



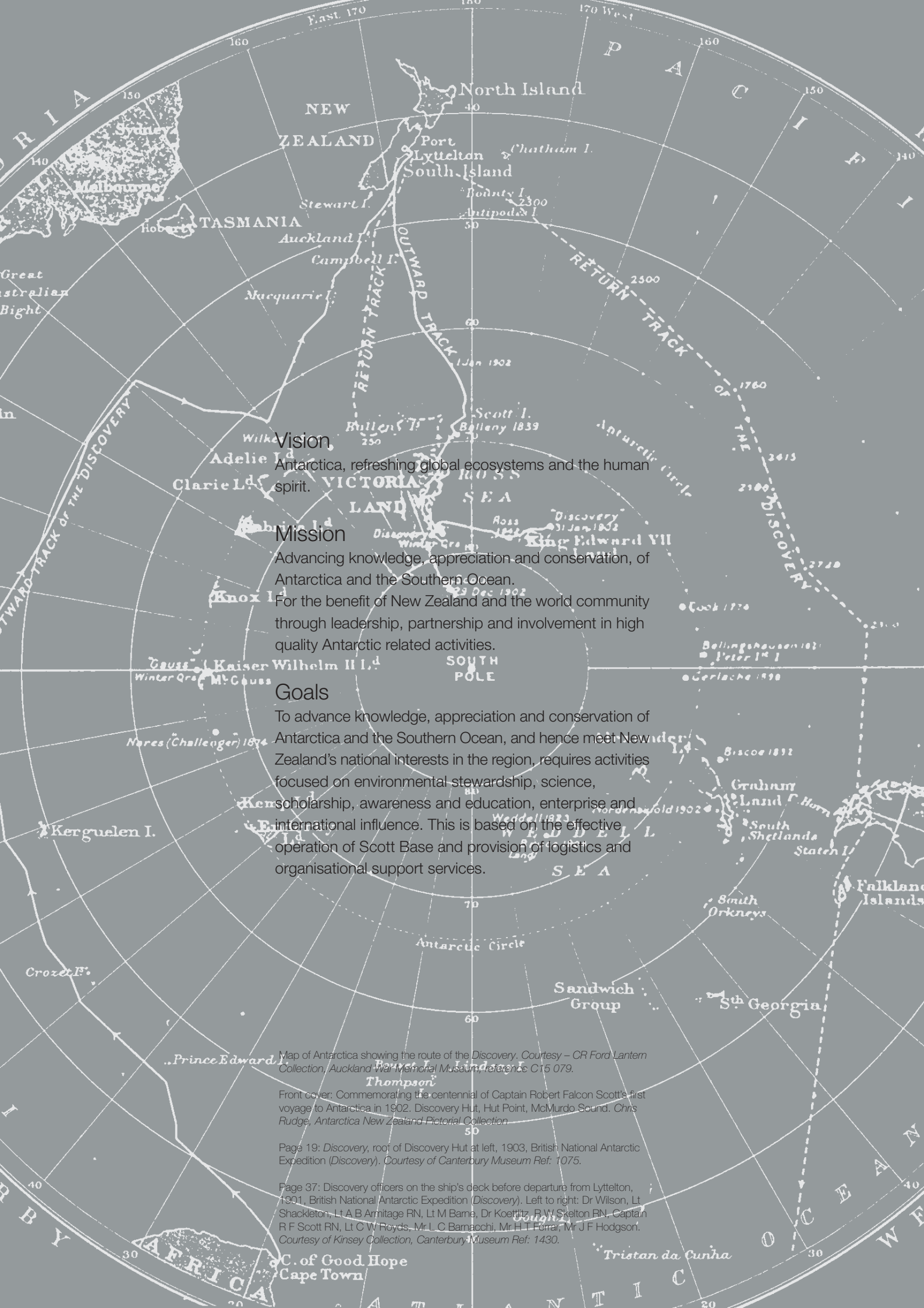
Antarctica New Zealand

New Zealand Antarctic Institute



*"The future is in the lap of the gods.
I can think of nothing left undone
to deserve success"*

ANNUAL REPORT 2001 – 2002



Vision

Antarctica, refreshing global ecosystems and the human spirit.

Mission

Advancing knowledge, appreciation and conservation, of Antarctica and the Southern Ocean. For the benefit of New Zealand and the world community through leadership, partnership and involvement in high quality Antarctic related activities.

Goals

To advance knowledge, appreciation and conservation of Antarctica and the Southern Ocean, and hence meet New Zealand's national interests in the region, requires activities focused on environmental stewardship, science, scholarship, awareness and education, enterprise and international influence. This is based on the effective operation of Scott Base and provision of logistics and organisational support services.

Map of Antarctica showing the route of the Discovery. Courtesy – CR Ford Lantern Collection, Auckland War Memorial Museum, Reference C15 079.

Front cover: Commemorating the centennial of Captain Robert Falcon Scott's first voyage to Antarctica in 1902. Discovery Hut, Hut Point, McMurdo Sound. Chris Rudge, Antarctica New Zealand Pictorial Collection

Page 19: Discovery, roof of Discovery Hut at left, 1903, British National Antarctic Expedition (Discovery). Courtesy of Canterbury Museum Ref: 1075.

Page 37: Discovery officers on the ship's deck before departure from Lyttelton, 1901, British National Antarctic Expedition (Discovery). Left to right: Dr Wilson, Lt Shackleton, Lt A B Armitage RN, Lt M Bane, Dr Koefitz, R W Skelton RN, Captain R F Scott RN, Lt C W Roys, Mr L C Bamacchi, Mr H T Ferrar, Mr J F Hodgson. Courtesy of Kinsey Collection, Canterbury Museum Ref: 1430.

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CHAIRMAN'S REPORT



Antarctica New Zealand continues to meet the challenge of involvement in one of the most remote and special places on our planet – Antarctica and the Southern Ocean.

High quality science, environmental stewardship, scholarship, education and public awareness continue as our primary focus, and our efforts and credibility in these areas underpin our international influence.

2001/2002 has been a most successful year with progress in a number of key areas. The year was also the final year of involvement for Antarctica New Zealand's chief executive, Gillian Wratt. Gillian completed eight years with New Zealand's programme on the southern continent including six years as Chief Executive of Antarctica New Zealand following our establishment in July 1996.

Our new chief executive is Lou Sanson. Lou joins us from the Department of Conservation where his previous role as Conservator for Southland including Stewart Island and the Sub-Antarctic Islands, provided him with considerable experience in environmental management and operations in remote locations.

Scientific research continues as the principal driver of New Zealand's Antarctic and Southern Ocean programme and we are well served by the skill and dedication of our various research and technical teams. An outline of some of these activities is included in this annual report.

Antarctica New Zealand is proceeding at some pace to take a significant role in several new and exciting scientific endeavours. ANDRILL is a new Antarctic drilling programme which New Zealand has been asked to project manage, the Latitudinal Gradient Project is also being managed by Antarctica New Zealand, and we are working on a comprehensive study of the biodiversity of the Ross Sea region. These projects are explained in detail in the science section of this report.

The publication in November 2001 of the *Ross Sea Region 2001: A State of the Environment Report for the Ross Sea Region of Antarctica* has received international acclaim as well as providing a blueprint for the development, in time, of an Antarctic Continent and Southern Ocean State of the Environment Report. It is also a valuable document to record data and manage change within the Ross Sea region.

Our research scholarships, artists, education and media programmes continue to develop and the quality of participants and the works created particularly by our Antarctic Arts Fellows contribute significantly to a greater understanding of, and support for, Antarctica and the Southern Ocean.

Antarctica New Zealand is pleased to provide ongoing support to the Antarctic Heritage Trust's programme to preserve the historic sites in the Ross Sea region and we were privileged to host the visit of HRH Princess Anne to commemorate the centenary of Robert Falcon Scott's first expedition and to launch the Trust's international fund-raising appeal.

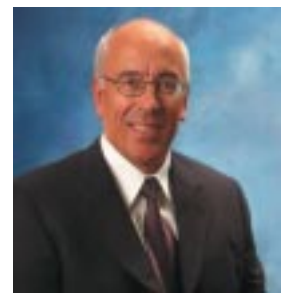
Throughout the year, Antarctica New Zealand has received strong support from the Ministry of Foreign Affairs and Trade, and, in particular, the Antarctic Policy Unit headed by Felicity Wong. Felicity has now taken up a new challenge in the Prime Minister's Department after three years of hard work in Antarctic and Southern Ocean fishing issues. Trevor Hughes has taken over as the new head of the Policy Unit.

The success of our organisation is entirely due to the skill and dedication of our team, both in Christchurch and in Antarctica at Scott Base. In particular, we have been well served by the leadership and truly outstanding contribution of Gillian Wratt. Gillian has steered the organisation from being part of a government department to an independent Crown Entity and has overseen considerable growth in research activity, the upgrading of our facilities and efficient use of our resources. She is also very highly regarded for her leadership and hard work within the international Antarctic community.

In October 2001, Dr Basil Walker and Dr Ron Heath completed their terms as Board members, having made a significant contribution to both the establishment phase and ongoing governance of Antarctica New Zealand. Dr Francis Small and Paul Hargreaves were appointed by the government to replace the retiring Board members and were welcomed in November 2001.

We operate in Christchurch and in the Ross Sea region alongside our American and Italian colleagues and the cooperation between our respective programmes is unique and very much appreciated. Antarctica New Zealand comprises a small team of dedicated specialists and its activities and responsibilities are diverse and complex. It is a credit to our entire team as well as our American and Italian friends, that we are able to continue to operate successfully and achieve the results that are highlighted in this report.

Chris Mace
Chairman



THE BOARD OF ANTARCTICA NEW ZEALAND



Board of Antarctica New Zealand left to right. Back row Bill Mansfield, Maj de Poorter, Wendy Lawson, Paul Hargreaves. Seated Chris Mace (Chair), Francis Small. *Diederik van Heyningen, Antarctica New Zealand Pictorial Collection.*

THE YEAR IN REVIEW



This year has been one of some notable achievements for Antarctica New Zealand. *Ross Sea 2001: A State of the Environment Report for the Ross Sea Region of Antarctica* has been published. We have seen the development, with the Ministry of Fisheries, of marine biodiversity research in the Ross Sea, a new research programme and initiative for New Zealand. Our artists, education and media programmes have had continued success, and we have supported another busy and incident-free season on the Ice, with further work to improve our Scott Base infrastructure. The scope, quality and quantity of this work are an ongoing credit to the expertise, dedication and enthusiasm of the staff of Antarctica New Zealand.

The importance to New Zealand of Antarctic science, and the confidence of the Government in Antarctica New Zealand was demonstrated this year through a successful Budget bid. Additional funding will contribute to our ability to support new internationally focussed research projects, in addition to continuing our support for other high priority research. Antarctic research proposals also had a high success rate in the Foundation for Research Science and Technology's Global Strategic Portfolio Outlines (SPO) funding round.

Antarctica New Zealand provided input into the revision of the strategic objectives for New Zealand's involvement in Antarctica and the Southern Ocean. The revised objectives, signed off by Cabinet in May 2002 provide an important foundation in setting the direction for our activities.

State of the environment reporting has become standard practice in most parts of the world. The United Nations Environment Programme includes a section on the state of the Antarctic environment in its global reporting. The Antarctic Treaty nations meanwhile, have discussed Antarctic state of the environment reporting at Treaty meetings for a number of years, expressing concerns as to the need for it, and its costs and processes. It is very satisfying to see the bold step that New Zealand took in 1997 in deciding to proceed with a report, coming to a successful conclusion.

The report provides a comprehensive and readable review of research carried out to date on the Ross Sea region, our knowledge of the state of the environment, and the implications for future environmental management and research. The report was predominantly written by New Zealand scientists, with funding support from the New Zealand Ministry of Foreign Affairs and project managed by Antarctica New Zealand. As with other large projects in the region, the contribution of scientists from other nations active in the Ross Sea Region – in particular the USA, Italy and Germany, in reviewing the report, has made a valuable contribution to the production of a quality document.

We followed the publication of the report with a very successful workshop with German, Italian, US, Australian, Brazilian, Chilean, British and New Zealand participation in May this year. The workshop aimed to identify research and environmental priorities arising from the report. Our aim is that the publication of the report will contribute to regional environmental management in the Ross Sea region, and to the development of processes for state of the environment reporting Antarctic-wide. Copies of the report have been provided to all other Antarctic Treaty nations, and we will be presenting a summary of the report's findings to the Antarctic Treaty Consultative Meeting in Warsaw in September 2002.

Whilst the State of the Environment Report has meant a major environment focus, we also continue to give priority to our operational environmental management and compliance. An independent audit of our Environmental Management System against ISO 14001



showed a high level of compliance.

A combined environmental and operational focus has been the construction of a sewage treatment plant for Scott Base. A containerised plant was shipped to Scott Base in January, and has been installed for commissioning in October 2002. This, along with continued Scott Base refurbishment work on the Hatherton Laboratory and the 3A accommodation area continue our commitment to upgrading the Scott Base facilities from an environmental and health and safety perspective. We are now in the process of developing plans for a heated field preparation and storage facility to enable better support for future field research projects.

January 2002 was the centenary of Captain Scott's first visit to Antarctica. The visit by HRH Princess Anne in support of the Antarctic Heritage Trust's work to preserve the important human heritage on Ross Island, also provided a reminder that Scott's expeditions were significant in the development of scientific research in Antarctica. A lot has been learnt about Antarctic ecosystems and processes in the last 100 years, but there is still much that is unknown, as awareness increases of the important role the Antarctic and the Southern Ocean play in global systems and processes.

On the science front, Antarctica New Zealand supported another busy season, with a range of science projects covering sea ice physics, atmospheric chemistry, geology and geophysics, ice sheet dynamics, penguin and seal biology, terrestrial biology and marine benthic research, contributing to the themes of New Zealand's Antarctic and Southern Ocean Science Strategy. We are now in the process of reviewing the strategy in preparation for a 3-year science bidding round later in the year. Since the establishment of Antarctica New Zealand in 1996, we have seen a two to threefold increase in the

high quality science we are supporting.

Several new large multi year projects are underway. The Latitudinal Gradient Project (LGP) is a multidisciplinary approach to ecosystem and environmental studies along Victoria Land. The three national programmes (Italian, New Zealand and USA) that have scientific bases in the region and constitute the majority of research done in Victoria Land, have conducted separate workshops relating to the concept. Additional Government funding was provided in the 2002 Budget to contribute to the infrastructure and operational support required for this project.

ANDRILL is a five nation consortium comprising Germany, Italy, the United Kingdom, the United States and New Zealand. An ANDRILL science steering committee has developed plans for a seven to nine year programme of scientific drilling to further our knowledge of ice sheet dynamics and climate change impacts. Antarctica New Zealand has been asked by the international steering committee to take the project management role. We received funding in our Budget bid to enable involvement in this project.

Good progress has also been made with the Ministry of Fisheries in planning for the Ross Sea Marine Biodiversity Research programme. Funding for this has been provided to the Ministry through a Government biodiversity research initiative. Plans are being developed for a dedicated research voyage using the National Institute of Water and Atmosphere Research (NIWA) vessel the *Tangaroa*, in collaboration with the Italian research vessel, the *Italica*, in 2004.

It was pleasing to see a proposal for an Antarctic Centre of Research Excellence (CoRE) at the University of Canterbury shortlisted in the Royal Society CoRE selection process. A successful CoRE would go a long way in consolidating the opportunities and recognising the expertise that New Zealand universities have in Antarctic research. The proposal was not successful in the first CoRE round. We hope that with more funding to be made available by the Government this year that the proposal will win support.

This year has seen another successful season for our artists, media and education programmes. Our selected school group this year, from Tauranga Girls High School, worked with a NIWA research team investigating the near shore marine biota. Our artists programme included a painter, a photographer and a print maker. As our Antarctic Arts Fellows group grows, it is rewarding to see them working together to develop innovative exhibition concepts. We are also in the preliminary stages of planning an international Antarctic art exhibition with several other Antarctic Treaty nations.

On the international front we have continued to support the work of the Council of Managers of Antarctic Programs (COMNAP), the Antarctic Environmental Officers Network (AEON) and New Zealand's participation in the Antarctic Treaty Consultative Meetings (ATCM) and Committee for Environmental Protection (CEP). This year's work has included development of environmental monitoring guidelines, the establishment of an Antarctic energy management network in COMNAP, and work to encourage broader uptake of Antarctic state of the environment reporting.

All the activities outlined in the pages of this report are based on having sound organisational operating systems, in Christchurch and Scott Base. Our operations team continues to demonstrate their



Gillian during Ministerial on Ice, 1999. Antarctica New Zealand Pictorial Collection.

commitment and professionalism on and off the Ice. Effective and efficient Antarctic logistics are also aided by the support we receive from the New Zealand Defence Force, and our close working relationship with the United States and Italian Antarctic programmes.

As I reflect on writing my last contribution to the Antarctica New Zealand Annual Report as Chief Executive, I am proud of what Antarctica New Zealand has achieved. Alongside the science community, it is the staff of Antarctica New Zealand who make our Institute what it is, and on whom the international reputation of Antarctica New Zealand depends.

Being Chief Executive of Antarctica New Zealand has been a unique and special opportunity. Thank you to all those who have supported me.

Gillian Wratt
Chief Executive





Antarctica New Zealand helps foster interaction with national agencies and international partners by facilitating workshops, working with government officials associated with Antarctic and Southern Ocean research, presenting New Zealand science plans and participating in international conferences. Its goal is to manage a system that gives scientists the opportunity to accomplish high quality science in Antarctica and the Southern Ocean, which increases New Zealand's international reputation.



Campsite on McMurdo Sound. Tim Naish, *Antarctica New Zealand Pictorial Collection*.

Antarctica New Zealand supported 34 science events in the 2001/02 Antarctic season. The events were spread across the five science themes of Antarctica New Zealand's science strategy, ranging from research on sea ice formation to research on human expectations and perceptions of their experiences in the Antarctic environment. The scientists supported came from four Crown Research Institutes and seven Universities in New Zealand. Their international collaborations spread across 14 countries. It is because of this diversity in individuals, organisations and funding agencies that New Zealand can participate at a "world-class" level in Antarctic and Southern Ocean science.

This is the inaugural year of the science companion document to the annual report. The companion document details research projects supported by Antarctica New Zealand covering the science themes of the Antarctica New Zealand science strategy. The publication provides a "snap-shot" of the research conducted on the ice.

Antarctica New Zealand also maintains the New Zealand Antarctic Bibliography. Over the past few years not only have the number of publications grown, but the quality of the research articles has increased. A measure of this quality is the number of scientific articles in pre-eminent international journals. Two journals with this distinction are *Science and Nature*. We are proud to say that over the last few years there have been a number of papers accepted for publication by these two journals.

New Zealand Antarctic research published in *Nature and Science* in the years 2000 to 2002 includes:

Abraham, E.R. Law, C.S. Boyd, P.W. Lavender, S.J. Maldonado, M.T. Bowie, A.R. 2000, *Importance of stirring in the development of an iron-fertilised phytoplankton bloom*. *Nature* 407: 727 – 730.

Boyd, P.W. Watson, A. Law, C.S. Abraham, E. Trull, T. Murdoch, R. Bakker, D.C.E. Bowie, A.R. Charette, M. Croot, P. et al. 2000, *A Mesoscale phytoplankton bloom in the polar Southern Ocean stimulated by iron fertilisation*. *Nature* 407: 695 – 702.

Vincent, W.F. Howard-Williams, C. 2000, *Life on Snowball Earth*. *Science* 187: 2421.

Watson, A.J. Bakker, D.C.E. Ridgewell, A.J. Boyd, P.W. Law, C.S. 2000, *Effect of iron supply on Southern Ocean CO₂ uptake and implications for glacial CO₂*. *Nature* 407: 730 – 733.

Naish, T.R. Woolfe, K.J. Barrett, P.J. Wilson, G.S. Atkins, C. Bohaty, S.M. Bücker, C.J. Claps, M. Davey, F.J. Dunbar, G.B. et al. 2001, *Orbitally induced oscillations in the East ice sheet at the Oligocene/Miocene boundary*. *Nature* 413: 719 –

723.

Lambert, D.M. Ritchie, P.A. Millar, C.D. Holland, B. Drummond, A.J. Baroni, C. 2002 *Rates of evolution in ancient DNA from Adélie penguins*. *Science* 295: 2270 – 2273.

Science and Logistics Funding

Logistics support comes from Antarctica New Zealand while science funding is available from four different agencies. Three different types of providers carry out Antarctic research. Good coordination between the logistics provider, research funders and research providers is key to delivering an efficient and effective science output from Antarctic research. The three science providers are:

- government research facilities (mainly CRIs)
- universities
- private research companies or individuals.

The four science funding contributors are:

- the Public Good Science Fund (PGSF) (Vote: R, S&T) which is run by the Foundation for Research, Science and Technology (The Foundation)

- the Marsden Fund, which is run by the Royal Society
- University Grants ('Vote: Education'), which is run internally by each University
- Biodiversity of the Ross Sea funding (BioRoss) run by the Ministry of Fisheries.

The PGSF, the Marsden Fund and BioRoss are all funds that are currently available to University and CRI researchers. The 'Vote Education' funding is only available for University researchers. Along with New Zealand's direct investment in Antarctic research a number of collaborations exist with other countries which fund their portion of the international research.

Total Antarctic Science Expense*

Funding Agency	Amount per year (\$NZ)
The Foundation	\$ 3.20m
The Marsden Fund	\$ 0.70m
Vote:Education	\$ 3.00m
BioRoss	\$ 0.35m
Science Subtotal	\$ 7.25m
Antarctica New Zealand (logistics)	\$ 4.30m
Total	\$ 11.55m

*This approximation of total costs does not include NZDF costs associated with Antarctic support, other than the direct costs charged to Antarctica New Zealand.

Antarctica New Zealand manages a science review process for all science providers requiring logistics support in Antarctica. The Antarctica New Zealand science review process is currently run on an annual cycle. The proposals are assessed on science merit and relevance to the Antarctica New Zealand 1998 Science Strategy document, *A New Zealand Science Strategy for Antarctica and the Southern Ocean*.

Antarctica New Zealand uses the Antarctic Research Committee (ARC) and peer-review letter reviews. The outcome of this review process is a ranked list of all the proposals. A recommendation on which projects should be supported is provided to the Antarctica New Zealand Board. In recent years the cut off point for recommended support has been at a ranking of 7. (Approximately 70% of proposals are approved for support.)

Latitudinal Gradient Project

Over the past two years, there has been growing scientific interest in a latitudinal gradient approach to ecosystem and environmental studies along Victoria Land, Antarctica. The three national programmes, (Italian, New Zealand and USA) which have scientific bases in the region and constitute the majority of research done in Victoria Land have conducted separate workshops relating to the concept. The previous workshops have created reports (*Victoria Land Coastal Program – Italy, The Latitudinal Gradient Project – New Zealand, and Latitudinal Ecosystem (LAT-ECO) Responses to Climate Across Victoria Land, Antarctica – USA*) focusing on different aspects of an international project. The documents can be accessed over the Victoria Land web-site at <http://www-bprc.mps.ohio-state.edu/victorialand>.

An international workshop (Latitudinal Gradients in Victoria Land) was convened under the auspices of SCAR in conjunction with the VIII SCAR International Biology Symposium in September

2001. The workshop integrated the previous reports from the national workshops mentioned above and introduced the framework and concept to the wider Antarctic community. In addition, the international workshop created a consensus on the general strategies for studying terrestrial and marine ecosystem and environmental variability along Victoria Land from nearly 72°S to 86°S.

The interdisciplinary approach, which is central to this latitudinal gradient research concept is a powerful tool for understanding the ecosystems and environments that exist along Victoria Land to interpret regional and global change impacts and responses.

The general hypothesis for the Latitudinal Gradient Project is: ice-driven dynamics control the structure and function of biological systems (marine, terrestrial and freshwater) near the limits of life at high latitudes.

The area of study along the Victoria Land coast can be split into three zones. The first zone of interest is for the most part ice-free and is designated on Figure 1 (see below) as Zone 1 (ice-free zone). This zone runs from Cape Adare to the Drygalski ice tongue, south of Terra Nova Bay. The second zone is characterised by the fast-ice along the coast. This zone runs from the southern boundary of the Drygalski ice tongue to the northern edge of the McMurdo Ice shelf. This area is named Zone 2 (fast-ice zone). South of McMurdo Sound the Ross Ice Shelf covers the sea and exerts a cooling influence on the adjacent landmass more than the sea does from McMurdo northwards. This area has been designated as Zone 3 (Ice-shelf zone).

New Zealand is leading the way with a call for proposals due in October of 2002. The first research season is currently planned for October of 2003 at Cape Hallett. This site will be used for terrestrial and near-shore marine research for two years. Then the region of Terra Nova Bay will be researched as the next site for LGP.

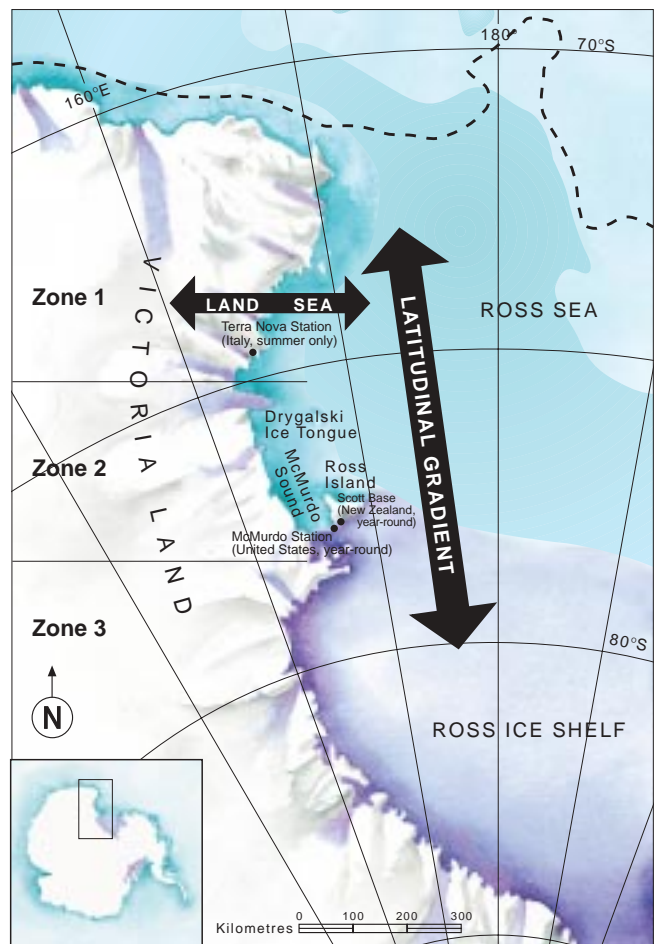


Figure 1: Map of Victoria Land, Antarctica.

ANDRILL



Alex Pyne preparing sea ice drill rig near Scott Base. Tim Naish, Antarctica New Zealand Pictorial Collection.



ANDRILL is a multinational scientific initiative to investigate Antarctica's role in Cenozoic to recent (65 million years ago to the present) global environmental change, and hence its potential

future role, through stratigraphic drilling of Antarctica's ice marginal sedimentary basins. An ANDRILL consortium has been established, comprising five countries – Germany, Italy, New Zealand, United Kingdom and the United States of America.

A key aim of ANDRILL is to understand the role of Antarctic drivers on global climate variability, which requires a fundamental knowledge of cryospheric evolution not only in recent times, but also for times as long ago as 40 million years into the past. This was a time when global temperature and atmospheric carbon dioxide (CO₂) were last similar to that which might well be reached by the end of this century. Through better understanding the interaction between the Antarctic cryosphere (ice sheets, ice shelves, and sea ice) and global systems during previous warmer periods, there will be a more comprehensive understanding of the impacts of predicted future climate warming – both in Antarctica and globally.

The goals of ANDRILL are to:

- Determine the fundamental behaviour of the Antarctic cryosphere, including the magnitude and frequency of its changes on centennial to million year time-scales.
- To obtain geological records from critical intervals in the development of the Antarctic cryosphere to guide and constrain glaciological and climatic models.
- To document the evolution and timing of major Antarctic rift and tectonic systems, and the stratigraphic development of associated sedimentary basins.
- To determine, by correlating near-ice margin and Southern Ocean stratigraphic records, the role of the Antarctic.

New Zealand's contribution toward the ANDRILL international consortium has been secured through investments from Antarctica New Zealand and the Foundation for Research, Science and Technology. New Zealand research money has also been secured by grants from the Foundation to University of Otago, Victoria University of Wellington and the Institute of Geological and Nuclear Sciences.

BioRoss

The BioRoss programme was developed collaboratively by the Ministry of Fisheries, Antarctica New Zealand and the Ministry of Foreign Affairs and Trade, and assessed through the Biodiversity Strategy initiative process. The programme is a critical initiative for achieving the goals of the *Biodiversity Strategy* and vital for improving understanding of biodiversity and providing information to enable action to be taken to protect and enhance the environment.

The objectives are to develop a more complete inventory of the biodiversity present in selected marine communities in the Ross Sea region and to facilitate better state of the environment reporting.

A high level of coordination between New Zealand government agencies and international research organisations with an interest in the Ross Sea is necessary. Antarctica New Zealand is maintaining these links through a formal agreement with the Ministry of Fisheries.

A research voyage is scheduled for February and March 2004. The proposed plan is to use the NIWA vessel *RV Tangaroa* and collaborate closely with the Italian Antarctic Programme and their vessel *RV Italica*. The voyage will choose study sites around the Balleny Islands and along the Northern Victoria Land coast. MFish has called for research interests in the spring of 2002. The BioRoss programme has close links with the marine goals of LGP. The final voyage plan will take into account the goals of both projects.

Antarctic Research Scholarships

Antarctica New Zealand continues to encourage excellence in Antarctica research by administering three Antarctic Research Scholarships of \$10,000 each to post-graduate students. Two of these scholarships were



Scholarship winner Briar Wait pumping basal brine from Skua Pond, Bratina Island. Ian Hawes, Antarctica New Zealand Pictorial Collection.

donated by generous sponsorship from Kelly Tarlton's Antarctic Encounter and Underwater World and New Zealand Post. This year, Kelly Tarlton's Scholarship was awarded to Briar Wait from Auckland University to study the chemical extremes in meltwater ponds during seasonal freeze and thaw cycles. New Zealand Post's Scholarship was awarded to Sarah Hawkins from the University of Waikato to research temperature adaptation at the molecular level in Antarctic organisms. The third scholarship, the Sir Robin Irvine Scholarship supported by Antarctica New Zealand, was awarded to Rebecca Batchelor from the University of Canterbury and NIWA. Ms Batchelor's work aims to further develop our understanding of the annual cycle of atmospheric chlorine by taking first-ever measurements of hydrogen chloride during the Antarctic polar night using reflected sunlight from the moon's surface.

ENVIRONMENTAL STEWARDSHIP



“ The report shows just what can be achieved with a little money, some political determination, and the enthusiastic support of the science community. The report is well-researched, attractively presented, and clearly argued, a real credit to Antarctica New Zealand and the New Zealand Government. ”

David Walton, Editorial, Antarctic Science, June 2002

Ross Sea Region 2001: A State of the Environment Report for the Ross Sea Region of Antarctica



State of the Environment Report Launched



Environmental Manager Emma Waterhouse speaking at the launch of *Ross Sea Region: A State of the Environment Report for the Ross Sea Region of Antarctica*. Forrest Smyth, Antarctica New Zealand Pictorial Collection.

In November last year, Antarctica New Zealand, in association with the New Zealand Ministry of Foreign Affairs and Trade, published *Ross Sea Region 2001: A State of the Environment Report for the Ross Sea Region of Antarctica*. The report was launched at Parliament by Deputy Prime Minister Hon Jim Anderton and is the first comprehensive state of the environment report produced for any region of Antarctica and the Southern Ocean. It represents over 3 years of work by more than 20 leading authors and other experts. The report includes over 250 pages of detailed information about the state of the atmosphere, terrestrial, and marine environments of the Ross Sea region of Antarctica and the activities that occur there. Overall, the report provides insights into the environment of this diverse and unique region, identifies where we lack information and knowledge, and where we have improved our environmental performance.

State of the Environment reporting is a process for describing, analysing and communicating information on the condition and trends in the environment and their significance. It is about the pulling together of disparate information which by itself may mean very little,

but when combined, provides a clearer picture of the environment. *Ross Sea Region 2001: A State of the Environment Report for the Ross Sea Region of Antarctica* aimed to achieve this.

The overall conclusion from the report was:

“Most of the Ross Sea region environment is in a pristine state, exceptionally so by global standards. The region contains some of the most undisturbed ecosystems in the world, and its value as a vast natural area, and for the conduct of scientific research, is immeasurable.”

Other key findings included:

- Despite nearly 50 years of research efforts, we are confronted with fundamental gaps in our knowledge of the Ross Sea region including changes human activities are causing.
- Current pressures include small-scale tourism, exploratory fishing, scientific whaling, and the operation of national science programmes. Global environmental pressures are also affecting the region. These pressures including climate change and ozone depletion and have perhaps the greatest potential to impact on the whole of the region's environment.
- Scientific activities and their supporting infrastructure account for the biggest range and severity of impacts on the region's environment.
- Despite the large scale of science activities, relative to other activities in the region, they are still small by global standards. Impacts are largely localised around permanent research stations.
- Significant progress has been made in environmental management practice since the signing of the Environmental Protocol in 1991. Overall, there has been a considerable improvement in attitudes which are reflected in the provision of resources by operators to improve their performance.
- Several key challenges still face the region including: significant gaps in our knowledge; lack of a regionally based approach to environmental management; inadequate management of key pressures such as tourism and fishing; identification and management of protected areas; and a lack of any agreed process for monitoring and reporting on the state of the environment in the future.

National and international reaction to the report has been very positive. Antarctica New Zealand will continue to explore opportunities to promote the report and its findings, to facilitate action to address the key issues and challenges, and to contribute our experience to the Antarctic Treaty System in its discussion on the development of a state of the environment report for the whole of Antarctica.



Deputy Prime Minister, Hon J. Anderton who officially launched *Ross Sea Region: A State of the Environment Report for the Ross Sea Region of Antarctica*. Forrest Smyth, Antarctica New Zealand Pictorial Collection.

Ross Sea Region 2001: The Next Steps Workshop

“The report does not prioritise the issues and does not provide solutions... it does provide a very good basis for moving forward.”
Emma Waterhouse, Ross Sea Region 2001: The Next Steps Workshop

Ross Sea Region 2001: A State of the Environment Report for the Ross Sea Region of Antarctica raises a number of issues and identifies several key challenges for the future management of activities in the Ross Sea region. The workshop was organised by Antarctica New Zealand and was held at Victoria University of Wellington from 28-29 May 2002. The aim was to examine how the issues identified in the report should be addressed and by whom, whether the challenges should be taken up, and what the priorities should be for future action.

Over 70 people participated in the workshop which was opened by Environment Minister Hon Marion Hobbs. Representatives from the United States, Italy, Germany, United Kingdom, Australia, Brazil, and Chile and from the science and NGO communities, and tourism and fishing industries attended the workshop.

Workshop participants heard about the outcomes and key issues identified in the report as well as recent Australian work on state of the environment reporting in Antarctica. Participants learnt about the development and growth of state of the environment reporting worldwide and different approaches to reporting to suit particular circumstances. Examples of successful approaches to dealing with some of the key issues identified in the report, such as cumulative impacts, were also presented. Important links were made to the development of research strategies aimed at providing good scientifically based information to assist environmental management.

Discussions focused on identifying priorities for future action, the next steps, and on how state of the environment reporting could be achieved in the Ross Sea region in the future. Initial priorities to emerge from these discussions included:

- the need for an integrated framework for environmental management in the region
- understanding and managing cumulative impacts
- the need for education and training of visitors
- the need for research on the marine ecosystem
- the need to collect and manage baseline data and ongoing monitoring data
- the need for an effective network of protected and managed areas.

Antarctica New Zealand has published detailed proceedings of the workshop. It is building the workshop outcomes into its environmental strategies and action plans for the future, and will follow up with other Ross Sea region operators on the potential for future collaborative work.

Environmental Performance

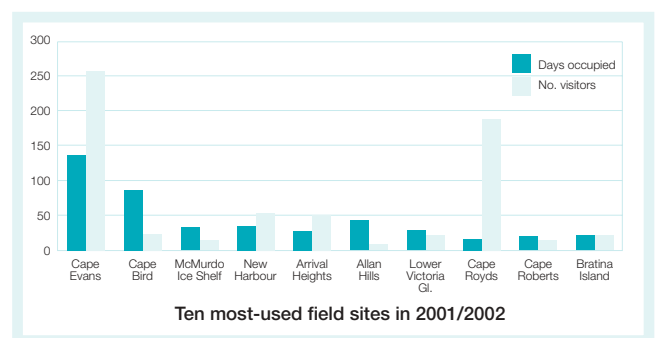
Environmental Compliance

During the 2001/2002 season both internal auditing (undertaken by Antarctica New Zealand environmental staff) and external auditing (undertaken by an independent environmental consultant) were undertaken at Scott Base and selected field camps. The audits did

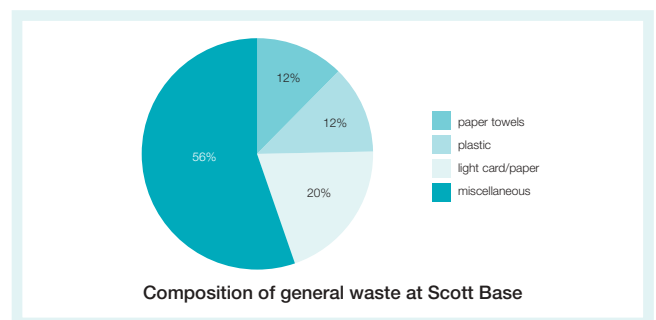
not reveal any actual or potential environmental impacts which are not already being addressed, or any significant non-compliances with existing legislation, policies and procedures. However, some documentation associated with our Environmental Management System (EMS) has not been kept up to date. The external auditor concluded that once “these matters are satisfactorily dealt with Antarctica New Zealand will be ready to seek certification of its EMS in terms of the ISO 14001 Standard. There is little doubt that, with attention to the identified issues, certification will be achieved.”

Over the next year we will focus on updating EMS-related documentation and ensuring that systems are in place to keep it current. Certification of the EMS, both ISO 14001 and alternatives, are being further investigated.

Monitoring Key Indicators



The sites shown had the highest person-days of all field sites visited by Antarctica New Zealand personnel.



A survey of one week's general waste bags was conducted at Scott Base on 18 October 2001. 'Miscellaneous' items found included disused clothing, wire, rope and string cutouts, polystyrene packaging and various other non-recyclable items.

Data for 2001/2002 from Antarctica New Zealand's Environmental Management System and environmental monitoring programme show:

- ✗ Total fuel use was up on last year, with an increase in diesel use for vehicles and field generators, although slightly less 'mogas' petrol was used than in the previous year.
- ✓ Fuel spills were down on the previous two years, with only two spills (total 87.5 litres, with an estimated 80 percent recovered).
- ✓ Waste production was similar to last year and general waste (to landfill) was down.
- ✗ Biological wastes (such as food scraps, human waste from the field and sanitary and medical waste from Scott Base) were up.
- ✓ Final environmental monitoring associated with the Cape Roberts Project found no detectable hydrocarbon contamination in soils or surface water (Total Petroleum Hydrocarbon analysis).



New Zealand, Norwegian and United States Antarctic programme environmental staff touring McMurdo waste management facilities. *Emma Waterhouse, Antarctica New Zealand Pictorial Collection.*

Environmental Highlights

Norwegian Environmental Officer Visit

Antarctica New Zealand hosted Birgit Njaastad, the Norwegian Polar Institute Environmental Officer and current Chair of the Antarctic Environmental Officers Network (AEON) in November 2001. Birgit worked alongside the Environmental Team for three weeks including a week-long visit to Scott Base. While on the ice, Birgit had the opportunity to visit McMurdo Station, hosted by the NSF Environmental Officer. Visits were also made to the historic huts and the McMurdo Dry Valleys. While in Christchurch considerable AEON work was completed and Birgit was briefed on aspects of Antarctica New Zealand's environmental management approach. Visits such as this offer important opportunities for environmental officers, who often work in isolation within their organisations, to informally exchange ideas and information with other environmental experts.

McMurdo Dry Valleys Specially Managed Area

Significant progress has been made over the last year on developing a consultation draft of the management plan for the proposed Antarctic Specially Managed Area (ASMA) in the McMurdo Dry Valleys. New Zealand and the United States have been working cooperatively on developing the draft plan, which was widely circulated for comment in June 2002. The proposed ASMA covers a significant area and aims to enhance planning and coordination of activities, avoid possible conflicts between activities, and minimise environmental impacts. The draft plan includes a general code of conduct for all visitors, specific codes of conduct for scientific activities, and establishes several different zones – facilities zones, a tourism zone, and special features – aimed at better managing activities in these specific areas. Information collection to generate detailed maps to support the plan was carried out in January 2002.



Draft map showing proposed Dry Valleys Antarctic Specially Managed Area.



Gateway Antarctica GIS Technician Paul Bealing surveying the Lower Wright Hut for the proposed Dry Valleys Antarctic Specially Managed Area. *Rebecca Roper-Gee.*



Environmental Policy Officer and team preparing to enter Cryptogram Ridge ASPA no. 118 (SPA no. 22) on Mount Melbourne. From left: Italian Antarctic Programme field guide, Rebecca Roper-Gee (Antarctica New Zealand), Paul Bealing (Gateway Antarctica), Matt Amos (Land Information New Zealand). *Rebecca Roper-Gee.*

Progress with Protected Areas

The Antarctic protected area system is well set up for some positive progress over the next few years. Annex V of the Environmental Protocol which deals with protected areas is now in force and many of the management plans for existing areas have now been revised into a format prescribed by the Protocol. New Zealand has responsibility for 14 protected areas in the Ross Sea region. Only three of these plans now require upgrading – two sites on Mount Melbourne and one in the Balleny Islands. Other plans are also coming due for review, five years after they were first revised into Annex V format.

In January 2002, the Antarctica New Zealand Environmental and Policy Officer conducted a site visit to the summit of Mount Melbourne. The aim of the visit was to collect survey information for the production of new maps and to collect up-to-date site information. Mount Melbourne is the site of geothermal soils that support a unique and diverse botanical community. The warmest areas of ground created by fumaroles support patches of moss, liverwort and algae along with one species of invertebrate protozoan. The revised plan will be tabled at the September 2002 Antarctic Treaty Consultative Meeting.

Environmental Team Speaks Out

Keynote Address at SCAR VIII Biology Symposium

The Antarctica New Zealand Environmental Manager was invited by SCAR to present the keynote address in the Antarctic Research, Human Impacts and Environmental Policy sub-theme at the SCAR VIII Biology Symposium in 2001. The Symposium was held in Amsterdam from 27 August to 1 September and had as its overall theme Antarctic Biology in a Global Context. The paper, entitled “From Microbes to Milestones: Science and Antarctic Environmental Policy” will be published in the Symposium proceedings and addresses issues related to developing links between often complex scientific data and research outcomes, and environmental policy making.

Hobart Conference

The Environmental and Policy Officer presented a paper on New Zealand’s experiences with contaminated sites in the Ross Sea region at the 3rd International Conference on Contaminants in Freezing Ground held in Hobart in April 2002. The conference was attended by a range of Antarctic and Arctic region scientists, policy makers and managers.



“ Teachers need to experience nature to help their learners develop an awareness of and sensitivity toward the environment. A teacher's informed enthusiasm is perhaps their greatest asset. They can then provide both second and first hand experiences of the natural world for their learners and interpret those experiences with them. ”

Chris Arcus Wellington College of Education 2002

Public Awareness

Our staff have been active in speaking engagements concerning Antarctic matters. We provided the University of the Third Age with an Antarctic lecture series involving Cape Roberts, Science, Environmental and Arts information. We have produced media releases on topics ranging from the Icebergs carving off the Ross Ice Shelf, to the visit of Her Royal Highness Princess Anne, to items promoting workshops and conferences. The very successful Antarctica New Zealand annual conference was held in Auckland in March. A mix of our science, arts, environmental and education event personnel spoke of the progress and successes of their Antarctic projects. Staff have spoken at public events including the Canterbury Annual Photographic Club, Universities throughout New Zealand, schools in Wellington and Christchurch, and the Antarctic Attraction in Christchurch. In addition we have participated in school visits, speaking and poetry reading at art galleries and museums, and newspaper features relating to Antarctica. Television New Zealand screened two different documentaries on the Artists to Antarctica programme during the year.

Artists to Antarctica

Three Arts Fellows travelled to Antarctica this year – Wellington photographic artist Anne Noble, printmaker Denise Copland from Christchurch and Richard Thompson, a painter and sculptor from Auckland. The three artists bring to thirteen the number of artists supported by Antarctica New Zealand and Creative New Zealand in



Antarctic Arts Fellow Dee Copeland at work in Shackleton's Hut. *John Gumbly, Antarctica New Zealand Pictorial Collection.*

a residency partnership that was established in 1997. Anne Noble's first exhibition of Antarctic photography opened in Wellington in June. Richard Thompson also opened his first Antarctic exhibition in Auckland in June. Denise Copland is currently working towards a large-scale individual exhibition which will profile her impressions of Antarctica.

The Antarctic Artists Programme has continued to prosper with former artists producing some exciting new work. Margaret Mahy published her book *The Riddle of the Frozen Phantom* in November



Margaret Mahy entertaining school children during the launch of her book *The Riddle of the Frozen Phantom*. *Vivienne Allan, Antarctica New Zealand Pictorial Collection.*

2001. The exhibition 'Antarctic Heart' by Virginia King continues on tour throughout New Zealand. Margaret Elliot has exhibited new works in Christchurch and Wellington during the year and Bronwyn Judge's dance theatre 'Kathleen's Antarctic' based on the life of Robert Falcon Scott and his wife Kathleen played to full houses for the duration of its premiere in Dunedin. Raewyn Atkinson's first exhibition of ceramic works opened at the Dowse Art Gallery in Lower Hutt in May to substantial acclaim. A catalogue of the exhibition was produced with support from Creative New Zealand which included a poem written by Chris Orsman specifically for the ceramic works.

The Antarctic Arts Programme is highly regarded by the New Zealand art community and continues to increase its profile. Next season's artists will include Fieke Neuman a textile and fashion artist from Dunedin and Phil Dadson from Auckland who is an inter-media artist specialising in sound.

Antarctica New Zealand also supported the visit of an Austrian photographer Josef Hoflehner who will mount an exhibition in Vienna in February 2003 on Scott's Hut at Cape Evans.

Facilitation of Antarctic Education

Secondary Schools Programme

Four students from Tauranga Girls College studied aspects of Antarctic science as their project when they visited Antarctica in November 2001. The students spent four days with NIWA scientist Ian Hawes and his research team at Cape Evans.

A total of 34 applications for next season's secondary schools programme were received by Antarctica New Zealand. The selected school is St Bedes College from Christchurch. Four students from the school will undertake a cross curriculum arts, history and English project.

Familiarisation Programme

Staff from the Antarctic Attraction in Christchurch, Kelly Tarlton's Underwater World and Antarctic Encounter, Otago Museum and a primary school teacher from Rome, Italy, travelled to Antarctica on a familiarisation programme designed to provide on-site information for educators who work in Antarctic-related institutes. Results from this visit include an Antarctic exhibition for the International Science Festival and a long running exhibition including an education programme at Otago Museum. Taking an Italian teacher is a new collaborative project between Antarctica New Zealand and the Italian Antarctic programme (ENEA) to develop educational information for primary and secondary students in both countries. Next season, an educator from the Antarctic Museum in Genoa will accompany New Zealand teachers on a visit that plans to include the Italian Antarctic Base at Terra Nova Bay.

Education Initiatives Programme

A teacher from Lincoln High School, Canterbury, two lecturers from the Christchurch College of Education and a teacher from the Wellington College of Education visited Antarctica in November to gather information that would assist in the development of primary and secondary teaching resources in the curriculum areas of drama, science, social studies and health. Later in the season, a tourism lecturer from the University of Otago went to Antarctica to gather information to create curriculum and university-based educational resources relating to Antarctica in the areas of tourism and environmental education.

Graduate Certificate in Antarctic Studies

We supported the University of Canterbury Graduate Certificate in Antarctic Studies course for the fourth season. Twenty students travelled to the Ice in December. Their visit was shortened due to inclement weather however they achieved their multi disciplinary education objectives in the areas of science, environmental and arts. Antarctica New Zealand staff were involved as lecturers, and project supervisors as well as in operational support.

Media Programme

Two New Zealand media representatives – from Radio New Zealand and from Telecom's Xtra Internet Site, produced a series of programmes and initiatives following their visit to Antarctica in November. In addition, Antarctica New Zealand supported a Canadian journalist who wrote about his Antarctic visit in major international publications. A photographer from October Films (UK) spent two weeks filming for the production of 'The Coldest March', written by American scientist Susan Solomon, an account of the last voyage of Robert Falcon Scott. Natural History New Zealand returned to Antarctica to film for a documentary series for National Geographic's television programme.



Tauranga Girls College students during kit out before travelling to Antarctica. Liam Nolan, Antarctica New Zealand Pictorial Collection.



Graduate Certificate in Antarctic Studies students practicing 'self-arrest' techniques during Antarctic Field Training. Richard Turvey, Antarctica New Zealand Pictorial Collection.



Rick Christie, a member of the Business distinguished visitors group chats with the Chef, Jeff Reid, at the Scott Base Bar. Unknown, Antarctica New Zealand Pictorial Collection.

Distinguished Visitor Programme

Antarctica New Zealand hosted Her Royal Highness, Princess Anne, the Princess Royal in Antarctica in February when she attended the centennial celebrations marking the first voyage of Captain Robert Falcon Scott to Antarctica in 1902. The visit which was organised jointly by Antarctica New Zealand and the Antarctic Heritage Trust, included the unveiling of a commemorative plaque at Discovery Hut, a commemorative church service at the Chapel of the Snows and a celebration dinner at Scott Base. Princess Anne was accompanied by the International Chief Executive of Saatchi & Saatchi, Kevin Roberts.

We took two additional groups of distinguished visitors to

Antarctica. The first group comprised prominent New Zealand business people – Rick Christie, Eion Edgar, Kerry McDonald and Stephen Tindall, and the second group focussed more on the arts, education and law sectors – Tony Preston, Roy Sharp and Chris Joyner (a law lecturer from Georgetown University USA). The benefit of taking distinguished visitor groups to Antarctica is to assist in profiling the activities of the New Zealand Antarctic Programme and at the same time to create ‘ambassadors’ who have a greater understanding of the Antarctic environment and Antarctic issues following their visit.

We also attempted to take the Governor General, Dame Sylvia Cartwright to Antarctica in December. After three attempts the visit was abandoned, but the experience gave Dame Sylvia a good understanding of the issues involved in Antarctic travel.



HRH Princess Anne being interviewed by Reuters at Discovery Hut. Mark Barker, Reuters.

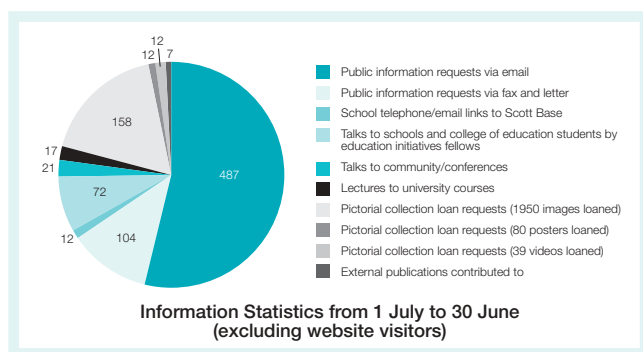
Information Provision

Information Management System

The Information Management System Team has had a very productive year. A Request for Information was widely circulated to potential providers of our information management needs. After a review of responses, a Request for Proposal was sent to selected organisations, after which a preferred vendor was selected and work began on a detailed Analysis and Design Project to map out the proposed solution. Work will continue on this project over the next few months.

Antarctica New Zealand Website

Development of our Website has continued with the inclusion of a search engine that enables users to search all parts of the site. A staff survey was undertaken which has provided useful feedback for future development of the site. A section was designed for The Antarctic Foundation site. This will be developed into a separate site once The Foundation is active. The Information Services Specialist was invited to participate in the Government Online Conference in Wellington, speaking about the process of developing the Antarctica New Zealand site into a cost effective site with good user statistics.



Special Activities

International Art Exhibition

Antarctica New Zealand is working with New Zealand art galleries to mount an international art exhibition opening in Christchurch in October 2003 which will feature Antarctic artworks from the US, UK, Australia and New Zealand.

The Antarctic Foundation

A new Foundation to fund Antarctic Research has been established by Antarctica New Zealand. Operating as a charitable trust, the Foundation’s trustees include Dame Ann Hercus and Kerry McDonald as well as Board members from Antarctica New Zealand – Chris Mace (Chairman), and Bill Mansfield and the Institute’s Chief Executive. The Foundation is still in its initial establishment phase, but it has already secured ongoing funding through a percentage of the profit from the Shop and Bar at Scott Base, and a percentage of profit from a new range of clothing established by the Antarctic Attraction at the International Antarctic Centre in Christchurch.

Erebus – Remembrance Exhibition

Antarctica New Zealand is working with Archives New Zealand on an archival display commemorating the aircraft crash of Flight TE901 on Mt Erebus on 28 November 1979. The display will open at the end of July 2002 and will run for three months at the Christchurch office of Archives New Zealand.



Wreaths placed at the base of the Flight TE 901 memorial cross during the 20th anniversary commemorative services. Images of commemorations in Antarctica will be featured in the exhibition. Peter Cleary/Peter Brookman, Antarctica New Zealand Pictorial Collection.

Stakeholder Management

A survey of key stakeholders was undertaken by Antarctica New Zealand in September 2001 to assess stakeholder perceptions of our performance over the last two years. The survey questions related to the outputs in our Purchase Agreement with the Government.

The survey results were an affirmation of the work being undertaken by Antarctica New Zealand, although there was a surprising lack of knowledge about the involvement of the Institute in international Antarctic forums. The survey showed that our major stakeholders endorse and support our science, environmental stewardship, public awareness and education programmes and rate very highly the logistics and provision of support services in Antarctica.



“ The Parties commit themselves to the comprehensive protection of the Antarctic environment...and hereby designate Antarctica as a natural reserve devoted to peace and science.”

Article 2, Protocol on Environmental Protection to the Antarctic Treaty, 1991.



Delegates to the Antarctic Treaty Consultative Meeting and Committee for Environmental Protection in St Petersburg relax with a canal trip during a break in proceedings. *Unknown, Antarctica New Zealand Pictorial Collection.*

Council of Managers of National Antarctic Programmes (COMNAP) and the Antarctic Environmental Officers Network (AEON)

Antarctica New Zealand has continued to play an active role in COMNAP and AEON, although our CEO and Environmental Manager have both stepped down from their respective chairing roles.

AEON has again been busy managing two projects aimed at facilitating improved implementation of the Environmental Protocol. The Antarctica New Zealand Environmental Team has been closely involved in both initiatives.

In the first project, practical guidelines for developing and designing monitoring programmes in Antarctica have been drafted. These are aimed at assisting national programmes with meeting the Environmental Protocol requirements of “regular and effective monitoring to allow assessment of the impacts of ongoing activities.” They will also aid the development of monitoring programmes that provide consistent and comparable data across a range of sites in Antarctica. The guidelines will be provided to all 29 COMNAP member countries at the annual meeting being hosted by the Chinese Arctic and Antarctic Administration in Shanghai in July 2002.

In the other project, led by the Environmental Manager, a sub-group of AEON has conducted an analysis of existing initial environmental evaluations (IEEs). The aim of the work was to achieve a better understanding of how the environmental impact assessment (EIA) process is being used by national

Antarctic programmes. IEEs for three different types of activities were analysed and the results compiled into a report. The results highlighted where the EIA process is being done well, as well as aspects that could be improved. The report included a number of recommendations aimed at facilitating improvement in the EIA process.

Antarctica New Zealand has also been instrumental in establishing an Energy Management Network within COMNAP. This network will examine the extent to which national Antarctic programmes effectively utilise energy management and conservation processes, and facilitate the exchange of operating experience and encourage co-operative projects in this area.

Antarctic Treaty Consultative Meeting

Antarctica New Zealand is represented on the New Zealand delegation to the annual Antarctic Treaty meetings (including the meetings of the Committee for Environmental Protection (CEP)) by the Chief Executive and the Environmental Manager. This year’s meeting was held in St Petersburg, Russia in July 2001. Expert advice is provided within the delegation both at the meetings and throughout the year, including acting as the contact point for various intersessional consultations, in particular through the CEP. This year, we were involved in work on protected areas, historic sites and monuments, and cumulative environmental impacts.

We sought and gained approval for “A” Hut at Scott Base to be an historic monument. “A” Hut was the first hut to be built for the 1956/57 Trans Antarctic Expedition and International Geophysical Year, and is the only remaining original hut at Scott Base dating from that period. It has been renamed the “TAE/IGY” Hut.

The Antarctic New Zealand Chief Executive also represented COMNAP at the ATCM, presenting advice on environmental emergencies for environmental liability discussions, and reporting on the activities of COMNAP since the previous ATCM.

IAATO Tourism Meeting

At the ATCM in July 2001, it was signalled that Antarctic tourism would be discussed in detail at the next meeting. To facilitate informed debate on tourism issues at the 2002 ATCM, the International Association of Antarctica Tour Operators (IAATO) convened an informal meeting in late April 2002 in Colorado, USA. Around 20 people attended the meeting including the Antarctica New Zealand Environmental and Policy Officer and participants from the United Kingdom, Norway, Chile, United States, the tourism industry, and non Government conservation groups. Key issues discussed included the adequacy of current regulatory measures, safety and other risks, especially from very large and very small vessels, compliance and enforcement, cumulative impacts and the exchange of information.

OPERATIONS



The Operations Group continues to underpin the activities of science, public awareness, education, and environmental stewardship in the Ross Sea region, through the delivery of high quality flexible logistics and field support.



HRH Princess Anne greets Captain Beanland, Hercules pilot, before travelling to Antarctica. *Mark Baker, Reuters.*

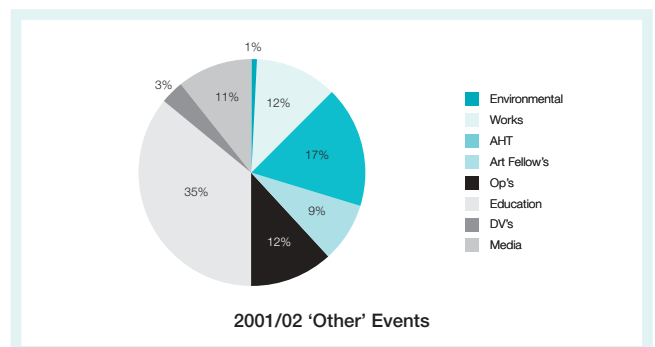
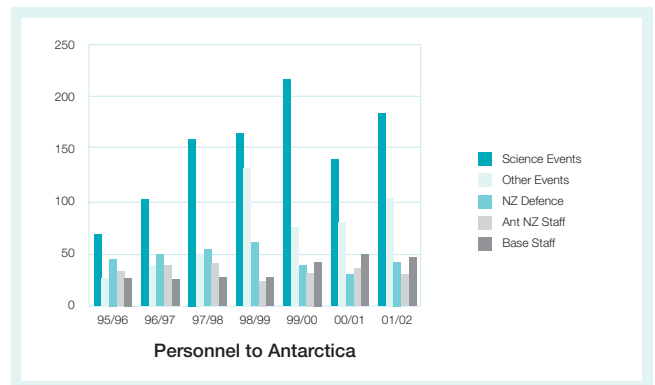
The group continues to implement new processes aimed at improving the effectiveness and efficiency of the support delivered. These include:

- computerised maintenance management
- financial and inventory systems
- risk management processes
- and project management

as part of the Antarctica New Zealand Information Management System project. The Operations Staff have also commenced planning to support two new major projects, ANDRILL and the Latitudinal Gradient Project.

Field Season

The 2001/2002 Antarctic season saw an increase in the number of scientific personnel and person days in Antarctica, compared with the 2000/2001 season. Overall, the total number of event personnel to Antarctica increased, as did base staff days in Antarctica, in part attributable to the significant reconstruction and development tasks undertaken. A wide geographical area was covered supporting field parties using both helicopter and Twin Otter aircraft. Once again close co-operation with the United States and Italian programmes was a key element of our success.



Logistics

The joint logistics pool continues to function well for both intercontinental logistics between Christchurch and Ross Island and for on-continent field support.

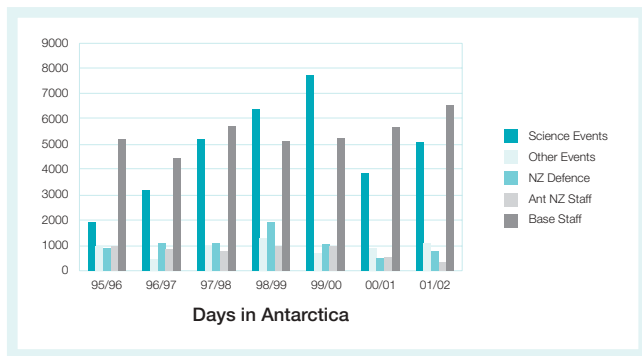
New Zealand contributed the following major resources:

- 16 RNZAF C130 Hercules flights
- 253 helicopter hours
- 400,000lbs of air lift capacity

Facilities Development

Antarctica New Zealand continues to invest in the infrastructure at Scott Base, to improve living and working conditions, safety, and environmental compliance. Significant projects included:

- Refurbishment of Stage 3 accommodation
- Installation of a new waste water treatment plant to meet Environmental Protocol requirements
- Installation of new insulated panels to strengthen the Stage 3A shell, and to improve insulation
- Refurbishment of the Hatherton laboratory to improve working conditions for scientists and science support staff
- Delivery of the refurbished Kassbohrer and 926 loader, the new D4 bulldozer, and purchase of a new four wheel drive vehicle



The staff of Antarctica New Zealand farewell the CEO Gillian Wratt with a song. Images Studio, Antarctica New Zealand Pictorial Collection

Corporate Services

Corporate Services is part of the Operations Group and its portfolio includes responsibility for Antarctica New Zealand's human resources management. The organisation is committed to building a world class team by developing and implementing policies that achieve our vision, mission and goals.

Policy Reviews

In the year 2001/2002 Antarctica New Zealand reviewed several of its HR policies including Performance, Development & Review (PDR) and its Medical Policy. The latter review involved staff and our external medical adviser with the aim of ensuring ownership of the policy by staff, transparency in the retention of medical records, best practice in following the procedures of the Health and Safety Act particularly at Scott Base, and confidentiality under the requirements of the Privacy Act.

Antarctica New Zealand surveyed staff to determine their needs in relation to the PDR process. The present system was modified following responses from the review, and taking into account the alignment between an individual's position and role, and the organisation's vision, mission and goals. Training requirements were also reviewed for individuals given the size of the organisation and the staff retention policy. The organisation introduced a new rewards system for staff to recognise and acknowledge individual effort beyond the normal role of their position.

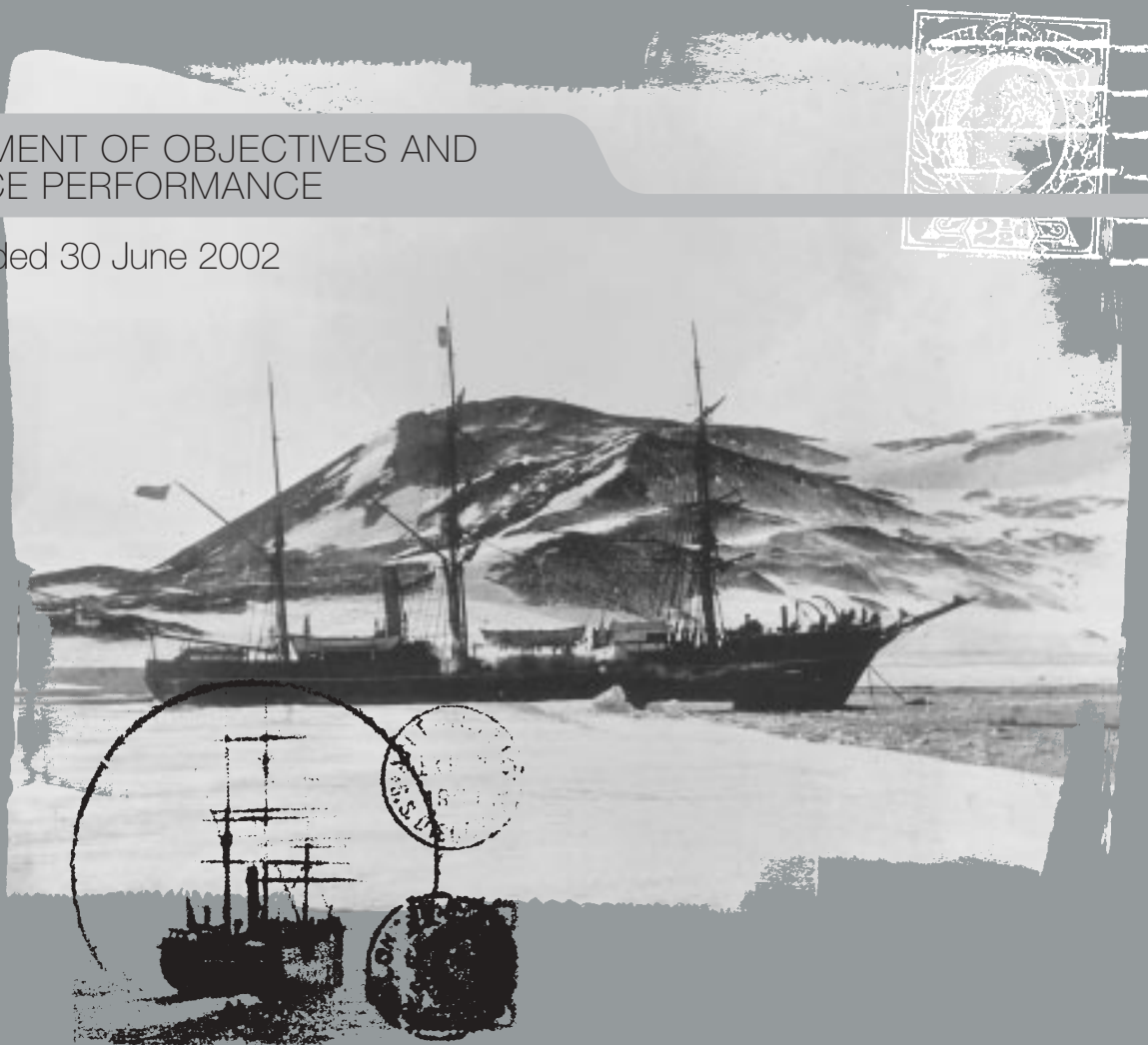
Antarctica New Zealand also reviewed the annual recruitment process for Scott Base staff and introduced new measures including psychometric assessments as an evaluation tool. The organisation employs an additional 20 – 30 staff each year to provide logistics and administrative support at Scott Base, 10 – 11 of whom winter over at the Base. They are considered an essential element of the Base operation and finding the appropriate staff is critical to Antarctica New Zealand's profile as a good Antarctic host.

Triple Bottom Line Reporting

Antarctica New Zealand participated in a pilot group funded and organised by the Ministry for the Environment (MfE) to explore the feasibility of government departments and crown agencies adopting the triple bottom line reporting model for future annual reports. Antarctica New Zealand's interest was based on the work already undertaken in Antarctica on sustainability and environmental management, and enthusiasm for a more socially responsible approach to staff management both in Christchurch and at Scott Base. As a result, Antarctica New Zealand has confirmed its commitment to triple bottom line reporting and is planning to begin initiatives in the new financial year.

STATEMENT OF OBJECTIVES AND
SERVICE PERFORMANCE

year ended 30 June 2002



GOVERNMENT STRATEGIC INTERESTS IN ANTARCTICA AND THE SOUTHERN OCEAN



New Zealand is committed to conservation of the intrinsic and wilderness values of Antarctica and the Southern Ocean, for the benefit of the world community and for present and future generations of New Zealanders. This will be reflected in active and responsible stewardship, under the Antarctic Treaty System, that promotes New Zealand's interests in:

- i. National and international peace and security through a commitment to keeping Antarctica peaceful, nuclear free, and its environment protected;
- ii. Continued influence in Antarctic governance through maintaining an effective role in the Antarctic Treaty System, and maintaining its long term interest and credible presence in, and commitment to, the Ross Dependency;
- iii. Conserving, protecting, and understanding the biodiversity of Antarctica and the Southern Ocean, in particular the biodiversity of the Ross Sea region, including promotion, protection and management of representative special areas, and enhancing biosecurity;
- iv. Conservation and sustainable management of the marine living resources of the Southern Ocean, and in particular the Ross Sea, in accordance with CCAMLR and the Antarctica Environmental Protocol, and within this context supporting strong environmental standards and sustainable economic benefits;
- v. Supporting and where appropriate leading, high quality Antarctic and Southern Ocean science that benefits from the unique research opportunities provided by Antarctica;
- vi. Demonstrating and advocating for best practice in environmental stewardship and all other activities throughout Antarctica, and in particular the Ross Sea region;
- vii. Ensuring that all activity is undertaken in a manner consistent with Antarctica's status as a natural reserve devoted to peace and science.



Interior of Discovery Hut. C Rudge, *Antarctica New Zealand Pictorial Collection*

STATEMENT OF OBJECTIVES AND SERVICE PERFORMANCE



Year ended 30 June 2002

Performance achieved against agreed measures, standards and costs for all outputs

The overall requirement of Antarctica New Zealand is to deliver Foreign Affairs and Trade Non-Departmental Output Class 01 Antarctic Research and Support:

Description

Advice on and the development, management and execution of New Zealand activities in respect of Antarctica and the Southern Ocean, in particular the Ross Dependency, including:

- planning, coordination, facilitation and logistic support for an international quality science programme based on a long-term strategic plan for New Zealand science in Antarctica, the Southern Ocean and the Ross Dependency
- environmental stewardship for New Zealand activities in the Ross Dependency, including State of the Environment reporting and management and monitoring of environmental impacts and associated logistical support
- public awareness and education on Antarctica and the Southern Ocean, including publications and events aimed at public awareness, encouragement of education in schools, and logistic support for associated visits to Antarctica

[Note: To deliver the above outputs, Antarctica New Zealand will ensure an effective presence in the Ross Dependency through the safe, effective operation of Scott Base, and an efficient and flexible logistic support capability, which is appropriately resourced to support New Zealand objectives in Antarctica, including supporting initiatives in science, education, public awareness and environmental stewardship.]

- encouragement of scholarship related to Antarctic and Southern Ocean issues
- proactively seeking to ensure that private sector activity in Antarctica is fully consistent with Government objectives in the region
- international representation in respect of scientific and other programme-level New Zealand activities in Antarctica and the Southern Ocean.

Quality, Quantity, Timeliness

Outputs will be delivered in accordance with the priorities and policy directions established by the Government.

Outputs will be delivered by agreed target dates and as specified in the Purchase Agreement between the Minister and the New Zealand Antarctic Institute.

At least 80% of affected parties will rate as very good or better the consultation processes and final standard of New Zealand Antarctic Institute's policy advice, planning and support services, rules and procedures, publications and international representation. Appropriate outputs will be assessed against the following quantitative benchmarks:

Quantitative Benchmarks

	2001/2002 estimated	2001/2002 actuals
Person days supported for science activities	at least 4,500	5,092
Persons days supported for non-science activities	at least 750	1,063
Estimated expenditure	\$6,292,000	\$6,950,404

Progress in delivering the outputs is reported below

1.1 PLANNING AND FACILITATION OF SCIENCE

Purchase Agreement Outcomes

- New Zealand Antarctic science makes a significant contribution to the understanding of Antarctic ecosystems and global change.
- Increased international profile through high quality science and collaborations with international partners.
- Research in and related to Antarctica is recognised as a valuable part of New Zealand's science investment by MoRST, the Foundation and research providers, with PGSF and University funding at least maintained at its current level.
- Increased Antarctic research money available through private sector involvement and international science collaboration.

Costs

Full year estimate: \$270,146

Expenditure to date: \$247,196

Activity	Performance Measures	Progress to date
<p>Science Management and Facilitation Provide strategic direction and planning for New Zealand Antarctic and Southern Ocean science.</p> <p>Manage a process for the 2002/03 and/or 2003/04 "Application for Support" round for Antarctic and Southern Ocean science, and initial selection of acceptable projects using the Antarctic Research Committee.</p> <p>Provision of logistic support to science projects in Antarctica.</p> <p>Provision of technical scientific support and facilities for science in Antarctica.</p>	<p>Revise the New Zealand Antarctic and Southern Ocean Science Strategy.</p> <p>Develop a three to five year science plan.</p> <p>Publish the Southern Ocean Science Strategy for 2001 – 2006 by April 2002.</p> <p>Develop individual research and operating plans for the Latitudinal Gradient Project, ANDRILL, and with MFAT and MFish, for Southern Oceans Research.</p> <p>Successful completion of the Application for Support selection process by January 2002.</p> <p>All approved science projects are appropriately supported in Antarctica to achieve project goals.</p> <p>Provision of science technician; computing and science support facilities meets event requirements as indicated by event debrief scores within cost constraints.</p>	<p>A first draft outline of a revised Science Strategy document was presented to the Board of Antarctica New Zealand at the November 2001 Board meeting. The outline was presented for discussion at the May 2002 Annual Antarctic meeting. A first draft is near completion for circulation at the beginning of July. The revised Strategy will be incorporated in the announcement for the 2002 bidding round in August.</p> <p>A 3 – 5 year plan for the organisation has been created by Antarctica New Zealand. This document and the plans for BioRoss, LGP and ANDRILL provide the basis for the 3 – 5 year plan.</p> <p>Discussions with the Ministry of Fisheries and NIWA regarding Southern Ocean research have progressed and an outline for the Southern Ocean Science Strategy has been written. The Southern Ocean biocomplexity theme of the revised Science Strategy document is a focal part of the Southern Ocean Strategy document. Meetings have been held with NIWA and MFish and the first draft of the Strategy is underway.</p> <p>All of these initiatives are progressing well. An ANDRILL project plan has been created, a first draft of a Science Overview and Logistics Plan for LGP written, and the medium term plan for BioRoss updated with MFish.</p> <p>We received 43 proposals applying for support for the 2002/2003 season. The Antarctic Research Committee met on 10 December to review and discuss the proposals. A final recommendation has been accepted, pending logistics support by the Board of Antarctica New Zealand at the February Board meeting.</p> <p>All approved science projects were supported.</p> <p>The Scott Base science technician was chosen along with the rest of the Scott Base crew in early August. Science technical, computing and support facilities are being provided from Scott Base as required. Many event reports commented on limitations of computing facilities at Scott Base.</p>

Activity	Performance Measures	Progress to date
<p>Reporting Science Publish information on New Zealand Antarctic and Southern Ocean science.</p>	<p>Annual Report includes contribution of science using the five science strategy themes.</p> <p>The web site has up to date scientific information relating to past findings and future directions.</p> <p>Maintain a running bibliography on New Zealand's Antarctic publications, including salient publications linked to the International Antarctic Bibliography by May 2002.</p>	<p>Annual Report published with sections on each of the five science strategy themes.</p> <p>The website has been updated regarding the Bidding Round information and scholarship awards for the 2001/2002 season. We have recently updated the Science section of the website. The new information will appear on Antarctica New Zealand's website in July.</p> <p>The bibliography has been updated to contain the most recent publications in 2000 and 2001. The bibliography is now completely searchable on the Antarctica New Zealand website and will be updated in August of each year.</p>
<p>Public education and awareness of recent scientific events and findings.</p>	<p>Coordination of an Antarctic science seminar/workshop in March/April 2002.</p>	<p>The Annual Antarctic Conference was hosted by the School of Biological Sciences at the University of Auckland in April 2002. A document of conference abstracts was published for the conference.</p>
<p>Science Funding Continued advocacy for Antarctic science to ensure funding availability for high quality research.</p>	<p>Play an active role in Antarctic Research priority setting by the Foundation.</p>	<p>Communications continue with the Foundation for Research Science and Technology regarding the advancement of the Global Environmental SPO. A document describing all the current methods of funding (science and logistics) of Antarctic research was presented at the May Board meeting. A letter of agreement between Antarctica New Zealand and FRST is being pursued.</p>
	<p>Maintain links with appropriate funding and research agencies.</p>	<p>Close links have been maintained with MFish, FRST, and MoRST. Antarctica New Zealand is continuing to work with Canterbury University and other universities and Crown Research Institutes (CRIs) regarding the Centres of Research Excellence follow-up concept.</p>
	<p>Attract interest in Antarctic research from science sector(s) not traditionally involved.</p>	<p>Gateway Antarctica (GA) was not successful with its CoRE for Antarctic research proposal. Antarctica New Zealand is helping GA to form a follow-up plan for the CoRE proposal.</p>

1.2 ENVIRONMENTAL STEWARDSHIP

Purchase Agreement Outcomes

- Antarctica New Zealand activities, including implementation of actions from the New Zealand Environmental Strategy for the Ross Sea region, demonstrate leadership in Antarctic environmental management and are adopted nationally and internationally.
- The development of the Ross Sea Region State of the Environment Report provides the platform for the development of a regional process for reporting on the environment and a basis for management of human activities in the region.

Costs

Full year estimate: \$200,261
Expenditure to date: \$229,968

Activity	Performance Measures	Progress to date
<p>Implementing Environmental Management Strategy Ongoing implementation of Antarctica New Zealand Environmental Management Strategy.</p> <p>Continued upgrade of Scott Base waste management systems.</p> <p>Clean up and remediation at Cape Hallett.</p>	<p>Antarctica New Zealand's Environmental Management Strategy revised and published incorporating relevant outcomes of the Ross Sea Region State of the Environment Report.</p> <p>Sewage treatment option selected and installation commenced following shipping of plant in February 2002.</p> <p>Clean up and remediation plan for Cape Hallett developed with the United States Antarctic program.</p>	<p>Revision process underway. Input to identification of specific initiatives and priority setting for the review delayed until after the publication of the proceedings from the Ross Sea Region State of the Environment Report follow up workshop (July 2002).</p> <p>The wastewater treatment plant was shipped to Scott Base in February 2002 and is now installed at Scott Base. The plant is being prepared for commissioning in October 2002.</p> <p>Agreement reached with USAP on overall clean up and remediation strategy. Detailed planning work has commenced.</p>
<p>Environmental Performance and Compliance Ensuring compliance with Antarctica (Environmental Protection) Act by persons involved in Antarctica New Zealand managed activities.</p> <p>Ongoing implementation of Antarctica New Zealand environmental monitoring programme.</p> <p>Compliance monitoring of activities (as feasible) in relation to non-Antarctica New Zealand managed activities in the Ross Dependency which come under the Antarctica (Environmental Protection) Act.</p>	<p>Antarctica New Zealand environmental management system (EMS) consistent with AS/NZ ISO 14001:1996.</p> <p>Environmental impact assessment (EIA) and permitting processes are completed for all Antarctica New Zealand supported activities.</p> <p>Environmental authorisations detailing specific activities are issued to all events according to Antarctica New Zealand permits.</p> <p>End of season environmental performance report demonstrates that activities supported by Antarctica New Zealand in Antarctica comply with the Antarctica (Environmental Protection) Act, and effective follow up for any non-compliance.</p> <p>Monitoring of agreed indicators carried out in 2001/2002 season and contributes to the assessment of environmental performance of Antarctica New Zealand managed activities.</p> <p>End of season environmental performance report includes reporting on agreed indicators.</p> <p>Reports on relevant monitoring and compliance activities provided to MFAT.</p> <p>Appropriate logistics support and training provided for the New Zealand Representatives programme for four vessels in the Ross Dependency.</p>	<p>An independent audit of the Scott Base aspects of the EMS was carried out in October 2001. The audit report noted just two non-compliance issues, both related to updating of documentation. All other aspects consistent with ISO 14001.</p> <p>EIA and permitting processes completed for 2001/2002.</p> <p>Environmental authorisations issued to all events for 2001/2002 season.</p> <p>End of season reporting and in-season internal audits demonstrate compliance of all activities with the Act.</p> <p>Monitoring activities carried out and incorporated into end of season environmental performance report (see below). Key points included no hydro carbon at Cape Roberts, a decrease in total fuel spilled but an increase in total fuel used.</p> <p>Draft report prepared and includes reporting on agreed indicators. Final report delayed by late event reports and to be completed by August 2003. Key points included an overall high level of compliance by events, a similar number of science events to last year, and the completion of surveying for improved protected area management.</p> <p>No relevant activities to report on.</p> <p>Appropriate support, equipment and training provided to representatives for 2001/2002 season.</p>

Activity	Performance Measures	Progress to date
<p>Ross Sea Region State of the Environment Report (RSR-SOER) Project manage the production of the Ross Sea Region State of the Environment Report and coordinate follow up action and development of specific initiatives following publication.</p>	<p>Successful publication and launch of the RSR-SOER, meeting project terms of references.</p> <p>Specific regional environmental initiatives identified and priorities set building on the outcomes of the RSR-SOER in consultation with other operators in the Ross Sea region.</p> <p>Options investigated for future New Zealand involvement in and priorities for state of the environment reporting in the Ross Sea region taking into account developments with any Antarctic wide SOER.</p>	<p>Report published and launched in November 2001.</p> <p>Regional initiatives identified in the report. Further identification, discussion and prioritisation of initiatives occurred during the <i>Ross Sea Region 2001: The Next Steps Workshop</i> held on 28/29 May 2002. The workshop included 70 participants with representatives from all Ross Sea region operators. The proceedings from the workshop have been drafted and will be published in July 2002.</p> <p><i>The Ross Sea Region 2001: The Next Steps Workshop</i> held on 28/29 May 2002 specifically examined options for future state of the environment reporting in the Ross Sea region. The proceedings from the workshop have been drafted and will be published in July 2002.</p>
<p>Protected Areas Revision of protected area management plans for Mt Melbourne protected areas.</p> <p>Provision of input and advice on the ongoing development of a protected area proposal for the Balleny Islands.</p> <p>Development of an Antarctic specially managed area (ASMA) for the McMurdo Dry Valleys.</p>	<p>Draft plan for Mt Melbourne protected area revised and submitted to the ATCM/CEP 2002 meeting.</p> <p>Input and advice contribute to the further development of the Balleny Islands protected area proposal.</p> <p>Continuing liaison and consultation with the US on development of a draft management plan for a McMurdo Dry Valleys ASMA with the US, leading to the preparation of a draft ASMA in 2002.</p>	<p>Field work in support of mapping for the draft plan carried out in January 2002. Text of plan well advanced and consultation with relevant scientists completed. Draft plan on track for submission as a working paper to the CEP in late July 2002.</p> <p>Environmental Manager co-ordinator of a New Zealand working group on the proposal. A strategy for advancing the Balleny proposal has been developed and subsequently endorsed by the OAC. Informal meeting (organised by AntNZ) held on marine protected areas on 30 May involving all Ross Sea region operators and others to discuss common MPA issues.</p> <p>Draft plan developed and circulated to science community and other interested parties in June 2002.</p>
<p>Provision of Advice Provision of high quality expert advice on EIAs for government and non government activities and other significant environmental issues as requested to MFAT and EARP.</p> <p>Provision of advice on national Antarctic environmental policy issues to MFAT and the OAC.</p> <p>Provision of advice to OAC departments and research organisations on Ross Sea region marine conservation and management including hydrography initiatives and research priorities.</p>	<p>Expert advice:</p> <ul style="list-style-type: none"> ● meets timelines; ● is proactive, highlighting emerging issues where appropriate; ● includes consideration of all relevant available information; and ● includes consideration of relevant scientific, technical and operational aspects. <p>Policy contributions and advice meet the policy advice criteria outlined above.</p> <p>Policy contributions and advice meet the policy advice criteria outlined above.</p>	<p>Ongoing liaison throughout the year between Environmental team and MFAT and EARP regarding EIA, permits and other issues.</p> <p>Ongoing input and liaison with MFAT regarding the updated tourism policy and procedures, and on the revised Government Strategic Objectives for Antarctica and policy on the Southern Ocean and fisheries.</p> <p>Ongoing liaison and advice provided through the year.</p>

1.3 PUBLIC AWARENESS AND EDUCATION

Purchase Agreement Outcomes

- Public awareness of the global significance of Antarctica and the Southern Ocean, to create a constituency of interest that encourages and underpins a continuing strong national involvement in the Ross Dependency, and the international influence to encourage compliance with the Antarctic Treaty System.

Costs

Full year estimate: \$163,773

Expenditure to date: \$233,242

Activity	Performance Measures	Progress to date
<p>Facilitation of Antarctic Education Encourage the provision of high quality education about New Zealand's Antarctic interests and activities.</p>	<p>Organise educators from Kelly Tarlton's Underwater World and the International Antarctic Centre's Visitor Centre and identified New Zealand museums to undertake a familiarisation visit to Antarctica.</p>	<p>Educators from the Dunedin Museum, the International Antarctic Centre Visitor's Centre and Kelly Tarlton's Antarctic Attraction went to Antarctica in November on a familiarisation visit. Also hosted an Italian primary teacher from Rome with this group as part of a pilot project between the Italian and New Zealand Antarctic programmes.</p> <p>Follow-up work included the initial scoping of a permanent Antarctic display at the Otago Museum, and preparation for a month-long Antarctic interactive display at the Museum to coincide with the annual Science Festival in Dunedin. The display received positive reviews in local and national media. Antarctica New Zealand provided artefacts and contemporary display material.</p>
<p>Encourage tertiary education institutions to develop appropriate Antarctica curricula as part of school programmes.</p>	<p>Encourage tertiary education institutions to develop appropriate Antarctica curricula as part of school programmes.</p>	<p>The Italian pilot project has been reviewed and an invitation has been extended to the Italian Antarctic Programme to provide another educationalist to participate in the familiarisation programme for the 2002/2003 season. A teacher from the Italian Antarctic Museum in Genoa will accompany the education familiarisation visit to Antarctica next season.</p> <p>Two tutors from the Christchurch College of Education, a tutor from the Wellington College of Education and a teacher from Lincoln High School visited Antarctica for two weeks in November. Following their visit, the tutors from Christchurch College of Education have completed the first primary school education modules which will be linked to Antarctica New Zealand's website as well as used for distribution to schools where Antarctica studies are part of their curriculum.</p> <p>One of the tutors from the Christchurch College of Education assisted Antarctica New Zealand in the assessment of the Education Initiatives programme for the new season. A total of 19 applications were received for the 2002/2003 season.</p>
<p>Encourage university Antarctic study.</p>	<p>Maintain Antarctica New Zealand's involvement with the University of Canterbury Gateway Antarctica programme.</p> <p>Encourage other Universities to continue/develop Antarctic research and study.</p>	<p>Hosted the Graduate Certificate in Antarctica Studies (GCAS) students at the beginning of their studies programme for the new season on a familiarisation visit to Antarctica New Zealand. Several members of Antarctica New Zealand staff have been involved in programme lectures ahead of their visit to Antarctica. Hosted GCAS Scott Base field programme.</p> <p>Facilitated the opportunity for a tourism lecturer at Otago University to visit Antarctica in February 2002 as part of a study project.</p>
<p>Initiate a new national secondary school education programme.</p>	<p>Develop a national plan for secondary schools to submit proposals to visit Antarctica.</p>	<p>Completed plan for secondary schools to submit annual proposals, and accepted a proposal from Tauranga Girls College to visit Antarctica as part of a science based project. The Tauranga students participated in a science project at Cape Evans in November. Since their return they have given talks to their school and staff, have been interviewed by local media and given external talks to other schools in their area.</p> <p>Following an evaluation of the Tauranga school visit, Antarctica New Zealand invited applications from secondary schools for the new season. Thirty-six applications were received. Four students from St Bede's College in Christchurch were selected to undertake a multi-media study in Antarctica including art, social studies and English.</p>

Activity	Performance Measures	Progress to date
Antarctic science post-graduate scholarship scheme.	Identify private sector sponsors to a minimum of two scholarships.	Ongoing with Kelly Tarlton's and New Zealand Post.
<p>Public Awareness Grow and develop the Artists to Antarctica programme.</p> <p>Improve general public awareness and understanding of the Antarctic environment, and New Zealand involvement in Antarctica and the Southern Ocean.</p>	<p>Implement the visit of two Antarctic Arts Fellows to Antarctica 2001/2002 season; assist with the hosting of an Antarctic exhibition within New Zealand; work with the Christchurch Art Gallery and Te Papa to extend the potential for travelling exhibitions nationally and internationally.</p> <p>Provide specific opportunities for media visits to Antarctica including film and documentary makers, mainstream news reporters and specialist reporters.</p>	<p>The Antarctic Arts Fellows – Richard Thompson, a painter from Auckland, Denise Copland, a print maker from Christchurch, and Anne Noble a photographic artist from Wellington, completed their Antarctic visits. They have received wide media coverage prior to, and following their visits. Anne Noble and Richard Thompson have exhibitions currently running in Wellington and Auckland respectively on Antarctic perspectives.</p> <p>Continuing discussions with the Canterbury Art Gallery and Te Papa regarding the potential for an international Antarctic exhibition to open in Christchurch in October 2003.</p> <p>Exhibition mounted by sculptor Virginia King (Antarctic Arts Fellow 1999) – Antarctic Heart – completed its season at the Dowse Gallery in Lower Hutt and moved to Hawkes Bay. It will be on tour for another year, finishing in Christchurch as the first exhibition at the new art gallery. Virginia King's Antarctic sculpture also accepted for exhibition in New York's science museum at an international science symposium.</p> <p>Dance choreographer Bronwyn Judge (Antarctic Arts Fellow 2000) produced her first dance series in the Dunedin Art Gallery in Dunedin to crowded audiences. She premiered her dance drama on the life of Kathleen Scott in Dunedin in March.</p> <p>Raewyn Atkinson (Antarctic Arts Fellow 2000) exhibited Antarctic works in the Portage exhibition in Auckland in November. Her first Antarctic ceramics exhibition opened at the Dowse Art Gallery in Lower Hutt in June. Her work will be on display and on tour until November 2002.</p> <p>Supported the visit of a Viennese photographer to Antarctica to photograph Scott's Hut and Shackleton's Hut. He will mount an international exhibition in Vienna on the historic huts in February 2003 and will publish a book at the same time.</p> <p>The assessment process was completed for the selection of the Antarctic Arts Fellows for the 2002/2003 season. Twenty-four artists submitted applications. The selected artists are Fieke Neumann, a fashion and fabric designer from Dunedin, and a music/composer Phil Dadson from Auckland.</p> <p>Completed organisation requirements for Natural History New Zealand to visit Antarctica in November to complete an international documentary for National Geographic television entitled 'Hot Science.' Project successfully completed. Canadian journalist Joseph Frey visited Scott Base in November to write about New Zealand science in Antarctica for major Canadian journals, magazines and newspapers. He has since published several articles about Antarctic research. Two other journalists – from Telecom's Xtra and Radio New Zealand visited Antarctica in November. Interviews, reports and articles have given positive coverage to Antarctic activities since their return. A BBC project to complete a series on Orca whales was cancelled due to the extent of the sea-ice this season.</p> <p>We supported another BBC cameraman to film Scott's Hut at Cape Evans and other sites involving Captain Robert Falcon Scott for the filming of the book 'The Coldest March'.</p>

Activity	Performance Measures	Progress to date
	<p>Provide opportunities for key influencers and decision-makers to visit Antarctica through the DV programme and highlight their visit by the inclusion of media where appropriate.</p>	<p>A DV party comprising the Director of the Christchurch Art Gallery, Tony Preston, the Deputy Vice Chancellor at Victoria University, Roy Sharp, and a visiting international law lecturer from the US, Chris Joyner, went to Antarctica in October. A second DV visit comprising Stephen Tindall (Chair of the New Zealand Business Council for Sustainable Development), Kerry McDonald (Chair of the State Sector Standards Board), Rick Christie (Chair of the Science and Innovation Advisory Council) and Eion Edgar (Chancellor, Otago University) visited Antarctica a week later.</p> <p>The planned visit of the Governor-General, Dame Sylvia Cartwright, and a party of five including Peter Cartwright, the Deputy Prime Minister Hon Jim Anderton, the Commander of the New Zealand Joint Forces Major General Martyn Dunne, and the Deputy Secretary for the Minister of Foreign Affairs, Mike Green was cancelled due to inclement weather.</p> <p>Hosted a visit of HRH Princess Anne as part of the Centennial celebrations of the first voyage of Captain Robert Falcon Scott to Antarctica in 1902, hosted in February. The visit was organised by the Antarctic Heritage Trust with support from Antarctica New Zealand to host the visit to Scott Base and co-ordinate the international media involvement. International media coverage was provided by a Reuters crew who accompanied the party.</p>

OPERATIONAL PRESENCE IN ANTARCTICA

Purchase Agreement Outcomes

- Effective operation of Scott Base to provide the capability to effectively and safely support up to 400 people over the summer season.
- The capability to support science, environmental, public awareness and education projects in the field throughout Ross Dependency.

Costs

Full year estimate: \$5,362,455

Expenditure to date: \$6,004,246

Activity	Performance Measures	Progress to date
<p>Scott Base Management Operation of Scott Base as a support facility for science and other approved activities.</p>	<p>Year-round resident New Zealand Government Representative.</p> <p>Accommodation capacity for 86 personnel, including catering, storage and ablution facilities.</p> <p>An all terrain vehicle fleet.</p> <p>Fixed and rotary wing air support.</p> <p>Laboratories and other work areas.</p> <p>Telecommunication capabilities, including phone, data, and radio.</p> <p>Installation of a sewage treatment facility.</p> <p>Planning for upgraded field preparation and storage facilities, and refurbishment of Stage 3A accommodation.</p> <p>Planned preventative maintenance system operational.</p> <p>Management of the Scott Base shell on behalf of the Crown.</p>	<p>Year-round Government representation at Scott Base has been maintained, with accommodation, communications, laboratory and storage facilities.</p> <p>Provided. The peak population at Scott Base this season was 113. Eleven personnel are currently wintering at Scott Base. Refurbishment of Stage 3A accommodation remains on target for completion in October 2002.</p> <p>Provided</p> <p>Fifteen RNZAF flights were completed this year with only minor delays due to weather. Helicopters New Zealand completed field support to both Antarctica New Zealand and USAP activities achieving a 99% aircraft availability rate. Helo operations were completed within budget. On-continent fixed wing (Twin Otter) support was negotiated with the Italian Antarctic programme. The RNZAF have committed to 15 C-130 flights for next season.</p> <p>Provided. The Arrival Heights Laboratory redesign has commenced with science events providing user requirements for the project definition stage. The Hatherton Lab has been refurbished internally.</p> <p>Provided. Funds have been budgeted for next year to increase the Scott Base-New Zealand data link to 64K, allowing faster data transfer.</p> <p>The plant has been delivered to Scott Base, mounted on its foundations, and enclosed with insulated panels. It is presently being connected to Base services. Commissioning is expected to take place in October 2002.</p> <p>3A refurbishment is underway. Design work is underway to provide information for a Budget bid for a capital injection for the Field Store.</p> <p>The preventative maintenance system is being evaluated as part of the Information Management System project.</p> <p>The annual maintenance and inspection programme of the Scott Base shell, as outlined to Treasury, is progressing. Stage 3A recladding to maintain the structural integrity of the building is complete.</p>
<p>Provide a safe working environment in Antarctica to enhance personnel health and safety, environmental compliance, and protect assets.</p>	<p>Regular statutory compliance reviews, and review of risk management procedures.</p> <p>Environmental Management System compliance.</p>	<p>The bi-annual statutory compliance check has been completed. All field events have been assessed under a new risk management system for the 2001/2002 field season. The Strategy Team continue to review the risk management processes for the whole organisation.</p> <p>Compliance with the Environmental Management System has been audited with no significant issues raised.</p>
<p>Capture opportunities to enhance efficiency through procedural/system reviews.</p>	<p>Inventory and purchasing systems reviewed and new systems operational by December 2001.</p> <p>Review of operational procedure documentation.</p>	<p>Part of the IMS project. Implementation now planned for 2002/2003 year.</p> <p>Documentation (eg Season Handbook, Field and First Aid Manual, and Scott Base Policies) are being reviewed post the 2001/2002 field season, for publication in July 2002.</p>

Activity	Performance Measures	Progress to date
	Review of recruitment and personnel selection and conditions of service.	The post season review of recruitment has led to a change in the way Scott Base jobs are advertised to cover a wider potential pool of applicants. In addition, psychometric testing of winter over staff is being used as an additional selection tool. These changes have been achieved within the existing recruitment budget. The recruitment process for Scott Base staff for 2002/2003 is largely complete with a team expected to be finalised by the end of July 2002.
<p>Logistics Capability Logistics and supply support for approved New Zealand activities in the Ross Dependency and Southern Ocean</p> <p>Field operating support in the Ross Dependency</p> <p>Co-ordination of total logistic support to all authorised science and non-science events, throughout the Ross Dependency.</p> <p>Effective delivery of support services to meet user requirements, in an effective manner to conserve organisational resources.</p>	<p>15 RNZAF C130 flights as a contribution to the joint logistics pool (airlift and sealift) between Christchurch and Ross Island operated pursuant to the existing NZ/US Government to Government arrangement.</p> <p>Freight forwarding and warehouse facilities.</p> <p>Efficient movement of all cargo requirements including hazardous materials in accordance with pertinent regulations.</p> <p>Effective management of the NZ/US/Italian logistic pool with international parties.</p> <p>Transport support both ground and air.</p> <p>Field food, clothing and camping equipment.</p> <p>Radio communications.</p> <p>Search and rescue support.</p> <p>Specialised training.</p> <p>Safe deployment and recovery of field events to required locations.</p> <p>Preparation of logistics plans for new science projects.</p> <p>Capability to support field activities anywhere in the Ross Dependency demonstrated.</p> <p>All approved events supported.</p> <p>Operate within budget, and meet reasonable user requirements as measured in event debrief scores of seven or better.</p>	<p>Fifteen C130 flights for the 2001/2002 season were successfully completed.</p> <p>Provided.</p> <p>Provided. Cargo forecasts for next season are being prepared including preparation of cargo for winter flying (Winfly).</p> <p>Ongoing. Attended the annual USAP planning conference in May and co-operative logistic arrangements negotiated satisfactorily.</p> <p>Provided. Helicopters New Zealand will again provide a Bell 212 aircraft, and on-continent fixed wing support has been negotiated with the Italian Antarctic Programme.</p> <p>Provided.</p> <p>Provided.</p> <p>Ongoing – in conjunction with USAP. Joint exercises have been held, and a Scott Base staff member is leading the joint winter search and rescue team.</p> <p>Provided for 2001/2002 season. Training curriculum for 2002/2003 Scott Base staff and event field training is under annual review.</p> <p>No significant safety or environmental hazard issues to report this season.</p> <p>Detailed planning for the 2002/2003 season is underway. Preliminary planning to support ANDRILL and the Latitudinal Gradient Project has commenced.</p> <p>Deep field events in both Victoria Land, and along the Hillary Coast, have been successfully supported in co-operation with the United States and Italian programmes.</p> <p>Events achieved objectives, as measured by event debrief scores.</p> <p>Ongoing. All event debrief scores were rated between 8 and 10, with 43.5% rating 10.</p>

Activity	Performance Measures	Progress to date
<p>Quality and Environmental Management Systems Work will continue to enhance service delivery, environmental compliance, occupational safety and health, and information accessibility.</p>	<p>Compliance with the Antarctic (Environmental Protection) Act, and the Occupational Safety and Health Act.</p> <p>Meeting the requirements of the Environmental Management System consistent with the AS/NZ ISO 14001:1996.</p>	<p>The Labour Department has conducted an independent audit of OSH compliance at Scott Base. Whilst some areas in need of improvement were noted, OSH compliance is very good.</p> <p>Investigating certification options for the EMS.</p>
<p>Mapping, hydrography and geodesy Input to LINZ priorities for mapping, hydrography and geodesy work in the Ross Dependency.</p>	<p>Science, operational and safety priorities for mapping, hydrography and geodesy work are provided to LINZ.</p>	<p>Ongoing.</p>

1.4 ENCOURAGEMENT OF SCHOLARSHIP

Purchase Agreement Outcomes

- Increased academic interest in Antarctica policy issues, resulting in academic endeavours that make a significant contribution to knowledge, understanding and policy development in relation to Antarctica.
- The development of an Antarctica academic centre of excellence at Canterbury University.

Costs

Full year estimate: \$26,273

Expenditure to date: \$24,691

Activity	Performance Measures	Progress to date
<p>Scholarship Support the development of Gateway Antarctica at University of Canterbury as a Centre of Excellence in Antarctic studies.</p> <p>Support the continuing development of interest in Antarctic scholarship at NZ Universities.</p>	<p>Membership of the Board of the University of Canterbury's Antarctic Studies Centre – Gateway Antarctica.</p> <p>Antarctica New Zealand staff involved in lecturing to University of Canterbury's Antarctic Certificate Course.</p> <p>Encourage the development of fellowship opportunities at Gateway Antarctica.</p> <p>Encourage Gateway Antarctica to take a leadership role in developing national initiatives involving other Universities.</p> <p>Support and encourage the development of Antarctic courses and studies at other New Zealand universities.</p>	<p>Chief Executive, Gillian Wratt, maintains membership of Gateway Antarctica Board.</p> <p>Antarctica New Zealand staff have provided lectures and assisted the course participants in Antarctica.</p> <p>Hosted visit of Gateway Antarctica visiting international law expert from Georgetown University (Washington DC) to Antarctica in October 2001.</p> <p>Supported the Gateway Antarctica Antarctic CoRE proposal.</p> <p>Involvement in CoRE discussions – encouraging a university network approach.</p>

1.5 ENTERPRISE

Purchase Agreement Outcomes

- The establishment of appropriate guidelines and principles for the development of new enterprise initiatives in Antarctica and the Southern Ocean.
- Greater awareness and understanding of Antarctica through the development of appropriate activities consistent with environmental stewardship and social responsibility.

Costs

Full year estimate: \$72,943

Expenditure to date: \$95,323

Activity	Performance Measures	Progress to date
<p>Tourism Initiative Contribute to the development of a national tourism policy for Antarctica and the Southern Ocean</p> <p>Develop scenarios for Antarctica New Zealand and for tour operators in the Ross Sea Region</p>	<p>Contribute as a member of the OAC sub-group on tourism in the development of appropriate guidelines and principles.</p> <p>The formulation of a plan for Antarctica New Zealand's interaction with Antarctic tourism.</p>	<p>Ongoing. Have provided drafting support for the New Zealand guidelines for visitors to Antarctica, and advice to MFAT on the development of safety guidelines/procedures for tour ship Government reps.</p> <p>As above. To date the focus has been on contributing to the New Zealand visitor guidelines</p>
<p>Private Sector Involvement in Antarctica-related activities Proactively seek to ensure that private sector activity in Antarctica is fully consistent with Government objectives in the region.</p> <p>Identify 2 – 3 private sector sponsorship opportunities</p>	<p>Develop and begin implementation of a strategic plan to establish an Antarctic Research Foundation that will provide opportunities for private sector funding of Antarctic science and environmental projects.</p> <p>Sponsorships successfully established.</p>	<p>The intention to establish an Antarctic Foundation was announced in the October issue of Ice Sheet. Development of a Charitable Trust document is in its final stages. Selection of external Trustees has been completed with Dame Ann Hercus and Mr Kerry McDonald accepting the position. Ongoing funding for the Foundation has been confirmed through the development of a new brand of clothing by the International Antarctic Centre's Antarctic Attraction which has agreed to give an annual percentage of profit to the Foundation. Similarly, an annual percentage of profit from sales achieved at the shop and bar at Scott Base will go to the Foundation. Trustees held their first meeting in April 2002 to confirm the aims and criteria of the Foundation to explore international funding options and to formally establish the Foundation.</p> <p>Scholarships confirmed with Kelly Tarlton's and New Zealand Post. A support programme agreed between the Antarctic Centre's Antarctic Attraction and Antarctica New Zealand for the Secondary School's Education Initiative.</p>

1.6 INTERNATIONAL INFLUENCE

Purchase Agreement Outcomes

- New Zealand profile and influence in the international management of Antarctica and the Southern Ocean, evidenced by New Zealand initiatives that Antarctica New Zealand has contributed to featuring in the Antarctic Treaty Consultative meeting (ATCM), Committee on Environmental Protection (CEP) and Council of Managers of National Antarctic Programmes (COMNAP) etc. activities, and receiving international acknowledgement.
- New Zealand contribution to Antarctic and global environmental knowledge bases enhanced by Antarctica New Zealand activities.
- Antarctica New Zealand activities stimulate enhanced international commitment to conservation of Antarctica.
- Increased foreign involvement, research and scholarship in Antarctic activities through New Zealand as a result of Antarctica New Zealand initiatives.

Costs

Full year estimate: \$196,149
Expenditure to date: \$115,738

Activity	Performance Measures	Progress to date
<p>International forums/ Antarctic Treaty Consultative Meeting (ATCM) Contribute to MFAT and OAC consideration of ATCM issues, the NZ ATCM/Committee on Environmental Protection (CEP) delegation, and a positive New Zealand profile in the Antarctic Treaty System.</p> <p>Contribution to the New Zealand influence in the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) – subject to resources.</p> <p>International Association of Antarctic Tour Operators (IAATO) meeting</p>	<p>Expert advice provided within the New Zealand delegation throughout the year.</p> <p>CEO and Environmental Manager members of the NZ delegation to ATCM XXIV.</p> <p>CEO Vice Chair of the CEP.</p> <p>Present NZ ATCM/CEP papers on Cape Roberts Environmental Management, Tramway Ridge Protected Area management plan review, and Ross Sea Region State of the Environment Report.</p> <p>Consider with MFAT the value/possibility of a liability negotiation meeting at Scott Base, and host if agreed to.</p> <p>Provide environmental advice to the New Zealand CCAMLR delegation throughout the year, including consideration of membership of the delegation to the 2001 meeting.</p> <p>Represent New Zealand at the annual IAATO meeting.</p>	<p>ATCM meeting reports included advice for ongoing ATCM work. Chief Executive and Environmental Manager have provided input and advice to the New Zealand CEP delegation, including contributing to development of a New Zealand CEP strategy paper.</p> <p>Environmental Manager, Chief Executive and Board Chair were members of the New Zealand delegation at St Petersburg ATCM in July 2001.</p> <p>Vice Chair role completed at St Petersburg ATCM. Chief Executive chaired one CEP session.</p> <p>Papers on Cape Roberts and Ross Sea Region State of the Environment Report prepared and presented to the ATCM/CEP in July 2001. Paper on Tramway Ridge protected area review not presented as scientific review not completed.</p> <p>Discussed with MFAT. Agreed not to propose at this stage.</p> <p>Environmental Manager attended delegation briefing and provided input on protected area issues. No Antarctica New Zealand representation in New Zealand CCAMLR delegation in October/November 2001 due to conflicting priorities.</p> <p>Antarctica New Zealand Environmental and Policy Officer attended IAATO 2001 annual meeting. Useful discussions held with Ross Sea Region tour operators. Environmental Manager attended informal IAATO meeting on tourism in April 2002.</p>
<p>International Operational Influence Influence in international operational developments through the Council of Managers of National Antarctic Programmes (COMNAP) and its subgroups.</p>	<p>COMNAP Chair until August 2001.</p> <p>Membership of COMNAP Executive Committee.</p> <p>Chair COMNAP Energy Management Committee.</p>	<p>Chief Executive chaired COMNAP meeting in Amsterdam in August 2001. Meeting consideration included Antarctic air and ship operations, Antarctic data management, co-ordination of Antarctic education and training, environmental issues, emergency response and contingency planning, energy management and provision of COMNAP advice to the ATCM.</p> <p>Continued membership of COMNAP Executive Committee as immediate past Chair. Attended Executive Committee meeting in November 2001.</p> <p>Operations Manager chaired Energy Management Committee meeting at Amsterdam. A network for the exchange of technical information has been established amongst engineering staff of COMNAP members.</p>

Activity	Performance Measures	Progress to date
	<p>Identify potential Antarctic Information Officers' Network (INFONET) initiatives.</p> <p>Identify and develop mechanisms for Antarctic sub-glacial lake research co-ordination through COMNAP, in conjunction with the Scientific Committee on Antarctic Research.</p>	<p>Possible INFONET initiatives discussed at Amsterdam meeting.</p> <p>Chief Executive and Science Strategy Manager attended SCAR meeting on sub-glacial lakes research in Amsterdam. Sub-glacial lakes research agenda topic for COMNAP meeting and joint COMNAP/SCAR Executive Committee meeting.</p>
<p>International Environmental Initiatives Participation in the Antarctic Environmental Officers Network (AEON).</p> <p>Pursue possibilities for international profile/influence from the Ross Sea Region State of the Environment Report (RSR-SOER).</p>	<p>Active participation in the AEON steering group.</p> <p>Co-ordinate AEON work on the analysis and comparison of Initial Environmental Evaluations (IEEs) for different activities, and participate in the AEON working group tasked with the preparation of guidelines for designing and developing monitoring programmes.</p> <p>Opportunities identified for participation in the Antarctic-wide SOER process.</p> <p>Opportunities taken for presentations on the RSR-SOER in relevant international forums, including the SCAR Biology Symposium.</p>	<p>Environmental Manager member of AEON steering group including leadership and membership of two working groups and the provision of comments and advice related to the AEON workshop on environmental training and education planned for 2002.</p> <p>Both the IEE analysis report and monitoring guidelines have been completed and provided to COMNAP for consideration.</p> <p>Several other ATS countries and a SCAR representative attended <i>Ross Sea Region 2001: The Next Steps Workshop</i> on 28/29 May 2002 to follow up on the publication of the RSR SOER. Options for future Ross Sea region and Antarctic wide SOER were identified and discussed. Ongoing dialogue with interested parties on a way forward for the September 2002 CEP meeting.</p> <p>Environmental Manager presented keynote address at SCAR Biology Symposium incorporating details on Ross Sea Region State of the Environment Report. Organised the <i>Ross Sea Region 2001: The Next Steps Workshop</i> on 28/29 May 2002 in Wellington with representatives from all Ross Sea region operators, and a number of other ATCPs. Environmental Manager presented key findings from the report. Proceedings to be published in July 2002.</p>
<p>International Science Continue to increase international connections in Antarctic science.</p>	<p>Facilitate interaction with other countries – LGP – USA, Italy; ANDRILL – Italy, USA, UK; Southern Ocean – USA, Italy, Australia, Canada.</p> <p>Continue to develop research opportunities with other countries eg Malaysia, Sweden and Canada.</p> <p>Contribute to NZ representation within the Scientific Committee on Antarctic Research (SCAR).</p> <p>Active participation in international scientific forums/conferences.</p>	<p>Ongoing. LGP meeting during SCAR Biology Symposium included New Zealand, United States, Italy and United Kingdom participation. Follow up on Ross Sea marine possibilities in meeting with Italians in March 2002. Facilitated ANDRILL presentation to United States, United Kingdom, Italy and Germany representatives at a Cape Roberts Project Operations Management Group meeting during COMNAP, Amsterdam. Proposal for ANDRILL Operations Management prepared for presentation to ANDRILL international steering committee in April, and Operations Management Group meeting in July 2002.</p> <p>Ongoing. Two Malaysian science groups were supported at Scott Base over the 2001/2002 season.</p> <p>Science Strategy Manager and Environmental Manager attended SCAR Biology Symposium. Ongoing participation in the New Zealand SCAR committee.</p> <p>Involvement in SCAR Biology Symposium as above.</p>

OUTPUT COST ESTIMATES (excl GST)

	Actual	Estimate
Planning and Facilitation of Science	\$ 247,196	\$ 270,146
Environmental Stewardship	\$ 229,968	\$ 200,261
Public Awareness and Education	\$ 233,242	\$ 163,773
Operational presence in Antarctica	\$ 6,004,246	\$ 5,362,455
Scholarship	\$ 24,691	\$ 26,273
Enterprise	\$ 95,323	\$ 72,943
International influence	\$ 115,738	\$ 196,149
TOTAL COSTS:	\$6,950,404	\$6,292,000

NOTE: The Full Year Estimate calculation is based on the Crown Funding approved in the 2001/02 Appropriations. The Actual calculation is based on the total expenditure which includes Crown Funding and other third party revenue.

S.MOUTH

PORTSMOUTH



FINANCIAL STATEMENTS

year ended 30 June 2002



*"Truly, they form the vanguard of
England's chivalry. No finer set of men
ever left these shores, nor were men ever
led by a finer Captain."*

Reporting Entity

Antarctica New Zealand is the trading name of the New Zealand Antarctic Institute, a Crown Entity established by the New Zealand Antarctic Institute Act 1996. The financial statements have been prepared in accordance with The Public Finance Act 1989 as amended.

Measurement Base

The measurement and reporting of results, financial position, and cash flows is based on historical cost with the exception of clothing, the library collection and the art collection.

Accounting Policies

The following particular accounting policies which materially affect the measurement of financial performance, financial position, and cash flows have been established and consistently applied.

(a) Revenue Recognition

Revenue is recognised when earned and is reported in the Statement of Financial Performance in the period to which it relates.

(b) Leases

Antarctica New Zealand has not contracted for any lease that would be classified as a finance lease. Operating lease payments where the lessors effectively retain substantially all the risks and benefits of ownership of lease items are charged as expenses in the periods to which they relate.

(c) Fixed Assets

Expenditure incurred on fixed assets is capitalised where such expenditure will increase or enhance the future benefits provided by the assets. Expenditure incurred to maintain future benefit is expensed in the period incurred.

Fixed assets are valued at cost, adjusted for additions and disposals, less accumulated depreciation to date, except for the following three categories:

(i) Library Collection

Rare books are recorded at market value as at 30 June 1997 as determined by the Institute's librarian using published specialist price lists. This is deemed to be cost.

Other books provided by the Crown are valued at depreciated replacement cost as at 30 June 1997. This is deemed to be cost. Additions are recorded at cost less accumulated depreciation. Periodicals and other materials are expensed at time of purchase.

(ii) Clothing

Clothing is valued at depreciated replacement cost as at 30 June 1997. This is deemed to be cost. Additions are recorded at cost less accumulated depreciation.

(iii) Art Collection

The art collection is recorded at market value as at 9 September 1999 as determined by H Fisher & Son Limited fine art dealers. This is deemed to be cost.

(d) Depreciation

Depreciation is provided at rates estimated to write off the cost of the assets over their estimated useful lives. Depreciation is not charged on rare books. All other assets are depreciated on a straight line basis with the following exceptions:

- (i) Computer hardware and software and communications equipment are depreciated on an accelerated basis reflecting the diminution in value as a result of rapid technological change.
- (ii) Leasehold improvements are depreciated over the life of the improvement or the life of the lease whichever is shorter.

The useful lives of major classes of assets have been estimated as follows:

Buildings	10 years
Communications Equipment	5 – 7 years
Computer Hardware and Software	3 – 4 years
Scott Base Fit Out	20 years
Leasehold Improvements	15 years
Office Equipment	5 years
Office Furniture	5 years
Plant and Machinery	10 years
Vehicles – Christchurch	7 years
Vehicles – Christchurch	10 years
Clothing	10 years
Library Collection (excluding rare books)	20 years

(e) Employee Entitlements

Provision is made in respect of liabilities for annual leave, long service leave, contribution leave and retirement leave.

Calculation of the entitlement for annual leave is based on current rates of pay or the appropriate historical rate whichever is the highest.

Long service leave, contribution leave and retirement leave are calculated on an actuarial basis.

(f) Debtors

Debtors are stated at their estimated realisable value.

(g) Goods and Services Tax

The Financial Statements have been prepared exclusive of goods and services tax (GST) with the exception of debtors and creditors, which are stated GST inclusive.

(h) Income Tax

Antarctica New Zealand is a public authority for the purposes of income tax legislation and is exempt from income tax.

(i) Financial Instruments

Antarctica New Zealand is party to financial instruments as part of its normal operations. These financial instruments include bank accounts, short term deposits, receivables and payables. All financial instruments are recognised in the Statement of Financial Position and all revenues and expenses in relation to financial instruments are recognised in the Statement of Financial Performance.

(j) Foreign Currency

Transactions in foreign currencies are converted at the New Zealand rate of exchange ruling on the date of the transaction. Monetary assets and liabilities are converted to New Zealand dollars at the exchange rate ruling at balance date and any exchange gains or losses are taken to the Statement of Financial Performance.

Changes in Accounting Policies

There have been no changes in accounting policies. All policies have been applied on a basis consistent with those used in previous years.

Statement of Financial Performance for the year ended 30 June 2002

	Note	2002 Budget \$000	2002 Actual \$000	2001 Actual \$000
Revenue	1	6,831	7,205	6,635
Expenses		6,798	6,950	6,430
Operating surplus/(deficit)	2	33	255	205
Net Surplus/Deficit attributable to Taxpayers		33	255	205

Statement of Movements in Equity for the year ended 30 June 2002

	Note	2002 Budget \$000	2002 Actual \$000	2001 Actual \$000
Taxpayers funds at start of period		5,959	5,961	5,756
Net surplus/(deficit) for the period		33	255	205
Total Recognised Revenues and Expenses for the Period		33	255	205
Taxpayers funds as at 30 June 2002		5,992	6,216	5,961

Statement of Financial Position as at 30 June 2002

	Note	2002 Budget \$000	2002 Actual \$000	2001 Actual \$000
TAXPAYERS FUNDS				
Taxpayers Funds		5,992	6,216	5,961
Total taxpayers funds		5,992	6,216	5,961
Represented by:				
CURRENT ASSETS				
Cash and Short Term Deposits		1,406	2,197	2,752
Receivable and Prepayments	3	140	311	217
Total Current Assets		1,546	2,508	2,969
NON CURRENT ASSETS				
Fixed Assets	4	5,009	4,363	3,624
Total Non Current Assets		5,009	4,363	3,624
CURRENT LIABILITIES				
Payables and Accruals	5	444	511	505
Employee Entitlements	6	119	144	127
Total Liabilities		563	655	632
NET ASSETS		5,992	6,216	5,961

Statement of Cash Flows for the Year ended 30 June 2002

	Note	2002 Budget \$000	2002 Actual \$000	2001 Actual \$000
CASH FLOWS FROM OPERATING ACTIVITIES				
Cash was provided from:				
Receipts from Crown		6,292	6,326	6,111
Receipts from Customers		482	596	290
Interest Received		148	159	218
Other receipts		0	0	0
Total Receipts		6,922	7,081	6,619
Cash was applied to:				
Payments to Suppliers		(4,055)	(4,106)	(4,755)
Payments to Employees		(1,988)	(2,192)	(1,961)
GST (net)		2	5	0
Total Payments		(6,041)	(6,293)	(6,716)
Net Cash inflow/(outflow) from Operating Activities	7	881	788	(97)
CASH FLOWS FROM INVESTING ACTIVITIES				
Cash was provided from: Sale of Fixed Assets				
		0	32	63
Cash was applied to: Purchases of Fixed Assets				
		(2,120)	(1,375)	(373)
Net Cash inflow/(outflow) from Investing Activities		(2,120)	(1,343)	(310)
CASH FLOWS FROM FINANCING ACTIVITIES				
Cash was provided from: Capital contribution				
		0	0	0
Cash was applied to: Payment of Crown liability				
		0	0	0
Net Cash inflow/(outflow) from Financing Activities		0	0	0
Net Increase (Decrease) in Cash Held		(1,239)	(555)	(407)
Add Opening cash and short term deposits		2,645	2,752	3,159
Closing cash and deposits		1,406	2,197	2,752

Statement of Commitments as at 30 June 2002

	2002 Actual \$000	2001 Actual \$000
Capital Commitments	823	292
Operating Commitments	1,483	1,273
Total Commitments	2,306	1,565
Term Classification of Commitment		
Less than one year	422	714
One to two years	422	264
Two to five	639	587
Over five years	0	0
	1,483	1,565

Statement of Contingent Liabilities as at 30 June 2002

Last year the Institute reported that it was seeking clarification of how the Goods and Services Tax legislation applied to the delivery of outputs at Antarctica. External advice received indicated that the Institute may be eligible for a refund. However, as the Institute was funded by the Crown on a GST inclusive basis to provide services in the Antarctica, any refund of GST would be repayable to the Crown. At balance date this issue continues to be addressed with the Inland Revenue. Until such time as this process is completed the amounts cannot be determined with any certainty.

Notes to and Forming part of the Financial Statements for the year ended 30 June 2002

Note 1

Revenue

Revenue for the 2000/01 year included the valuation of the Art Collection (\$62,335) for the first time.

Revenue for the 2001/02 year includes the \$61,123 of assets purchased from the proceeds of Armed Forces Canteen Council Scott Base Canteen profit share agreement. These assets were purchased over the past six years and had not previously been recognised in the financial statements. In addition, \$62,157 of revenue has also been recognised in the financial statements from this arrangement.

Note 2

Operating Surplus (deficit)

After Charging

	2002 Actual \$000	2001 Actual \$000
Remuneration of Auditor		
- Audit Fee	15	14
- Other Services	0	0
Depreciation	654	715
- Buildings Scott Base	44	48
- Leasehold Improvements	17	15
- Communications Equipment	19	72
- Plant and Machinery	203	157
- Vehicles	72	73
- Computer Hardware and Software	53	80
- Scott Base Fit Out	177	200
- Office Furniture	19	4
- Office Equipment	10	6
- Clothing and Tents	36	52
- Library Equipment	4	8
- Art Collection	0	0
Directors' Remuneration	58	57
Donations	9	0
Interest Expense	0	0
Rental and Operating Lease Costs	422	438
Bad Debts Written Off	0	2
Changes in Provision for Doubtful Debts	(4)	0
Assets written off	30	0

After Crediting

Interest Income	151	217
Gain on sale of assets	19	50

Note 3

Receivables and Prepayments

	2002 Actual \$000	2001 Actual \$000
Trade Debtors	291	200
Term Deposit Interest	9	17
Provision for Doubtful Debts	(2)	(6)
Net Trade Debtors	298	211
Prepayments	13	6
Total Receivables and Prepayments	311	217

Note 4
Fixed Asset
2002

	Cost \$000	Accumulated Depreciation \$000	Book Value \$000
Buildings Scott Base	659	(232)	427
Leasehold Improvements	154	(89)	65
Communications Equipment	552	(479)	73
Plant and Machinery	1,934	(950)	984
Vehicles	554	(264)	290
Computer Hardware and Software	506	(423)	83
Scott Base Fit out	2,463	(1,309)	1,154
Office Furniture	49	(24)	25
Office Equipment	52	(38)	14
Clothing & Tents	328	(270)	58
Library Collection	135	(42)	93
Art Collection	62	0	62
Work in Progress	1,035	0	1,035
	<hr/> 8,483	<hr/> (4,120)	<hr/> 4,363

	Cost \$000	Accumulated Depreciation \$000	Book Value \$000
Buildings Scott Base	648	(179)	469
Leasehold Improvements	135	(73)	62
Communications Equipment	501	(464)	37
Plant and Machinery	1,507	(765)	742
Vehicles	411	(200)	211
Computer Hardware and Software	445	(362)	83
Scott Base Fit out	2,298	(1,123)	1,175
Office Furniture	36	(17)	19
Office Equipment	48	(36)	12
Clothing & Tents	273	(227)	46
Library Collection	135	(40)	95
Art Collection	62	0	62
Work in Progress	611	0	611
	<hr/> 7,110	<hr/> (3,486)	<hr/> 3,624

Work in progress represents capital expenditure that are not operational as at balance date.

Buildings are recorded at cost, less accumulated depreciation, which in the Directors' opinion is an indication of fair value.

In addition to the rare and current books, Antarctica New Zealand has a resource of periodicals, maps, slides, photographs, films and microfiche located at Antarctica New Zealand and at the Canterbury University. These items are expensed at time of purchase. Microfiche is physically held on loan from the US National Science Foundation.

Note 5
Payables and Accruals

	2002 Actual \$000	2001 Actual \$000
Trade Creditors and Accruals	241	226
Accrued Payroll	41	28
Directors' Fees	0	0
Fuel	136	121
Other	93	130
	<hr/> 511	<hr/> 505

Note 6
Employee Entitlements

	2002 Actual \$000	2001 Actual \$000
Long Service Leave	8	6
Annual Leave	136	114
Retirement Leave	0	7
	<hr/> 144	<hr/> 127

Note 7
Reconciliation of Net Surplus to Net Cash Flow from Operating Activities

	2002 Actual \$000	2001 Actual \$000
Net Operating Surplus/(Deficit)	255	205
Add/(Less) Non-Cash Items		
Depreciation	654	715
Gain receivable on Sale of Assets	(19)	(50)
Art collection	0	(62)
AFCC Assests	(61)	0
Assets written off	30	0
Total Non-Cash Items	604	603
Add/(Less) Movements in Working Capital		
(Increase)/Decrease in receivables and prepayments	(94)	(117)
Increase/(Decrease) in payables and accruals	23	(788)
Working Capital Movements – Net	(71)	(905)
Net Cash Flow from Operating Activities	788	(97)

Note 8
Post Balance Date Events

No post balance date events have come to the attention of Antarctica New Zealand that are of a material nature as to require adjustment of the amounts contained in the financial statements or separate note disclosure.

Note 9
Related Party Transactions

Antarctica New Zealand is a Crown entity. All transactions with other Crown Entities, Government departments and State Owned Entities are carried out on an arm's length basis.

The Crown has granted a license to Antarctica New Zealand in respect of the Scott Base facility. The initial term of this license was five years from 1 July 1996. This contract has been renegotiated for 5 years and awaits final signature from Treasury.

Antarctica New Zealand paid fees for payroll processing to Datacom Employer Services Limited, a subsidiary of Datacom Group Limited, of which P. M. Hargreaves, a director of Antarctica New Zealand, is also a director. The fees were charged on normal terms and conditions. Fees paid during the year from the point which Mr Hargreaves became a director of Antarctica New Zealand amounted to \$1700. At year end an amount of \$172 is payable to Datacom Employer Services Limited.

Note 10
Financial Instruments

(A) Nature of activities and management policies with respect to financial instruments

1) Foreign Exchange Risk
 Antarctica New Zealand undertakes transactions denominated in foreign currencies. As a result of these activities exposures in foreign currencies arise. It is the policy of Antarctica New Zealand to hedge significant currency risks associated with fuel purchases.

Antarctica New Zealand puts in place forward foreign exchange contracts to match anticipated purchases with budgeted costs for the period for which information is known.

As at balance date Antarctica New Zealand held one foreign bank account containing US\$159,000, as approved by the Board of Directors May 2002.

2) Credit Risk
 In the normal course of business Antarctica New Zealand incurs credit risk from trade debtors and financial institutions. There are no significant concentrations of credit risk from trade creditors and exposures to them are monitored on a regular basis. Antarctica New Zealand places its cash and short term investments with high quality financial institutions which limits the amount of credit exposure. No collateral or security to support financial instruments is required due to the quality of the financial institutions dealt with.

3) Interest Rate Risk
 Antarctica New Zealand has no significant exposure to interest rate risk on its financial instruments.

(B) Fair Values

The estimated fair values of Antarctica New Zealand's financial assets and liabilities are as disclosed in the Financial Statements.

**Note 11
Segmental Reporting**

Antarctica New Zealand operates primarily in the scientific research industry in New Zealand and Antarctica.

Note 12

Remuneration of Employees	Remuneration band	No of employees
	\$100,001 – \$110,000	1
	\$120,001 – \$130,000	1

Directors

	Remuneration
Mr Christopher Mace (Chairman)	\$ 10,000
Mr Paul Hargreaves (from Nov 2001)	\$ 6,667
Dr Ron Heath (until Oct 2001)	\$ 2,500
Dr Maj de Poorter	\$ 10,000
Dr Wendy Lawson	\$ 10,000
Mr Bill Mansfield	\$ 10,000
Dr Francis Small (from Nov 2001)	\$ 6,667
Dr Bas Walker (until Oct 2001)	\$ 2,500

Statement of Responsibility

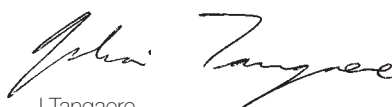
In the financial year ended 30 June 2002, the Board and management of Antarctica New Zealand were responsible for:

- the preparation of the financial statements and the judgements used therein.
- establishing and maintaining a system of internal control designed to provide reasonable assurance as to the integrity and reliability of financial reporting.

In the opinion of the Board and management of Antarctica New Zealand, the financial statements for the financial year fairly reflect the financial position and operations of Antarctica New Zealand.



C Mace
Chairperson
18 September 2002



J Tangaere
Acting Chief Executive Officer
18 September 2002

Performance indicators

	2002 Budget	2002 Actual	2001 Actual
Operating Results			
Revenue \$'000	6,831	7,205	6,635
Surplus/(Deficit) \$'000	33	255	205
Current Ratio	2.75	3.83	4.70
Working Capital	983	1,853	2,337
Ratio Personnel Expenses: Total Expenses	31.84%	32.36%	30.50%

TO THE READERS OF THE FINANCIAL STATEMENTS OF
THE NEW ZEALAND ANTARCTIC INSTITUTE
FOR THE YEAR ENDED 30 JUNE 2002

We have audited the financial statements on pages 21 to 44. The financial statements provide information about the past financial and service performance of the New Zealand Antarctic Institute and its financial position as at 30 June 2002. This information is stated in accordance with the accounting policies set out on page 38.

Responsibilities of the Board

The Public Finance Act 1989 require the Board to prepare financial statements in accordance with generally accepted accounting practice in New Zealand that fairly reflect the financial position of the New Zealand Antarctic Institute as at 30 June 2002, the results of its operations and cash flows and service performance achievements for the year ended on that date.

Auditor's Responsibilities

Section 15 of the Public Audit Act 2001 and Section 43(1) of the Public Finance Act 1989 require the Auditor-General to audit the financial statements presented by the Board. It is the responsibility of the Auditor-General to express an independent opinion on the financial statements and report that opinion to you.

The Auditor-General has appointed K J Boddy, of Audit New Zealand, to undertake the audit.

Basis of Opinion

An audit includes examining, on a test basis, evidence relevant to the amounts and disclosures in the financial statements. It also includes assessing:

- the significant estimates and judgements made by the Board in the preparation of the financial statements; and
- whether the accounting policies are appropriate to the New Zealand Antarctic Institute's circumstances, consistently applied and adequately disclosed.

We conducted our audit in accordance with the Auditing Standards published by the Auditor-General, which incorporate the Auditing Standards issued by the Institute of Chartered Accountants of New Zealand. We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatements, whether caused by fraud or error. In forming our opinion, we also evaluated the overall adequacy of the presentation of information in the financial statements.

Other than in our capacity as auditor acting on behalf of the Auditor-General, we have no relationship with or interests in the New Zealand Antarctic Institute.

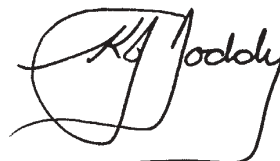
Unqualified Opinion

We have obtained all the information and explanations we have required.

In our opinion the financial statements of the New Zealand Antarctic Institute on pages 21 to 44:

- comply with generally accepted accounting practice in New Zealand; and
- fairly reflect:
 - the New Zealand Antarctic Institute's financial position as at 30 June 2002;
 - the results of its operations and cash flows for the year ended on that date; and
 - its service performance achievements in relation to the performance targets and other measures adopted for the year ended on that date.

Our audit was completed on 27 September 2002 and our unqualified opinion is expressed as at that date.



K J Boddy
Audit New Zealand
On behalf of the Auditor-General
Christchurch, New Zealand

ORGANISATIONS REPRESENTED IN ANTARCTICA NEW ZEALAND'S 2001/2002 ANTARCTIC EVENTS



New Zealand Organisations Supported in Antarctica

Antarctic Heritage Trust
Antarctic Attraction, International Antarctic Centre
Armed Forces Canteen Council
Christchurch College of Education
ConnecTel, Limited, Christchurch
Helicopters New Zealand
Industrial Research Limited (IRL)
Institute of Geological & Nuclear Sciences (IGNS)
Kelly Tarltons Underwater World & Antarctic Encounter
Land Information New Zealand (LINZ)
Landcare Research New Zealand Ltd
Lincoln High School
Lincoln University
Massey University
Ministry of Fisheries
Ministry of Foreign Affairs & Trade
National Institute of Water & Atmospheric Research (NIWA)
Natural History New Zealand
New Zealand Defence Force (Army, Navy, 40 Squadron of RNZAF)
New Zealand Fire Service
Otago Museum
Radio New Zealand
Tauranga Girls College
Telecom Ltd
University of Auckland
University of Canterbury
University of Waikato
Victoria University of Wellington
Wellington College of Education
Xtra, Telecom Internet Site

International Agencies & Collaborations

Australian Institute of Marine Sciences, Australia
BGR, Germany
Bloomsburg University, USA
British Antarctic Survey, UK
Christian-Albrechts University of Kiel, Germany
IASOS University of Tasmania, Australia
Italian Antarctic Programme – Italy
Multimedia University, Malaysia
Norwegian Polar Institute, Norway
October Films, UK
Reuters Ltd
Royal Office, Buckingham Palace, London, UK
Sheffield University, UK
Stirling University, UK
United States Department of Agriculture, USA
University College of London, UK

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University of Melbourne, Australia
University of Nebraska, USA
University of Newcastle, Australia
University of Oxford, UK
University of Queensland, Australia
University of the Western Cape, South Africa
University of Tromso, Norway

Christchurch Staff

Strategy Team

Gillian Wratt, Chief Executive
Vivienne Allan, Communications & Marketing Manager
Catherine Coulter, Financial Accountant (to 21 September 2001)
Dean Peterson, Science Strategy Manager
Dene Robinson, Accountant (from 12 November 2001)
Julian Tangaere, Operations Manager
Emma Waterhouse, Environmental Manager

Staff

Peter Brookman, Facilities Engineer
Natalie Cadenhead, Information Services Specialist
David Callis, Pictorial Assistant (from 5 March 2002)
Rosa Cole, Seasonal Support (Warehouse)
Jim Cowie, Antarctic Support Coordinator
Shulamit Gordon, Science advisor (from 20 August 2001)
Miranda Huston, Environmental Researcher (from 4 March 2002)
Michelle Jones, Executive Assistant
Kevin Leech, Movements Officer (Clothing) (seasonal)
Mike Mahon, IT and Science Administrator
Michael Nottage, Inventory/Purchasing Officer
Teresa Orr, Receptionist (to 18 February 2002)
Kevin Rigarfsford, Maintenance and Field Engineer
Kelly Robins, Office Assistant
Rebecca Roper-Gee, Environmental and Policy Officer
Rob Stewart, Movements Officer (Cargo)
Prue Sullivan, HR/Office Administrator
Jeanette Tamakehu, Accounts
Alison Whitaker, Receptionist/Travel Coordinator (from 25 February 2002)
Paul Woodgate, Movements Controller

Scott Base

Winter Staff

Paul Anderson, Base Engineer
Luke Haddleton, Winter Manager, Base Engineer
Paul Houston, Electrician
Tim Kerr, Science Technician
Chris Knight, Mechanic
Dan Mathers, Carpenter
Craig Minty, Carpenter
Jeff Reid, Chef
Annette Roberts, Domestic
Keith Roberts, Telecom Technician
Keith Springer, Field Support

Summer Staff

Paul Anderson, Base Engineer
Helen Brown, Domestic
Steve Brown, Summer Carpenter
Hillary Cave, AFT Instructor
Anthony Clegg, Cargo
Brad Gordon, Stores (NZDF)
Luke Haddleton, Base Engineer
Lisa Holliday, AFT Instructor
Paul Houston, Electrician
Tim Kerr, Science Technician
Chris Knight, Mechanic
Allan Marshall, Engineer
Dan Mathers, Carpenter
Craig Minty, Carpenter
Greg Nathan, Plant Operator (NZDF)
Kevin Nicholas, AFT Instructor
Karl Read, Plant Operator (NZDF)
Jeff Reid Chef
Chet Riley, Base Services Manager (NZDF)
Paul Houston, Electrician
Annette Roberts, Domestic
Keith Roberts, Telecom Technician
Grant Shadbolt, Project Carpenter
David Skerton, Painter
Cath Slee, Summer Domestic
Dan Smale, NIWA Technician
Jim Spenser, AFT Instructor
Keith Springer, Field Support Officer
Clare Sprosen, Summer Chef
Sarah van Lent, Shop & Bar Assistant (AFCC)
Jane Weatherill, Canteen Manager (AFCC)

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ACRONYMS



AEON	Antarctic Environmental Officers Network
AHT	Antarctic Heritage Trust
ANDRILL	Antarctic Drilling Project
ASA	Antarctic Support Associates
ASMA	Antarctic Specially Managed Areas
ASOC	Antarctic and Southern Ocean Coalition
ASPA	Antarctic Specially Protected Area
ATCM	Antarctic Treaty Consultative Meeting
ATCP	Antarctic Treaty Consultative Parties
ATS	Antarctic Treaty System
BIROSS	Biodiversity of the Ross Sea
CCAMLR	Convention for the Conservation of Marine Living Resources
CEE	Comprehensive Environment Evaluation
CEP	Committee for Environmental Protection
CEMP	CCAMLR Ecosystem Monitoring Programme
COMNAP	Council of Managers of National Antarctic Programmes
CORE	Centre of Research Excellence
EARP	Environmental Assessment Review Panel
EIA	Environmental Impact Assessment
FRST	Foundation for Research, Science and Technology
IAATO	International Association of Antarctic Tour Operators
IEE	Initial Environmental Evaluation
IGY	International Geophysical Year
IMO	International Maritime Organisation
IMS	Information Management System
IPCC	Intergovernmental Panel on Climate Change
LGP	Latitudinal Gradient Project
MFAT	Ministry of Foreign Affairs and Trade
MFE	Ministry for the Environment
Mfish	Ministry of Fisheries
MoRST	Ministry of Research, Science and Technology
NASA	National Aeronautics and Space Administration
NGOs	Non-Governmental Organisations
NIWA	National Institute of Water and Atmospheric Research
NSF	National Science Foundation (USA)
OAC	Officials Antarctic Committee
PEE	Preliminary Environmental Evaluation
SCAR	Scientific Committee on Antarctic Research
SSSI	Site of Special Scientific Interest
UNEP	United Nations Environmental Programme
UNFCCC	United National Framework Convention on Climate Change
USAP	United States Antarctic Programme
WAIS	West Antarctic Ice Sheet
WINFLY	Winter Flights
WMO	World Meteorological Organisation



Tauranga Girls College students visit Robert Falcon Scott's Memorial statue in Christchurch. *Liam Nolan, Antarctica New Zealand Pictorial Collection*



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Head Office

Antarctica New Zealand
 The New Zealand Antarctic Institute
 Administration Building
 International Antarctic Centre
 38 Orchard Road
 Private Bag 4745
 Christchurch
 New Zealand

Telephone: +64 3 358 0200
 Facsimile: +64 3 358 0211
 Email: info@antarcticanz.govt.nz
 WebSite: www.antarcticanz.govt.nz

Map of Antarctica showing the sledging routes of the Discovery crew. Courtesy – CR Ford Lantern Collection, Auckland War Memorial Museum, reference C15 083.



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