



Darwin Initiative Main/Post/D+ Project Half Year Report (due 31 October 2016)

Project Ref No	DPLUS054
Project Title	Managing Antarctic krill fisheries: identifying candidate marine areas for protection
Country(ies)/Territory(ies)	BAT, SGSSI
Lead Organisation	BAS
Partner(s)	BirdLife International, ERA
Project Leader	<i>Philip Trathan, Head of Conservation Biology</i>
Report date and number (e.g., HYR3)	<i>HYR1</i>
Project website/ Twitter/ Blog/ Instagram etc	
Funder (DFID/Defra)	<i>Darwin Plus 4</i>

1. Outline progress over the last 6 months (April – Sept) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up to end September).

Since the project started on 1 April 2016 we have successfully recruited a postdoctoral fellow, Dr Victoria Warwick-Evans (BAS) who will be employed full time a BAS for the duration of the project. Dr Warwick-Evans has been working on the development of preferred foraging habitat models for chinstrap penguins, using pre-existing GPS telemetry data and time-depth-recorder dive data. Dr Warwick-Evans has successfully integrated all available data for the South Orkney Islands and is beginning to integrate the data with corresponding environmental co-variate data. Models are being developed in ArcGIS Geographic Information Software and in the R statistical framework. A variety of statistical frameworks are under consideration, including Generalised Additive Models (GAM), Boosted Regression Trees (BRT) and Ensemble Models.

Dr Philip Trathan (BAS) is dedicating 15-20% of his research time to the project and is developing habitat availability models using the same data and the same software platforms. The intension is to bring together the preferred habitat and availability models to explore where chinstrap penguins forage at different times of year.

Dr Trathan has developed collaborative links with other Antarctic animal tracking experts through the Scientific Committee for Antarctic Research (SCAR) Expert Group on Birds and Marine Mammals (EGBAMM). This link is extremely beneficial to the project as it ensures that world leading experts are involved in the design of the statistical analyses.

Dr Trathan and Dr Claire Waluda (BAS) have also begun to develop krill consumption models for penguins in the Scotia Sea. They are collaborating with Dr Louise Emmerson and Dr Colin Southwell (Australian Antarctic Division) to develop appropriate energetic models in the R statistical framework. These models will subsequently be parameterised using existing CCAMLR Ecosystem Monitoring (CEMP) data.

Katarina Lorenz, Dr Colin Harris (ERA), Dr Ben Lascelles, Dr Maria Dias (BirdLife International) and Dr Trathan have also begun to consider how best to delineate marine Important Bird and Biodiversity Areas for penguins in Subarea 48.1 and Subarea 48.2.

Evidence of the progress made on the project is available from the papers submitted to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) during 2016, including to the Working Group on Ecosystem Monitoring and Management (WG-EMM) and the Scientific Committee.

CCAMLR WG-EMM

WG-EMM-16/14: Delegation of the United Kingdom - Report on the Second SCAR Retrospective Analysis of Antarctic Tracking Data Workshop.

WG-EMM-16/16: P. Trathan and S. Hill - Start date of the CCAMLR fishing season for Antarctic krill.

WG-EMM-16/17: P. Trathan and S. Hill - Spatial aggregation of harvesting in Subarea 48.1, in particular during the summer and close to the coast.

WG-EMM-16/20: K. Lorenz, C. Harris, B. Lascelles, M. Dias and P. Trathan - A first assessment of marine Important Bird and Biodiversity Areas for penguins in Subarea 48.1 (Antarctic Peninsula, and South Shetland Islands) and Subarea 48.2 (South Orkney Islands).

WG-EMM-16/37: P. Trathan, L. Emmerson, C. Southwell and C. Waluda - A bioenergetics model assessment of the prey consumption of macaroni penguins in Subarea 48.3.

CCAMLR Scientific Committee

SC-CAMLR-XXXV/11: Delegation of the United Kingdom - Precautionary management of the Antarctic krill fishery at small spatial scales in the context of regional climate variability: is no data the same as no impact?

SC-CAMLR-XXXV/BG/14: Delegation of the United Kingdom - Precautionary management of the Antarctic krill fishery at small spatial scales in the context of regional climate variability: pros and cons of coastal buffers, closed areas and move-on rules.

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

No significant problems or unexpected delays have been experienced. Dr Warwick-Evans began work in early August 2016, however it is not anticipated that this slightly late start date will have any long-term carry-over effects.

2b. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS:	Yes/No	<i>Not applicable</i>
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Formal change request submitted:	Yes/No	<i>Not applicable</i>
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Received confirmation of change acceptance	Yes/No	<i>Not applicable</i>
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3a. Do you currently expect to have any significant (e.g., more than £5,000) underspend in your budget for this year?

Yes No Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project

please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

This report is a little late due to the impact of the annual cycle of CCAMLR meetings which involved the Project Leader being away from the UK for a substantial part of October.

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also be raised with LTS International through a Change Request.**

Please send your **completed report by email** to Eilidh Young at Darwin-Projects@ltsi.co.uk . The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g., Subject: 22-035 Darwin Half Year Report**