



# icesheet

newsletter of antarctica new zealand

## Antarctic Treaty Meeting in Sweden

Antarctica New Zealand CEO Lou Sanson and Environmental Manager Neil Gilbert attended the 28th Antarctic Treaty Consultative Meeting in Sweden in June. The New Zealand delegation was led by the Ministry of Foreign Affairs and Trade.

New Zealand's main focus included the finalisation of the Liability Regime, Bioprospecting, Antarctic Tourism and State of the Environment Reporting.

Within the Committee for Environmental Protection, Antarctica New Zealand presented papers on a review of the Protected Areas System and an Antarctic environmental domains analysis, which looks at different types of environments across the Antarctic continent, as a means of providing a systematic approach to protected area designation. These initiatives were strongly supported by the Committee.

## EnviroMark Award

Antarctica New Zealand has been awarded Gold Level accreditation under the EnviroMark accreditation scheme. This endorsement of Antarctica New Zealand's environmental performance resulted from an audit of Scott Base undertaken by Landcare Research. The audit recommended seven corrective actions, which were all taken. Antarctica New Zealand aims to complete the final two accreditation levels (platinum and diamond) over the next two years.

## New Zealand Universities Antarctic Alliance

The first meeting of the New Zealand Universities Antarctic Alliance Steering Group was held in Dunedin on 27 January 2005. Peter Barrett, Bryan Storey, Vernon Squire and Wendy Lawson attended for Antarctica New Zealand. The group has been established to foster greater strategic alliance between universities regarding Antarctic research.

## New Programme Support Manager

Erik Barnes was appointed to the role of Programme Support Manager in April. Erik was Programme Support Co-ordinator for the second half of the 2004/2005 season and has previously worked for the United States Antarctic Program.



Above: The new programme support manager, Erik Barnes. Photo courtesy of Erik Barnes

## Environmental Impact Assessments

A review undertaken by The Ministry of Foreign Affairs and Trade has seen Antarctica New Zealand become the primary adviser to the



Ministry on Environmental Impact Assessments submitted under the Antarctica (Environmental Protection) Act 1994.

The new scheme will see Antarctica New Zealand advising the Ministry on all Preliminary Environmental Evaluations (which cover the majority of the activities Antarctica New Zealand supports, including science events), and all non-Antarctica New Zealand Initial Environmental Evaluations, such as those prepared by the fishing industry and the tourism industry. The Ministry for the Environment will assess evaluations prepared by Antarctica New Zealand and will undertake regular audits of Antarctica New Zealand's assessment process. "The EIA process is an important means of managing activities in Antarctica and we welcome the opportunity to support MFAT in this way," Environmental Manager Neil Gilbert said.

## Census of Antarctic Marine Life

The largest New Zealand commitment to IPY is under the Census of Antarctic Marine Life (CAML) project. Science Strategy Manager Dean Peterson represented New Zealand at the first science steering committee meeting for CAML in Brussels at the end of May. The meeting has produced a first draft science plan for the CAML project. CAML currently has 14 countries interested in participating and a commitment of eight research vessels to the project.

## Recruitment Drive

Recruitment for positions at Scott Base for the 2005/2006 season began in May. Antarctica New Zealand received 160 applications. The successful applicants, including 16 people who have worked at Scott Base previously, have now been selected. Training for the new season starts on 19 September.

## Dining Hall Refurbishment

The Scott Base dining hall has been repainted and a 2.5 metre Andris Apse photograph has been hung. The work was completed in time for the mid-winter celebrations in June.



Above: A new, framed Andris Apse photograph adorns the refurbished Dining Hall. Photo courtesy of Rob Turner

## New Images to Adorn Scott Base

A series of nearly 30 photographs of New Zealand will decorate Scott Base. The photographs, which were all taken by New Zealand photographers, depict images of New Zealand from Cape Reinga to Stewart Island. The collection includes images from well-known photographers such as Andris Apse,

Craig Potton and Harley Betts. The photographs are intended to provide colour and greenery to the base and to profile New Zealand to international visitors.

## Midwinter Event

A formal, five-course meal at Scott Base marked the mid-winter point for base staff. Celebrations continued the following week with a traditional polar plunge into the frozen sea through a hole in the sea ice. There are three polar plunge parties at Scott Base over winter – at sunset, mid-winter and sunrise. In August, two weeks before the 19 August sunrise, Winter Station Manager Kevin Rigarslford reported, "Everyone is still smiling."

## Antarctic Stamps Displayed

A display of 16 framed Antarctic stamp sets dating from the 1950s to this decade are on display near the main entrance to Scott Base, across from the base shop. Some of the collection is old letters while others are first day covers, where the stamps have been cancelled on their first day of issue on a commemorative envelope. Antarctica New Zealand is hoping to expand the collection.



## Undie 500

Scott Base staff joined in an "Undie 500" run to raise money for Child Cancer. The event, held earlier in the year, was the brainchild of Scott Base chef, Jeff Reid. Participants completed a 500 metre run sporting underwear bearing the Scott Base label.

The Armed Forces Canteen Council, who runs the Scott Base shop, made a contribution from each pair of underwear sold to the participants. In addition, McMurdo Station fireman, Lieutenant Dave Johnson, raised \$372.50 by running in an especially brief pair of briefs. In total, \$844.70 was raised. On the day of the event, the wind chill factor brought the temperature down to -21 C so only the hardy souls attempted the short run around Scott Base. Though there was some red skin and grimaces on participants at the finish line, the first Undie 500 was a success and it's hoped that it will become an annual fundraising event.



Top: Antarctic stamps are displayed at Scott Base. Photo courtesy of Anna Howard

Above: The Undie 500 run raised money for Child Cancer. Photo courtesy of Jeff Reid

## CEO's Report



It's hard to believe that already it's the end of August and Winfly has been and gone and there are now less than six weeks to the start of the season. I have just returned from Scott Base where the winter-over crew under the leadership of Base Manager Kevin Rigarslford, were all in good spirits and the Hillary Field Centre (HFC) is almost complete.

The 19 staff at Scott Base worked tirelessly over the winter fitting the HFC out. Heating, ventilation, air-conditioning, plumbing and drainage services are now functional and with the exception of the heated linkway, the only area left to complete is the west stairwell.

This year has also been busy off Ice. The ANDRILL project Record of Understanding has just been signed between Italy, Germany and the United States, confirming funding for the operational and logistics aspects of the project.

The Annual Antarctica New Zealand Conference held at Canterbury University in July, was a successful event for all those involved. An ANDRILL workshop was convened at the conference to bring together interested parties and to clarify the national and international education, public awareness and media expectations and requirements for ANDRILL over the lifespan of the project.

The conference also enabled us to host a midwinter function that was attended by over 250 members of the Antarctic Community. At the function four post-graduate science scholarships were awarded.

Planning to mark the 50th Anniversary of Scott Base continues, with the focus on several major events in New Zealand and a series of commemorative events in Antarctica over the 2006/2007 season. We are working closely with the Antarctic Society who are exploring a range of activities that complement ours. Discussions are also underway with the Ministry of Foreign Affairs and Trade and others to ensure 50th Anniversary events recognise the importance of our strategic relationship with the United States.

Antarctica New Zealand has concluded a tripartite agreement with the Engineering Department at Canterbury University and Gateway Antarctica

on the issue of energy management and the use of alternative technologies in Antarctica. The three-year agreement provides a framework to assist Antarctica New Zealand's objective of increasing our reliance on renewable energy sources throughout the programme.

In the non-science area, a review of last season's Project K Youth on Ice pilot showed that all public awareness objectives were achieved. Consequently the partnership with Project K was extended for another season and three new Project K graduates will travel to Antarctica in January 2006.

Under the media initiatives programme, a journalist from *Unlimited* magazine will travel to Antarctica in October to produce a series of articles with a science, business, and environmental focus. *Nelson Mail* photographer Martin de Ruyter and *The Press* Editor, Paul Thompson will travel to Antarctica in November for two weeks, then in January three people from TVNZ's *Sunday* programme will visit Antarctica to produce ANDRILL and climate change stories.

The Artists to Antarctica application process for 2006/2007 is about to commence. This is seven months earlier than in previous years in order to align with the science bidding round.

Finally, we have grappled with logistics constraints, arising from the RNZAF Hercules refurbishment programme. As at 1 August 2005 (final event confirmation date), Antarctica New Zealand will be supporting a total of 42 science events, 6 education and media visits, and 1 Invited Visitor event totalling 320 persons. The 2004/2005 total was 370 persons southbound and 394 northbound. We anticipate this to be a short-term effect during the period of the upgrade project.

I would like to thank everyone who trimmed their numbers back to help us maintain support for the proposed events. I believe we have managed a balanced programme while still ensuring we support high quality science and deliver on our commitments in a number of other areas.

Lou Sanson  
Chief Executive



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**Cover Image**  
Weddell seal mother and pup, © Mark Mitchell / antnzpc K3100304

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## Chair's Report



The iceberg blocking McMurdo Sound, B15A, has finally moved northward, clipping the Drygalski Ice Tongue as it passed with both the New Zealand and the United States Antarctic Programmes relieved the sea ice broke out to Cape Evans.

We start the 2005/2006 season with a reduced intercontinental flight capacity as a result of the major programme by the RNZAF to upgrade their C-130 Hercules aircraft over the next several years. Reductions have been negotiated with all our stakeholders and we thank them for their co-operation and understanding. Fuel costs have also risen and are impacted by the additional icebreaker costs incurred by the United States to bring the tanker into McMurdo Sound.

Antarctica New Zealand is presently undertaking the first full review of New Zealand science conducted in Antarctica over the past five years. This is being carried out by an independent panel chaired by Dr John White of the Australian National University and is seen by the Board as an important step in ensuring that New Zealand receives the highest possible outcome for the scientific work it supports in Antarctica and that it aligns with the New Zealand Government's scientific objectives.

The International Polar Year coming up in 2007/2008 has seen a commitment by New Zealand to support the Census of Antarctic Marine Life. CAML has received widespread international support that will see 12 countries participating in the seas around Antarctica. Planning is proceeding at the New Zealand end in conjunction with the Ministry of Fisheries, the Ministry of Research, Science and Technology, the Foundation for Research, Science and Technology and NIWA.

At the same time a major New Zealand Government sponsored project, Oceans Survey 20/20 (OS 20/20) is planning a research voyage in early 2006 which will involve hydrographic survey work for Land Information New Zealand (LINZ), seismic survey work for the Institute of Geological and Nuclear Sciences (IGNS), and biodiversity studies for the Ministry of Fisheries and Department of Conservation.

The largest project commitment that Antarctica New Zealand currently has responsibility for is ANDRILL. This is a \$US30m project designed to sample the deep sedimentary basins in McMurdo Sound to investigate Antarctica's role in global environmental change over the past 50 million years and to better understand Antarctica's future response to global change. The drill equipment is currently being assembled in Christchurch and the first hole will be drilled through the McMurdo Ice Shelf at Windless Bight in the spring of 2006.

We look forward to a challenging new season starting in October. A major milestone will see the commissioning of the Hillary Field Centre where contractors have worked over the winter to complete the fitout. With Winfly now behind us, we eagerly anticipate the start of the season at the beginning of October.

Paul Hargreaves  
Chairman

## Artists to Antarctica Programme

A composer and a photographer will travel to Antarctica this summer as the 2005/2006 Antarctic Arts Fellows through Antarctica New Zealand's Artists to Antarctica Programme.

Composer Gareth Farr will explore the human stories associated with Antarctica. "I am particularly interested in the stories of great human endeavour, such as Robert Scott's South Pole expedition and the emotions inspired by Antarctica. These stories and emotions have huge and dramatic potential to inspire powerful music that people can relate to," Farr said. Photographer Megan Jenkinson plans to concentrate on the colours of Antarctica "I want to produce works of art about the colours and light in a landscape predominantly regarded in terms of its whiteness," she said.

The Artists to Antarctica Programme is a joint initiative between Antarctica New Zealand and Creative New Zealand and selects artists who are prominent in their field.

"This scheme gives New Zealand artists a rare opportunity to experience the greatest wilderness on earth. The Arts Fellows interpret that inspiration and share their unique experience for the benefit of other New Zealanders," Antarctica New Zealand CEO Lou Sanson said.

## Antarctic Co-operation

The New Zealand and Australian Antarctic programmes have agreed to work more closely together. In May, Antarctica New Zealand CEO Lou Sanson and Australian Antarctic Division Director Tony Press signed a memorandum of understanding for closer co-operation. The alliance will assist both programmes on research in Antarctica and will involve Scott Base and Australia's three Antarctic stations hosting the other country's scientists and workers.



Above: Programme participant working on the ice.  
Photo © Margaret Elliott / ANZPC K3949899

## ANDRILL Update

Progress is being made on the ANtartic DRILLing (ANDRILL) drill system, which is scheduled for delivery to Antarctica in January 2006. The multinational project between New Zealand, USA, Germany and Italy will begin in October 2006. The project aims to improve understanding of Antarctica's role in global environmental change through drilling around the McMurdo Sound area.

The drill rig has been delivered and is being integrated onto the rest of the drill system at Gough Engineering in Christchurch. The Drill System will be tested in South Canterbury for two weeks beginning in September. The other major part of the drill rig, the hot water drill system, is currently being constructed and will be tested in Antarctica in early February.

Site surveys will continue at the two approved drilling sites this season by Drs Tim Naish and Gary Wilson. A camp will be set up at the McMurdo Ice Shelf site and site preparation work, including compacting a snow road and work platform, will be undertaken. When the equipment arrives on the ship in late January, the system will be set up so that drilling can begin without delay in October 2006.

The annual ANDRILL meeting was held in Siena, Italy in July. ANDRILL Project Manager Jim Cowie from Antarctica New Zealand said, "It was really bringing everybody up to date and looking toward the future. There was a general agreement on the budget as it stands and an update of progress on the science side," Cowie said. "We were also looking to the future for the media and education outreach side of project, which was tabled and discussed for the first time." The project's Record of Understanding was signed off by all parties in July after a two-year process.

## Science Review

Antarctica New Zealand is currently undertaking a science review to assess the Government's investment in Antarctic science over the past five years. The science review will give an overview of progress made by the science research supported in Antarctica and the Southern Ocean during the last five years. The first step is to collect existing information related to the science supported over the last 20 years and then interview the science providers and users both within and outside of New Zealand to take a closer look at our national and international reputation. Once the information is collected, an independent panel will conduct a review and report its findings to the Board of Antarctica New Zealand and the Ministry of Research, Science and Technology.

The independent panel will be looking at the quality of the research supported over the timeframe to look at trends in scientific quality, outputs and outcomes. The Ministry of Research, Science and Technology and the Foundation for Research, Science and Technology are interested in how the Antarctic and Southern Ocean research has been used by Government agencies and the technology sector.

By looking at different trends that have occurred over this period some assessment may be made regarding ways we can improve Antarctica New Zealand's support for science and increase science output and quality for the Government's investment. The review information will also be used by the Research Theme Committee to understand the strengths and weaknesses within the programme.

## Relocatable Building Designs

The Victoria University of Wellington School of Design has developed three proposals for a relocatable habitat for the Antarctic. A project brief was provided to the University last year and three groups of students worked on three different approaches to habitat design, and consulted extensively with the VUW Antarctic Research centre and the University of Canterbury School of Engineering. The next steps are to assess the competing designs for suitability and work in partnership with VUW to fund and build a prototype. The models and other material for the proposals were exhibited at the annual conference at the University of Canterbury.

## Annual Conference

More than 130 people attended Antarctica New Zealand's annual Antarctic conference at Canterbury University in July. The conference included 36 poster presentations on topics ranging from records of climate change and Antarctic lake sediments, to predicting the size of the ozone hole, to finding living marine fossils. There was also a report on the discovery of bacteria living under mummified seals found far from the current sea level and information on how iceberg B-15 is affecting the breeding of Adélie penguins on Ross Island.



## Postgraduate Scholarship Winners Announced

The recipients of Antarctica New Zealand's three post-graduate research scholarships to Antarctica were announced in July. The scholarships have been restructured this year, and the Sir Robin Irvine Scholarship has been extended to \$20,000 a year over two years.

The New Zealand Post and Kelly Tarlton's Antarctic Encounter and Underwater World Scholarships each support post-graduate research with a \$10,000 award over one year. All scholarship winners will also be provided with logistical support to, from and in Antarctica.

The research scholarships programme was initiated in 1994. Since this time 32 masters and doctoral students have investigated subjects as diverse as Antarctic silverfish, McMurdo Sound beaches, sea ice properties, Adélie penguin mitochondria, lice on penguins, mosses and lichens, geological formations and Antarctic bacteria.

Antarctica New Zealand CEO Lou Sanson said the scholarship programme provided excellent opportunities for a new generation of researchers to conduct investigations in Antarctica that would not otherwise be possible due to logistical costs. "The financial support provided by the sponsors allows students to experience hands-on Antarctic research at a developmental time in their academic careers," Mr Sanson said.

"We are excited to offer the three scholarships this year for Antarctic research, and in particular the extension of the Sir Robin Irvine Scholarship to two years, with an additional \$10,000 per year. As always, we are delighted with the high quality and calibre of the proposals received, and that all three recipients this year are pursuing post-doctoral research," said Dr Dean Peterson, Antarctica New Zealand Science Strategy Manager.

The first recipient of the newly extended Sir Robin Irvine Scholarship for post-doctoral research is Shelley MacDonell of the University of Otago. She will study the hydrological regime of the cold-based Wright Lower Glacier. Adam Martin of the University of Otago has been awarded the New Zealand Post Scholarship for his post-doctoral work on the geology of Mount Morning, Erebus province.

The Kelly Tarlton's Antarctic Encounter and Underwater World Scholar, Mélanie Raymond, a post-doctoral student from the University of Otago, will study the diversity and survival strategies in nematodes from the Ross Sea Region.

## Hillary Field Centre

The largest construction project ever at Scott Base is progressing well. The building shell was completed on 24 January 2005 and the fit-out team arrived at Scott Base on 4 February. Progress over the winter has been good, with some minor rework and adaptations necessary. The goal is to have the fit out and commissioning completed by the conclusion of WINFLY in August 2005. The Hillary Field Centre will be linked to the main base by a heated passage way. Once operating, a demolition programme will commence to remove a number of old storage facilities around the base making the base much more energy efficient.



Top: Progress continues in the construction of the Hillary Field Centre.  
Photo courtesy of Emma Reid.

Above: Progress continues in the construction of the Hillary Field Centre.  
Photo courtesy of Kevin Rigarfsford.