

Business Plan 2011



**British
Antarctic Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

**POLAR SCIENCE
FOR PLANET EARTH**

Executive summary

The British Antarctic Survey (BAS) Business Plan 2011 sets the agenda and priorities for BAS to achieve its objectives during Financial Year 2011/12. The coming financial year sees us entering a period of very significant funding constraints that will last for at least the duration of the Comprehensive Spending Review (CSR), i.e. until March 2015. The impact of these constraints will be widespread and fundamental in nature, and are not yet fully known as this Plan goes to press. The Plan is relevant to the work of everyone in BAS and is published on the BAS Intranet (http://basweb.nerc-bas.ac.uk/information/business_plan).

BAS Vision

By 2020 the British Antarctic Survey will be recognised as a world-leading centre for polar research and expertise, addressing issues of global importance.

BAS Mission

- To deliver a world-class programme of scientific research, national capability and long-term observations, concentrating on the regional and global role of polar processes in the Earth System
- Through our science and impact, sustain for the UK an active and influential Antarctic regional presence, and a leadership role in Antarctic affairs

BAS provides a focus for national and international co-operation in polar science, and access for scientists to the polar regions. BAS delivers and co-ordinates major research programmes, including those requiring significant technology or infrastructure. It exploits research outcomes, engages with the public, provides expert independent advice to the British Government and other stakeholders, and helps to discharge the UK's responsibilities under the Antarctic Treaty System and to administer British Antarctic Territory.

The British Antarctic Survey is part of the Natural Environment Research Council (NERC).

Resources

The financial element of this business plan, the BAS budget, is focussed uniquely on financial year 2011/12 in light of the highly variable macro environment for funding. Whereas BAS is largely balanced over the coming plan year, there is no contingency for unforeseen events. Further ahead there will be a need to either secure robust funding from a variety of sources or risk a significant downsizing of activities in both parts of our Mission.

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Above: RRS James Clark Ross in sea ice during a science cruise in the Belingshaussen Sea, Antarctica.

I. Director's foreword

This is the fourth introduction to the BAS Business Plan I have written and it comes at a time of enormous change and increasing pressure on BAS. The financial settlement for science in the December Comprehensive Spending Review (CSR) announcement was as good as we might have expected but the consequence of reducing spending power will never-the-less impose financial constraints on us not felt for a generation.

The settlement of 'flat cash minus 3%' will, by the end of the CSR period in March 2015 mean that our real income will have reduced by up to a fifth depending on the impact of inflation. The new NERC funding model is beginning to take shape and our Polar Science for Planet Earth (PSPE) science programmes have risen to the challenge.

One of the key tools available to us to be successful in a changing world is this, our Business Plan. It sets out our top-level objectives for the medium and longer term and in detail our intentions for the forthcoming year. These in turn are backed up by detailed financial forecasts.

Last year we introduced the BAS Management Tool and after a period of learning how best to use it, we now have a tool that provides invaluable capability for managing BAS. We continue to focus on our three sectors of activity, our Science, Expertise and Impact. Importantly, these radiate outwards from our core Vision and Mission to specific team and group targets and activities, which in turn will inform all individual Forward Job Plans. In this way, each one of us can see our role and contribution to making BAS a successful organisation. Thus, even though we live in changing times, this Business Plan provides us with a foundation upon which we can build. For external readers, the Plan will, I hope, prove useful in providing you with information about our activities and intentions. For BAS staff this is a very important source of information, so please keep it easily to hand.



Professor Nicholas Owens
Director British Antarctic Survey

2. Scope and purpose of the Plan

The BAS Business Plan 2011/12 marks the third full year of the new BAS science programme, PSPE. It contributes to the Natural Environment Research Council's (NERC's) Strategy, Next Generation Science for Planet Earth 2007-2012, through a programme of world-class polar research and by the delivery of National Capability (NC) to provide survey, long-term observations and interdependent research. In a complementary and additional manner, the BAS science programme helps sustain for the UK an active and influential regional presence and leadership in Antarctic affairs. The Plan reflects the financial agreement reached with NERC and sets the agenda and priorities for BAS to achieve its Mission during Financial Year 2011/12. Given the ongoing uncertainty of funding longer term, the focus of this Business Plan is for 2011/12 only. The Plan was approved by the BAS Board and is used to shape the work, direction, and management of BAS during this period. It is published on the BAS Intranet (http://basweb.nerc-bas.ac.uk/information/business_plan) and on BAS's website (www.antarctica.ac.uk/about_bas/publications/corporate.php).

3. BAS Vision

By 2020 the British Antarctic Survey will be recognised as a world-leading centre for polar research and expertise, addressing issues of global importance.

4. BAS Mission

- To deliver a world-class programme of scientific research, national capability and long-term observations, concentrating on the regional and global role of polar processes in the Earth System
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The British Antarctic Survey is part of the Natural Environment Research Council.

An overview of the vision, science, impact and expertise of BAS

Our science programmes

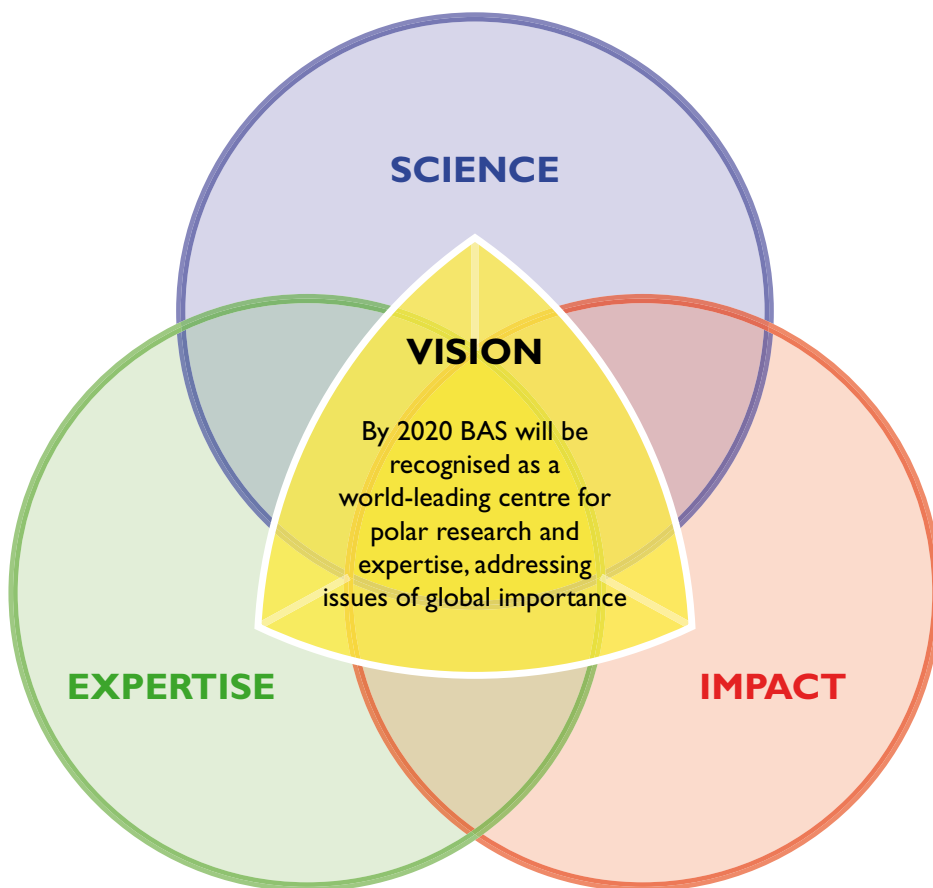
- Chemistry and Past Climate
- Ecosystems
- Environmental Change and Evolution
- Climate
- IceSheets
- Polar Oceans

Our expertise

- World leading health, safety and environmental management in polar regions
- Integrated logistics delivery
- Integrated science delivery
- Polar science management
- Polar engineering
- People, development and skills
- Sustainable operations

Our impact

- Public engagement
- Citations/publications
- Polar/climate policy
- National and international collaboration and recognition
- Economic/social benefit
- Antarctic policy and Treaty



5. BAS strategic priorities

5.1 Short-term overview. Polar Science for Planet Earth (PSPE) is the science centrepiece of the BAS Vision and was launched to a wide audience in November 2009. BAS is committed to ongoing support and delivery of the UK's polar science in an excellent, effective and efficient way. To that end, BAS recognises that strategic choices will need to be made after thorough and informed discussion with NERC and wider stakeholders over the coming year. Halley VI is due to be completed in February 2012 and officially opened in 2013. The installation of the Dutch-funded science facility at Rothera is progressing to plan and will be completed next season.

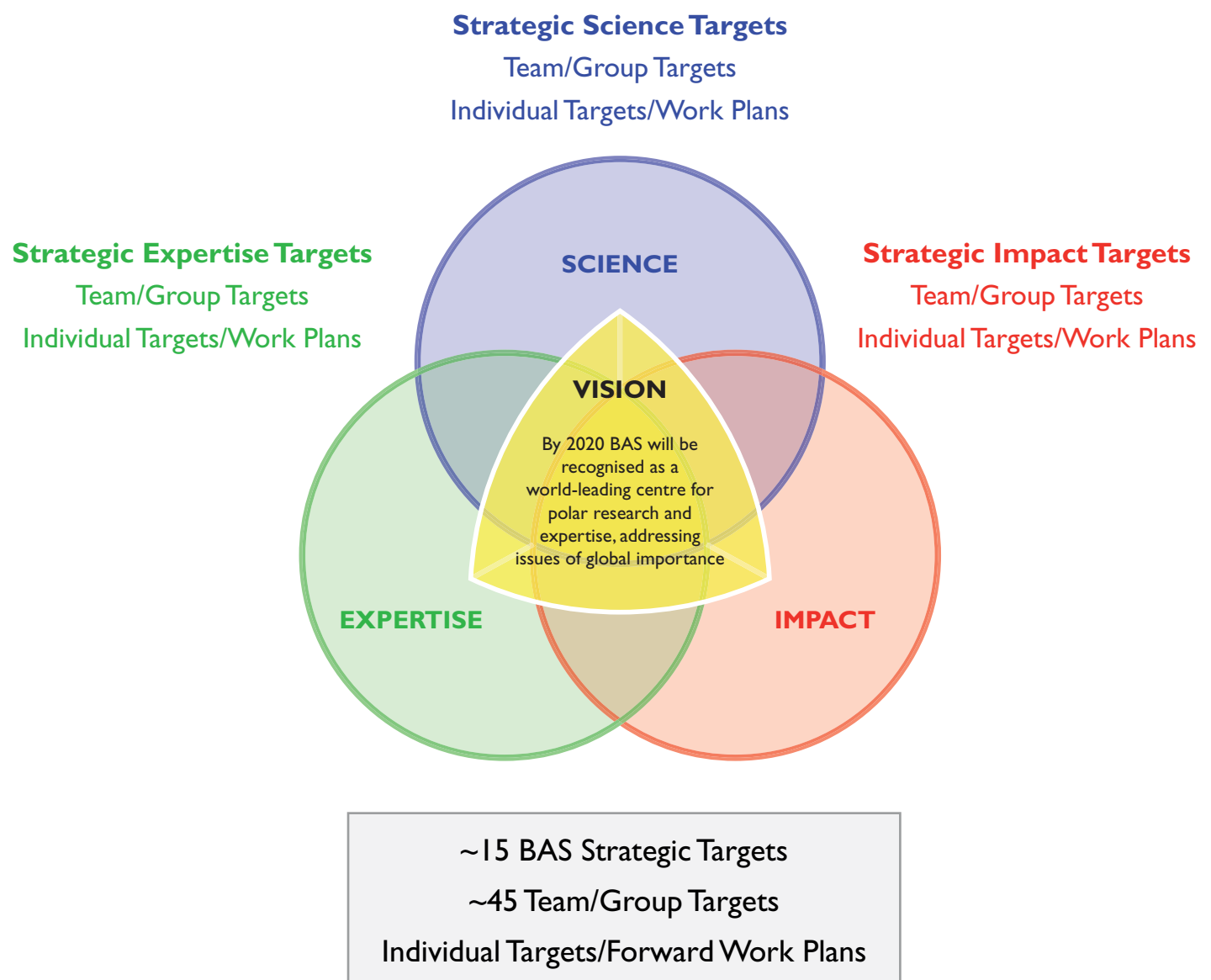
5.2 Medium-term overview. PSPE is now an established science programme producing very strong scientific output. In this medium-term time frame, BAS expects to demonstrate evidence of leadership in Arctic science and is managing on behalf of NERC the Arctic Research Programme in addition to the iSTAR programme (West Antarctic Ice Sheet). A decision will be required either to extend the RRS *Ernest Shackleton* (ES) contract (from 2014 to 2019) or to find alternative shipping support. A mid-life refit of RRS *James Clark Ross* (JCR) is also planned for summer 2013.

5.3 The longer-term (+5-10 years). BAS will continue to respond flexibly to changes in the strategic direction of NERC science and to the requirements of Her Majesty's Government (HMG) in the Antarctic and sub-Antarctic regions. The major infrastructure issues in this time frame will be the replacement of RRS *James Clark Ross* in the event of not undertaking a mid-life refit to extend the life of the vessel. This is as per the RCUK Large Science Facilities Roadmap. In this time frame, the next phases of the Rothera Research Station refurbishment should have commenced and a decision taken as to the future of Science Building One at Cambridge.

5.4 Supporting NERC's strategic actions. In addition to the wide ranging engagement with and contribution to NERC's corporate activities, BAS will:

- Proactively engage in National Capability (NC) Integration strategy development
- Contribute proactively to the development and delivery of the Theme Action Plans
- Lead and develop the NC Polar Pillar
- Continue to develop support mechanisms with NERC to meet the evolving needs of the wider UK science community wanting to work in the polar regions
- Manage the NERC Arctic Research Programme and the West Antarctic Ice Sheet Stability Programme (iSTAR)
- Develop the role of the NERC Arctic Office at BAS Cambridge
- Manage activities within NERC's Delivery Plan. These include the PSPE science programmes, and the construction of Halley VI
- Strengthen collaboration with NERC centres and surveys and with the wider NERC community in universities and HEIs
- Continue to work with NERC on commercialisation and business engagement including:
 - A commercial transaction to capture the value of the intellectual property, design and development of bird loggers
 - The expansion of PolarView satellite sea-monitoring services to the Arctic
 - Continued education of business leaders with the Cambridge Programme for Sustainability Leadership and Judge Business School
- Continue to support Science into Policy, including informing and advising senior Ministers and officials across UK Government (BIS, FCO, DEFRA, DECC, DfT and MoD)
- BAS is committed to long-term workforce planning and will incorporate NERC's people policy guidelines to provide the foundation for this critical activity

6. BAS Management Tool



Above: A schematic of the BAS Management Tool

For more information, please visit our website: www.antarctica.ac.uk

BAS ensures linkage between its strategic objectives and its operational activities through use of the BAS Management Tool (BMT). A schematic of how the tool aids the directing of the work of all employees of BAS is provided on the previous page. By linking the Vision and Mission to Strategic Aims and targets; to team targets and finally to individual work plans we aim for aligned, efficient and effective delivery of organisational objectives. The entire BMT can be found at: <http://basweb.nerc-bas.ac.uk/bmt>

The BAS Management Tool Strategic Aims, guiding activity in a one-to-three year time frame, were agreed at the BAS Board meeting of May 8th and are as follows:

SCIENCE

Science	Areas	Strategic Aims
S1	Chemistry and Past Climate	The Chemistry and Past Climate programme concentrates on the Quaternary period (the last 2.6 million years). Ice-core and other palaeorecords can be analysed for that period. Although many aspects of the Earth were similar to the present, large climate changes, as well as periods warmer than today, can be observed. BAS scientists investigate how different parts of the Earth System interacted to produce the large climate changes that occurred naturally in the past, and complement this with investigations on how changing sea-ice and ocean conditions affect the present chemistry of the polar atmosphere.
S2	Climate	The Climate programme uses observations from both polar regions to improve our understanding of how natural and human-induced factors contribute to climate change.
S3	Ecosystems	The Ecosystems programme undertakes integrated analyses of Antarctic ecosystems and develops understanding of the large-scale operation of Arctic ecosystems and the role of polar ecosystems in the Earth System.
S4	Environmental Change and Evolution	The Environmental Change and Evolution programme addresses key aspects in the polar regions of geological and ice-sheet structure, marine and terrestrial biodiversity, and natural complexity, that influence the unique role of the polar regions in environmental change and evolution.
S5	IceSheets	The IceSheets programme examines the role of ice sheets in the Earth System, and the processes that control ice-sheet change. It monitors current change and sets this in context with the past. BAS scientists produce tools to predict how ice sheets will change over time, allowing more accurate projections for increases in global sea level.
S6	Polar Oceans	The Polar Oceans programme investigates the role of processes and changes both in the shelf sea and in open-ocean environments, and will further our understanding of polar control of the Earth System.
S7	Science Strategy, Facilities and Funding	The Science Board sets the overall science strategy for British Antarctic Survey through the development of Polar Science for Planet Earth, and evaluates the excellence and impact of BAS science. Science Facilities are maintained and developed to provide effective support to the science programmes. The expertise of the science, technical and support staff is developed and utilised to generate external income both through the UK Research Councils, the EU, business and elsewhere.

EXPERTISE

Expertise	Areas	Strategic Aims
E1	People Skills & Culture	To attract, develop, motivate and retain world-class talent and to create an organisational structure and processes that are flexible, responsive and goal oriented.
E2	Operations, Logistics & Infrastructure	To optimise operations and logistics activities to ensure cost-effective support to the approved science programmes in the polar regions. To manage infrastructure effectively and efficiently to ensure optimum utilisation of facilities.
E3	Safety, Health & Environment	To protect the safety and health of our staff, and minimise our effect on the environment. To maintain BAS's influential role within the Antarctic Treaty system on all these issues.
E4	Engineering & Technology	To research, develop and provide innovative and cost-effective engineering and technology solutions for PSPE and the NERC Technology Theme and objectives.
E5	Business Sustainability	To support delivery through astute financial management, workforce planning, resource management and further development of our grant-winning capability.
E6	Knowledge	To be recognised as a world-leading centre of excellence, both externally and internally, through effective science communication and corporate communication activities. To further develop our information and knowledge management capability for the benefit of users.

7. BAS culture

BAS promotes the core expectations that NERC has defined for its staff through a culture that is:

Positive – Positive attitude, energy, realism, enjoy the work

Responsible – Safety conscious, environmentally friendly, accountable for one's actions, honourable, ethical, respectful towards one another, open and fair

Imaginative – Creative, flexible, thinking of better ways, constructively challenging, learning from experience, problem solving, entrepreneurial and outward looking

Co-operative – Open, communicative, loyal to one another, working in the best interests of BAS and science

Excellent – Professional, efficient and effective, successful and recognised, high quality, applying best practice and developing our people

These BAS cultural values are a fundamental element in the way we operate and are embedded in day-to-day business processes and reward mechanisms.

8. BAS deliverables in the 2011 Business Plan

Utilising the combination of our science, organisational responsibilities, strategic objectives, operational activities, management tools and the culture of our organisation, BAS will aim to be recognised as one of the world's leading polar research institutes through:

- Delivering and co-ordinating major polar scientific research programmes aligned with NERC's science strategy
- Providing a focus for national and international co-operation in polar science
- Providing access for scientists to the polar regions
- Exploiting research outcomes for maximum scientific impact
- Engaging with the public to enhance their understanding of and engagement in the polar regions
- Broadening the range of its funding
- Providing expert independent advice to the UK Government and other stakeholders
- Discharging part of the UK's responsibilities under the Antarctic Treaty System
- Assisting with the administration of British Antarctic Territory

9. NERC's science strategy

Next Generation Science for Planet Earth. NERC's science strategy, Next Generation Science for Planet Earth 2007-2012, introduced fundamentally different ways of working across the UK's environmental science community. The quinquennial funding of Research Centre (RC) programmes has been replaced by long-term funding for National Capability (NC), and a strategically-directed, competitive Research Programme (RP). BAS has made excellent progress in adapting to the new funding regime and has largely met its targets in the first two years of the transition. BAS has significantly increased the number of grants submitted in the last two years and made a step change in the extent of competitively-won funding. This activity needs to continue expanding to meet the further reduction of committed funding in each of the next three years.

10. Grant funding and submissions

10.1 Preparing submissions for external funding. Staff discuss emerging ideas for external funding bids with the most appropriate Science Programme Co-ordinators and Science Leaders. All external funding bids are subject to scrutiny prior to submission by a 'Gateway Panel' to ensure they are of sufficient quality and fit to the PSPE strategy. The BAS Programme Office (BPO) co-ordinates the submission of all external bids and can help substantially in their preparation (see http://basweb.nerc-bas.ac.uk/departments/programme_office for further details). BAS aims to further improve the success rate of BAS-led grant proposals, which is comparable to the best performing universities and research institutes in the UK whilst at the same time ensuring the highest possible financial return to BAS. Handling the increasing volume of grants effectively will require strict adherence to the deadlines published on the BAS Intranet.

10.2 Research Programme (RP). RPs are a key mechanism for NERC to deliver its strategic science objectives. Information concerning the approved theme action plans is available via www.nerc.ac.uk/research/themes/tap.

10.3 Responsive Mode (RM). NERC's approach to RM research is unchanged, except for the Antarctic Funding Initiative has now been fully incorporated into the NERC standard grants rounds.

11. BAS National Capability

NERC's National Capability Action Plans (NCAPs), and the move towards closer integration of NERC's NC will be developed further in 2011/12. BAS is the lead for the Polar Pillar. This successful model ensures efficient delivery of NC across the wider NERC organisation through the 'cross-pillar' strategy groups. The main BAS elements of NC are:

- A programme of long-term observations, mapping and survey, which will be adjusted as necessary in response to emerging NCAP and TAP requirements
- A programme of excellent interdependent research to maintain the long-term observations at the cutting edge
- Maintaining a body of nationally and internationally recognised scientists to provide leadership in strategic and discipline based polar science
- Maintaining the Antarctic infrastructure, providing the UK's Antarctic regional presence and developing the UK's access to Arctic infrastructure
- Maintaining our excellent Safety, Health and Environment (SHE) management systems
- A leadership role within the Antarctic Treaty System, including management of collaborative, international research projects in Antarctica
- A leading role in the Council Of Managers of National Antarctic Programmes (COMNAP)
- Hosting NERC's Arctic Office, and the management of NERC's Arctic research station at Ny Ålesund, Svalbard
- Active programmes for knowledge exchange, commercialisation, and public engagement
- Data and information management for the UK polar community
- Providing the British presence on South Georgia, funded in full by the FCO and the Government of South Georgia and the South Sandwich Islands (GSGSSI)



- Scientific leadership and advice to policy makers in UK Government, (including BIS, the FCO, DECC, DEFRA, MoD and DoT) and in the Overseas Territories (BAT, SGSSI, FI)
- Advice to UK Government on other polar issues as required
- Scientific leadership and advice to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), for sustainable fisheries in the Southern Ocean and the setting of the fishing licences that provide the GSGSSI's main income
- A vibrant and excellent research studentship programme

12. Polar Science for Planet Earth (PSPE)

12.1 PSPE addresses questions of global importance or of a fundamental nature through research that is best undertaken in the polar regions. The themes of PSPE are to unlock the past, understand the present, predict the future, and explore the unknown. The BAS Science Board provides advice on scientific priorities and requirements to deliver PSPE.

PSPE comprises six interdependent science programmes:

- **Climate**
The Climate programme uses observations from both polar regions to improve our understanding of how natural and human-induced factors contribute to climate change
- **Chemistry and Past Climate**
Investigates how different parts of the Earth System interacted to produce the large climate changes that occurred naturally in the past, and complement this with investigations on how changing sea-ice and ocean conditions affect the present chemistry of the polar atmosphere
- **Ecosystems**
The Ecosystems programme undertakes integrated analyses of Antarctic and Arctic ecosystems and develops understanding of the role of polar ecosystems in the Earth System
- **Environmental Change and Evolution**
The Environmental Change and Evolution programme addresses key aspects in the polar regions of geological and ice-sheet structure, marine and terrestrial biodiversity, and natural complexity, that influence the unique role of the polar regions in environmental change and evolution
- **IceSheets**
The IceSheets programme examines the role of ice sheets in the Earth System, and the processes that control ice-sheet change. It monitors current change and sets this in context with the past
- **Polar Oceans**
The Polar Oceans programme investigates the role of processes and changes both in the shelf sea and in open-ocean environments, and will further our understanding of polar control of the Earth System

12.2 **Science quality assurance.** BAS fully endorses the NERC Ethics Policy (www.nerc.ac.uk/publications/corporate/documents/ethics_policy_leaflet.pdf) and the RCUK Policy and Code of Conduct on the Governance of Good Research Conduct (www.rcuk.ac.uk/cmsweb/downloads/rcuk/reviews/grc/goodresearchconductcode.pdf). All staff have a responsibility to ensure that these high standards are maintained. Countersigners have oversight of specific areas of science.

13. Collaboration and partnerships

13.1 **UK collaboration.** BAS continues to strengthen its links and collaborations within the UK, across NERC, with Higher Education Institutes (HEIs) and with Government departments. The existing scientist-to-scientist collaborations within the NERC research centre community and with HEIs are an excellent foundation for the increased collaboration required by the NERC Strategy. A NC consultation exercise with the wider science community is to take place in 2011. All arrangements involving BAS resources are codified, normally in Letters or Memoranda of Understanding (see http://basweb.nerc-bas.ac.uk/departments/programme_office/agreements.html).

13.2 **International leadership.** The leadership of international partnerships is a strategic BAS priority, in line with NERC's requirement for Research Centres to provide a focus for international co-operation and the co-ordination of major programmes solving complex scientific problems. The aim is to build on BAS's world-class science reputation and leadership role for the UK in polar affairs. This includes maintaining a leading role within the Scientific Committee for Antarctic Research (SCAR), the Council of Managers of National Antarctic Programmes (COMNAP) and increasingly in Arctic affairs. BAS has strong and active working agreements with Canada, China, Germany, Malaysia, the Netherlands, Norway, South Korea, and the USA. BAS is also involved in several European polar science initiatives.

13.3 NERC Arctic Office. BAS hosts and manages the NERC Arctic Office to facilitate the development and delivery of NERC's scientific interests in the Arctic and to respond to the growing UK national requirement in this area. It initiates the co-ordination of Arctic science opportunities, and provides a source of advice for the safe execution of Arctic fieldwork. The Office is the UK point of contact for the UK-Canada Memorandum of Understanding on polar research for mutual access to Canadian facilities in the Arctic and British facilities in Antarctica. In addition BAS is developing links with Denmark and Norway for science opportunities in Greenland and the wider Arctic.

14. Research studentships within BAS

14.1 BAS maintains a vibrant community of about 40 research students. Research students are seen as vital to the maintenance of strong research groups and project teams, and thus to the achievement of key aspects of the BAS Vision and Mission.

14.2 All aspects of the admission and management of research students are included in the BAS Student Manual, which is published on the Intranet. BAS will normally agree joint studentships with any leading university department within the UK. BAS currently enjoys recognised research institute status with the University of Cambridge and is an Affiliated Research Centres of the Open University.

14.3 BAS recognises the importance to students of gaining field experience in the Antarctic. Nevertheless students can only be taken to the Antarctic if there is a strong science case, the research undertaken will enhance the project and sufficient funding has been identified to cover the costs. (<http://basweb.nerc-bas.ac.uk/information/student-information>).

15. People, culture and skills

15.1 The NERC and BAS Strategy will be delivered through having a core resource of talented and engaged people with the right skills. BAS has a People and Skills Action Plan to address the four key challenges that underpin NERC's Strategy in this area:

- Creating flexibility/adaptability in the people within our community
- Delivering training priorities to meet skills gaps in our community
- Attracting the best people for employment; developing and retaining them
- Identifying the role NERC can play in attracting young people into environmental science

15.2 Training priorities. BAS training priorities, within both the local and NERC context, are set during the Board's annual review of training and development. The review considers achievements, resources costs and priorities, and sets the direction for the forthcoming financial year. Considerations for 2011/12 include ongoing grant writing, leadership skills at all organisational levels, change facilitation and the more effective use of objectives and appraisals. BAS increased its active participation in Leadership for NERC (L4N) and the BAS Board has successfully piloted a new module on team strategic leadership.

15.3 Attracting and developing the best people. BAS actively uses its world-renowned reputation to underpin the employment philosophy that 'excellence attracts excellence'. Fundamental to ensuring we attract and retain the best people is the need to maintain BAS's national and international reputation for scientific, operational and engineering excellence. We have a culture of fairness and transparency and apart from exceptional circumstances, BAS vacancies are advertised externally. The BAS recruitment website is the main source of job applicants.

Development and training are BAS Board priorities, using processes such as Career Development Panels and a Staff Development Forum drawn from a cross section of disciplines and grades. A cornerstone to having the best people with the right skills in place is the development of tools such as workforce planning, succession planning and creating and supporting vibrant integrated research communities. BAS recently secured reaccreditation to Investors in People and is committed to retain this valuable recognition.

16. Supporting science – operations, logistics and infrastructure

16.1 The maintenance of research stations, ships, aircraft and well-found laboratories is funded in full as part of the BAS NC. The planning for field operations seeks to optimise the use of the logistic infrastructure for approved science and its support within the available capacity and funds. The Operations and Logistics Group will continue to modify the planning and co-ordination of field activity and the management of aircraft, ship and research station programmes in response to the changes introduced by NERC's Strategy and PSPE.

16.2 Project management. NERC has adopted PRINCE 2 as its project management methodology. BAS has used this approach since 2001 and continues to apply it widely. All capital acquisitions are assessed to establish those that need to be managed as formal projects.

16.3 Marine operations. BAS marine operations are complex, highly cost-effective and delivered in a professional manner. The outcomes of the 2008 NERC Ships Review have been implemented successfully. BAS and NOC continue to work together to deliver the most effective NERC-wide shipping capability and will review further opportunities during the Plan period.

16.4 Rothera Research Station. Following independent advice, a phased redevelopment programme has been established for Rothera. This is a major undertaking over a number of years, including the replacement of site services and the introduction of sustainable energy solutions. The first phase of redevelopment was completed in February 2008. Phase two will depend on when new money can be made available through NERC's Asset Management Strategy (Para 23.6 refers).

16.5 Halley Research Station. A new Halley station (Halley VI) is being built and the existing station (Halley V) demolished and removed. The project delivery strategy combines the construction and demolition phases while maintaining the innovative design for the new station. The extremely successful 2010/11 build season has significantly underpinned the planned operational start date of February 2012.

16.6 Science Facilities. The laboratories supporting science, both in Cambridge and on stations and ships, are kept under regular review. The reviews take account of demand by all science users and external developments in both technology and services. A review of micro- and molecular laboratory services will be completed early in year. This will take due account of the recently published NERC Ohmics Review (in which BAS staff participated), as well as the recent NCAG prioritisation exercise, in scoping what services need to be provided in-house and what will be provided externally. It will also produce a recommended investment plan which must take account of the very restricted scope for capital investment (section 20.2 and 20.4).



17. Support to the Foreign and Commonwealth Office (FCO) and other Government departments

17.1 BAS provides a range of support to the FCO as part of its mission to sustain for the UK an active and influential regional presence and a leadership role in Antarctic affairs. BAS experts are key members of the UK Government delegation to: Antarctic Treaty Consultative Meetings, CCAMLR, the Committee for Environmental Protection and COMNAP. BAS also helps administer British Antarctic Territory.

17.2 BAS has a responsibility to provide scientific advice to policy makers in other Government departments, such as BIS, DECC and DEFRA, MOD, DfT and Non-Departmental Public Bodies, such as the Joint Nature Conservation Committee, the UK Hydrographic Office, the Environment Agency and the Marine and Coastguard Agency. BAS is increasing its efforts to transfer polar science results into these policy fora.

17.3 **Support for South Georgia.** BAS took over the UK's presence at King Edward Point (KEP) in South Georgia from the Ministry of Defence in March 2001. The arrangements that define this commitment are set out in an MOU between BAS and the FCO and the Government of South Georgia and the South Sandwich Islands (GSGSSI). The MOU codifies the BAS-directed fisheries research programme and the operational support of the research station at South Georgia for the FCO and GSGSSI.

18. Safety, Health and Environment (SHE)

BAS implements safety, health and environment and other workplace legislation effectively and pragmatically. This includes maintaining a culture that is ethical and safety conscious.

BAS aims to be positive, open, pragmatic and effective in its approach to health and safety. BAS safety policy is firmly embedded in the NERC Safety Management System, tailored in detail to meet the special needs of the BAS operation. Accident, incident and near miss reporting allows safety performance to be improved through lessons learnt, and the BAS system is now the basis for one used by all National Antarctic Programmes. BAS is accredited to the OHSAS 18001 standard for safety management for the Cambridge site and the ships, which is audited annually by the British Standards Institute.

Safety Management and Environmental Protection are integrated into a cross BAS SHE Management Team led by the Deputy Director. Regular discussions with the trade unions combine the three elements of SHE which has proved efficient and beneficial. SHE is a mandatory item on all BAS Committee agendas.

19. Environmental management

19.1 **Environment Office.** BAS is committed to reducing the impact of our operations on the environment. Environmental issues have increasing prominence within the Antarctic Treaty System, and 'minimising our effects on the environment' is a strategic priority to achieve the BAS Vision. The BAS Environmental Office acts as the focal point for environmental activity, with appropriate research and monitoring organised jointly with the science programmes. BAS is registered to the ISO 14001 standard for environmental management for the Cambridge site and the ships, which are audited at least annually by the British Standards Institute.

19.2 **Abandoned facilities.** BAS has completed a major programme of work to remove abandoned facilities and waste dumps to satisfy Antarctic Treaty requirements. The clean up of other legacy facilities or old buildings from Antarctica and South Georgia, when bases are redeveloped, is now part of business as usual. Funding is provided centrally from NERC. Halley V will be removed once Halley VI is operational.

19.3 **Carbon Reduction Strategy.** BAS is implementing a Carbon Reduction Strategy that was agreed in June 2007 with targets to reduce emissions over a period of five years. Energy monitoring equipment is being installed at stations and a greater emphasis is being placed on the need to manage energy demand on station. Sustainable energy solutions will continue to be introduced on stations and at BAS Cambridge, as finances allow.

The BAS Board has decided to reduce carbon usage, whilst maintaining the normal BAS operations. This means:

- Reducing carbon usage by 2012 against the 2006 baseline by 20% at Cambridge and on the stations, and by 5% on the ships
- Monitoring, educating, and carbon efficient retrofits (maximising the opportunities for obtaining extra funds from external sources)

- Reinvesting in energy efficiency activities wherever possible
- An annual review of progress

19.4 Environmental improvements within NERC. BAS is fully involved with the NERC Environmental Management Group, the corporate group that is taking forward environmental initiatives.

20. Finance

20.1 Income and expenditure. This Plan marks a period of financial austerity combined with uncertainty for BAS income due to a combination of the Comprehensive Spending Review, NERC Council decisions and the ongoing transition to NERC's new funding framework for science. The high level of uncertainty has resulted in a 'light touch' Centre Activity and Resource Plan (CARP) for the coming year, with expectation of a more detailed exercise for the coming years. Planning assumes that the targets for grant income to replace the ramp-down in allocated research income will be achieved. Pay expenditure is presently frozen as per all public sector pay and budget holders have been required to reduce all noncontractual spend by 10% from 2010/11 levels.

20.2 Sustainability of the BAS programme. With the actions that have been taken, and those planned, the BAS Board judge the resource budget for this financial year to be balanced. There is however zero flexibility to accommodate unexpected events whether externally derived, such as specific inflationary pressure (viz fuel and food), or internally derived. There are many more cost pressures than in previous years and the funding constraints may require action to be taken within the financial year if events dictate.

A more immediate concern is that the lack of available capital will mean that for the coming year maintenance of all assets will be at a minimum. Given the highly demanding operating environment in which BAS works this can only result in a progressive deterioration in asset quality. The BAS Board will continue to drive towards achieving BAS's sustainability through 2011/12 with a wide range of cost-reduction activities being considered.

20.3 Managing BAS budgets. BAS budget holders are held accountable for the effective management of their financial allocations. This requires budget owners to remain at or below budget unless specific agreement to do otherwise is forthcoming. Maintaining forecasting accuracy provides confidence in the overall financial management, and helps the BAS Board to judge the appropriate level of expenditure controls during a financial year when these are needed to avoid overspending.

20.4 Capital Investment Programme. There is an ongoing need for capital investment in BAS science equipment and infrastructure and this is increasing as the assets age. For the coming financial year there is, however, no capital available for any activity except ship maintenance. A formal approval process is nevertheless maintained for all capital investment activity and options.

20.5 Large facilities replacement. The new Halley VI Research Station on the Brunt Ice Shelf is due to be completed in February 2012 and the project continues to progress well. The RCUK Roadmap of the large facilities identified by Research Councils as being of the highest strategic importance over the next 10-15 years is presently being updated. The BAS submission includes the renewal and upgrade of Rothera, and the replacement of the *James Clark Ross*. NERC's long-term Asset Management Strategy includes these projects and the replacement of BAS Cambridge Science Block One and the establishment of a polar remote observation capacity.

20.6 Pricing guidance. Special arrangements continue to apply to certain funding schemes such as EU grants, whilst others involve a judgement within the overall Treasury accounting guidelines. Advice should be sought from Finance when required.

21. Information management

21.1 The BAS Information Strategy Committee sets the strategic direction for information in BAS and provides information governance, including risk, security and compliance. It ensures that all BAS data and information assets are managed effectively and fully exploited. BAS is committed to implementing the NERC Science Information Strategy and will continue to play a key role in the implementation team. BAS will continue to improve the security and accessibility of the data in line with new NERC Data Policy, developing innovative ways to collect, transfer, curate and visualise data.

21.2 BAS will focus on how it manages its business information in 2011. A project to redevelop our Intranet will aim to make it the definitive source for accurate and useful information for BAS staff. BAS gives its full support to NERC-wide information management initiatives and expects to roll out Microsoft SharePoint for collaboration and document management through the iShare project during the year.

22. Knowledge exchange – commercialisation

Ensuring that our science and knowledge is used to contribute to economic well being and quality of life has become increasingly important. BAS is committed to NERC and wider Government objectives to use and exchange knowledge to address environmental issues. BAS achieves this by working with policy makers, business and industry and non-government organisations, and engaging with the public. BAS also plays a part in NERC's commercialisation activities, facilitating the commercial exploitation of research outputs and intellectual property. BAS has an excellent track record in this area within NERC and is presently developing commercial strategies in a number of areas (geolocators, PolarView, biopesticides, bioscanning). More generally, BAS will continue to play an active role in the NERC Knowledge Exchange Network.

23. Science and society

BAS has a well-established, and award-winning, communications programme that promotes, explains and engages people from many sectors of society (nationally and internationally) in its scientific research and operation. Effective and targeted communication is a key strand in delivering the strategic goals of PSPE. Communications, engagement and knowledge exchange objectives are aligned to Government, Research Councils UK and NERC aspirations for Science and Society. Partnership working is core to adding value, excellence and impact to the BAS communications portfolio. The continued development of the online learning resources 'Discovering Antarctica' (www.discoveringantarctica.org.uk) and 'Discovering the Arctic' (www.discoveringthearctic.org.uk), created in a partnership with the FCO Polar Regions Unit and the Royal Geographical Society, demonstrates BAS's commitment to enthusing young people in polar science.

24. Management of externally-funded projects

BAS manages a number of externally-funded activities, the main ones of which are the NERC Arctic Station, King Edward Point on South Georgia and Lake Ellsworth. In addition BAS was awarded the management of the Arctic Research Programme (ARP) and the West Antarctic Icesheet programme (ISTAR) by NERC.

A fundamental principle is that all external arrangements with a call on BAS resources are codified through a Service Level Agreement, Memorandum of Understanding or Letter of Understanding.

25. Additional mandatory requirements

25.1 International Safety Management (ISM). ISM is an international maritime safety standard that all ship operators must meet. BAS Cambridge, the *James Clark Ross* and *Ernest Shackleton* have achieved continuous accreditation since 2002. The Maritime & Coastguard Agency (MCA) audits Cambridge annually and the ships every two-



and-a-half years. These audits also cover the International Ships and Ports Security Code (ISPS). BAS is assisting the MCA and FCO with expert technical advice regarding the international discussions on the proposed Polar Shipping Code.

25.2 Aircraft regulation. BAS fully meets the requirements of Air Safety Support International (ASSI), who assumed regulatory authority for the airworthiness of BAS's aircraft in September 2006.

25.3 Antarctic permits. BAS activities in Antarctica are regulated by FCO permits under the Antarctic Act 1994. This requires the regular re-approval of BAS activities, including permission for significant changes such as major new science projects and logistical activities. All planning for science projects and programmes and their support must satisfy the permitting regulations.

25.4 South Georgia permits. The Government of South Georgia and the South Sandwich Islands (GSGSSI) has a permitting regime similar to that used for Antarctica.

25.5 Risk management. NERC has a risk management policy and a risk strategy to meet Treasury corporate governance requirements. The purpose is to ensure that organisations identify, evaluate and manage their key risks. The Board Member for Corporate Services is the BAS Risk Manager, and the risk register is on the BAS Intranet (<http://basweb.nerc-bas.ac.uk/busplan/risk-register.pdf>). All BAS Board papers include a mandatory assessment of the risk implications. BAS also inputs into the NERC risk assessment process.

25.6 Business continuity management. The BAS Incident Plan is BAS's primary Business Continuity Management (BCM) mechanism to meet NERC-wide corporate governance requirements. The plan provides a flexible response to unexpected events that are not covered by standard management practices for business interruption, such as system redundancy and the off-site back-up of data. The BAS Board reviews its BCM position annually.

25.7 Research Councils' Shared Services. Responsibility for BAS Finance and Personnel administrative transactions transferred to the RCUK Shared Service Centre (SSC) in Swindon during 2010. Formal responsibility for strategic procurement transferred to the SSC on 1 April 2008. BAS remains heavily engaged in ensuring robustness of support systems post the establishment of the SSC. Care has been taken throughout to retain within BAS the resources and expertise necessary to maintain Antarctic-specific administrative functions, such as support of the Antarctic Employment Pool and Personal Accounts.





Planning assumptions

1. BAS planning reflects NERC's recently agreed strategic aims and delivery plan.

NERC strategic goals for CSR 2010

Secure competitive advantage for the UK in the race to a global green economy, and ensure the nation is resilient to environmental crisis by:

- Delivering strategic environmental knowledge with the strongest potential for the nation
- Creating vibrant business and policy partnerships to co-design research and maximise its benefits
- Transforming the delivery of NERC science to provide the most effective and efficient support

NERC's Strategic Agenda

- Increase focus on strategic research
- Increase economic impact and societal benefit
- Attract and retain top talent for the UK
- Transform delivery of national capability
- Shift resources into front-line science

2. **Planning.** Planning is based on the defining characteristics of NERC Research Centres, which are to provide within NERC's mission and science strategy:

- Excellent scientific research, monitoring and survey not obtainable elsewhere within the UK at competitive quality, timeliness and cost

- An integrated, well-managed national capability to provide reliable and independent advice to Government and other interested organisations
- A focus for international co-operation, for technology expensive projects, and for co-ordinating distributed major programmes solving complex scientific problems

The term 'national capability' covers the development and maintenance of trained staff, enabling infrastructure, data gathering, and data curation, management and delivery.

3. **Costing principle.** Costings are based on approved requirements and levels of service. New requirements are not to be funded without appropriate prior approval. Non-pay inflation has to be absorbed except where there is unavoidable cost growth.

4. **Staff numbers.** Due to the ongoing freeze on non-front-line business-critical appointments, staffing numbers are presently under review.

5. **Science.** Costings reflect the approved Polar Science for Planet Earth programmes, long-term monitoring and survey and well-found laboratory support for delivering Polar Science for Planet Earth.

6. **Cambridge facilities.** Allowing for the freeze on capital in the coming year, maintenance (and associated expenditure) from 2012 onwards has been costed on the long-term assumption that the BAS Cambridge site will be maintained in accordance with NERC Estate Management standards, the recommendations of periodic condition surveys and in conformity with existing and anticipated safety, fire and security regulations.

Above: Scientists at Rothera Point, near Rothera Research Station, Adelaide Island, Antarctica.

i For more information, please visit our website: www.antarctica.ac.uk

7. **Halley Research Station.** Planning assumes that Halley VI will be constructed by 2012 and Halley V demolished by 2013. The Halley construction and demolition waste will be removed in the subsequent years.

8. **Other research stations (less Halley).** Support for Bird Island, King Edward Point (KEP), Rothera and Signy reflects the need for a long-term UK presence. The KEP station is governed by the MOU with the FCO and GSGSSI. Expenditure on field stations, such as Sky-Blu and Fossil Bluff is planned on a year-to-year basis. These facilities are managed by Rothera and the arrangements are monitored by the Rothera Operations Working Group.

9. **South Georgia.** GSGSSI and BAS have agreed that scientific fieldwork can be undertaken across South Georgia, not just at KEP and Bird Island.

10. **Ships.** Expenditure plans for RRS *James Clark Ross* and RRS *Ernest Shackleton* are based on maintenance in class with the respective Classification Societies (Lloyds Register and DNV). Maintenance and refit assumes an annual average of 315 operational days for each ship and no mid-life updates.

- RRS *James Clark Ross* – owned by NERC with circa 160 days/year in the Antarctic
- RRS *Ernest Shackleton* – hired from the owners, GC Rieber, until 2014 with a possible extension of up to 2019, with circa 130 days/year in the Antarctic. The owner has exercised the annual option for 2011 to charter, which provides an annual income to BAS

11. **Aircraft.** Plans for the maintenance of BAS aircraft are in accordance with the schedules laid down by Air Safety Support International (ASSI) to the standards required for a Corporate Operator's Category Certificate of Airworthiness. The operational life of the aircraft is assumed to be:

- Twin Otters until 2015, with an overall potential of 1,660 hours/year for field operations per season, reduced to 1,300 hours for 2011/12 as a cost saving measure
- DHC-7 until 2015, with an average of 450 hours/year for field operations and 19 international flights to/from Antarctica per year, reduced to 16 for 2011/12 as a cost saving measure

12. **KEP.** Funding of KEP is through an MOU with the FCO and GSGSSI and is ring-fenced. Core science money is not used to fund the project (nor vice versa). The BAS presence is assumed to be long term.

13. **Vehicles.** Expenditure plans are based on maintaining a vehicle fleet to meet the needs of the approved field programme and specific station requirements.

14. **Health and safety.** General infrastructure and project expenditure plans take into account the health and safety of BAS's staff and known and anticipated UK and EU legislation, qualified only by the practicalities of implementation in Antarctica.

15. **Environment and waste management.** Capital and recurrent expenditure plans are based on the UK's obligations under the 1991 Protocol on Environmental Protection to the Antarctic Treaty and 1994 Antarctic Act (conditions attaching to permits issued by FCO).

16. **Information and technology support.** Plans are based on the requirements of approved projects, scientific cruises, the maintenance and support of the Antarctic and ship-based networks and Cambridge computing.



Above: BAS Boating Officers on a training exercise in front of the Sheldon Glacier, Adelaide Island, Antarctica.

Income and expenditure summary

	2011/12 £000's Resource Budget	2011/12 £000's Capital Budget	2011/12 £000's TOTAL Budget
INCOME – ALLOCATION			
Resource			
National Capability	35,079	-	-
Research Programme – Transition	2,023	-	-
Research Programme – Variable Element	1,185	-	-
Capital			
Capital for ships	-	730	-
Total Allocation	-	-	39,017
OTHER INCOME			
External	2,907	-	-
Sales	80	-	-
Collaborative Funding	822	-	-
Responsive Mode	3,810	1,134	-
Research Programmes	283	-	-
Total Other Income			9,036
TOTAL FUNDS AVAILABLE	-	-	48,053
EXPENDITURE			
Science	12,506	527	13,033
Science Support	32,101	1,337	33,438
Arctic Office, Station and Programme	456	-	456
South Georgia	1,081	-	1,081
Surplus	-	-	46
TOTAL EXPENDITURE	-	-	48,053

Notes:

- Marine Gas Oil will be adjusted in line with actual costs
- Excludes Halley VI

ANTARCTIC STATIONS			
Halley VI – Construction Capital	-	2,908	-
Halley VI – Demolition Resource	1,037	-	-
TOTAL EXPENDITURE	-	-	3,945



Business Plan 2011 distribution list

BAS

Director
 Deputy Director
 Board Member for Corporate Services
 Board Member for Science Delivery
 Board Member for Science Strategy
 Board Member for Operations and Engineering
 BAS Board Non-Executives
 Individual Merit Promotees
 Science Leaders
 Head of Finance
 Head of Operations
 Head of Personnel
 Head of Logistics and Shipping
 Head of Technology and Engineering
 Head of Environment Office
 Head of MAGIC
 Safety Advisor
 Head of Cambridge Facilities
 Head of AME
 Head of AST
 Head of Building Services
 Head of ICT
 Halley VI Project Manager
 Prospect/Whitley Chair
 Library
 Archives
 Master RRS *James Clark Ross*
 Master RRS *Ernest Shackleton*
 Mrs P Sackett, Stanley Office, Falkland Islands
 Halley Research Station, Antarctica
 Rothera Research Station, Antarctica
 Bird Island Research Station, Antarctica
 Signy Research Station, Antarctica
 King Edward Point Research Station, Antarctica

BAS Intranet

http://basweb.nerc-bas.ac.uk/information/business_plan

External to BAS

Mr Graeme Reid	BIS, London
Dr Miles Parker	DEFRA
Dr Chris Sear	DECC
Wing Co. Moore	MoD
Ed Wallis	Chairman, NERC
Professor A Thorpe	Chief Executive, NERC
Dr S Wilson	Director of Strategy & Partnerships, NERC
Mr P Fox	Director of Finance & Operations, NERC
Mrs J Timberlake	Director of People Skills and Communication, NERC
Dr P Newton	Director of Science Delivery, NERC
Ms Judy Parker	Communications Business Manager, NERC
Mr J Bates	Head of People & Skills, NERC
Mr Steve Allsopp	Head of Corporate Personnel, NERC
Mr Ned Garnett	Science and Innovation Manager for polar science, NERC
Dr Gina Adams	NERC, Acting Head of International Affairs, NERC
Mr T Rachwal	Chair of NCAG
Professor D Wingham	Chair of SISB
Mr R Harris	Director of RCIAS, Swindon
Mr N Yates	RCIAS, Swindon
Ms Jane Rumble	Foreign & Commonwealth Office, London
Mr Rob Bowman	Foreign & Commonwealth Office, London
Mr M Collins	GSGSSI
Dr Anne Hicks	BASMU, Plymouth

BAS Images and Maps

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www.photo.antarctica.ac.uk

The British Antarctic Survey also has a selection of maps available to purchase at:

www.stanfords.co.uk

Feedback and further information

We welcome your feedback and comments on this document. These should be addressed to:

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For further information about BAS, please visit our website:

www.antarctica.ac.uk

BAS offices and research stations

NERC Ny Ålesund Research Station

BAS Cambridge

BAS Stanley Office

Fossil Bluff Field Station

Sky-Blu Field Station

Bird Island Research Station

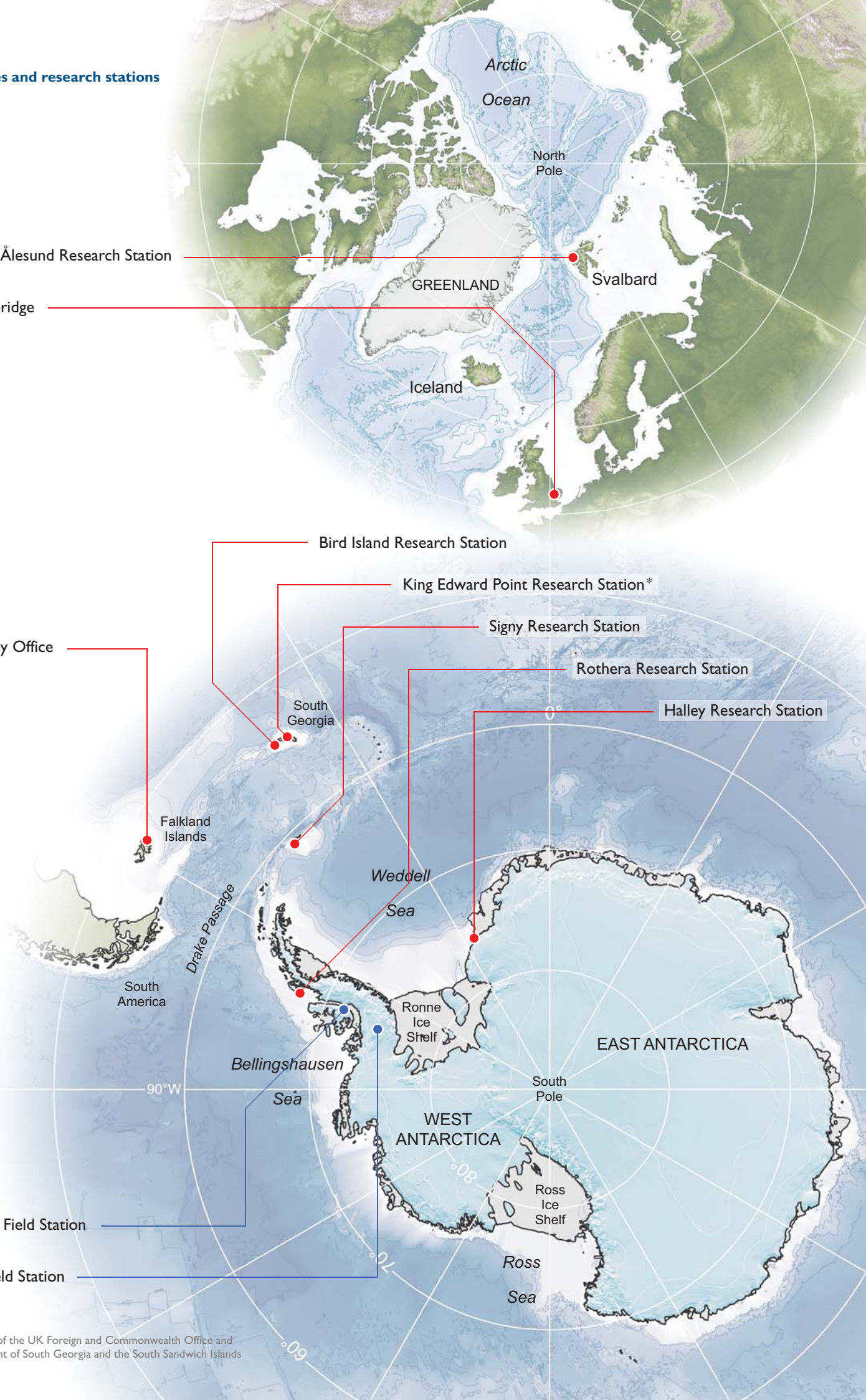
King Edward Point Research Station*

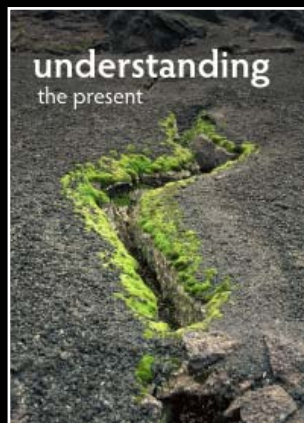
Signy Research Station

Rothera Research Station

Halley Research Station

* Run on behalf of the UK Foreign and Commonwealth Office and the Government of South Georgia and the South Sandwich Islands





British Antarctic Survey (BAS), a component of the Natural Environment Research Council, delivers world-leading, interdisciplinary research in the polar regions. Its skilled science and support staff based in Cambridge, Antarctica and the Arctic, work together to deliver research that underpins a productive economy and contributes to a sustainable world. Its numerous national and international collaborations, leadership role in Antarctic affairs and excellent infrastructure help ensure that the UK maintains a world-leading position. BAS has over 450 staff and operates five research stations in and around Antarctica and one in the Arctic. BAS has two Royal Research Ships and five aircraft supporting its activities in the polar regions.

www.antarctica.ac.uk



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