



OUTCOME 2—ANTARCTICA

Antarctica

The Department of the Environment and Heritage is advancing Australia's interests in Antarctica by carrying out Antarctic and Southern Ocean programmes, participating in international forums, and conducting scientific research.

Main responsibilities for this outcome

Output 2.1: Antarctic policy

- Influence the Antarctic Treaty System
- Protect the Antarctic and Southern Ocean environment
- Negotiate international whaling matters
- Administer the Australian Antarctic Territory and the Territory of Heard Island and MacDonal Islands

Output 2.2: Antarctic science

- Carry out research in Antarctica and the Southern Ocean
- Provide data to Australian and international institutions and support them to undertake research

Australian
Antarctic Division



Objectives

- Maintain the Antarctic Treaty System, to enhance Australia's influence in it and enhance international protection for whales and seabirds
- Protect the environment of Antarctica, the Southern Ocean and the Territory of Heard Island and McDonald Islands including its marine living resources
- Improve understanding of Antarctica's role in the global climate system
- Support practical and significant Antarctic scientific research

Results 2005–06

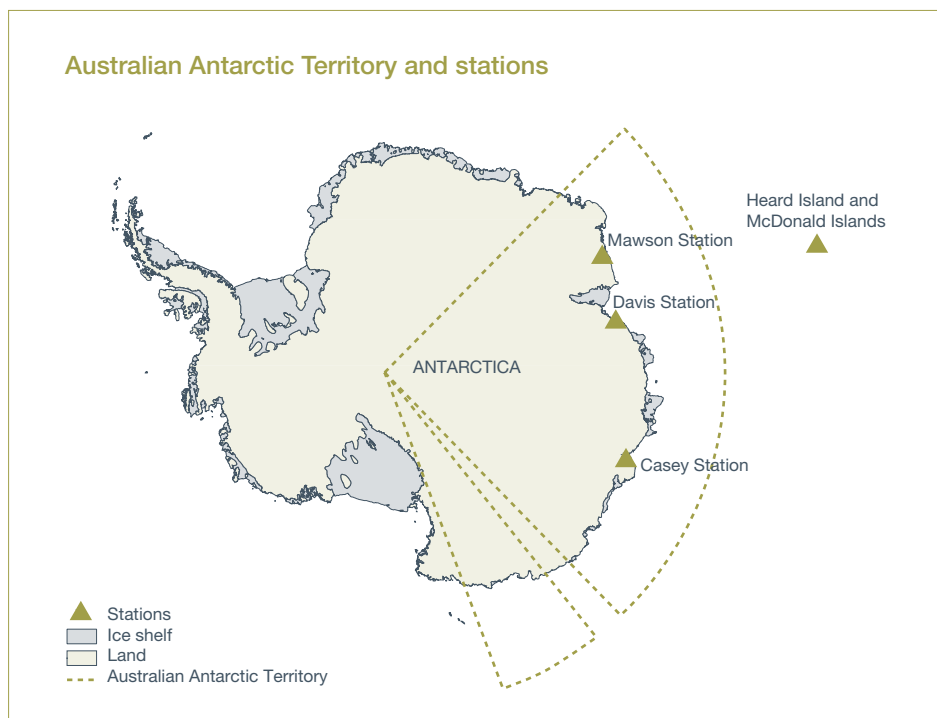
- Australia continued efforts to pursue a permanent global ban on commercial whaling and worldwide protection for whales at the 58th annual International Whaling Commission meeting. Australia helped to defeat pro-whaling countries' proposals to remove consideration of small cetaceans from the agenda, to introduce a mechanism for secret ballots, to increase commercial 'coastal' whaling, and to abolish the Southern Ocean Whale Sanctuary.
- At the meeting the Australian delegation also successfully defended Australia's resolution, put at last year's meeting, to condemn 'scientific whaling'. Australia's defence was supported by the Australian Antarctic Division's scientific contributions to developing non-lethal research methods, and highlights the flaws in 'scientific' whaling.
- Results from research conducted under Australia's five-year Antarctic research programme (Antarctic Science Strategy 2004–2009) are helping scientists to better understand the Southern Ocean ecosystem and the effects upon it of a changing climate. Extensive populations of krill, an important food source for whales, seals and seabirds, were encountered throughout the south-west Indian Ocean sector during a major multidisciplinary survey.
- Australia's new blue-ice runway in Antarctica is on track for the first regular intercontinental flights in 2007. The airlink between Hobart and Antarctica will make research more efficient by enabling scientists to spend less time travelling by ship and more time conducting research.
- The Australian Antarctic Division established a new set of quarantine principles to protect Antarctica and the subantarctic islands from the threat of introduced alien species of plants and animals and from disease.



Antarctic policy

The department's Australian Antarctic Division advances Australia's policy interests in Antarctica by supporting and participating in the Antarctic Treaty system, including taking an active role in forums of the Antarctic Treaty Consultative Meeting, the Committee for Environmental Protection, the Commission for the Conservation of Antarctic Marine Living Resources (fishing and ecosystem management), the International Whaling Commission, and the Agreement on Albatrosses and Petrels (seabird conservation).

The division administers the Australian Antarctic Territory, which covers 42 per cent of Antarctica, as well as the Territory of Heard Island and McDonald Islands.



Antarctic Treaty System

The Australian Government considers that support for the Antarctic Treaty system is the best way to advance Australia's Antarctic policy interests. The Antarctic Treaty system has grown into a wide-ranging regime for managing Antarctica, with a particular emphasis on environmental protection. It also provides for scientific and logistic cooperation. Since 1961, 45 countries have become parties to the treaty.

In 2005–06 the department's Australian Antarctic Division continued to represent Australia's interests at Antarctic Treaty meetings. The most significant forums are the Antarctic Treaty Consultative Meeting, the annual meeting of the Committee for Environmental Protection and meetings under the Convention for the Conservation of Antarctic Marine Living Resources.

The Committee for Environmental Protection is responsible for developing the regulatory framework established by the Protocol on Environmental Protection. The director of the Australian Antarctic Division was chair of the committee from 2002 until June 2006.

Improvements to tourism management

While Antarctic tourism is a relatively small component of the industry worldwide, the number and diversity of operations is increasing and each year more people visit Antarctica. Tourist numbers have doubled over the past decade and the Australian Government is concerned about possible environmental impacts.

In February 2006, the division participated in an inspection of popular tourist sites in the Antarctic Peninsula. This follows from the June 2005 Stockholm Antarctic Treaty meetings where it was agreed to continue work on the Australian Antarctic Division's previous proposals for accrediting tour operators. Since those meetings, the division's draft proposal for improving the management of Antarctic tourism was endorsed at an international meeting of Antarctic tourism operators.

At its annual meeting held in Edinburgh in June 2006, the Committee for Environmental Protection endorsed new guidelines protecting sites in Antarctica that are subject to tourism. The guidelines were adopted at the 29th Antarctic Treaty Consultative Meeting also held in Edinburgh from 8–19 June 2006.

The Committee for Environmental Protection also endorsed the Australian Antarctic Division management plans for the Clark Peninsula and Hawker Island, which provide for the management of two environmentally sensitive areas within Antarctica.

Protecting the Antarctic environment

The Antarctic Treaty's Protocol on Environmental Protection requires Australia and other signatories to minimise the environmental impacts of activities in Antarctica. The Australian Antarctic Division implements Australia's environment protection programmes and legislation in Antarctica.

Environment protection laws

The Australian Government is scrupulous in minimising the environmental impacts of Antarctic operations, including cumulative impacts. This includes assessing possible impacts under the *Antarctic Treaty (Environment Protection) Act 1980* and the *Environment Protection and Biodiversity Conservation Act 1999*.

Australia has quarantine procedures in place to protect Antarctica and the subantarctic islands from introduced species. The Australian Antarctic Division seeks to develop and promulgate these procedures through the Antarctic Treaty system. Australia presented a working paper on quarantine to the 2005 meeting of the Committee for Environmental Protection and for the 2006 meeting the Australian Antarctic Division prepared several working and information papers, including a management plan to complete a suite of protected areas covering the three breeding colonies of endangered southern giant petrels in the Australian Antarctic Territory.



The Australian Antarctic Division continues to be active in the Committee on Environmental Protection Steering Group on 'CEP Futures', which is intended to set the processes and focus of the committee's work for the next 15 years.

Antarctic Approvals Online project

Each year the Australian Antarctic Division receives about 160 research applications from scientists and another 30 or so applications to conduct other activities, such as tourism, in Antarctica. The Australian Government has a range of laws and processes to protect the Antarctic environment and people working in Antarctica.

The Australian Antarctic Division has invested \$500 000 in the Antarctic Approvals Online project. This website has streamlined the applications process, saving time and costs for applicants as well as the division.

Cape Denison site and Mawson's huts

Cape Denison site and Mawson's huts: Australia's most significant Antarctic heritage site, Cape Denison, contains the national heritage listed Mawson's huts. Mawson's huts rank alongside those of Scott, Amundsen and Shackleton as icons of the 'heroic age' of Antarctic exploration.

The Australian Antarctic Division manages the Mawson's huts site. In May 2006 the Australian Government provided a grant of \$320 000 to the Mawson's Huts Foundation for conservation work at Cape Denison. This work will be carried out in the summer of 2006–07. The Australian Antarctic Division will continue to work closely with the Mawson's Huts Foundation to manage this important conservation work and raise awareness of the site.

Environmental management system

The Australian Antarctic Division's environmental management system provides a transparent way to identify and manage the environmentally significant aspects of Antarctic activities. The Australian Antarctic Division was the first national operator among Antarctic Treaty parties to have its environmental management system certified to the international ISO 14001 standard.

Renewable energy at Mawson

The Australian Antarctic Division has installed two wind turbines at Mawson station. In suitable wind conditions the turbines contribute approximately 90 per cent of the station's energy needs, so that fuel use in 2005–06 was approximately 30 per cent less than 2002 levels. The next stage in this project is to install equipment to use excess wind energy to generate hydrogen. This is planned for the 2006–07 Antarctic summer.



Clean-up operations

The Australian Antarctic Division has embarked upon an extensive clean-up campaign to remove 30-year-old waste from disused tip sites at Australia's Antarctic stations, and to remediate the effects of fuel spills that have occurred. Approximately 1 000 tonnes of excavated material remains in a banded stockpile at Thala Valley near Casey station, pending final disposal.

Research on the effects of the waste site on the marine environment has been undertaken, and ongoing research and monitoring will evaluate the remediation work. The results of this research will be shared with Australia's Antarctic Treaty partners in a major clean-up workshop to be held in Hobart in 2007.

The Australian Antarctic Division began planning for the removal of the old Davis station, which was abandoned in the mid-1990s. The old station is now structurally unsound, contains asbestos cement sheeting, has unstable foundations and is releasing lead-based paint, insulation and other materials into the environment. Approvals for the work were received under the *Antarctic Treaty (Environment Protection) Act 1980* and *Environment Protection and Biodiversity Conservation Act 1999*.

Protecting the Southern Ocean

The Southern Ocean has abundant wildlife but fishing and whaling are pressure points. Since 2002 the Australian Government has pushed for improvements to fisheries management in the Southern Ocean under the Convention on the Conservation of Antarctic Marine Living Resources.

Under the convention the 24-member international Commission for the Conservation of Antarctic Marine Living Resources (often referred to as CCAMLR) is responsible for fisheries in much of the Southern Ocean. Australia is a founding member of the commission. The director of the Australian Antarctic Division leads Australian delegations to the commission, which meets annually.

In recent years highly organised illegal, unregulated and unreported fishing for Patagonian toothfish in the Southern Ocean has heavily depleted several stocks. Most fishers use longlines and make no attempt to avoid seabird bycatch. Such fishing is killing tens of thousands of albatrosses and petrels each year, and has brought some seabird populations to the brink of extinction.

The Australian Antarctic Division works with other departments and agencies to develop Australia's response to illegal, unregulated and unreported fishing and provides support to the Australian Government's armed patrols in the Southern Ocean. Partly as a result of the division's efforts, Australia has a strong record of action against illegal fishing in the Southern Ocean, particularly in Australian waters off the Territory of Heard Island and McDonald Islands.



Monitoring fishing

The Australian Antarctic Division continued to play a key role in actions aimed at combating illegal, unregulated and unreported fishing, and is working with other government departments in developing and implementing the Australian Government's position. While illegal fishing within subantarctic regions of Australia's Economic Exclusion Zone has reduced dramatically, the threat from illegal, unregulated and unreported fishing remains and continues unchecked on the adjacent high seas, seriously threatening conservation goals.

Ecosystem-based management

The Australian Antarctic Division is active in research on the ecosystem approach to management adopted by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). In 2005–06 this involved further development of the CCAMLR Ecosystem Monitoring System, developing ecosystem models and surveying krill in the south-west Indian Ocean so that precautionary catch limits can be set by CCAMLR.

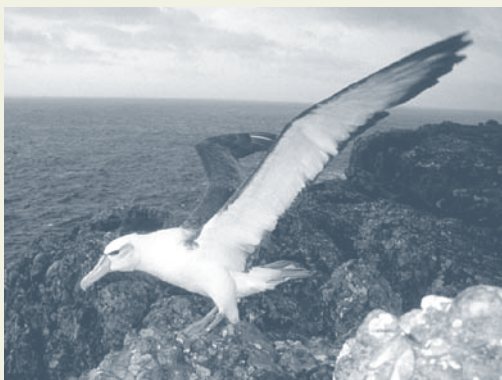


Conservation of albatrosses

Albatrosses are one of the most threatened seabird groups in the world—a total of 21 out of 24 species of albatross are considered threatened under the World Conservation Union criteria. The Tasmanian Shy Albatross is listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*.

The biggest threat facing albatross and other seabird populations is the interaction with fishing operations, particularly longline fishing.

The department is helping to conserve albatross and other seabirds by leading Australia's participation in the Agreement on the Conservation of Albatrosses and Petrels, and supporting projects to reduce the impacts of longline fishing.



A Tasmanian shy albatross in flight.
Photo: Mike Double

A threat abatement plan is in place under the *Environment Protection and Biodiversity Conservation Act 1999* for incidental catch of seabirds during longline fishing.

Albatrosses and petrels

The Australian Antarctic Division leads Australian participation in the Agreement on the Conservation of Albatrosses and Petrels. The agreement, which was developed under the auspices of the Convention on the Conservation of Migratory Species of Wild Animals, came into force on 1 February 2004.

Under the agreement Australia supports projects to reduce the impacts of longline fishing, and to tackle emergency situations where a particular species of albatross or petrel is in rapid decline. Australia also supports the control and eradication of non-native species threatening breeding colonies.

The Australian Antarctic Division has continued to lead the negotiations on headquarters for the Agreement on the Conservation of Albatrosses and Petrels secretariat. This is a key step toward establishing a permanent secretariat to support the agreement. The Australian Antarctic Division currently supports the interim secretariat. The division led discussions with the parties to the agreement at the June 2006 meeting of the advisory committee, in the lead up to the meeting of the parties in November 2006.

Heard Island and McDonald Islands Marine Reserve

The Australian Antarctic Division manages the Heard Island and McDonald Islands Marine Reserve on behalf of the Director of National Parks. Management results for 2005–06 are reported in the annual report of the Director of National Parks (see www.deh.gov.au/parks/publications).

International whaling negotiations

The International Whaling Commission has maintained a moratorium on commercial whaling for nearly two decades. Australia opposes all commercial and scientific whaling. Australia supports the needs of some subsistence cultures for continued access to whaling and whale products to meet demonstrated traditional, cultural and dietary needs.

It is Australian Government policy to work through the International Whaling Commission to achieve a permanent international ban on commercial whaling, and worldwide protection for all cetaceans.

The Australian Antarctic Division was responsible during 2005–06 for carrying out the government's whale protection policy through relevant international forums, including the International Whaling Commission.

Moves to resume commercial whaling

The International Whaling Commission held its 58th annual meeting in Basseterre, St Kitts and Nevis from 16–20 June 2006. The Australian delegation argued against moves to reintroduce commercial whaling.



Australia worked with like-minded parties to monitor the moratorium on commercial whaling, maintain existing International Whaling Commission whale sanctuaries and to ensure conservation of small cetaceans, such as dolphins, would continue to be discussed by the International Whaling Commission.

Antarctic science

A core component of advancing Australia's Antarctic interests is to carry out scientific research in Antarctica and the Southern Ocean. The Australian Antarctic Division undertakes research and provides data on physical, biological and human sciences. This research contributes to Australia's knowledge of global climate, Southern Ocean ecosystems, adaptation by plants and animals to global change, meteorology, and the impact of human activities in Antarctica.



Antarctica's influence on climate

Antarctica influences the global climate because of its low temperatures, circumpolar ocean and immense size. Antarctica's vast ice sheets affect the flow of heat in the oceans and atmosphere, the shape of the southern ozone hole, and how much carbon dioxide the oceans absorb.

Climate change is beginning to cause large-scale changes to Antarctica's ice sheets, including the collapse of the Larsen B ice shelf in 2002. These changes could affect major ocean currents and food webs.



An iceberg off Antarctica. Photo: Alison McMorrow

The Australian Government has a five-year research plan called the Antarctic Science Strategy 2004–05 to 2008–09. One of the four priorities is adding to knowledge about Antarctica's influence on the climate. The Australian Antarctic Division works closely with the Antarctic Climate and Ecosystem Cooperative Research Centre and the Australian

Greenhouse Office to carry out this research. The division also works closely with the CSIRO Marine and Atmosphere Division's Wealth from Oceans Flagship programme.

Latest research on the Southern Ocean

The Australian Antarctic Division's chartered research ship *Aurora Australis* carried out a 10-week research voyage between January and March 2006.

The Baseline Research on Oceanography, Krill and the Environment—or BROKE-West—voyage was led by the Australian Antarctic Division and the Antarctic Climate and Ecosystem Cooperative Research Centre and covered more than 1.5 million square kilometres of the Southern Ocean off Australia's Antarctic Territory.

During the survey researchers found extensive krill populations—the main food source for whales, seals and seabirds. The distribution and abundance of krill is being matched to that of krill predators, and to other elements of the ecosystem that are food for krill. This study is one of the most comprehensive marine ecosystem analyses ever undertaken.

While most sectors of the survey area confirm earlier findings of cooler Antarctic waters and less salinity, the easternmost line of the survey showed an increase in both temperature and salinity. This is possibly due to a convergence of ocean fronts and a movement of currents south. Researchers will undertake further analysis over the coming year to determine why this has happened and what it means for ecosystems in the region.

Researchers on the voyage also confirmed the presence of a source of very deep Antarctic waters—among the densest waters found on earth. These waters, known as 'bottom waters', fill the abyssal ocean around Antarctica and are important in carrying oxygen-rich waters and driving global deep ocean circulation.

Law Dome ice core project

Law Dome, 100 kilometres inland from Casey station, has been a focal point for Australian glaciological research since the 1960s. Its ice sheet preserves a record of the climate. In October 2004 scientists retrieved a 120-metre ice core from near the summit. Preliminary analysis of the material indicates that the record covers 650 years. It will be used to validate recent reports of a 20 per cent decline in sea ice over the past half-century and to extend this record back over past centuries. Detailed analysis is proceeding at the Antarctic Climate and Ecosystem Cooperative Research Centre.

Amery Ice Shelf

Research into the dynamics of heat transfer between the waters flowing underneath the Amery Ice Shelf (Prydz Bay) continued in 2005–06, with the completion of two further bore holes made with a hot-water drill. The project is part of a strong research focus into the factors affecting local climate conditions. Both holes (722 and 603 metres deep, respectively) were instrumented with



thermistors and upward-looking sonars to reveal details of the freeze-melt interface and the crystal structure of re-forming marine ice. Samples from the sea floor underneath the ice were extracted for examination of past glacial events. Initial photographic analysis of the cavity beneath the ice reveals the presence of Antarctic krill—an unexpected observation—and other invertebrates.

Also on the Amery Ice Shelf work is being conducted on a large block of ‘calving’ ice at the margin. Detailed observations are showing that rifting occurs faster in summer than winter and occurs in short, sharp bursts followed by periods of relative quiet. It is expected this block of ice will calve within the next few years into a substantial iceberg. Observations are expected to continue for the next two years with joint studies being undertaken by United States and Australian scientists.

The good atmospheric and weather conditions experienced during the 2005–06 Antarctic season allowed many observations of high altitude clouds to be made by both lidar and radar. The status and prevalence of these high altitude clouds is not well known in Antarctica and the division’s studies are in the forefront of knowledge of this phenomenon. Changes in high altitude cloud abundance are important indicators of environmental change.



Australian Antarctic Programme

Antarctic science provides direct benefits to Australians. Examples include more reliable weather forecasts, the geological history of the Australian continent, and new ways to contain and treat pollutants in cold environments. Support for Antarctic research reinforces Australia’s influence in the Antarctic Treaty system.

Providing logistical support for researchers is one of the main responsibilities of the Australian Antarctic Division. The division maintains three permanent stations in Antarctica and one at Macquarie Island. Each summer the Australian Antarctic Division deploys around 200 people to these stations and to field camps. The expeditions are supplied using chartered ships and aircraft.

In 2005–06 the Antarctic science programme supported 122 projects, leading to 316 publications (the best measure of scientific output) of which 127 are peer-reviewed papers. Since 1999 the programme has produced 1 191 peer reviewed publications. A recent review of publications output from the world’s Antarctic programmes has shown that Australia’s output ranks third, behind the United States and the United Kingdom.

Antarctic science grants

The Australian Antarctic Division supports the Australian Antarctic Science Grants scheme. Applications for 2005–06 grants were sought nationally in May 2004, prompting 159 research proposals. Following independent assessment 47 proposals were awarded grants with a total value of almost \$800 000.

Antarctic air link

The Australian Government provided funding of \$46.3 million in the May 2005 Budget over four years to establish a permanent, intercontinental air link between Hobart and Antarctica. The air link will make research more efficient by enabling scientists to spend less time travelling by ship and more time conducting research.

The Australian Antarctic Division completed a feasibility study, including runway construction trials, at a cost of \$3.2 million. The construction of a 4 000 metre ice runway near Casey station commenced in October 2005 and will continue over the summer of 2006–07, to allow a long-range jet aircraft to land in Antarctica. The Australian Antarctic Division expects to finalise the aircraft type for the service by late 2006, with trial flights scheduled to commence in 2006–07.

International management meetings

Australian Antarctic Division scientists and managers participate in the international Council of Managers of National Antarctic Programmes and the Standing Committee on Antarctic Logistics and Operations. These bodies represent countries with a national presence in Antarctica. They promote better management through sharing operational experience and innovations.

Concurrent meetings of the Scientific Committee on Antarctic Research and Council of Managers of National Antarctic Programmes will be hosted by the Australian Antarctic Division in Hobart from 26–30 July 2006.

International Polar Year preparations

The International Polar Year will be held over 24 months from March 2007 to March 2009. It will mark the 50th anniversary of the International Geophysical Year, which lasted 18 months from July 1957 to December 1958, and helped to stimulate development of the Antarctic Treaty. The Australian Antarctic Division is coordinating the Census of Antarctic Marine Life for the International Polar Year.

Pollution research

Research over the 2005–06 summer continued on the sensitivity of marine invertebrates to heavy metal and other pollutants. Following a partial but significant clean-up of the old rubbish tip at Casey Station (Thala Valley) the fate of hydrocarbon and other polluting run-off is being studied in the adjacent Brown Bay and on land. The marine ecosystem is particularly sensitive to pollutants due to the high prevalence of reproductive brooding among marine invertebrate species.

A new ‘geo-active’ barrier composed of different materials has been established between the old oil spill site and the coast to intercept the plume of hydrocarbons flowing through the soil. Preliminary results suggest the barrier is acting effectively and the technology might be transferable to other locations both in Antarctica and in the Arctic.



Results for performance indicators

Performance indicator	2005–06 result
Antarctic Treaty System	
<p>The degree to which Australia's policy interests are advanced through international forums, particularly: (i) the Antarctic Treaty Consultative Meetings; (ii) the Commission for the Conservation of Antarctic Marine Living Resources; and (iii) the Committee for Environmental Protection</p>	<p>(i) Australia's interests were advanced through the June 2006 Antarctic Treaty Consultative Meeting. Australian-designed tourist site use guidelines for 12 frequently visited sites in the Antarctic Peninsula region were endorsed. Commitment to support International Polar Year scientific research was obtained through a formal declaration. Australia assisted the Antarctic Treaty Secretariat: now fully functional, and thoroughly monitored by the Consultative Meeting. Non-Antarctic Treaty member Malaysia agreed to announce a timeline to sign the treaty</p> <p>(ii) A range of high priority Australian interests and goals were significantly advanced through participation in the Commission for the Conservation of Antarctic Marine Living Resources, including with regard to increasing international support for the commission; combating illegal, unreported and unregulated fishing; improving the sustainability of legal fisheries and conserving high seas biodiversity. In addition to longer-term policy interests, several shorter-term fishery management goals were achieved</p> <p>(iii) Australia chaired the June 2006 Committee for Environmental Protection meeting and its strategic workshop on environmental challenges, which ensured Australia's interests were advanced to a very high degree. Australia's revised management plan for the Clark Peninsula was endorsed. Australia's proposal to designate Hawker Island as a specially protected area was endorsed. New quarantine guidelines, to prevent introducing non-native species into Antarctic waters in ballast water, were agreed, codifying standards Australia already applies</p>
Illegal, unregulated and unreported fishing	
<p>The extent of Australia's impact within the Commission for the Conservation of Antarctic Marine Living Resources on measures to combat illegal, unreported and unregulated fishing for toothfish</p>	<p>Australia has conducted extensive fisheries enforcement patrols in the waters managed by the commission and has submitted several reports that collectively present information about the extent of illegal, unreported and unregulated fishing and the offenders involved. Australia has also successfully proposed to the commission that it adopt improvements to existing measures and new measures to combat such fishing</p>



Performance indicator	2005–06 result
International seabird conservation	
<p>The extent of Australia's impact in changing fishery practices, including reduction in the number of albatrosses caught by fishing gear</p>	<p>Australia advanced its interests through meetings of the Agreement on the Conservation of Albatrosses and Petrels Advisory Committee and meetings of the parties. Australia took a leading role in developing the agreement, and currently provides the interim secretariat. 3 of the 4 working group chairs are from Australia, including the chair of the Seabird Bycatch Working Group</p> <p>Australia promoted the uptake of bycatch mitigation measures in Regional Fisheries Management Organisations, including the Commission for the Conservation of Antarctic Marine Living Resources, Commission for the Convention of Southern Bluefin Tuna and the Indian Ocean Tuna Commission</p> <p>Australia ensured that the reduced bycatch limits specified in the threat abatement plan for the incidental catch of seabirds in oceanic longline fishing were met in domestic longline fisheries through a combination of measures including education, enforcement, and monitoring through fisheries-independent observer programmes and fishing closures</p>
International whaling	
<p>The degree to which Australia's policy interests are advanced through the International Whaling Commission</p>	<p>Australia and other pro-conservation countries were successful at the 58th International Whaling Commission meeting in retaining the simple majority in all circumstances except one. As such the moratorium on commercial whaling, existing International Whaling Commission whale sanctuaries, and transparency were retained, and conservation issues associated with whales continue to be discussed. Australia also opposed scientific whaling and highlighted the flaws with such programmes</p>





Performance indicator	2005–06 result
Protecting the Antarctic environment	
No outbreaks of introduced diseases, pests or weeds	A number of alien invertebrates were discovered in various food items and were reported and returned to Australia for analysis. The mushroom gnat has reappeared in the living quarters at Casey station and is the subject of an eradication plan to be undertaken in August 2006. None of these species could survive outside warm buildings
Number and extent of oil spills and remediation action taken	2 minor fuel spills (2 litres and 12 litres) were reported and cleaned up using fuel spill equipment. In July 2005 there was a spill of 200 litres when a fork was accidentally put through a full drum of diesel near the bunded refuelling area at Mawson station. All contaminated snow was removed, melted and fuel recovered. In October 2005 approximately 1 000 litres of fuel leaked from a damaged (now replaced) fuel bowser at Casey station and is the subject of a bioremediation project
Number of environmental impact assessments: (i) completed by the department; and (ii) submitted by third parties and assessed by the department	(i) 32 assessed (ii) 52 submitted under the <i>Antarctic Treaty (Environment Protection) Act 1980</i> , and 3 referrals under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>
Percentage of completed environmental impact assessments that are subsequently audited under Australia's Antarctic Environmental Management System	Audit process commences in 2007
Support for Antarctic science	
Successful completion of the 2005–06 elements of the Antarctic Science Strategy 2004/05–2008/09	A total of 122 projects from 34 institutions were undertaken to address 4 priority areas. 51 projects addressed the ice, ocean, atmosphere, climate priority area, 34 addressed the Southern Ocean ecosystems, 37 addressed adaptations to environmental change and 28 addressed impacts of human activity in Antarctica. Many projects address more than one priority area
Number of peer-reviewed scientific papers produced by scientists participating in the Antarctic science programme	127
Number of scientists active in Antarctica and the Southern Ocean	162

Performance indicator	2005–06 result
Outcome 2— Individual outputs	
The minister is satisfied with the timeliness and accuracy of briefs and draft ministerial correspondence provided by the department	The minister was satisfied
Percentage of payments that are consistent with the terms and conditions of funding (Target: 100%)	100%
Percentage of participants in the Australian Antarctic programme whose participation is consistent with the terms and conditions of logistic support (Target: 100%)	100%

Resources

Departmental outputs	Budget prices \$'000	Actual expenses \$'000
Output 2.1 Antarctic policy	31 987	44 676
Total (Output 2: Antarctic policy)	31 987	44 676

Administered items

Mawson's Hut Foundation – expedition	320	320
Total (Administered)	320	320

Departmental outputs	Budget prices \$'000	Actual expenses \$'000
Output 2.2: Antarctic science	63 569	79 430
Total (Output 2.2: Antarctic science)	63 569	79 430



