



BSES Southern Endurance 2008 Expedition Report

GAP YEAR EXPEDITION TO THE FALKLAND ISLANDS & SOUTH GEORGIA

Bruce Manning, Chief Leader

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1.0 Expedition Members

Leaders



Bruce Manning
Chief Leader



Hamish Matheson
Fire Leader



Ade Harris
Deputy Chief Leader &
Chief Mountain Leader



Jackie Harris
Fire Leader



Chris Pearson
Chief Scientist



Paul Corwin
Expedition Doctor



Debs Jenkins
Fire Leader

Expedition Members

Young Explorers



Abby Enoch



Dani Rabaiot



Ask Helseth



Evans Boland



Ben Rigby



Gemma Smith



Clare Howes



Jack Williams



Michael Kinahan



Rosanna Cousin



Sarah Watts



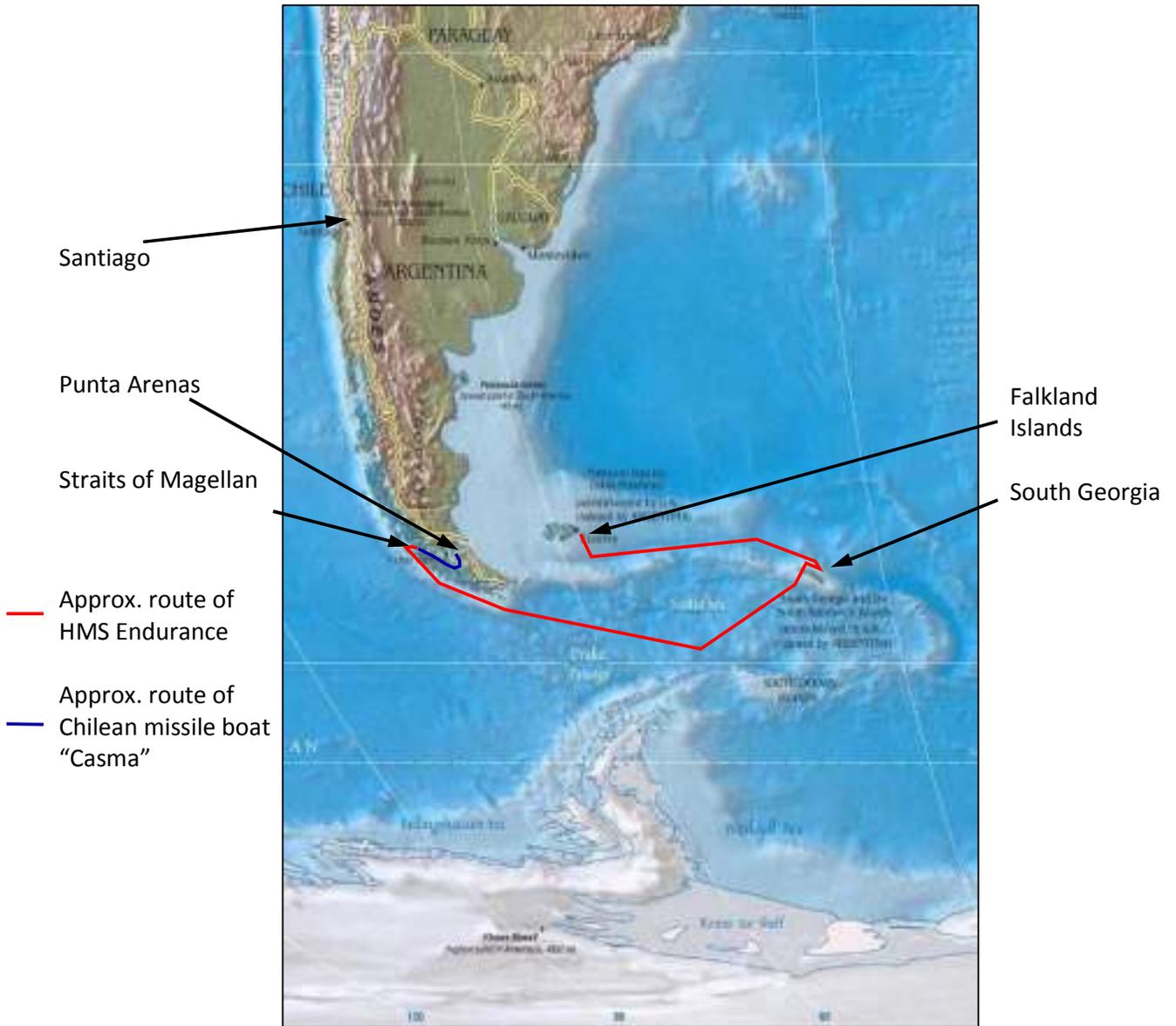
Stephen Rawlinson



Will Timmis

2.0 Maps of Expedition Areas

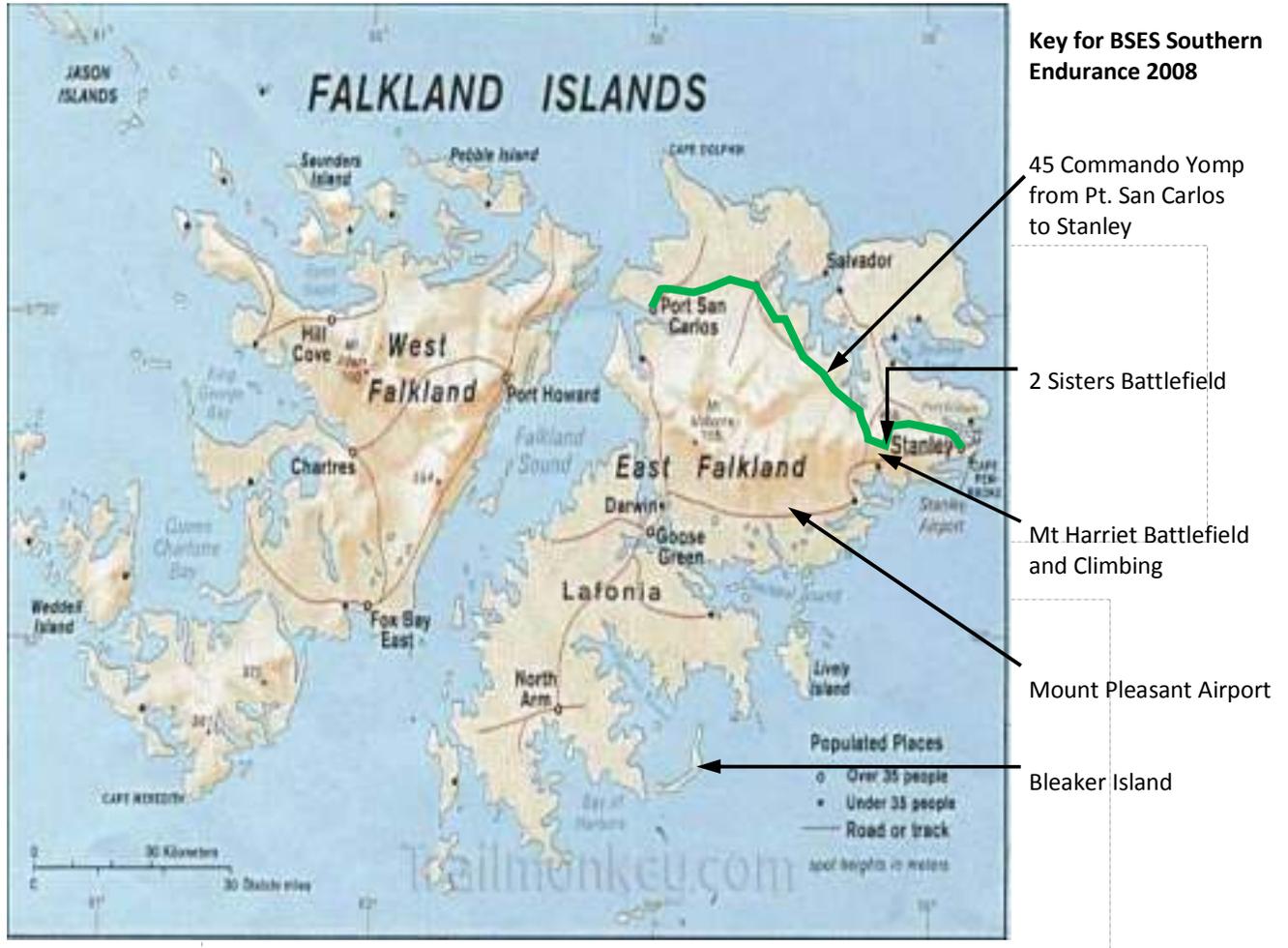
BSES Southern Endurance 2008 Expedition Overview



Bleker Island Map



Falklands Island



South Georgia



3.0 CHIEF LEADER'S REPORT

It is now the fourth time BSES has run expeditions to the Falkland Islands and South Georgia in recent years. It started with an expedition led by David Nichols in 2002-03 followed by a reconnaissance trip led by Pat Parsons in 2006 and a full Young Explorer expedition in 2007. Southern Endurance 2008 has benefited greatly from the learning provided by these previous expeditions but has naturally met its own challenges. Regrettably many of the contacts on the ground had changed since 2007 and this will be a recurring issue for future expeditions.

Organisation of the expedition stumbled during the 3 months prior to departure due to an unavoidable change in Chief Leader. This led to a loss of momentum which required much work from office staff and leaders to regain the upper hand. That said, this year's expedition has been extremely successful with nearly every goal we set before leaving UK achieved.

The aim was to provide a balance of science, recent history, personal development, exploration and adventure. The locations chosen provided an abundance of opportunity, but especially in the remoteness of South Georgia, many risks to be overcome. To do this successfully and safely required a controlled and progressive approach with checks along the way to ensure we were not exceeding the capability of the group.

The first phase on Bleaker Island at the southern end of East Falklands provided excellent science and wild life opportunities whilst starting the process of toughening us up. Wind and rain were often quite severe making it essential to master simple outdoor living skills. Most of the Young Explorers were able to spend some time on their own to experience the strength which comes from personal isolation. It was also during this phase that personal development and leadership training commenced. This was a strong theme throughout the expedition driven by the experience and expertise of the leader team.

This was followed by a repeat of the route "yomped" by 45 Commando which added fitness and strength, both mental and physical, to the mix. At the same time we learned about recent historical events along the way and found items on the ground remaining from the battles around Mount Kent and the Two Sisters. Whilst we did not carry the pack weights of those soldiers who first followed the route in 1981, mile after mile of "baby heads" (grass mounds) meant that this was no mean feat for an inexperienced group of young people.

Whilst staying at MPA and at Hillside Camp in Stanley we were also able to develop climbing and rope work skills, plus elementary crevasse rescue procedures and use of avalanche transceivers. These exercises made a significant contribution to our readiness for the next phase of the expedition which could not have been undertaken within such a short time period without them.

Following sea passage from Falklands to South Georgia aboard HMS Endurance, we were landed ashore at Sea Leopard Fjord. Our chosen spot for a temporary base camp was in the centre of the area for science work. In accordance with our plan the first two full days were spent in developing mountaineering and glacier skills to enable the next phases to progress safely. Our leader team comprised a very strong set of mountaineers

and it was recognised that further training would be required as situations arose. Continuous learning, as with all aspects of the expedition, was the key to success.

We split into two fires, Gunner travelling East and Wild travelling West to conduct various science projects including glacier snout surveys, accurate cairn location surveys and measurement of various bird colonies. We already anticipated that HMS Endurance would recall us 2 or 3 days earlier than planned and hence cut one day off this phase to make it more likely that the final phases of the expedition could be achieved successfully. In reality this did not significantly reduce our ability to complete the tasks as planned.

One day earlier than originally planned HMS Endurance collected our science and other surplus equipment and returned it to the ship. This enabled us to commence the crossing to Husvik with no more than the essential equipment for safe and efficient travel. Two Young Explorers elected to miss this phase and we were grateful to HMS Endurance for transporting them directly from Sea Leopard Fjord to Husvik along with two leaders. From this location they were able to carry out other useful science work prior to re-joining the main party at Husvik.

The final phase on South Georgia was billed as a land traverse from Sea Leopard Fjord to Husvik. This clearly included the route across the centre of the island taken by Earnest Shackleton in 1916 and generally referred to as the Shackleton crossing. Various exit routes were agreed in advance with HMS Endurance, however it was not clear right up to the last moment if it would be practical to undertake this challenge.

In the event we set out with a well planned route, a strong leader team and in moderately reasonable weather conditions. Two and a half days later found us in the relative safety of Fortuna Bay having crossed the Morris, Purvis, Murray, Crean and Fortuna glaciers and reaching the unglaciated section of the route. The final push to Stromness and over the hill to Husvik was hard going but very satisfying. To have achieved such a famous and epic route was, we thought, a truly fitting climax to the expedition.

We had arrived in Husvik three days ahead of the original schedule but remained only one night in the Manager's Villa surrounded by an amazing density of wildlife living right up to the door. Fur and elephant seals abound making moving around outside the hut hazardous without great care and a stout ski pole to fend off the fur seals. For ornithologists this area is also a paradise. The following morning HMS Endurance sailed into the bay and sent inflatable boats ashore to evacuate us to the ship.

The final phase of our journey was to take us to Valparaiso in Chile via the 60th parallel just north of Elephant Island to indicate that we arrived from Antarctica. This involved sailing through Drakes Passage and around the Horn before laying off the mouth of the Magellan Straits from where personnel from British Antarctic Survey, BBC and Spiderlight Productions could be transported by helicopter to Punta Arenas.

By 16:15 on Tuesday 16th December HMS Endurance had put ashore all but the last group when a major leak into the engine room was announced to the ship's company. I will not try to report in detail the following events but within a short time all hands, including civilians, were called to assist in bailing out the lower decks as the flood had not been contained. YEs and leaders all worked extremely hard alongside the crew and

received praise from the Navy for their efforts. Around 20:00 half our expedition members including 6 girls, 3 boys and 1 leader were hoisted to a Chilean Coastguard helicopter and taken to a nearby lighthouse for safe shelter. The remainder of us stayed on board throughout the night and continued to help the crew in several areas.

During the night we were drifting towards a headland and the ship dropped anchors, even though the water was very deep, which slowed and eventually stopped our progress. By this time a small tug was on site but unable to help us and a larger tug with 50T bollard pull was on its way from Punta Arenas some 130nm away. With anchors down the ship weathered and the rolling, which had been very considerable, was significantly reduced.

The bailing and pumping operation continued but was at best slowing the rate at which the level was rising. The large tug eventually arrived and took HMS Endurance under tow. Larger pumps were brought on board and the water levels eventually settled at about 5ft on C Deck. During the night we took the BSES communication barrel to the bridge in order that the crew could make use of our satellite phones.

Some time around 05:00 Paul Corwin (expedition Doctor) was winched off by helicopter and taken to a nearby cruise ship which was standing by to assist. I understand Paul then flew with a cruise ship patient to the hospital in Punta Arenas.

Throughout the emergency Deborah Jenkins remained with the ship's officers interpreting Spanish especially, I understand, facilitating communication with the initial rescue vessels and interpreting for the pump mechanics from the Chilean Navy who were transferred on board by the helicopter. Around mid morning the following day the remainder of our expedition members with the exception of Debs were evacuated by helicopter to the lighthouse. Some of our members offered to Lieutenant Commander Adam Northover to remain on board and continue to work, however he was, by this time, under instructions to evacuate us.

From the lighthouse 19 expedition members were transferred to a Chilean Navy fast patrol/missile ship where we were very well looked after. At around 09:00 the following morning we were put ashore in Punta Arenas. To our amazement we were greeted by the Chilean Navy Admiral, the British Consul from Santiago and around 20 members of the press. Following introductions and photos we were escorted to the nearby police station to obtain entry papers and on to the Backpacker's Paradise hostel.

At this stage we were all wearing the clothes in which we had been bailing what was at times quite polluted water. Our personal belongings were all still aboard HMS Endurance and hence we had to buy essential fresh clothing and clean up as best we could.

The British Consul, Moira Harte and Hon British Consul, John Rees gave us more than excellent support and assisted in all matters throughout this phase. They communicated for us with both the British and Chilean Navies, Chilean immigration and worked extremely hard to assist us in finding flights from Punta Arenas to Santiago which were officially all full until after Christmas. They also issued 9 temporary passports to those members who did not have their passports, though some were later recovered. They even assisted in sorting paperwork for Ask, a Norwegian YE, who clearly did not come under their jurisdiction.

HMS Endurance was brought alongside in Punta Arenas at Bay Catalina (Asmar) around 23:30 on Thursday 18th December and the new Captain gave permission for us to go aboard the next day at 10:30 to recover what kit we could. For the most part we were able to recover personal and group equipment but six members (Ade Harris, Michael Kinahan, Chris Pearson, Will Timmis, Ask Helsith, Evans Boland) whose cabins were on C Deck were unable to recover anything as it was still under water. Loss of personal equipment was hugely stressful to all members and remains so for the unlucky six.

During the following days two RN "stress councillors" visited our hostel to offer any help we might need. They advised that spending time together as a group, which we had to do for a few days, was the best way to deal with any issues. It was generally thought that we were all in good shape but they advised that professional help should be sought if we were experiencing any concerns after a month or so.

With the help of several parties we eventually obtained flights to get everyone back to Santiago in time for our UK flights. Expedition members enjoyed an excellent final evening meal together in Santiago complete with after dinner speeches. It was agreed that it had been an amazing expedition and that we would strongly recommend future BSES expeditions to friends and family. It was however noted that we could not promise them quite as much excitement as we had on this particular trip.

THANKS TO SPONSORS AND SUPPORTERS

I should like to extend my thanks and that of all members of the Southern Endurance 2008 Expedition to the following people without whom this expedition would not have been possible:

Air Commodore G Moulds – Commander British Forces FI&SAI – and Col Julian Simpson

For authorising the expedition's use of Joint Forces facilities on Falkland Islands without which such an expedition would not be possible.

Flt Lt Duncan Martin Smith - Mt Pleasant Airfield Liaison Officer

For coordinating with the Joint Forces and all our needs whilst on Falkland Islands

Andy and Margaret – Falkland Island Tourism and Transport (FITT)

For providing all our transport needs, often at short notice

Mike and Phyl Rendell - Owners of Bleaker Island

For their kindness in agreeing to allow us to visit their beautiful island when circumstances forced us to change plans.

Elaine and Robert – Managers of Bleaker Island

For their great kindness and help throughout our stay on Bleaker and especially for Elaine's biscuits.

Valerie Haynes - Glaciologist Sterling University

For recommending useful science projects on South Georgia.

Roger Spink and Sue Buckett - Falkland Islands Company

Our thanks for providing storage for our equipment over the last year.

Richard McKee - Government Officer for South Georgia

For his patience with our permit application and time in explaining the intricacies of working on South Georgia with minimal impact on the fragile environment.

Pat Parsons - BSES Chief Leader 2007

For all the planning put in for last year's expedition which laid the foundation for this year.

Lt Com Adam Northover – Operations Officer HMS Endurance

For his support and that of the whole crew of HMS Endurance throughout the time we were aboard and when ashore on South Georgia. Without HMS Endurance and her facilities such an expedition would be impossible for a non profit making organisation.

Peter Biggs – Falkland Islands Defence Force (FIDF)

For obtaining permissions from the land owners whose land we crossed whilst following the route of the 45 Commando Yomp.

John Maskell Bott – Hillside Camp CO

For his friendly help and assistance whilst in Stanley and provision of messing and accommodation at Hillside Camp.

Rebecca Upson, Grant Munro and Sarah Crofts – Falkland Conservation

For providing information and training to assist in our work on Bleaker Island and, we hope, making good use of our findings.

4.0 CHIEF MOUNTAINEER'S REPORT



Photo H. Matheson

INTRODUCTION

The primary role of the Chief Mountaineer on any expedition must surely be to ensure that the necessary training and safeguards are put in place to enable the expedition goals to be achieved safely. With that in mind I set about a programme that was designed to ensure that all the Expedition members were fit enough and well trained enough to deal with anything they might encounter.

TRAINING

The process began at the briefing weekend in Capel Curig during which many of the Expedition members took part in mountain walking, river crossing and indoor climbing activities. More in depth training then continued throughout the Expedition with the emphasis being on reaching a safe level rather than an expert level. Indeed, even if the whole Expedition was given over to training we would still not be able to produce experts. To this end the camp craft skills were taught during the Bleaker Island phase, leadership and group management during the 45 Commando “yomp”, whilst the snow and ice craft were taught over a two day period upon our arrival on South Georgia.

Bleaker Island was a perfect venue for camp craft. Exposed and very windy, yet with the insurance of being camped within a fenced sheep enclosure which allowed any lost items to be recovered easily. The 45 Commando “yomp” was an ideal chance to introduce leadership, group management and navigation with the Young Explorers taking a day each to lead their Fire. With some reconnaissance, the Morris Glacier on South Georgia provided a suitable venue for the snow and ice craft although the snow conditions were not well suited for crampon work. This was not a problem as throughout



Bucket seat belays Photo G. Smith



Buried axe belay stance Photo G. Smith



Photo S.Rawlinson

ACTIVITIES

There were several opportunities during the Falkland Islands phase of the Expedition to work up the physical stamina of the members. These included many walks up and down Bleaker Island, some trips around the 1982 battlefields and a climbing day on Mount Harriet. The Falkland Islands phase of the Expedition culminated in a re-enactment of the 45 Commando “yomp” from Port San Carlos to Stanley. This journey, of around 120km, provided a good chance for the Young Explorers to experience the delights of packing up and moving on a daily basis.

Similarly, the early stages of the South Georgia phase included short trips onto the mountains and glaciers and were an ideal build up to our intended walk from Sea Leopard Bay to Husvik. In the event, although there were some sore feet and tired bodies, the level of fitness achieved was sufficient.

RISK ASSESSMENT

As previously stated, the focus of all this training was, in essence, to ensure that the Expedition's activities could be carried out safely. However, equally important was my need to satisfy myself that the members who were to be walking from Sea Leopard Bay to Husvik, a walk that includes the Shackleton Crossing, were up to the task both in terms of mental and physical strength and mountaineering competence. In the event five leaders took eleven Young Explorers on this journey, a ratio that allowed at least one leader to be on each rope of four. Despite the poor weather all of the party and almost all of our equipment made it to Husvik. It must be stated that we had an exceptionally strong alpine leader team for this phase, but that I remained concerned about the team selection until the last few hours before we departed. This is a committed route and with the prevailing weather conditions rescue, in any form, would be difficult to impossible to achieve.

Despite the fact that we had taken MSR snowshoes ashore I elected not to use them. My concern was that they would result in crampons not being used for glacier travel with the attendant increase in risk should anyone fall into a crevasse. As the snow was, in the most part, well consolidated the absence of snow shoes was of little concern. Clearly, future Chief Mountaineers will have to make their own assessment of the risks involved with this piece of equipment.



Negotiating Breakwind Gap on the Shackleton crossing

Photo A.Helseth

SUMMARY

This was a long and robust training programme but then South Georgia is a dangerous and remote place. Given the overall success of the Expedition in achieving its goals and the lack of any significant injuries, it can be taken to have been successful. Hopefully, at least some of our Young Explorers will continue to develop these adventure skills and take up the challenge of adventure leadership.

5.0 YOUNG EXPLORERS' PERSONAL PERSPECTIVES

Santiago De Chile
30/10/08



I could feel excitement rising in my throat as I realised this was it; the expedition had begun!



As the plane touched down in Santiago airport, it was hard to believe I had just spent the last 15 hours flying. We emerged from the airport into the pleasant heat and sun of Chile and caught taxis to the Hostel Forestal. The landscape was sunny and dry and I could feel excitement rising in my throat as I realised this was it; the expedition had begun!

Santiago is a beautiful city with some great architecture and amazing views, all of which are looked over by the snowy mountains surrounding it. We had some encounters with the locals including an eccentric street entertainer who had much fun making the crowd laugh at the expense of Rosie, Michael, Ben and Clare, his four 'volunteers'. Once back at the hostel Will brought out his harmonica and played us a few tunes to rapturous applause. As I lay down to sleep that night, I could tell it was going to be a great trip.

The next day we split into two groups, one who wanted to climb a mountain on the outskirts of Santiago, and one who wanted to look around the city more. Abby, Ask, Gemma, Michael and I opted for looking round the city. We saw the sights and sampled the local cuisine, before heading for the city's zoo. There were tigers, tapirs, penguins (as if we wouldn't see enough on the trip!), elephants and a polar bear to name but a few. I felt a little sorry for the polar bear, but over all the standard of animal care was high and we enjoyed a lovely day out in the sun. The antics of the tortoises caused much amusement.

Meanwhile the other group got dropped off on the outskirts of the city, and headed up the nearest mountain to see what they could find. They saw some wildlife including two snakes and much plant life. On the way down it was very steep and the scree meant many found it hard to keep their balance. All had a good time and returned looking tired but satisfied.

Dani

Mount Pleasant Airfield (MPA)
1/11/08



'We learnt many new skills such as how to use GPS'



Wineglass Rock

'Excitement rose as we spotted two magellanic penguins sitting outside their burrow, basking in the sun'

After a 4 am start and a plane journey spent watching and thoroughly enjoying Mamma Mia, we landed amidst armed sentries at Mount Pleasant Airfield. Here we were provided with some of the best meals of the trip, and learnt many new skills such as how to use GPS. Another revelation came from Evans, whose whistle is apparently 'loud, but not loud enough to kill a badger.'

We also undertook our first walk of the Falklands, and for some of us of the trip; 18km to Wineglass Rock. Only one Fire actually reached Wineglass Rock, however, since one Fire missed it due to the fact it didn't look all that much like a wine glass.

The walk provided a chance for us to test out our plastic boots, and for me provided a huge challenge, I really struggled as a result of travelling and getting very little sleep, along with the fact I'd done very little walking since breaking my toe shortly before the trip. This just made the meal at the end even more satisfying however, and I finished the day feeling very happy.

We also discovered the delights of Stanley, with its pretty multicoloured roofs, quaint little cathedral and whale bone arch. We cleared the gift shop of postcards before stocking up on snacks in the local supermarket and shopping for souvenirs.

Next it was on to Gypsy Cove for our science briefing and first penguin sighting of the trip. Excitement rose as we spotted two magellanic penguins sitting outside their burrow, basking in the sun. Those two penguins must now be some of the most photographed on the island.

Dani

**Bleaker Island, The Falkland Islands
4/11/08**



"We climbed into the tiny red planes with a mix of excitement and nerves."



"Ask looked on in complete bewilderment, having never heard 'I've Got a Brand New Combine Harvester' before."

On the 4th of November Ghurkha Fire (Dani, Evans, Clare, Steve, Ask and Sarah) prepared to set off for Bleaker Island by stuffing as much food as possible into our clothes in order to get our bags under the 20kg weight limit for the plane. Much hilarity ensued as Evans patched up his ripped trousers with silver duck tape.

Spirits were high as we set off through the wind with our packs full, looking like teletubbies, towards the airport. We climbed into the tiny red planes with a mix of excitement and nerves. The journey did not disappoint; the small plane bumped along through the wind as we looked down in amazement upon East Falkland and the surrounding islands from the air.

Meanwhile the 45 Fire (Michael, Abby, Jack, Will, Rosy, Gemma and Ben) were trekking in the rain and wind down to Mares Cove to see the Gentoo Penguins and dolphins usually seen there. Unfortunately, due to the weather, not a single Gentoo or dolphin was seen.

Back in the sheep shearing shed on Bleaker, Sarah and the leaders had set off to look round the island, leaving the others in the company of Elaine's homemade biscuits and the radio. Clare, Evans and Dani were entertaining themselves by dancing, as Ask looked on in complete bewilderment, having never heard 'I've Got a Brand New Combine Harvester' before.

The next day the others arrived and a joint effort was made to survey the north of the island, a really enjoyable day spent surveying the vast array of wildlife and taking in the beauty of the island. By that evening I think we all knew more about the plants and birds of Bleaker than our own native wildlife back home.

The next day Gurkha Fire headed down to the South of the Island to complete their tussock grass planting project. Great success! Although close encounters with sealions were had amongst the tussock grass we got the



Lady's Slipper

"By that evening I think we all knew more about the plants and birds of Bleaker than our own native wildlife back home"



King Shags

area planted and by evening the birds had already moved in. We were proud of what we'd achieved.

We then surveyed the south of the island, spending 3 noisy nights surrounded by honking upland geese and braying magellanic penguins, although the ducks seemed to be afraid of me since when I appeared from my tent they fled over the horizon, and never returned, much to Hamish's dismay.

On the last night we threw a fancy dress party, with Hamish and Debs dressed as mermaids in fetching rat pack bikinis and other costumes such as Clare in her rucksack and Ask disguised as some tussock grass.

Meanwhile 4-5 fire were beginning the King Shag survey, sitting in tents watching Lady's Slipper flowers and starting to build the rock island in the middle of a natural pond. This was a huge challenge as the only tools they had to use were some poles, a rope and a Zodiac boat. Oh, and rocks of course. After a tiring but successful day there was a fairly large island in the middle of the pond. This was later enlarged by Ghurkha Fire upon their return. Somehow, no-one fell in!

The day Ghurkha Fire returned, 4-5 Fire made a trip to the South to see the parts of the island they hadn't already seen. Meanwhile Ghurkha Fire spent more time amongst the Rockhopper penguins-surveying them. A fairly difficult task since they won't stay still!!! The friendly little birds were not intimidated by our presence and we were all amazed by how close we could get. Finally, without being fooled by the King Shags hiding in their midst we reached a grand total of 1511 penguins.

The next night Robert and Elaine kindly invited us all for a meal at their house. We had lamb and macaroni cheese, an absolute feast fit for kings after our ration pack diet of the previous week. And cakes for pudding! The next day the majority of the group left, leaving Jack, Dani, Gemma, Ben and Michael, along with Paul and Jackie, to brave another day. We set off and completed the King Shag



Rockhopper Penguin

'We were proud of what we'd achieved.'

colony survey, with a wave of pride due to the many difficulties encountered in carrying it out.

**Hillside Camp, Stanley,
The Falkland Islands 13/11/08**



The Governor's House, Stanley

The best thing about Hillside Camp was the food, and the ability to stuff our faces with as much of it as possible'

The best thing about Hillside Camp was the food, and the ability to stuff our faces with as much of it as possible. Coming off Bleaker where we had been surviving on rat packs this was truly a welcome treat.

A little later the next group arrived and shortly afterwards our bags came from MPA. This meant we could finally have a shower after all that time without one on Bleaker. Such simple things that you really come to appreciate! Another treat was being able to wash our clothes. People started putting up washing lines around the room that all the YEs were sharing. It consequently became a veritable obstacle course.

Due to the high winds the others' flight was heavily delayed and they didn't arrive until the following evening. They had to rush straight to the Governor's House where we met them at the Drinks reception we had been invited to. What followed was an interesting and enjoyable evening, where we felt somewhat out of place in our jeans and BSES T-shirts, but thoroughly intrigued to talk to some really accomplished mountaineers such as Steven Venables and his team who had just come back from South Georgia and could shed light on what lay in store for us.

We also mingled, wide eyed, with the owners of Bleaker Island who were happy to hear of our tussock grass planting efforts, before



Street scene, Stanley

The highlight for me was going to see the 4 King Penguins, 1 Gentoo and 1 Rockhopper at the Penguin Rehabilitation Sanctuary'



Visiting the Penguin Sanctuary

having a guided tour of the house by the Governor Alan Huckle. This included Shackleton's room and the Governor's Office and we got to see all the signatures, including many famous names, under the pool table. Will, Ben and Ask added their own names in too. There were some fascinating pictures and the whole building was amazing. We left for Hillside feeling awestruck and somewhat merry.

I spent a lot of the rest of the time working with Sarah on the powerpoint we and Rosy were going to present to the Falkland Islands Conservation Group about our Bleaker Island science projects. We worked a long time on the presentation and it was quite thorough and informative. When we eventually went to present it everything was very informal with us, Jackie and a few Falkland Island Conservation people crowded around a desk in the entrance of their gift shop.

During our time at Hillside we also prepared for the Yomp and South Georgia with navigation and avalanche training. We also heard from the EOD about possible mines in the area and how to keep from being blown up. All quite disquieting!

The highlight for me was going to see the four King Penguins, one Gentoo and one Rockhopper at the Penguin Rehabilitation Sanctuary (well it was more like a small hidden pen beside a random shed next to the Vet's clinic). Some of the group got to feed the penguins but even for those of us who visited at another time, it was really awesome. The King Penguins came right up to us and we were able to feel their feathers and flippers whilst dodging their beaks as they tried to peck us! It was really cool to be amongst them like that.

Abby

**Practise Yomp and
Climbing at Mt. Harriet
14/11/08**



It was a surreal feeling, hearing about how the war unfolded, whilst actually standing on the battlefield where men had died

The mini Yomp started on the 14th of November when we set off in our fires from Stanley, on our way to camp between Mount Harriet and Mount Tumbledown for the night. It was a nice relaxing walk to get to our campsite and we chose a site by the side of a small stream on a flat bit of ground near the col.

In the afternoon, we had the first of our battlefield tours led by Ade and we spent the time walking around Mount Harriet and climbing to the top, listening to him describe the journey the Commandos took during the war. On our way, we found different remnants of the war scattered up the mountain in the rocks. It was a surreal feeling, hearing about how the war unfolded, whilst actually standing on the battlefield where men had died.

Everyone learnt a lot, and by the time we got down the other side of the mountain we were all hungry and so headed back to camp for food and warmth. We ended the day sitting and talking and as the sun slowly set we drifted into our tents for a good night's sleep.

We woke early the next day in order to cook breakfast and pack our tents away in time to start our day's climbing. Steve, Ben and Sarah had already set off at 7am to prepare the top ropes and set up the climbing so it was all ready when we arrived.

The weather was not pleasant and it looked like it was set to rain for the rest of the day. It was a shame, especially because we had had such good weather the day before. The weather in the Falklands is just as unreliable and unpredictable as that back home in England so it's a good job most of us are used to it!

Once we arrived at the climbing we put on our harnesses and helmets and Steve proceeded with his planned day of climbing. Firstly we were all reminded about the basics of rope work, as well as how to move over steep ground. This took up the remainder of the



'I was so happy and it was such a good feeling to achieve something which I have never done before.'

morning and after a quick break, we started climbing.

I was so excited about being able to climb for the first time outside. I was also slightly apprehensive, however, as the rock face looked so high and slippery. There were 3 routes of varied difficulty from severe to hard/very severe. The route I took was hard severe. I was last to climb in my group so after watching Evans, Michael and Jack fail to make it to the top, I was even more nervous when it came to my turn.

I was determined to beat the boys, however, and after much moaning and crying whilst on the rock face, I eventually made it to the very top. I was so happy and it was such a good feeling to achieve something which I have never done before. Despite the appalling weather a great day was had by all, and we scampered back down the hill to an eagerly awaited minibus that took us back to Hillside and our nice dry bunks.

Gemma

The Yomp – Ghurka Fire 17-23 November



'We also made a death defying trip up the rocks to the summit in the strong winds, which was very exciting.'

After days of build up leaving butterflies in my stomach there came the day when we set out on the Yomp. For me, the thought had been looming on the horizon worryingly. I'd never done anything like this before – carrying a 20kg rucksack over 120km. Would I manage it?

We arrived in Port San Carlos by bus with the sun blazing down and set off to cover the first 10km. We had completed this by 5 and found a good camping spot. I had managed to keep up and hadn't struggled like on the walk at MPA. It was such a relief! The extra pasta we took gave an extra lift to our moods and I went to bed feeling unexpectedly happy.

The next day continued along the same lines and we 're-took' Douglas settlement just as 45 had during the war. No-one was left behind and our Fire entertained ourselves with songs

'We breezed through these challenges with a positive attitude and everyone helped everyone else out'



'We arrived at Stanley before 11, with Ben's Falkland Flag billowing proudly in the wind, feeling tired but extremely proud of ourselves'

and games as we walked. We set up camp feeling content and ready for the next leg.

On the second full day we covered the distance to Teal Inlet, where we camped with the other fire and celebrated Debs' birthday. A surprisingly tasty rat pack cake was produced which we all enjoyed. The weather had once again been lovely, and many strange tan lines were on show.

In the morning we picked up our re-supply of rations and set off in high spirits. I managed to sunburn my ears that day which was pretty painful, but other than that the day was fine, despite the rivers and barbed wire fences we continually had to cross. We breezed through these challenges with a positive attitude and everyone helped everyone else out.

The next day we set off for Two Sisters in high spirits. It was so hot I wished I'd brought a pair of shorts! The Stone Runs slowed progress, and as we climbed up past Mount Kent we found the remains of old army bivvies and ration packs. We were amazed to find this included the very same Biscuit Browns and Biscuit Fruits as was in our own ration packs. It was fascinating!

After setting up camp, the other Fire informed us of their misfortune with their rations; petrol had leaked into the barrel and got all over them, especially into the Yorkies! They described a day of burping up petrol after every meal. Disgusting! We shared out the remainder of our food with them and put forward our start time on the last day so we'd arrive back at Hillside Camp in time for lunch.

Ade conducted the battlefield tour the next day and it was fascinating to find all the old army gear and learn about the battles that had taken place there less than 30 years previously. It was amazing to see the scars on the landscape and burnt out bits of Land Rover, and to hear the story of the men who fought there. We also made a death defying trip up the rocks to the summit in the strong winds, which was very exciting.

We arrived at Stanley before 11, with Ben's Falkland Flag billowing proudly in the wind, feeling tired but extremely proud of ourselves. We then stocked up on food once more in Stanley, before sitting down to one of the biggest lunches I have ever eaten.

Dani

**Mount Pleasant Airfield (MPA)
24/11/08**



Sorting the ration packs

Once back at MPA there was a flurry of activity. We had to sort out all our kit, along with the science activities we wanted to take part in once on South Georgia. This meant new fires had to be allocated and we were divided into Wild Fire - Steve, Will, Sarah, Ben, Clare, Jack and Rosie, led by Hamish and Paul, and Gunner Fire - Me, Michael, Abby, Gemma, Ask and Evans, led by Chris and Debs.

We also had a tour around the MET office, which was fascinating as we found out a lot about the causes of the weather we'd be having and what to expect on South Georgia. We also saw how they measured different variables in weather.

In the afternoon of that day we practised rope work for getting out of a crevasse and I couldn't help but think that if anyone on the end of my rope fell down a crevasse they wouldn't do too well. Thankfully, I was reassured that we would be going over it many more times once on South Georgia. It was then time to pack once more ready for getting onto Endurance.

Dani

**HMS Endurance –
Passage to South Georgia
25-28 November 2008**



'The helicopter ride was amazing. We were swooping low over the sea, skimming over the tops of icebergs and watching the seals leaping out the water.'



As we headed down to the dock with all our kit, we got our first sighting of the ship that was to be our home for the next few days, and for two weeks (or so we thought) after South Georgia. It was then time to load up our kit into the hold and eventually, later that day, to set off.

It was quite an interesting experience, and for the first day or so many people were preoccupied with feeling sea sick so not a huge amount was achieved; mainly sitting and lying around along with discovering the delights of the Naafi (the tuck shop).

Dani, Steve, Evans and Jack were writing their presentations so that gave them something to do. The rest of us spent the time scouring the library, also used as the girls room, for a good book. There was a surprisingly large number and we also had the evening briefings to go to so that gave our lives some structure.

The Marines gave us a talk on keeping warm and surviving on South Georgia. The Ship's Doctor told us how to tell if we were dying, the EWO told us how not to die when onboard and to top it all, the helicopter pilots told us how to avoid drowning if we crashed into the water. Obviously, this instilled a great deal of confidence in everyone, however the ships crew made us feel really welcome.

We were all waiting with a mix of anticipation and excitement, and in Gemma's case total fear, for our helicopter trip to South Georgia on the last day. There was a lot to do before we took off- kit to move and immersion suits to put on. We all looked pretty silly but at least we were warm. Better get used to it!

The helicopter ride was amazing. We were swooping low over the sea, skimming over the tops of icebergs and watching the seals leaping out the water and tramping all over the beaches. The weather was foggy but we didn't care. It was something we all wanted to do and it lived up to our every expectation.

Michael

South Georgia
28/11/08

'Arriving on South Georgia was one of the most amazing moments of my life.'



'To say we were thrilled with the anticipation of what the next twelve days had in store for us would be an understatement'



Arriving on South Georgia was one of the most amazing moments of my life. Months of build up before the expedition and weeks of important training and personal development had led us here, to this remote island in the South Atlantic.

We were overwhelmed with excitement as the helicopters gave us our first glimpse of Sea Leopard Fjord, the site of our new base camp. Although the weather was poor, it did little to dampen our spirits. In fact, if anything, it only heightened the sense of expectancy at what wonders might be concealed behind the cloud.

To say we were thrilled with the anticipation of what the next twelve days had in store for us would be an understatement. As we set up camp, everyone was feeling rather stunned that we had finally arrived on South Georgian soil. The whole experience was very surreal, not least because we could still feel the motion of the ship despite being back on dry land.

However, there was not much time to get lost in the moment for we had plenty of vital preparation and two days of mountain training to complete before embarking on the science projects.

Everyone was looking forward to getting out on the snow and learning the essential skills for safe travel on South Georgia. It was a chance to test out our plastic boots and for some to take their very first steps in crampons. Practising roping up, moving on a glacier and crevasse rescue techniques was critically important, as we were all aware, but the seriousness of what we were learning did not detract from our thorough enjoyment of the training.

It was great fun trying to build the best bucket seat, and test them out against each other, not to mention throwing ourselves head first down steep slopes to improve our ice axe arrests. We were also delighted when the clouds briefly parted to reveal spectacular

<p><i>'Everyone was looking forward to getting out on the snow and learning the essential skills for safe travel on South Georgia'</i></p>	<p>views over the Morris Glacier and to the jagged peaks beyond.</p> <p>Everyone worked very hard during the training from which we emerged as fully fledged Sub-Antarctic mountaineers. We even had our camping skills tested during a particularly windy night back at base camp. The next morning we set out on our science projects further afield with great excitement at where our new mountain skills might take us and what discoveries we might make.</p> <p><i>Sarah</i></p>
<p>Science – Gunner Fire South Georgia Phase 1/12/08 – 4/12/08</p>  <p><i>'I loved it! I felt like a proper explorer.... It surpassed anything I had imagined.'</i></p>	<p>It was an early start for Gunner Fire (Ask, Gemma, Dani, Abby, Evans, Chris, Debs and myself). We were up at 4.00 am to leave at 6.00 and we made steady progress across the Morris Glacier and to the bottom of a pretty sizeable and craggy hill we had set out to conquer. After one and a half hours we got to the top feeling pretty tired and were greeted by Ade, Bruce and Jackie who then kindly gave us a huge tripod to go with our already heavy DGPS kit.</p> <p>On our way down we had to belay down a steep slope and scabble down a lot of moraine. By 4.30 we had been on the move for 10 hours, the weather was setting in and we were all tired so we set up camp in the moraine of the Lucas Glacier.</p> <p>The following morning we did not get going across the Lucas Glacier until around 10.30 due to the bad weather and we experienced our first white out. I loved it! I felt like a proper explorer.</p> <p>We made camp by a lake just down from the snout of the Lucas Glacier and set off on a walk to see the outliers of penguin colony. It surpassed anything I had imagined. The weather closed in so we had to head back to camp.</p> <p>The next day we set out to do the science work. We crossed Salisbury Plain to go cairn hunting and found one pretty easily on a</p>



'We visited the penguin colony and spent some time getting up close with them, just watching and listening to them. What a way to spend a day!'

hillock. Ask, Debs Gemma and I set up the DGPS amongst the tussock grass and fur seals, whilst Dani, Abby, Evans and Chris headed off to survey the snout of the Grace Glacier and retake some old photographs.

We had a nice easy time watching the fur seals for two hours while the DGPS accurately located its position. We later set off to find the other cairns only to be trapped by the fur seals so we retreated back to meet the others. On the way back, we visited the penguin colony and spent some time getting up close, just watching them and listening to them. What a way to spend a day!

On the final day, we had a pretty early start only to be delayed by a runaway inner tent that blew into the lake, closely chased by Evans. The inner could not be rescued but on the bright side, this reduced the weight we had to carry. The weather was on our side on the way back so we got some amazing views of South Georgia. We got back into camp at 4.00pm, just before the rain hit. The other Fire weren't so lucky. Overall, it was a great 4 days with some really worthwhile science achieved.

Michael

**Science – Wild Fire
Wildfire South Georgia Science Phase
1/12/08 – 4/12/08**

'Across the bay we could see huge hanging glaciers and steep peaks rising straight out of the sea. . .'

Day 1 – Today we left base camp and set off across the Morris Glacier and over onto the Purvis Glacier. This involved going over a col and thus we were presented with a new mountainous skyline and it really felt like we'd set off on an adventure. We found a fantastic camping spot at the base of the Purvis Glacier overlooking Possession Bay.

Across the bay we could see huge hanging glaciers and steep peaks rising straight out of the sea, and we were surrounded by penguins (and yet more seals). In the afternoon the group split in two with some setting out to do the glacial snout survey which proved to be much more complex than we were expecting.

The remainder of the group went on a recce of a possible route up a snow gulley onto the Austin Glacier for Day 2. Although the recce



At the summit of Mt Wildfire

'We could see icebergs in the bays below and there were mountains as far as the eye could see. We couldn't help thinking there is nowhere else on Earth quite like this...'



'We visited the small graveyard on the hill which gave us a view of life at the whaling station'

was unsuccessful the excitement and thrill of climbing on virgin snow was very much enjoyed.

Day 2 – As we woke to another bleak day we were wondering 'Why does it always rain on us?' The morning was spent completing the Esker survey. Despite the temperamental GPS unit, this project was completed very quickly and we were left thinking 'Is that it for science work?'

In the afternoon, we did a long walk in the snow and wind back around the mountains right the way round to the Austin Glacier. Putting the tents up that evening proved to be particularly challenging as it decided to snow on us the moment we found a nice flat spot by the stream.

Day 3 – This morning we woke to glorious sunshine. The first tasks of the day were to survey the glacier snout and locate the survey cairns. Despite more grief from the GPS units the glacier snout survey was successfully completed. This is more than can be said for the cairn location which involved looking for a pile of stones (built almost 40 years ago) on a moraine bank!

Needless to say we gave up in favour of heading down to the beach to visit the thousands of fur seals and a Gentoos penguin colony. This outing provided plenty of amusement when it came to getting through the territorial and aggressive fur seals, which culminated in Will hitting a seal right in the jaw with a rock when it came rather too close for comfort.

In the afternoon, we decided to make the most of the good weather by setting ourselves the target of climbing the largest peak in the area. We set off with much excitement and anticipation. This was true mountaineering. Part of the route was up a very steep slope which was particularly hard work for the leaders who had to cut steps in the snow.

When we reached the top the views were spectacular. We could see icebergs in the

<p><i>'We set off with much excitement and anticipation. This was true mountaineering.'</i></p> <p><i>'It was a fantastic feeling to be standing on the top of an unclimbed peak and we named it Mount Wildfire.'</i></p>	<p>bays below and there were mountains as far as the eye could see. We couldn't help thinking there is nowhere else on Earth quite like this, with a horizon of snow and ice reaching down into the sea. It was a fantastic feeling to be standing on the top of an unclimbed peak and we named it Mount Wildfire.</p> <p>Day 4 – Having already completed all our science tasks we decided to spend our final morning (before we returned to base camp) visiting Prince Olav Harbour. Here there was a whaling station and although we couldn't get close to it, it was very interesting to see.</p> <p>We visited the small graveyard on the hill which gave us a view of life at the whaling station. Whilst we were here Endurance arrived in the Bay and from this hill we were able to watch the BBC film crew diving and filming amongst the seals. At lunchtime, we also met three of the British Antarctic Survey (BAS) team from the ship. This was proving to be a busy day on South Georgia.</p> <p>On the way back to our camp, we visited the Gentoo penguin colony again. After packing up, we returned over the Morris Glacier back down into Sea Leopard Fjord to base camp. As we descended, we could see one of the Ship's helicopters at base camp, and worried that they had come to take our kit early. Fortunately they hadn't, they'd just dropped in for a cup of tea!</p> <p><i>Steve</i></p>
<p>Shackleton's Crossing 5/12/08 – 8/12/08</p>	<p>On the 5th of December our 16-strong team set off from base camp on the first section of Shackleton's crossing. Roped up and with ice axes, the glacier travel was similar to that which we had undertaken on the science phase, with the exception that we had pulks. Whether these would be an advantage or not was much disputed. It did however mean that I had a much lighter rucksack than on the science phase and to start with, walking along at the back of the rope wasn't too much effort.</p>



'The leaders did a great job of getting everyone down safely'



'Despite the infamous pulk incident and bad weather we all remained in good spirits . . .'

This changed when the weather started to worsen and we were walking in a white out from the knees down over really crusty snow that you got stuck in. Most people went up to their ankles but for me this was halfway up my calves and since my pace length is shorter than everyone else I ended up practically being dragged by Ben.

The first amusing incident provided by the pulks was when going downhill. The person behind the person pulling the pulk needed to hold the pulk back so the person towing it wasn't hit in the back of the legs. I was on the back of the rope holding Ben's pulk back but it took us a while to realise I wasn't heavy enough to hold it back. Three times Ben (entangled in pulk) and I both ended up sprawled across the snow.

Walking across the Trident ridge seemed to go on forever as we couldn't see anything. I wasn't sure exactly where we were camping so just carried on plodding onwards till somebody said stop. Once we arrived at camp it took an hour to remove kit, dig a space in the snow for the tent, put up the tent, bury the edges and ice-axe the guy lines into the snow – by the time we got into the tent I was freezing cold, tired and incredibly hungry.

I really didn't want to get out the tent again but unfortunately, being female is a distinct disadvantage when mountaineering and going to the loo requires getting cold again!

The next day, after dismantling the tents, putting crampons on and roping up once more, which takes even longer in the snow, we spent five hours lowering the pulks and ourselves down the other side of the col. This was a long and tedious task especially in the inclement weather but the leaders did a great job of getting everyone down safely.

There were lots of jobs to do and everybody got involved in order to make everything run smoothly and also stay warm. Despite the infamous pulk incident and bad weather we all remained in good spirits and I enjoyed the experience.



Campsite in Fortuna Bay

'The next morning we woke up to a complete white out.'

'As the snow continued to fall we slid down the marshy snow into Stromness, one very satisfied group of people'

'As we entered Husvik we were filled with mixed emotions – relief that we had almost finished walking, pride and happiness at what we had achieved, but sadness that this marked the end of our time on South Georgia.'

In the afternoon, the weather cheered up slightly and we got some momentary glimpses of the stunning surroundings. Once again we weren't sure where we would be camping so it was a case of plodding on until we were told to stop. Camping on the Fortuna glacier was much the same as the last night but even more windswept.

The next morning we woke up to a complete white out. We started off walking with no way of telling how far we could see other than the people in front of us on the rope, or what the ground was like. Hamish's expert navigation ensured we reached exactly the right col on Breakwind Ridge.

After heading down the other side we reached the end of the snow travel. This meant we had to pack all the kit from the pulks into our rucksacks and the pulks had to be strapped onto our rucksacks, resulting in some interesting looking rucksacks that were particularly hard to control when the wind blew! As we camped in Fortuna Bay, greeted by seals, penguins and reindeer it was nice to see green grass and have a plentiful supply of water to fill our bottles and cook with.

The next day it seemed the weather was still out to get us as we woke to snow covered ground and more snow falling. The last section of the crossing involved a river crossing which was cold but not as deep as I was expecting. As the snow continued to fall we slid down the marshy snow into Stromness, one very satisfied group of people.

The final push to Husvik involved a steep climb and a quick descent. As we entered Husvik we were filled with mixed emotions – relief that we had almost finished walking, pride and happiness at what we had achieved but sadness that this marked the end of our time on South Georgia.

Clare

Extra Science
5/12/08 - 9/12/08



'I saw my first bull male elephant seal up close, something that I'd been looking forward to all trip.'

Abby and I opted for doing extra science instead of Shackleton's crossing on the basis that we had not yet done a penguin survey; one of the reasons we came on the trip. So we packed up our things as the others set off, and as we were taking down our tent a Lynx helicopter came to pick up me and Debs.

We had the most amazing flight; the weather was clear and as we landed in the Karakatta Valley we could see a herd of reindeer and their young heading up over the hills. The Ship's photographer Caz, landed with us and proceeded to take photos of both us and the surrounding wildlife.

Husvik is amazing. There are hundreds of seals everywhere and I saw my first bull male elephant seal up close, something that I'd been looking forward to all trip. I sat with him a while before going to meet Abby and Chris off the next helicopter.

We stayed overnight and the next day we woke to swirling snow and reindeer outside. It was the kind of snow, falling in big clumps, which still set off little butterflies of excitement in my stomach, despite the fact I knew it would just mean we'd be colder and wouldn't see much.

We then headed over to Fortuna Bay for two nights to carry out the glacial snout surveys and penguin colony survey. After heading up the Karakatta Valley we were met by a steep slope leading up to the col, around 300 feet high and made entirely of scree. My legs were shaking by the time we reached the top but I felt pretty satisfied.

We got under the group shelter and had our lunch. Later, once we had set up camp, we headed down to the Fortuna glacier only to find that the snout disappeared into the water and it was pretty unstable, so we would need the ropes to complete the survey. We didn't have time to get them and come back that day so we headed back to camp for the night.

The next day we got up early and headed down into the bay towards the penguin colony,



'We were greeted with the sight (and smell) of the King Penguin colony we were to be surveying. Despite having already seen one, it still took my breath away'

'... there was a break in the clouds and a ray of light shone down onto Husvik, lighting up the whaling station, which made me smile.'

hoping to get all three science projects completed that day. Unfortunately, the weather was against us. It was absolutely tipping down with rain and very windy. We reached the bay cold and soaked through. Debs and Chris thought it best to head back to camp due to the big risk of hypothermia. We got back into our tents and desperately tried to warm up.

The next day it was time to head back to Husvik, but we persuaded Chris to take us to do the penguin survey first. We headed once again down to the bay and bumped into one of the Fires undertaking the Shackleton Crossing. We were greeted with the news of Michael's bag disappearing down a crevasse and they informed us there was a river crossing between us and the penguins.

Not to be dissuaded, we carried on, battling off fur seals as we went, until we reached the river. The water was freezing but not too deep and we got across without mishap. As we headed over the next hill we were greeted with the sight (and smell) of the King Penguin colony we would be surveying. Despite having already seen one, it still took my breath away. It was then down to business. Chris headed off to take photos of the colony from up on a hill whilst Abby and I used a GPS to track the perimeter.

After arriving back at camp and packing up we set off back up to the col at the head of the Karakatta Valley. It was now snowing heavily and was pretty windy. Once we reached the col we were confronted with the same steep scree slope we had come up, but this time covered in snow and ice.

We began to make our way down and realised it was a lot harder than it had been getting up, and a lot more dangerous. There were gusts of wind so strong they were lifting Abby off her feet. We then had to cross above a snow field and Chris decided it was too dangerous for any of us to take our packs.

We eventually made it across and he brought them to us, and as we waited for him there

	<p>was a break in the clouds and a ray of light shone down onto Husvik, lighting up the whaling station, which made me smile.</p> <p>Then it was back on with the packs and time to head down the main bit of the slope. It was very tough going and I was freezing but eventually we made it, despite the many slips and slides. Once we were all at the bottom it was just a short distance back to Husvik and we arrived to be greeted by the others, who were already settled in. It was nice to be back together again and we all filled each other in on what had happened.</p> <p><i>Dani</i></p>
<p>HMS Endurance – Passage to Valparaiso 9/12/08 onwards</p>  <p><i>It felt very strange returning to civilisation – this little slice of home on the edge of the Antarctic.'</i></p>	<p>We were transported back to Endurance by boat. After drawing alongside, we were pleasantly surprised to be greeted by the XO on the Quarterdeck with a handshake and a 'Welcome back'. We had minutes to catch lunch and were desperate not to miss our first good meal in two weeks, so we shrugged off our immersion suits and dashed to our cabins. I stood in the shower as the seconds ticked by, torn between the hot water and a hot meal. My stomach won.</p> <p>It felt very strange returning to civilisation – this little slice of home on the edge of the Antarctic.</p> <p>We rested for a day or two, and were glad of it, although we were starting to feel sorry for ourselves that our adventure was over. Being busy helped, and there was a lot to be done; writing up our science and adventure reports, preparing individual and group presentations, and working in some of the Ship's Departments to learn more about life on board and to lend a hand as much as we could.</p> <p>We were glad of this as we owed them a lot. All of this kept us occupied to an agreeable degree, without preventing us from indulging in copious amounts of napping.</p> <p>Several days were filled this way, structured around mealtimes and trips to the NAAFI (the</p>



Endurance from the Zodiac boat

ship's tuck shop), while the evenings were spent watching DVDs and playing Guitar Hero with the Officers. We settled into this comfortable routine and looked forward to arriving in Valparaiso and flying home for Christmas.

W²II

**The day the Ship started taking on water
– Evacuees
16/12/08**

'Flood Flood Flood, Flood in the Engine Room'

'I remember my first thought as I took up my place in line being 'Oh no, now we won't be able to do the Carol Service' a ridiculous thought looking back on it!'

I can't believe what has happened; it left me in a complete daze. Ships don't leak! I was sitting at the computer in the Library, halfway through typing this up, when I heard the pipe 'Casualty, Casualty, Casualty' shortly followed by 'Flood Flood Flood, Flood in the engine room' I was waiting for it to be followed by 'For exercise, for exercise, for exercise' but those words never came, so I headed as quickly as possible up to the Wardroom to join the others.

Michael was late as he'd been in the gym with his music on and hadn't heard the pipe. We all thought it would just be pumped out. It was only when the XO came and told us there was 3 metres of water in the engine room and 3 inches on the deck above that we realised just how serious the situation was.

Two minutes later this had risen to seven inches of water in the room above and we were told all hands were needed downstairs to help bail, including civilians. It was then that it hit us, and we ran downstairs to the Mess, took up our place in line and began passing buckets, the full ones going one way and the empties going the other.

I remember my first thought as I took up my place in line being 'Oh no, now we won't be able to do the Carol Service' a ridiculous thought looking back on it!

About half an hour after that a Marine came

'Despite being at the front of the bailers, right in the thick of things, at no point did I feel fear. We laughed and joked with the guys from the Navy as we bailed and we carried on for hours'

'Chocolate and water was handed around and the medics checked we were all ok. Morale was very high and I could have kept going for hours.'

by calling for more hands downstairs. Clare, Steve and I followed straight behind him, down a flight of stairs into cold ankle deep water. It was then that it suddenly became real. We were the first three down and so were handed buckets and told to fill them and start passing them back quickly.

Despite being at the front of the bailers, right in the thick of things, at no point did I feel fear. We laughed and joked with the guys from the Navy as we bailed and we carried on for hours. The pipes said we were winning but the water was slowly and steadily rising on C deck.

At one point mattresses were called for and Clare and I ran into the nearest room, the door slamming behind us and leaving us in pitch black, with shin deep water all around us. We grabbed the two mattresses and got out of there, it was pretty nerve wracking.

Chocolate and water was handed around and the medics checked we were all ok. Morale was very high and I could have kept going for hours. Despite this, after around three hours of bailing, me and Clare, along with Abby and Allison from BAS were told to take a break because.

So it was up to the Senior Rates Mess for a break – water and a Lion bar – before more hands were called for in the Gym. I made my way down and found Steve and a few others busy bailing out the water that was coming in through the wall.

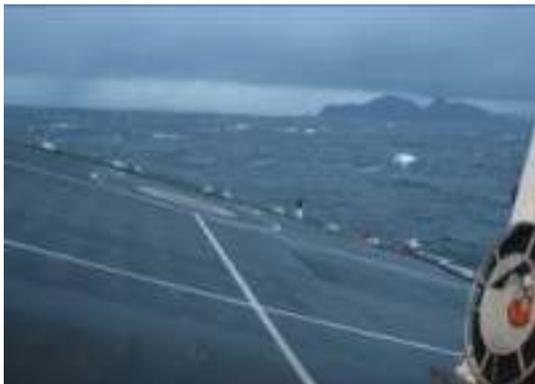
I carried a few full buckets up the stairs but they were heavy and I was impractically slow so I made my way back down to my original position in the bailing line, in the corridor joining the corridors on either side of the ship. More mattress barricades had been put up by this point in order to stop the ship rolling from side to side.

At this point, half of our expedition was taken off the ship by helicopter but I remained onboard.

'As I got up to the Senior Rates Mess I was met by Michael, sporting a Santa suit, as he had been told to change into dry clothes'



'Being winched into a helicopter sounded brilliant to me, I hadn't even been on a helicopter before the trip began'



It was around this point they decided to try rigging a pump and we had to clear all the rubbish out of the water. We were then sent upstairs for a ten minute break while they rigged the pump.

As I got up to the Senior Rates Mess I was met by the sight of Michael, sporting a Santa suit as he had been told to change into dry clothes. Then the last remaining BSES girl, me, and four others were called for. Michael, Jack, Steve, Hamish and I were taken up to the hanger and I managed to grab my passport and a couple of other things from my room next door.

The first thing we were asked upon reaching the hanger was if we'd ever been winched before. I felt excitement rising in my stomach. Being winched into a helicopter sounded brilliant to me, I hadn't even been on a helicopter before the trip began.

We were talked through it and we put on our immersion suits.

Michael went first, the bobble from his Santa hat poking out from underneath his helmet. It was then Jack's turn, then Steve's. Hamish went next and before I knew it I was being lead out onto the Flight Deck by a reassuring hand, and the winch was lowered over my head.

All I could think about was what I'd been told; hands by my side, keep my hands by my side. Then, with a sudden jerk, I was in the air, the sea and ship spinning below me. It was fantastic! Before I knew it I was safely in the helicopter and we were flying towards the lighthouse.

When we landed at around 11.00pm, we saw the girls through the window, and once inside the most hilarious moment of the trip occurred. Michael peeled back his immersion suit to reveal his Santa outfit underneath. Everyone's faces were a picture.

<p><i>Then, with a sudden jerk, I was in the air, the sea and ship spinning below me. It was fantastic!</i></p>	<p>The lighthouse keepers were really kind and gave us all food and hot drinks and mattresses to sleep on. It was a great comfort to be near the heater as we were all soaked through from bailing.</p> <p>We were all really worried about how those who had been left behind were getting on, but were reassured as we could hear all the radio conversations between the ships. We settled down and watched Godzilla in Spanish, before drifting off into a fitful sleep. I dreamed of bailing out water.</p> <p><i>Dani</i></p>
<p>The Day the Ship started taking on water – Those who stayed on board 16 – 17 December</p> <p><i>Helly Hanson Evacuation suits appeared in an attempt to keep people dry and prevent hypothermia.</i></p>  <p><i>'Dawn broke and we were dead on our feet but morale always remained at least a foot higher than the water level.'</i></p>	<p>At 10.00pm after most of the YEs had been evacuated by helicopter to Felix lighthouse, four YEs and six Leaders were left on board. Evans, Ask, Ben and Will soldiered on through the night, with barely an hour's sleep between them, bailing water and fixing pumps. We presumed, once the others left, that we would be evacuated but as darkness fell it became apparent that we would be on the ship overnight at least.</p> <p>As the water level rose higher, Helly Hanson Evacuation suits appeared in an attempt to keep people dry and warm.</p> <p>At around midnight, the bailing was halted as a pump was brought on. A wave of relief went around. This quickly evaporated, however, when it failed to gain any suction. In the meantime the water had reached five feet on the port side and we resigned ourselves to a night in the bucket chain.</p> <p>As the time wore on we grew steadily more and more exhausted and the water continued to creep dishearteningly up despite our efforts. Dawn broke and we were dead on our feet but morale always remained at least a foot higher than the water level.</p> <p>At around 8.00am we took a ten minute break, collapsed on the floor in our suits and fell into a mind-numbing half sleep which was</p>



The Corridor on C Deck

interrupted abruptly as we were called to muster in the hanger.

With less than 3 minutes of spare fuel we were airlifted to join the others at the lighthouse where we were greeted with tea and, finally, a chance to sleep.

Will, Evans and Ben

**The Journey from Felix Lighthouse to Punta Arenas
17/12/08**

Once the group, minus Debs who remained on board as a translator and Paul who had been transferred to the Norwegian Cruise liner to help out with a casualty of theirs, all arrived at the lighthouse we were transferred to a Chilean tug on a small zodiac and then to a Chilean Navy missile ship, CASMA.

We were greeted by lots of smiling Chileans who found Michael's Santa outfit very amusing. Once on board we were taken down a tiny staircase into a room no bigger than the one Rosy, Dani and I had been allocated on Endurance. For the next 17 hours this was home to all 22 of us.

They provided us with tea, bread, pasta and meat for dinner and put on the cheesiest music DVD ever, which included Celine Dion singing the song from Titanic. How appropriate!

When we caught up with Endurance, which was now being towed to Punta Arenas by a tug, we were allowed up on the Bridge of the CASMA. Endurance was still listing a lot but we were all very glad to see she was still above water.

The next morning after a mixed night's sleep we arrived in Punta Arenas. To say we were unprepared for what greeted us was an understatement. On the docks was the Chilean media filming and taking photos of





Surrounded by the Chilean Press upon arrival in Punta Arenas

'We also found we had made front page news of the local paper ! Could this expedition get any more surreal?'

"the poor British evacuees the Navy had rescued". They boarded the boat and interviewed Michael, me and Rosy about our experience on the Chilean ship.

The whole experience of the last 40 hours was just becoming even more surreal. We were met by Paul and two people from the British Embassy. After completing the paperwork to enter the country, despite 50% of us not having passports, we finally went to a café for breakfast.

Once fed, we headed off to the hostel where we were staying and spent the afternoon shopping for new clothes and toiletries as almost everybody's kit was still on the ship, some of it underwater. The range of Chilean clothes available was very amusing, in particular the underwear which proved to be very tight.

That evening Endurance came into the Naval Dockyard. Unfortunately we had been ordered to stay away so we were all feeling a bit gutted we couldn't welcome Debs back to dry land. On Friday morning we were allowed back onto Endurance to reclaim any possessions we could find. Most of us were able to get the majority of our stuff but Evans, Will, Ask, Michael, Ade and Chris couldn't reclaim anything from their cabins on C Deck as it was still under water and barricaded off.

Going back on board the ship was a bit sad for everyone as it was a complete mess, absolutely stank and we met a few of the ship's company who were still on duty and had lost everything. The afternoon was spent trying to book as many flights as possible back to Santiago, to ensure everybody could get home in time for Christmas.

We also found we had made front page news of the local paper! Could this expedition get any more surreal? Once back in Santiago we spent the last few days of the expedition soaking up some much needed sunshine!

Clare

6.0 SCIENCE WORK OVERVIEW

18 separate science projects were carried out in two main locations. 4 projects were completed on Bleaker Island at the southern end of East Falklands and a further 14 science projects were planned for the north coast of South Georgia.

BLEAKER ISLAND

These tasks were planned in conjunction with Falkland Conservation and carried out during our stay on Bleaker Island. A briefing session was carried out by Falkland Conservation in Stanley immediately prior to the visit.

- Coastal habitat survey
- Vegetation transects across the island
- Bird Surveys
- Lady's Slipper Observation Project

SOUTH GEORGIA

All but one of the tasks were concerned with glaciers:

- Four glacier snouts were mapped.
- Old survey cairns built in the 1970s were hunted for in 3 separate locations with partial success.
- New photographs were taken from the same location as old photographs in order to make comparison and where possible assess glacial changes.

In addition an esker in the Possession Bay was visited and mapped. This is thought to be the only example of an esker on South Georgia.

A full list of tasks is shown in the following table and the location of each task is shown on South Georgia Science Task Location Maps 1 and 2.

Task No.	Description	Status of Task
1	Retaking of old photographs of Grace Glacier	Completed
2	Recording the snout position of Grace Glacier	Completed
3	Locating & obtaining differential GPS location of any of the 3 cairns built for the Timmis 1970's Plane Table survey of the Grace Glacier	Completed
4	Recording the snout position of Lucas Glacier	Not completed due to bad weather & limited time
5	Survey of King Penguin colony on W side of Sea Leopard Fjord	Not completed due to limited time
6	Survey of snout of Morris Glacier	Not completed due to safety considerations; steep face calving into the sea
7	Hunt for old survey cairns from Timmis survey of 1970s below unnamed glacier on east side of Sea Leopard Fjord (Morris Glacier)	Completed. No sign of any cairns found
8	Survey of snout of Austin Glacier	Completed
9	Hunt for old survey cairns from Timmis survey of 1970s below Austin Glacier	Completed. No sign of any cairns found
10	Survey of esker emerging from Purves Glacier	Completed
11	Survey of snout of Purves Glacier	Completed
12	Retaking of Photographs from Brown Point	Not completed due to limited time
13	Survey of snout of Konig Glacier	Only partially completed due to limited time
14	Survey of King Penguin colony – Fortuna Bay	Completed

Chris Pearson

6.1 BLEAKER ISLAND HABITAT AND BIRD SURVEYS

ABSTRACT

The aim of this study was to conduct a habitat survey of the entire coast of Bleaker Island (which lies off the south coast of East Falkland) in addition to a survey of the inland habitat. At the same time a bird count was made identifying the variety and number of different species seen. This data was requested by Falkland Conservation to provide baseline data to provide an understanding about habitat variety and wildlife on the island.

1. INTRODUCTION

1.1 Study Area

Bleaker Island is one of the Falkland Islands, lying off south east Lafonia (the southern peninsula of East Falkland). The name is a corruption of "Breaker Island" due to the waves that break on it. It was also known as "Long Island" at one point.

Bleaker Island is long, narrow and low-lying and the southern tip of the Island is separated from Lafonia by a thin stretch of water named 'The Jump'. It has an area of 20.7 square kilometres (8 square miles) and is 19 kilometres (12 miles) long. The island is no wider than 2.5 kilometres at any point and tapers to several thin necks of land at various points down its length. 'Semaphore Hill' is the highest point of the Island at 29 metres high.

The western shores of Bleaker Island are low-lying and fringed by shallow stone beaches. The east coast of the island is characterised by low cliffs, interspersed with sand and pebble beaches and gultches and is directly exposed to the Atlantic Ocean. The Island has several large ponds and the most impressive beach is the 2 kilometre long 'Sandy Bay'. Bleaker Island has been a sheep farm for many years. Between 1908 and the mid 1920s the locally well-known agriculturalist and amateur naturalist Arthur Cobb (Cobb's wren is named after him) managed the Island. The present owners, Mike and Phyll Rendell, are now shifting the emphasis from sheep to tourism. The predominant vegetation is dwarf shrub heath and greens.

1.2 Falklands Conservation

Falklands Conservation (PO Box 26, Stanley) is a conservation body engaged with surveying and protecting wildlife habitats and flora and fauna throughout the Falkland Islands. They enthusiastically suggested the survey work tasks that were carried out in order to add to their body of data.

2. OBJECTIVES

1. To conduct a complete survey of coastal habitats of Bleaker Island.
2. To conduct an inland habitat survey of Bleaker Island.
3. To identify and count bird species seen during our 6 days on the island

3. METHODOLOGY

3.1 Coastal habitat survey

Over approximately three days the entire coast of Bleaker Island was walked. Changes in habitat were recorded using a key supplied by Falkland Islands Conservation. The information recorded included the start and end points of each particular habitat type (in latitude and longitude using a GPS unit), what it was made up of (rock or sediment and which specific type) plus details of any plant or animal communities (for example kelps, mussels and barnacles). To avoid collecting overly complicated information any changes in habitat which were less than ten metres in extent were ignored. The equipment used was a hand held GPS unit, a map of Bleaker Island, a waterproof note book and pencil and the forms and key from Falkland Island Conservation.

Each member of the group was assigned one of three tasks. The first was to mark the beginning point of each new habitat on the GPS unit, the second was to record the habitat information in the waterproof notebook and the third was to make a note of all the birds seen. This was to allow completion of the coastal and bird surveys at the same time. The data recorded in the notebook was then copied into the forms as a backup and input into an Excell spreadsheet (copied onto a CD) for analysis using ARCVIEW GIS software mapping at a later date.

3.2 Inland Habitat Survey

The Young Explorers walked in small groups along the vertical gridlines shown on the map from gridline 67 to 73 inclusive, and also the horizontal gridlines shown on the map from gridline 14 to 22 inclusive. These gridlines are every kilometre. Changes in habitat along these transects were recorded using a key supplied by Falkland Islands Conservation. Only habitats of more than 10 metres in length were recorded to simplify the data collected.

The information noted down included the start and end points of each particular habitat type (in latitude and longitude using a GPS unit). The specific plants seen in each habitat were also recorded. Birds observed in each habitat were identified and recorded for the bird survey.

The data recorded in the notebook was copied into the Falkland Conservation forms as a backup and input into an Excell spreadsheet (copied onto a CD) for analysis using ARCVIEW GIS software mapping at a later date.

4. RISK ASSESSMENT

Data was collected in minimum group size of 3 people. Cliff edges were avoided

5. RESULTS

All the habitat data gathered for the coastal survey and inland habitat survey was input onto Excell spreadsheets and runs to about 20 pages. It is therefore, in the interest of space, copied on to a CD.

Appendix 6 shows the GPS track waypoints recorded for each change of habitat. The different colours represent different GPS units. The aim is to develop this data further, using the GIS software to produce a choropleth (colour coded) map of Bleaker Island showing the different types of habitat.

Discussions are ongoing with Falkland Conservation to achieve this objective.

The results of the bird survey are presented here:

5.1 Results of Coastal Survey

Type of bird	Number
rockhopper penguin	100
magellanic penguin	134
gentoo penguin	1
southern giant petrol	251
rock shag	2885
king shag	97
skua	124
dolphin gull	67
kelp gull	334
black crowned night heron	22
greater upland goose	345
kelp goose	284
ruddy headed goose	55
flightless steamer duck	322
speckled teal	83
magellanic oystercatcher	318
blackish oystercatcher	56
two banded plover	29
turkey vulture	5
Falklands thrush	12
snowy sheathbill	77
Patagonia crested gull	225
brown hooded gull	139
south american tern	66
sand piper	24
chilean swallow	11
yellow breasted finch	2

5.2 Results of Inland Survey

Type of bird	Number
black throated finch	5
dolphin gull	1
Falkland thrush	1
magellanic penguin	18
ruddy headed goose	25
skua	28
greater upland goose	302
Falkland great wren	1
two banded plover	33
king shag	6865
red back hawk	1
snowy sheath bill	3
rock hopper penguin	1511
Patagonia crested duck	23
magellanic oyster catcher	27
Cobbs wren	3
rufus crested dotterie	13
sandling	12
kelp goose	12
blackish oystercatcher	3
kelp gull	24
flightless steamer duck	11
southern giant petrol	4
Falkland pipit	4
gentoo penguin	300

6. DISCUSSION

The data collection as requested by Falkland Conservation was a huge success and a lot of data was gathered. The completed habitat map once produced using the GIS software should provide a clear overview of the differing habitat types both around the coast and inland. This will provide a useful baseline map for monitoring future changes in the habitats.

7. CONCLUSION

The methodology proved easy to follow and the data was gathered successfully. The inland survey data is of necessity only a sample (at 1km intervals). The resulting habitat map will show what types of habitat actually exist at present and will be a useful management tool for both the owners of the island and Falkland Conservation for fauna and flora conservation

8. FUTURE WORK

A similar survey could be conducted in the future to enable the mapping of changes with the possible consequences for fauna and flora.

9. ACKNOWLEDGEMENTS

Rebecca Upson & Sarah Crofts of Falkland Conservation for suggestions and initial briefing.

Mike & Phyll Rendell, the owners of Bleaker Island for kindly inviting BSES to their island.

All the Young Explorers who diligently gathered the habitat data and Gemma Smith, in particular, for her efforts with the GIS software.

6.2 LADY'S SLIPPER PROJECT

BACKGROUND

The Lady's Slipper is known to exist in other parts of the world where it is pollinated by a particular species of bird. That bird does not exist in the Falkland Islands.

AIM

To identify where the Lady's Slipper can be found on Bleaker Island and if possible establish how it is pollinated.



METHODOLOGY

During our many transects across the island we located and marked all the Lady's Slipper sites we found. To tackle the problem of finding out how it is pollinated Ben, Michael and Rosy spent a day observing a clump of the flowers.

We pitched a tent close to a colony of more than 30 flowers and spent 5 hours quietly watching and waiting to see if any birds or insects settled on the flowers. We also took a note of any nearby wildlife and plant species.

FINDINGS

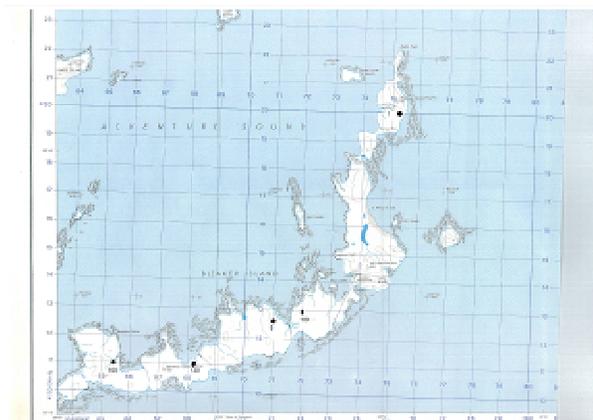
The Lady's Slipper was found at five main sites on the island with a total of more than 300 individual plants. The five sites are indicated by black dots on the map below.

During the period of observation only four birds came within a metre of a flower, one Falkland Thrush and three Black Throated Finches.

Nearby plant species included Small Fern, Whitegrass, Buttonweed, Diddle-Dee and Field Mouse Ear.

CONCLUSIONS

Identification of the colony locations will be useful to Falkland Conservation in future studies. Our investigation provides clear evidence that the Lady's Slipper is reproducing on Bleaker Island. It was not possible, in the time available, to establish the method of pollination. A possible way of finding out could be to set up an all weather camera to record over a period of several weeks. Either way...the mystery of the Lady's Slipper remains unsolved!



7.1 AUSTIN GLACIER SURVEY

ABSTRACT

The aim of this study is to aid an understanding of recent changes in the position of the Austin Glacier. This forms part of an ongoing study of glacier changes on South Georgia being conducted by a team of scientists from Stirling University.

1. INTRODUCTION

1.1 Study Area

The Austin Glacier is a relatively small glacier lying between Sea Leopard Fjord & Possession Bay on the north coast of South Georgia. See Science location task map.

1.2 Glaciological activity

Valerie Haynes is a Glaciologist from Stirling University. She went to South Georgia in 2002/03 as part of the Scotia expedition working with others on recent glacier change. They published a preliminary paper involving most of the glaciers on the north east coast and a few on the south west coast, using their own field surveys & other archive material, satellite imagery, and aerial photographs. They are engaged in extending their work to other glaciers and updating the accuracy of the ones they previously surveyed, including the Austin Glacier.

2. OBJECTIVES

3.1 Primary Objectives

1. To record the current position of the Grace Glacier with photographs and a GPS track
2. To attempt to find survey cairns built below the Austin snout by the Timmis Survey in the 1970s

3. METHODOLOGY

A hand held GPS unit was used to record the position of the glacier snout by walking along on the ice as close as possible to the ice edge.

Photographs of the snout were also taken.

4. RISK ASSESSMENT

The dangers of meltwater lakes, rivers, soft ground around and in front of the snout / esker were discussed and avoided as necessary. Glacier travel skills were taught.

5. RESULTS

See Austin Glacier Snout Survey Map for snout position.

Photographs of Austin Glacier snout follow:







6. DISCUSSION

These results will be supplied to Valerie Haynes at Stirling University for analysis
NB There was no evidence of any survey cairns below the glacier from the Timmis survey in the 1970s.

7. FUTURE WORK

Retaking photographs of the snout position would aid a study of the rate of change of these features.

8. ACKNOWLEDGEMENTS

To Valerie Haynes at Stirling University for suggesting this survey work.

Chris Pearson

Austin Glacier GPS Snout Survey



7.2 GRACE GLACIER SURVEY

ABSTRACT

The aim of this study is to aid an understanding of changes in the Grace Glacier during the last 100 years and forms part of an ongoing study of glacier changes on South Georgia being conducted by a team of scientists from Stirling University. There were three specific sub-aims: to locate and obtain accurate GPS positions for the Timmis' 1970s plane table survey cairns, enabling the plane table maps to be put into real space; to retake four historical photographs taken of the Grace Glacier between 1914 and 1976 to aid a visual comparison of glacial changes; to obtain a GPS track of the current snout position. Digital photographs, scanned images of the historical photographs, a location map and GPS readings of the snout position overlain on a base map using Geographical Information Software are included with this report.

1. INTRODUCTION

1.1 Study Area

The Bay of Isles lies on the North Coast of South Georgia. See location map. The retreating Grace Glacier has produced an extensive outwash plain of over 2 square kms in extent, known as Salisbury Plain. It is the largest area of flat land on South Georgia and home to thousands of fur seals and king penguins.

1.2 Glaciological activity

Valerie Haynes is a Glaciologist from Stirling University. She went to South Georgia in 2002/03 as part of the Scotia expedition working, with others, on recent glacier change. They published a preliminary paper involving most of the glaciers on the north east coast and a few on the south west coast, using their own field surveys & other archive material, satellite imagery, and aerial photographs. They are engaged in extending their work to other glaciers and updating the accuracy of the ones that they previously surveyed, including the Grace Glacier.

2. OBJECTIVES

1. To obtain 4 photographs matching 4 original photographs of the Grace Glacier taken during 1914, 1917, 1975, & 1976
2. To obtain accurate GPS locations for any of the 3 cairns (A, B, C) used to produce the Timmis plane table map of the Grace Glacier in the 1970s
3. To record the current position of the Grace Glacier snout using a GPS track

3. METHODOLOGY

Retaking old photographs

A visual judgement was made as to the actual location each photograph was taken from using the original as a guide and as far as possible the same photograph taken again for comparison. All four original photographs were retaken.

Old Cairn survey

Using a copy of the Timmis Plane table map, the location of cairns A, B and C was hunted for. Only Cairn A could be visited as Cairn B on Start Point headland was defended by aggressive fur seals and Cairn C was not easily accessible by following the coast as it was cut off by a meltwater river from the retreating Grace Glacier. An Ashtech Differential GPS (loaned by HMS Endurance) was placed over Cairn B and activated for 2 hours following the operating procedures provided with the unit (and practiced in advance). A location reading was recorded by the unit and later processed by the Survey Dept on Endurance to provide an accurate location.

Current Snout position

A hand held GPS unit was used to record the position of the glacier snout by walking along as close as possible to the ice edge.

4. RISK ASSESSMENT

Fur seals were numerous and aggressive in the survey area. Safety briefings were given, caution exercised, and sticks used to fend them off. A seal bite kit was carried. The dangers of meltwater lakes, rivers and soft ground in front of the snout were discussed and avoided as necessary.

5. RESULTS

The results are split into 3 sections:

1. Retaking of old photographs
2. Timmis Cairn A survey
3. Glacier snout track

1. Retaking of old photographs

Photo Set A 1914 v 2008 (94 year gap)

Top Photograph - taken by RC Murphy 1914.

Bottom Photograph - taken by Evans Boland 3 Dec 2008 from GPS point S 54 03.235
W 037 21.347



Photo Set B 1917 v 2008 (91 year gap)

Top Photograph - taken by Hurley 1917.

Bottom Photograph - taken by Evans Boland 3 Dec 2008 from GPS point S 54 03.292
W 037 21.426



The beach and glacier face at the Bay of Isles, 1917. Hurley visited the locale twice during his return voyage. [SLNSW]



Photo Set C 1975 v 2008 (33 Year gap)

Top Photograph of Grace Glacier - taken from Start Point South cairn by J Gordon
March 1975

Bottom Photograph - also taken from Start Point South Cairn by C Pearson 3 Dec 08
GPS location of photograph taken from cairn on knoll top South 54 03 235 West 037 21
347 elevation 28metres



Photo Set D 1976 v 2008 (32 year gap)

Top Photograph - taken from Start Point North Cairn 5/3/76 by John Gordon

Bottom Photograph - the retake was not possible from exactly the same location due to being overrun with fur seals so it was taken from South cairn (approx 300metres south of top photo and visible as top of knoll in lower left of top picture) taken by C Pearson on 3 Dec 08



4.



2. Timmis Cairn A Survey

The coordinates of the DGPS cairn survey are:
54 degrees 03 minutes 17.68832 seconds S
37 degrees 21 minutes 31.87047 seconds W



Cairn A
Grace Glacier in
background



Looking North from Cairn A to headland of Start Point



Cairn A is located on top of the small grassy hillock on left of picture.
Assumed location of Cairn B is further back on headland in middle of picture (Start Point)

3. Glacier snout track

The data for the waypoints is shown below

NAME	LAT	LONG	ALTITUDE
	-	-	
G1	54.0689427	37.3676659	17
	-	-	
G2	54.0702053	37.3645522	16
	-	-	
1	54.0690986	37.3713088	6
	-	-	
2	54.0691415	37.3709870	7
	-	-	
3	54.0689054	37.3708153	8
	-	-	
4	54.0687338	37.3702788	6
	-	-	
5	54.0680686	37.3696993	12
	-	-	
6	54.0687338	37.3693131	18
	-	-	
7	54.0686265	37.3691414	14
	-	-	
8	54.0688197	37.3686907	16
	-	-	
9	54.0689484	37.3677036	19
	-	-	
17	54.0702359	37.3645920	12
	-	-	
18	54.0703217	37.3642272	18
	-	-	
19	54.0704505	37.3639911	23
	-	-	
20	54.0706222	37.3639268	24
	-	-	
21	54.0708367	37.3633474	24
	-	-	
22	54.0708153	37.3628752	24
	-	-	
23	54.0704505	37.3625104	22
	-	-	
24	54.0705793	37.3608580	28

Note 1: between G1 & G2 a glacial lake prevented walking along the snout. A line has been drawn between these points to show the snout location at the lake edge. This lake can be seen on the aerial photo below

Note 2: only east side of snout was tracked due to lake in front of the west side making access impractical as can be seen on the same photograph.

Grace Glacier with Start Point at extreme left taken from the Royal Navy Lynx helicopter by C Pearson 5 Dec 2008



6. DISCUSSION

These results will be supplied to Valerie Haynes at Stirling University for analysis.

7. CONCLUSIONS

An accurate Differential GPS location was only obtained for one of the 3 Timmis plane table survey cairns (Cairn A).

Retaking old photographs clearly show the retreat of the Grace Glacier since 1976 with the creation of a lagoon in front of the snout.

Actual figures for the past rate of retreat of the Grace Glacier based on our gathered evidence will have to await analysis by the team at Stirling University.

8. FUTURE WORK

Retaking of the same photographs and recording of snout position would enable future changes in snout position to be identified

9. ACKNOWLEDGEMENTS

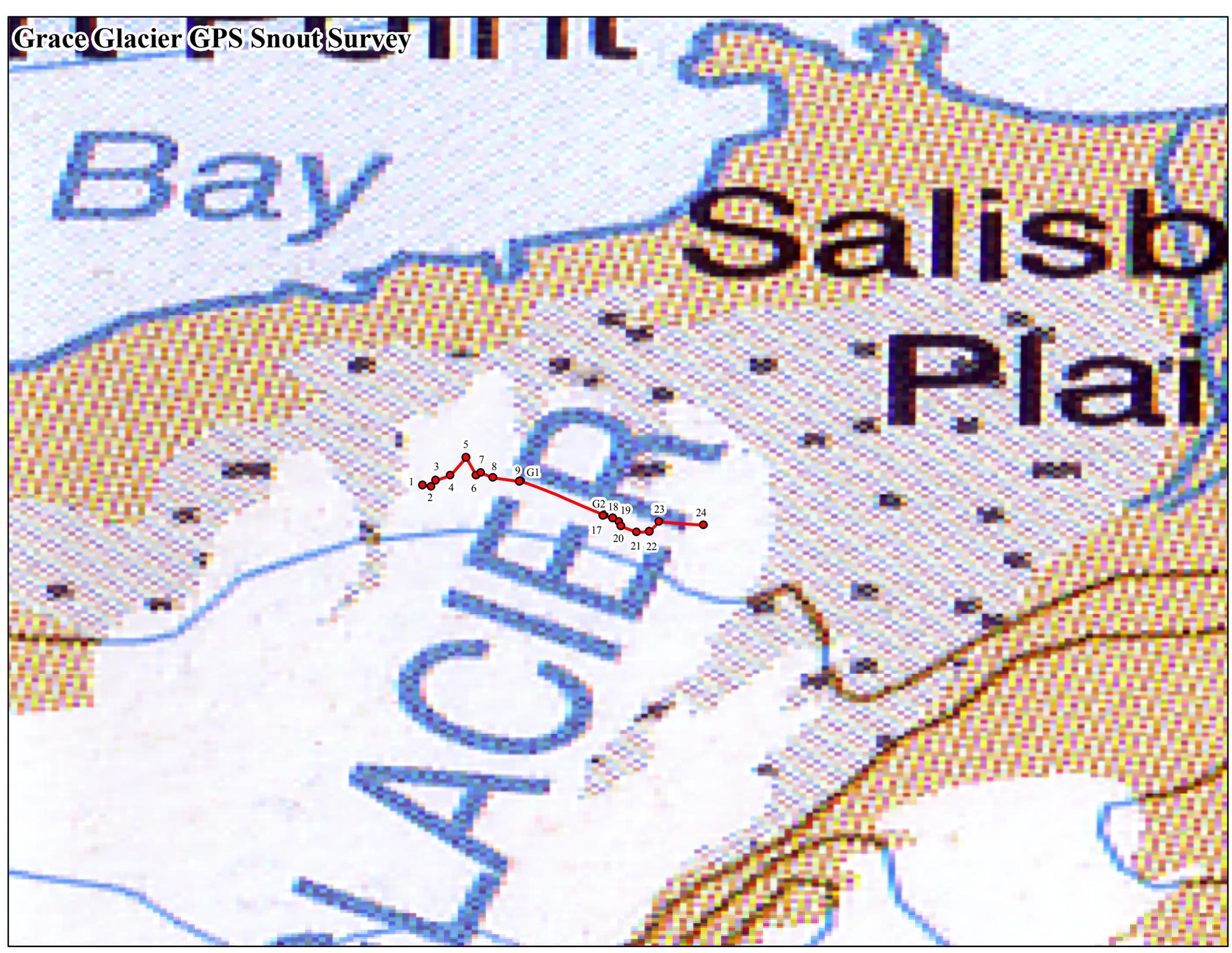
- Valerie Haynes at Stirling University for suggesting this survey work
- HMS Endurance Hydrography Dept for loan of DGPS and processing of data
- Gemma Smith for leading the DGPS survey and GIS mapping
- Evans Boland for leading the retaking of historical photographs
- Daniella Rabaiotti for leading the snout tracking

10. APPENDIX

See Grace Glacier Snout Survey Map for positions as recorded using Garmin Extrex GPS and plotted onto abase map using Arc View GIS software.

Chris Pearson

Grace Glacier GPS Snout Survey



7.3 PURVES GLACIER SURVEY

ABSTRACT

The aim of this study is twofold: To aid an understanding of recent changes in the position of the Purves Glacier, which forms part of an ongoing study of glacier changes on South Georgia being conducted by a team of scientists from Stirling University. A second aim was to photograph and map the position of an esker (a narrow, sinuous ridge of moraine left by the melting back of the glacier snout and indicating the course of a former sub-glacial stream).

1. INTRODUCTION

1.1 Study Area

The Purves Glacier flows into the west side of Possession Bay which lies on the north coast of South Georgia. See Science task location map in introduction. It was in Possession Bay that Captain James Cook first landed on South Georgia in 1785 claiming South Georgia for Britain.

1.2 Glaciological activity

Valerie Haynes is a Glaciologist from Stirling University. She went to South Georgia in 2002/03 as part of the Scotia expedition working, with others, on recent glacier change. They published a preliminary paper involving most of the glaciers on the north east coast and a few on the south west coast, using their own field surveys & other archive material, satellite imagery and aerial photographs. They are engaged in extending their work to other glaciers and updating the accuracy of the ones they previously surveyed, including the Purves Glacier.

2. OBJECTIVES

1. To obtain photographs and GPS location track for an esker (sub-glacial stream emerging from the snout of the glacier). This data is requested by Valerie Haynes at Stirling University to enable her to write a professional paper about this esker, believed to be the first identified on South Georgia.
2. To record the current position of the Grace Glacier snout using a GPS track.

3. METHODOLOGY

1. Take a photograph (E1) looking down glacier towards the esker. Walk along the crest of the esker stopping four times at regular intervals, (E2, E3, E4, E5). At each halt, record the GPS location of each stopping point and take a photograph looking both ways up and down the length of the esker. Leaving a person in situ for scale walk 10 metres out at right angles on either side and take a photograph looking back in at the esker. Attempt to discover if the esker is ice cored, checking for any naturally eroded sections.

2. A handheld GPS unit was used to record the position of the glacier snout by walking along on the ice as close as possible to the ice edge. At either side of the glacier snout, the presence of moraine cover required a judgement to be made about the actual snout position.

4. RISK ASSESSMENT

Fur seals were numerous and aggressive in the survey area. Safety briefings were given, caution exercised and ski sticks used to fend them off. A seal bite kit was carried. The dangers of meltwater lakes, rivers, soft ground around and in front of the snout / esker were discussed and avoided as necessary.

5. RESULTS

Locations for each photograph taken of the esker

NAME	LAT	LONG	ALTITUDE
E1	54.1027200	37.1681873	21
E2	54.1031073	37.1669038	2
E3	54.1033057	37.1665574	6
E4	54.1036189	37.1662802	7
E5	54.1036240	37.1658183	-1

The locations of E1 to E5 are shown on a base map using GIS software in the Appendix

Photographs of esker



Point E1 looking down on esker from Purvis Glacier



Point E2 looking down esker



Point E2 looking up esker



Looking side on at point E2



Looking side on at point E2



Point E3 looking down esker



Point E3 looking up esker



Looking side on at point E3



Looking side on at point E3



Point E4 looking down esker



Point E4 looking up esker



Looking side on at point E4



Looking side on at point E4



Point E5 looking down esker



Point E5 looking up esker



Looking side on at point E5



Looking side on at point E5

Purves Glacier snout survey

The following table give the track position of the snout.

PG1, PG2, PG3 are the separate locations from which the photographs looking at the snout were taken.

NAME	LAT	LONG	ALTITUDE
PG1	54.1087298	37.1635217	13
PG2	54.1056057	37.1646108	14
PG3	54.1010237	37.1690029	16
1	54.1018245	37.1722497	17
2	54.1016958	37.1714343	13
3	54.1012881	37.1708334	9
4	54.1014598	37.1700608	8
5	54.1016529	37.1698462	11
6	54.1013525	37.1690307	3
7	54.1014813	37.1671423	6
8	54.1012882	37.1681938	2
9	54.1013096	37.1687089	5
10	54.1015027	37.1686016	7
11	54.1017388	37.1666058	3
12	54.1019319	37.1666702	4
13	54.1021465	37.1670780	7
14	54.1023825	37.1669277	4
15	54.1026186	37.1675072	9
16	54.1025971	37.1679578	12
17	54.1028760	37.1682154	8
18	54.1037558	37.1675072	6
19	54.1040991	37.1675716	8
20	54.1042279	37.1669493	5
21	54.1045068	37.1673356	8
22	54.1045926	37.1673141	9
23	54.1046141	37.1663914	7
24	54.1051076	37.1660910	6
25	54.1055368	37.1652970	3
26	54.1061591	37.1654901	4
27	54.1063093	37.1651682	3
28	54.1065667	37.1658764	8
29	54.1069744	37.1661554	10
30	54.1074465	37.1661340	4
31	54.1075538	37.1658765	0
32	54.1079186	37.1657692	0
33	54.1082404	37.1661555	8
34	54.1086481	37.1661984	13
35	54.1087983	37.1652971	-8
36	54.1087340	37.1635374	12

See Map in Appendix for GPS data of snout position overlaid on a base map using Arcview GIS software. (Snout is purple line)

GPS Location PG 1

54.1087298 S 37.1635217 W

Two photographs looking up the Purves Glacier from the south end of snout



GPS Location PG2

54.1056057 S 37.1646108 W

2 Photographs looking up at the middle of Purves Glacier



GPS Location PG 3

54.1010237 S 37.1690029 W

Two photographs taken from right (north) side of Purves glacier looking up glacier



6. DISCUSSION

The esker seemed less continuous on the ground than had been expected. A stream had eroded a way through one section. Once the esker entered the lake it became partially submerged and the group carrying out the research were unable to follow its crest. There was no evidence of any ice core. These results will be supplied to Valerie Haynes at Stirling University for analysis and as data towards a professional paper being written about the esker.

7. FUTURE WORK

Retaking of photographs of the snout and esker position would aid a study of the rate of change of these features.

8. ACKNOWLEDGEMENTS

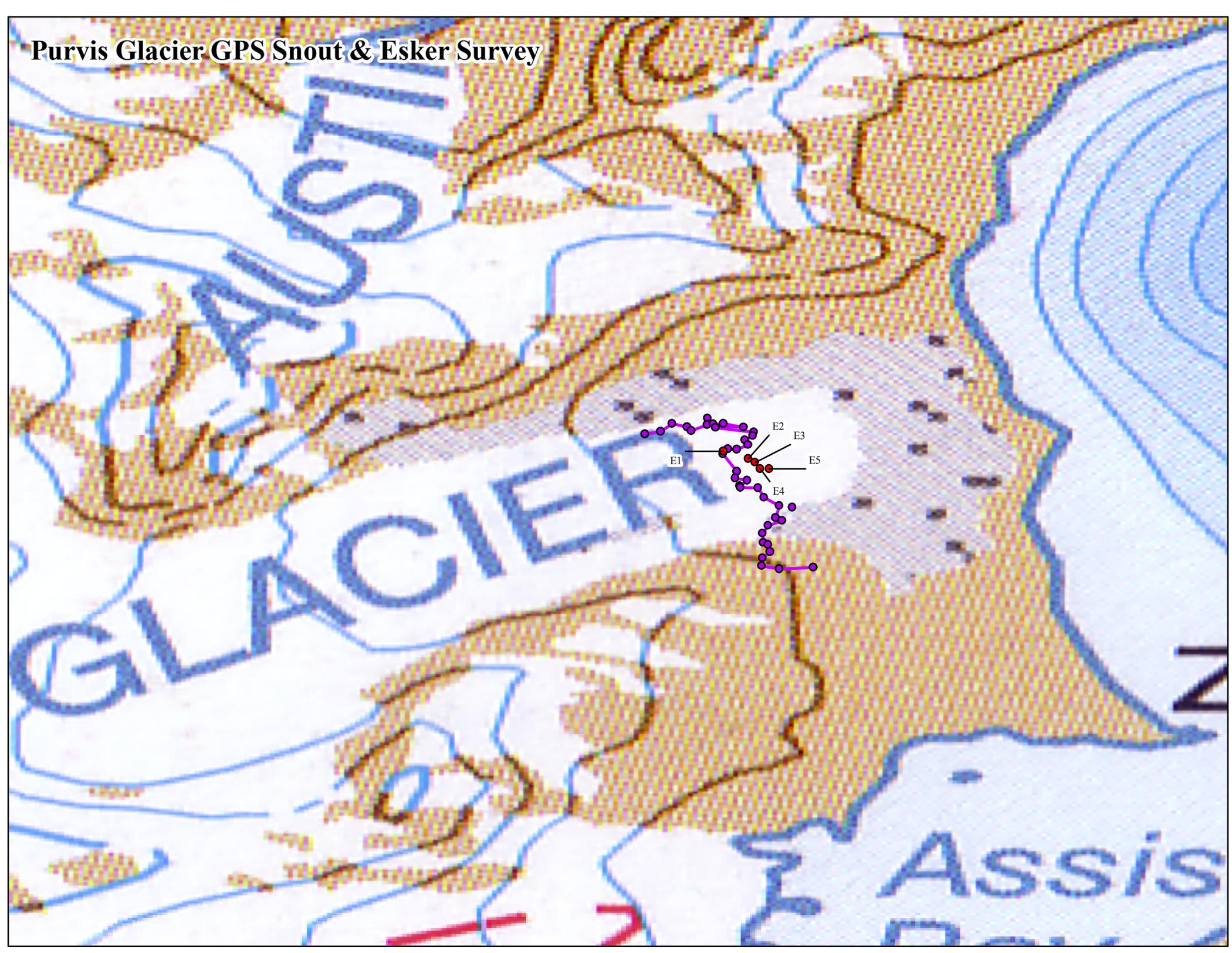
Valerie Haynes at Stirling University for suggesting this survey work.

9. REFERENCES

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Chris Pearson

Purvis Glacier GPS Snout & Esker Survey



7.4 FORTUNA BAY KING PENGUIN REPORT

ABSTRACT

The aim was to carry out a survey of the King Penguin *Aptenodytes patagonicus* colony in Fortuna Bay, South Georgia. Digital images of the colony have been attached to this report.

1. INTRODUCTION

1.1 Study Area

King Penguin colony in Fortuna Bay, South Georgia.

1.2 Activity

The king penguin *Aptenodytes patagonicus* is a sub-Antarctic species that feeds primarily on mesopelagic fish and cephalopods in the vicinity of the Antarctic Polar Front (APF). King Penguin colonies are mainly found close to the APF. Poncet, 2005 quotes a population of 450,000 breeding pairs in South Georgia; Shirihai, 2002 quotes 34 colonies of king penguins and 400,000 breeding pairs by the mid 1990s. The birds breed twice every three years, on average, and the breeding cycle takes over one year.

2. OBJECTIVES

2.1 Primary Objectives

1. To carry out a survey to estimate the breeding population size of the King Penguin colony near the Konig Glacier.
2. Compare results with previous surveys to see if there is a difference.

2.2 Secondary Objective

To introduce the young explorers to different survey methods.

3. METHODOLOGY

Three ways of carrying out a count were considered:

- 1) Take digital photographic images of the colony from a high vantage point. Make sure individuals are easily discernable and that you are high enough to be near vertical (you may need a good zoom). These images could then be stitched together and counts made from the image. This is possibly the most accurate method.
- 2) Circumnavigate the colony with a GPS, recording the track. Set the GPS on a rapid data acquisition, so you get a good polygon outline.

Make sure you walk slowly, avoid disturbance, follow all the indents on the perimeter and stay a fixed distance out to leave a sensible buffer around the colony. Overlap the track at the start and end. Then work out the area of the colony. Obtain a few estimates of the nesting density by counting a few sections of the colony very accurately. Then calculate a mean density and multiply it by the total colony area. This is potentially quite accurate.

3) Count the individual birds using clicker counters. This can be very inaccurate, especially when observers are inexperienced.

A combination of the first 2 methods were used and a GPS track was made by walking slowly 5 metres away from the edge of the colony. The GPS was set to WGS84 and on automatic tracking mode. A reading was taken for the start of the survey and the trip odometre set to give the circumference of the colony

Defining the edge of the colony was difficult as there was variable density and gaps with isolated clusters and individuals.

There was however a clear distinction between the vegetation on the outside of the colony and the guano on the inside so this was the line used for walking around as far as practicable.

Images from cameras were taken from as high angles as was possible without compromising the safety of the observers.

4. RISK ASSESSMENT

See expedition risk assessment.

5. RESULTS

See map in Appendix of GPS track overlaid on base map using ARC View GPS software

See photos of colony in Appendix

6. DISCUSSION

The colony outline as shown on the map in the Appendix should be treated with some caution due to the surprising difficulty of determining the boundary of the colony. This problem can be seen from studying the photographs.

Analysis of the digital images may shed more light on the numbers in each colony.

7. CONCLUSIONS

No real conclusions can be drawn until the results have been analysed by the expert scientist, Sally Poncet.

8. FUTURE WORK

The data will be supplied to South Georgia Government for their records. The colony could be surveyed in future years to measure any differences in the size. There also appears to be a second colony on the east side of Cape Best, which could be surveyed if access can be found through the rough ground.

9. ACKNOWLEDGEMENTS

- Abigail Enoch & Daniella Rabaiotti (Young Explorers) for conducting the survey
- Gemma Smith for producing the GIS map.
- Sally Poncet who explained the different methodologies

10. REFERENCES

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Bibby, C., Jones, M. & Marsden, S. (1998). *Expedition field techniques: Bird Surveys*. Royal Geographical Society.

7.5 Fortuna Bay King Penguin Colony Pictures- December 2008

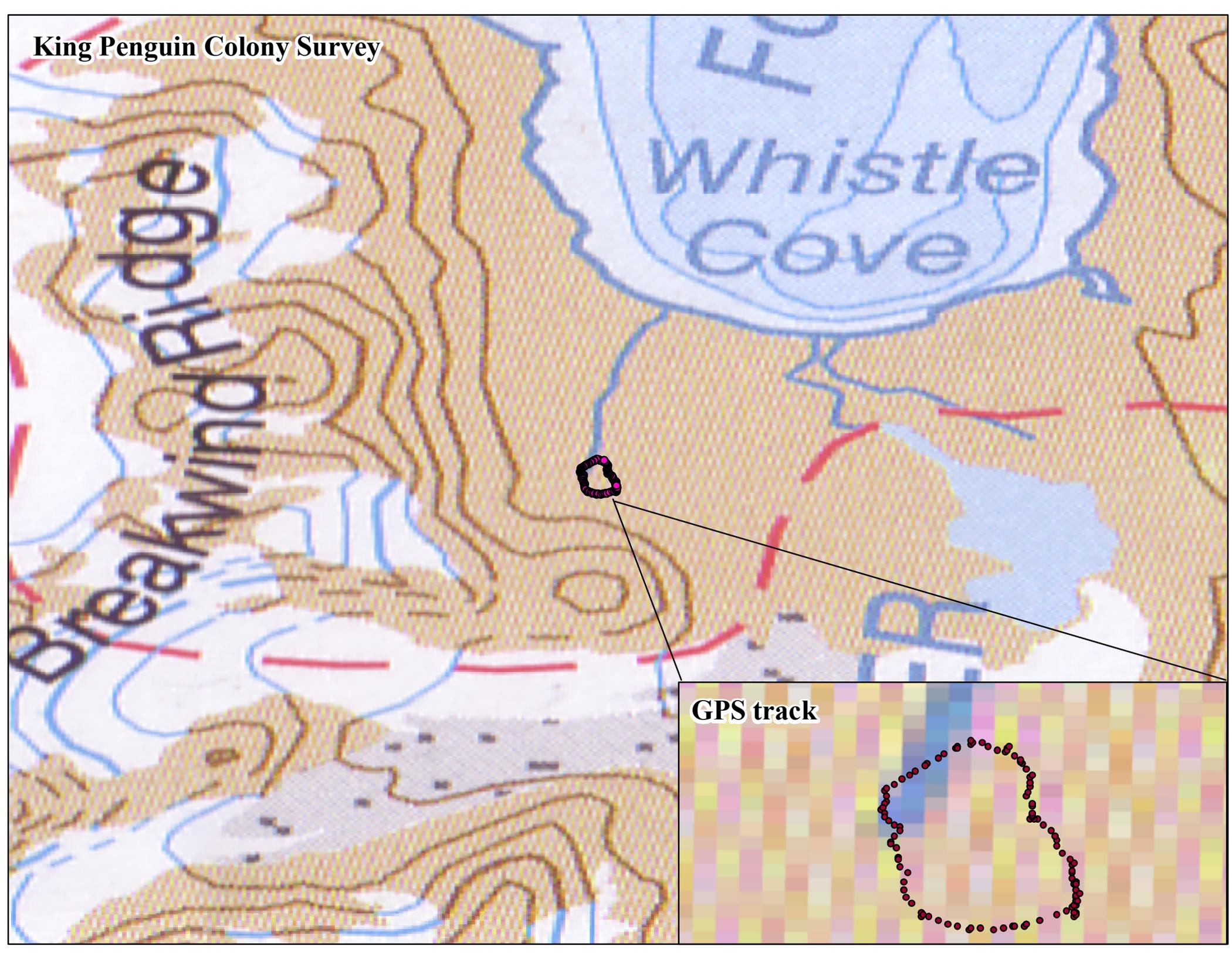






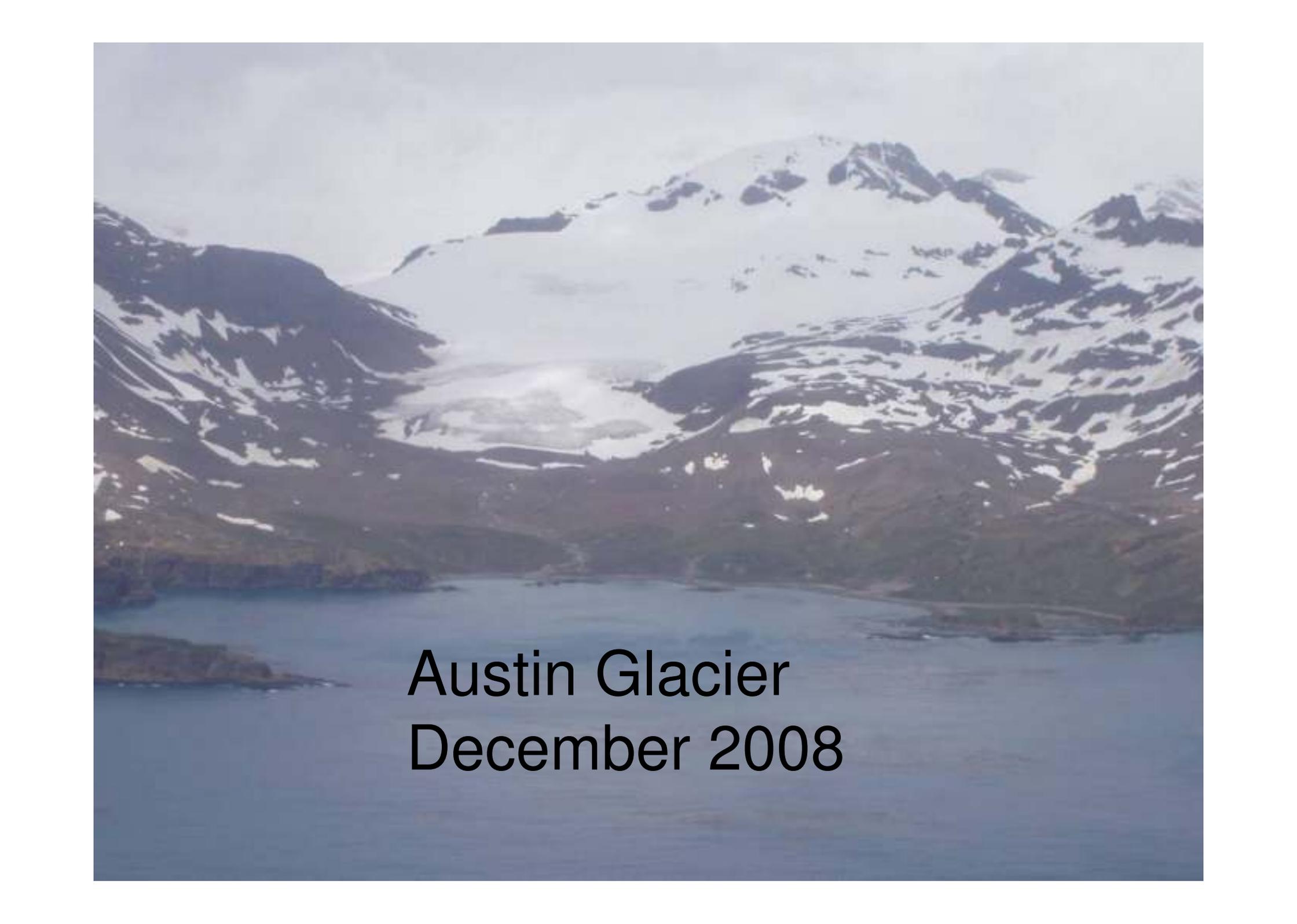


King Penguin Colony Survey



South Georgia Glaciers from the air

Taken from RN Lynx Helicopter
from HMS Endurance by Chris
Pearson - December 2008

A wide-angle photograph of a large glacier system nestled in a mountain valley. The glacier is a mix of white and light blue, with dark rock outcrops visible. The surrounding mountains are rugged and partially covered in snow. In the foreground, a calm, blue lake reflects the sky and the surrounding landscape. The overall scene is serene and majestic.

Austin Glacier
December 2008

An aerial photograph of a large glacier system, the Crean Glacier, flowing through a mountainous landscape. The glacier is a pale blue-grey color, contrasting with the dark brown and grey rocky terrain. Patches of snow are scattered across the mountainsides. The glacier terminates in a large body of water, likely a fjord or bay, which has a deep blue hue. The sky is overcast with soft, grey clouds.

Crean Glacier December
2008



Fortuna Glacier
December 2008



Grace Glacier December
2008

An aerial photograph of a large glacier, identified as Lucas Glacier, flowing from a mountain range into a large body of water. The glacier is a light blue-grey color, contrasting with the dark blue of the lake. The mountains in the background are rugged and covered in patches of snow and ice. The sky is overcast with grey clouds. The text "Lucas Glacier" and "December 2008" is overlaid in the lower-left quadrant of the image.

Lucas Glacier
December 2008



König Glacier December
2008



Possession
Bay Dec 2008

An aerial photograph of a coastal landscape. In the foreground, a large, deep blue body of water, likely a fjord, stretches across the frame. To the right, a dark, rocky peninsula or headland juts into the water. In the background, a range of mountains is visible, with several peaks covered in snow and partially obscured by a light, hazy sky. The overall scene is a high-altitude, cold-weather environment.

Purves Glacier
Dec 2008

An aerial photograph of a wide, deep fjord. The water is a deep blue color. In the distance, a large glacier is visible, surrounded by snow-capped mountains. The sky is overcast with grey clouds. The fjord is flanked by steep, rocky slopes with patches of snow and sparse vegetation. A small island is visible in the foreground of the fjord.

Sealeopard Fjord & Morris
Glacier

8.1 TUSSOCK GRASS PLANTING

BACKGROUND

Tussock grass is a plant that was once common on the Falklands but has now been severely depleted due to overgrazing by sheep and cattle. It is a vital habitat for many bird and invertebrate species and also provides shelter for seals and sea lions. The plants can grow up to 3m in height and grow in clumps with long green leaves protruding from them. An individual plant can live up to 200 years.

AIM

To replant tussock grass in overgrazed areas on Bleaker Island in order to re-establish the tussock habitat and reduce erosion.



METHODOLGY

Tussock tillers were pulled from well established areas of tussock. This was done by separating out a handful sized section of tussock and pulling on it whilst twisting slightly until it came free of the plant. This was easier said than done and proved to be extremely hard work. The best tillers pulled were those with roots remaining as they would grow more successfully when planted. The tillers were placed in a large bag which, once full, was transported using a Land

Rover to a fenced off area in the South of the Island where it was to be re-planted. The area had been fenced off to avoid further grazing and to allowing the plants to re-colonise.



An area of bare ground was selected for planting in order to give the tussock a better chance of colonisation. Care was taken not to disturb the nearby giant petrel colony. A dibber was used to make holes in the soil between one and two metres apart and a tiller was placed in each. After each tiller was placed in the hole the soil was stamped down around it to prevent the tiller from blowing away. This was continued until all the tillers had been planted.



By Daniella Rabaiotti

8.2 Bleaker Rock Island Construction Project

Introduction

Bleaker Island is home to a large diversity of bird life, which the landowner is keen to encourage. Black-necked swans recently found nesting on the island have been attacked by rats and so the landowner requested that BSES construct a small artificial island in the lake on Bleaker to offer the birds a safe haven for breeding. This task was begun by 4-5 fire on the 9th November with much help from the island manager, Robert, and then extended and improved by the Gurkhas two days later.

Preparation

Robert helpfully provided us with the use of his zodiac inflatable boat as well as a Land Rover and tractor, each with a trailer. Of course, we were also equipped with the combined experience and insight of 4-5 and Gurkha fires and their leaders! On the morning of the 8th, Ade, Jacky and Will reconnoitred the area and found a suitable site for the island, they consulted with Robert and that evening presented a plan to the fire. It was hoped to paddle out in the zodiac and drive a stake into the lake bed, fix another on the shoreline, and tie a rope between them. This guide-rope would then be used to allow the boat to quickly shuttle rocks from the shore out to the nascent island. Meanwhile other fire members would collect rocks from the nearby incongruously named 'Sandy Bay', whose large surplus of rocks provided a supply that could be easily exploited without damaging the habitat.

Execution

The morning of the 9th brought very strong westerly winds and the project was almost postponed. It was bravely decided to continue despite the weather however and the zodiac was hitched and driven to the eastern shore of the lake, closest to Sandy Bay, and launched towards the centre. Frantic paddling and punting against the wind propelled us no more than 5m from the shore before an alternative plan to drift across from the windward side was suggested by Rosy. The boat was re-

hitched and driven round to the western shore. A stake was fixed here and

a rope tied to it so that we could belay out to the site for the island. This was reached and a stake driven in. We then collected in the rope and began to belay out from the stake to the eastern shore. However, after adjusting the plan, Will had not checked enough rope was available and the end of the rope was reached while the boat was still 20m from the shore! Undeterred we re-hitched the boat again and fetched enough rope to reach from the island site to the eastern shore. Unfortunately, on pulling the rope tight the stake in the water snapped.



Figure 1: Paddling out to the island



Figure 2: Gurkha fire display their team-working skills

Still unbowed, a much sturdier stake was fetched, the boat yet again re-hitched and the guide-rope system was eventually successfully completed. Rocks were then efficiently transferred from Sandy

Bay to the lakeside by trailer and then ferried by zodiac to the island, which quickly took shape. By the end of the first day, after a lot of hard work and more than a little frustration, the island's area above the waterline stood at around 2m². Finally, the rope system was removed in order that the Gurkhas still had a little challenge in getting started when they took over – inter-fire rivalry was already rife!

It was on the morning of the 11th that Gurkha fire took their turn and worked to extend the island. After much deliberation in the cold wind, the same rope-pulley system was devised under Claire's leadership. A first attempt to reach the island by paddling was thwarted, but eventually strenuous punting got them to the site. After this they tied on to the stake left by 4-5 at the island and the rope system was soon up and running again. Much help from Robert once again helping fetch rocks from Sandy Bay as well as a good deal of effort from the Gurkhas and their leaders meant that by the end of the day the island had reached an area of around 7m², and has now hopefully become a valuable, safe breeding site for the black-necked swans.

9.0 ADVENTURE REPORTS

9.1 ROCK CLIMBING

The rock climbing session at Mount Harriet was designed to teach rope technique, practise knots and also give everyone the chance to have some fun!

The arrangements for the climbing session were that I was to lead the session as preparation for my SPA assessment, with Ade Harris supervising. The venue was a fine quartzite slab with some excellent routes for beginners and experienced alike. Three routes of varying difficulty were chosen with the help of a local guidebook, however their lines up the crag were vague.



Ben Rigby, Sarah Watts and I helped set up the routes. All the anchors for the belay stances were two boulders with slings equalised to the stances. All belaying was done direct from the anchors.

The weather always adds an extra dimension to mountaineering, and on this occasion it was not in our favour. The day began with drizzle and strong winds, increasing to heavy rain and occasional snow showers. This was certainly not an ideal day to climb as the slab became very slippery and therefore difficult to climb on. As the slab was over 30 metres high and our ropes only 50 metres long, we had to belay from the top of the crag which sometimes complicated communications at the bottom.

Once everyone had arrived at around 10am, harnesses and helmets were put on with the assistance of the leaders and experienced YEs. As a warm up, some basic movement on rock was done at the base of the crag, as well as a demonstration on how to use your feet on slabs. The group was then shown how to tie into the rope and how to belay as a reminder from the briefing weekend.



As the majority had not had the chance to practise for a while the group was split into three and given the chance to practise on the ropes. Before letting people have lunch the arrangement of the belays at the top was required as it was quite complex. One route required a roped traverse, whilst the method of attaching to the belays was shown for the other.

It was important to keep everyone active due to the cold weather so lunch was kept short. Again the group was split up into different rope teams depending on experience and whether they had climbing shoes.

Due to the breadth of experience in the group it was possible to have two separate groups of supervisors. One group at the base of the crag was helping with tying in and difficult moves whilst a group at the top belayed. The plan was that once a person finished the climb they would take over the belaying. However, this became a problem as the weather meant few people got up their selected routes.

The easterly route was first completed by Ask in impressive style as the swing potential was pretty great. Dani attempted a direct route but struggled with a reachy move. Abby was able to overcome this move with plenty of determination and some mild 'pulling' from Ask, who was belaying, and completed the direct route with little fuss thereafter.

The route was around the Hard/Very Difficult level. Of all the routes the middle line was the most successful. Grotto is a pure very severe slab climb with some delicate moves. The majority who completed the line (Sarah, Will and Clare) had rock shoes, however Hamish was able to do it in plastics. This was a reassuring sign that the line was correct. Ben did attempt the route later on but the weather had deteriorated so much he couldn't continue.

The westerly route proved the most difficult with Gemma being the only completer. This was achieved thanks to rock shoes but also a lot of emotional work and determination from herself. With hindsight this line was harder than it looked with an initial guide of Very Difficult. The line completed looked more Severe/Hard Severe.



Due to the nature of the weather, not everyone was able to complete a climb which was disheartening. It also meant that belayers had to be changed regularly, noting that people who had finished a climb were generally too cold to belay afterwards. The climbs were all stripped by 3.15pm with some lines being stripped earlier. This was all thanks to the initiative of the experienced leaders and YE's.

All in all, a successful day's climbing was achieved considering the complexity of the crag and the fickle nature of the weather. Thankfully most people had fun and learnt a lot about climbing. Hopefully, a few will continue climbing long after the expedition.

Steve Rawlinson

9.2 45 COMMANDO YOMP

For many of us the yomp from Port San Carlos to Stanley was the main feature of our time in the Falkland Islands. The route we would be taking followed the route 45 Commando took during the Falkland Islands War in 1982. I was particularly looking forward to the yomp as I would be following in the footsteps of those I admired most.

We split into two fires for the yomp; 45 fire and Ghurkha fire. I was in 45 Fire. On the first day we only walked in the afternoon, but still managed to cover 12km before setting up camp. All the boys in our fire had decided to bivvy out on the entire yomp, which we managed to do.

Over the next few days we yomped, following the route the Royal Marines had taken in their mission to liberate Stanley from the Argentinians. We passed many landmarks and evidence of the war which we had been reading about in Cpl. Gardener's account of the Yomp. It was amazing to be able to see and touch so much history.

When we reached the Two Sisters we had a battlefield tour from Ade where we followed the routes the different companies of Royal Marines took during the battle. The next day we walked the short distance into Stanley accompanied by my flag and Will's harmonica.

Ben



9.3 SHACKLETON CROSSING

The British Schools Exploring Society (BSES) Southern Endurance Expedition disembarked HMS Endurance on 28th November 2008 and set up base camp on South Georgia at Sea Leopard Fjord. We spent the next two days snow and ice training for safe travel over South Georgia's heavily glaciated terrain prior to commencing four days of science and survey work around several glacier snouts.

On 5th December we departed Sea Leopard Fjord to follow in the footsteps of Sir Ernest Shackleton who famously crossed the island's treacherous and crevasse ridden, glaciated interior after his ship, the Endurance, was crushed in the Antarctic sea ice. In fact, our route would cover a greater distance than Shackleton's, who began his in King Haakon Bay and finished at the whaling station at Stromness just short of our final destination at Husvik.



Map of Shackleton Crossing

Map key: **Red dashed line:** Shackleton's 1917 route
Blue solid line: BSES 2008 route

The day began with a walk to the snout of the Morris Glacier where we tied into four rope groups and organised our pulks (small plastic sledges for load hauling). Our rope groups were:

Bruce Manning, Michael Kinahan, Ask Helseth, Sarah Watts.
Jackie Harris, Ade Harris, Will Timmis, Rosy Cousins.
Gemma Smith, Stephen Rawlinson, Evans Boland, Paul Corwin.
Hamish Matheson, Jack Williams, Ben Rigby, Clare Howes.

There were two pulks per rope group and they were to be pulled by the middle two people. This would allow for greater ease of travel with heavy loads across the gentle terrain but would require more care when travelling across steeper ground.



Breaking Camp, Trident Col, Day 1

Our route took us up over the Morris Glacier and across the top of the Purvis glacier from where we looked down the length of King Haakon Bay, where Shackleton had left the James Caird and set out on his crossing. The weather started out fine but worsened throughout the day. The wind picked up and whipped the snow off the ground so for a while we were walking in a total white out from the waist down! From King Haakon we crossed the Murray Snowfield to the base of the Trident, a formidable looking mountain with a steep ridge running to the north.

Shackleton and his men achieved this ridge by noon and spent the remainder of the day finding a col by which to cross it before descending and continuing over the Crean Glacier by moonlight. We had achieved our target for the day, however, and with the luxury of time and tents, we set up Camp 1 in the same spot used by Stephen Venables and Skip Novak a few weeks earlier.

For many of the group this was their first experience of camping on snow and the potential hazards it entails. We needed to probe the area first to check for crevasses and dig pits for our tents so that they could be secured into the snow.



Camp 1, Trident Col

The next day greeted us with not exactly perfect weather conditions and proved to be particularly eventful. We had camped by a wind scoop on the west side of the ridge and, by early morning, we successfully reached the col which Shackleton had crossed. We were then presented with the challenge of lowering the pulks and people safely down the steep snow slope on the other side that Shackleton and his men had slid down sitting on their ropes.

An ice-axe belay system was set up and all was going well until one of the pulks, along with all of Michael's kit, a tent and two people's food rations, slipped off from a supposedly secure patch of snow and flew down the slope to be lost into a crevasse. However, Michael to his credit maintained a heroically positive attitude to this dramatic turn of events despite the loss of all his personal equipment!

In the end it took us five hours to get the rest of the kit and personnel down the slope. We were now behind schedule and pushed ahead at full speed across the Crean glacier to our next campsite on the middle of the Fortuna glacier. Shackleton gave an account of finding a way between great crevasses to the north and ice falls to the south. During the afternoon the weather cleared, offering us marvellous views of this landscape and the course that we would take. However, we were doing in summer what Shackleton had done in early winter and hidden crevasses below the melting snow were always a risk.



One of the rope groups

Indeed, there was a delay when Sarah got her leg stuck in one and had to be dug out with a shovel. However she was not alone in getting up close and personal with a crevasse! Several times people would have one foot disappear into cracks that were too narrow for more than one leg. These were often hidden beneath delicate snow and too deep to see the bottom of.

Campsite 2 afforded no shelter from the wind and we had to build walls with the snow that we dug out for our tent pits. Everyone rallied round and shared out supplies to make up for those lost in the crevasse along with the pulk.

The next day we woke up to a complete white out and walked for an hour before starting to make out the shapes of mountains as Breakwind Gap loomed into view. It certainly lived up to its name as we scrambled one by one through a tiny col that funnelled spectacular winds and descended into the relative calm of the lee side of the mountains. Clambering over the top with our pulks proved tricky as did handling them on the descent to the base of the snowline, but we had now left the ice for the last time and were looking down on Fortuna Bay.



Descending Breakwind Gap

We were at the place where Shackleton had heard the morning whistle from the distant whaling station and shaken hands with his men, knowing that the worst was now behind them. We un-roped and took off our crampons to start a scramble down a wet and steep rocky gully. The pulks needed to be tied onto the rucksacks so that the carrier resembled a turtle and whenever there was a large gust of wind they were blown off course!

After some careful footwork we arrived down at Fortuna Bay where we set up Camp 3 on the luxury of grass and moss. The wildlife nearby included a large king penguin colony, elephant and fur seals and a herd of reindeer. It had now started to snow at sea level and would not stop again until we re-embarked on HMS Endurance!

We had been told that the final day to Husvik would be a stroll in the park, however this proved not to be the case! First of all we had to negotiate a river crossing across Fortuna Bay before climbing up to a col which gave us our first glimpse of the Stromness whaling station. This was cruelly taken away from us by the weather as we walked down Shackleton Valley to the edge of Stromness. (We were not allowed inside due to the 200m exclusion zone.)



Stromness Whaling Station

For Shackleton this was the end of his crossing of South Georgia and 17 months of hardship and fighting for survival. We, however, had to carry on to Husvik, which required another climb up to a col on a steep and loose scree slope. All of us were feeling the strain of our heavy rucksacks, but Michael had the hardest job of all, carrying a rucksack made out of pulks, harnesses and ropes.

Finally we arrived in Husvik, four days after setting off from Sea Leopard Fjord; an amazing accomplishment, particularly for those who had carried on regardless of painful blisters. We had successfully overcome many obstacles including poor weather, difficult terrain, crevasse fields and the loss of equipment. All members of the expedition were rightly proud of their achievement as inflatable boats arrived on the beach to take us back to HMS Endurance.

11.0 PERSONAL DEVELOPMENT

Given the length of the expedition and the strength and skills of the Leader Team we decided to implement a tailored Personal Development Programme, new to BSES. This section outlines the programme so that it can be repeated with similar success and in a proportionate way on other expeditions.

THREE PHASE PROCESS

PHASE 1

1) Initial goal setting - This consisted of a discussion between Fire Leaders and individual YEs about the motivation behind coming on an expedition, personal strengths and weaknesses and the specific things that the YEs wanted to achieve during their time away. Personal goals were set and recorded (30-40 minutes per YE)

2) Opportunity identification - (Leaders only) The motivation and development goals of each YE were shared and discussed with the whole leader team and opportunities for achieving these goals were identified (3-4 hours). These were then communicated to the YEs and they started to implement their various responsibilities at the appropriate stage of the expedition.

PHASE 2

3) Mid Point Review Preparation - (Leaders only) Prior to the mid point review session with the YEs the progress of each individual was discussed with the entire leader team and points of feedback / new opportunities were identified.

4) Mid Point Review - Half way through the expedition a review chat (20-30 minutes) was organised to discuss individual progress to date on the achievement of the personal goals. New objectives were set where appropriate. Initial feedback was also given to the YE.

PHASE 3

5) Summary session 2 - (Leaders only) Prior to the final review session, again the progress of each individual was discussed with the entire leader team and main points of progress and feedback were identified.

6) Final Review - At the end of the expedition a final review session was held where the learning points of the expedition were reviewed in full and final feedback was given to the YE. A short report was written on each YE and provided to both the BSES Office and the relevant individual (20 -30 minute chat)

ELEMENTS OF THE DEVELOPMENT PROGRAMME

At the beginning of the expedition and interspersed throughout, sessions were delivered on:

- Aspects of Leadership (leadership styles: autocratic, consultative and delegatory)
- Aspects of Teamwork (Belbin Profiles and different roles within a team, e.g. completer-finisher, monitor evaluator, co-ordinator, plant etc)
- Johari Window (elements of disclosure, feedback and self awareness)
- Giving and receiving feedback (timely, proportionate, constructive)
- Public speaking (how to give a good presentation)

Opportunities given to the YE's varied depending upon their initial personal goals and included:

- Planning and running science projects e.g. coastal surveys, vegetation transects, bird surveys on Bleaker Island; tracking the snout of the Grace glacier, DGPS cairn survey on South Georgia
- Planning and running conservation projects e.g. tussock planting, bird island building
- Preparing and delivering personal presentations on a subject of their choice (topics included; glaciers, sustainable energy, music, weather, penguins)
- Opportunity of leading the group (practising group management) during the trekking days
- Active listening exercises
- Group Kit preparation and briefings
- Leading a climbing day as part of preparation for SPA assessment

FEEDBACK

Each position of responsibility and task undertaken was reviewed and debriefed by the leaders. For many of the tasks, such as the day leads and the personal presentations, Peer Review Sessions were also held. Feedback would include what they did well and what they could improve upon.

COMMENTS

YEs are asked about their motivation for applying and doing the expedition on their initial application forms however, the leaders on the actual expedition rarely get to read these forms so the initial session is really the first time that the YE and Leader have to discuss and understand this.

We found that some YEs had quite clear goals and had thought in depth about what they wanted to achieve, gain from and contribute to the expedition whilst other had generic aims such as 'have an adventure' and didn't initially articulate any specific goals or objectives. The purpose of the initial conversation is to tease out what these goals might be or could be so that each individual has a minimum of three personal development goals that they are working towards. Leaders will need to guide this initial discussion as appropriate.

In designing activities and tasks, the Leaders always bore in mind the personal objectives of the YEs and gave them as many opportunities to achieve these as possible.

12.0 MEDICAL REPORT

We had no medical problems of note on this expedition. As expected, foot problems were the main source of trouble. We did have breaks between the long marches which enabled those with foot problems to generally recover before the next extended period of foot travel. One problem relating to feet was that most of the zinc oxide tape brought by YEs was useless and came off within hours. I am not familiar with British tape brand names but in the future I would suggest that BSES ascertain the exact brand name of suitable zinc oxide tape and instruct YEs to purchase this type of tape only. In the event I used all my own supply of tape to patch up YEs. An alternative solution would be for BSES to bulk purchase suitable tape and supply it to YEs.

We only had one transient case of diarrhoea which did not spread despite the difficulties of keeping clean during glacier travel. I would include alcohol hand cleanser on the group kit list for sanitation on the snow. Again, I had brought my own which was used by the whole expedition.

The main hazard on South Georgia is fur seal bites. For that reason we took large (50ml syringes) and lots of antiseptic irrigating solutions for immediate cleaning of bites. We borrowed these from the ship's medical stores but future expeditions to South Georgia should pack these. In the event no seals were successful in biting us!

Sea sickness was effectively treated using Phenergan 10 mg. Future expedition doctors involved with ship's travel should be made aware that advice in the British National Formulary regarding treatment of sea sickness is NOT correct. There is a wealth of research dating back many years showing that Phenergan (Promethazine) is the most effective treatment for sea sickness.

Finally, I should mention that both the Snatch Bag and Fire Medical Kits are far too comprehensive for use in a wilderness setting. I condensed each fire medical kit down to a small 200g plastic bag's worth of items. The vast majority of items in both types of kit are unnecessary as alternatives can be improvised. There are also far too many types of drugs carried. It is always easy to add items to medical kits but without careful consideration of each item's absolute necessity one ends up with a huge medical kit that no one takes as it weighs too much.

I would be more than happy to liaise with previous BSES doctors and the office in trying to prune the medical kits to a safe yet useable size.

I would finally like to thank BSES Expeditions for the opportunity to take part in this expedition. I am also grateful to the surgery staff who packed the medical kits at such short notice. (We sent them a letter and gift from the Falklands.)

Dr. Paul Corwin

Risk Assessment – Southern Endurance Expedition 2008 (Updated 01 Oct 08)

BSES is a member of the Young Explorers Trust and as such follows the YET guidelines for safe and responsible expeditions. These can be viewed at www.theyet.org/pages/publications.htm.

The British Schools Exploring Society (BSES Expeditions) therefore adopts, as the primary concern, safety measures which embody its duty of care. By awareness of and by managing the inherent risk of wilderness expedition travel and activities BSES Expeditions seeks to eliminate the danger of fatalities, disabling injuries, emotional distress and serious illnesses and to reduce minor accidents, injuries and illnesses to a level no higher than might be expected in the everyday life of an active and adventurous young person.

Possible Severity of Injury (PSI)		Likelihood of Accident Occurring (LAO)	
Major (As defined by RIDDOR 95)	3	Very likely (Certain/near certain)	3
Minor (Requires qualified medical staff)	2	Likely (Frequently)	2
Slight (Requires minimal first aid)	1	Unlikely (Seldom)	1

Hazard – Something with the potential to cause harm or injury.

Risk – The likelihood of harm or injury arising from a hazard and it's severity

Significant Hazard	Risk	PSI	LAO	Control Measures
Travelling by air	Aircraft crash	3	1	Use of reputable airline/operator for intercontinental flights. All will receive a flying brief if required to fly on the Ship's aircraft and the RN has a good flight safety record to date.
Travelling by air	Hijack	3	1	Recent increases in airport security have reduced this risk as far as possible.
Travelling by air	DVT	3	1	Briefing on need to mobilise lower limbs during long flights.
Travelling by road	Road traffic accident	3	1	All drivers to hold UK driving licence.
Travelling by ship	Slips, trips and falls.	2	2	Newcomers to travel onboard an RN ship will be briefed on the many slip, trip and fall hazards they may encounter, especially when transitting Drake's Passage.
Travelling by boat during transfer from HMS Endurance	Crash/drowning	3	1	Life preserver, immersion suit and helmet to be worn (RN requirement). Boat master to brief inexperienced crew members on emergency procedures. RN have robust "man overboard" procedures.

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Working near containers	Crush injuries	3	1	All to be aware of the dangers of working around containers, even in the slightest wind or sea swell. Doors to be secured when open and containers are not to be climbed upon.
Operating in remote areas	Illness or disease	3	1	All will complete confidential medical report. Individuals are responsible for taking and carrying sufficient of any prescribed medication. Doctor on expedition. HMS Endurance on station to assist.
Operating in remote areas	Food poisoning	2	1	Individuals responsible for hand cleanliness after toileting Care to be taken when handling food.
Operating in remote areas	Water poisoning	2	1	Care to be taken when selecting a place to collect water and when handling water.
Operating in remote areas	Horse play	3	1	Caution will be exercised to avoid fooling about. Practical jokes rarely seem as funny when you are in court.
Operating in remote areas	Equipment failure (personal)	2	1	Kit list has been issued and a robust briefing will be given to all expedition members on the importance of having good reliable equipment.
Operating in remote areas	Equipment failure (Group)	2	1	Extensive research into group kit which has been issued from BSES stores and has been tested in similar situations.
Operating in remote areas	Stove fire or explosion	3	1	Training in the use of stoves and their potential failings.
Operating in remote areas	Comms. failure	2	2	Extensive research into a reliable comms system, Iridium satphones, Marine Band VHF and HF will be carried.
Operating in remote areas	Over ambition	3	1	All plans will be discussed amongst the leader team and will be subject to approval by the Chief Leader.
Operating in remote areas	Over caution	3	1	Experienced leader team with strong base camp and Royal Navy backup.
Operating in remote areas	Separation/lost	3	1	The need to exercise good group control will be briefed.
Operating in remote areas	Natural disaster	3	1	Antarctica, South Georgia and the Falkland Islands are not noted for natural disasters to date. However, Deception Island last erupted 1967-70 with minor activity in 1987. Although the current state is 'green' (no activity expected) it will need to be monitored.
Operating in remote areas	Flash flood	3	1	Careful planning of camp positioning.
Operating in remote areas	Foul weather	2	2	Suitable equipment and adequate supplies will be carried so that the team can sit out storms. Strong mountaineering background will assist the decision making process. Suitable comms protocols to enable contact with HMS Endurance and allow contingency plans to be

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				discussed.
Operating in remote areas	Inability to rejoin the ship due to weather or changes of plan	2	2	Suitable equipment and adequate supplies will be carried so that the team can sit out storms. Strong mountaineering background will assist the decision making process. Suitable comms protocols to enable contact with HMS Endurance and allow contingency plans to be discussed
Mountain walking	Slips, trips and falls	3	1	Take care at all times. Good leadership.
Mountain walking	Boots rubbing	2	2	Briefing on the need to wear in boots and feet. Advice and briefing on foot care and it's importance.
Climbing	Falls	3	1	Good leadership and decision making. Suitable protective equipment.
Skiing	Falls	2	2	Training and care, particularly regarding route and training venue selection.
Swimming	Drowning/exposure	3	1	Avoid swimming whenever possible.
Crossing rivers	Drowning/falls/exposure	3	1	Avoid river crossing if possible. When necessary, careful selection of crossing point and use of safe system of river crossing.
Crossing glaciers	Falls/becoming stuck in crevasse	2	1	Training in crevasse avoidance and rescue. Generally roped up when travelling on wet glacier.
Operating in mountain area	Avalanche	3	1	Avoidance of threatened areas, especially laden slopes after snowfall. Check snow profile if in doubt. All team members briefed on avalanche awareness and safety drills.
Operating in mountain area	Rock fall	3	1	Avoidance of high risk areas. Suitable protective equipment.
Operating in mountain area	Lack of fitness	2	2	Briefing will be given on the need to train.
Operating in antarctic areas	Hypothermia	3	1	Leaders to monitor well being of group. Suitable clothing and equipment will be used. Hypothermia briefing to all team members.
Operating in antarctic areas	Snow blindness	2	2	Use of UVA/UVB protective glasses or goggles at all times as appropriate.
Operating in antarctic areas	Frost nip	2	1	Avoid exposing skin when below freezing.
Operating in antarctic areas	Frost bite	3	1	Leaders to monitor well being of group Suitable clothing and equipment will be used.
Operating in antarctic areas	Heat exhaustion	3	1	All will be briefed on the need to hydrate.
Operating in antarctic areas	Heat stroke	3	1	All will be briefed on the need to ventilate (especially the head) when working hard.

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Operating in antarctic areas	Sunburn	2	2	Leaders to monitor well being of group. All will be briefed on the need to apply suitable sun protection to exposed skin.
Operating in antarctic areas	Fur seal attack	2	2	Fur seals are naturally aggressive and in many areas cannot be avoided. All will need to carry ski poles for defence and should travel in pairs when otherwise distracted eg by photography or collecting water.
Operating in antarctic areas	Fur seal attack	2	2	All members to be briefed on how to fend off a Fur Seal attack.
Operating from old huts	Hut fire	3	1	It is intended to use old BAS huts for some stages of the expedition. A robust fire prevention, fire fighting and escape plan will need to be briefed. Consideration should be given to provision of more extinguishers.
Unexploded ordnance	Explosion leading to trauma	3	1	The battlefields of the Falkland Islands (and to a lesser extent South Georgia) are littered with ordnance. All expedition members must attend the brief provided by the EOD team based at Hillside Camp before proceeding into the hills.
Science program hazards	As above in "operating in remote areas"	As above	As above	Most of the science projects will take place in remote areas, so the risks will be as under that section.
Science program hazards	Equipment breakage	1	2	Sample jars may be of glass and cause injury if broken. Use plastic jars when possible and take care of equipment.

Appendix 2 Group Equipment

This is the advised equipment from experience that is required for a similar expedition to the Falkland Islands and South Georgia for a party of 20 persons.



Photo A. Harris

Item	Quantity
Camping Equipment	
Terra Nova Hyperspace tent with extended snow valances	10
Primus stove with windshield and reflector	10
Stove Board	10
Cooking pan preferably MSR 2L pan (to save on fuel and time)	10
MSR/Trangia pan handle	12
1L fuel bottles	20
Small funnels with filters	4
Safety Equipment	
Group shelter	4
Avalanche probe	6
<i>Avalanche transceivers (required by S. Georgia advisory council)</i>	20
Metal snow shovel with detachable handle	10

Mountaineering Equipment	
DMM alpine harness standard size	20
Elios or Ecrin Helmet	20
10.5mm 50m climbing rope	6
Accessory cord – 6mm	50m
1 inch flat tape	50m
Prussic short – 1.5m before tied	40
Prussic long – 2.5m before tied	20
8 foot sling	20
16 foot sling	8
HMS Karabiner	20
'D' shaped screwgate karabiner – not petit dru as too small	60
Belay brake	5
Bamboo stakes for tent anchorage in snow (60cm)	80
Ice screw	20
Stubai Crampons mixture of 10 point and 12 point crampons to reflect boot size of group	30 prs
Spare assorted length crampon bars – some are designed to be either left or right	20 prs
Spare crampon straps	20
<i>Snowshoes with spares – see below</i>	<i>20prs</i>
<i>Skis 190cm –see below</i>	<i>20prs</i>
Ski poles	26prs
Ice Axe 55cm fitted with flat tape leash	20
Pulk with trace and harness	10
Pulk bag	10
Repair kit	
Fire repair kit inc. stove spares and ski pole baskets, tent repair kit	3
Base Camp repair kit	1
Hyperspace spare pole sets	2
Spare stoves	2
Navigation	
GPS	6
Maps as required	
Base Camp Equipment	
Blue Barrels	As required
Kit bags	As required
Buckets	3
Tarpaulins	3
Gerry cans water 10L	3

5L plastic fuel cans	3
Consumables	
Rubbish bags	50
String	200m
Dettol	500ml
Jay Cloths	50
Pan scourers	30
Marker pens	6
Gaffa tape	6
A4 paper	1 ream
Tie wraps assorted	100
AA batteries	200

Note:

This year, despite taking MSR snowshoes ashore I elected not to use them as it could result in crampons not being used for glacier travel with the attendant increase in risk should anyone fall into a crevasse. As the snow was, in the most part, well consolidated the absence of snow shoes was of little concern. Similarly it was considered that there would be insufficient time ashore to teach competent ski touring techniques. Future Chief Mountaineers will have to make their own assessment of the risks and advantages associated with these items.

Southern Endurance 2008 Expedition Kit List



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Introduction
Kit List and Information

BSES Expeditions
at the Royal Geographical Society, 1 Kensington Gore, London SW7 2AR
Introduction

This kit list covers the equipment that you will need when actually working off the ship in the Falkland Islands and South Georgia. You will not require any special clothing on board, clean casual clothing (your travel clothing) will suffice with some soft shoes – trainers are fine. You will also need your washing gear and reading / writing materials.

Kit List and Information

Everybody has different priorities and you may think of things that you must take that are not on this list. Do not omit anything in **normal** type.

Items in *italics* are not essential but you may wish to take them if you have space and weight available. Please be ruthless in your decision making.

Clothing is largely a matter of personal preference but please make sure that you have tried it all out before the expedition in all weathers and that the combinations you have chosen work for you. Most important is a correct fit – especially your boots!

Bags/packing

Rucksack	Expedition rucksack, 70-80 litres.
Rucksack liner	Dry bag or heavy-duty plastic bag.
Stuff sack(s)/dry bags	To separate clothes etc. A variety of colours and sizes.
Daysack	25-30 litres – take as hand luggage.
Hold all/bag	Robust (for storing excess kit).
Bungi cords/straps	Useful for strapping things, especially skis, onto rucksack.

Sleeping

Sleeping bag	3-4 season, preferably synthetic. (Down doesn't dry well).
<i>Sleeping bag liner</i>	<i>A fleece liner and/or a silk liner.</i>
Bivi Bag	Expensive but essential, breathable.
Sleeping mat	Full length closed cell foam roll mat or inflatable Thermarest – type

Inner Layer

Thin socks x 2 pairs	Wool, Nylon-wool mix or meracilon. No uncomfortable seams.
Underwear x 2 sets	Comfortable. Preferably go for sports type bras.
Long-johns x 2	Quick-drying.
Leggings	“RonHill” tricksters (or similar).
Thermal top x 2	Long sleeved.
Inner gloves x 2 pairs	Thin, thermal or cotton/synthetic mix. Good for fiddly work.

Mid layer

Thick socks x 2 pairs	Mountain socks with no uncomfortable seams.
Leggings	Powerstretch (or similar).
Fleece midlayer	
Fleece jacket	
Gloves	2 pairs of Windstopper gloves to wear over inner gloves.

Outer layer

Boots	Plastic for mountaineering and skiing and a pair of approach shoes or light walking boots.
Gaiters	Tough, clip on traditional-style are fine. Yetis tend to tear on rough ground and rough ice but you will have dry feet.
Waterproof Jacket	Goretex, robust, large map pocket, storm cuffs and a wired hood.
Waterproof Overtrousers/ Salopettes	
Hat	Warm, and big enough to cover your ears.
Sun hat	Must provide protection for ears and back of neck
Mitts	Waterproof overmitts.
Scarf	Head-over (neck gaiter) e.g. Polar Buffs are good.
Balaclava	Should be fairly snug and meet the edges of your ski goggles so that you are not exposing any skin.
Sun glasses/ glacier specs	Good quality UVA and UVB block with side protection
Ski goggles	

Cooking and tent living

Strong plastic bowl	To eat out of.
Mug	1 pint, plastic, NOT METAL.
Spoon x 2	Mark clearly with your name.
Pen-knife	Preferably with good blade, scissors/nail file and tin opener.
Head-torch	LED ones are good. A cheap one will do, it is rarely dark.
Water bottle	1 litre, strong plastic e.g. Nalgene.
Thermosk Flask	1 litre minimum, stainless steel, wrapped in karimat.
Pot scourer	Green scratchy one, small.
Fire steel	Always works, learn how to use it and make it personally identifiable as only 2 or 3 types on the market.
Spare boot laces	Or a couple of metres of para cord.
DuckTape (5m plus)	Strong fabric sticky tape.
Mending kit	Mini sewing kit plus safety pins, velcro, spare buckles, glue and patches
Tent booties	Improve your evenings.
Glasses case	Strong enough to sit on without damaging your glasses.
Line	Elastic washing line for inside your tent

Food

Emergency rations	Not more than 500g. Only for REAL emergencies or end of the Expedition.
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Toiletries

Bag	Use the smallest stuff sac you can find.
Towel	small
Flannel	
Soap	Small bar. In plastic ziplock bag
Toothpaste	1 x 50ml tube will do.
Toothbrush	Some keen mountaineers saw the handles off to reduce weight.
Feminine Hygiene	Enough supplies.
<i>Pee bottle</i>	<i>You know it makes sense.</i>
<i>Feepee/Whizaway</i>	<i>For girls</i>
<i>Hand cleanser</i>	
<i>Comb/hairbrush</i>	<i>Nothing fancy, just to reduce the mop effect and for going home.</i>
<i>Pocket mirror</i>	<i>If you are vain. Some compasses have an integral mirror.</i>
<i>Shaving gear</i>	<i>It is sometimes nice to go home clean shaven.</i>

Medical

The expedition doctor will supply an emergency medical kit but you should bring a small personal supply of standard items. Always keep the directions for drugs with your kit.

If you require regular medication, discuss this with the expedition doctor.

Pain killers	Paracetamol and Ibuprofen.
Antiseptic Cream	Small tube e.g. Savlon or Sudocrem.
Fungicidal cream	e.g. Canesten for feet and if you are prone to thrush.
Sun screen	High factor UVA and UVB protection. Screw lids are more secure.
Moisturiser	For chapped face, hands and everything. Nivea/ E45 are good.
Lip balm 2 tubes	Sunscreen or sunblock type.
Zinc Oxide tape	1 roll, non-elastic, as wide as possible.
Blister kit	Moleskin/second skin/ compeed.
Elastoplast	Or a selection of different sized plasters.
Sea sickness pills	You will need them!
<i>Throat lozenges</i>	<i>A few, e.g. Strepsils.</i>
<i>Tubigrip</i>	<i>If you are prone to knee or ankle problems.</i>

Leisure, Art and Writing

Pencil x 2	Cut in half is good, for diary and science work.
<i>Eraser</i>	<i>If you are prone to making mistakes.</i>
<i>Camera</i>	<i>Most people take small automatic cameras rather than SLRs</i>
<i>Film/memory card</i>	
<i>Batteries</i>	<i>Remember that these run down faster in cold conditions.</i>
<i>Notebook</i>	<i>1 or 2 for diary etc. A6 size is good.</i>

Sketch pad	Or combine with note book above.
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Science and Adventure

Spare glasses (if worn)	In a robust case. Contact lens wearers should also take a pair of glasses
Compass	Silva type.
Ortlieb map case	The only map case that actually works.
Whistle	Plastic, on a string.
Survival bag	Orange plastic bag type.
Wrist watch	Cheap, must have an alarm, preferably waterproof. Make sure the battery (if required) is new.
Thermometer	<i>Small and reliable to aid protection against the cold.</i>
Small binoculars	<i>Wonderful if you've got the space and cash. Great if you are in to birds.</i>

BSES will provide ice-axes, helmets, harnesses, crampons skis and ski poles and camping equipment (list available).



South Georgia Science Tasks Location Map 1



South Georgia Science Tasks Location Map 2