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Newsletter of Antarctica New Zealand

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CEO Report



It's hard to believe that another season is almost upon us. With preparations for WINFLY well underway, it's timely to report on the results from 2003/04 and a year of intense activity characterised by a number of achievements.

The dedication and passion of the staff and Board of Antarctica New Zealand resulted in over 370 personnel safely deployed to the ice in 81 events - a record high.

The Latitudinal Gradient Project (LGP) completed its first season in the northern Ross Sea at Cape Hallett after 5 years of planning. This was the largest deep field camp ever supported by Antarctica New Zealand with sixteen New Zealand and six American researchers from a variety of disciplines.

The first stage of the Field Centre was also concluded with the construction of the platform and building foundations. This required the single largest shipping consignment ever undertaken for the programme in tandem with the USAP. Construction of the external structure will begin this October.

The Cape Hallett remediation project with the USA and Italy was another outstanding team effort. The last remaining buildings of the former station were dismantled with 22 tonnes of debris staged for removal this season. The New Zealand Defence Force team deployed to Cape Hallett made a significant contribution, as did our own staff on site.

The site surveys for ANDRILL continued in earnest on the McMurdo ice shelf.

Last season also saw a large scale marine research effort with NIWA's RV Tangaroa jointly funded by the Ministry of Fisheries and Land Information New Zealand. This 42-day voyage combined marine biodiversity work with hydrographic surveys in the Ross Sea. Research undertaken by the RV Italica further strengthened our collaborative relationship with Italy.

The environmental team have continued to lead two separate initiatives under the auspices of the Antarctic Treaty's Committee for Environmental Protection (CEP). One on state of the Antarctic environment reporting, and the other the Dry Valleys Management Plan, which was successfully signed off in Cape Town in May. This represents the culmination of many years of work between the USA and NZ, and their respective scientific communities. In achieving international recognition of this very special part of Antarctica, this status recognises the unique value of research in the Dry Valleys.

In addition to this, Pat Bodger, Head of Electrical Engineering at Canterbury University, visited Scott Base and various field events during the 2003/4 season. As a result of his experiences he identified several alternative energy research projects for further exploration. These projects are potentially very exciting and may have significant advantages for future operations at Scott Base.

Yet again an impressive season of Antarctic media coverage was gained through the artists, education and media programmes. Highlights included Kim Hill broadcasting live from Scott Base, extensive coverage in the New Zealand Herald, The Press and the Sunday Star Times, and a number of items on TV3. Our invitational artist Grahame Sydney also generated significant media interest.

Over the weekend of May 15-16th this year a major storm struck Scott Base. Wind speeds were the second highest recorded since 1972, with sustained winds of 120.96km/hr, reaching a maximum gust of 179.64km/hr. The base and some outlying structures sustained damage as did some vehicles. The hangar door was torn from its guide rails and blew down, filling the building with snow. Roof panels were also uplifted, a 20 foot steel container was blown over, the A-frame suffered snow ingress and flying debris broke windows at Arrival Heights.

However, thanks to the sterling efforts of the winter-over crew, temporary repairs have been effected and replacement material will be sent down at WINFLY and during the summer season. The Scott Base crew also sent their best wishes to everyone at the Midwinter function in Christchurch, which saw over 200 Antarcticans in attendance. The new Scott Base staff have now been selected and training is scheduled for late September with deployment early October. Once again we were impressed with the standard of applications, and feel confident we have another excellent team for the coming season.

Having just attended four separate Antarctic Midwinter functions, I am heartened by the ongoing support of the NZ Antarctic Programme, and the sense of pride that all who have worked in Antarctica continue to show. Along with the NZ Antarctic Society we certainly look forward to celebrating 50 years of NZ Antarctic achievements in 2007.

Finally, I would like to pay tribute to Mario Zucchelli, leader of the Italian Antarctic Program, who sadly died in October 2003. Mario had been a huge supporter of the New Zealand Antarctic programme. Given his 15 year association with New Zealand, and his work in the construction of Terra Nova and Concordia Bases, we wish to seek Government approval to have him posthumously considered for the New Zealand Polar medal.



Esme Robinson receiving her Kelly Tarlton's scholarship from Richard Wilson

Board Reporting



The Ross Dependency and Ross Sea region are of strategic importance to New Zealand. They form our back door just as the South Pacific Region is our front door. The basis for New Zealand's current involvement and influence in the area is the Antarctic Treaty and the collaborative arrangements with the United States and Italy that the Treaty enables and encourages.

New Zealand's statement of Strategic Interest signed off by the Prime Minister in November 2002 reflects this and confirms our commitment to:

- Conserve, protect and understand the biodiversity of Antarctica and the Southern Ocean, in particular the biodiversity of the Ross Sea region
- Support and lead high quality Antarctic and Southern Ocean science.

The International Polar Year (IPY) occurs in 2007/08, 50 years on from the International Geophysical Year (IGY) in 1957/58 which triggered the Trans Antarctic Expedition, the establishment of Scott Base and the US McMurdo Station on Ross Island and the foundation of New Zealand's Antarctic science programme together with an enormous amount of scientific activity on the part of other nations.

Australia has advanced proposals to the international Antarctic science community for a major international science project for IPY involving a ship-borne circum-Antarctic census of marine life aimed at a systematic recording of biodiversity in the waters right around the continent through a coordinated programme of ocean observations. This project would occur under the umbrella of the Census of Marine life (CoML), a ten-year international programme having the goal of exploring the Earth's oceans to assess and explain changes in its biological diversity and the distribution and abundance of oceanic life. This would contribute to the theme 'Understanding change at the Poles' by enabling comparisons to be made with data from previous expeditions into Antarctic waters going back to the 1920s and 1930s.

The significance of this is that the Ross Sea is an enormously productive ecosystem, the influence of which extends far beyond its boundary with the Southern Ocean. It is considered to be one of the world's seas least modified by human impacts. Moreover it is likely that this would be the beginning of further significant scientific work in the Ross Sea in the years following the International Polar Year. Such work will have an important influence on strategies and policies for the future of the region just as the terrestrial based science did that flowed from the IGY initiatives in 1957/58.

If this international project goes ahead it is of great strategic importance to New Zealand that we are part of it and meet the scientific challenges just as we did all those years ago in IGY 1957/58.

[Paul Hargreaves, Chairman](#)
[Antarctica New Zealand](#)

Staff changes at Antarctica New Zealand

Emma Reid has replaced Shelly Peebles as Antarctica New Zealand's new Communications Manager. She comes to Antarctica New Zealand from Wellington public relations firm Busby Ramshaw Grice. Emma has extensive media relation skills. She has also worked as press secretary for several Government Ministers. She has a strong background in education and conservation, and has worked as an education policy analyst here, and in South Africa.

New Corporate Services Manager Peter Smith brings financial, HR and IT management skills to the role. A chartered accountant and former general manager corporate services at Trade New Zealand, Peter has also held senior management roles with the New Zealand Association of Credit Unions in Auckland and the BOC Group in London.

Anna Howard has been appointed to the new role of Information and Communications Coordinator. Anna has over nine years' experience in data and information management, having worked for both software houses and information providers. Anna also has a strong background in education and environmental auditing.

Antarctica New Zealand farewells Human Resources Advisor Prue Sullivan, and welcomes Melanie Lindroos as her replacement. Melanie comes to us from the Canterbury District Health Board with over 6 years' experience in the Human Resources field, accompanied by degrees in Psychology, Education and HR. She has a keen interest in sport and joined us on the 19th of July.

Conference attracts record attendance

Antarctica New Zealand's annual Antarctic Conference was held at Waikato University in April, attracting a record number of registrations. A broad spectrum of presenters included broadcaster Kim Hill and artist Grahame Sydney as well as an update on the ANDRILL multinational drilling project and a report on the first season of the Latitudinal Gradient Project at Cape Hallett.

Waikato University biological sciences' professor Allan Green shared research on vegetation change at Cape Hallett over 40 years. Shona Duncan and Roberta Farrell of Waikato University presented their findings on the condition of Ross Island's historic huts, and Kevin Sullivan from the Ministry of Fisheries gave a presentation on the status of toothfish numbers in the Ross Sea. Anne-Marie Schwarz of NIWA talked about her research on how seaweeds survive in near-darkness under the sea ice. In all, more than 30 presenters were heard during the three-day conference. We are pleased to announce that next year's Annual Antarctic Conference will be hosted by Gateway Antarctica at the University of Canterbury from 4th to 6th July 2005.

Science scholarship winners announced

Antarctica New Zealand recently announced the recipients of four post-graduate scholarships of \$10,000 each plus logistical support for the 2004/05 season.

Andrew Clifford of University of Otago was awarded the Sir Robin Irvine Scholarship for a Masters project aimed at investigating the influence of a remnant volcanic crater under the Southern McMurdo Ice Shelf with the use of ground penetrating radar.

Andrew Martin of Victoria University of Wellington received the New Zealand Post Scholarship for his Doctoral work on the role of bacteria on Antarctic sea ice.

Esme Robinson of Canterbury University received the Kelly Tarlton's Antarctic Encounter and Underwater World Scholarship for her Masters work on the adaptability of Antarctic fish to changes in water temperature.

Erica Hofstee of Waikato University was awarded the first Latitudinal Gradient Project Scholarship for her Masters research at the Cape Hallett LGP site on the soils and hydrology of the area.

The scholarship programme is now in its 10th year having supported 31 students in Antarctic research. In particular Antarctica New Zealand acknowledges and thanks New Zealand Post and Kelly Tarlton's Antarctic Encounter and Underwater World for their continued support.

Latitudinal Gradient Project Begins

Cape Hallett was the site for the first operational season of the Latitudinal Gradient Project, an international study of how marine and terrestrial ecosystems differ from north to south. The Latitudinal Gradient Project will study five sites along the Victoria Land coast in detail. The information gained will increase understanding of polar ecosystems and help create a predictive knowledge of the future effects of environmental change on these ecosystems.

Antarctica New Zealand provided the logistical support for the Cape Hallett camp, which hosted 16 New Zealand scientists and six US scientists during the season.

The research will continue at Cape Hallett for two more years, before moving along to other points on the coast. The Victoria Land coastline spans 14° of latitude along a narrow longitudinal band from Cape Adare to the southern end of the Ross Ice Shelf. Important environmental factors such as solar radiation, temperature and sea ice cover predictably vary with latitude along the Victoria Land coast.

The LGP research falls into three categories: marine, terrestrial and climate.

This year, Megan Balks from Waikato University was working with Jackie Aislabie of Landcare Research to determine the extent of hydrocarbon spills left over from the old station. In addition, their work included general soil mapping and characterization. Ian Hawes of NIWA focused his studies on the diversity of life in the flowing streams around Cape Hallett while Ken Ryan from Victoria University looked at algae growing under the sea ice, and Mary Sewell from Auckland University sampled plankton through the sea ice. Craig Marshall of the University of Otago looked at the local diversity of notethenoid fish species in Antarctica.

For more information, visit the project's website, www.lpg.aq. This site includes the background to the LGP, the collaborative programmes and organisations involved, a description of the science projects being undertaken, and information on the study sites including maps, imagery, publications and data.

Cape Hallett Camp. Photo: M Balks K1230304

Cape Hallett Remediation

The establishment of a camp at Cape Hallett for the Latitudinal Gradient Project provided a good opportunity to conduct clean-up work in the area. It is a joint project between New Zealand and the US, who both have an obligation under the Protocol on Environmental Protection to the Antarctic Treaty to clean up sites of past activity.

The old Hallett Station operated between 1957 and 1973. This season, contents from inside the last remaining buildings were packed for removal, with items of potential historic value separated for evaluation. The buildings themselves were then also dismantled, leaving 22 tonnes of material ready for removal. Debris was collected from the ground around the old station, and water and soil samples were taken for contaminant analysis.

The remediation project will continue next year.

News in brief

Field Store

The largest project ever undertaken at Scott Base began this summer with site blasting and earthworks resulting in the foundations being laid by the end of the season. Materials and components for construction and fit out of the building were delivered to Scott Base in February 2004.

Construction of the building shell is scheduled to commence in October 2004, and should be complete in late January/early February 2005. Leighs Construction Ltd. will field a crew of 9 people to do this work.

Antarctica New Zealand trades staff will fit out and commission the building during winter. It is planned to have the facility useably complete by October 2005.

Storm Hits Scott Base

The worst storm in 30 years hit Scott Base on May 16th 2004, damaging buildings and equipment. No one was injured in the storm that barraged the station with winds up to 200 km/h. The fierce winds blew over containers and blasted the hangar door in. Several windows were broken in vehicles and roofing iron was torn off. The station's 10 winter staff began work clearing and repairing the damage almost immediately.

Due to the loss of the hangar door, the first task was to clear all the snow that had accumulated within the hangar. This took nearly two weeks, with all staff spending any spare time on a shovel or brush clearing snow from every shelf and corner of the building, some of it up to six feet deep.

The roller door had to be rebuilt and has now been reinstalled, returning the interior of the building back to normal. What was left of the damaged section of roof has been removed, and all the exposed edges of the remaining roofing iron have been strengthened and temporarily held down. New roofing materials have been ordered and should arrive to restore the roof during the main season.

The vehicles with broken windows have been left out in the cold, as there's no chance of the snow melting inside them and causing any damage! New glass should arrive at WINFLY, and they will be repaired at that time.

Searches were made of the foreshore at the Willy's Transition and also along the flag route to the A-frame. These searches proved very fruitful. Quite a few 209L drums and other "flotsam and jetsam" were discovered amongst the snow, and returned to base.

The A-frame, which had been abandoned and left cold since the storm, was visited and had the inside cleared of snow, the heater fired up and the linen brought back to base to be cleaned and dried. The building is now happily back in use.

The odd small piece of repair work that went unnoticed pops up now and then, but life is pretty much back to normal around the base now, and the usual work continues until the next one hits.

2004 Recruitment Round

The 2004-2005 Scott Base vacancies were advertised in May with interviews taking place in Auckland, Wellington and Christchurch during June. The recruitment process included reference checking of all potential staff and psychological assessment for all winter-over roles. It is a condition of appointment that all successful candidates pass appropriate Antarctic medical examinations before being deployed to Scott Base. This year we had a total of 175 applicants for the 30 positions available at Scott Base. The quality of the selected staff is up to normal high standards and includes a number of returnees.

In addition to the usual roles, this year extra trades staff were selected for the winter interior fit-out of the new Field Store. These staff will take over the exterior shell which will be constructed by Leighs Construction personnel over the summer.

Current planning is that the Pre-Antarctic Training Course (PATC) will be 20-24th September, with Fire Training/Joint Antarctic Search and Rescue Team (JASART) the following week. JASART is compulsory for all Antarctic Field Training staff; Fire Training is compulsory for all other staff. The season is scheduled to start on Tuesday 5th October 2004, with most Scott Base staff flying down over the subsequent few days, weather/flights permitting.

Antarctic Centre Redevelopment

The Antarctica New Zealand/Scott Base display area at the Antarctic Visitor Centre was redeveloped this year in time for the APEC Science Minister's meeting in March. If you are out and about near the Antarctic Visitor Centre drop in and take a look.



Field store desk after the storm at Scott Base

Field food under review

University of Otago nutrition student Katharine Fouhy has reviewed the contents of food supplied to field groups in Antarctica. Fouhy looked at the food's nutritional adequacy, food quality and practicability. She said nutrition was critical when working in extreme environments and that energy requirements are increased in a cold and elevated environment. She said it takes 4000-5000kcal/day to meet energy demands for Antarctic fieldwork.

In general, Fouhy found that the nutritional contents of the boxes met daily recommendations but she found areas where the food could be more energy dense. Fouhy suggested decreasing the poly-saturated fat content but increasing the mono-saturated fat and carbohydrate content.

For vegetarians, Fouhy recommended a wider range of vegetables. She also suggested food box assembly guidelines be written to ensure good variation in each box. To help inexperienced groups, Fouhy recommended reviving the Antarctica New Zealand recipe book to provide information about the amount of calories required for working in a cold environment, meal suggestions and general camp cooking hints.

Environmental award for Antarctica New Zealand

Antarctica New Zealand was the only government organisation to receive one of the Christchurch City Council's inaugural Target Zero annual merit awards in May. The judges were particularly impressed with Antarctica New Zealand's waste management and reporting systems as well as the full range of environmental management systems in place.

The Target Zero scheme aims to help Christchurch businesses move towards sustainability by improving resource efficiency, minimising waste and reducing risk of harm to the environment.



International News

Antarctic Treaty Consultative Meeting

A significant achievement at the Antarctic Treaty Consultative Meeting in Cape Town (24 May - 4 June 2004) was the formal adoption of the McMurdo Dry Valleys Antarctic Specially Managed Area (ASMA). The special status for the Dry Valleys was the result of a joint proposal by New Zealand and the United States, including a comprehensive Management Plan. The 15,000 km² area includes the largest expanse of ice-free ground in Antarctica, containing cold desert soils millions of years old, unusual biological communities, special geological features and minerals, and spectacular scenery. The Dry Valleys ASMA, along with one proposed by Australia for Commonwealth Bay, is the first to be formally designated under the provisions of Annex V of the Protocol on Environmental Protection, which came into force in 2002.

New Zealand also presented papers on inter-sessional work on Antarctic wide state of the environment monitoring led by Neil Gilbert, an update on the ANDRILL Comprehensive Environmental Evaluation process being carried out by Antarctica New Zealand, and a progress report on the pilot environmental domains analysis which is being undertaken by Landcare Research.

Malaysian seminar

Lou Sanson and Dean Peterson represented Antarctica New Zealand at the second Malaysian International Seminar on Antarctica, held in Penang in May. The seminar discussed Malaysia's role in Antarctic research and the possible establishment of a Malaysian research station on the continent. Lou presented a session about the New Zealand Antarctic Programme, while Dean gave an invited talk on climate change and the Antarctic.

APEC Science Ministers meet

Antarctica New Zealand supported the APEC Science Minister's conference in March by hosting a dinner at the Antarctic Visitor Centre, which included a live link to Scott Base and a presentation from CEO Lou Sanson. A seminar session was also held at the centre.

Tourism conference

The International Association of Antarctic Tourism Operators held its general meeting in Christchurch in April. Antarctica New Zealand hosted a workshop to address the development of a site inventory project for typical landing sites in the Ross Sea region.

Tourism policy

Lou Sanson, along with Trevor Hughes (MFAT) and Elana Geddis (NZ Embassy, New York) attended the Antarctic Treaty Meeting of Experts on Tourism and Non-Governmental Activities in Antarctica in Norway from 22-25 March 2004. A total of 72 people representing 20 consultative parties and two non-consultative parties along with ASOC, COMNAP, IAATO, IUCN and SCAR also attended the meeting. The meeting was very productive with a total of 26 papers presented and a substantive report prepared for the Antarctic Treaty Meeting in Cape Town.

Upcoming meetings

The Sixteenth Meeting of COMNAP will be held concurrently with the 28th meeting of the Scientific Committee on Antarctic Research (SCAR) in Bremen, Germany at the end of July. COMNAP will also feature a technical exhibition of Antarctic supplies and services and a symposium on Antarctic logistics and operations. The SCAR conference will feature a conference on "Antarctica and the Southern Ocean in the Global System".

Environmental exchange

Antarctica New Zealand environmental officer Rebecca Roper-Gee has recently spent several months with the British Antarctic Survey (BAS) as part of the Environmental Officer's Exchange Programme.

In the first exchange of this programme, which aims to increase co-operation and strengthen links between the organisations, Rebecca visited a number of historic British bases that are being cleaned up. Her role was to assist in the clean-up and provide an external audit on the clean-up programme in general. Together with BAS, she will provide a written report of her findings. To reciprocate, Antarctica New Zealand plans to invite the BAS Environmental Officer, Dr John Shears, to spend time in Christchurch and at Scott Base during one of the next two seasons.

Antarctic Education

Stamps support post-graduate research

The latest issue of New Zealand Post's Ross Dependency stamps feature strange and beautiful animals from the sea floor. The Marine Life stamp series includes sea stars, urchins and jellyfish from the Ross Sea. For 10 years, New Zealand Post has sponsored postgraduate scientific research in Antarctica with an annual science scholarship. Research supported by this scholarship has included studies of glaciers, beach development and sea ice formation as well as the study of penguin antibodies and the thermal properties of Antarctic enzymes.

Graduate programme reviewed

A survey of the Graduate Certificate in Antarctic Studies (GCAS) was undertaken last year to evaluate the effectiveness of the programme. The course was developed jointly in 1998 by the University of Canterbury and Antarctica New Zealand to provide a study programme for people with an interest in Antarctica and the Southern Ocean. The course includes 632 hours of classroom learning and field studies.

The survey concluded that 52% of GCAS graduates went on to do some form of Antarctic work. Within this group, 24% regularly incorporate knowledge of Antarctica into their current professional work and 7% are in professional positions with direct and regular involvement in Antarctic affairs. Forty per cent of participants continued with further study. The survey found that GCAS attracted a wide range of students from around the country. Past participants commented on how the programme has impacted on their career. One engineer said, "The qualification has helped me in my profession. It has made me a lot more open minded about all sorts of issues related to professions, cultures, organisations and in particular the environment. I find I am a lot more careful and sensitive when designing things and consider the impact from all sides."

Events

Baden Norris unveiling Mrs Chippy



Midwinter function

Antarctica New Zealand held its first Midwinter function on 17th June to bring together many South Island people past and present, with an Antarctic connection. The evening began with a welcome from Lou Sanson (CEO), then Paul Hargreaves (Chair) introduced the presentation of the four Antarctic Post-graduate Scholarship winners. This inaugural event was a big success with over 200 people in attendance. It is intended to become an annual event.

Antarctic Heroes exhibition opens at Te Papa

Antarctica New Zealand provided clothing, images, information and educational material to support Te Papa's Antarctic Heroes: the race to the South Pole exhibition, and the educational and events programme accompanying it.

The exhibition tells the stories of three of the Antarctic's greatest heroes – Captain Robert Scott, Roald Amundsen, and Ernest Shackleton. One of the major attractions of Antarctic Heroes is the James Caird – the lifeboat in which Ernest Shackleton, his navigator, New Zealander Frank Worsley, and four other men made one of the greatest small-boat voyages ever. Antarctic Heroes opened in Wellington on 29th May and runs until 26th October.

Air Force art exhibition

Through its contribution of personnel and equipment, the RNZAF has been an integral part of New Zealand Antarctic research since

its beginning in 1956. Ice on my Pallet, an exhibition of Antarctic art, is an artistic celebration of this longstanding relationship between the Royal New Zealand Air Force (RNZAF) and Antarctica New Zealand.

The exhibition, at the Wigram Air Force Museum in Christchurch, includes works by Royal New Zealand Air Force official artist Maurice Conly as well as works from former Antarctic Arts Fellows Austen Deans, Jonathan White and Raewyn Atkinson. There are also musical compositions by Chris Cree Brown. The exhibition opened in April and will run until October.

Mrs Chippy memorialised

Natalie Cadenhead represented Antarctica New Zealand at the recent unveiling of a commemorative sculpture of Mrs Chippy the cat, on the grave of Harry McNeish at the Karori Cemetery in Wellington.

Mrs Chippy - a tabby described as full of character - was taken aboard Shackleton's ship Endurance by Shackleton's carpenter Harry McNeish. When the Endurance sank, marooning 28 men, dogs and Mrs Chippy on the sea ice, Shackleton ordered him (Mrs Chippy) shot along with the pups, and later the rest of the dogs. The cat's death impacted heavily on McNeish and he never forgave Shackleton for it.

The New Zealand Antarctic Society commissioned the bronze sculpture of Mrs Chippy and Antarctica New Zealand made a donation to the \$6000 project.

Obituary

Mario Zucchelli, known by many as the father of the Italian Antarctic Programme, died in October 2003, just a week after the Italian President awarded him the gold medal for schools, culture and art.

Trained as a nuclear engineer, Mario Zucchelli was responsible for the implementation of the Italian Antarctic Programme in 1987, when the Italians voted to discontinue development of nuclear energy and put their scientific resources to work in Antarctic research. Mario was instrumental in the construction of Terra Nova Base on the Ross Sea, which has now been renamed in his honour.

As well as being the long-standing Director for the Italian Antarctic Programme, Mario was also a founding executive member and former chairman of the European Polar Board and chair of the Council of Managers of National Antarctic Programs (COMNAP) from 1991 to 1994. Mario helped to build the close relationship between the Italian programme and Antarctica New Zealand, which resulted in many collaborative projects, including the Cape Roberts project and ANDRILL. Mario's death is a great loss not only for the Italian Antarctic Programme, but for the whole Antarctic community.



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