

SOUTH GEORGIA ACAP PETREL SURVEY 2005-07

FIELDWORK REPORT

25 March 2007

**Sally Poncet
South Georgia Surveys**



Northern giant petrel on nest and *S/V Golden Fleece*, Narval Bay

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Northern giant petrel on nest and S/V Golden Fleece, Narval Bay, December 14th 2006.

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1. INTRODUCTION

This is the final Fieldwork Report for the South Georgia ACAP Petrel Survey 2005-07. It contains a summary of the work covered to date, including details of the fieldwork completed during the two seasons 2005-06 and 2006-07, some preliminary results and an overview of the data analysis and lab work required in order to finalise census data and complete the survey. A comprehensive account of the survey will be presented in the Final Project Report including methodologies employed to census the giant petrels and white-chinned petrels and to map their nesting habitat and distribution.

The research was coordinated by the environmental consultancy agency South Georgia Surveys (SGS) under contract to the Government of South Georgia and the South Sandwich Islands (GSGSSI). The research programme is led by Sally Poncet of SGS, and conducted in collaboration with Project Partner the British Antarctic Survey (BAS). Project preparation began in April 2005. Completion of data analysis and presentation of the Final Report to GSGSSI are scheduled for September 2007.

The project was commissioned by the GSGSSI as part of the United Kingdom's commitment to ACAP. Joint funding was received from the FCO Overseas Territories Environment Fund (OTEP) and GSGSSI, with funding 'in kind' provided by the BAS and survey team members. OTEP and GSGSSI funds are administered through the offices of GSGSSI under the management of Harriet Hall, Gordon Liddle and Richard McKee.

Contributions in kind were received from South Georgia Surveys, a number of individuals including volunteer fieldworkers, Dame Ellen MacArthur and RSPB/BirdLife International. Additional logistical support in 2005-06 was provided by Etienne Bourgois and his S/V *Tara V* and by Antarctic tour operator Peregrine Shipping and their cruise ship *Akademic Vavilov*; and in 2006-07 by HMS *Endurance*, and by the tour operators Residensea and their ship *The World*, and Compagnie des Iles du Ponant and their ship *Le Diamant*.

Scope of the research

This programme of research was designed to provide GSGSSI with improved and up to date data on the distribution and abundance of southern giant petrels, northern giant petrels and white-chinned petrels at South Georgia. The research data will enable the current conservation status of each species to be determined and will form a baseline for future long-term demographic studies for monitoring population changes. The data constitute a valuable resource material for management planning and protection of key breeding sites and in identifying research priorities for the effective conservation of each species. Publicising the research programme's activities via websites and TV documentaries has served to raise awareness of the conservation aims and efforts by GSGSSI in protecting seabirds.

Collection of accurate baseline data is required as part of the process of managing these sites and of re-assessing the species' global conservation status, and for achieving and maintaining favourable conservation status for these three species. The requirement for this data is referred to in the Agreement on the Conservation of Albatrosses and Petrels (ACAP), and the undertaking of such research is an integral part of the process that enables compliance with the Agreement. These steps are part of the process of bringing South Georgia further into line with the principles of ACAP and the Environment Charter, and will help to ensure protection for the South Georgia populations of

these species, and in so doing, will help the UK to meet its WSSD commitment to reverse the current rate of loss of biodiversity by 2010.

1. Summary of Project components and achievement

1.1. Fieldwork

Island-wide censuses by shore-based and boat-based field parties, with full vessel support for access to remote locations around the island.

Island-wide censuses of the population size and surveys of the breeding distribution of southern and northern giant petrels and white-chinned petrels were conducted between November 2005-January 2006 and November 2006-January 2007 working on board S.V *Golden Fleece*. Fieldwork activities focussed on censusing breeding pairs, recording the breeding distribution and its associated habitat, and assessing environmental threats at breeding sites.

A framework for future long-term monitoring of petrels was established at key breeding sites identified during the course of fieldwork.

Long-term monitoring sites for southern and northern giant petrels were established on Albatross and Prion Islands in 2005-06, and for white-chinned petrels at Maiviken, Husvik, Corral Bay and Prion Island in 2006-07.

1.2. Database

The petrel data collected during the survey will be analysed at BAS and be stored in the existing South Georgia GIS database held at BAS and scheduled for upgrading in 2007.

Up to date population estimates for the three species surveyed and detailed information about their breeding distribution and habitat will be stored in the BAS/GSGSSI South Georgia GIS database. Data include a review of current knowledge and information collected during the surveys, identifying key ACAP sites and including reference to pest status and appropriate eradication or control programmes, disturbance, tourism and other potential threats to breeding areas.

1.3. Scientific collaboration

A formal collaborative agreement between South Georgia Surveys and British Antarctic Survey (BAS) was established in order to maximize research potential for this project, thus generating value-for-money for both studies through the sharing of expertise and resources. International scientific collaboration also took place through invitations extended to scientists from France, USA, Chile and the RSPB in UK.

Collaboration with HMS *Endurance* in both seasons provided essential aerial photography of the coastline. The resulting colour obliques will be used in the compilation of a vegetation and habitat map of the entire island.

Fieldwork

Dr. Tony Martin from the BAS took part in the two seasons' fieldwork assisted by 2 BAS personnel. They censused white-chinned petrels in collaboration with the ACAP petrel team while working from on board *Golden Fleece*. Their research was part of the 'Foodweb' project, a component of the BAS 'Discovery' 2005-2010 programme, and designed to construct more accurate food web models of top predators in the South Atlantic and Scotia Sea. BAS scientists under Dr. Richard Phillips provided giant petrel census data from Bird Island and also calibration data for correcting ACAP survey field counts.

Dr. Robert Powell of the University of Clemson USA and Dr. Ben Sullivan from the RSPB took part in the 2005-06 season's fieldwork; and Dr. Christophe Barbraud from the Centre National de la Recherche Scientifique (CNRS) at Chize in France, Ronnie Reyes from the Universidad de Valdivia in Chile, and Dr. Oliver Watts from the RSPB, UK in the 2006-07 season. Dr. Barbraud was key in the establishment of long-term monitoring sites for white-chinned petrels in 2006-07.

Data analysis

Dr. T. Martin of BAS will carry out analysis of the white-chinned petrel data. Analysis of ACAP survey giant petrel data is being conducted in collaboration with Dr. Phillips (BAS), Dr. R. Powell (University of Clemson) and Dr. Christophe Barbraud (CNRS). Analysis of breeding habitat is proceeding in collaboration with Drs. Andrew Fleming and Peter Fretwell of the BAS Mapping and Geographic Information Centre (MAGIC).

1.4. Information sharing

International workshops

A powerpoint presentation on the work carried out in 2005-06 was given by Sally Poncet at the International Workshop for Overseas Territories held in March 2006 in the Falkland Islands. Similar presentations were given at the British Antarctic Survey in Cambridge in May 2006, and at the University of Tasmania in Hobart in July 2006.

Web-based coverage

Regularly updated web pages on various websites and website diaries from Dame Ellen MacArthur and RSPB/BirdLife International's Dr. Ben Sullivan and Dr. Olly Watts, were maintained throughout the two fieldwork seasons, showing details of fieldwork in progress at South Georgia and promoting awareness of the issues surrounding seabird conservation. Regular updates of the survey also appeared on the South Georgia Government's website www.sgisland.org.

Press coverage

During the 2005-06 fieldwork season, coverage was assured by a number of British newspaper, radio and magazine articles reporting on Ellen MacArthur's involvement in the survey.

Films

Two TV documentaries (British 'Seamaster' series and French 'Thalassa' series) presenting the ACAP petrel survey and seabird conservation in general were filmed on location by Ellen MacArthur and Jerome Teignie and broadcast in 2006. A third programme for BBC4 is in preparation and due for release in late 2007.

Local capacity building

A number of people from the Falkland Islands joined the survey both as research assistants and crew on the survey vessel, working alongside experienced South Georgia researchers and logistics operators. This has resulted in a significant increase in the small pool of dedicated local people with a firsthand local knowledge of the island, its environment and working conditions, and all are now potential future contributors to South Georgia-focused activities.

Scientific publications

A number of peer-reviewed scientific papers are expected to be prepared presenting the results of the survey.

2. FIELDWORK PROGRAMME

2.1 Permits

The research was conducted under permit from the GSGSSI. Comprehensive self-sufficiency, environmental and safety and emergency contingency plans were submitted to GSGSSI as part of the research permit application document. Permission was obtained to land at Protected Areas, including all rat-free areas and including Cooper Island, Annenkov Island and Bird Island.

2.2 Support Vessel

The support vessel, S/V *Golden Fleece*, is a Falkland Islands registered vessel that has been operating in South Georgia, the Falklands, Antarctic Peninsula and the Cape Horn area since 1996-97. Owned by Falklands resident Jerome Poncet, *Golden Fleece* has been support vessel for numerous film, mountaineering and diving expeditions. In 2000, she was chartered by the South Georgia Government to provide logistics for rat eradication trials at the island; in 2002 and 2003 she sailed from South Georgia to the Falklands with two consignments of reindeer, and with British Antarctic Survey personnel under contract in 2004.

The vessel owner is a Full Member of the International Association of Antarctica Tour Operators (IAATO) and as such *Golden Fleece* complies with all IAATO regulation and guidelines regarding vessel operations and environmental mitigation measures in the Antarctic Treaty Area and is maintained in accordance with the demands of expedition voyaging. She is equipped with essential emergency measures associated with high-latitude cruising (including EPIRB, extensive first aid kit, flares and fire-extinguishers, survival suits, flotation suits, safety harnesses, 2 liferafts, 2 inflatable boats with 2 outboards, medical kit, and scuba diving gear for underwater repairs). Communications equipment includes an ICOM marine HF transceiver & tuner with 2182 automatic distress alert, a fixed mount VHF radio and 3 mobile handsets and an Iridium satellite phone with email/data capability. The vessel is equipped with weatherfax, GPS, e-charts & plotter, multi-frequency depth sounder and a full set of South Georgia charts. Ample fuels, spares and tools for all repair situations and sufficient food for three months at South Georgia are carried on board.

2.3 Petrel Survey Team

Summer 2005-06

Sally Poncet (South Georgia Surveys), project leader

Collaborative researchers:

Dr. Andrew Fleming (BAS, Mapping and Geographic Information Centre, MAGIC)

Dr. Peter Fretwell (BAS, MAGIC)

Dr. Tony Martin (BAS, Conservation Biology)

Dr. Richard Phillips (BAS, Conservation Biology)

Dr. R. Powell (University of Clemson)

Field researchers:

Andy Black (s/v *Golden Fleece*)

Ellen Macarthur (s/v *Golden Fleece*)

Tony Martin (BAS s/v *Golden Fleece*)

Leiv Poncet (s/v *Golden Fleece*)

Sally Poncet (s/v *Golden Fleece*)

Bob Powell (s/v *Golden Fleece*)

Fran Prince (s/v *Tara V*)

Micky Reeves (s/v *Golden Fleece*)

Ben Sullivan (RSPB/BirdLife Int. *s/v Golden Fleece*)
Jerome Teignie (Nefertiti cameraman *s/v Golden Fleece*)
Catrin Thomas (BAS *s/v Golden Fleece*)
Andy Whittaker (*s/v Tara*)
BAS at Bird Island: Isaac Forster , Richard Phillips, Helen Taylor

Crew of *s/v Golden Fleece*:
Dion Poncet (skipper)
Russell Evans (deckhand)
Kilian du Couedic (deckhand)

Summer 2006-07

Sally Poncet (South Georgia Surveys), Project Leader
Collaborative Researchers:
Dr. Andrew Fleming (BAS, MAGIC)
Dr. Peter Fretwell (BAS, MAGIC)
Dr. Tony Martin (BAS, Conservation Biology)
Dr. Richard Phillips (BAS, Conservation Biology)
Dr. R. Powell (University of Clemson, USA)
Dr. C. Barbraud (CNRS, Chize, France)

Field researchers:
Christophe Barbraud (CNRS, *s/v Golden Fleece*)
Andy Black (*s/v Golden Fleece*)
Carolina Mantella (*s/v Golden Fleece*)
Tony Martin (BAS, *s/v Golden Fleece*)
Ash Morton (BAS, *s/v Golden Fleece*)
Leiv Poncet (*s/v Golden Fleece*)
Sally Poncet (*s/v Golden Fleece*)
Ronnie Reyes (Universidad de Valdivia, *s/v Golden Fleece*)
Olly Watts (RSPB, *s/v Golden Fleece*)
BAS at Bird Island: Fabrice LeBouard, Helen Taylor, Robin Snape

Crew of *s/v Golden Fleece*:
Dion Poncet (skipper)
Ken Passfield (deckhand)
Steve Cartwright (deckhand)

2.4 Vessel and Fieldwork Operations

Due to the many external factors, notably weather conditions, that affect any vessel-based expedition, a high degree of flexibility was built into the work schedule during operations around the island. Last-minute changes to the itinerary were an accepted element of the working day, and were made by the skipper after consultation with crew and researchers. This resulted in survey work proceeding with maximum efficiency, with full use made of both vessel and fieldworker time.

Logistically, this was a demanding survey that required a high standard of seamanship, boat-handling skills and fieldworker fitness and experience. Landings were made on numerous offshore islands and along the entire South Georgia coastline whenever weather permitted. Fieldwork operations were complex and required a close monitoring of weather forecasts and meticulous

planning on the part of skipper and project coordinator. The success of operations was in large part due to the commitment of the skipper and crews of the charter vessel *S/V Golden Fleece*, with the vessel working the exposed south coast at every suitable weather opportunity, meeting rendez-vous deadlines with other vessels and providing 24 hour support for fieldworkers and shore parties throughout each season.

Censuses of seabird breeding populations at South Georgia should ideally be carried out between the end of egg laying and before hatching and with minimal snow cover in the colonies. The third week in November was considered the earliest practical date to start the survey. Snow cover was expected to be light and clear quickly, and the period offers the best overlap in the breeding cycles of the three species surveyed during the 43 days of survey time available in each season.

2.5 FIELDWORK OPERATIONS

Summer 2005-06

Fieldwork operations in the first ACAP Survey fieldwork summer season 2005-06 were conducted from *S/V Golden Fleece* during a 56 day charter period, starting 13 November in Stanley in the Falkland Islands, and ending 7 January in Stanley, with additional support offered by *S/V Tara V* for the period November 13-December 10. See 2005-06 Trip Report for logistic operations details.

The fieldwork was carried out from the two yachts and 2 person land-based shore parties. Landings and travel between sites was done using inflatable dinghies and sea kayaks. The principal survey vessel, *S/V Golden Fleece*, with skipper Dion Poncet and crew Russell Evans and Kilian de Couedic and a petrel survey team of 7-10 people, spent 44 days circumnavigating South Georgia during the course of surveys. Long-term monitoring sites for southern and northern giant petrels were established at Albatross and Prion Islands

Fieldwork logistics took into account the following personnel movements: Micky Reeves returned to Stanley on *S/V Tara V* part way through the season as planned; Tony Martin and Catrin Thomas (BAS) joined *S/V Golden Fleece* at King Edward Point December 8; 24 hour support was available to the shore party Bob Powell and Leiv Poncet throughout their entire circumnavigation of the island at each of their 11 campsites; Ben Sullivan, Ellen MacArthur and Jerome Teignie transferred from *Tara V* to *S/V Golden Fleece* at King Edward Point just before Christmas; Tony Martin transferred from *Golden Fleece* to *S/V Tara V* on January 28 at Prince Olav Harbour, and Sally Poncet and Ellen MacArthur disembarked at Albatross Island on December 28. See Trip Reports for *S/V Golden Fleece* and *S/V Tara V* 2005-06 for further details of vessel movements. See Map No. 1 for vessel routes and areas surveyed.

S/V Golden Fleece called in briefly at Bird Island on arrival at the island on November 17 to discuss giant petrel census methodology with Isaac Forster, Helen Taylor and Richard Phillips. Rendez-vousing later that day with *S/V Tara V* at Elsehul, the petrel survey team from both vessels then spent a day ashore coordinating survey methodology. Sally Poncet and co-researchers Andy Black and Micky Reeves worked from *S/V Golden Fleece*; Fran Prince and Andy Whittaker surveyed from the yacht *S/V Tara V* for three weeks in November; land-based fieldwork was done by Bob Powell and Leiv Poncet with support from *S/V v Golden Fleece* as required. Also on board *S/V Tara V* were Séamus McCann and Finn McCann who conducted a fur seal survey for SGS on behalf of BAS, and glaciologist Alun Hubbard who installed three automatic weather stations. They and several members of *S/V Tara V*'s crew also helped with the petrel census fieldwork. From Elsehul, *Golden Fleece* proceeded down the south coast while *S/V Tara V* surveyed the north coast.

The two vessels met up in Larsen Harbour in early December just prior to departure of S/V *Tara V* for Stanley. S/V *Golden Fleece* then continued to King Edward Point where Dr. Tony Martin and Catrin Thomas (assistant) from BAS joined the boat on December 8. Ben Sullivan from the RSPB/BirdLife International's Save the Albatross Campaign, Dame Ellen MacArthur and cameraman Jerome Teignie arrived on December 20, travelling to South Georgia on S/V *Tara V*. As part of the ACAP Survey's commitment to raising awareness about seabird conservation, Ellen and Jerome were able to film aspects of the petrel survey from on board the vessels.

The main ACAP Survey work period ended on 31 December 2005 when S/V *Golden Fleece* departed South Georgia for Stanley, leaving Sally Poncet and Ellen MacArthur on Albatross Island in the Bay of Isles to continue the giant petrel counts at Albatross Island and carry out the annual wandering albatross counts for the Albatross and Prion Islands Monitoring Programme. They were picked up two weeks later by the cruise ship *Akademic Vavilov*, S Poncet being dropped off at King Edward Point and E MacArthur continuing to Ushuaia.

In total, the teams surveyed over 150 areas around the island, estimated to contain approximately half of the island's giant petrel breeding sites. Fieldworkers walked a total of over 600 km and a total of 4539 pairs of northern giant petrels and 3253 pairs of southern were counted. These are uncorrected counts (ie not adjusted for egg and/or chick losses) and do not include Bird Island counts. S/V *Golden Fleece* covered a total of about 1700 km around the island, putting field parties ashore at 150 different landing sites, and the land-based party paddled a total of 481 km. See Map No. 1

Summer 2006-07

The 2006-07 fieldwork schedule included a 56-day charter of S/V *Golden Fleece* at South Georgia, starting November 18 from the Falkland Islands, and ending January 13.

Fieldwork logistics were determined by personnel movements to some extent: Tony Martin and Ash Morton (BAS) joined S/V *Golden Fleece* at King Edward Point on December 4; 24 hour support was available to the shore party Leiv Poncet and Andy Black while camped on Annenkov Island; Ollie Watts and Ronnie Reyes were transferred from S/V *Golden Fleece* to HMS *Endurance* at Elsehul on December 15; Christophe Barbraud transferred to the cruise ship *Le Diamant* on January 28 at Stromness Harbour, and Sally Poncet and Carolina Mantella disembarked at Albatross Island on December 31. See S/V *Golden Fleece* Trip Report for further details of vessel movements.

The boat skipper was Dion Poncet, assisted by crew Stevie Cartwright and Ken Passfield, and the petrel survey team consisted of between 7 and 9 people. The majority of fieldwork was once again carried out from the yacht by surveying petrel sites around the entire coastline and a number of offshore islands during a 43-day circumnavigation of the Island. Numerous white-chinned petrel transects were completed at a range of sites around the island. Annenkov Island giant petrels were surveyed by a shore-based party (Leiv Poncet and Andy Black), with S/V *Golden Fleece* standing by. Long-term monitoring sites for white-chinned petrels were established at Prion Island, Maiviken, Corral Bay and Husvik. These sites were selected on the basis of key environmental features, including presence/absence of perceived threats such as introduced species (notably Norway rats and reindeer) and visitor activities. Habitat types and distribution as displayed on the Landsat image were ground-truthed at selected sites, and further colour aerial oblique imagery of the coastline obtained by HMS *Endurance*. The long-term monitoring site for giant petrels established on Prion Island in 2005-06, were re-surveyed. On conclusion of the petrel survey fieldwork on January 3, Sally Poncet and Carolina Mantella were landed at Albatross Island to carry

out the census of the island's breeding wandering albatrosses as part of the annual Albatross and Prion Islands Monitoring Programme.

In total, over 100 areas were visited, estimated to contain approximately half of the island's giant petrel breeding sites. *S/V Golden Fleece* covered over 1800 km while working around the island, including a circumnavigation. Fieldworkers walked a total of over 600 km and a total of 2051 pairs of northern giant petrels and 1554 pairs of southern giant petrels were counted. These are uncorrected counts (ie they are not adjusted for egg and/or chick losses) and do not include counts for Bird Island or those areas previously surveyed in 2005-06.

3. SURVEY METHODOLOGY

The following is a brief outline of survey methodologies employed during the survey. A full account will be presented in the End of Project Report.

3.1 Giant Petrels

Each giant petrel nest position was recorded using a hand-held GPS. Associated breeding site data (for example nesting habitats, vegetation communities), potential threats (eg human visitation, reindeer-grazing and fur seal trampling) and introduced species (rats, mice, reindeer) were recorded. Opportunistic data were also collected for historic sites and artefacts, South Georgia pipits, pintails and wandering albatrosses. All data were down-loaded daily and archived on CD for long-term storage at BAS. BAS personnel Helen Thomas, Robin Snape, Fabrice Lebrouard and Richard Phillips (BAS) censused the Bird Island populations of northern and southern giant petrels. Breeding success data from the BAS Bird Island giant petrel monitoring programme will be used to calibrate the ACAP Survey counts to allow for nest failure during the course of the boat-based survey.

3.2 White-chinned Petrels

Tony Martin, Catrin Thomas and Ash Morton of BAS developed white-chinned petrel census methods using transects, burrowscopes and playback to estimate the number of occupied burrows at a range of sites around the Island. Christophe Barbraud set up 4 long-term monitoring sites for white-chinned petrels based on similar research he has carried out on Kerguelen and Crozet Islands.

3.3 Aerial photography

HMS *Endurance* helicopters carried out a photographic coastline survey at 2000 feet and the resulting colour obliques, to be archived at BAS, are being used in the compilation of a vegetation and habitat map of the entire island. All photographs were taken at 2000ft above ground level (as per instructions in the South Georgia Wildlife Avoidance Map), and from between 100-200 metres to seaward of the shoreline, looking towards the coastline and perpendicular to the coast where possible. Each image shows the coastline, and all vegetated areas inland to the boundary with rock and ice.

3.4 Habitat mapping

Vegetation boundaries, colony outlines and other such features, and fieldworker tracks walked during the course of the two seasons of surveying were saved as individual track files. The mapping software used in the field is OziExplorer which is compatible with Arc software. Two map layers (the coastline derived from the Landsat satellite image, and the 100 metre elevation contour) were supplied as tracks by Andrew Fleming (MAGIC, BAS) and can be loaded into the map view. All map data collected in the field are georeferenced to the BAS map projection of the Landsat image of

South Georgia. A set of 1:20,000 maps designed by Peter Fretwell (BAS MAGIC) for this project were used to record additional spatial data.

4. SURVEY RESULTS AND DATA ANALYSIS

4.1 Giant Petrels

The total number of northern giant petrel nests counted in the field over the two-year survey period was approximately 6600 and 5700 southern. These are uncorrected field counts (ie they are not adjusted for egg and/or chick loss) and they do not include counts for Bird Island. The total number of breeding pairs of northern and southern giant petrels will be calculated from these counts by using the Bird Island study colony data for egg and chick loss. Adjustments will also be made for counter error and for gaps in survey coverage in those few areas that were not surveyed in order to calculate the total number of breeding pairs of giant petrels at South Georgia. Bird Island census data will be provided by BAS. Analysis of breeding distribution and habitat and of threats to breeding sites will be undertaken by S. Poncet and R. Powell in the first instance, and further analyses and archiving of data will take place once the South Georgia Government/BAS GIS database, currently in development, is in place. The final results of the survey will be submitted in September 2007 to the South Georgia Government and in 2008 for publication in the scientific literature.

4.2 White-chinned petrels

Analysis of white-chinned petrel transect data is being carried out by BAS under the BAS Discovery 'Foodweb' programme. Preliminary analysis of data from 2005-06 field season indicated that survey design and the resultant accuracy and precision of data would provide an abundance estimate with a CV of around 20% for the total breeding population of white-chinned petrels. The overall impression gained by researchers on conclusion of fieldwork is that the historic estimate of 2 million pairs was a gross overestimate, even allowing for population declines due to fisheries. Final population estimates for the white-chinned petrel population are expected to be available from BAS for inclusion in the Final Report September 07.

4.3 Mapping

Habitat analysis and mapping are proceeding using a combination of BAS-sourced Landsat and Quikbird imagery, together with colour oblique aerial photographs (both prints and digital) provided by HMS *Endurance*. The latter are part of a growing collection of coastline images which forms an important resource for recording a wide range of environmental features and variables, e.g. seal haulout beaches, seabird colonies, vegetation distribution, extent of ice cover and glacier fronts, etc. These images, along with historical habitat maps and additional vertical and oblique photography from a range of sources, are being used to interpret details on the Landsat image and Quikbird images of Cooper Bay, Albatross Island and Wales Head coastline of South Georgia provided by Andrew Fleming in order to map the basic vegetation categories of the island.

This mapping component of the project is a key element in the management of ACAP species breeding sites: the boundaries and surface areas of ice-free coastal areas, vegetated areas, areas with >60% tussac cover, areas occupied by giant petrels, areas covered by the ACAP petrel survey, and the areas occupied by invasive introduced species ie Norway rats and reindeer, will be mapped.

The suite of data obtained has the capacity to form the basis of a 'new-generation' terrestrial GIS map for South Georgia, and every effort was made to ensure that data collected are GIS-compatible and also match the requirements of the recently-designed ACAP database. GIS-generated analysis

of the ACAP Petrel Survey data will be possible once the South Georgia Government/BAS GIS database, currently in development, is in place.

5. CONCLUSIONS

Achievements

The fieldwork for this South Georgia ACAP Petrel Survey has gone exceptionally well. This is due in great part to the skills and experience of the vessel crew and fieldworkers who were able to function as a highly experienced, flexible and motivated team in the field. In particular, the skills and experience of the skipper, Dion Poncet and his crew, and the qualities of the survey vessel S/V *Golden Fleece*, designed and equipped for this type of inshore work in remote areas and uncharted waters, were essential to the success of the surveys. The generous logistical support provided by several cruise ships, HMS *Endurance* and S/V *Tara V*, and the assistance of British Antarctic Survey personnel at King Edward Point and Bird Island and from Government Officers at KEP, were also crucial to the smooth-running of operations.

The fieldwork also provided the opportunity for Falkland Islanders to take part in the Survey both as research assistants and crew on the survey vessel, working alongside experienced South Georgia researchers and logistics operators. This has resulted in a significant increase in the small pool of dedicated local people with a firsthand local knowledge of the island, its environment and working conditions, and all are now potential future contributors to South Georgia-focused activities.

Media focus on this ACAP survey was outstanding largely due to the presence of Dame Ellen MacArthur in the first season of fieldwork 2005-06. Regular entries on websites eg www.savethealbatross.net, www.sgisland.org and a number of public lectures have also maintained the high profile of this research.

Work remaining

The post-fieldwork stage of the project, that of data analysis, is now underway, and the major part is due to be completed at British Antarctic Survey headquarters in Cambridge between May and July 2007. With such a huge quantity of data to analyse from two summers' of fieldwork, the length of time required for data analysis following conclusion of fieldwork was always going to be an issue, given that the OTEP component of funding is due to finish on 31 March 2007. However, provision has been built into the programme for office space, data analysis and IT resources to be provided by BAS in Cambridge for the project coordinator Sally Poncet. Elements of data analysis will also be undertaken by associate researchers involved in the project, Drs. Christophe Barbraud, Andy Black and Robert Powell. The current development of the South Georgia GIS at BAS will also enable appropriate archiving of the survey data, and the means with which the survey data can be accessed for ACAP-related purposes, for example assessment of species' conservation status and of key breeding sites, development of management plans for breeding sites.

As presented in the original OTEP funding proposal document, Sally Poncet will continue to be the primary coordinator for giant petrel data during the post-OTEP period of data analysis, archiving and interpretation and preparation of final reports, scheduled for September 2007. Tony Martin at BAS will be responsible for the white-chinned petrel data analysis and reporting, for which the final results are expected to be available in September 2008.

ACKNOWLEDGEMENTS

This research project would not have been possible without the generous assistance of a number of individuals and organisations whose contributions effectively represent matching-funding for the funds provided by OTEP and GSGSSI.

Thanks to Etienne Bourgois, owner of *S/V Tara V*, for his generosity in offering the vessel for 3 weeks of survey work at minimal cost in November 2005, and for assistance with transport for Ellen MacArthur, Jerome Teignie and Ben Sullivan from Stanley to South Georgia in December. Thanks also to the vessel charterer F Paulsen, for kindly agreeing to host these extra guests on board *S/V Tara V* during the December trip.

Assistance from the Antarctic cruise ship tour operator Peregrine Shipping is gratefully acknowledged: their vessel *Akademik Vavilov* provided logistical support for fieldworkers in January 2006, and Peregrine Shipping's commitment to seabird conservation, through the allocation of an annual research grant to South Georgia Surveys is also gratefully acknowledged here.

The contribution of HMS *Endurance*, Captain Nick Lambert and helicopter pilot/photographer Ft Simpson through acquisition of aerial photography images was invaluable, and the effectiveness of the opportunistic helicopter flying time used to achieve this is much appreciated. HMS *Endurance* also provided passage to two petrel team members from South Georgia to Rio de Janeiro in December 2006, and retrieved the *s/v Golden Fleece's* anchor after it became entangled in debris in Stromness Harbour. Similarly, the Compagnie des Iles du Ponant provided passage for one petrel team member on their cruise ship *Le Diamant* from South Georgia to Ushuaia, and as did Residensea's *The World*.

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GOLDEN FLEECE Operations Logs for the South Georgia ACAP Petrel Survey 2005-07

Including survey activities of shore-based parties and SV *Tara V*.

2005-06 OPERATIONS LOG FOR s/v GOLDEN FLEECE AND THE SOUTH GEORGIA ACAP PETREL SURVEY				
Date	Time GMT depart ψ	Time GMT Arrive ψ	Weather conditions	Locations, remarks and summary of field work
13.11.05	1500		SW35, seas rough	<i>Golden Fleece</i> GF departed Stanley, Falkland Islands in company with <i>Tara V</i> . On board GF were Dion Poncet skipper DP, Russell Evans crew RE, Kilian de Couedic crew KC, and petrel survey team Sally Poncet SP, Andy Black AB, Micky Reeves MR, Leiv Poncet LP, Bob Powell BP. On board <i>Tara V</i> included Fran Prince FP, Andy Whittaker AW (both for petrel survey), Seamus McCann SMC and Finn McCann FMC (for fur seal survey and assisted with petrel survey on occasions), and Alun Hubbard AH (for weather stations installation project).
17.11.05		1230	NW10, good vis early in day, but thick fog and light winds in evening with wind shifting S. Some light wet snow in pm.	0700: Arrival off Willis Islands, steaming between Main, Trinity, Verdant, Hall and Proud, identifying possible white-chin and giant petrel colony locations. 1230: Anchored at Elsehul with <i>Tara V</i> 1500-1900: Both petrel survey teams ashore to trial the petrel survey methods. 2100-2400: GF left for BI to discuss census methods with BI personnel Isaac Forster and Jaume Forcada, back at Elsehul at 0100. ψTara V: Elsehul ψGF: Elsehul
18.11.05			Light S and fog clearing early to a sunny pm.	All teams surveying area from Elsehul to north entrance point of Johan Harbour, Hope Valley, Coal Harbour to Smith Point 1230-1730 ψTara V: Elsehul ψGF: Elsehul
19.11.05	1500	1630	NW 20-25 0600 with thick mist, dropping to 15 and mist clearing by 0800 with some sun. 1500 wind NE 25 increasing but vis ok and sea slight-mod in Bird Sound and C.Paraydin. NE 25-30 with >30 gusts at times in Coal Hbr anchorage. Wind blew all night in	0700 <i>Tara V</i> left for KEP. Shore party left for Wilson Harbour at 1100. 1500 GF left for Coal Hbr to continue Coal Harbour area survey 1700-1930. Shore party: Wilson Harbour ψTara V: Grytviken ψGF: Coal Hbr

20.11.05	0915	2100	strong gusts >40kt, heavy rain started around 0200-0900 0900 NW outside? 25 gusting 30 still, heavy rain. Poor vis. Improving at 1100 and only light drizzle for rest of day, wind NW 20-25 middle of day but increasing round 1500 to 30+ and decreasing in evening	0930 GF left Coal Harbour; ashore to survey Frida Hole mainland area and adjacent islands 1230-1600, and return to Coal Harbour. Shore party: Wilson Harbour ψTara V: Grytviken. ψGF: Coal Harbour
21.11.05	0840	1830	WNW 20, then 25 outside in am, swell increasing all day.	GF left for Schlieper Bay 0840. Swell made the coast from Smith Point to Schlieper Bay unworkable so carried on to Schlieper Bay. 1030-1430 ashore to survey Weddell Point area. 1530-1700 ashore to survey NW and NE corners of Schlieper Bay. 1700 GF left for Wilson Harbour as too much swell in Ice Fjord and Demidov Peninsula to do any landings Shore party: Wilson Harbour, surveyed N shore Wilson Hbr to Kade Point 1030-1500 Tara V: Godthul, surveyed petrels at Godthul 1800-2030. ψGF: Wilson Harbour
22.11.05	1700	2100	WNW 10-15, snowing occ in am.	1000-1630: ashore to survey Miles Bay overland from Wilson Harbour 1700 GF left Wilson Harbour for Demidov Pen, teams surveyed ashore 1800-2000, and return to Wilson Harbour. Shore party: Wilson Harbour and on board GF ψTara V: Ocean Harbour, surveyed petrels at Ocean Harbour 1800-2030 ψGF: Wilson Harbour
23.11.05	0900	1200	Swell increasing on Wilson Hbr beaches, SW 20-25 all day but some brief sun in evening at last.	0900: GF left for Saddle I, but too much swell on all coasts for a landing, so returned to Wilson Hbr via a brief look at Kade Pt approaches, but seas were starting to break on offshore shallow patches, too rough to land. 1200: anchored at Wilson Harbour; ashore to finish Wilson Harbour survey 1400-1700 Shore party: Wilson Harbour and on board GF ψTara V: Larsen Harbour GF: Wilson Harbour
24.11.05	0800	1600	SE 15-20 outside, swell much less. E 10-15 in pm and slight seas, and then flat calm in early evening, then light W overnight.	GF left Wilson Harbour, and landed survey team at Kade Pt 0900-1400. Shore party left for Holmestrand 0900. 1430-1700: GF en route to Cape Rosa for RV with Polar Pioneer at 1730 to collect BP's bag and missing GPS units (kindly delivered by EL Howard Whelan). Ashore 1800-2030 to survey Cape Rosa Shore party: Holmestrand

				<p>ψTara V: Larsen Harbour after surveys of Trollhul 1100-1300, Diaz Cove 1600-1700. ψGF: Cape Rosa in Totorore Cove</p> <p>1000-1330: ashore to finish Cape Rosa area and survey McCarthy I and tussac island SE of Cape Rosa. 1400 GF en route to Mouse Cove, with a landing on Hammerstad Reef. 1600-2000: ashore to survey Mouse Cove and north and south shores of Shallop Cove. 2030 GF left Mouse Cove for Holmestrand arriving 2230, passing the Pelagic kayakers who were camping W of Holmestrand Shore party: Holmestrand, surveyed Holmestrand to Shallop Cove 1000-1800 ψTara V: Larsen Harbour. ψGF: Holmestrand</p>
25.11.05	1400	2230	Light W all day, dropping to calm evening and snow overnight. No swell.	
26.11.05	1030	2100	Calm in am with a light covering of snow initially, melting and clearing to calm and sunny all day. No swell.	<p>1030: GF left Holmestrand for Totorore Point area on Nunez Peninsula, shore to survey areas in vicinity of Totorore Pt 1200-1900. Shore party: Ducloz Head. ψTara V: Moltke Harbour, having surveyed Cooper Bay 1230-1530, Gold Harbour 1830-2015. ψGF: Holmestrand</p>
27.11.05	0800	2400	Calm, no swell, virtually no wind all day and intermittent sun, beautiful calm evening	<p>0800 GF left Holmestrand to survey areas between Bore and Horten 0830-1400, tussac area opposite Storer Reef 1600-1700, and Sandefjord 1800-1900 Shore party: Smaaland Cove. ψTara V: Ocean Harbour, petrel surveyed 1130-1700 from Moltke to Koppen Point. ψGF: Annenkov Island</p>
28.11.05	1000	2400	Flat calm all day, no swell, sunny. 1800 at light SW wind started up with cloud coming in from the west at 2200.	<p>0800-1000: teams surveying SE area Annenkov. GF left Annenkov to survey Hauge Reef islands 1030-1600, Pickersgill Islands 1630-1800, Leon Head 2000-2200 before leaving for Diaz Cove at 2200, arriving midnight. Shore party: Larsen Harbour ψTara V: Jason Harbour, having surveyed Maiviken 1230-1500, Busen Peninsula from near the Crutch to Allen Bay 1630-1845, Jason Harbour 1900-1930. ψGF: Diaz Cove</p>
29.11.05	1200	1500	W10 increasing to 25 by end of day. Light swell initially but increasing during morning.	<p>Teams ashore surveying Kupryanov Islands 1000-1130. GF left midday for RV with Tara V and shore party at Larsen Harbour. Shore party: Larsen Harbour. ψTara V: Larsen Harbour, after survey of Cooper Bay 1900-2130. ψGF: Larsen Harbour</p>
30.11.05			Overcast and windy outside,	<p>FP and SMC on board to discuss the petrel data. MR transferred from GF to Tara V</p>

				for return to Stanley Shore party: Larsen Harbour ψTara V: departed for the Falklands 2300 ψGF: Larsen Harbour
01.12.05	1300	2230	snowing again, were 50kt in Drygalski Fjord in the evening	1300 GF left Larsen Hbr for Smaaland Cove area, surveying Smaaland Cove 1500-1700. Then to Hamilton Bay, surveying both sides of the bay 1900-2130. Shore party: Albatross Cove in Cooper Bay ψGF: Cooper Bay
02.12.05				1030 GF left Cooper Bay 1030 for Damien Bay, surveyed west and east sides of bay 1100-1300 until sudden weather change with strong WSW gusts started. Shore party: Cooper Bay, surveyed from the area from Albatross Cove to big mac colony excl. chinstrap area 0730-1100. Shore party: Cooper Bay ψGF: Larsen Harbour
03.12.05	1500	1800	Wind strong in am, decreasing but gusty by mid afternoon, with moderate swell, wind decreasing overnight.	GF left Larsen at 1500 as the wind dropped, but SW 45-50 against tide on entering Cooper Sound so went south round Cooper Island Shore party: Cooper Bay. ψGF: Cooper Bay
04.12.05	0900	2300	Calm with light SE and SE swell all day but veering light WSW by evening.	0830 GF left Cooper Bay to survey Cooper Island N and W coasts 0930-1430, returning 1500 to Cooper Bay to land shore party before going on to Damien Bay to finish survey there 1800-2100. Shore party: Cooper Bay and surveying Cooper Island with GF. ψGF: Larsen Harbour
05.12.05	0900	1900	Calm overnight, very light NW outside all day increasing to occasionally 20-25kt in evening	GF left Larsen Hbr for Cape Disappointment 0930 but swell increasing from the west and too rough for landing so continued direct to Trollhul arriving 1230. 1300-1800 surveyed Trollhul area Shore party: Gold Harbour ψGF: Trollhul
06.12.05	1100	1730	Calm still, very light NW wind, slight swell only	0900-1200 by zodiac to south edge of the Graae Glacier to survey Paradise Beach area, GF arrived from Trollhul 1100. Surveyed coastline between Paradise Beach and Rogged Bay 1300-1400. GF left for promontory north of Trollhu at 1430, surveying the area 1515-1645 before leaving 1700 for Ranvik. 1745-2030: surveyed Ranvik area. Shore party: Gold Harbour, surveyed Gold Hbr to N side of Bjornstadt Bay 1030-1700 ψGF: Ranvik
07.12.	0900	0200	Calm overnight, and still calm in am, clouding over with light snow squalls at	Finished Ranvik survey 0815-0900. GF moved to Diaz Cove 0900 to survey coastline between Harmer and Novosilksi Glaciers 1000-1830, with zodiac landing

05			times during the day but wind still light until evening when it picked up from the west as we steamed to Moltke Hbr.	on islands off Harmer Glacier. 1830: GF left for Moltke Harbour, arriving 0200. Shore party: Moltke Harbour; surveyed Harcourt Island 1400-1600 ψGF: Moltke Harbour
08. 12. 05	1100	?1500	Calm overnight at Moltke, but wind picked up about 0700 quickly, with snow squalls	GF left at 1100 for Grytviken to pick up Tony Martin TM. Shore party: embarked on GF until 14.12.05 ψGF: Grytviken
09. 12. 05	1200	1830	Calm overnight, wind picking up slowly during the early afternoon, NW 20-25 outside	TM embarked at KEP. Shackleton left at 1000 and GF moved to KEP to take on water, leaving jetty at 1200 just before Sigma came in. 1300-1530: GF anchored off Moraine Fjord Reef to survey entire W coast from Lake Jeremy to Dartmouth Point area 1530 GF left for Stromness Bay with landing on Grass Island to survey petrels and penguins 1800-1930. ψGF: Leith Harbour
10. 12. 05			Good weather, westerlies, gusty at times	At Leith: data entry, repairs ψGF: Leith Harbour
11. 12. 05	1130	1215	Sunny, westerly 15 most of the day.	1130: GF left Leith for Husvik. At Husvik trialed WCP at Kanin Pt 1530-2030. Surveyed Alert Cove to Kelp Pt 1530-2030 and Tonsberg Pt 1400-1900. ψGF: Husvik
12. 12. 05	1330	1930	Sunny, 20-25kt out of Husvik Harbour in pm. Gusting 35 kt off the Skerries in evening, calm at Cobblers	GF left Husvik 1330 for survey of coast between Kelp Pt and Harrison Pt 1430-1600. 1700 GF left for Cobblers Cove. ψGF: Cobblers Cove
13. 12. 05	1330	2100	Beautiful weather, sunny calm all day until we moved to Royal Bay in evening where the wind was blowing out as usual, and continued gusting till 0300.	0930-1300: teams ashore to survey Cobblers Cove to Rookery Point areas. GF left for Hound Bay at 1300 to pick up BAS assistant Catrin Thomas CT and gear. 1630: arrived Doris Bay and surveyed from N end of Doris Bay to Kelp Bay 1645-1930 before going to Moltke Harbour. ψGF: Moltke Harbour
14. 12. 05	1100	1900	Wind dropped by early am. But still 25kt out of the bay while N side of Cape Harcourt was calm. Wind changed to light N during pm and calm in Royal Bay all day.	1100: shore party landed at Moltke and left for Ocean Harbour 1100: GF to Cape Harcourt 1130-1800: Surveyed Harcourt Peninsula from Cape Harcourt to Koppen Pt, and along the Sacramento coast. GF back to Royal Bay overnight in a bay between Koppen Pt and Cape Harcourt. Shore party: Ocean Harbour ψGF: Cape Harcourt
15.	0900	1900	Calm overnight, low fog patches forming	0900: GF left for S side of Royal Bay, anchoring W of Cape Charlotte.

12.05	1400		early morning till 1300 when a very light NE started. By 1500 fog finally cleared. 1730, off Tijuca Pt, wind suddenly increased to 40-50 kt, then gusting 60 with snow, blowing hard 3-4 hours before easing late evening	Surveyed coastline from anchorage out to Cape Charlotte 0930-1430. At 1500 GF left for Ocean Harbour due to strong SW forecast. Shore party: Jason Harbour ψGF: Ocean Harbour
16.12.05	1530	1400	Beautiful weather, sunny, calm	0930-1130 ashore surveying Ocean Harbour to Johannesen Loch and S shore of Ocean Harbour. 1400-1530: GF en route for Godthul via Johannesen Loch, ashore to survey Godthul 1600-2000 Shore party: Jason Harbour ψGF: Ocean Harbour
17.12.05	1745	0645		0645: GF left Ocean Harbour for Stromness Bay arriving 0930. Surveyed Grass Island 1400-1630. Shore party: Salisbury Plain ψGF: Leith Harbour
18.12.05	2100	0720	W 15 increasing to 20-25 during afternoon, sunny intervals.	0720: GF left Leith for Fortuna Bay 0915-1430: RE landed SP and AB in Small Bay at E entrance to Fortuna Bay, to svey WCP along the coast to Hodson Point. CT and KC landed in SW corner at head of Fortuna Bay 1000 to check the Konig Glacier crossing, CT continuing with WCP transects in SE corner 1230-1400. TM did WCP surveys at Whistle Cove 1000-1230, then SE corner 1315-1430. 0935-1310: GF anchored in Whistle Cove then moved to Hodson Pt anchorage in SE corner 1310-1500, then stood off Robertson Point 1630-1930 while TM, CT, AB, SP went ashore at Robertson Pt to survey GPs and WCPs. 1930: GF left for Leith, arriving 2100 Shore party: Salisbury Plain ψGF: Leith Harbour
19.12.05	1740	0840		0840: GF left Leith for Hercules Bay, anchoring there at 0935 1100-1530: AB surveyed Hercules Point Peninsula geeps, TM, CT and SP surveyed WCP. 1640: GF left Hercules for Leith, arriving 1740 Shore party: at Salisbury Plain. 1100-1600: LP surveyed Salisbury Plain to Luck Point ψGF: Leith Harbour
20.12.05				GF at Leith, repairs, data entry Shore party: Salisbury Plain; surveyed Start Point area ψGF: Leith Harbour
21.12.	2000	1040		1040 GF left Leith for Tonsberg Point where teams surveyed 1100-1700. 1750 GF left Tonsberg Pt for RV with Tara V and Endurance, arriving 2000 at KEP

05				Shore party: Salisbury Plain ψKEP
22. 12. 05				GF at KEP, filled up with water and diesel. Tara V arrived late morning with Ben Sullivan BS, Ellen MacArthur EM, Jerome Teignie JT who transferred to GF. Captain Nick Lambert and helo pilot Scott Simpson came on board to discuss obliques. Shore party: Salisbury Plain ψGF: KEP
23. 12. 05				GF at KEP. ES, JT, SP, TM on to Endurance in am, for flight, back ashore 1500. Shore party: Salisbury Plain ψGF: KEP then en route overnight to BI leaving at midnight
24. 12. 05	0010	1300	W 15-20, 25 west of Bay of Isles	0010 GF left KEP with EM, BS and JT on board. 1300: arrived Bird Island BI winterers on board for a meal, 6 of us on base for a meal Shore party left Salisbury Plain for Elsehul 0600, arriving 1630. 1820: GF left BI to collect shore party at Elsehul, arriving back at BI 1940. ψGF: Bird Island
25. 12. 05			Lovely weather	GF at Bird Island. EM and JT filming with Isaac. ψBird Island
26. 12. 05			Weather still ok	GF at Bird Island. EM and JT filming. TM and CT doing WCP surveys ψBird Island
27. 12. 05	0600	1930	W 15, part sunny	0600: GF left BI for the Bay of Isles, anchoring off E coast Prion 1100-1500. 1100-1830: teams surveying Prion, Skua, Outer Lee, Inner Lee, Petrel I. SP, EM and JT filming. ψGF: Rosita Cove
28. 12. 05	1100	2135	Light W all day, part sunny. Calm in Possession Bay, overcast and snowed in the night	1100: GF left Rosita to continue Bay of Isles surveys 1200-1500: teams surveying Crescent, Mollyhawk and Invisible I. EM and JT filming GF left for Possession Bay 1500. 1730-2030: GF at anchor off Brown Point and teams surveying Brown Pt and Zero Pt. 2030: GF left for Prince Olav, meeting up with Tara V at entrance to Possession Bay ψGF: Prince Olav Harbour
29. 12. 05			Light snow covering melting by mid morning. Light winds, overcast	GF at Prince Olav. Teams surveyed Prince Olav Harbour area. ψGF: Prince Olav Harbour

30. 12. 05	0830	2130	Calm, overcast all day, clearing to a beautiful sunny evening. Fresh W in Possession Bay, calm at Prince Olav	GF left Prince Olav for Beckmann Fjord, team walked from Prince Olav to Beckmann Fjord surveying 0950 –1100. GF to Salisbury Plain 1200-1600 for filming, then to Blue Whale Harbour for surveying and filming 1830-2000, arriving Prince Olav 2130. ψGF Prince Olav Harbour
31. 12. 05	1200	2400	SW 20 increasing to S30-35 by evening	Both boats left Prince Olav together for Albatross Island where SP and EM gear offloaded and set up camp, and TM and CT transferred from GF to Tara V which left for Grytviken 2000 to drop off TM and CT at KEP. GF en route for the Falklands at midnight, arriving Jan 4 th . Off charter January 7 th (Lan Chile departure date for fieldworkers).
1-15	Jan06			SP, EM on Albatross Island to census wandering albatross and giant petrels, and wandering albatross on Prion Island 7 January. Picked up by <i>Vavilov</i> courtesy PEREGRINE SHIPPING.
15-26	Jan06			SP at KEP. EM on board <i>Vavilov</i> , courtesy PEREGRINE SHIPPING, arriving Ushuaia 26.01.06
26-29	Jan06			SP on board <i>Europa</i> courtesy HAPAG LLOYD, arriving Falklands 29.01.06

2006-07 OPERATIONS LOG FOR s/v GOLDEN FLEECE AND THE SOUTH GEORGIA ACAP PETREL SURVEY

Date	Time GMT depart ψ	Time GMT Arrive ψ	Nm per day	Weather conditions for Golden Fleece	Location and remarks
19.11.06	1730			WSW30 then SW25 by evening; rolling swell outside	S/V Golden Fleece departed Stanley, Falkland Islands. On board were Dion Poncet skipper DP, Steve Cartwright crew SC, Ken Passfield crew KP, and petrel survey fieldworkers Sally Poncet SP, Andy Black AB, Carolina Mantella CM, Leiv Poncet LP, Ronnie Reyes RR, Christophe Barbraud CB, Oily Watts OW.
23.11.06				ENE25 early am, then E with heavy snow 0300-0500. SW50 in night with strong gusts, heavy swell in Bird Sound	1000: Arrival off Willis Islands, passing close along S coast of Main, Trinity, through Verdant Passage, Hall and Proud. 1200: tied up in Main Bay, Bird Island as E increased. 1600-1730: SP, CM, AB, LP, RR, CB, OW ashore with Robin Snape BAS to check WCP site on Cobblers Mound. Went through survey methodology and mapping software with fieldworkers, distributed VHF's, GPS units, rechargeable batteries and chargers, notebooks etc. OW sent his first webdiary to RSPB. ψBird Island
24.11.06		1000	0	SW30 early am, decreasing to a sunny pm. with snow on ground; heavy swell outside	1100-1600: SP, CM, AB, LP, RR, CB, OW ashore with Alison Deane BAS to visit geep habitat with GPS units etc. and confirm survey methodology. Too rough and snowy to start surveying. More practice with survey methodology and mapping software for fieldworkers. OW sent his webdiary. ψBird Island
25.11.06	0900		5	SW15 with some snow on ground, sun coming through in am	0815: ashore to base briefly before leaving. Snow melting and ok for survey work to start. 0900: left for Elsehul, dropping OW, CB, LP, AB at Cape Alexandra in Bird Sound at 1030 to survey GPs on Paryadin Peninsula coast from Cape Alexandra to below Hesse Peak; they walked overland to Elsehul arriving 1600. 1100-1230: SP, CM, RR surveyed GPs on steep slope S of macs on E side of Elsehul. 1400-1900: SP, CM, RR test-surveyed GPs between Undine Harbour and Johan Harbour, covering most of the same area done last year. ψElsehul
26.11.06	0710		25	SW15 all day, slight seas, cloud clearing, perfect for landings	0830-1030: 3 landings along Church Bay coast SP, AB, CM, LP, RR, OW, CB 1230-1300: Cape North SP, CM, LP, AB 1415-1700: Nameless Point LP, AB, CB walked coast to Binder Beach 1430-1830: Craigie Pt SP, OW, RR, CM ψRight Whale Bay
27.11.06	0820		30	SW10-15 all day, 1 snow squall at 0900, another at 1700	0900-1300: Wales Head west: SP, CB surveyed between Craigie Pt and N side of large lake in Tawny Gap; AB, CM, RR surveyed Tawny Gap valley and E side of large lake; OW, LP Wales Head coast to N side of large lake; all picked up at Tawny Gap beach. 1400-1600: Wales Head east: SP, CM surveyed coastline between bay close E of Tawny Gap beach and large un-named bay further E; AB, LP, RR, OW, CB surveyed the large un-named

		1910			bay. 1700-1730: Welcome Islands: KP, LP AB landed and surveyed the middle island ψRosita Harbour
28.11.06	1210		17	WNW 10-15, snowing occ in am, veering N light in pm	0730-1200: MacDonald Cove SP, KP, AB surveyed Rosita Cove to MacDonald Cove. 1300-1400: Start Pt LP, AB, OW, CB. 1530-1900: Prion I AB, CM, LP, OW doing GPs and CB, SP, RR setting up long-term white- chinned petrel monitoring quadrats ψPrince Olav Harbour
29.11.06		2045	0	NE15 and more outside, rain, mist, snow,sleet all day with big surge, high seas	Bad weather, day off. KP, AB, LP. CM sent her first webdiary to Peregrine cruise ships Vavilov and <i>loff</i> , OW sent his RSPB webdiary. Data entry. ψPrince Olav Harbour
30.11.06	0700		38	WNW25, swell outside, weather improved as we got to the Fortuna Bay–Stromness Bay area with >10C temps in evening and some gusty fohn winds overnight	0830-1030: Antarctic Pt CB, LP, AB. 0900-1000: Windy Cove south SP, CM, RR, OW, no GPs here. 1100-1200: Morse Pt south SP, AB, CM, LP, RR, OW, CB. 1430-2625: Grass Island SP, AB, CM, LP, RR, OW, CB to survey GPs, beacon and check for rat sign; 2 pipsits seen aerially singing but no nest found; several new WCP burrows found in areas where none have been seen before. 1800-1900: Kanin Pt RR, CB, SP setting up white-chinned petrel monitoring site. ψHusvik Harbour
01.12.06	0700		34	Calm in am at Husvik, later WNW 25 decreasing to 15, sunny	1100-1730: Hound Bay south shore to Lonnberg Valley CM, OW, SP; Hound Bay to Cape Vakop RR, CB, KP; Hound Bay to Luisa Bay AB, LP. ψOcean Harbour
02.12.06	0925		44.9	WSW20, sunny, conditions variable along the coast, W25 out of Royal Bay, calm close off Cape Charlotte	0730-0900: Ocean Harbour south point SP; whaling station area KP, CM, DP, SC. 0900: Headed to KEP to meet HMS Endurance but email message in advising of change in plan so off Johannesen Loch we turned round and headed south to Kelp Bay. 1115-1230: Kelp Bay SP, AB, CM, LP, RR, OW, CB. Surveyed Calf Head by passing close inshore with the boat. Anchored off Cape Charlotte. 1500-1930: Cape Charlotte SP, AB, CM, LP, RR, OW, CB OW landed in small cove 1 km S of the cape, picked up in cove on Royal Bay shore, W of the cape. CB, LP, AB did headland area S of landing cove and up to the saddle over to Royal Bay; SP did Cape Charlotte headlands; CM, RR, OW did Royal Bay facing slopes; AB, OW, CM surveyed W as far as there was suitable habitat on Royal Bay coast. OW sent his RSPB webdiary ψOcean Harbour
03.12.06	0815		20	Calm sunrise, NW15 increasing to 30 backing SW30, gusting 40kt in pm	Left for KEP to do clearance, pick up TM and AM. Too rough to land on Right Whale Rocks. 1030-1400: Corral Bay SP, CB set up 5 quadrats for white-chinned petrel monitoring site between the hut and the waterfall. AB, CM, LP, RR, OW, OW did a between-counter variation in detecting nests, covering the ground between Corral Bay and Sandebugten. Caro sent her webdiary. ψ: Grytviken
04.12.06	1800		35.3	Lovely sunrise; W10,	CB and SP checking yesterday's counter accuracy data in am. SP and KP discussed Historic

			2100		sunny all day	<p>Sites database with Pat Lurcock. TM and AM (BAS) embarked pm. OW sent RSPB webdiary.</p> <p>1830-1900: Jason Island KP, LP.</p> <p>2030-2100: SP ashore at Husvik to plan next day's white-chinned petrel work with Sarah Robinson and other members of BSES team.</p> <p>ψ: Husvik Harbour</p>
05.12.06	1440				Light warm winds off the land, sunny. Very rough overnight.	<p>0730-1230: Kanin Pt SP with BSES team to WCP monitoring.</p> <p>1600-1830: Maiviken SP, CB set up WCP monitoring quadrats in Poa Cove; TM, AM doing WCP transects; AB, OW walked from Maiviken to KEP; KP, SC on W shore of Maiviken doing historic sites survey.</p> <p>2000-2300: KEP to collect stores and mail. OW sent his webdiary</p> <p>Overnight to Wilson Harbour.</p>
06.12.06		80			WNW25 and increasing in evening	<p>1230: Arrived off Saddle I but too rough to land. Continued on to Samuel Is and mainland</p> <p>1430-2000: Samuel Islands mainland: TM, AM, CM, OW doing WCP transects; SP, RR surveyed GPs on E half of the area, AB, CB, LP on the W half.</p> <p>1500-1530: Samuel Is east island landing by DP.</p> <p>Caro sent her webdiary, OW sent his RSPB webdiary</p> <p>ψWilson Harbour</p>
07.12.06		0	2150		W45, rain easing by evening	<p>Lying up: strong winds and swell outside</p> <p>KP, DP, SC, CM ashore to photograph the trypts in pm as wind dropped. Data entry</p> <p>ψWilson Harbour</p>
08.12.06	0630	37.2			W15, sunny, heavy swell outside	<p>0730-1200: Saddle I SP, AB, LP, RR, OW, CB, KP. TM; AM doing WCP transects. Rat sign found: skull, bones, burrows, droppings. No pipits seen, prions still breeding.</p> <p>1400-1530: Nilse Hullet West SP, CM, AM.</p> <p>1400-1630: back of beach Nilse Hullet RR, OW, TM; KP, SC, DP surveyed historic site.</p> <p>1400-1730: Nilse Hullet East to W entrance Cheapman Bay AB, LP, CB. Continued to Holmestrand, no landing at Nunez Peninsula due to heavy swell.</p> <p>ψHolmestrand</p>
09.12.06	0630	25.7	2040		NW15, sunny, beautiful weather, calm overnight	<p>1000-1700: Annenkov Island TM, AM, SP, CB, CM, OW, RR all did WCP transects all day at SW area of island, with some also done at N end by TM, AM, RR landing in 'Totem Pole Bay'. LP and AB were landed at waterfall beach for one week camping.</p> <p>1230-1830: AB and LP surveyed GPs along N shore Rustad Bay. OW sent his webdiary</p> <p>ψAnnenkov I</p>
10.12.06	0850	30.1	0915		NW25 increasing in am with rain, then backing W15 with dense fog in pm. Swell outside	<p>0830-1130: Larvik SP surveyed W shore of Larvik.</p> <p>0830-1100: Larvik TM, AM did WCP transects; CB, RR surveyed GPs E side of bay, OW, CM did area behind the beach.</p> <p>1100-1200: Vestfold I CM, CB, OW surveyed for GPs, but no WCP transects.</p> <p>1130-1500: Sandefjord SP surveying GPs; OW, CM, KP walking; TM, AM doing WCP.</p> <p>1030-1930: AB, LP surveyed GPs S shore Rustad Bay on Annenkov I. 2100 Iridium form LP.</p> <p>ψHolmestrand</p>
11.12.06	0900	35.1			WNW10-15 in am, increasing to 20-25, then decreasing 10-15 then light and cloudy,	<p>Left for King Haakon Bay intending to survey Semla Reef area on Nunez Peninsula but too much swell to land.</p> <p>1215-1445: Cheapman Bay CM, RR surveyed landing beach area; CB, SP did further E; TM, AM did WCP transects.</p>

			1850		swell outside	<p>1245-1400: KP and OW did small area at head of bay. Surveyed N shore of King Haakon Bay starting at Cheapman Bay from <i>Golden Fleece</i>. 1730-1830: Peggotty Bluff TM, AM looking for WCP; CM, OW, RR surveying GPs. 1730-1830: Vincent Is SP, KP for GPs and historic sites. 2100: Iridium call from LP on Annenkov. ψVincent Is</p>
12.12.06	0820		42.7		E15 in early am then W15 increasing to 25, then back to 10, swell outside	<p>1000-1400: Cape Rosa SP, OW, CM, RR, CB, SP, TM, AM all doing WCP transects. 2100-2200: Wilson Harbour SP, RR, CB, SP, TM, AM KP, SC, DP ashore. 2100: Iridium call from Leiv. 0930-1400, 1430-1600: LP surveyed area E of and below Fan Lake on Annenkov I. ψWilson Harbour</p>
13.12.06	0745		12.8		N and E light, W 20 to NE25, swell outside	<p>1030-1230: SP, CM surveyed area on N side of the S cove Narval Bay.. RR surveyed headland area, N entrance point to Ice Fjord. 1030-1330: CB surveyed N shore Ice Fjord. 2100: Iridium call from LP on Annenkov. 0930-1230: AB, LP set off for N end on Annenkov. ψCoal Harbour</p>
14.12.06	0800		15.5		Calm and misty early am, N15 increasing to 30 and gusting more, mist, swell decreasing	<p>0900-1100: Laurie Pt CB, RR, CM, SP, OW; AM, TM looking for WCP. 1030-1730: AB, LP surveyed E coast E of Intrusion Lake out to NE point of Annenkov. 2100: Iridium call from LP. Iridium call to HMSE to check R-V at BI 2000 on 15th. ψEisehul</p>
15.12.06	1900		14.2		WNW25-30 decreasing to 20, swell outside and SW corner too rough for landing. SW light by late evening but very rough seas off Paryadin.	<p>0900 Iridium call from LP. 1000-1300: Eisehul TM and AM landed to do WCP transects. OW sent his final RSPB webdiary 2000: positioned boat near Bird Sound entrance for HMSE rib for OW and RR. 2100-2200: at anchor at Bird Island while TM, AM, CB, KP ashore. 2100 Iridium call from LP. ψCoal Harbour</p>
16.12.06	0630		58		W20, rough seas, moderating, sun at 0900, calm in evening, then rain and NW increasing overnight	<p>1230: arrived at Annenkov I to pick up LP and AB. 1400-1700: Annenkov Island N end CB, SP, CM, LP, AB; TM, AM doing WCP transects. Had to stop surveying as sea mist came down so only got about half the area done. 1800: left for Undine South Harbour. 2000-2200: Undine South Harbour SP, KP, CM, CB, LP, AB; TM, AM doing WCP. Caro sent webdiary ψUndine South Harbour</p>
17.12.06	2000		40		W20, swell outside	<p>1100-1900: Undine South Harbour to Rocky Bay CB, SP. 1500-1900: Undine South Harbour DP, KP, CM, TM, AM. 1500-1730: Undine South Harbour E side headland LP. Motored up to the Reusch Glacier, left for Larsen Harbour, arriving 0245 next day. ψLarsen Harbour</p>
18.12.06			0		NW strong outside, rain	<p>Bad weather. Day off. KP surveyed Bonner Beach historic site. AM, CM, SP, DP, AB, LP landed Williams Cove. ψLarsen Harbour</p>
19.12.06	0610		42		N25 but decreasing	<p>Left for Diaz Cove.</p>

				once round Cape Disappointment, calm, low cloud at Diaz Cove		1100-1300 and 1600-1800: Poncet Island SP, CM, LP, CB, TM 1100-1800 Diaz Cove visits by SP, KP, CM, CB, LP, AB, TM, AM, SC, DP. Shipwreck site surveyed. 2200: left Diaz Cove for Cooper Bay arriving 0245 next day ψCooper Bay
20.12.06	1400	0245	8	N30 with swell in am at Cooper Bay, flat calm in Drygalski Fjord in pm		0245: Arrived Cooper Bay 1400: left Cooper Bay for Larsen Harbour. 1530-1630: Drygalski Fjord north cove LP, SP, CM, AB. 1745-1945: Larsen Harbour south entrance TM, AM, for WCP with SP, LP. 1750: anchored Larsen Harbour for evening then left for Cooper Bay around 2300. ψCooper Bay
21.12.06	0730	0240	14.4	WSW 20-25, sun, decreasing		0240: arrived Cooper Bay 0930-1700: Cape Vahsel LP, AB. 0930-1630: Cooper Island north coast SP, CM, CB, TM, AM surveying WCP. GF returned to Cooper Bay until 1630 when returned to pick up team from Cooper I. ψCooper Bay
22.12.06	0815	1730	50.4	W20, sunny		0930-1600: Cooper I E coast SP, KP, CM, CB, LP, AB, TM, AM, SC, DP. GF anchored off E coast all day in calm, then circumnavigated island before heading north to Ocean Harbour around 1700. ψOcean Harbour
23.12.06	1315		13	W15		0900-1300: Ocean Harbour TM, AM ashore to collect whale bones. 0930-1430: LP walked from Ocean Harbour to Penguin Bay to Hound Bay north shore; 0930-1430: Penguin Bay to Hound Bay north shore SP, CM; 0930-1130: Tijuca Point AB, CB; 1545-1900: Hound Bay south SP, CM, CB, AB, LP, TM, AM doing WCP transects. 1430-1630: GF anchored in Hound Bay. ψCobblers Cove
24.12.06	1050		19	W15, big N swell outside		0830-0930: Cobblers Cove KP, SC, DP historic site on isthmus between Cobblers and Godthul. 1030-1230: Godthul TM, AM collecting whalebones. ψGrytviken
25.12.06			0			KEP: Day off. ψKEP
26.12.06	0900		17	Gusty all day		Day off. Left for Stromness Bay to R-V with <i>Le Diamant</i> at Stromness at 1800. 2130: CB transferred to <i>Le Diamant</i> . ψLeith Harbour
27.12.06	0600		2	Calm and sunny all day		0800-1100: Grass Island SP, CM, LP, AB did a calibration count of the island's GPs. TM, AM, KP also ashore. ψLeith Harbour
28.12.06	0830		21	Calm and sunny till pm then swell, fog and NW wind increasing		1030-1530: Cape Best SP, CM, AB did coast area at Cape Best; TM, AM did WCP; LP surveyed GPs on the highest areas. DP, SC, KP also ashore. 1630-1930: Bjelland Pt: SP, LP doing GPs; AM, TM, AB, CM doing WCP. Found new small chinstrap colony ψLeith Harbour

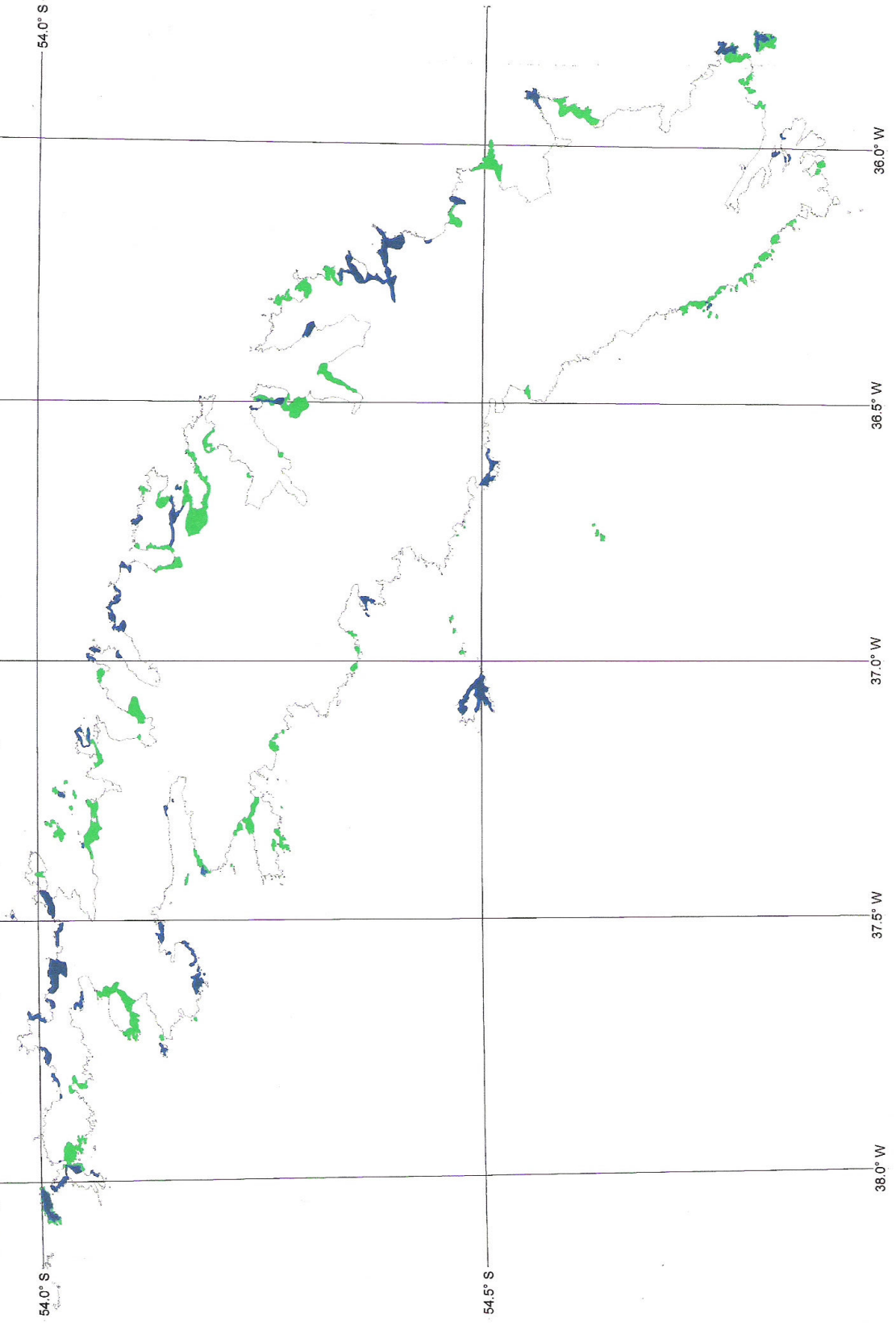
29.12.06			0	N swell outside, calm, fog clearing sunny pm.	Day off, and data entry. ψLeith Harbour
30.12.06	0600		22	Calm and low cloud, big N swell outside, wind starting up in pm.	Left for Prince Olav Harbour with too much swell to land at Morse Pt. Continued data entry while waiting for swell to drop. ψ Prince Olav Harbour
31.12.06		0940	0	Still windy, light snow in pm, swell outside still	Bad weather, continuing data entry ψ Prince Olav Harbour
01.01.07			22	Heavy swell, and moderate NW, both decreasing in pm	Still swell outside but enough shelter in Tornquist Bay to be able to land. 1130-1400: Cape Constance SP, CM, TM, AM did WCP at Cape Constance, some GPs; LP, AB surveyed GPs to Cone Pt. 1600-2100: Prion I SP, CM did wanderers; AM did WCP. 1800-1930: Start Pt LP, AB, KP, to check GP numbers and look for Murphy campsite. ψ Prince Olav Harbour
02.01.07	0930	2230	22	Still swell outside but decreasing and ok for landings at Morse Pt., light westerlies.	1030-1230: Morse Pt SP did area to south of landing beach; CM did area above beach; AM did WCP above beach; 1100-1330: TM, LP, AB, surveyed area 2 km east of Morse Pt 1100-1530: KP surveyed area 2 k E Morse Pt and un-named bay to the E. 1430-1530: SP, CM, AB, LP surveyed east side of un-named bay east of Morse Pt. 1730-2030: Cape Crewe SP, KP, AB, TM, AM walked from Lighthouse Bay via the outside coast to Prince Olav Harbour, surveyed lighthouse. No GPs. ψ Prince Olav Harbour
03.01.07	1700	1800	11	W 10, swell increasing.	Prepared camping gear most of the day. 1830: Landed at Albatross I to drop off SP and CM. ψStart Pt
04.01.07	1400	2200	28	Swell, rain, NW 25 increasing	Start Pt TM collecting whale bone then to Right Whale Bay in pm for bones, and Bird Island for short visit in evening to drop off TM. GF underway for the Falklands
		2300			

SUMMARY OF FIELDWORK OPERATIONS 2006-07

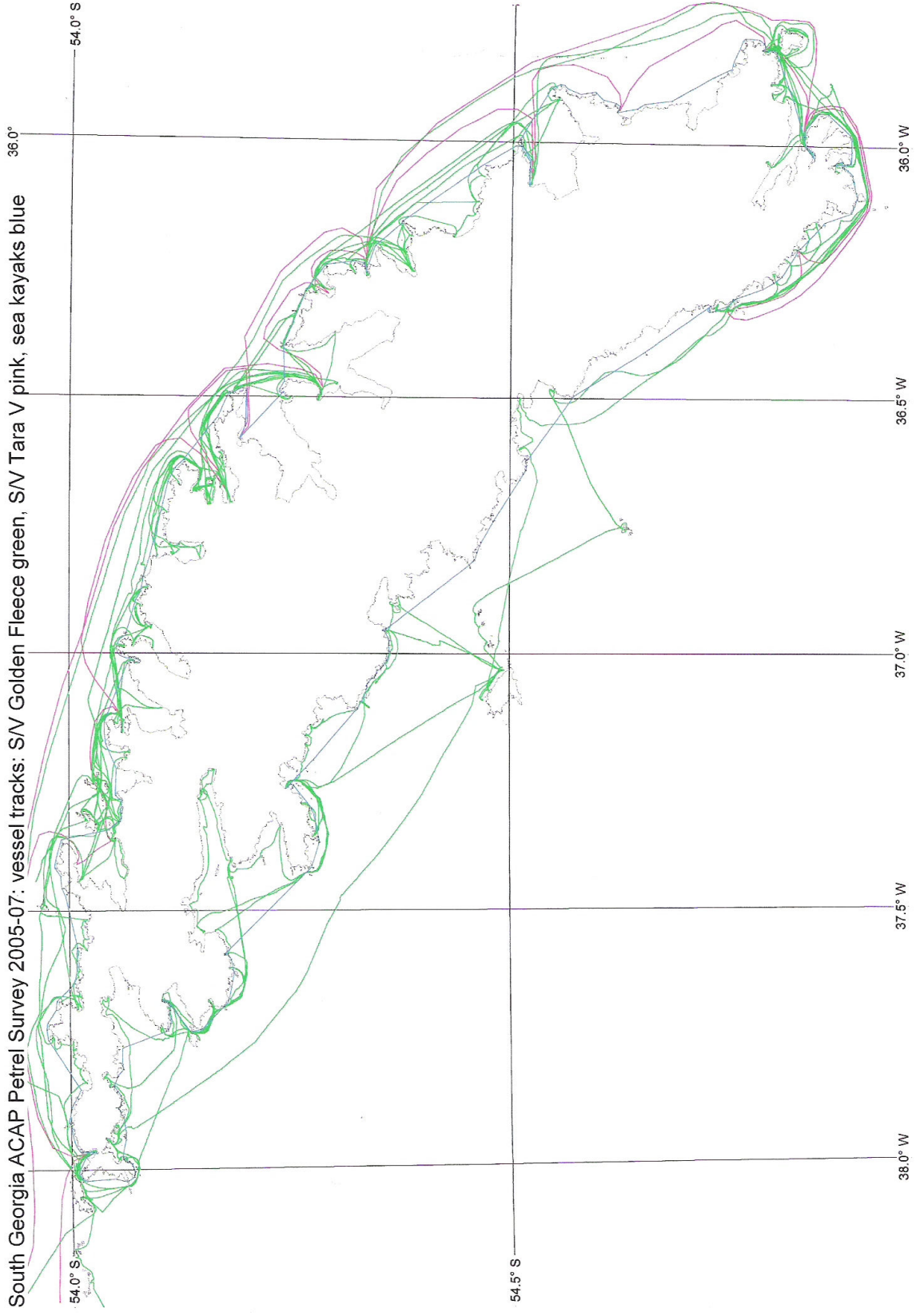
GOLDEN FLEECE ANCHORAGE		ACAP PETREL SURVEY
NOVEMBER		
18	Stanley	7 petrel survey personnel embark: Sally Poncet, Andy Black, Leiv Poncet, Ronnie Reyes, Olly Watts, Carolina Mantella. Skipper Dion Poncet, crew Stevie Cartwright and Ken Passfield (also doing Historic Sites Survey)
19	Departure for South Georgia	
20-22	At sea	
23	Arrival Bird Island	Ashore to visit white-chinned petrel site, guided by Robin Snape
24	Bird Island	Instruction in use of field equipment and survey methodology for personnel; guided by Ali Deane
25	Elschul	Giant petrel surveys of Elsehul, Cape Alexandra, Undine Harbour
26	Right Whale Bay	GP surveys of Church Bay, Cape North, Nameless Point, Craigie Point, Right Whale Bay
27	Rosita Harbour	GP surveys of Wales Head area, Welcome Islands
28	Prince Olav Harbour	GP surveys of MacDonald Cove, Rosita Hbr, Start Point, Prion I; set up long-term monitoring plots for WCP on Prion I
29	Prince Olav Harbour	Bad weather; data entry
30	Husvik Harbour	GP surveys of Antarctic Pt, Morse Pt, Grass I; set up long-term monitoring plots for WCP on Kanin Point
DECEMBER		
1	Ocean Harbour	GP surveys of Hound Bay, Lonnbeg Valley, Cape Vakop, Luisa Bay
2	Ocean Harbour	GP surveys of Ocean Harbour, Kelp Bay, Cape Charlotte
3	Grytviken	Set up long-term monitoring plots for WCP at Corral Bay; GP calibration survey at Sandebugten; R-V with HMS <i>Endurance</i>
4	Husvik Harbour	Picked up Tony Martin and Ash Morton (BAS) at KEP.
5	Overnight to Wilson Harbour	Reviewing the long-term monitoring plots for WCP at Kanin Pt with Sarah Robinson and BSES; set up long-term monitoring plots for WCP at Maiviken
6	Wilson Harbour	GP survey and WCP transects on Samuel Is and mainland
7	Wilson Harbour	Bad weather; data entry
8	Holmestrand	GP survey and WCP transects on Saddle Island, Nilse Hullet
9	Annenkov Island	GP survey and WCP transects on Annenkov Island
10	Holmestrand	GP survey and WCP transects at Larvik, Sandefjord, Vestfold I; GP surveys on Annenkov I
11	Vincent Islands	GP survey and WCP transects at Cheapman Bay; GP survey Peggotty Bluff, Vincent Is

12	Wilson Harbour	GP surveys on Annenkov I; GP survey and WCP transects at Cape Rosa
13	Coal Harbour	GP survey and WCP transects at Narval Bay, Ice Fjord
DATE	GOLDEN FLEECE ANCHORAGE	ACAP PETREL SURVEY
DECEMBER (cont.)		
14	Elsehul	GP survey and WCP transects Laurie Point
15	Coal Harbour	WCP transects at Elsehul. Transferred Olly Watts and Ronnie Reyes to HMS <i>Endurance</i> off Elsehul; brief call at Bird I
16	Undine South Harbour	GP survey and WCP transects at Annenkov I, Undine South Harbour
17	Larsen Harbour	GP survey and WCP transects at Undine South Harbour; GP survey of Rocky Bay
18	Larsen Harbour	Bad weather. Data entry
19	Cooper Bay	GP survey and WCP transects at Diaz Cove, Poncet I
20	Cooper Bay	GP survey and WCP transects at Larsen Harbour; GP survey at Drygalski Fjord
21	Cooper Bay	GP survey at Cape Vahsel, Cooper Bay; WCP transects at Cooper Island
22	Ocean Harbour	WCP transects at Cooper Island
23	Cobblers Cove	WCP transects at Hound Bay; GP survey at Tijuca Pt, Penguin Bay, Ocean Harbour
24	Grytviken	Data entry; R-V with <i>Le Diamant</i>
25	KEP	Day off
26	Leith Harbour	Day off. Transferred Christophe Barbraud to <i>Le Diamant</i> at Stromness Harbour
27	Leith Harbour	GP calibration survey on Grass Island
28	Leith Harbour	WCP transects and GP calibration survey at Cape Best, Bjelland Point
29	Leith Harbour	Data entry
30	Prince Olav Harbour	In transit. Bad weather. Data entry
31	Prince Olav Harbour	Bad weather. Data entry
JANUARY		
1	Prince Olav Harbour	GP survey and WCP transects at Cape Constance, Cone Pt; Wanderer survey and WCP transects of Prion I, GP re-survey of Start Point
2	Prince Olav Harbour	GP survey and WCP transects at Morse Point and area east, Cape Crewe
3	Start Point	Sally Poncet and Carolina Mantella disembarked at Albatross Island
4	Bird Island	Tony Martin disembarked at Bird Island
5	EN ROUTE TO STANLEY	
9	ARRIVAL STANLEY	
13	END OF CHARTER	END OF FIELDWORK OPERATIONS

South Georgia ACAP Petrel Survey: areas surveyed on foot: green 2005-06, blue 2006-07



South Georgia ACAP Petrel Survey 2005-07: vessel tracks: S/V Golden Fleece green, S/V Tara V pink, sea kayaks blue





Golden Fleece survey team 2005-06:

left to right: Andy Black, Sally Poncet, Ben Sullivan, Leiv Poncet, Jerome Teignie, Bob Powell, Catrin Thomas; front: Russell Evans, Kilian du Couedic, Dion Poncet, Ellen MacArthur, Tony Martin. Absent: Micky Reeves, Fran Prince, Andy Whittaker



Golden Fleece survey team 2006-07:

left to right: Andy Black, Leiv Poncet, Carolina Mantella, Dion Poncet, Ken Passfield, Olly Watts, Christophe Barbraud, Ronnie Reyes, Stevie Cartwright. Absent Sally Poncet, Tony Martin, Ash Morton



white-chins



wanderers



geeps