ICESHEET

Mar/Apr11
#53

Conviction And The Core Mission

From the Director

One of the things that never ceases to make me smile is the reaction I get from people – strangers and acquaintances alike – when I talk about BAS and the work we do. Their almost universal response is one of great interest with the inevitable questions such as: how cold does it get?; what's it like?; and far too many that reveal a rather disappointing understanding of geography! However, the discussions that ensue invariably turn to melting ice, the ozone hole and wildlife, among other things. But whatever the discussion, such encounters always leave me with my conviction renewed that what we do is relevant, important and valuable – both for now and the future.

Given all that is happening in the external governmental and financial environment and more locally within NERC, it is easy to lose sight of our core mission – to do great polar science and provide international leadership in Antarctic affairs for the UK. We are excellent at delivering in all areas of activity but where there is room for improvement we do not hold back in making changes.

There is no doubt we are in a period of significant change, possibly the biggest change since BAS's early history, but such periods also bring opportunities for good, strong and adventurous organisations. I know we are all of those, and more besides, and as long as we keep our attention focussed on our core mission we will not only manage the change but we will thrive on it.

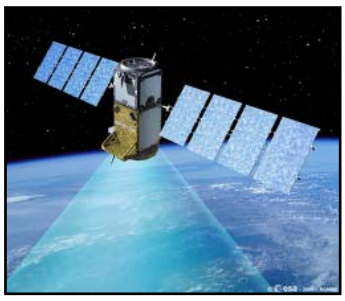
To end where I started – one of the other things that makes me smile is the opportunity to be able to work with all of you, the people who make BAS such a great place to work.

Professor Nicholas Owens

Richard Horne To Lead New SPACECAST Initiative

BAS honours

A major EU-funded initiative to improve 'space weather' forecasting had its inaugural meeting in the UK on 29 March. SPACECAST, an international group of space experts, led by BAS's Professor Richard Horne, met to discuss how to develop forecasting models to help predict intense space radiation which causes damage to satellites used for positioning (GPS), communications, remote sensing and other applications.



▲ *ESA Galileo satellite GIOVE-B*

Most satellites orbit inside the Earth's magnetic field, which acts as a protective shield. However, bursts of energetic particles from the Sun and magnetic storms at Earth can increase radiation levels inside the magnetic field to dangerously high levels. The last major magnetic storm occurred in 2003 and disrupted 47 satellites, including one scientific satellite costing $640 million, which was written off. However, much larger magnetic storms have occurred in the past, such as the Carrington super-storm of 1859. If such a super-storm occurred today the cost of satellite disruption could be as high as $30 billion.

The Sun has an 11-year cycle of activity, which is measured by the number of 'sunspots'. The next peak in activity will occur over the next few years, but the number of large magnetic storms is expected to maximise up to two years later, at around 60 per year, between 2013 and 2015. SPACECAST will have a warning system in place by March 2012, ready for the new peak in activity and ready for Galileo – the new European constellation of 30 radio-navigation satellites.

Professor Horne has also recently been elected a Fellow of the American Geophysical Union (AGU). This is a special tribute for those who have made exceptional scientific contributions. Nominated

▲ *Professor Richard Horne*

Fellows must have attained acknowledged eminence in the Earth and space sciences. Primary criteria are major breakthrough/discovery and paradigm shift. This designation is conferred upon not more than 0.1% of all AGU members in any given year. Congratulations Richard.
– Jamie Oliver

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

BAS In The Lyme-Light Again

BAS events

▲ *The impressive display was set up before the doors were opened*

The Lyme Regis Fossil Festival 2011, 'Marine Parade', which ran from 29 April to 1 May celebrated both fossil and current sea life from the Jurassic Coast and around the world. BAS again joined forces with the Natural History Museum (NHM), the National Museum of Wales, Plymouth University, the Ocean Research Centre in Southampton, as well as Dinosaur Island, to enthral everyone with our exhibits and activities.

A small but dedicated band of enthusiastic volunteers (Andy Blagbrough and Tim Foord), led by BAS geological technician Hilary Blagbrough, displayed some of the amazing material from our Antarctic fossil and biological collections – from giant sea spiders and isopods to ammonites and plant fossils, the objects were scrutinised by people from all walks of life and many nationalities. Both biological and fossil specimens attracted great interest and several researchers are now intending to follow up on the materials that we hold. One exhibitor from NHM is keen to learn how to make resin displays. Many people were surprised to find that there are fossils in Antarctica and that life thrives in its unfrozen seas.

Hilary gave a science talk for the Saturday lecture series, which was well received. In all it was very successful and enjoyable and saw 20-25,000 people visiting the marquee on the beach at Lyme Regis. Next year's event is planned to be an even larger science-led event, with tie-ins to the Olympic events in Weymouth.
– Hilary Blagbrough

▲ *Over 20,000 people visited*

UKPN Events

UK Polar Network (UKPN) will hold another of its fun and successful Networking Days in Plymouth on 7 June at the Royal Corinthian Yacht Club.

Join us for an exciting day with a 'historical touch' for presentations and discussions around the scientific legacy of Scott's 1910-13 expedition, the wealth of archives available for polar scientists in the UK, to discover the work of UK Antarctic Heritage Trust, and last but not least, to meet lots of other early career polar scientists. Douglas Russell (Natural History Museum), BAS Archives Manager Ellen Bazeley-White and Anna Malaos from the UK Antarctic Heritage Trust will speak about their work and the resources it opens up for scientists. For more info and to register your interest, please get in touch.
– Amélie Kirchgäßner

The Festival Of Britain 1951

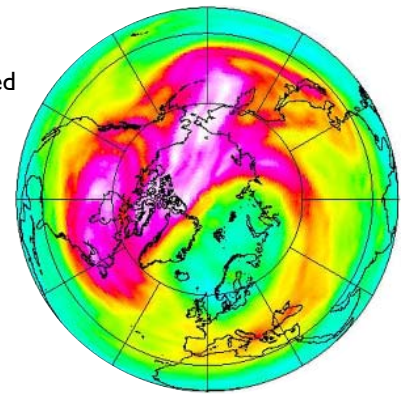
Events marking the 60th anniversary of the Festival of Britain have been in the news recently and it's interesting to note that BAS (or FIDS as it was then) were involved in the 1951 Festival. In the Dome of Discovery on the South Bank there was a polar demonstration, which included a film about the work of FIDS and the Norwegian-British-Swedish Expedition of 1949-52. At Battersea Park (the Festival Gardens) nine huskies, including Vivian Fuchs' lead dog Darkie, managed by two fids, gave over 2,000 performances of dog sledging to a delighted public. Meanwhile, on the Embankment, RRS *Discovery* (Scott's first expedition 1901-04) was open to the public and man-hauling demonstrations in full Antarctic kit gave a flavour of the Heroic Age of Antarctic exploration.
– Jo Rae

Ozone Holes North And South

BAS science

This year we almost had an ozone hole over Cambridge! Normally the Arctic ozone layer is about 10°C warmer than that over the Antarctic, and this means that polar stratospheric clouds (PSCs) are rare in the north. Not so in 2011. The strong wind system that forms during the polar winter, the polar vortex, was unusually stable this year. Parts of the Arctic ozone layer were therefore able to cool below the critical temperature of around -78°C at which PSCs can form. With clouds present, chemical reactions could take place which allowed over 40% of the Arctic ozone to be destroyed. Whilst this reduction would class as an ozone hole in the Antarctic, ozone amounts start at a higher level in the north. A correspondingly greater amount of depletion is thus required to hit the 220 Dobson Unit threshold that defines an ozone hole. For the UK, lowest ozone levels were reached around 29 March, but by the end of the month the stratosphere was warming and ozone amounts increasing.

When ozone amounts fall, UV levels rise, but in late March the Sun was still relatively low in the sky, and the risk of sunburn was low. By early April, although the ozone amount was up, the Sun was also higher in the sky and UV exposures exceeded the level at which protection is advised.



▲ *Low ozone over the northern UK, Scandinavia and the Russian Arctic on 29 March 2011*

Recent research has been flagged as indicating that the Antarctic Ozone Hole is recovering, but this is wrong. What it shows is that the amount of chemical ozone depletion is decreasing. This is exactly what is expected as the Montreal Protocol, now signed by all UN Member states, is working and the amount of ozone destroying substances in the atmosphere is going down. The depth of the Antarctic ozone hole is however also controlled by the 'weather' of the stratosphere, as well as by external events such as massive volcanic eruptions, or even meteorite explosions. These near-random events could still give us an exceptionally deep ozone hole, so it is too soon to say that it is on the mend.
– Jon Shanklin

Comic Relief Charity Events

Thanks to everyone who donated money to Comic Relief by coming to the quiz, buying raffle tickets and playing pinball. We raised £1,170 which is more than we ever hoped for. The team with the highest score in the Cambridge Quiz were 'We thought it was a disco' led by Ellen Bazeley-White. Winner of the Pinball was William Mortimer. Thanks again to everyone for their generosity.
– Rebecca Chisnall

▲ *Pinball wizardry in action*

2011 Laws Prizes Awarded

▲ *Huw Griffiths & James Smith*

Every year the Laws Prize Committee tries to select the most outstanding young scientist at BAS. This year the choice was especially difficult and the Committee eventually decided, for only the second time, to award two prizes.

Huw Griffiths joined BAS in 2000 to develop a new database on Antarctic marine biodiversity. SOMBASE, as it became know, grew rapidly and Huw has developed its potential by linking it to ArcGIS so that the biological and environmental data could be overlayed. Since then he has made SOMBASE available online, linked it to SCAR-MarBIN and CAML and developed an innovative range of visualisation tools. He has a portfolio of 25 papers, six of them as first author, in a wide range of journals.

James Smith published his first paper on his MSc work on the provenance of Antarctic dust before completing his PhD. Joining BAS as a marine sedimentologist he has shown himself to be remarkably versatile, working both from the ship and on land and has rapidly learnt a range of new skills to help date both marine sediments and rock outcrops. His interdisciplinary and flexible approach has led to 20 papers in leading journals, six of them as first author.

Congratulations to both. There will be lectures in the autumn.
– David Walton (E-Fellow)

Cambridge Science Festival

BAS took part in the popular annual Cambridge Science Festival (14-27 March) again this year. The Festival included more than 150 talks, events and activities and BAS had two displays – 'Climate change and atmosphere: from Cambridge to Antarctica' which focussed on BAS research on global atmosphere and climate change and 'What is it like living and working in Antarctica'. Hundreds of people enjoyed visiting. Many thanks to all involved.
– Audrey Stevens

▲ *Preparing for the Antarctic*

Stanley School Visit For R-Doc

Dr Claire Lehman, Rothera Doctor in 2009-11, popped into the Secondary School in Stanley *en route* home from Rothera to give a talk to the class of Jo Symons, a teacher whom she met on the journey south 18 months before. Despite power downs (Stanley need the Rothera Genny mech!) the class gained a glimpse into life down south.

The questions were insightful and apparently for days afterwards the pupils were hoping for -20°C so that they too could freeze their hair and throw cups of water into the air to make clouds too!
– Claire Lehman

▲ *Claire and class in Stanley*

The ICESHEET Green Corner

▲ *The site at BAS Cambridge*

As part of BAS's accreditation to the Environmental Management System ISO 14001, the Cambridge site had a successful external audit on 29th March. External audits are carried out twice a year to identify areas where BAS can improve our environmental management in all aspects of operations and to ensure BAS is legally compliant.

A range of laboratories were visited and the auditor was impressed with the good working knowledge of waste management procedures for chemicals, spill containment and sample control. Thanks to Tim Moffat, Min Gordon, Louise Fleet, Mike Tabecki and Elaine Fitzcharles for ensuring the systems are comprehensive and effective. It was also commented upon that excellent guidelines have been produced for BAS personnel intending to export samples from Antarctica and import them to the UK. Mike Dunn and Paul Geissler provided a full explanation of our import procedures which ensure that BAS meets the legal requirements set by DEFRA and CITES. The auditor also recognised the comprehensive work that Paul Geissler is currently undertaking by logging the back log of existing samples stored in Cambridge.

Time was spent with David Hyett discussing emergency preparedness plans. Everyone should now be fully aware of when to use the '1321' Emergency and Medical Aid number. If you are a first aider, spill responder or deal with chemicals on a regular basis, please ensure that you know what to do in an emergency.

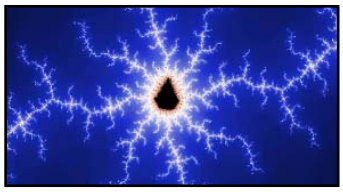
Thanks to everyone involved in the audit. Only one minor non-conformity was identified but we still need to follow best practice wherever possible to ensure our continued compliance and accreditation. We still have plenty of improvements to make and internal audits will be ongoing throughout the year. Please pop in or contact the Environment Office if you have any questions or suggestions.

Two new team members join the Environment Office this spring – Clare Fothergill as Environment Manager and Matthew Jowett as SHE Support Officer (spending time on Health and Safety as well as Environment issues).
– Clare Fothergill

Environment Office

Fractals & Unmeasurable Quantities

BAS mapping

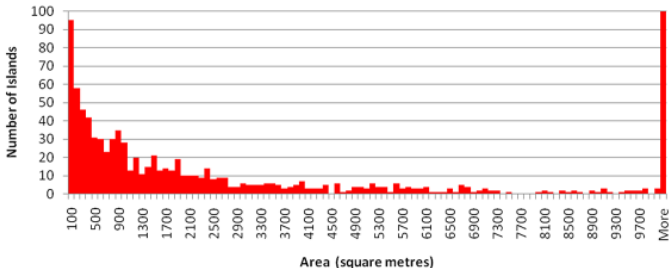


▲ *Not just a pretty pattern*

In MAGIC, we are often asked to quantify geographic objects. Questions like "How big?" or "How far?" we generally can answer. But there is a class of question that can't be answered in a straightforward manner. "How long?" and "How many?" frequently don't have a meaningful answer without additional information. I've just been asked "How many islands are there in the South Georgia archipelago?" Well, our spatial database says 1,025 – but this figure is meaningless.

The problem is that most natural objects have fractal dimensions. Think of it this way. If I digitise the coastline of South Georgia using an image with a resolution of (say) 60m, it means the smallest object I can see is ~100m across. Groups of islands will get merged into one object and isolated small islands won't be visible at all. But if I increase the image resolution the number of separate islands goes up. And so it goes on, down to the microscopic scale. Therefore any number for "How many islands?" has to be qualified – e.g. "How many islands larger than *x* square metres?" Even then, closely spaced islands may not be distinguished. There is also the problem that the answer changes according to the tide!

The length of coastlines suffers from exactly the same problem – the higher the resolution, the longer the coastline. Indeed, Benoit Mandelbrot of fractal fame has shown that the measured length of any coastline approaches infinity as the resolution increases! So fractals aren't just the pretty pictures you see in books about chaos – they have a real and practical impact on what is measurable, and what is not.
– *Paul Cooper*



▲ *Frequency distribution of islands in South Georgia by area*

2011 Cambridge Cycle Challenge

Thanks to all who took part in the 2011 Cambridge Cycle Challenge. After glorious victory last year, BAS came third in our category of organisations with between 200 and 499 staff and registered an impressive 36.6% staff participation. This was a great achievement so well done to everyone involved!

During this year's initiative, Cambridge cyclists clocked up over 238,900 miles via 22,827 trips and saved over 37,800kg of CO_2. To put that into perspective, that's:

- Cycling more than nine times around the world
- Burning off over 25,900 cream eggs
- Saving 7,644,800 balloons of CO_2 being released into the atmosphere

– *Amélie Kirchgäßner*

EGU Photo Competition Winner

▲ *Winner: A 'geysir' about to blow in the Haukadalur Valley, Iceland*

Congratulations to BAS Atmospheric Chemist James Levine who won first prize at the European Geosciences Union (EGU) General Assembly 2011 photo competition *(see above)*. There were a total of 275 entries, with nine finalists. Participants at the General Assembly voted 1,418 times to identify their favourite images. All the finalist and entry images are on *Imaggeo (www.imaggeo.net)*, which is the EGU online open access geosciences image repository. Every geoscientist can submit their images and being open access, it can be used by scientists for their presentations or publications as well as by the press. If you submit your images, you retain full rights of use. See the website for more info.
– *Jamie Oliver*

Spotlight On Science – Feb 2011

Ice core evidence for a 20th century decline in sea ice in the Bellingshausen Sea, Antarctica

This study uses ice core methanesulphonic acid (MSA) records from the Antarctic Peninsula, where temperatures have been warming faster than anywhere else in the Southern Hemisphere, to reconstruct the 20th century history of sea-ice change in the adjacent Bellingshausen Sea.

Using satellite-derived data, we show that ice core MSA records from this region are a reliable proxy for regional sea-ice change, with years of increased winter sea-ice extent recorded by increased ice core MSA concentrations. Our reconstruction suggests that the recent satellite-observed sea-ice decline in the Bellingshausen Sea is part of a long-term regional trend that has occurred throughout the 20th Century. The long-term perspective is consistent with evidence of 20th Century Peninsula warming and may reflect a progressive deepening of the Amundsen Sea Low due to increasing greenhouse gas concentrations and recent stratospheric ozone depletion.

As a first-order estimate, our reconstruction suggests that sea ice in the Bellingshausen Sea has retreated southward by ~0.7° during the 20th Century. Comparison with other 20th Century sea-ice observations, reconstructions, and model simulations provides a coherent picture of 20th Century Antarctic sea-ice decline, although with regional-scale differences evident in its timing and magnitude. This longer-term perspective contrasts with the small overall increase in Antarctic sea ice that is observed in post-1979 satellite data.
– *Nerilie Abram*

Signy Island Blue-Eyed Shags

There are two nesting areas of blue-eyed shags on Signy Island – one at North Point and one to the south on Shagnasty Island (so named because of the unpleasant state of the island caused by the shag colony). Counts of these colonies have been made since the base opened in 1947. To make the data available and useful to scientists now and in the future, all available count data have recently been put into a database which includes information on exactly what was counted (e.g. nests or pairs), when the count was made and a reference to the original source, typically a report in the BAS Archives. Looking back through the archived reports highlighted just how much potentially useful data there are in some of the historic records.

The North Point colony has shown a steady increase from nine nests in 1948 to 135 in 2011. The data, along with a variety of biological datasets, can be found on the Intranet at: *http://bsdbase.nerc-bas.ac.uk:7777/pls/apex/f?p=189*
– Helen Peat

▲ *The number of Signy's blue-eyed shags has increased since 1947*

BAS Science Highlights Recognised

BAS has been very successful at getting its science highlights noticed by NERC once again this year. Of the 86 top achievements selected by a NERC panel, 12 were achieved by BAS, giving BAS an excellent success rate. Topics included space weather, ice change measurements, fisheries, SWATH surveys, geo-locators, marine biochemistry and census work.

NERC co-ordinates an annual Output and Performance Measures (OPM) collection exercise every spring, using an online system called the Research Outputs Database (ROD). The information submitted by team and science leaders includes publication numbers, prizes, patents, achievements, public engagement activities and contribution to policy. NERC had about 3,000 science and organisational achievements reported from its centres, surveys, collaborative centres and grant holders for 2010/11. Of these, 296 were considered by the NERC Achievements Panel that met in mid-April. Panel members complimented BAS on the high quality of the writing of our achievements and this was certainly a major factor in our success. So when writing your achievements follow the guidelines given and aim for a press release style rather than an academic abstract! Achievements should also be complete pieces of work that are eye-catching, exciting and help answer 'big questions'.

Thank you to all those people that contributed to the collection exercise. If you want to get ahead of the game, start thinking about 2011/12!
– Ellen Bazeley-White

'Ice Adventure' Penguin Exhibit

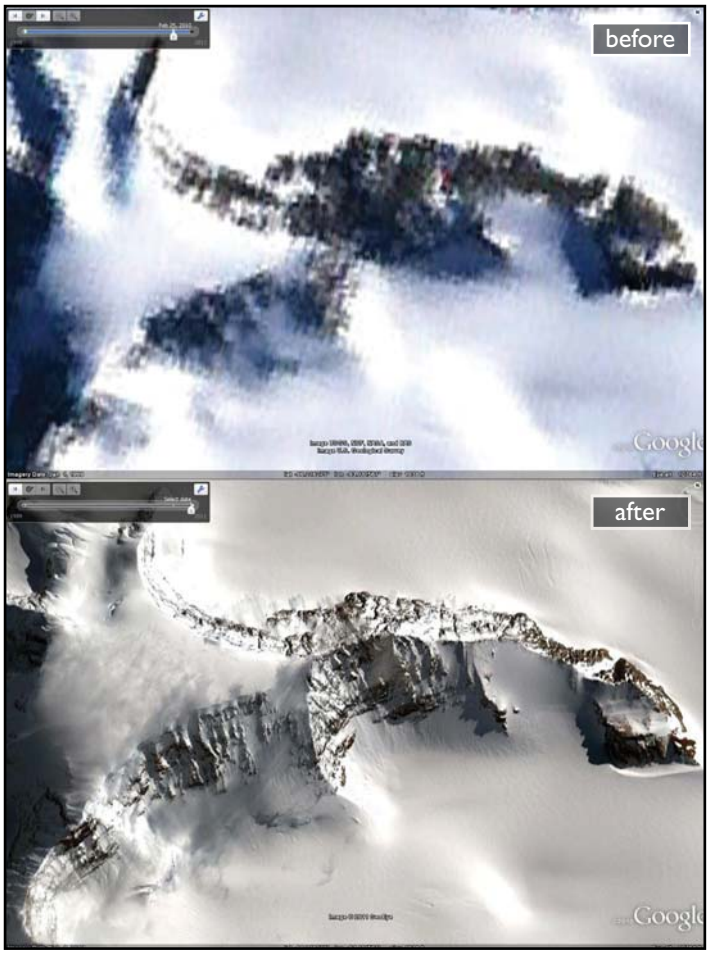
A new exhibit called 'Ice Adventure' will open at the SEA LIFE London Aquarium in May 2011 featuring gentoo penguins. BAS has been involved in providing equipment, images and footage of the research stations for the exhibit. Also, both Iain Staniland and Norman Ratcliffe have provided expert advice along with some 'training' to staff who will be working in the new exhibit.

Spider crabs will also be featured along with freezing touch pools and a 'cold' room where people can experience Antarctic conditions. The exhibit will provide an opportunity for members of the public to learn more about gentoo penguins, BAS scientific research and Antarctica. To find out more please visit: *www.visitsealife.com/london*
– Audrey Stevens

MAGIC Image Of The Month

MAGIC Image #37

The US Polar Geospatial Center, based in Minnesota, has begun working with Google Earth to improve the available satellite imagery of the Antarctic. This will mean the gradual addition of many more very high resolution images to the online archive, resulting in a huge increase in visible detail. The accompanying image shows part of the Churchill Peninsula on the east Antarctic Peninsula, as previous lower resolution LIMA (above) and newer high resolution imagery (below). They are keen to hear about high priority areas to update, so please let us know and we can pass them on to PGIC and Google. Of course if you wish, it is possible to use the 'time slider' in Google Earth to scroll back to earlier historical imagery, just click on the clock icon on the top tool-bar. Please get in touch with any questions you may have.
– Andrew Fleming



▲ *Google Earth is updating its Antarctic imagery to higher resolution*

New Starters And Contracts

Cambridge
Claire Fothergill
Environmental Manager
Norman Scott
Temporary Stores Assistant

Science Staff
Tom Newman
Airborne Radar Analyst (IceSheets)

PSPE Video & PPT Support

A reminder to all staff that the 10-minute long Polar Science For Planet Earth promotional video that introduces BAS and our science is available in all seminar rooms and on the BAS website. Also, PowerPoint support for presentations or posters can be found on the Intranet at *http://basweb/ppre*.
– *Linda Capper*

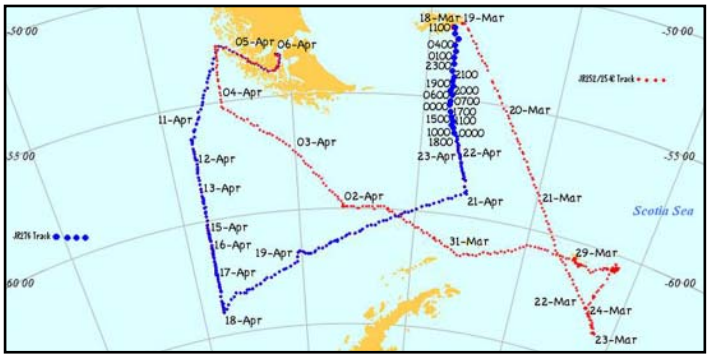
JCR Heads North After Cruises

▲ *The JCR, as seen from a floating spar buoy*

Since the last ICESHEET, RRS *James Clark Ross* has conducted three different science cruises and closed Signy Station for winter. She has now started her journey north to the UK.

Cruise JR252 involved the recovery and redeployment of a number of moorings around the South Orkney Islands, convenient for the closure of Signy on 29 March. JR254C was the third part of an ongoing project called WAGES, involving several instruments, including a 3cm wavelength radar and camera which were operating all the time. Scientists from NOC are onboard to take further readings and measurements using tethered and free floating spar buoys and a balloon to fly to altitude and take pictures of the waves (photo at left was taken from a spar buoy).

The Dimes Recovery Cruise (JR276) started to the south-west of Punta Arenas and involved a CTD transect with additional vertical microstructure profiler (VMP) and buoy deployments down the longitude of 078°W (S3 transect). We then turned eastwards deploying buoys before a further CTD and VMP transect northward towards the Falkland Islands (SR1 transect). The Dimes Recovery Cruise was successfully completed with all stations being occupied, additional VMP deployments and two additional CTD stations being completed.
– *Graham Chapman*



▲ *Vessel tracks for the three science cruises (from www.sailwx.info)*

Place-Name Of The Month – #1

Pourquoi-Pas? Island (67°40'59"S, 67°30'0"W) is situated about 20km from Rothera, in the north-east corner of Marguerite Bay, between Bigourdan Fjord and Bourgeois Fjord, separated from Blaiklock Island by The Narrows. It was first discovered and roughly charted by Charcot's French Antarctic Expedition (1908-1910), but not recognised as an island. It was then mapped as an island by the British Graham Land Expedition in 1936 and named after Charcot's three-masted schooner, the 'Pourquoi-Pas?' (which means 'Why not?' in English). Many of the place-names in this area follow the theme of Jules Verne's '20,000 leagues under the sea', such as Arronaz, Nemo and Nautilus.

For more information and to submit place-name proposals, go to the Antarctic Place-Names Committee website: *www.antarctica.ac.uk/apc* or email the Place-Names Secretary at *kabaz@nerc.ac.uk*
– *Kate Bazeley*

▲ *Pourquoi-Pas? Island was named after a French ship*

BAS Wedding In South Georgia

▲ *Guests gather at the church*

The final day of 'second call' at King Edward Point was made a remarkable and joyous affair, as two long-serving crewmembers of RRS *Ernest Shackleton* – Tim Patterson and Julia Forde – were married at the Norwegian Lutheran Church in Grytviken. In a spectacular location against a backdrop of mounts Duce and Hodges the church sits nestled at the landward side of Grytviken whaling station, five minutes walk from KEP.

Andy Rutter, the Motorman, beautifully turned models of the bride and groom out of brass to adorn the cake. The cake itself was made and iced by Claire Lehman, outgoing Rothera Doctor, whilst the bridal bouquet was folded from cancelled charts to keep with the nautical feel of the wedding by Michael Ramage (outgoing Halley Doctor) and Penny Grainger (dentist).

The congregation made its way to the church to a chorus of fur seal pups. Captain John Harper PM brilliantly conducted the very personal and heart-warming ceremony, with readings from several BAS staff. The happy couple were piped into the church by Robert Patterson and Rob Webster played the fiddle. Then we had a BBQ.
– *Michael Ramage*

▲ *The happy couple!*

David Blake's Tech Update

BAS has a video conferencing system to enable meetings to be held without having to travel. With the reduction in budgets, video conferencing and other systems save travel and the cost of subsistence. The ICT Wiki at *http://ictdocs.nerc-bas.ac.uk/wiki/index.php/main-page* is on the BAS Intranet. Under 'remote access and conferencing' there are details of the VC system and also others that can be used. Contact the Helpdesk or Richard Cable with questions.

The Video Conference System should be the first system to consider if you wish to hold a meeting with several remote sites. It delivers high-quality images and sound and can be connected to single PC connectors running applications similar to Skype. Skype is now possible on NERC Systems to provide telephone and video calls between subscribers. It is not encouraged for use over the Antarctic link because of the bandwidth demand. To use Skype you will need to install the software from the Internet.

WebEx is a commercial system that provides web conferencing for online meetings and events. It is a powerful tool that needs a paid for account to be able to host a meeting. The ICT budget does not support the hosting of WebEx but if working with a commercial partner, you can encourage them to provide the system and then connect.

Whilst virtual meetings will never replace face-to-face meetings in all circumstances, the systems currently available to staff will help to reduce the need for travel.

New Bikesheds Officially Open

New bikesheds and stands have been installed at BAS Cambridge during March, in the south and north car parks. The new facilities are funded equally by the NERC Green Fund and the Cambridgeshire Travel For Work Partnership.

The opening ceremony, on 31 March, included tea, coffee and a 'cyclists' breakfast' for those arriving by bike. The ribbon was cut by Alan Rodger, BAS Board Member for Science Strategy. With so many BAS staff commuting via pedal power, the new facilities will be well used and appreciated.
– Amélie Kirchgäßner

▲ *The opening ceremony*

A Week In The Freezer

BAS stations

▲ *Exploring the Hinge Zone*

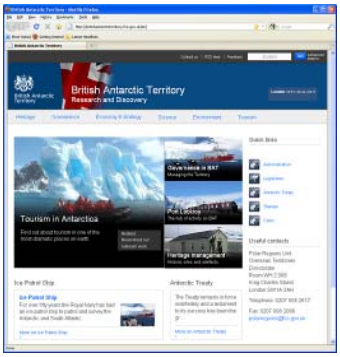
A week off station – camping, snowshoeing, abseiling, field training, photography, a digging holiday... Whilst it means different things to different folk the 'Winter Trip' is one of those memorable Antarctic experiences. A week of dealing with some extremes of weather, with no warm buildings to run back to, is valuable experience for the wintering team members. At Halley this season the pre-Midwinter trips were all to the Hinge Zone. A strange place, it doesn't follow the rules. Forget the usual snow and ice features you might see in a Scottish winter or in the Alps. The chasms in the Hinge Zone near Halley are a maze of undulations, frozen-in bergs, wind-scoops, huge wind-tails, holes, melt-pools and gaping crevasses.

Pyramid tents are renowned for their ability to withstand the worst of Antarctic weather. Inside can be made very cosy with sheep-skins to lie on and a Tilley lamp for light and warmth. We keep most essentials within easy reach so that, in strong winds and blowing snow, we only really need to go outside to collect snow or for calls of nature. Calorie intake is constantly on everyone's mind and at least four hours each day are spent melting snow and cooking. Standard 'man food' rations provide around 3,500 calories per person per day, probably just enough to maintain body temperature. We cheated a bit and courtesy of Chris-le-chef took some extra goodies from the kitchen!

On clear days, the focus is on getting out and exploring. It's easy to forget the sun-cream when the ambient still air temperature reads -41°C. With the stove and lamp on, inside the tent is often around 0°C on the floor to +30°C or more near the apex. After lights-out there is a sharp drop in temperature and mornings are often a battle with ice crystals as you exit a warm sleeping bag. Some teams were lucky, with fantastic calm sunny days, whilst others got to experience high winds, blowing snow and zero contrast. The enforced lie-up days were made more enjoyable with good company and copious amounts of tea and biscuits!
– Ian MacNab

BAT Website Launched

The Foreign & Commonwealth Office Polar Regions Unit have launched a new British Antarctic Territory website outlining the heritage, governance, science and environment of the region as well as a host of relevant information and references. See it here: *http://britishantarctic territory.fco.gov.uk*. Any comments/suggestions to: *natasha.whitehouse@fco.gov.uk* – *Jamie Oliver*



▲ *The new BAT homepage*

The Continuous Plankton Recorder

BAS bioscience

▲ *The new set of SG stamps*

A set of South Georgia stamps commemorating Sir Alister Clavering Hardy (1896-1985), the eminent marine biologist famous for his work on plankton and fisheries, has been commissioned by the Government of South Georgia and the South Sandwich Islands. In April 1924 Hardy was appointed Chief Zoologist to the Discovery Investigations, which were established to assess the status and natural history of whale stocks in the Atlantic sector of the Southern Ocean. The expedition utilised Captain Scott's first Antarctic vessel, RRS *Discovery*, which was refitted for scientific work. During his time south, as well as undertaking surveys and helping design the shore laboratory on South Georgia (Discovery House) that is still standing today, Hardy also designed and built a device called the Continuous Plankton Recorder or CPR. The CPR collects plankton samples and stores them on a moving band of silk, preserving them in formalin, and was first trialled in the Southern Ocean onboard RRS *Discovery*.

The Sir Alister Hardy Foundation for Ocean Science (SAHFOS) continues Hardy's pioneering research and operates the CPR throughout the world's oceans. This has generated unprecedented data sets on plankton distribution and abundance and to date more than five million CPR miles have been towed and over 235,000 samples analysed.

As part of a Southern Ocean CPR initiative BAS has entered an agreement with SAHFOS to undertake monthly CPR tows between Stanley and South Georgia from fisheries protection vessel *Pharos* SG. Contemporary research has shown that summer surface temperatures close to South Georgia have risen by more than 1°C in the last 80 years making it increasingly important to understand how the oceans, and in particular the plankton at the base of the food chain, will respond to future change. The first tows on this new route were successfully undertaken in April and help provide a year-round view of plankton distribution in this part of the Southern Ocean.
– *Pete Ward*

Pictures From The BAS Archives

Archive Image #27

The Falkland Island Dependencies Survey (FIDS) hut on Detaille Island, Loubet Coast, was occupied in 1956-59 during the International Geophysical Year. Largely abandoned since then, it was due for demolition until a change of policy in 2009 saw it designated as an historic site under the Antarctic Treaty.

Management of the site was delegated by BAS to the UK Antarctic Heritage Trust and in January 2011 a team started restoration work on the building, which had deteriorated considerably since the last visit in 2007 due to a leaking roof. The many artefacts were also assessed and listed.
– *Jo Rae*

▲ *Detaille Island hut, 30 December 1956 by Jeremy Smith [Archives Reference AD6/19/3/C/W1]*

And Finally...

▲ *The new Rolex Explorer II*

Apply for a Rolex Award for Enterprise for your science or technology project and you could win £60,000 and a Rolex watch. The Rolex Awards are open to anyone of any age or nationality whose groundbreaking projects are helping to expand the knowledge of our world and improve the quality of life on the planet and the outlook for humankind. Deadline for pre-applications is 31 May 2011. Info at: *www.rolexawards.com*
– *Athena Dinar*

ICESHEET contact details:
Jamie Oliver (jaol@bas.ac.uk)