



**Research report for the  
South Georgia and the South Sandwich Islands**

**Island-wide census of  
black-browed and grey-headed albatrosses**

20 April 2016

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<http://jncc.defra.gov.uk/default.aspx?page=4079>

## JNCC OT & CD Research Report Template

Name of OT/CD	South Georgia and the South Sandwich Islands
Name of OT/CD leads	Jennifer Lee
Government Department responsible for implementing	Environment
Project title	Island-wide census of black-browed and grey-headed albatrosses
<p><b>Aims &amp; objectives<sup>1</sup></b></p> <p>The primary aim of this project was to census black-browed and grey-headed albatross colonies around mainland South Georgia to determine if the annual trend, of declining population size, recorded on Bird Island is applicable to the wider South Georgia population.</p>	
<p><b>Research report<sup>2</sup></b></p> <p>Black-browed albatross (BBA) and grey-headed albatross (GHA) colonies are usually situated in tussac on steep coastal headlands and sea cliffs of both the mainland and offshore islands. Colonies on South Georgia were photographed using a digital camera from a rigid hull inflatable boat (RHIB) supported by Pharos SG during a 14 day period, on 24, 25, 26, 28 and 29 November, and on 1, 4, 5 and 6 December 2014. The survey team consisted of Georgina Strange, (Photographer) and Sarah Browning, (Field Assistant and Ships Charter Representative).</p> <p>Colony locations were already known from surveys in 1985/1986 and 2003, and the same name and numbering conventions were used for the 2014 survey. The RHIB was positioned close inshore so as to provide optimal views. The viewing distance from the shore depended on the steepness of the terrain, the altitude of the colonies (both factors that affect whether all birds could be seen from the yacht), wind strength and direction, sea state, location of shoals, kelp beds, ice bergs and brash ice, but was usually 100–200 metres.</p> <p>Each colony and section of coast occupied by albatrosses was photographed and images were downloaded to computer. Colonies or areas with albatrosses were photographed twice, initially with a wide-angle lens and then close-up with a vibration reduction lens. The wide-angle photographs of the coastline enabled collages of close-up colonies to be located in the</p>	

<sup>1</sup> Aims and objectives: insert the overall question or hypothesis being addressed by the research along with key aims or deliverables;

<sup>2</sup> Research report: An objective explanation of the research (basically who, what, when, how and/or why). This should include an outline of the broad approach taken including the scientific methods and technologies used. Please include images where appropriate and references to datasets on websites etc.

landscape. Groups of albatrosses in colonies were photographed at a resolution that permitted identification of individual birds as albatrosses (and not as white-coloured rocks or snow) and in most cases identification of species. To achieve consistency in the scale of birds and marks in the photographs, close-up images were taken from similar distances.

In the laboratory, and using the perspective photographs as a guide, images of discrete colonies or groups of birds were 'stitched' together using Adobe Photoshop software to form a montage of sequential images which were then saved as JPEG files. The location of each individual albatross was highlighted on the computer screen by superimposing a coloured dot on each bird, and these dots were then counted.

To determine the number of breeding pairs of black-browed and grey-headed albatrosses present in each colony, these raw photo-counts were corrected for diurnal variation in the number of birds present, and for nest failure between the date of laying and the date each colony was censused. The correction for diurnal variation in the number of birds present was derived from counts from photographs taken by the British Antarctic Survey of one black-browed albatross colony on Bird Island taken at two-hourly intervals each day between 24 November and 7 December. The adjusted master counts are shown in table 1.

Table 1. 2014 survey results

Area	BBA	GHA
Bird Island	1170	1177
Sorn & Bernt	60	616
Cape North	1642	120
Welcome Islands	152	0
Sheathbill Bay	334	0
Sitka Bay	588	0
Cape Buller	93	0
Cape Wilson	202	0
Cape Crewe	31	0
Paryadin north	930	2865
Jomfruene	0	389
Paryadin south	2798	12195
Cooper Island	8772	0
Totals	16772	17363

Although, more than 15,000 black-browed and 17,000 grey-headed albatross were recorded this unfortunately still represents a considerable decline since the previous survey in 2004. The for black-browed albatross this constitutes around a 20% decline in the SG population but for grey-headed it is more than a 40% decline. Although there are likely to be multiple factors influencing the population dynamics of these species including availability of prey due to global environmental change, a component of the population decline is likely to be due to mortality associated with fisheries. Although there are stringent measures in place to reduce bird by-catch on vessels licensed to fish in South Georgia waters, the wide foraging range of these species means it is vulnerable to fisheries operating elsewhere. GSGSSI is in the process of developing species action plans and identifying project partners to promote conservation of these species out of the Territory.

Link to dataset(s) <sup>3</sup>	N/A (once published will be available through the GSGSSI environmental data portal)
<p>Recommendations for further study<sup>4</sup></p> <p>A repeat census of selected colonies in 5-years would track whether out of Territory conservation efforts were being successful or if additional measures were required.</p> <p>Additional research into the foraging habits of these species may be of benefit in disentangling environmental factors influencing population trends from declines caused by mortality from fisheries by-catch.</p>	

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<sup>3</sup> Link to dataset: insert website address where data generated from the research is held (e.g. baseline survey, management plans etc)

<sup>4</sup> Recommendations for further study: If appropriate, this section should include a brief assessment of follow-up actions, including a timeframe and clear allocation of responsibility