British Antarctic Survey

Delivering world-leading science

British Antarctic Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

POLAR SCIENCE FOR PLANET EARTH

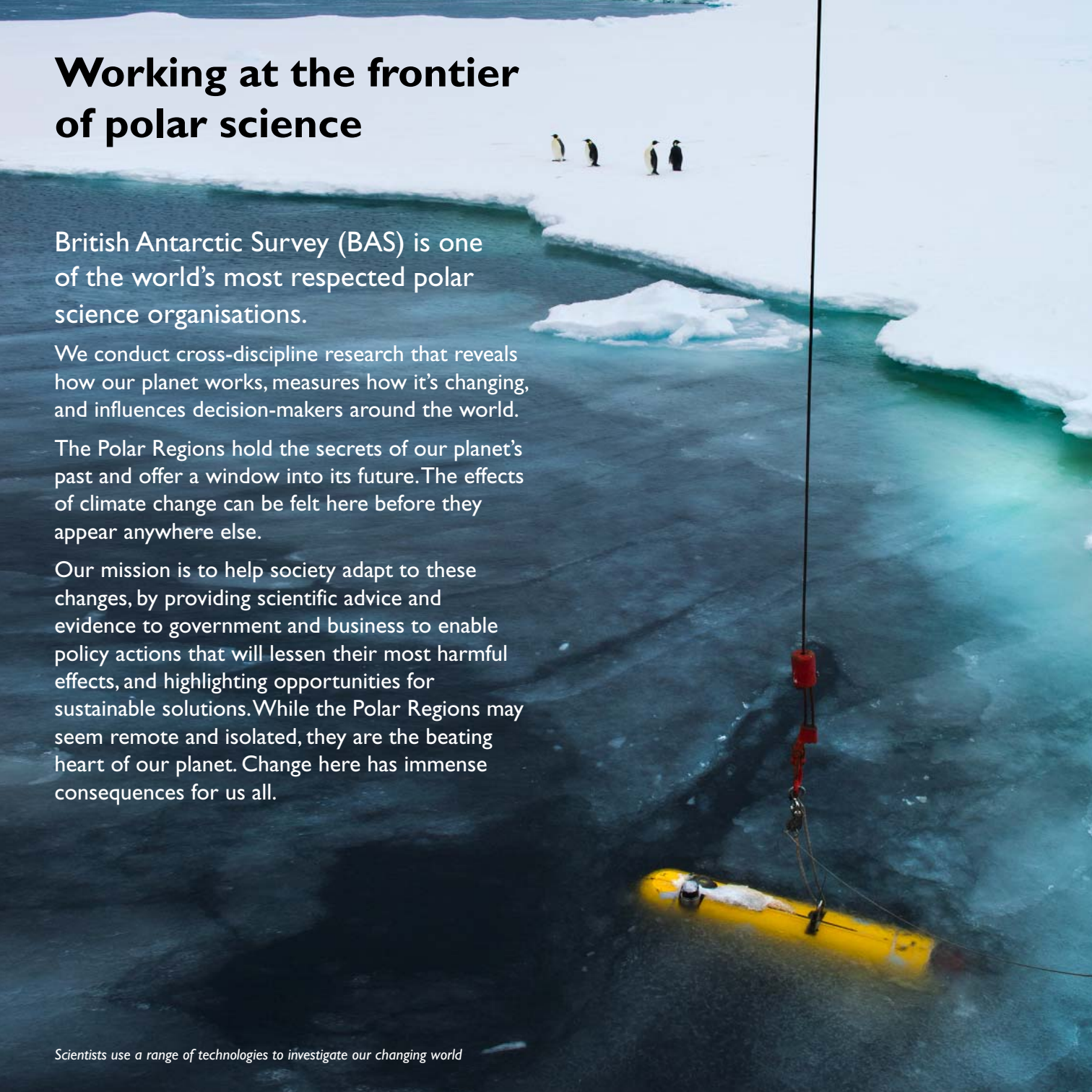
Working at the frontier of polar science

British Antarctic Survey (BAS) is one of the world's most respected polar science organisations.

We conduct cross-discipline research that reveals how our planet works, measures how it's changing, and influences decision-makers around the world.

The Polar Regions hold the secrets of our planet's past and offer a window into its future. The effects of climate change can be felt here before they appear anywhere else.

Our mission is to help society adapt to these changes, by providing scientific advice and evidence to government and business to enable policy actions that will lessen their most harmful effects, and highlighting opportunities for sustainable solutions. While the Polar Regions may seem remote and isolated, they are the beating heart of our planet. Change here has immense consequences for us all.



Scientists use a range of technologies to investigate our changing world

An extraordinary community: our people

BAS aspires to deliver science of the highest standard, which can only be done with the help of the brightest minds from across multiple scientific disciplines.

Our scientists are grouped into teams that work together under an ethos of openness, collaboration and creativity. This multidisciplinary approach is one of our defining strengths, removing barriers and allowing us to tackle problems from every angle.

Our operational support teams use their skills and expertise to ensure our research teams can work safely in some of the world's most extreme environments.

We are committed to explaining the importance and relevance of our research to everyday lives. Our communications experts work in partnership with scientists and operational teams to make sure our findings reach international audiences. An experienced leadership team ensures we stay tightly focused on issues of global importance.

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Crossing boundaries: our science

The Polar Regions are complex networks of inter-related systems and habitats, which cannot be properly understood through the lens of a single scientific discipline.

Obtaining meaningful knowledge about these enigmatic environments requires a multifaceted approach. BAS employs scientists from across the entire spectrum of natural sciences.

Our geophysicists work closely alongside chemists, who themselves collaborate with oceanographers. Meteorologists share laboratories with geologists, palaeontologists and marine biologists.

This unique multidisciplinary culture enables us to extract more scientific value from our research and to piece together a much more complete picture of polar science than would otherwise be possible.

The unique location of BAS research stations allows scientists from all disciplines to interact and operate in collaboration

Polar Science for Planet Earth: our approach

Research at BAS is diverse and ambitious, often involving partnership working with like-minded organisations from around the world.

To guide our work, we have identified four grand challenges for polar science that we hope to address:

1. Understanding the causes and impacts of global change
2. Understanding how polar processes impact the global system
3. Developing resilience to natural hazards and managing natural resources
4. Exploring the frontiers of knowledge

Tackling these challenges requires a broad mix of scientific methods. Using the most advanced available technology we collect data from ground, sea, air and even space, for analysis both in the field and back at our Cambridge headquarters.

All of this data are made available to the wider scientific community and the public, so that as many people as possible can benefit from our privileged access to some of the planet's most inhospitable regions.

Ice core analysis provides data on past climate; just one element of BAS science that helps inform government policy and international reporting such as the IPCC

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Designed for extreme environments: our facilities

Science at BAS is enabled by a robust infrastructure of research stations, laboratories, offices, ships and aircraft.

In total we operate six research stations: one in the Arctic and five in Antarctica. A rolling programme of modernisation ensures they each contain everything UK scientists need to live and carry out their work, while using minimal energy and having the smallest possible impact on their surrounding environments.

Our headquarters in Cambridge are equipped with unique facilities and capabilities that are available to the UK science community. These include laboratories, a polar aquarium and the UK's only facility for ice-core analysis. This specialised centre can process ice cores up to 1,000m in length, unlocking secrets that have remained hidden in the ice for hundreds of thousands of years.

Polar operations are supported by five specially adapted aircraft and two Royal Research Ships. These ships will soon be replaced by the £200m RRS *Sir David Attenborough*, which will be one of the world's most advanced research vessels when she enters service.

RRS Sir David Attenborough is set to transform our ability to deliver frontier science (Image: Rolls-Royce)

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Looking ahead: the future for BAS

The arrival of our new ship and extensive modernisation of our research stations represent the biggest UK investment in polar science infrastructure for a generation.

Commissioned by the Natural Environment Research Council (NERC), these state-of-the-art facilities will transform our ability to deliver impactful, relevant research and support our drive to become the partner of choice for polar science projects worldwide.

We will continue to build bridges between science and wider society, through our outreach and education programmes and through our close ties with business, the media and government. We strive to make sure discoveries we make translate to tangible action at an international level.

The UK's polar research stations and a world-leading science programme will empower us to fulfill our duty as custodians of these most vulnerable parts of our planet, ensuring people can continue to study and benefit from the Polar Regions for years to come.

Our national capability

We deliver a portfolio of 'National Capability Science' activities that provide the backbone for UK polar science. Our programmes of sustained observation focus on crucial Earth System indicators in Antarctica.

These are vital to the UK and global scientific effort to understand our changing world. Capabilities (instruments, facilities and expertise), unique to BAS, are available to the UK science community to ensure Britain's success in the field of polar science.

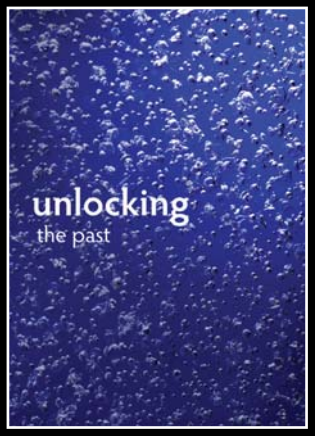
Working together

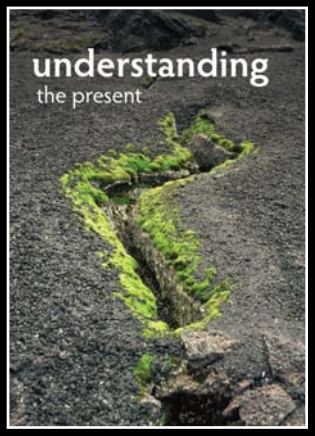
British Antarctic Survey is the UK centre for research in the Polar Regions.

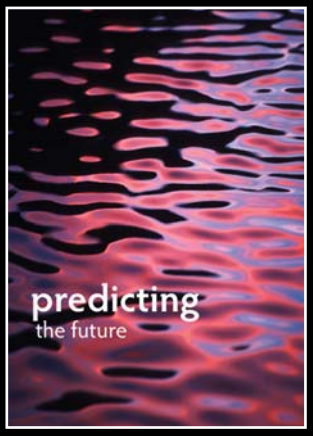
Access to Antarctic and Arctic infrastructure is coordinated and managed by BAS. Our aim is to attract research collaboration partners from leading national and international organisations.

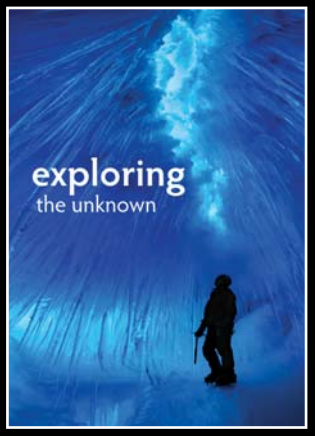
To talk to us about working together with our multidisciplinary research teams, and how the UK's polar research facilities can support your research ambitions, email *partnerships@bas.ac.uk*.

Find out more about British Antarctic Survey at *www.bas.ac.uk*.









British Antarctic Survey (BAS), an institute of the Natural Environment Research Council (NERC), delivers and enables 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 uses the Polar Regions to advance our understanding of Earth as a sustainable planet. Through its extensive logistic capability and know-how BAS facilitates access for the British and international science community to the UK polar research operation. Numerous national and international collaborations, combined with an excellent infrastructure help sustain a world-leading position for the UK in Antarctic affairs.

NERC is part of UK Research and Innovation www.ukri.org

www.bas.ac.uk

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