

## **UK Government Evidence**

### **Environmental Audit Sub-Committee on Polar Regions Inquiry**

#### **The UK and the Antarctic Environment**

The Government welcomes the Environmental Audit Sub-Committee on Polar Research's inquiry into 'The UK and the Antarctic Environment'.

The UK has long-standing and enduring interests in Antarctica, stemming from Britain's history of Antarctic exploration and scientific study, our sovereignty of the British Antarctic Territory, and our commitment to the Antarctic Treaty.

#### **The UK and the Antarctic Treaty**

The UK was one of the twelve original signatories to the Antarctic Treaty. Signed in 1959, the Treaty sought to protect the continent for peaceful purposes and enshrined the freedom of scientific investigation. The UK is committed to the Antarctic Treaty as a framework for the security and effective management of Antarctica.

The Treaty protects the UK's sovereign interests in Antarctica and ensures ongoing peace and security on the continent, including through the prohibition of military activity. While the Treaty itself set out an overarching framework for Antarctic governance, it was the later instruments under the Antarctic Treaty system which established the detailed measures for the conservation of Antarctica and the regulation of human activities in the continent.

The Convention for the Conservation of Antarctic Seals (CCAS) came into force in 1978, pre-empting a potential, although never realised, resumption of commercial sealing in Antarctica. The Convention for the Conservation of Antarctic Marine Living Resources (the CAMLR Convention) came into force in 1982, primarily to regulate fishing in the Southern Ocean. The Parties then agreed a Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA) in 1988, but this never came into force after global pressure mounted against mineral resource activity in Antarctica. This trio of resource management focused agreements were then followed in 1991 by the signing of the Protocol on Environmental Protection to the Antarctic Treaty. This 'Environmental Protocol' establishes Antarctica as a natural reserve dedicated to peace and science and crucially prohibits any activity relating to mineral resources, other than for scientific research.

The UK attends the annual meetings of the Antarctic Treaty Consultative Meeting (ATCM) (the host rotates through the Parties) and the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) (always in Hobart).

UK delegations are led by the Foreign, Commonwealth & Development Office (FCDO), with scientific input provided by the British Antarctic Survey (BAS) and the Centre for Environment, Fisheries and Aquaculture Science (Cefas – only for CCAMLR). WWF provides environmental advice and UK fishing (CCAMLR) and tourism (ATCM) industry experts also advise the UK delegations.

### *The CAMLR Convention*

The objective of the CAMLR Convention is conservation, which includes fishing, where this can be undertaken sustainably. It practises an ecosystem-based management of fisheries (i.e. it assesses the whole food chain in setting limits for sustainable harvesting) in the Southern Ocean. The main fisheries in the CAMLR Convention area are for krill, toothfish and icefish.

The UK's most significant contributions to the conservation of the Southern Ocean through CCAMLR, were outlined in the recent publication *CCAMLR: 40 Years of the Convention*<sup>1</sup> published in January 2023.

The designation in 2009 of the first CCAMLR Marine Protected Area (MPA) on the South Orkney Islands southern shelf was underpinned by British science, and the UK strongly supported the designation of the Ross Sea Region MPA in 2016. The UK is a co-proponent of the MPA proposals for East Antarctica and the Weddell Sea, and supports the development of an MPA around the Antarctic Peninsula. UK monitoring of the retreating ice around the Antarctic Peninsula led CCAMLR to agree, in 2017, to set aside newly-exposed marine areas for scientific study.

The UK is playing a leading role in CCAMLR in the development of a new management framework for the Antarctic krill fishery, which would ensure catch limits are sustainable and that fishing is effectively spatially distributed, to minimise impacts on the wider ecosystem. This is vitally important, as the krill fishery is expanding, and is concentrated in particular areas, posing a potential threat to krill-dependent predators.

The UK continues to push for a greater focus within CCAMLR on the impacts of climate change on the Southern Ocean, and for more precautionary decision making within CCAMLR in light of these impacts and uncertainty regarding future trends. This led to the adoption of a climate change resolution within CCAMLR in 2009, further updated in 2022, which urges Members to consider climate change implications in the decision-making processes.

Other significant UK contributions to CCAMLR include: leading the development of seabird by-catch mitigation measures and being the first Member to use video monitoring of fishing gear in regions where vulnerable seabirds may interact with fishery longlines; and being the first Member to ensure its fishing vessels are fitted with filters to capture particulate plastics preventing discharge into the ocean.

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<sup>1</sup> [https://www.ccamlr.org/en/system/files/CCAMLR-40th-Anniversary-Book\\_6.pdf](https://www.ccamlr.org/en/system/files/CCAMLR-40th-Anniversary-Book_6.pdf)

The UK Overseas Territory of South Georgia and the South Sandwich Islands (SGSSI) lies within the area covered by the CAMLR Convention. The SGSSI MPA is one of the world's largest MPAs. The MPA was established by the Government of SGSSI in 2012, and further enhancements were made to the MPA in 2013 and 2019. The MPA is separate to the CAMLR Convention; it implements all relevant CCAMLR measures as well as stronger environmental protection measures.

### *Environmental Protocol*

The Environmental Protocol provides a framework for the comprehensive protection of the Antarctic Environment and ensures that all activities in Antarctica (except for activities separately regulated under the CAMLR Convention) are pre-planned and conducted, in so far as is practicable, with minimum environmental impacts.

The Environmental Protocol also establishes the Committee for Environmental Protection (CEP), which advises the ATCM on the state of the Antarctic environment and whether additional protections are needed.

Through the CEP the UK has led work to address the impacts of climate change, to tackle the spread of non-native species and to create visitor site guidelines for some of the most popular Antarctic tourist sites. The UK has been the proponent for the creation of fifteen Antarctic Specially Protected Areas, and thirty-two Historic Sites and Monuments.

Current UK priorities for the ongoing protection of the Antarctic environment are largely focussed on mitigating impacts of climate change, including to mitigate anticipated loss of biodiversity and increased spread of non-native species. The UK has been leading calls for enhanced protection for Emperor Penguins, which are especially vulnerable to climate change impacts. The spread of pollution, including plastic and microplastic pollution, is a topic of ongoing importance within the Antarctic Treaty system. In 2019 the UK secured agreement from the ATCM for a Resolution (Resolution 5 (2019)) to reduce plastic pollution in Antarctica and the Southern Ocean.

### **Antarctica and the UK**

In 2024 it will be the 80<sup>th</sup> anniversary of the creation of the role of Antarctic expert within the UK's Foreign Office – a role which continues today as the Head of Polar Regions Department (PRD) within FCDO. PRD holds the UK's policy lead on all matters relating to Antarctica, reporting to the FCDO's Minister with responsibility for the Polar Regions, including representing the UK at the annual meetings within the Antarctic Treaty system. PRD consults with other policy leads across Government, including in the Ministry of Defence, Department for Transport, Department for Environment, Food and Rural Affairs, and Department for Science, Innovation and Technology, as appropriate.

### *UK Rights and Obligations under the Antarctic Treaty*

Under Article VII of the Antarctic Treaty all Parties have the right to undertake inspections of all areas of Antarctica, including all stations, installations and equipment, and all ships and aircraft at points of discharging or embarking cargo or

personnel in Antarctica. This right of inspection is to promote the objectives and ensure the observance of the provisions of the Antarctic Treaty. The UK undertakes to regularly exercise this right, and has completed inspections (usually in collaboration with other Parties) in 1963/64, 1988/89, 1992/93, 1998/99, 2004/05, 2005/06, 2012/13 and 2014/15.

UK inspections are usually facilitated by HMS Protector, the UK's current Ice Patrol Ship. HMS Protector undertakes an annual Antarctic Patrol during the austral summer, with tasking directed by FCDO in support of carrying out the UK's rights and obligations under the Antarctic Treaty. While varying season by season, HMS Protector regularly undertakes tasks in support of BAS and UK Antarctic Heritage Trust (who undertake management of UK heritage in Antarctica on behalf of the UK, including sites designated as Historic Sites and Monuments under the Antarctic Treaty system). FCDO regularly tasks HMS Protector to undertake informal inspections of other nations' scientific research stations, and the ship often supports tasks as part of the UK's scientific contribution to the work of the Antarctic Treaty, such as facilitating reviews of Visitor Site Guidelines and ASPA Management Plans.

The Governments of SGSSI and the Falkland Islands, as well as HMS Protector, undertake inspections of fishing vessels, and provide inspection reports to CCAMLR. The UK also designates British scientific observers on foreign fishing vessels, under CCAMLR, and provides reports and data.

## **Management of British Activities in Antarctica**

### *Tourism*

The popularity of Antarctic tourism is increasing (over 100,000 people visited the continent during the 2022/23 season), and there is a growing desire for ever broader ranges of experiences.

The Antarctic Treaty System has a range of mechanisms for effectively managing tourism. Through the Environmental Protocol and a number of Measures and Resolutions, obligations are placed on tourist operators, including to minimise their potential environmental impact. The designation of protected areas and sites can restrict activities, including tourist activities, from sites that have been identified as particularly environmentally sensitive. Visitor Site Guidelines manage tourist visits at some of the most popular tourist sites, and Revised General Guidelines for Visitors to the Antarctic set out general behaviours that should be observed to minimise environmental disturbance.

Most tourism operators are members of the International Association of Antarctica Tour Operators (IAATO), which advocates for safe and environmentally responsible tourism. The UK recommends that visitors to Antarctica travel with an IAATO member. Nevertheless, recent growth and diversification of tourism activities suggests that IAATO's self-regulatory approach needs to be underpinned with stronger international regulation. The UK has been one of the leaders in developing future Antarctic tourism policies and management measures, including co-chairing the 2019 Antarctic Tourism Workshop in Rotterdam to discuss and develop recommendations on tourism management, and advocating for a new regulatory

framework for the ongoing effective management of future Antarctic tourism, negotiations on which are due to commence at the 2024 ATCM.

The UK continues to advocate for a precautionary approach, taking action to manage tourism to prevent environmental damage. We continue to work within the Antarctic Treaty system towards an effective system for monitoring the impacts of tourism to inform management decisions.

### *UK Permitting Process*

The requirements of the Environmental Protocol have been translated into UK domestic legislation through the Antarctic Act 1994 (as amended in 2013) and the Antarctic Regulations 1995 (as amended). The Regulations are amended regularly to incorporate new requirements for environmental protection as agreed by Antarctic Treaty Consultative Parties.

This legislation established the requirement, amongst others, for people on a British expedition to seek authorisation from the Secretary of State to enter and undertake certain activities in Antarctica, through a permitting process operated by the FCDO. The Antarctic Act also creates offences for those in contravention of the requirements. The UK's permitting process ensures that the UK can regulate activities in Antarctica to be compliant with requirements agreed through the Antarctic Treaty. The process also provides the opportunity for the regulation of British activities in Antarctica to ensure the highest safety and environmental protection standards are maintained.

Any person on a British expedition must apply for a permit from the FCDO before travelling to Antarctica, and specialist permits are required for activities that would potentially harm Antarctic flora and fauna, involve mineral resource activities, or require access to Antarctic Specially Protected Areas or Historic Sites and Monuments.

Permit applications are assessed to ensure that expeditions, vessels and aircraft are suitably prepared to operate safely in the harsh and demanding Antarctic environment. Applicants must ensure that appropriate plans are in place for search and rescue and medical evacuation, including through adequate insurance (a requirement of ATCM Measure 4 (2004)).

Assessing and mitigating the environmental impact of proposed activities in Antarctica is an important element of the UK's permit application process. All applicants must complete an initial environmental impact assessment to determine the degree of impact of the planned activity on the Antarctic environment, and propose measures to mitigate identified impacts. In cases where the proposed activity may have a more severe environmental impact, a further comprehensive and detailed environmental impact assessment is required (either an Initial Environmental Evaluation (IEE) or a Comprehensive Environmental Evaluation (CEE)). The FCDO reviews the environmental impact assessments prepared by applicants and seeks specialist advice from experts in BAS as needed. Permit holders are required to submit a Post Visit Report following the conclusion of their

activity or expedition, which includes an assessment of compliance with permit conditions.

As permitted under Section 16 of the Antarctic Act, the Secretary of State has delegated authority to the Director of BAS for the issuing of specialist permits for scientific activities.

### *Fishing*

Operators of British registered vessels seeking to obtain access to CCAMLR fisheries must obtain authorisation from the FCDO, to ensure that they would meet all relevant Conservation Measures and the rigorous environmental, safety and management standards required by the UK.

## **Antarctic Climate Change and Science**

### *Climate change*

The Antarctic environment is experiencing significant climate-driven change.

FCDO recently commissioned a paper to review extreme environmental events in Antarctica<sup>2</sup>, which identified that there is increasing evidence that fossil-fuel burning and consequential global heating of 1.1°C to date has led to the increased occurrence and severity of extreme environmental events in Antarctica. Observed extreme events include the most extreme ‘heatwave’ ever recorded globally in March 2022, record lowest annual minimum sea ice extents in 2022 and 2023, and the catastrophic collapse of ice shelves on the Antarctic Peninsula.

Changes in Antarctica also have global importance. The continent plays an integral role in the earth’s heat balance. The Antarctic ice sheet reflects a large amount of solar radiation away from the earth’s surface, but as there is a decrease in ice cover, more incoming solar radiation is absorbed by the earth’s surface, causing an unequal heat balance with links to global warming. Melting Antarctic sea ice also causes a greater amount of heat to be absorbed into the ocean, causing even faster melting, and affecting the way warm and cold water moves around the globe, with potential impact on the Atlantic Meridional Overturning Circulation (AMOC), which plays an important role in the climate of north-west Europe.

Rising sea temperatures also have implications for carbon storage. The physical storage of dissolved carbon in Southern Ocean waters represents an important contribution to global carbon budgets, and these cold waters can store carbon at higher levels than in warmer seas.

The melting Antarctic ice sheet has significant implications for global sea-level rise. Mean sea level around the UK has risen by about 12-16cm since 1900 and is projected to rise further (by 45-78cm in London by 2100) with increases in flooding and erosion<sup>3</sup>. Some of this will be driven by the contributions of ice loss from Antarctic glaciers and ice sheets.

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<sup>2</sup> Siegert et al. 2023, Antarctic Extreme Events - <https://www.frontiersin.org/articles/10.3389/fenvs.2023.1229283/full>

<sup>3</sup> Horsburgh, K., Rennie, A. and Palmer, M. (2020) Impacts of climate change on sea-level rise

The Marine Climate Change Impacts Partnership (MCCIP), the primary independent source of marine climate change impacts evidence and adaptation advice in the UK, provides updates on observed and potential future climate impacts to support adaptation to these changes. The UK's Flood and Coastal Erosion Risk Management Policy Statement sets an ambition to create a nation more resilient to future flood and coastal erosion risk.

Within the Antarctic Treaty system the UK continues to advocate for action to mitigate the impacts of climate change in Antarctica, including contributing to the agreement of the Helsinki Declaration on Climate Change and Antarctica<sup>4</sup> at the most recent ATCM.

### *UK Antarctic Science*

The UK has a long history of scientific study in Antarctica, with the first over-wintering bases established during the Second World War (2024 will mark eighty years of uninterrupted British presence in what is now the British Antarctic Territory). Today BAS is the UK's National Antarctic Programme, delivering world-leading interdisciplinary research in the Polar Regions.

BAS's new Science Strategy 2023-2033 *Polar Science for a Sustainable Planet* sets out an ambitious programme to tackle the most pressing regional and global issues, with a strong focus on responding to and mitigating the impacts of climate change.

BAS's programmes of long-term observation focus on crucial Earth System indicators in Antarctica, and are vital to the UK and global scientific effort to understand our changing world. BAS' unique collection of infrastructure, instruments, facilities, and expertise are available to the whole UK science community positioning the UK as a global leader in the field of polar science.

The importance of national research capability infrastructure in both the Antarctic and Arctic regions has been further underpinned by an investment of £670 million by UK government, securing next generation polar science over the next 25 years.

The UK also has a wide community of Antarctic researchers, with international participation coordinated by the UK National Committee on Antarctic Research. The UK Arctic and Antarctic Partnership is a community-led initiative aimed at bringing together researchers across the full range of disciplines who are interested in the Polar Regions, and the UK Polar Network is the UK branch of the Association of Early Career Scientists (APECS) which organises career development events.

The UK's strong Antarctic science output (the UK has been ranked second only to the USA in the number of peer-reviewed research publications on Antarctica<sup>5</sup>) informs our approach to the Antarctic Treaty system, with UK scientists and science

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relevant to the coastal and marine environment around the UK. *MICCIP Science Review 2020*, 116-131

<sup>4</sup> [https://um.fi/current-affairs/-/asset\\_publisher/gc654PySnjTX/content/helsinki-declaration-on-climate-change-and-the-antarctic](https://um.fi/current-affairs/-/asset_publisher/gc654PySnjTX/content/helsinki-declaration-on-climate-change-and-the-antarctic)

<sup>5</sup> Andrew D. Gray & Kevin A. Hughes (2016) Demonstration of "substantial research activity" to acquire consultative status under the Antarctic Treaty, *Polar Research*, 35:1

a strong component of UK engagement. The UK is committed to maintaining its leading role in Antarctic science. As set out in the 2021 Integrated Review of Security, Defence, Development and Foreign Policy the UK is committed to maintaining our leadership in the study of the global implications of climate change in Antarctica, and has been investing in Antarctic scientific stations and capabilities.

### *Blue Belt*

The UK Government's Blue Belt Programme was launched in 2016 to assist the UK's Overseas Territories to enhance marine protection and sustainable management. The Blue Belt of marine protection now covers more than 4.3 million square kilometres of marine environment. The Blue Belt Programme has provided funding to support the regular review process for the SGSSI MPA ahead of the 2018 and 2023 MPA review, including two large scale scientific surveys to data-poor areas around the South Sandwich Islands. The Programme has also supported scientific analysis in the development of the new CCAMLR krill fishery management framework, focused initially on the vulnerable Antarctic Peninsula. The Programme conducts satellite surveillance in the waters around SGSSI and the British Antarctic Territory to guard against the threat of IUU (illegal, unregulated or unreported) fishing.

### **Future UK Priorities**

The UK remains committed to the Antarctic Treaty system and works actively to strengthen it to ensure the preservation of the continent for science and peaceful cooperation, believing that an effectively functioning system is the best way to achieve this objective.

The UK believes that the governance of the Antarctic would be strengthened by more nations becoming signatories to the Treaty, the Environmental Protocol and the CAMLR Convention, and we take steps to encourage other nations to accede to these agreements.

While the Antarctic Treaty system remains largely effective, recent years have seen emerging challenges in securing consensus agreement for additional measures to protect the Antarctic environment. Examples include Russia and China's resistance of further MPA designations around Antarctica (CCAMLR), and China's blocking of consensus to afford additional protection to Emperor Penguins (ATCM). At a time when environmental protection and taking action to mitigate the impacts of climate change is more important than ever, the UK is reflecting on how it can best work with other Treaty Parties to ensure that the Treaty continues to achieve its core objectives.

The UK works collaboratively and in partnership with many Antarctic nations in the pursuit of Antarctic objectives. Understanding and protecting Antarctica is an inherently shared endeavour, and we have made a number of joint statements and concluded memoranda of understanding on mutual cooperation and science collaboration with other nations to achieve common objectives. As we look forward, we will give consideration to new partnerships and engagement that could support effective progress within the Antarctic Treaty system.



While the UK participates and contributes actively to work across the Antarctic Treaty agenda, particular priorities for the coming years include advocating for a greater focus on tackling the impacts of climate change, and strengthening regulations on Antarctic tourism and marine protection.

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