

2005/2006 RESEARCH SEASON

EVENT SUMMARY AND CONTACT INFORMATION

Event K001A ANDRILL Operations & Logistics Preparation

Event K001A
14-Oct-05 to 25-Feb-06
Scott Base,
McMurdo Ice Shelf

Antarctica New Zealand, Christchurch. Jim Cowie, Phone: (03) 358 0200, Fax: (03) 358 0211, Email: j.cowie@antarcticanz.govt.nz

ANDRILL (ANTArctic DRILLing) is an international scientific drilling project following on from the Cape Roberts Project (CPR) 1995-2000. AntNZ is the Project Operator on behalf of the four participating countries – Germany, Italy, NZ and USA. The purpose of the drilling is to recover rock cores from sub-sea floor sites in the McMurdo Sound area using the McMurdo Ice Shelf and the annual sea ice as the drilling 'platform'. The first hole is to be drilled under the McMurdo Ice Shelf (MIS) about 10kms SE of Scott Base in summer season 2006-2007. During the 2005-2006 summer season ANDRILL personnel will continue preparing for the drilling operation. Main tasks will be:

- Compaction of the route to the MIS drill site and the site itself – this will be done October to December, mainly with USAP assistance.
- Deployment of the Drill Site camp and laboratory to near the MIS drill site.
- Current and sea ice measurement work at the second drill site in SW corner of McMurdo Sound.
- Organising ANDRILL equipment at Scott Base.
- Assembling the Drill System following ship off-load in February 2006 and deploying it to the MIS drill site.
- Conducting a trial of the Hot Water Drill on the Ice Shelf following ship off-load.

Event K001S ANDRILL MIS & SMIS Site Surveys

17-Oct-05 to 13-Dec-05
Southern
McMurdo Ice Shelf

Institute of Geological & Nuclear Sciences Ltd, PO Box 30368, Lower Hutt 6315 and Victoria University Wellington. Dr Tim Naish, Phone: (04) 570 4767, Fax: (04) 570 4600, Email: t.naish@gns.cri.nz University of Otago Dept of Geology, PO Box 56, Dunedin. Dr Gary Wilson, Phone: (03) 479 7509, Fax: (03) 479 7527, Email: gary.wilson@stonebow.otago.ac.nz

ANDRILL will recover rock cores from sub-sea floor which will help scientists from the participating countries to determine Antarctica's role in Cenozoic to Recent global environmental change; that is, Antarctica's paleoclimatology, and volcanic and tectonic history. As in the previous three seasons, ANDRILL site survey work is to continue at the approved MIS site to the south of Williams Field skiway and at a future possible drill site – Southern McMurdo Ice Shelf (SMIS) – between Black Island and Minna Bluff. Tim Naish and Gary Wilson will lead a team of 16 scientists, technicians and drillers who will conduct seismic and ground magnetic data gathering operations.

Event K001H ANDRILL Oceanographic and Sedimentation McMurdo Ice Shelf

01-Feb-06 to 25-Feb-06
McMurdo Ice Shelf

Institute of Geological and Nuclear Sciences Ltd, PO Box 30368, Lower Hutt 6315 and Victoria University Wellington. Dr Tim Naish.

Five scientists from IGNS, NIWA, VUW and Alfred Wegener Institute (Germany) will deploy instruments through the hole (~100 metres) in the Ice Shelf that will be 'drilled' by the ANDRILL Hot Water Drill in February 2006. From the 800 metre water column underneath the Shelf they aim to collect data on sea temperature, salinity, turbidity and currents. In addition they will obtain high resolution CHIRP seismic profiles of the upper 100 metres of the sea floor and recover sea floor sediment cores. Data obtained will assist in interpreting cores recovered from the ANDRILL MIS hole. The MIS portion of K001S and the oceanographic and sedimentation studies of this project are part of a three-year Marsden Fund grant.

Event K002 Latitudinal Gradient Project (LGP)
27-Oct-04 to 07-Feb-05 Cape Hallett
Antarctica New Zealand, Christchurch. Shulamit Gordon (Project Manager),
Phone: (03) 358 0200 Fax: (03) 358 0211 E-mail: s.gordon@antarcticanz.govt.nz
The Latitudinal Gradient Project (LGP) is aimed at increasing the understanding of the coastal marine, freshwater and terrestrial ecosystems that exist along the Victoria Land coastline in the Ross Sea region, and describing potential environmental variability that may occur in the future. Antarctica New Zealand is providing the logistical capabilities for research camps to be located at specific sites along the Victoria Land coast. Thus, the opportunity to work at particular locations in collaboration with other scientists from various disciplines and National Antarctic Programmes is provided. This year the LGP will be located at a camp at Cape Hallett, northern Victoria Land. This will be the third season at this location. The following New Zealand events will be working at Cape Hallett this season: K021, K024, K029, K063, K066, K081B and K122 (see individual event entries for research summary).

Event K012 Early Development in Antarctic Fishes
25-Oct-05 to 03-Dec-05
Mario Zuccelli Station
School of Biological Sciences, University of Auckland. Dr John Macdonald.
Phone: (09) 373 7599, Fax (09) 373 7417, E-mail: ja.macdonald@auckland.ac.nz
Many Antarctic fishes are in contact with sea ice during larval development, and one, the pelagic Antarctic silverfish *Pleuragramma antarcticum*, is a key species in the trophic structure of the Antarctic marine ecosystem. Very little is known, however, of the early development of *P. antarcticum* prior to hatching. Over the past 4 years, members of this programme (Macdonald, Vacchi, DeVries, Evans) have discovered how to obtain fertilised eggs from *P. antarcticum*, and from a second very different species, the bottom-dwelling naked dragonfish (*Gymnodraco acuticeps*). Our programme in 2005 involves an international collaboration between New Zealand, Italian and American scientists to document embryological development and biochemical changes in the first species. Particular emphasis is placed on determining the true extent of the putative spawning ground, and estimating the total mass and distribution of eggs. Additional projects include ion transport (Macdonald), freezing resistance and the ontogeny of antifreeze production (DeVries, Evans), morphological and metabolic changes associated with the transition from yolk to feeding (Pisano, Evans), and changes in body density, lipid composition, fins and muscle activity associated with the onset of locomotion (Macdonald, Vacchi). Eggs and larvae will be collected in early spring in Terra Nova Bay, and analysed in laboratories at Terra Nova Bay.

Event K021 Ecosystem Functioning of Terrestrial Microorganisms
03-Jan-06 to 24-Jan-06
Cape Hallett
Cape Evans
Cape Royds
Department of Biological Sciences, University of Waikato, Private Bag 3105, Hamilton.
Prof Roberta L Farrell. Phone: (07) 838 4704, Fax (07) 838 4976,
E-mail: r.farrell@waikato.ac.nz
This programme addresses the ecosystem functioning of microorganisms isolated from the Antarctic Specially Protected Areas (ASPA) of the Ross Dependency that contain the Heroic Period Historic Huts, and from surrounding natural environments. The study focuses on terrestrial fungi and *Bacillus* species. The research is multi-disciplinary, considering both physiology of the whole microorganism as well as biochemistry of crucial enzymes with aims to fundamentally understand the underlying mechanisms of cold adaptation, proliferation and life in extreme environments. The Historic Huts and their artefacts provide a unique ecosystem to distinguish between endemic Antarctic microorganisms responding to the introduction of substrates to Antarctica in contrast to introduced microorganisms 'hitchhiking' on these substrates that have survived and adapted to this cold and dry environment. The hypotheses of this research programme are firstly, that endemic Antarctic fungi proliferated with the introduction of wood and artefacts as this food web created opportunities for an

unique microbial evolution system; secondly, that 'hitchhiking' microorganisms that have survived and proliferated have biochemically adapted to mimic endemic microorganisms; thirdly, that a better understanding of ecosystem functioning of terrestrial fungi will be gained from the natural environmental isolates.

Event K023 Microbial Biodiversity and Metgenomics of the Ross Desert, Eastern Antarctica

06-Jan-06 to 03-Feb-06
Tramway Ridge, Miers Valley, Mt Erebus
Department of Biological Sciences, University of Waikato, Private Bag 3105, Hamilton.
Professor Craig Cary, Phone: (07) 838 5493, Fax: (07) 838 4324,
E-mail: caryc@waikato.ac.nz

This project aims to extend our current research addressing four basic questions relating to the microbiology of the Antarctic mineral type soils 1) What is the true microbial diversity of the terrestrial biotopes? 2) What factors control microbial biomass, activity and diversity? 3) What is the impact of human activities on the introduction of non-indigenous microbial species into Antarctic environments? 4) Can metagenomic methods be applied to the discovery and recovery of valuable genes and gene products in unculturable Antarctic microbiota? Our intent is to survey soils where unprecedented physical/nutrient gradients exist using a suite of molecular genetic approaches. The introduction of molecular genetic tools to the study of microbial ecology has provided a new capability to determine the precise composition and structure of complex microbial communities where most of the members have eluded cultivation. These methods have provided surprising insight into the complexity and diversity of bacterial communities inhabiting a wide range of natural and artificial habitats. To date, these methods have yet to be applied in a comprehensive manner to the study of bacteria inhabiting Antarctic environments.

Event K024 Biodiversity and Performance of Lichens and Mosses

24-Nov-05 to 31-Jan-06
Cape Hallett
Department of Biological Sciences, University of Waikato, Private Bag 3105, Hamilton.
Professor T G Allan Green, Phone: (07) 838 4225, Fax: (07) 838 4324, E-mail:
greentga@waikato.ac.nz

The objective of LGP (Latitudinal Gradient Project) is to increase our understanding of polar ecosystems to the extent that the effects of environmental change can be predicted. This proposal contributes to this objective by determining both the biodiversity of terrestrial vegetation and the effect of environmental parameters on seasonal productivity at Cape Hallett, the first LGP site. Changes in biodiversity are expected to be one signal for environmental change. Biodiversity remains poorly described within the Ross Sea region but application of better collection techniques and better identification including molecular methods, can greatly improve our knowledge. Another signal is likely to be improved production and growth. This will be investigated by determining the active growing season by chlorophyll fluorescence techniques and recording the major environmental parameters (light, plant temperature). The response of net photosynthetic rates to these parameters will also be measured through the season and this will allow total production to be estimated. This data will also allow us to detect acclimation by the mosses and lichens. By changing the response of net photosynthesis to, for example, temperature, acclimation has the potential to confuse any modelling of seasonal production. The data from Cape Hallett will provide a baseline for the remaining LGP sites.

Event K027 Long-Term Impacts of Human Disturbance on Breeding Adélie Penguins

21-Oct-05 to 17-Jan-06
Cape Crozier
Department of Biological Sciences, University of Waikato, Private Bag 3105, Hamilton.
Dr Joseph R Waas, Phone: (07) 856 2889 ext 4286, Fax: (07) 838 4324,
E-mail: j.waas@waikato.ac.nz

Little is known of the long-term consequences of human disturbance on breeding Adélie penguins, or the physiological and behavioural processes responsible for human-induced change, despite sharp increases in recreational and research visits to colonies. Sub-

colonies of penguins at Shell Glacier will be exposed to one of four experimental treatments, representing different levels of human disturbance (i.e. high, moderate, low and no disturbance), to measure effects on key long-term reproductive parameters (e.g. the timing and synchrony of egg-laying, hatching success, fledging success and site fidelity within and across breeding seasons). Changes in reproductive and stress hormones will also be mapped to identify underlying mechanisms that explain treatment differences. In addition, we will assess, for the first time in penguins, a non-invasive method of tracking stress and changes in reproductive state using enzyme immunoassays of faecal samples, by using the technique in conjunction with traditional blood sampling methods. Ultimately, our work will allow us to measure human disturbance and explain biological processes that lead to human-induced change. The work will allow managers to make more informed decisions on acceptable levels of human disturbance within colonies, and will also provide managers with new non-invasive tools (e.g. faecal sampling) to monitor the influences that human visits have on Adélie penguins.

Event K029 Transfer of microorganisms between Ross Sea mega-fauna.

21-Nov-05 to 10-Dec-05
Cape Hallett area
Centre for Biodiversity and Ecology Research (CBER), Department of Biological Sciences, Private Bag 3105, The University of Waikato, Hamilton. Dr Jonathan Banks, Phone: (07) 838 4139, Fax: (07) 838 4324, E-mail: jbanks@life.uiuc.edu

The relatively recent arrival of humans in Antarctica and the continent's physical separation from other land areas appears to have limited the introduction of pathogens associated with human activity. Despite this isolation, there have been outbreaks of pathogenic diseases in Antarctic wildlife, some of which may have been associated with human activities. There is a lack of knowledge about how pathogens already present in the Ross Sea might transfer between hosts and there is also little knowledge regarding the route novel microorganisms might take if introduced to naïve Antarctic host populations. This lack of knowledge occurs in part because the probability of detecting an individual animal with active disease is extremely low. We will overcome the low probability of detecting active disease by using the genetic distances between populations of benign gastrointestinal bacteria to model the pattern of transmission of bacteria around the Ross Sea, both between and within host species. This study will provide insight into the evolution of gut microorganisms and the information obtained may be significant in ensuring the conservation of the Ross Sea's charismatic and iconic mega-fauna in an environment predicted to change markedly.

Event K042 Cape Roberts Tide Gauge check

02-Nov-05 to 04-Nov-05
Cape Roberts
Antarctic Research Centre, Victoria University of Wellington, PO Box 600, Wellington. Mr Alex R Pyne, Phone: (04) 463 5396, Fax: (04) 463 5186, E-mail: Alex.Pyne@vuw.ac.nz

The Cape Roberts Tide gauge was initially established in 1990 by VUW to support marine geological investigations and the Cape Roberts Project drilling operations in the last ten years. A permanent installation has been established and has continued operating since 1990 providing the longest tidal record for the Ross Sea region of Antarctica. The operation of the tide gauge has encouraged USGS and Ohio State University workers to establish Cape Roberts as a primary datum for their GPS stress and deformation control network in South Victoria Land. In 2000 LINZ in partnership with USGS have established a continuously recording GPS station at Cape Roberts that will also require continued tidal records. LINZ bathymetric survey commitments in the Ross Sea (C. Adare and C. Hallet) require a linked Ross Sea tidal datum and the Cape Roberts Tide gauge data recording was modified in 2000/2001 for this purpose. New drilling initiatives proposed in Granite Harbour will also require continued tidal data recording. The installation will be serviced by VUW, supported by LINZ and data archived by LINZ.

Event K047 Dating Relict Ice in the Dry Valleys07-Dec-05 to
13-Dec-05Victoria Valley,
Beacon Valley,
Wright Valley,
Kennar Valley**School of Earth Sciences, Victoria University of Wellington, PO Box 600, Wellington.
Dr Warren Dickinson, Phone: (04) 463 6199, Fax: (04) 463 6199, E-mail:
warren.dickinson@vuw.ac.nz**

In the last 15 years deep cores through the Antarctic ice sheet have provided a wealth of high resolution climate data (e.g. atmospheric gas composition, air temperature) covering the 500,000 years of earth history, and are providing invaluable for testing both regional and global climate models. However, the possibility of obtaining much older climate data of similar high quality is now being recognised in a few select areas where ancient glacial ice has stagnated and lies buried beneath rock debris. Beacon Valley contains the best-known relict ice, which if glacial has been dated by a volcanic ash layer as more than 8 million years old. This age and origin remains controversial. Other occurrences of relict ice have recently been discovered in Pearce, columnar, and Victoria valleys and appear to be analogous but of a different to Beacon Valley. The ongoing aim of this project is to understand the origin and paleoenvironmental significance of ice from these areas and place them in context with the Beacon Valley ice. Of particular value will be the independent dating of debris covering the ice. We will use a new method of beryllium-10 dating, which unlike exposure age methods, can extend back at least 20 million years.

Event K049 NZ International Transantarctic Scientific Expedition – Climate Variability Along the Victoria Land Coast24-Nov-05 to
06-Dec-05Evans, Piedmont,
Victoria Glacier**Antarctic Research Centre, Victoria University of Wellington, PO Box 600, Wellington.
Ms Nancy Bertler, Phone: (04) 463 5233 ext 8391, Fax: (04) 463 5186,
E-mail: nancy.bertler@vuw.ac.nz**

International polar ice coring programmes (e.g. GISP and Vostok) have provided powerful new insights into Earth's climate back 400,000 years from the diverse inventory of atmospheric information stored both within the ice and trapped air bubbles. To understand and predict the local response to anthropogenically induced global warming seen in these "global" ice cores, the focus of ice core research in Antarctica is moving to the acquisition of "local" ice cores that overlap with and extend the instrumental records of the last 40 years back several thousand years. This has been a key motivation behind the US-led International Transantarctic Scientific Expedition (ITASE) of which New Zealand is now a member. The project's objective is to recover a series of ice cores from glaciers along a 14-degree latitudinal transect of the climatically sensitive Victoria Land coastline and thereby directly contribute a critical dataset to ITASE. Moreover the ice core records will provide a baseline for climate change in the region that will contribute to the NZ-led multinational Latitudinal Gradient Project as well as providing essential reference records for the NZ-led ANDRILL objective to obtain a high-resolution sedimentary archive of Ross Ice Shelf stability.

Event K052 Natural Spatial Subsidies in Continental Antarctic soil06-Jan-06 to
24-Jan-06Garwood Valley,
Lake Vanda**School of Biological Sciences, Private Bag 4800, Christchurch. Dr Ashley Sparrow,
Phone: (03) 364 2958, Fax: (03) 364 2590, E-mail: ashley.sparrow@canterbury.ac.nz**

Organisms in Antarctic dry valley plant-soil systems are very stressed and, because of low intensity of indigenous productivity, rely on resources transported from external sources by wind or water (spatial subsidies). The magnitude and effect(s) of such subsidies on these ecosystems are largely unexplored, but are likely to significantly influence community structure, ecosystem function and responsiveness to environmental change. We are conducting experiments (established in 2001/2 and 2002/3) in the Garwood Valley where lake-derived resources (microbial mats and water-surface foams derived from algae and cyanobacteria) enter the soil system by aerial redistribution. We are quantifying the spatial variability amongst the landscape units in the valley in

terms of microbial composition and functioning of the soil system, and the level of resource inputs. In a factorial experiment, we are directly applying microbial mat and foam collected from the lakeshore, and contrasting their effects on the soil system with treatments of simpler substrates (e.g. glucose). We are measuring how the soil system develops after substrate addition, including community composition and diversity, microbial activity, and key decomposer processes including carbon and nitrogen release patterns. These experiments are framed as tests of a new model of landscape function in the dry valleys.

Event K055 Dynamics and Ionisation in the Antarctic Middle Atmosphere
01-Dec-05 to 13-Dec-05
Arrival Heights
Department of Physics and Astronomy & Gateway Antarctica, University of Canterbury, Private Bag 4800, Christchurch. Adrian McDonald, Phone: (03) 364 2281, Fax: (03) 364 2469, E-mail: a.mcdonald@phys.canterbury.ac.nz

The goal of the programme is to study the seasonal and intra-seasonal behaviour of the wave-driven circulation in the middle atmosphere, particularly its dependence on major disturbances from the troposphere and stratosphere which result in the transport of energy and momentum by waves to the higher altitudes. The programme is based on continuous monitoring of winds in the mesosphere using a ground-based radar at Scott Base. The importance of large “planetary-sized waves” on the circulation above Antarctica was shown to dramatic effect last winter when these phenomena were responsible for the small Antarctic ozone hole in September 2002. The September 2002 ozone hole was half the size it was in 2000. The measurement of these large scale phenomenon benefits considerably from co-operative observations by our own radar near Christchurch, and by US colleagues at the South Pole, Arrival Heights and Tekapo. We also use satellite data for the region between Antarctica and NZ.

Event K057 Temperature and Cardiovascular Physiology of Antarctic Fish
21-Oct-05 to 10-Dec-05
Scott Base
Local
Department of Zoology & Gateway Antarctica, University of Canterbury, Private Bag 4800, Christchurch. Associate Professor William Davison, Phone: (03) 364 2029, Fax: (03) 364 2024, E-mail: Bill.Davison@canterbury.ac.nz

Antarctic fish are extremely stenothermal, having upper lethal limits only a few degrees above their habitat temperature. Temperature changes are already having effects on the distributions of animals in the Southern Ocean, yet there is little information available on the effects of increased temperatures in their physiology. The central theme of this project is the cardiovascular and respiratory physiology of Antarctic notothenoid fish, particularly as it relates to small, sub-lethal increases in temperature. Parameters to be examined include oxygen uptake at the gills, oxygen consumption by the fish, the presence of hypoxia and its effects on the heart, and the ability of the heart itself to provide the driving force for blood flow. Determination of this combination of physiological variables will allow insights into the role of the cardiovascular system in determining upper thermal limits.

Event K058 Unique fat transport in Antarctic fish – cold adaptation?
21-Oct-05 to 10-Dec-05
Scott Base
Local
School of Biological Sciences, University of Canterbury, Private Bag 4800, Christchurch, New Zealand. Dr Victoria Metcalf, Phone: (03) 364 2987 ext 4848, Fax: (03) 364 2590, E-mail: Victoria.metcalf@canterbury.ac.nz

The dominant fauna of the Southern Ocean are the notothenoid fish, which show substantial morphological and ecological adaptation to the frigid waters they inhabit. They also possess a number of unique physiological and biochemical characteristics including production of antifreeze, reduced blood viscosity and high levels of tissue lipids. Another interesting finding in one species, the Antarctic toothfish, *Dissostichus mawsoni*, has been loss of the major fatty acid transporter, albumin, from its blood. Fatty acids, the preferred oxidative metabolic fuel in notothenioids, are instead carried by high density lipoprotein. The loss of albumin in the toothfish may be a means of

further reducing blood viscosity, aiding survival in subzero water temperatures. This project aims to use biochemical and molecular biological approaches to determine if loss of albumin is common in Antarctic fish and how this loss has occurred. Increased knowledge about this unique feature of notothenioids will give improved understanding of these fish as well as the biodiversity of the region. Lipid metabolism is very poorly understood in vertebrates. This work will provide significant new knowledge about the mechanism of lipid transport in Antarctic fish, which can also be extrapolated to vertebrates in general.

Event K061 Magma-Supply Dynamics of the Ferrar Large Igneous Province

21-Nov-05 to
13-Jan-06
Coombs Hills
**Geology Department, University of Otago, PO Box 56, Dunedin. Dr James D L White,
Phone: (03) 479 7519, Fax: (03) 479 7527, E-mail: j.white@otago.ac.nz**

Large Igneous provinces (LIPs) form by the movement of large volumes of magma from the mantle to the crust and earth's surface. Distribution of the magma takes place both in surface lava flows (so-called flood basalts) and through subsurface sheets whose solidified remnants are dikes and sills. The mode of magma distribution in the surface plumbing system of LIPs is not well known, and the proposed study will use physical features of Ferrar Dolerite dikes and sills, which are well exposed in the Dry valleys and other parts of the Transantarctic Mountains, to constrain interpretations of magma flow in this LIP. More specifically, the work will quantify vesicle characteristics, orientation of crystals, coarseness of crystallinity, and contact relationships (e.g. contact geometry, host-rock fragmentation). Anisotropy of magnetic susceptibility will also be investigated; it has the potential to augment other flow-direction indicators, and has been successfully applied to other dikes and sills. In addition to magma-flow directions, this approach will allow assessment of injection style (single or multiple). The combined dataset will powerfully constrain interpretations of emplacement and eruption dynamics for the intrusive, extrusive and pyroclastic rocks of the Ferrar and other LIPs, and hence of their environmental effects and potential hazards in the unlikely event of near-future continental LIP eruptions.

Event K062 Magmatism of the McMurdo Volcanic Group

14-Nov-05 to
16-Dec-05
Mt Morning
**Geology Department, University of Otago, PO Box 56, Dunedin. Professor Alan Cooper,
Phone: (03) 479 7515, Fax: (03) 479 7527, E-mail: Alan.Cooper@stonebow.otago.ac.nz**

Sedimentary basins of the Ross Sea are terminated in Southern McMurdo Sound by a massif comprising the volcanic centres of White and Black Islands, Minna Bluff and Mts Discovery and Morning. Although regional geochronology suggests a volcanic history from 15.4 Ma to the present day, the detailed evolution of each of these centres, both in terms of age and the nature of the erupted products is known only at a reconnaissance level. Progressive growth of 20-25km diameter, 2000m high volcanic cones loaded the Ross Sea lithosphere creating flexural-moat basins. This depositional accommodation space evolved into substantial sedimentary basins (>500m) that now preserve a sediment fill recording tectonic, volcanic and climatic events throughout the Neogene. ANDRILL proposes to drill these sediments and interpret from them the glacial and climatic evolution of the Ross Sea Region, and its likely influence on Global climate change. Essential to this interpretation is basic information relating to the stratigraphy and lithological constitution of the proximal volcanic centres.

Event K063 Feeding Chases in Adélie Penguins: can brood reduction save them or will brood maximisation condemn them?

03-Jan-06 to
21-Jan-06
Cape Bird,
Cape Royds,
Cape Crozier,
Cape Hallett
**Department of Zoology, University of Otago, PO Box 56, Dunedin. Assoc Prof Dr Lloyd Davis,
Phone: (03) 479 7654, Fax: (03) 479 7584, E-mail: adellie@stonebow.otago.ac.nz**

Adelie penguins (*Pygoscelis adeliae*) exhibit a unique form of behaviour known as the *feeding chase*, whereby a parent is chased by its crèche-aged chicks before feeding

them. Typically, these chases take the chicks outside the boundaries of their sub-colony, making them vulnerable to predation by skuas. The *brood-reduction hypothesis* proposes that feeding chases lead to preferential feeding of one chick when food resources are scarce; whereas, the contradictory *brood maximisation hypothesis* suggests they serve to distribute food evenly among chicks, thereby thwarting the effects of sibling competition. The recent grounding of two immense icebergs (B-15A and C16) near Ross Island has created a natural experiment, making it difficult for penguins breeding there to get enough food for their chicks. If the brood reduction hypothesis is correct, it will benefit the penguins - but if the brood maximisation hypothesis is right, it will exacerbate the likelihood of breeding failure. By comparing feeding chases of penguins at Cape Bird, Ross Island, with those under normal feeding conditions, we can (i) determine the function of feeding chases in Antarctic Pygoscelid penguins (ii) help assess the consequences of the grounded bergs for the Ross island penguins, and (iii) potentially provide management options to help mitigate the effects of such events in the Antarctic marine ecosystem.

Event K064 The Hydrological Behaviour of Cold-Based Glacier

24-Oct-05 to
13-Jan-06
Wright Lower
Glacier

Department of Geography, University of Otago, PO Box 56, Dunedin. Shelley MacDonell, Phone: (03) 479 8786, Fax: (03) 479 9037, E-mail: macsh330@student.otago.ac.nz

Glaciers are important indicators of climate change due to their intimate connection with climate patterns. In Antarctica, predictions of future climate change have focused on the large ice sheets and ice shelves, with valley glaciers on the continent being largely ignored. Consequently, sea level rise approximations are conservative. One way to rectify this situation is to monitor the hydrology of these glaciers. By considering the hydrology of McMurdo Dry Valley glaciers, questions from the Science Strategy regarding climate change predictions for the Ross Sea region can be answered, an important undertaking as we approach the International Polar Year. This proposal will take a watershed approach of hydrology in the Wright Lower Basin, connecting the glacier with the proglacial stream. The research aims to understand melt processes and drainage configurations, and to characterise glacier hydrochemistry, leading to the construction of a hydrological model.

Event K066 Latitudinal gene drift in organisms from the Ross Sea Region

24-Nov-05 to
16-Dec-05
Cape Hallett

Department of Biochemistry, University of Otago, PO Box 56, Dunedin. Craig Marshall, Phone: (03) 479 7570, Fax: (03) 479 7866, E-mail: craig.marshall@stonebow.otago.ac.nz

Marine and terrestrial organisms have been exposed to quite different environments after Antarctica separated from the rest of Gondwana and then gradually cooled. Since the development of Antarctica as a frozen continent, there is evidence of significant variation in sea temperature and in the extent of ice shelves. Antarctic marine systems are thought to be potentially well-mixed allowing organisms to move from place to place relatively easily. Notothenioid fish dominate the Antarctic fish fauna and are quite speciose implying that some mechanism must exist to isolate individual populations long enough for new species to arise. It is not clear what mechanisms might be responsible for such isolation and whether ice shelf advance and retreat, or both, may be important in sympatric isolation. In contrast, land organisms such as nematodes; typically inhabit ice-free refugia that comprise only a few percent of the area of the continent. Animals from these areas show much stronger regional variation and a different pattern of speciation to those from marine environments and it is clearer what mechanisms isolate each site. To try and understand the relationship between changes in climate and speciation, we will collect material from both marine and terrestrial animals, determine their phylogenetic histories, and compare these with what is known of changes in climate to determine if any clear associations can be identified.

Event K068 An Integrated Approach to Understanding the Effects of Increased Ultraviolet-B Radiation on Antarctic Invertebrate Larvae
14-Oct-05 to 19-Nov-05
Cape Armitage
Cinder Cones
Department of Marine Science, University of Otago, PO Box 56, Dunedin. Dr Miles Lamare, Phone: (03) 479 7463, Fax: (03) 479 8336, E-mail: miles.lamare@stonebow.otago.ac.nz

Ozone depletion over Antarctica is forecast to result in an Ozone hole until ≈2040. The concurrent increase in UV-B radiation can influence the Antarctica Marine community, and research quantifying these effects is essential for predicting if Antarctic marine populations remain viable during the next half century. We aim to extend our 2002 to 2004 research on the effects of increased UV-B on Antarctic marine invertebrate larvae under Antarctic sea ice. Our research is in four parts:

- Direct monitoring of UV-R penetration into the sub-sea ice marine environment
 - Bioassay (using sea urchin embryos) the effects of UV-B in situ under varying sea ice conditions and between years under high and low column ozone
 - Create UV-R spectral weighting functions and quantify UV-R sensitivity in larvae
 - Examine kinetics and physiological mechanisms of UV-R induced damage & repair.
- These, combined, will allow us to quantify present-day effects of UV-B on invertebrate larvae, make predictions on impacts of increased UV-B on Antarctic larvae, and provide a greater understanding of the physiological basis of susceptibility of Antarctic larvae.

Event K069 Monitoring Magnetosphere-Ionosphere Coupling and Space Weather in the polar region
13-Jan-06 to 20-Jan-06
Arrival Heights
Professor Brian Fraser & Professor Richard Dowden, Department of Physics, University of Newcastle, NSW 2308, Australia. Professor Brian Fraser, Phone: (+61) 2 4921 5445, Fax: (+61) 2 4921 6907, E-mail: bhhjft@cc.newcastle.edu.au Department of Physics, University of Otago, PO Box 56, Dunedin. Professor Richard Dowden

This project will provide a better understanding of the volatility of near-Earth space, a plasma region populated by ionised gas embedded in the geomagnetic field. Energy from the Sun must pass through many important regions and boundaries to reach Earth, including the magnetosphere and the ionosphere. The dynamic behaviour of this plasma system, now referred to as “space weather” is of vital importance to life on our planet, and its effects are best studied at high latitudes, e.g. the aurora. Space weather can disrupt the operation of satellites, radio and GPS navigation and power distribution systems. The results of this project will provide important input parameters to global magnetospheric circulation models currently under development for space weather forecasting. In particular, it will study the dynamics and topology of the southern high latitude cusp and polar cap, geomagnetic field regions open to direct solar influence. Ultra-low frequency (ULF) waves will be used as tracers to study plasma dynamics and magnetosphere-ionosphere coupling.

The Scott Base magnetometer and optical imager data, in conjunction with international observations from Australian bases, USA-UK-Japan-China polar cap remote sites will provide the basic dataset.

Event K073 Examining the Values of Visitors to the Ross Sea Region
06-Jan-06 to 03-Feb-06
Scott Base
Local
Social Sciences, Tourism & Recreation Group, Lincoln University, PO Box 84, Canterbury. Dr Gary Steel and Tim Williams, Phone: (03) 325 3838 ext 8784, Fax: (03) 325 3857, E-mail: steelg@lincoln.ac.nz

Individuals making ethical decisions are strongly influenced by the social and organisational context in which decision-making takes place. Antarctica is an environment in which environmental ethics are highly valued; where individuals are removed from their usual organisational and social setting; and where most work is conducted in small, intense, and isolated social groups. Isolated small groups tend to develop unique and strong social norms. Group norms in such closed groups may

differ from social norms of other similarly structured groups and/or from organisational rules or standards. This project will investigate influences on decision-making about decision-making involving environmental ethics by individuals in field-teams and base parties over three Antarctic seasons. The proposed methods are well established and recognised within social science research for their rigour and effectiveness. The outcome will contribute to a greater understanding of environmental ethical decision-making in groups in Antarctica. Strategies may be developed on how to establish effective ethical guidelines and training and on how to maximise compliance of working parties and Antarctic tourists with accepted environmental standards.

Event K081B Antarctic Aquatic Ecosystems (Inland)

& K081C NIWA, PO Box 8602, Christchurch. Dr Ian Hawes c/o Clive Howard-Williams,

12-Dec-05 to Phone: (03) 348 8987, Fax: (03) 348 5548, E-mail: ian@iclarm.org.sb

17-Jan-06

Cape Hallett,

Bratina Island

This programme will provide information on Antarctica's inland aquatic ecosystems, focusing on ponds, lakes and estuaries. The programme will determine how climate-related environmental processes (temperature, wind, irradiance) influence the physical and chemical characteristics of aquatic habitats, and how these characteristics in turn affect the diversity and productivity of biological communities. We will develop climate-driven models that describe the physical and chemical processes within aquatic ecosystems. We will determine the structure, diversity and dynamics of the biological communities within these systems, and develop a mechanistic understanding of the linkages between biology, chemistry and physics. We will do this by linking simple models describing how key biological processes (photosynthesis, respiration, nutrient transformations) within the dominant microbial communities, are affected by physical and chemical drivers. As the programme develops over the next five years we will use natural gradients across the latitudinal range of the Ross Sea, as part of the Latitudinal Gradient Project, to provide a range of conditions within which to further develop and test these models, with an ultimate goal of assessing the resistance and resilience of aquatic ecosystems to climatic variability and other disturbance.

Event K085 Drivers of Global Change in the Antarctic: Atmospheric Remote-Sensing

20-Aug-05 to NIWA, Private Bag 50061, Omakau. Dr Stephen W Wood, Phone: (03) 440 0426,

07-Feb-06 Fax: (03) 447 3348, E-mail: s.wood@niwa.co.nz

Arrival Heights

This research is to investigate of the Antarctic atmosphere's role in global change, its response to that change, and its impact on its surroundings. Springtime Antarctic ozone depletion is due to anthropogenic change in the stratosphere. This depletion has impacts on UV radiation in the Antarctic and, due to atmospheric circulation, at places in the mid-latitudes such as New Zealand in the summer. Although ozone-destroying chlorine has begun to decline, ozone recovery may be delayed 1–2 decades due to climate change. Testing model-based predictions with Antarctic observations will give early insight into ozone recovery. Changes in greenhouse gases, including ozone, affect the radiative balance of the atmosphere in ways that are not yet fully understood. The Antarctic provides a unique opportunity to determine global trends of atmospheric trace gases at sites isolated from anthropogenic sources. We propose to continue our programme of ground-based remote sensing of ozone and other important trace gases in the atmosphere at Scott Base and Arrival Heights. This involves continued collaboration with overseas groups from Denver, New York and Heidelberg, Germany.

Event K087 Drivers of Global Change in the Antarctic: Atmospheric Air Sampling

22-Aug-05 to NIWA, PO Box 14 901, Wellington. Mr Gordon Brailsford, Phone: (04) 386 0308, Fax:

14-Oct-05 (04) 386 2153, E-mail: g.brailsford@niwa.co.nz

Air Sampling

The Antarctic region provides a vast area that is not influenced by man, and therefore

the atmosphere is unaffected by local anthropogenic activity. The main goals of our programme are to study trace gas species in the Antarctic troposphere and lower stratosphere to better understand the way in which the global changes impact on the Antarctic region. Our studies include collections of whole air at Arrival Heights and in the free troposphere between Christchurch and Ross Island; these samples are later analysed for mixing ratio of trace gases such as methane, carbon dioxide, nitrous oxide and carbon monoxide, as well as the isotopic composition of H₂O, CH₄, CO₂, and CO. The information obtained from these analyses can assist in determining the transport of these species from other locations and the way in which they are produced or removed from the atmosphere. Our programme also includes the collection of air samples in the lower stratosphere; these samples are then later analysed to better understand the interaction of trace gas species within the Antarctic vortex, and the way in which these interactions change with the development of the ozone hole in spring. Part of this work involves the study of water vapour and its role in the formation of polar stratospheric clouds; these clouds provide sites for the destruction of ozone.

Event K089 Climate Data Acquisition – Scott Base and Arrival Heights, Antarctica

13-Jan-06 to
20-Jan-06
Scott Base,
Arrival Heights

NIWA, PO Box 8602, Christchurch. Mr Andrew Harper, Phone: (03) 343 7890, Fax: (03) 343 7891, E-mail: a.harper@niwa.co.nz

The goal of this programme is to obtain a high-quality continuous climate record for Scott Base and Arrival Heights in Antarctica, and archive it in NIWA's publicly accessible climate database. Scott Base is one of 47 reference climate stations for the New Zealand region managed by NIWA, and climate observations (wind speed and direction, air temperature, relative humidity, barometric pressure, global solar radiation, diffuse solar radiation and direct solar radiation) are recorded there daily. This climate record began in 1957 and is one of the longest continuous records in Antarctica. Wind speed and direction, air temperature, relative humidity and global solar radiation are now also recorded at Arrival Heights. The measurements are needed for characterising the local climate and state of the environment, identifying climate variations and changes, and in research on climate-sensitive processes and ecosystems. This programme now also includes the recently installed sea level recorder at Scott Base.

Event K102 Magnetic Instrument upgrade and check

13-Jan-06 to
27-Jan-06
Scott Base,
Cape Evans,
Lake Vanda

Institute of Geological and Nuclear Sciences Ltd, PO Box 30368, Lower Hutt 6315. Anthony Hurst. E-mail: T.Hurst@gns.cri.nz

This event will upgrade the equipment in the Scott Base Magnetic Observatory and conduct repeat magnetic observations at Cape Evans and Lake Vanda.

Event K104 Transantarctic Mountain Tectonics: Cape Adare

24-Nov-05 to
14-Dec-05
Protection Cove

Institute of Geological and Nuclear Sciences Ltd, Private Bag 1930, Dunedin 9020, New Zealand. Dr Nicholas Mortimer. Phone: (03) 479 9686, Fax: (03) 477 5232, E-mail: N.Mortimer@gns.cri.nz

Antarctica represents a gap in the Pacific “ring of fire”, where plates are subducted back into the mantle, and hence it provides a unique opportunity to quantify the South Pacific and global plate-motion circuits. This proposal addresses Australia-Antarctica separation and associated deformation in Northern Victoria land. Seafloor formed north and east of Cape Adare indicates 150-400 km of extension since 83 Ma, but how much was transferred to the southeast Indian Ocean via large sinistral strike-slip faults, and how much was continuous with the West Antarctic Rift? The magnitude and sense of strike-slip faulting in Northern Victoria Land is an important constraint.

Recent studies have all suggested dextral Cenozoic faulting, but there is only sparse data from key onshore sites closest to the postulated Cape Adare Fault – the main structure that displaced the South Tasman Rise from Northern Victoria Land. We will

establish the extent and timing of synthetic and antithetic deformation zones in this region by mapping brittle structures and volcanic orientations, by dating pseudotachylites and igneous rocks, and by establishing the pattern of exhumation using fission-track and U-He thermochronology.

Event K122A Adélie Penguin Population Dynamics

11-Nov-05 to 03-Feb-06
Cape Bird
Landcare Research, PO Box 69, 40 Gerald Street, Lincoln 8152, Christchurch. Phil Lyver. Phone: (03) 325 6700, Fax: (03) 325 2418, E-mail: LyverP@landcareresearch.co.nz

Event K122B

09-Nov-05 to 31-Jan-06
Cape Hallett

We are investigating the factors (biotic and abiotic) that control population size and colony distribution of Adélie penguins (*Pygoscelis adeliae*) to determine the demographic mechanism of colony growth (or decline). The aim is to understand the effects of climate change on Antarctic marine organisms by determining the mechanisms regulating population size at higher trophic levels. Currently, this research is being carried out in the southernmost cluster of Adélie colonies in the Ross Sea. The latitudinal gradient of penguin colonies in the Ross Sea provides important environmental variation for understanding population dynamics, and a new initiative is to collect data from Cape Hallett in the northern Ross Sea. In collaboration with a US team, we propose to test the hypotheses: (1) demographic parameters, including those related to a natural philopatry, do not differ among the colonies in the Ross Sea; (2) timing of breeding differs at the colonies depending on environmental factors; (3) the northern position of the wintering area is critical to overwinter survival.

Event K123A Environmental Protection of Antarctic Soils

15-Nov-05 to 06-Dec-05
Marble Point, Bull Pass
Landcare Research New Zealand Ltd. Dr Jackie Aislabie, Phone: (07) 858 3700, Fax: (07) 585 4964, E-mail: AislabieJ@Landcareresearch.co.nz

The goal of this research is to support environmental protection and management of ice-free areas of the Ross Sea region, Antarctica by:

Event K123B

28-Dec-05 to 27-Jan-06
Bull Pass, Lake Vanda, Bartley Glacier

- Increasing fundamental knowledge and understanding of Antarctic soils including soil distribution and climate, microbial diversity, and vulnerability to human impacts; and
- Developing mitigation strategies for management and remediation of hydrocarbon spills on soils.

Event K123C

06-Dec-06 to 13-Jan-06
Scott Base, Minna Bluff, Mt Fleming, Bull Pass, Marble Point, Victoria Valley, Granite Harbour

- Soil maps will be developed for the Wright Valley, and soil vulnerability to human impacts determined. Soils data will be added to our Antarctic soils database.

This season deep boreholes 15-20 metres deep will be drilled at Marble Point and Bull Pass near existing soil climate stations. The boreholes will be instrumented to measure the depth of zero-annual temperature fluctuations. This is an important parameter for understanding permafrost temperature regimes and the impacts of global change. Soil and permafrost samples will be retrieved for chemical, physical and microbial analyses.

In the McMurdo Dry Valleys region we have installed climate stations for continuous atmospheric and soil climate recordings at Scott Base, Marble Point, Bull Pass, Mt Fleming, Granite Harbour and Minna Bluff. Each summer colleagues from the USDA download the dataloggers and carry out maintenance as required at these 6 sites plus one in the Victoria Valley that was installed in collaboration with a US colleague.

Event K131A Sea Ice and Southern Ocean Processes

21-Aug-05 to 26-Aug-05
Tent Island
Industrial Research Ltd. Dr Timothy G Haskell, Phone: (04) 569 0000, Fax: (04) 569 0754, E-mail: t.haskell@irl.cri.nz

Event K131B

21-Oct-05 to 02-Nov-05
Tent Island, New Harbour

A research consortium consisting of the Crown Research Institutes Industrial Research Ltd and the National Institute of Water and Atmosphere together with the Universities of Auckland, Otago and Victoria propose a programme of research 'Sea Ice and Southern Ocean Processes'. This programme is of direct relevance to southern hemisphere climate, and consequently to the interest and well-being of New Zealand

and other southern hemisphere nations. The programme has three complementary and intersecting objectives:

1. **Thermal properties and growth processes in sea ice**, which focuses on aspects of sea ice that determine how it controls the relationship between the ocean beneath and the atmosphere above.
2. **Ocean wave / sea ice linkages relevant to climate**, where the aim is to determine how the sea ice interacts with the sea borne wave field, especially in areas of spatial variability and abrupt transitions.
3. **Southern Ross Sea oceanography**, which focuses on circulation in Antarctic fjords, turbulence under the sea ice and internal waves in McMurdo Sound. Conventional and novel techniques include NMR, thermal and optical characterisation, electrical resistance and modelling of wave propagation in heterogeneous media.

Event K141A Malaysian Antarctic Programme

21-Oct-05 to
02-Nov-05
Scott Base
Local

Malaysian Antarctic Research Programme, Kuala Lumpur, Malaysia, Azizan Samah, Phone: 0060 3 796 74638, Fax: 0060 3 796 75457, E-mail azizans@um.edu.my
Supporting the Malaysian Antarctic Programme.

Event K141C

27-Jan-06 to
07-Feb-06
Scott Base
Local

Event K150 Postgraduate Scholarships

Antarctica New Zealand, Christchurch. Shulamit Gordon, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: s.gordon@antarcticanz.govt.nz

The three scholarships are:

- a) **Sir Robin Irvine Scholarship:** awarded to Shelley MacDonnell from the University of Otago for her PhD research. See K064 for further details.
- b) **New Zealand Post Scholarship:** awarded to Adam Martin from the University of Otago for his Doctoral work on xenoliths (foreign rock bodies) to gain a better understanding of mantle processes. Associated with K062.
- c) **Kelly Tarlton's Scholarship:** awarded to Mélianie Raymond from the University of Otago for her Doctoral work on the diversity and survival strategies in nematodes from the Ross Sea region. Associated with K066.

Event K200 Communications Staff

21-Nov-05 to
10-Feb-06

Antarctica New Zealand, Private Bag 4745, Christchurch. Emma Reid, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: e.reid@antarcticanz.govt.nz
To support media events. Familiarisation visit for new staff member.

Event K210 Project K – Youth on Ice

17-Jan-06 to
24-Jan-06
Scott Base
Local

Project K – Blair Gilbert

Three Project K graduates from around the country will complete an environmental project looking at waste management in Antarctica

Event K220 University of Canterbury Graduate Certificate in Antarctic Studies

15-Dec-05 to
27-Dec-05
Windless Bight

Gateway Antarctica, University of Canterbury, Private Bag 4800, Christchurch. Professor Bryan Storey.

The goal of the Graduate Certificate in Antarctic Studies is to engage participants in a critical examination of the contemporary scientific, environmental, social and policy issues and debates facing the Antarctic region. The Antarctic field component incorporates field studies at Scott Base and its environs. Students will complete Antarctic Field Training, participate in base activities and undertake supervised studies related to geology, ecology, art, glaciology and meteorology.

- Event K230 Artists to Antarctica Programme**
 01-Dec-05 to 16-Dec-05
 Scott Base local, Blood Falls, Cape Evans, Cape Royds
Antarctica New Zealand, Christchurch. Phone: (03) 358 0200, Fax: (03) 358 0211.
 Composer Gareth Farr will explore the human stories associated with Antarctica with particular focus on the stories of great human endeavour, such as Robert Scott's South Pole expedition and the emotions inspired by Antarctica.
 Photographer Megan Jenkinson will concentrate on the colours of Antarctica to produce works of art about the colours and light in a landscape predominantly regarded in terms of its whiteness.
- Event K240 Media Programme**
 11-Nov-05 to 22-Nov-05
 Scott Base local, Arrival Heights
Antarctica New Zealand, Christchurch. Phone: (03) 358 0200, Fax: (03) 358 0211.
 Journalist Bette Flager will write stories with a science, business, human interest, people and environmental focus for Unlimited Magazine, New Zealand Geographic, Next magazine, Human Resources Magazine, Cosmos and Ecos magazines.
- Event K241 Media Programme**
 24-Jan-06 to 07-Feb-06
 Scott Base local, Arrival Heights, Dry Valleys
Antarctica New Zealand, Christchurch. Phone: (03) 358 0200, Fax: (03) 358 0211.
 Journalist Janet McIntyre will collect footage to produce features for the Sunday programme focusing on ANDRILL.
- Event K242 Media Programme**
 24-Nov-05 to 08-Dec-05
 Scott Base local, Cape Evans, Cape Royds, Arrival Heights
Antarctica New Zealand, Christchurch. Phone: (03) 358 0200, Fax: (03) 358 0211,
 Martyn deRuyter (Nelson Mail) and Paul Thompson (The Press) will produce feature articles including images with a science and environmental focus for The Fairfax group of newspapers.
- Event K310 Antarctica New Zealand Board**
 18 to 22-Nov-05
 Scott Base local
Antarctica New Zealand, Christchurch. Lou Sanson, Phone: (03) 358 0209, Fax: (03) 358 0211.
 Visit to Scott Base by a delegation of the Antarctica New Zealand Board of Directors.
- Event K320 Invited Visitor Familiarisation Group**
 16 to 22-Nov-05
 Scott Base local
Antarctica New Zealand, Christchurch. Lou Sanson, Phone: (03) 358 0209, Fax: (03) 358 0211.
 Visit to Scott Base by invited visitors.
- Event K400 Operations Staff**
 20-Aug-05 to 22-Feb-06
 Scott Base local
Antarctica New Zealand, Christchurch. Julian Tangaere, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: j.tangaere@antarcticanz.govt.nz
 The purpose of this event is to provide experience and familiarity with Scott Base and Antarctic field operations for Antarctica New Zealand staff, provide for hand-over and liaison with relevant Scott Base staff, and allow necessary on-site management, audit and inspection.
- Event K401 Scott Base Summer Support Staff**
 04-Oct-05 to 20-Feb-06
Antarctica New Zealand, Christchurch. Julian Tangaere, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: j.tangaere@antarcticanz.govt.nz
- Event K402 Scott Base Winter Support Staff**
 04-Oct-05 to 15-Oct-05
Antarctica New Zealand, Christchurch. Julian Tangaere, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: j.tangaere@antarcticanz.govt.nz
- Event K411 Helicopter support**
 02-Nov-05 to 06-Feb-06
Antarctica New Zealand, Christchurch. Julian Tangaere, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: j.tangaere@antarcticanz.govt.nz
 Helicopter support for Antarctica New Zealand sponsored operations provided by Helicopters (NZ) Ltd.

- Event K414 Worker Visitors - Non-engineering**
 05-Oct-05 to 14-Oct-05 **Antarctica New Zealand, Christchurch. Julian Tangaere, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: j.tangaere@antarcticanz.govt.nz**
 Short term visits by contracted support specialists.
- Event K415 Joint Antarctic Search and Rescue Team**
 04-Oct-05 to 26-Feb-06 **Antarctica New Zealand, Christchurch. Julian Tangaere, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: j.tangaere@antarcticanz.govt.nz**
Telecom Riggers & Technicians
Antarctica New Zealand, Christchurch. Peter Brookman, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: p.brookman@antarcticanz.govt.nz
 Annual maintenance of transmission lines and equipment, antennae, structures & antennae.
- Event K423 Worker Visitors – Engineering**
 17-Oct-05 to 24-Jan-06 **Antarctica New Zealand, Christchurch. Julian Tangaere, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: j.tangaere@antarcticanz.govt.nz**
 Short term visits for maintenance, construction or consultancy projects.
- Event K425 Hillary Field Centre - Engineering worker**
 22-Aug-05 to 16-Dec-05 **Antarctica New Zealand, Christchurch. Peter Brookman, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: p.brookman@antarcticanz.govt.nz**
 Construction certification inspections and fibre optic cable jointing.
- Event K430 Armed Forces Canteen Council**
 04-Oct-05 to 26-Feb-06 **Antarctica New Zealand, Christchurch. Julian Tangaere, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: j.tangaere@antarcticanz.govt.nz**
 Staff visit to oversee shop and bar operations.
- Events K440/ K441 Antarctic Heritage Trust - Shackleton's Hut conservation & carpentry International Antarctic Centre, Christchurch. Nigel Watson, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: n.watson.ahf@antarcticanz.govt.nz**
 02-Nov-05 to 10-Feb-06 Employees and contractors will undertake the annual conservation programme at the historic sites on Ross Island and undertake planning work for the Trust's restoration project. This includes maintenance of the hut structures, completion of site surveys, documentation and assessment of artefacts, conservation treatment and environmental monitoring. Activities are scheduled for Hut Point, Cape Evans and Cape Royds.
- Events K445 Antarctic Heritage Trust – Invited visitors**
 02-Nov-05 to 10-Feb-06 **International Antarctic Centre, Christchurch. Nigel Watson, Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: n.watson.ahf@antarcticanz.govt.nz**
 Familiarisation visit for key stakeholders.
- Events K450 Land Information New Zealand**
 24-Oct-05 to 02-Dec-05 **Office of the Surveyor-General, Wellington. Graeme Blick. Phone: (04) 460 0110, E-mail: g.blick@linz.govt.nz**
 Land Information New Zealand (LINZ) and its predecessor agencies (the Department of Lands & Survey until 1987 and the Department of Survey and Land Information until 1996) have operated surveying, charting and mapping programmes in the Ross Sea Region, as well as place naming administration, for some 30 years. The department has an agreement with the United States Geological Survey, which provided for co-operation in these activities and in particular joint topographic mapping, geodetic surveying, and place naming programmes. The logistics for these activities have been provided mainly through the US programme in recent years, and there is a need to move to a more balanced situation. The objectives for this season are to: - Service the tide gauge at Cape Roberts; - Remove old, unused drum beacons; - Support the TAMDEF (Trans-Antarctic Mountains Deformation) programme with the US UNAUCO project.

Events K452 Italian Programme

Contribution to ENEA transport pool.

Events K500B Environmental Management and Monitoring Projects

14-Nov-05 to 25-Nov-05
Rebecca Roper-Gee, Antarctica New Zealand, Christchurch. Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: r.ropergee@antarcticanz.govt.nz

Events K500C

17-Dec-05 to 02-Jan-06
Canada Glacier
Environmental review of Antarctica New Zealand operations and supported activities including monitoring for compliance with the Antarctica (Environmental Protection) Act 1994. Ongoing clean up efforts at the former site of joint NZ-US Cape Hallett Station are also planned (see K510 below).

Events K500D

17-Dec-05 to 02-Jan-06

Scott Base local

Events K510 Cape Hallett Station fuel tank removal

01-Dec-05 to 29-Jan-06
Rebecca Roper-Gee, Antarctica New Zealand, Christchurch. Phone: (03) 358 0209, Fax: (03) 358 0211, E-mail: r.ropergee@antarcticanz.govt.nz

Removal of the main fuel tank from the former site of the joint US/NZ Cape Hallett Station.

Events K600 Corporate Services Staff

05-Oct-05 to 24-Jan-06
Melanie Lindroos, Antarctica New Zealand, Christchurch. Phone: (03) 358 0200, Fax: (03) 358 0211, E-mail: m.lindroos@antarcticanz.govt.nz

Scott Base exit interviews and familiarisation visit for new staff.

Events K601 Corporate Services Staff – Advanced Dynamics visit

13-Jan-06 to 20-Jan-06
Peter Smith, Antarctica New Zealand, Christchurch. Phone: (03) 358 0209, Fax: (03) 358 0211, E-mail: p.smith@antarcticanz.govt.nz

Scott Base local

Events K605 Treasury Invited Visitor

18-Nov-05 to 22-Nov-05
Peter Smith, Antarctica New Zealand, Christchurch. Phone: (03) 358 0209, Fax: (03) 358 0211, E-mail: p.smith@antarcticanz.govt.nz