

## Darwin Plus: Overseas Territories Environment and Climate Fund Annual Report

To be completed with reference to the "Writing a Darwin/IWT Report" Information Note: (<https://dplus.darwininitiative.org.uk/resources/reporting-forms-change-request-forms-and-terms-and-conditions/>). It is expected that this report will be a maximum of 20 pages in length, excluding annexes)

**Submission Deadline: 30<sup>th</sup> April 2021**

### Darwin Plus Project Information

Project reference	DPR8S2\1004
Project title	Spatial segregation and bycatch risk of seabirds at South Georgia
Territory(ies)	South Georgia
Lead organisation	British Antarctic Survey
Partner institutions	Birdlife International
Grant value	£269,233
Start/end dates of project	1 <sup>st</sup> March 2021 / 31 <sup>st</sup> October 2023
Reporting period (e.g. Apr 2020-Mar 2021) and number (e.g. Annual Report 1, 2)	April 2021 Annual report 1
Project Leader name	Victoria Warwick-Evans
Project website/blog/social media	
Report author(s) and date	V. Warwick-Evans R. Phillips 25/04/2021

### 1. Project summary

Despite measures to minimise bycatch of South Georgia's globally important populations of seabirds, albatross and petrel populations are still declining, and at different rates across the archipelago. We will use biologging devices to track grey-headed albatrosses and white-chinned petrels from different colonies. We aim to characterise variation in colony-specific overlap of birds with fishing fleets, identify high-risk areas, and inform a more focussed approach to engaging with fisheries to better understand and address impacts of bycatch on these threatened species.

### 2. Project stakeholders/partners

Since the start of the project at the beginning of March, we have engaged with the project partners via email. The purpose of the email was to update the project partners about the amended timescale of the project, and to update them on logistical aspects of the project. Given that the project has only been running part time (1.5 days per week), since 1<sup>st</sup> March 2021, there has been little reason to engage with them at present. We will continue to engage with all partners as the project progresses.

### **3. Project progress**

#### **3.1 Progress in carrying out project Activities**

There are no activities in the logframe that should have been completed by this stage in the project. The date of the first activity is January 2022 where we will begin the tracking work. However, during the few days that we have worked on the project we have made substantial progress with preparing for the field season. We have engaged with South Georgia government, to discuss the details of the project and the timetable that we will need to visit the different islands for deployment of the GPS devices. We have also completed documents required by the British Antarctic Survey logistics and operations team, so that they can provide support with project planning and logistics. Additionally, we have conducted in-depth research into the different GPS devices available from different manufacturers, in order to decide which devices to purchase that meet all specifications and provide the best value for money.

#### **3.2 Progress towards project Outputs**

As stated in the previous section, the project has only just begun. However, we believe that the project remains on track to achieve all outputs during the specified timeframe of the project.

#### **3.3 Progress towards the project Outcome**

The project remains on track to achieve the outcome by the end of funding, and we have no reason to doubt that the indicators are adequate for measuring achievement of the project outcome.

#### **Monitoring of assumptions**

All of the risks and assumptions still hold true.

### **4. Project support to environmental and/or climate outcomes in the UKOTs**

The project will directly benefit the GSGSSI as it will achieve some of the objectives as stated in the MPA RMP, and GSGSSI-led albatross action plan. These objectives include understanding the at sea-distribution of white-chinned petrels, and tracking albatrosses from locations other than Bird Island. In the long-term it will benefit GSGSSI if we are able to use this information to maintain healthy populations of seabirds around the archipelago. The project will benefit the UK government as it will contribute to the Blue Belt initiative for protection of the marine environment, and as such will support vital conservation objectives whilst demonstrating the UKs commitment to protecting the global marine environment. The project will benefit various NGOs as it will provide scientific results to present to fisheries managers to promote the adoption of mitigation measures in areas of high bycatch mortality.

### **5. OPTIONAL: Consideration of gender equality issues**

The PI on the project is female and is supported mainly by a male Co-I. Project partners are 1 male and 1 female. Therefore our project is supportive of gender equality issues.

### **6. Monitoring and evaluation**

The PL and Co-I will work together for M&E. As the project progresses we will continue to meet weekly as necessary to discuss the day to day running of the project (such as fieldwork logistics, analysis, interpretation, and communication with stakeholders). Additionally, monthly

meetings will be organised where progress will be evaluated, any challenges will be discussed, and any modifications to the project will be developed. We will also have biannual meetings with the project partners that will be written up and reported. Papers to be presented at stakeholder meetings such as regional fisheries management meetings, GSGSSI Stakeholder meetings, ACAP and ICCAT, will be developed and discussed in advance of the relevant meeting. Additionally, we will hold post-meeting debriefs, with project partners, to discuss, in particular, how our project was received by other members, and if there are any improvements we can make to achieve improved stakeholder engagement. Additionally, in the final year of the project, we will have meetings with the project partners to discuss the progress in terms of implementing changes to management in order to mitigate bycatch in fisheries.

## **7. Lessons learnt**

Everything has gone well in the limited time that we have been working on the project. We will continue to evaluate what is going well and what could be improved as the project progresses.

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

Not Applicable.

## **9. Other comments on progress not covered elsewhere**

We have covered all progress made to date in previous sections.

## **10. Sustainability and legacy**

We have engaged with various members of South Georgia government and Friends of South Georgia to discuss the project. As a result of these discussions we have been offered additional funding to track wandering albatrosses from prion island in addition to the grey-headed albatrosses and white-chinned petrels that were in the original proposal. This provides evidence of increased interest and capacity as a result of the work we have done so far during the short time we have been working on the project. Our planned exit strategy is still valid.

## **11. Darwin identity**

We have not had the opportunity to date to publicise the Darwin initiative, but will take every opportunity to do this as the project progresses.

## **12. Impact of COVID-19 on project delivery**

Covid-19 has impacted our project as a result of limited international travel during December 2020 and January 2021. As it became clear during the summer of 2020 that it would be unlikely that the project would go ahead as planned, we submitted a change request form, to delay the project and change the timescale of the project. The change request was granted, and we now plan to carry out fieldwork during January 2022 and January 2023, instead of 2021 and 2022 as originally planned. As the change request was agreed and a new implementation timetable and logframe were developed, the impact of COVID 19 on these new time-frames is minimal to-date. We have been able to work well on the project whilst working from home and are able to continue planning the upcoming season. As a result of meetings with the operations team, we are of the opinion that it is very likely that our upcoming season will go-ahead, albeit under slightly different conditions. For example, it is likely that we will be required to quarantine for 2 weeks when we arrive in the Falklands. However, we are currently of the opinion that the work will go ahead.

We will assure the health and safety of the team by adhering to strict social distancing and quarantining guidelines both as we work from home, and during the travel required for fieldwork.

It is likely that as a result of COVID-19 there will be more of an opportunity for remote working, and for remote attendance at international meetings. We will take every opportunity to use virtual meetings in future, if the impact and outcome will not be impacted by attending remotely.

### 13. Safeguarding

Please tick this box if any safeguarding violations have occurred during this financial year.

If you have ticked the box, please ensure these are reported to [ODA.safeguarding@defra.gov.uk](mailto:ODA.safeguarding@defra.gov.uk) as indicated in the T&Cs.

### 14. Project expenditure

**Table 1: Project expenditure during the reporting period (1 April 2020 – 31 March 2021)**

Project spend (indicative) in this financial year	2020/21 D+ Grant (£)	2020/21 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others (Please specify)				
<b>TOTAL</b>				

**Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021 – if applicable**

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
<b>Impact</b> Insert agreed project Impact statement		(Report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity e.g. steps towards sustainable use or equitable sharing of costs or benefits)	
<b>Outcome</b> (Insert agreed project Outcome statement)	(Insert agreed Outcome level indicators)	(Report against the indicators on progress towards achieving the project Outcome)	(Highlight key actions planned for next period)
<b>Output 1.</b> (Insert agreed outputs with activities relevant to that outputs in lines below. Activities relevant to more than one Output should be cross-referenced rather than repeated)	(Insert original Output level indicators)	(Report general progress against indicators, comment on their appropriateness, and reference where evidence is provided e.g. <i>Evidence provided in section 3.2 of report and Annex X</i> )	
Activity 1.1 Insert activities relevant to this Output		(Report completed or progress on activities that contribute toward achieving this Output)	(Outline what will be carried out in the next period)
Activity 1.2, Etc.			
<b>Output 2.</b> (Insert agreed output)	(Insert agreed Output level indicators)	(Report against the indicators on progress towards achieving the Output)	
Activity 2.1.			
Activity 2.2. Etc.			
<b>Output 3. Etc.</b>			

**Annex 2: Project’s full current logframe as presented in the application form (unless changes have been agreed) - if applicable**

*N.B. if your application’s logframe is presented in a different format in your application, please transpose into the below template. Please feel free to contact [Darwin-Projects@ltsi.co.uk](mailto:Darwin-Projects@ltsi.co.uk) if you have any questions regarding this.*

**Impact:**

Population declines of white-chinned petrels and grey-headed albatross breeding on South Georgia will reverse, and their conservation status will improve as a result of improved management practices.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p><b>Outcome:</b> Colony-specific, areas of high bycatch-risk, during breeding and non-breeding seasons, are identified for white-chinned petrels and grey-headed albatrosses. Initial steps towards modification of mitigation policy incorporating these results.</p>	<p>0.1 Maps indicating spatially and temporally explicit high-risk areas are produced. 0.2 Engagement with Stakeholders (including relevant Fisheries managements, government stakeholders and NGOs). 0.3 Commitment to change policy mitigation measures. 0.4 Steps towards adoption of results into relevant fisheries management frameworks.</p>	<p>0.1 Independent meeting report text discussing the results of the project in a positive light. 0.2 Report text to include the next steps for incorporation into management frameworks.</p>	<p>0.1 Tracked birds will interact with fishing vessels, or overlap with areas used by pelagic or demersal fisheries. Previous tracking studies from Bird Island indicate that the both of these species overlap with fisheries during the non-breeding season. Bycatch records from South Georgia show that white-chinned petrels overlap with the South Georgia toothfish fishery if the season starts early.</p>
<p><b>Output 1:</b> Habitat preferences of white-chinned petrels and grey-headed albatrosses from different colonies, during the breeding season, are identified, and inter-colony variation in their at-sea distributions is characterised.</p>	<p>1.1 Relationships between seabird habitats and oceanographic variables are identified (May 2022). 1.2 Maps highlighting seabird distributions and high-density hotspots during the breeding season are produced (June 2022). 1.3 Spatial overlap in high-use areas of birds from different colonies are quantified (July 2022).</p>	<p>1.1 Models will be validated to test their predictive power using recognised statistical techniques. 1.2 Results will be discussed with project partners at bi-annual meetings which will be written up.</p>	<p>1.1 White-chinned petrels and grey-headed albatrosses will be breeding on Cooper Island and Bird Island and will be catchable. These species breed in large numbers and are tractable for tracking studies. 1.2 Environmental predictors will have sufficient predictive power to predict the distribution of seabirds. There is abundant evidence that seabirds select habitats based on oceanographic cues. Furthermore, extensive experience in this type of modelling, large sample sizes and abundant environmental information will optimise model performance.</p>

<p><b>Output 2:</b> Identify overlap with fisheries during the breeding season, and identify specific high-risk areas from different fishing fleets.</p>	<p>2.1 A suite of detailed maps and tables describing the overlap between predicted habitat use and different fishing fleets are produced for the breeding season (December 2022).</p>	<p>2.1 Submission of manuscripts for peer-reviewed papers, after quality assessment from co-authors.</p>	<p>2. 1 Tracked birds will overlap with fisheries. Tracking studies from birds breeding at Bird Island have shown overlap of both grey-headed albatrosses and white-chinned petrels with both local and international fisheries.</p>
<p><b>Output 3:</b> Habitat preferences of GHA and WCP during the non-breeding season are identified, inter-colony variation is characterised, and overlap with fisheries is quantified.</p>	<p>3.1 Relationships between seabird preferred habitats and oceanographic variables during the non-breeding season are identified (April 2023). 3.2 Maps highlighting seabird distribution and high-density areas during the non-breeding season are produced, and spatial overlap between colonies is quantified (April 2023). 3.3 Maps and tables which describe the overlap between both species and individual fishing fleets are produced (May 2023).</p>	<p>3.1 Models will be validated to test their predictive power using recognised statistical techniques. 3.2 Results will be discussed with project partners at bi-annual meetings which will be written up. 3.3 Submission of manuscripts for peer-reviewed papers, after quality assessment from co-authors.</p>	<p>3.1 White-chinned petrels and grey-headed albatrosses will be breeding on Cooper Island and Bird Island and will be catchable. These species breed in large numbers and are tractable for tracking studies. 3.2 Environmental predictors will have sufficient predictive power to predict the distribution of seabirds. There is abundant evidence that seabirds select habitats based on oceanographic cues. Furthermore, extensive experience in this type of modelling, large sample sizes and abundant environmental information will optimise model performance.</p>
<p><b>Output 4:</b> Dissemination and application</p>	<p>4.1 Results and recommendations shared with stakeholders to inform their conservation and management frameworks (May to October 2023). 4.2 Data deposited in global databases (October 2023). 4.3 Communication of results at national and international conferences (May to October 2023).</p>	<p>4.1 Text from independent meeting reports, and meeting minutes will discuss the results and the plans to implement changes to management frameworks. 4.2 Datasets available online. 4.3 Abstracts presented in conference programmes.</p>	<p>4.1 Outputs will be discussed at relevant stakeholder meetings. The decline in populations of WCP and albatrosses is a recognised conservation issue for all stakeholders. As such any measures to mitigate further declines in these populations are a priority for many stakeholders, and a consideration for fisheries management bodies.</p>

## Activities

1.1 Track GHA from Cooper Island and Bird Island, and track WCP from Bird Island and Paryadin Peninsula

using GPS devices (January 2022).

1.2 Use statistical analyses to create habitat models which link distribution of tracked individuals with environmental variables during the breeding season. Use these models to predict at-sea distribution for all individuals from these colonies.

1.3 Calculate core foraging areas for each species for each colony and measure overlap between colonies.

2.1 Collect satellite-AIS data on all fishing vessels operating in the core foraging areas of GHA and WCP for which this data is available.

2.2 Collate fishing effort in these regions from existing datasets, including pelagic longline, demersal longline and trawl fisheries.

2.3 Calculate spatial overlap between fishing effort and at-sea distribution for both species during the breeding season. Identify which fleets present the highest risk to each species at this time of year.

2.4 Produce a series of maps and tables describing the overlap with different fishing fleets.

2.5 Prepare manuscripts for publication in peer-reviewed journals.

3.1 Track GHA from Cooper Island and Bird Island, and track WCP from Bird Island and Paryadin Peninsula, using geolocators. Devices will be deployed during the first field season (January 2022), and will be recovered during the second field season (January 2023).

3.2 Calculate locations of individuals during the non-breeding season using information from geolocators.

3.3 Create habitat models which link distribution of tracked individuals with environmental variables. Use these models to predict at-sea distribution for all individuals from these colonies, to calculate core foraging areas for each species for each colony and to measure overlap between colonies.

3.4 Collect satellite-AIS data on all fishing vessels operating in the core foraging areas of GHA and WCP for which this data is available. Collate fishing effort in these regions from existing datasets, including pelagic longline, demersal longline and trawl fisheries.

3.5 Calculate spatial overlap between fishing effort and at-sea distribution for both species during the non-breeding season. Identify which fleets present the highest risk to each species at this time of year.

3.6 Produce a series of maps and tables describing the overlap with different fishing fleets during the non-breeding season.

3.7 Prepare manuscripts for publication in peer-reviewed journals.

4.1 Prepare reports for meetings and working groups.

4.2 Share results with all stakeholders via email, conferences, and attendance at meetings (e.g. ACAP, ICCAT and GSGSSI annual stakeholder/ working group meeting).

4.3 BirdLife will engage directly with fishing fleets and fishing management organisations, to engender change in fisheries management practices in areas of high bird-fishery overlap

4.3 Deposit data into the Birdlife Tracking Database

4.4 Attend national and international conferences to present results.



## Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	x
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	x
<b>Do you have hard copies of material you need to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	x
Have you involved your partners in preparation of the report and named the main contributors	x
Have you completed the Project Expenditure table fully?	x
Do not include claim forms or other communications with this report.	