

The Antarctic Treaty



**British
Antarctic Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



Antarctica is the largest and most pristine wilderness on Earth, and an unrivalled natural laboratory for scientific research. The continent has been protected for 50 years by a unique international agreement – the Antarctic Treaty.

Introduction

The origins of the Antarctic Treaty can be traced back to the late 1950s, and the International Geophysical Year (IGY) of 1957-58. Scientific research in Antarctica was a major focus for the IGY and the continent became the centre for a global scientific effort involving some 67 countries. The IGY was a tremendous success, as not only did it produce highly important scientific results, but it showed that nations could co-operate and work together peacefully in Antarctica.

The USA proposed that the twelve nations involved in the IGY – Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, UK, USA, and the USSR (now the Russian Federation) – should meet to discuss how international co-operation and freedom of science in Antarctica could be continued. After a year of closed discussions, the 12 nations signed the Antarctic Treaty on 1st December 1959, which came into force on 23rd June 1961.

The major provisions of the Antarctic Treaty are:

- Antarctica is only to be used for peaceful purposes, although military personnel may be involved in logistical support
- There is freedom of scientific investigation and co-operation
- Scientific information, data and personnel can be freely exchanged
- Territorial claims are 'frozen' and new ones cannot be made

Image: Mountain tops stick up above the surrounding ice on Adelaide Island, Antarctic Peninsula.

- Nuclear explosions and radioactive waste disposal are banned
- All stations and equipment are open to inspection by any Treaty nation at any time
- The Treaty covers all areas south of latitude 60° south

The Antarctic Treaty remains in force indefinitely and is recognised as one of the most successful of all international agreements. Since 1959, the number of countries which have signed the Treaty has risen from the original 12 to a total of 49 in 2011.

As well as the original Treaty, the Treaty nations have agreed a series of other measures to conserve wildlife living on and around Antarctica, such as the conservation of seals and management of fishing activity. Agreements are also in place to protect the environment, including a prohibition of all minerals-related activity (except for science). Together, the Treaty and its associated agreements are known as the Antarctic Treaty System.



Competing claims

Prior to the Antarctic Treaty, the Antarctic continent was the subject of escalating disputes over sovereignty. Seven nations have formal claims to territories in Antarctica – the UK, Chile, Argentina, France, Australia, Norway and New Zealand. The USA and the Russian Federation have reserved their right to submit similar claims. The claims are based on discovery, geographical proximity and occupation of a particular area. The UK claim – British Antarctic Territory – includes the whole of the Antarctic Peninsula in a wedge extending from the South Pole to 60°S between longitudes 20°W and 80°W. To a very large extent the areas claimed by Chile and Argentina overlap British Antarctic Territory. The Antarctic Treaty effectively puts all territorial claims on hold, and member nations cannot make any new claims while the Treaty is in force. There is a large section of West Antarctica that is not claimed by any nation.

Image: Flags of the 49 nations signed up to the Antarctic Treaty, with the original 12 signatories on the inner circle.

The operation of the Antarctic Treaty System

Because of the special nature of the Antarctic Treaty, no one nation governs Antarctica. Instead, the Treaty nations work together to discuss the affairs of the continent and seek to work in friendly co-operation.

Each year, representatives from the Treaty nations meet to discuss relevant issues and any pressing concerns, which can range from environmental protection to scientific collaboration, and from tourism to the safety of operations. At each of these annual Antarctic Treaty Consultative Meetings (ATCMs) all decisions are taken by consensus. The meetings are rotated between the Treaty nations. The UK has hosted the meeting twice, once in London in 1977 and then in Edinburgh in 2006. The administration of the Treaty and the organisation of the annual meetings are managed by the Antarctic Treaty Secretariat, which is based in Buenos Aires in Argentina.

Twenty-eight of the Treaty nations are known as Consultative Parties, because of their substantial scientific research activity in Antarctica, and they have voting rights at each ATCM. These nations maintain over 40 permanent, year-round scientific research stations on the continent and surrounding islands, with more operating in the Antarctic summer.

The Treaty ensures that science is the main activity and the highest priority for every country operating in Antarctica. The Scientific Committee on Antarctic Research (SCAR) works to make sure that nations co-ordinate their research programmes so everyone benefits. New signatory nations to the Treaty are expected to have established scientific research programmes, and to have become members of SCAR before they can be accepted as Consultative Parties.



Image: British Antarctic Survey krill biologist Jon Watkins, speaking at the 29th Antarctic Treaty Consultative Meeting in Edinburgh in 2006.



Scientific collaboration

Multinational and multidisciplinary research projects are common in Antarctica.

This is partly because the Antarctic Treaty requires that countries freely exchange scientific data and personnel, but also because the conduct of world-class science is often difficult and expensive and involves complex logistical support.

The British Antarctic Survey (BAS) is a world leader in Antarctic science and currently undertakes research projects with more than 40 UK universities and has over 120 national and international collaborations. BAS scientists have developed strong ties with research groups in Europe, the USA and Australia.

International Polar Year (IPY) 2007-08, the largest co-ordinated international scientific effort since the International Geophysical Year (IGY) 1957-58, encompassed more than 200 Arctic and Antarctic projects and harnessed the skills of 50,000 people – including scientists, students and support staff – from 63 nations. Some 65 UK institutions – including 40 universities, research council institutes, government departments, museums and science centres – were involved in around 120 IPY projects.

❶ Who lives in Antarctica?

Most people who live and work in Antarctica are scientists, together with the various support personnel required to maintain the scientific research projects and stations. These include engineers, doctors, pilots and chefs. The only permanent structures of any size in Antarctica are scientific research stations (both current and past – many of which are designated as historic monuments). There are currently around 10,000 people based on stations in the Antarctic in summer, falling to about 1,000 in winter. The largest UK facility is Rothera Research Station, on Adelaide Island, which currently has a complement of up to 120 in summer and 21 in winter.

Image: An international, geological field camp near the Shackleton Range in Coats Land, Antarctica.

Protecting the seas

The Southern Ocean, which surrounds Antarctica, covers 10% of the world's ocean surface, and contains some of the richest stocks of marine living resources on Earth.

Unlike the Antarctic continent, the Southern Ocean has suffered significant human impacts over the past 300 years. In the early 18th century, large-scale sealing activities brought the Antarctic fur seal and the southern elephant seal to the brink of extinction.

Sealing was soon followed by commercial whaling. Starting in the late 18th century, whales were hunted for oil and baleen. In the early 20th century, with the development of faster steam-ships and explosive harpoons, whaling in the Southern Ocean entered an era of major industrialisation, during which time hundreds of thousands of whales were killed. Commercial whaling ships operated up until the late 1960s when the industry became uneconomic.

In more recent years, there has been commercial fishing for finfish, squid and krill (a shrimp-like organism eaten by whales, birds and seals). The original Antarctic Treaty does not include provisions to manage fishing activity in the Southern Ocean. However, during the late 1970s there were increasing concerns about the possible collapse of krill and fish populations through overexploitation. This was a major issue for the Treaty nations given the importance of krill to the Southern Ocean ecosystem.

As a result, a new Antarctic Treaty agreement was negotiated – the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). The Convention was signed on 20th May 1980 and entered into force on 7th April 1982.



Image: An abandoned whaling ship in Husvik, South Georgia.

The Convention applies to the waters south of the Antarctic Convergence (or Polar Front), where cold Antarctic waters meet warmer waters to the north. The Antarctic Convergence acts as an effective biological barrier; meaning the Southern Ocean is therefore substantially a closed ecosystem.

The aim of the Convention is to conserve the marine life of the Southern Ocean. Achieving this is far from simple – it requires the collection of large quantities of information and the development of appropriate scientific and analytical techniques. CCAMLR utilises two key approaches, which are:

- The ecosystem-based management approach – this requires that fishing, and other use of marine living resources, does not affect the ecological relationships between harvested, dependent and related populations
- The precautionary principle – where measures are implemented to minimise risk associated with unsustainable practices in conditions of uncertainty

To manage sustainability of the Southern Ocean's marine living resources, measures adopted by CCAMLR are based on scientific data and advice. These measures require enforcement to be effective.

The UK plays a leading role in CCAMLR – work done by UK scientists, including those from BAS, provides important data and information to policy-makers so they can make informed decisions.



i Saving the albatross

BAS research on Bird Island, South Georgia, has highlighted the serious impact of long-line fishing on albatrosses. Long-lining uses hundreds of baited hooks, and albatrosses and other seabirds can get caught in the lines and drowned. UK scientific observers onboard fishing vessels working around South Georgia determined the best ways to reduce seabird mortality. These practices, such as the use of streamers, weighted hooks and the prohibition of offal dumping, have been extremely effective and have been adopted by the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). This work has contributed to a huge reduction in seabird mortality in certain areas.

Image: A biologist recovers a long-line hook from a wandering albatross nest on Bird Island, South Georgia.



Protecting the continent

Antarctica is a stunningly beautiful natural wilderness, largely undisturbed by man. The continent is also an unparalleled natural laboratory for science of global relevance, including research into major environmental problems such as climate change. However, if we allow Antarctica to become polluted or significantly disturbed then we risk damaging its wildlife, marine and plant life as well as destroying its scientific value.

The Treaty agreement that protects the Antarctic environment is called the Protocol on Environmental Protection. The Protocol was signed on 4th October 1991 and came into force on 14th January 1998. It establishes strict rules regulating the environmental impact of human activities in Antarctica.

The major provisions of the Environmental Protocol are:

- Antarctica is designated as a 'natural reserve devoted to peace and science'
- All mineral activities are prohibited, except for scientific research
- All activities must undergo prior Environmental Assessment before going ahead, and must be conducted so as to limit adverse environmental impacts

Attached to the Environmental Protocol are a series of six Annexes, which set out detailed regulations for Environmental Impact Assessment, conservation of flora and fauna, waste management and disposal, prevention of marine pollution, area protection and management, and liability arising from environmental emergencies.

The Environmental Protocol (including its first five Annexes) has been enacted into UK law through the Antarctic Act (1994). This sets up a permitting system for all British activities being undertaken in Antarctica, including research by UK scientists, tourist companies and private expeditions. Permits are administered and granted by the UK Foreign and Commonwealth Office (FCO).

Minimising the impact

The British Antarctic Survey carries out a programme of world-class science with the minimum of environmental impact, ensuring all of its activities comply with the Environmental Protocol. Environmental protection is a key strategic priority for BAS – stations and ships are operated to the highest environmental standards.

BAS removes all hazardous waste and general rubbish from its research stations and ships for proper and safe disposal or recycling outside of Antarctica. New buildings and major science projects undergo thorough Environmental Impact Assessments before they can go ahead. All stations and ships have oil spill contingency plans, and response exercises regularly take place. A major programme for the clean-up and removal of unused and abandoned bases and waste dumps has been completed.



1 Environmental Impact Assessment for Halley Research Station

It is a requirement of the Environmental Protocol that the construction of new research facilities must undergo a rigorous Environmental Impact Assessment. The final Comprehensive Environmental Evaluation (CEE) report for the construction of British Antarctic Survey's new Halley VI Research Station on the Brunt Ice Shelf, and the demolition and removal of Halley V has been acknowledged by the Antarctic Treaty nations as one of the best of its kind and serves as a model for similar projects by other nations.

Image: Checking waste being removed onboard RRS Ernest Shackleton before it leaves Antarctica for processing and recycling.

Tourism

With its glorious scenery, unique wildlife and fascinating history of exploration and discovery, it is little surprise that Antarctica is becoming an increasingly popular tourist destination. However, tourist operators are aware that they need to take extra care not to damage the special environment that they bring people to see.

Small-scale commercial tourism began in Antarctica in the 1950s, with commercial operators providing ships for intrepid travellers. The first specially-designed, ice-strengthened cruise ship visited the continent in 1969. Since then the industry has grown considerably with numbers increasing from under 9,000 in 1992-93 to over 33,000 in 2010-11.



i Preserving the past

Some of the major tourist attractions of Antarctica are the bases built during the 'heroic age' of exploration. Among the most iconic and famous are Captain Robert Scott's huts, built in 1902 at Hut Point and in 1911 at Cape Evans, both on Ross Island. Inside, the shelves are still lined with provisions and stores, and socks and clothing hang from the bunks – as if the explorers had just departed. Even though only a few hundred visitors pass through the huts every year, their body heat is sufficient to raise the temperature above freezing, causing the preserved artefacts to decay. Strict limits have been put in place on the number of people visiting the huts, who must now be accompanied by a trained guide.

Image: Tourists come ashore at the historic British base at Port Lockroy in the Antarctic Peninsula.

Most tourists still visit Antarctica onboard cruise ships but others take overflights from Australia or South America, or even sail by yacht or fly in to a blue-ice runway to climb mountains or ski. The greatest number travel to the Antarctic Peninsula to see the spectacular wildlife, scenery and research stations. Most tour operators are members of the International Association of Antarctic Tour Operators (IAATO), which seeks to ensure that tourism in Antarctica is conducted in a safe and environmentally-friendly way.

The ATCM has adopted guidelines for some of the most frequently visited sites in the Antarctic. These are intended to ensure that wildlife and vegetation are not disturbed, protected areas and research programmes are respected, and activities are conducted with a high regard to safety.



Conclusion

The Antarctic Treaty is recognised as one of the most successful international agreements ever. It has enabled peaceful co-operation and freedom of scientific research in Antarctica for over 50 years. The science carried out has contributed significantly to our knowledge of the Earth and is vital in helping to safeguard the future of the global environment. It has also protected an entire continent as a natural reserve devoted to peace and science.

❶ Global pollution

The greatest environmental impacts on Antarctica have been caused not by local activities, but by global pollution. For example, lead from petrol and man-made pesticides originating thousands of kilometres away have been transported to Antarctica by atmospheric circulation and ocean currents and been found in Antarctic ice cores and in penguin eggs.

The ozone hole, discovered in 1985 by British Antarctic Survey scientists, which forms annually above Antarctica is caused by pollution. It is created by man-made gases – CFCs and Halons – that have been released into the atmosphere. Although production of CFCs has been phased out under the international Montreal Protocol, agreed in 1989, the gases will remain in the atmosphere for decades.

Image: Icebergs off the coast of the Antarctic Peninsula.



British Antarctic Survey (BAS), a component of the Natural Environment Research Council, 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.

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