 20 December 2012

Application Checklist for submission

	Check
Have you provided **actual start and end dates** for your project?	X
Have you provided your **budget based on UK government financial years** i.e. 1 April – 31 March and in GBP?	X
Have you checked that your **budget is complete**, correctly adds up and that you have included the correct final total on the top page of the application?	X
Has your application been **signed by a suitably authorised individual**? (clear electronic or scanned signatures are acceptable in the email)	X
Have you included a **1 page CV for all the principals**?	X
Have you included a **letter of support from the main partner(s) organisations**?	X
Have you included a **copy of the last 2 years' annual report and accounts** for the lead organisation? An electronic link to a website is acceptable.	X
Have you **read the Guidance Notes**?	X
Have you **checked the Darwin Plus website** immediately prior to submission to ensure there are no late updates?	X

Once you have answered the questions above, please submit the application, not later than midnight GMT at the end of Monday 7 January 2013 to Darwin-Applications@ltsi.co.uk using the first few words of the project title **as the subject of your email**. If you are e-mailing supporting documentation separately please include in the subject line an indication of the number of e-mails you are sending (e.g. whether the e-mail is 1 of 2, 2 of 3 etc). You are not required to send a hard copy.

DATA PROTECTION ACT 1998: Applicants for grant funding must agree to any disclosure or exchange of information supplied on the application form (including the content of a declaration or undertaking) which the Department considers necessary for the administration, evaluation, monitoring and publicising of Darwin Plus. Application form data will also be held by contractors dealing with Darwin Plus monitoring and evaluation. It is the responsibility of applicants to ensure that personal data can be supplied to the Department for the uses described in this paragraph. A completed application form will be taken as an agreement by the applicant and the grant/award recipient also to the following:- putting certain details (i.e. name, contact details and location of project work) on the Darwin Initiative and Defra/FCO/DFID websites (details relating to financial awards will not be put on the websites if requested in writing by the grant/award recipient); using personal data for the Darwin Initiative postal circulation list; and sending data to Governor's Offices outside the UK, including posts outside the European Economic Area. Confidential information relating to the project or its results and any personal data may be released on request, including under the Environmental Information Regulations, the code of Practice on Access to Government Information and the Freedom of Information Act 2000.