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Meteorological Society Of New Zealand (Inc.)

NEWSLETTER 102

SEPTEMBER 2005

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September 2005 Newsletter

President's Note

This is a report of many thanks as I reflect over what the committee has achieved in the last few months.

I hope you will all have had the chance to check out our new-and-improved website. Our webmaster Peter Knudsen has done a fabulous job at sprucing it up and adding more useful information about the society. Thanks to Peter or all of his hard work.

We are now putting the finishing touches our new poster and brochure for promoting our society at international conferences. We hope to have this ready for the Greenhouse 2005: Action on Climate Change Conference to be held in Melbourne later this year. Thanks especially to Warren Gray for all of his efforts in making this happen.

Also, the winners of our first ever photo competition have been announced. Check out the web site to view the awesome winning entries. Thanks to Bob McDavitt and his judging panel for making this competition possible. The competition has been especially valuable in promoting public interest in our society.

For the first time in a long time our journal Weather and Climate is up to date, thanks to the very hard work of our Journal Editor Brian Giles. Well done Brian!

A draft Conference Programme has now been put together for the Society's upcoming annual conference to be held in Wellington in November this year. Richard Turner and his team have been working hard to ensure that the conference is both productive and smooth-running. During the conference, we will be holding our next Annual General Meeting and announcing the winner of the Meteorological Society's second Kidson Medal. I hope to see you there!

K

Regional Reports.

WELLINGTON (Jim Renwick, Vice President)

On Thursday 14 July 2005 a seminar was held at NIWA's Greta Point conference room on

Speakers: David Wratt, Jim Renwick, and Dave Lowe from NIWA

This talk summarized some of the main aspects of current research on the physical climate system. As well as covering science issues, the talk also touched on the process through which the science is being assessed and reviewed for the Intergovernmental Panel on Climate Change's Fourth Assessment Report (AR4). All the speakers are involved in the development of the Working Group I Report for AR4

CHRISTCHURCH (Peyman Zavar-Reza, Vice President)

Christchurch members were invited to a public meeting organized by the Christchurch City Council on Tuesday, 2 August 2005 about

Observations show that global warming because of human activities is already producing significant climate change. Jim Salinger described those already being observed such as melting permafrost in the Arctic severely disrupting traditional Eskimo lifestyles, the migrating birds that are arriving earlier and departing later in North

America and the third less snow and ice girding our Southern Alps.

He presented the latest climate projections showing that other impacts resulting from increasing climate variability and change are likely to be more frequent in the medium term affecting New Zealand agriculture, natural environment, coasts, cities and communities.

13 July NIWA Seminar about Seasonal Climate Forecasting Applications for the Australian Sugar Industry. The speakers were Yvette Everingham and Kathryn Jones visiting from Townsville, Queensland, Australia.

Owing to the increased acceptance of climate forecasting technologies within the Australian sugar industry, new climate related projects have evolved, and these were examined in this seminar.

Wairarapa Weather Watchers (Alex Neale)

We had a successful meeting on Monday evening 4 July 2005. Twenty-three turned up on a chilly cut calm winter's evening to inaugurate our sixteenth year. Six of the eleven who founded the group are still members. Our total membership is now 35.

The topic for the meeting was a review of scientific forecasting. Starting with Bjerknes' proposal, at the beginning of the 1900s, of the concept of a graphical analysis of observed data followed by a prognosis of how those charts would look at some time in the future. Progressing through computer-driven Numerical Weather Prediction, to the current use of ensemble forecasting.

Those at the meeting agreed that, in future, there would be no meetings during winter, while four would be held during Daylight Time. The six Newsletters a year will continue

Regards to all from Alex

Met Soc Annual Conference 2005

Wednesday 23 November - Friday 25 November 2005
Brentwood Hotel, 16 Kemp St., Kilbirnie, Wellington

AIM

The aim of the meeting is to serve as a gathering point for meteorologists, forecasters, climatologists, atmospheric scientists, and atmospheric chemists where they can;

- (i) share their knowledge and consider progress at all levels,
- (ii) interact with peers and colleagues,
- and (iii) learn new things.

PAPERS AND POSTERS The organisers invite contributions (either posters or talks) on topics including; the stratosphere, atmospheric chemistry, urban meteorology and air pollution, Modelling (over all atmospheric scales of motion), hydrological applications, remote sensing, weather hazards, forecasting, data Assimilation, agricultural and bio-meteorology, climate and impacts, including global change, seasonal forecasting, and the history of New Zealand meteorology and atmospheric research.

FORMAT Talks will be of 20 minutes duration including time for questions. Alternatively a poster presentation, with a 5 minute oral description, may be requested. Audio-visual equipment on hand will allow for Overhead and Power-Point presentations.

TITLES AND EXPRESSION OF INTEREST. Those intending to present talks and/or posters are asked to submit the titles to Richard Turner by email r.turner@niwa.co.nz by 31 August, 2005

Would those planning to attend the conference but not give a talk also indicate their expression of interest by emailing Richard by 31 August, 2005.

For planning purposes the organisers would like to get an indication of numbers of conference delegates who are likely to stay at The Brentwood Hotel. Therefore, it would be appreciated if when notifying Richard of your interest in attending the conference that you also indicate whether you plan to stay at the Brentwood Hotel. (See also the Titles & Expression of interest form)

ABSTRACTS

Abstracts should not exceed one A4 page, and should include full address information as well as the corresponding author's email address. Where possible please submit your abstract by email to: r.turner@niwa.co.nz, or post or fax it to: Met. Soc. Conference. c/o Richard Turner. NIWA, Private Bag 14-901, Kilbirnie, Wellington or Fax: (04) 386 2153 Abstracts may include a figure or table if submitted electronically. Abstracts must be submitted by 31 October 2005

LOCAL ARRANGEMENTS The conference will be held at The Brentwood Hotel, 16 Kemp St, Kilbirnie, Wellington. Presentations, posters and teas will be in the "Tawa Room". There will be an icebreaker on the Wednesday evening and a conference dinner on the Thursday night.

REGISTRATION The full Registration Fee is \$200. The "unwaged" (includes students) Registration Fee is \$100. The registration includes the conference dinner, lunches and morning and afternoon teas. Day registration fees are available at a cost of \$90 per day, these include the lunches, morning and afternoon teas, but not the dinner.

CONFERENCE DINNER The Conference Dinner will take place following the Society's AGM on the evening of Thursday 24 November. The dinner will be at The Brentwood Hotel. The cost is included in the registration fee, but will be \$50 per extra guest. A highlight of the dinner will be presentation of the Kidson Medal for only the second time, an award honouring outstanding New Zealand scientific research in the field of Meteorology and/or Climatology.

ACCOMMODATION AND TRAVEL Participants should make their own accommodation and travel arrangements.

Reservations for the Brentwood Hotel can be made by telephone at 04 920 0400, or email at reservations@brentwoodhotel.co.nz. More information about the hotel can be found at www.brentwoodhotel.co.nz If you are planning to book accommodation at the Brentwood, please ensure you indicate this when you send in the titles of your talks or expression of

interest to Richard. This can then be confirmed when you send in the
REGISTRATION FORM

(Deadline 31 October, 2005)

METEOROLOGICAL SOCIETY of NEW ZEALAND (Inc)

26th Annual Conference

Wednesday 23 November - Friday 25 November 2005

Brentwood Hotel, 16 Kemp St., Kilbirnie, Wellington

Please print out - fill in - and mail to

Met. Soc. Conference.

c/o Richard Turner

NIWA, Private Bag 14-901,

Kilbirnie, Wellington

Name _____

Address _____

Phone _____

Fax _____

Email _____

I have booked (or will definitely book) accommodation at
The Brentwood Hotel during the conference. (Yes/No)

Registration Fee: (including Dinner)

| | | |
|-------------------------|-------|----------------------|
| (Full) | _____ | \$200 each |
| (Unwaged) | _____ | \$100 each |
| Symposium Dinner | _____ | \$50 per extra guest |
| Single Day Registration | _____ | \$90 per day |
| TOTAL | _____ | |

Please make cheques payable to Meteorological Society of New Zealand.

Please complete this section if you are giving a paper.

STUDENT'S FUND The Meteorological Society operates a "Students' Fund", which provides a grant to subsidise accommodation and travel expenses for a student presenting a paper. Several awards can be made per year. Applications, with a copy of the paper abstract, should be forwarded to the Secretary, Meteorological Society of New Zealand, P.O. Box 6523, Te Aro, Wellington, or emailed to r.turner@niwa.co.nz

For more information please contact: Richard Turner, NIWA, Private Bag 14-901, Kilbirnie, Wellington, Phone (04) 386-0315, Fax (04) 386-2153, email r.turner@niwa.co.nz.

Information regarding the conference will be progressively updated on our web site <http://metsoc.rsnz.org/>

Timetable for Deadlines:

Registration Deadline: 31 October 2005
Deadline for abstracts: 31 October 2005

THE (Met Society) EDWARD KIDSON MEDAL

The Edward Kidson Medal is awarded every two years and was first presented in 2003.

The award is named in honour of Dr Edward Kidson, Director of the New Zealand Meteorological Service from 1927 to 1939. Kidson was instrumental in placing New Zealand meteorology on a sound scientific footing and is regarded as a key figure in the development of meteorology and climatology in this country. His own scientific work in meteorology covered a wide field and he had an international reputation for his papers on Southern Hemisphere atmospheric circulation. His papers on New Zealand's climate remained standard works for many years.

The Edward Kidson Medal is awarded to the author of an outstanding scientific paper published in a refereed scientific journal during the preceding three years, which:

- advances the science of meteorology and/or climatology, or
- advances understanding of the influence of meteorology and/or climatology or other meteorological factors in other fields of scientific or human endeavour or, conversely, the influence of other sciences or endeavours in meteorology and/or climatology, or
- reports on a significant and novel scientific, educational, social or economic application of meteorology and/or climatology.

The winner of this year's Edward Kidson medal will be announced during our conference.

GREENHOUSE 2005

ACTION ON CLIMATE CHANGE



Carlton Crest Hotel, Queens Road, Melbourne, 13-17 November, 2005

This high-profile, prestigious international event will attract hundreds of representatives from research and development organisations, government, industry, and the general community. Conference attendees will discuss the latest in climate change research, with a focus on action - abatement, adaptation, and awareness.

This will be the most significant climate change conference in the southern hemisphere, and its multi-disciplinary, broad and inclusive treatment of climate change is likely to interest the readers of your publication: *Weather and Climate*. GREENHOUSE 2005 will cover themes including measurement, detection and attribution; impacts, vulnerability and adaptation; modelling and scenarios; abatement and mitigation; as well as international issues, policy development, communication and education. Register your interest now for GREENHOUSE 2005: Action on climate change at www.greenhouse2005.com or call Paul Holper on (613) 9239 4661, Melbourne.

Chris Gerbing, CSIRO

The Western Pacific Geophysics Meeting (WPGM) provides an opportunity for AGU members, and members of the sponsoring societies in the Western Pacific region, to attend a meeting that serves the needs of geophysicists interested in studies in the western Pacific region. However, papers on all related aspects of geophysical sciences are encouraged. This is the first WPGM to be held in Beijing. Don't miss this opportunity to participate!

Session Proposals

Members of the Earth and space sciences community are invited to propose a session for the 2006 Western Pacific Geophysics Meeting. Session proposals must focus on scientific results, theories, or applications. For more information check out the website <http://www.agu.org/meetings/wp06/>

New Zealand Vice Chancellor's Committee
Edward and Isabel Kidson Scholarship

The funds for this scholarship are provided by the income from a bequest made to the University of New Zealand in 1959 by Isabel Maria Kidson.

Object

The object of each scholarship is to enable a graduate of a university of New Zealand, who is of good character and who has shown an ability in physics or a combination of physics and mathematics, to undertake further advanced study or research whether in New Zealand or elsewhere, in Meteorology; or, should there be at any time or times no suitable candidate for an award of the scholarship for that purpose, then to undertake further advanced study or research in some other branch of science whether in New Zealand or elsewhere.

NOTE: The value of the scholarship has been set at \$5,000 a year and up to three awards may be made annually.

For further scholarship information, please check the website <http://www.nzvcc.ac.nz/default.aspx?l=4&p=48>

WEATHER AND CLIMATE update (Brian Giles)

The next issue to come out is number 25 and this should be ready during November 2005.

Official Notice of
Annual General Meeting (AGM)

The 26th AGM of the Meteorological Society of New Zealand (inc.) is scheduled to commence at 5:30pm on Thursday 24 November 2005 at the Ta-wa Room of the Brentwood Hotel, 16 Kemp St., Kilbirnie,

Wellington. All members are invited to attend. Please send apologies to our secretary, f.drost@niwa.co.nz .

Some issues to read about in preparation
for this year's AGM

PTO

Newsletters by email.

Or The (printing of the) Times They Are A Changing

Your Met Society committee has spent many committee-hours this year discussing electronic publishing. Also, at this year's meeting of the constituent societies of the Royal Society of New Zealand, this was a hot topic. We formed an Electronic Publishing subcommittee to review the issue and make recommendations. This report is a summary of what we have finally agreed upon.

We intend over 2006 and 2007 to switch to electronic publishing of our newsletter. In the meantime, there will be NO change to the distribution of the journal - a primary reason being that it is too big too email at full resolution (currently over 4 GB).

The first step will come with the DECEMBER edition of our newsletter, which will be printed and mailed out to all as usual but it will also be sent as two e-mails to those that we have e-mail addresses for. The second e-mail will contain the newspaper clippings and the first will contain the rest. This newsletter will also be made available from our <http://metsococ.rsnz.org> website via a password. The password for the website December newsletter shall be, in lowercase, cumulus9.

During these transition years, short updates may be e-mailed out to those we have addresses for, in between regular issues. Subsequently the frequency of the newsletter may be increased.

Points for electronic publishing: If you look at the financial pages you can see how much in the past year we collected in subscriptions and how much was spent on newsletters. Printing and postage are a significant overhead for us, and these are funds that may well be better employed elsewhere. Most of our members have email and already receive newsletters from other societies as PDF attachments.

Points against: There is a certain amount of permanency with having professionally printed copies, especially for the journal. The Parliamentary library will need to continue receiving printed versions and we can expect to find others in a similar situation (about a dozen, we expect). In addition we should continue adding to our own archive of printed copies.

Under Section 12 of Society's constitution, Annual subscriptions shall be determined from time to time by resolution of a General Meeting. Our electronic publishing sub-committee recommends that the 2006 and 2007 subscription invoices shall be sent out to existing members offering two options. The first option is the status quo, paying the current rate (\$25pa for individuals and \$75 for Institutions and receiving printed newsletters in the mail), with an invitation to the member to write on the invoice why emailed newsletters are a problem. And the other option is a NEW RATE of \$20pa for individuals and \$60 for institutions plus the requirement that a legitimate confirmable email address be entered on the invoice (and the option of a backup email) and that this be used for all subsequent newsletters. Those who pay via direct payment shall be invited to provide the requested information in some other way, presumably by e-mail. New membership shall be at the NEW RATE.

Naturally we appreciate your position in all this. If electronic newsletters will inconvenience you then please either come along and discuss this at the AGM, or get a fellow member to do so on your behalf. Also (preferably) please let us all know your viewpoint before the AGM by writing to Kim Dirks, Department of Physiology, School of Medical Sciences, The University of Auckland, Private Bag 92019, Auckland or sending an email at k.dirks@auckland.ac.nz

The Royal Meteorological Society is exploring options for reciprocal membership, whereby fully paid-up members of one Society should be eligible for membership to another at a discounted rate and vice versa. The above transition to electronic publishing of the newsletter may STILL not give us financial room to offer reciprocal members a suitable discount and so we have DECLINED the offer at this stage but NOTED our intention to review this decision in 2008.

See you at the AGM

NIWA WEATHER FOR Winter 2005

Winter was warmer, drier, rather settled, and sunny in many regions. Although June was the coldest in more than a decade with frequent southerly winds, both July and August were unusually mild, with more north westerly winds. Dunedin recorded its sunniest winter ever in over 50 years, and Lincoln (in Canterbury) recorded its driest winter in more than 120 years of records.

It was the sixth warmest winter in reliable records dating back to the mid 1860s with a national average temperature of 9.1 °C, 0.7 °C above normal. Only the winters of 1984 and 2000 (9.2 °C), and 1971, 1988, and 1998 (all 9.1 °C) were warmer. Seasonal rainfall was well below average throughout much of New Zealand, especially in coastal areas of Canterbury and north Otago where totals were less than 25 percent (quarter) of normal. The dryness has resulted in significant soil moisture deficits for the end of August developing in parts of south Canterbury and north Otago. Sunshine hours were well above average in parts of Northland, inland South Canterbury, and Otago, and also above average in most North Island regions. The overall winter climate pattern was dominated by more frequent northwesterlies over the South Island, and more frequent anticyclones ('highs') over the North Island.

MAJOR HIGHLIGHTS

- The highest temperatures during winter 2005 were 25.1 °C recorded at Hanmer Forest on 30 August, and 25.4 C recorded in Amberley on 31 August, both exceeding the previous all-time New Zealand maximum temperature record for August.
- The lowest temperature for the season was -8.6°C, recorded at Middlemarch on 16 June.
- There were at least eight major rainfall events - three with flooding, all occurring between 17 June and 19 July.
- Damaging winds occurred on June 1 near Rotorua that toppled trees cutting electricity. On 25 June, at least three tornados hit southeastern parts of Auckland, resulting in fallen trees.
- Only two periods of significant snowfall occurred. Over 2-3 June snow fell in Otago and Southland, and in the central North Island. Over 25-26 June, snow fall on the North Island Desert Road.

Of the four main centres Auckland was the warmest, wettest, and sunniest, while Christchurch was the coldest and driest. Rainfall was below average and temperatures above average in all four main cen-

tres. Winter sunshine hours were the highest on record for Dunedin, and they were also above average in Auckland and Wellington. Near average winter sunshine hours were observed in Christchurch.

TEMOERATURE

Seasonal mean temperatures were above average throughout Auckland, Coromandel, and the west of the North Island from Taranaki to Wellington, as well as southern Wairarapa and most South Island regions. They were more than 1.0 °C above average in north Canterbury and Nelson. Temperatures were near average in Waikato, Bay of Plenty, Gisborne, Hawke's Bay, south Canterbury, and parts of Fiordland.

RAINFALL

Winter rainfall was less than 50 percent (half) of normal throughout Canterbury and Otago, as well as Horowhenua, southern Wairarapa and Wellington, some coastal areas in Canterbury and north Otago recording less than 25 percent (quarter) of normal winter rainfall. Rainfall was also below average throughout most central and western North Island and northern South Island regions.

SUNSHINE

Sunshine hours were at least 120 percent of average in parts of Northland, inland South Canterbury, and Otago. They were also above average in most other North Island regions.

**For further information, contact Dr Jim Salinger – Principal Scientist,
Climate NIWA National Climate Centre j.salinger@niwa.co.nz**

Stuart Burgess – Climatologist– Wellington s.burgess@niwa.co.nz

Geoff Baird – Communications Manager g.baird@niwa.co.nz

Acknowledgement of NIWA as the source is required.

Notable Recent Weather

by Trevor McGavin, MetService of N.Z. Ltd.

Winter 2005 was a relatively quiet season for stormy weather, with only two events standing out - damaging tornadoes in Auckland in June, and floods in Coromandel in July. It was unusually mild too, especially in July and August, which wasn't good news for ski-fields wanting lots of snow to last into Spring.

Thanks to Ben Tichborne and Bob McDavitt for their contributions to this article.

Summary of Events

1 June. Tornado at Hinehopu, Lake Rotoiti (28km northeast of Rotorua) damages property, fells trees and causes power-cuts (morning). Snow flurries to near sea level in Southland in evening.

2 June. Very cold west to southwesterlies bring fresh snow to Southern Alps, reaching low levels in South Westland, Fiordland and Southland. Highs of only 3°C in Milford, 6°C in Queenstown and Hokitika.

3-4 June. Snow in southern South Island closes roads, including Milford – Te Anau road and Dunedin's northern motorway (3rd). In Dunedin there are numerous vehicle accidents and schools are closed, with temperatures struggling to reach 5°C. In the North Island, snow closes the Desert Road (3rd, remains closed overnight 3rd-4th) stranding vehicles. Waiouru's minimum is -6°C overnight 3rd-4th and its high just 6°C on 4th. Southwest gales in many coastal areas.

6 June. Cold southerlies over New Zealand again with fresh snow on mountains of both islands, and light falls to 300m about Dunedin and Banks Peninsula. Desert Road closed for 2 hours in morning due to ice.

7-8 June. Morning frosts, severe in many South Island places, and inland North Island parts, eg. Waiouru -6°C (7th). Icy roads make driving treacherous, notably on Rimutaka Road (morning 7th). High of only 3°C at Milford Sound (7th) due cloud cover after a frosty start.

9-17 June. A long spell of frosts and fogs, notably in central parts of South Island where night-time temperatures routinely fall to around -5°C , and day-time highs reach just 2 to 5°C (suppressed either by persistent fog or cloud). Ice is observed in Dunedin Harbour (9th), and black ice closes roads in Central Otago (14th). Meanwhile up in Auckland, fog disrupts flights at the Airport (notably on 9th, 10th and 12th). The settled period is only disrupted once, with heavy showers/downpours in central districts on 11th. Also, a deep slow-moving low near Kermadecs generates heavy sea swells on North Island east coast (notably Haumoana in Hawkes Bay) around 15th.

18 June. Heavy rain in Nelson, Buller, Taranaki and northern parts of North Island, spreads over Gisborne ranges overnight 18-19th.

19 June. Heavy showers and thunderstorms on West Coast.

21 June. Heavy rain in northern Taranaki and Coromandel Peninsula, also northwest Nelson and Buller. Unusually warm in Canterbury and along Kaikoura Coast, eg. highs of 22°C at Kaikoura and 21°C at Ashburton.

22 June. Heavy, thundery showers in some northern districts.

23-24 June. Overnight snow showers to around 400m in Otago and Southland.

24-26 June. Tornadoes in Auckland district; cold snap. **See details following.**

29-30 June. Westerlies reach gale force in southern Hawkes Bay and Wairarapa, eg. Castlepoint gusts to 133 km/hr (29th). Cold, squally southerly change spreads over south with thunderstorms and hail, reaching Christchurch at night (29th). Air New Zealand flight struck by lightning near Invercargill. The southerly change reaches Cook Strait early morning (30th) and spreads quickly up east coast of North Island, with gales for a time. Snow closes the Desert Road and Crown Range Highway (morning 30th). Waiouru's high is just 3°C and Taupo's 8°C (30th).

3-4 July. Heavy rain on West Coast, especially Westland. Whataroa records 440mm in 24 hours to 9am on 4th. On 3rd, a frosty morning in many North Island places, eg. -4°C at Taupo, but unusually mild in eastern parts of South Island with temperatures reaching high teens.

5-7 July. Heavy rain in northern districts, especially Northland (5-6th) and Coromandel Peninsula (7th). In Whangarei, where over 100mm falls in 24 hours, roads are flooded and schools closed. Meanwhile, fog disrupts flights in many South Island places (Prince William's trip to Invercargill is cancelled due to fog there on 6th).

10 July. Scattered heavy showers in east from Canterbury to Hawkes Bay, with snow to about 250m on Banks Peninsula in morning, stranding vehicles on State Highway 75.

11-12 July. Heavy rain in Northland (11th) spreads south to affect Auckland, Coromandel Peninsula and

Bay of Plenty overnight 11-12th. Floods in Matata with SH2 closed for a time, also in West Auckland. Power-cuts in Coromandel due to wind damage. Meanwhile, severe frosts in many South Island and southern North Island places (morning 11th), then on 12th, heavy showers with hail and thunder affect Southland and Otago, with snow to about 200m including Dunedin's hills (high of just 6°C) and southwesterly gales in coastal parts.

13-14 July. Heavy rain in Fiordland on 13th spreads up remainder of West Coast to Nelson on 14th. Paparoa Ranges record 98mm in 24 hours to 11am on the 14th. In Canterbury, temperatures reach 17°C on 13th due to mild northwesterlies but only 7°C in places on 14th after a cold southerly change.

14-15 July. Wet over central districts, with 40-50mm about Wellington and 150mm in Tararuas in 24 hours to midday. Severe morning frosts in south (15th).

16-17 July. Heavy rain and floods on Coromandel Peninsula. **See details following.**

18 July. Heavy rain about Mt Taranaki with 24 hour totals of 132mm at Dawson Falls and 128mm at North Egmont. Heavy falls also in northern and eastern parts of North Island and in Nelson (notably Golden Bay). Floods in Te Kauwhata (Waikato) following afternoon deluge, and an (unofficial) 44mm/hr reported at Waiuku. Cloud cover suppresses highs in the south after a frosty dawn, eg. high of only 5°C in Invercargill, Manapouri and Alexandra.

19-20 July. Heavy rain in east of North Island, especially Hawkes Bay and Wairarapa (19th), spreads south reaching Kaikoura Coast early 20th causing floods and slips, affecting State Highway 1. Heavy showers also in northern parts of North Island (19th).

21 July. Cold southerly over North Island brings light snow to about 800m on central and eastern ranges, including the Desert Road (but remains open). High of just 4°C at Waiouru.

23-27 July. Unusually mild in eastern parts with temperatures reaching high teens most days, and up to 20°C in Ashburton on 24th, and 20°C in Kaikoura, Napier, Hastings and Kaitaia on 27th. Heavy rain and thunderstorms on West Coast (25-26th), also on Mt Taranaki where one station records 71mm in 12 hours to midday 26th.

30 July. Severe morning frosts in parts of South Island, also inland North Island, eg. -7°C at Rock and Pillar (Central Otago), -5°C at Dunedin Airport, -3°C at Waiouru.

31 July. Thunderstorms on West Coast, notably Hokitika and Westport. Heavy downpours in north and west of North Island, eg. Inglewood (Taranaki) records 27mm in 1 hour to 9am, and Lower Hutt 20mm in 2 hours to 6am. Morning fog in Auckland disrupts flights at the Airport.

3 August. Frosty morning in many places, eg. Waiouru -5°C and Taupo -3°C.

7-8 August. Heavy rain and thunderstorms in some northern districts. Mokohinau Island in Outer Hauraki Gulf records 36mm in 2 hours (7th). A mild 17°C in Wellington, Levin, Greymouth and Hokitika due to foehn east to northeast flow. Severe morning frosts in south, eg. -6°C at Arthurs Pass and -5°C at Culverden (both on 7th).

9-10 August. Cold southerly change spreads north, reaching Wellington late at night on 9th. Heavy showers and a few thunderstorms over northern and central districts (9th). Fresh snow on Otago and Canterbury high country to about 700m, including major ski-fields, eg. 25cm at Coronet Peak (9th). Snow closes Desert Road early 10th.

11-12 August. Fresh snow on Mt Ruapehu (overnight 11-12th). Heavy showers and thunderstorms on West Coast, especially Fiordland and Westland with snow in the high country (12th).

13 August. Thunderstorms over northwest of South Island (especially Buller). Fresh snow on ski-fields, notably in South Island.

14 August. Becoming colder with snow to 300m in Southland and Otago, but 100m in the Catlins (South Otago) in morning. Snow closes Desert Road (early morning). Few thunderstorms in Wairarapa with southerly change around middle of day.

15-16 August. Frosty mornings, eg. -3°C in Taupo (15th), -6°C in Waiouru (16th). However, on 16th milder northwesterlies develop over South Island pushing Alexandra to 19°C; and heavy rain and thunderstorms arrive in Fiordland.

17-21 August. An unusually mild period, especially in north and east of country, eg 20°C highs in Hastings and Alexandra (17th), 19°C at Tokoroa (19th), 20°C in Christchurch (20th), 22°C in Ashburton (20th and 21st), 22°C in Darfield (21st).

24 August. Heavy rain over northern parts, notably Auckland (surface flooding around dawn disrupts peak hour traffic) and Rotorua (37mm in 3 hours between 11am and 2pm).

25 August. Afternoon thunder and hailstorms in northern districts (notably Bay of Plenty) also Gisborne and Hawkes Bay.

26-27 August. A mild 20°C in Kaitaia and Alexandra on 26th, and 19°C in Tokoroa and 20°C in Kawerau on 27th, but a cold southerly change spreads north over southern and central districts bringing fresh snow to mountains (and ski-fields) of both islands.

28 August. Severe morning frosts in many parts of South Island (eg. -5°C in Dunedin) and inland areas of North Island.

29-30 August. Unusually warm in eastern parts of South Island and Wairarapa, eg. 22°C in Alexandra (both days), 20°C in Ashburton (29th), 25°C in Hanmer Forest (30th) and 20°C in Masterton (30th).

31 August. Morning fog and low cloud in many places, persistent in coastal Canterbury and Otago, results in contrasting temperatures - unusual highs of 25°C in Amberley and 22°C at Alexandra, but only 8°C in Oamaru and 12°C in Timaru on the coast. Mild highs of 21°C in Masterton and Hastings, and 20°C in Tokoroa.

Tornadoes in Auckland district; cold snap

24-26 June 2005

An active trough containing a number of low pressure centres crossed northern New Zealand 24-25 June bringing heavy rain, thunderstorms and hail. In the Auckland region, thunderstorms on the 25th spawned tornadoes, and caused flash floods. The trough was followed by a very cold southerly outbreak over the whole country 25-26 June, bringing snow to low levels in the south and east, closing roads.

On 25 June, three tornadoes were reported in southeastern parts of Auckland, damaging property and trees.

One of the tornadoes was estimated to be 500m high and 100m in diameter, and cut a path towards Ardmore Aerodrome. A horticulture business was badly hit, sustaining thousands of dollars worth of damage. Flash floods kept the fire service busy – they estimated more than 100 flood-related incidents in Auckland.

Meanwhile, a thick shield of cloud and rain associated with the trough covered the central and southern North Island making for unusually low daytime temperatures there. Highs of just 7°C were reported at Masterton and Taupo on the 25th. Snow fell on the high country, with “slushy” falls on the Napier-Taupo road slowing traffic.

In the South Island, a very frosty dawn on the 25th (-6°C at Timaru and Christchurch, -7°C at Culverden) gave way to a cold southerly blast spreading in from the south, reaching Christchurch in the afternoon. The southerly brought hail showers to the south and east, with snow to 200m, affecting mountain passes, eg. the Lindis Pass. Queenstown’s high was just 4°C.

In Christchurch, the first Lions vs. All Blacks rugby test was played in atrocious conditions during the evening of the 25th, with hail and sleet showers and biting winds. The temperature had dipped to 3°C by the end of the match. The Port Hills received a dusting of snow the next morning, following flurries in the City in the early hours.

The North Island received the same cold southerly air-flow during the morning of the 26th. Snow fell on the central high country and main eastern ranges with both the Desert Road and Rimutaka Road being closed for a time. Wellingtonians were treated to a spectacular view of snow on the Rimutaka Ranges to the east.

Heavy rain and floods on Coromandel Peninsula

16-17 July 2005

Another complex trough of low pressure affected the northern North Island 16-17 July, bringing heavy rain and thunderstorms, with torrential falls in parts of the Coromandel Peninsula causing severe flooding.

Worst hit was the area around Tairua on the eastern side of the Peninsula where properties were damaged, roads were closed and motorists stranded in flood-waters. The town of Pauanui was isolated after a culvert was washed out. The Karangahake Gorge road (SH2) was also closed. One station in Coromandel district (the Pinnacles) recorded 159.5mm in 24 hours to 9am on the 17th.

Heavy falls also hit parts of the Auckland, Waikato, Bay of Plenty and Gisborne district north of Auckland City) recorded 38.4mm in 1 hour ending 11pm on the 16th.

The maps show how a number of lows crossed the far north of the country, while a slow moving front lay across northern districts. This front (responsible for the heavy rain and thunderstorms) marked the collision zone between cold air which had spread over southern and central districts on 15-16 July, and warmer, moister air moving south from the seas north of New Zealand.

The cold, dense air to the south was evidenced by highs of only 6°C in many southeastern parts of the South Island on the 16th. Light snow also fell on the seaward Kaikouras. The cold conditions persisted over southern New Zealand on the 17th, with severe morning frosts. For example -6°C at Manapouri, and -5°C at Queenstown and Dunedin. Queenstown’s high was only 4°C on the 17th.

WEATHER NOTES FOR CHRISTCHURCH - WINTER 2005 -Ben Tichborne

JUNE

It was a drier than normal month for the Christchurch, though changeable and cloudier than normal with a variety of weather patterns. Disturbed southwesterly conditions prevailed for the first eight days, with a number of cold southerly changes bringing brief showery periods to the city, including snow on higher parts of Banks Peninsula and some brief hail on the 3rd. An anticyclone moved over and then to the southeast of NZ from the 9th to the 17th. Onshore flows meant that Christchurch was cloudy at times during this period with some foggy mornings, and a little drizzle fell at times; daytime temperatures staying cold. There was a milder spell from the 18th-21st, as the flow changed from northerly to westerly. Disturbed southwesterly conditions prevailed for the rest of the month, with generally fine weather. However, a very cold southerly spread over Canterbury during the afternoon of the 25th, with hail and sleet in the evening (providing unpleasant conditions for both the players and spectators at the Lions vs All-Blacks test at Jade Stadium). During the early hours of the 26th, snow flurries dusted the city, but all snow had gone by dawn except for a dusting above about 200 metres on the Port Hills. A southwesterly squall in the late evening of the 29th gave a brief thunderstorm to Christchurch, with scattered hail.

JUL

While the weather was changeable with a variety of different patterns, rainfall was below normal in Christchurch, while temperatures were mild, especially at night. A variety of troughs and lows crossed NZ, but most of these delivered little to Christchurch. The wettest period was on the 18th and 19th, in a damp northeasterly. A disturbance in cold southerlies early on the 10th, brought a brief period of heavy snow above about 300 metres on Banks Peninsula, a lighter fall also dusting the higher Port Hills. From the 22nd, mild westerly flows predominated, interrupted by a trough and outbreaks of rain on the 28th.

AUGUST

People could be forgiven for thinking that winter was over this month, as it was much drier and milder than normal. The only days with significant rain were on the 7th and 9th, otherwise there were only a few brief showers on some days. Snow fell on the high country and high Banks Peninsula peaks on the 9th, 14th, and 27th, but overall there was less snow than usual on the mountains and ski-fields. By contrast, a number of days were significantly milder than normal, especially towards the end of the month, when at least two North Canterbury stations (Hanmer and Amberley) recorded record high August maximums on the 31st

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Auckland-President Kim Dirks
2nd KAGI21 International Summer School
Bandung Institute of Technology, Indonesia
13-27 August 2005
Stacey Dravitzki and Sonja Greve

The 2nd Kyoto University "active geosphere investigation in the 21st century" (KAGI21) international summer school was held at Bandung Institute of Technology in Indonesia this August. This year, 42 post-graduate participants from 14 countries attended the summer school, two of them – Stacey Dravitzki and Sonja Greve – from VUW. The international summer school is a component of a Kyoto University program aimed at encouraging scientists to integrate multiple disciplines' techniques when investigating aspects of the active geosphere. The active geosphere, in this context, encompasses all processes occurring within 100 km above and below the earth's surface, thus combining the fields of geophysics, meteorology, oceanography and ionospheric studies.

The KAGI21 participants were a mixture of current PhD students and young professionals in all of the above fields from around the Asia-Pacific region. We all attended a two week lecture course providing an overview of each of the disciplines. While each lecture only provided a brief overview, it allowed us to see how similar the fields are, and how we can combine aspects of other fields to gain a better understanding of our own research. It was also an opportunity to see what research is currently being undertaken in the Asia-Pacific region and to meet other young scientists in similar fields. Additionally we had the opportunity to see Indonesia, it's culture and food.

As I (Stacey) am currently working on a PhD in meteorology I particularly found the courses on fluid dynamics and mesoscale weather phenomena very useful as an overview of material that I am currently in the process of learning. However in my opinion the most interesting course was the one about using continuous GPS measurements to improve numerical weather prediction models. The professors were happy to share their own research, providing papers and details of the work they are undertaking as well as giving us ideas for our own work. I am now looking into the possibility of attempting some of these ideas in my own project.

I, Sonja, am doing my PhD in seismology; therefore I really liked the seismology lectures that refreshed the basics. I also enjoyed the lec-

tures about rock mechanics, which gave an introduction to the smaller scale processes of faults and earthquakes. In agreement with Stacey I found the introduction in GPS and remote sensing the most interesting lectures, as they demonstrated the power and broad range of applications for these fast growing tools. Another highlight of the KAGI21 summer school was the fieldtrip to Tangkuban Parahu volcano.

Group photo of participants, lecturers and local organising committee taken on a crater at Tangkuban Parahu Volcano during our field trip,
17/08/05.

Sonja explaining her work to Professor Yoden at one of the poster sessions

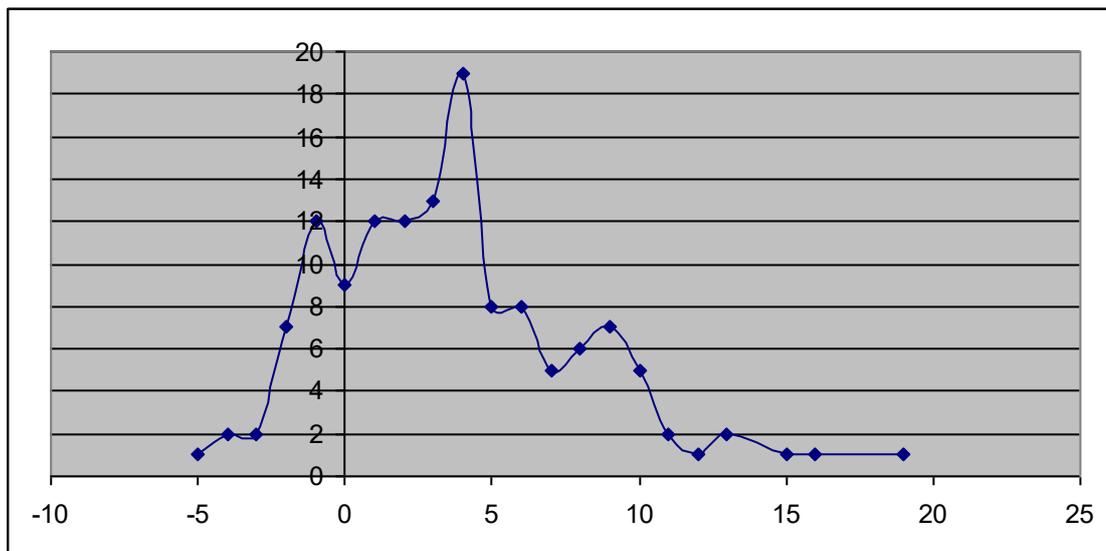
The first day of lectures, many of the local Professors can be seen sitting in on the lectures as well.

This course will run each year for at least the next three years: this is the second year in a row that VUW students have taken part, and we strongly recommend it to other fellow students who would like to broaden their research interests.

Meteorological Society Photo Competition Report

Our Photo competition closed on 1 July and there were 139 entries. On behalf of the Meteorological Society, I'd like to thank all those who willingly shared their time and effort in support of this competition; this includes those who sent in entries, and the judges who gave their time voluntarily.

The judges were Warren Gray, Simon Kjellberg and Bob McDavitt (Met. Society Committee) and Katja Riedel, a professional photographer working for NIWA at Greta Point. They were asked to score each image with a plus or minus (or leave neutral) for the aspects of content, creativity and technique, and were allowed to add another plus to a few that hit them with a WOW factor. The scores were then all summed and the graph shown here gives the final distribution (score shown horizontally and count shown vertically):



Note that the most popular score was plus 4, that means the overall quality of our contributions was good. Note also that the first three photos sorted themselves out nicely with a clear winner, second and third.

THIRD

Third Prize—Free 1 year Subscription to the Society.

Glenbrook1 by Frits Schouten of Waiuku.

"Taken around 11:30 on Thursday 9 June 2005. I'm facing North over the Waiuku Estuary from the spot at the top of Racecourse Road. It's not about beautiful cloud formations, although one might say that the water emissions from New Zealand Steel are forming nice clouds. It is all about this crisp morning, after the fog is just about completely burned off, showing itself so glorious off this day.

Local weather Temp: 13.5 deg C

Hum: 95%. Pressure: 1026 hPa"

(Editors comment -note the fog is drifting one way and the plume another- a cycle is evident.)

SECOND

Second Prize—Free Subscription for two years

Taken by Peter Fisher of Wellington: original title—"Sunset out my Window, Wellington December 2004".

(Editors comments: Monochrome doesn't give this photo justice. The interesting serendipitous combination of cumulus and Altocumulus helps us see a cloud with teeth)

FIRST

First Prize—Free Subscription for three years –

Honeymoon 008 by Bill Slater, March 2005

"The picture(s) were taken on the afternoon/evening of 2nd March 2005. We had just ridden up the Lewis Pass from West to East at 5pm. It was a fine day and we first noticed some round disc like clouds at fairly high altitude. We commented that they were like flying saucers. Then as we reached Hamner Springs we started to see these swirls and dangling clouds, looking back towards the Lewis Pass. A

local told me this sky was not uncommon. He said something about the jet stream and warm dry Aussie air, and there was a Southerly whipping up. The two were

meeting over the Lewis Pass. As the evening progressed a cold gusty wind increased from the south but no rain ever fell. It truly was the best part of my holiday. We don't have skies like that in UK."

Editors Notes:

The weather map and satellite image shows the Northwest flow over the Southern Alps that sculpted these clouds. The cold front didn't arrive until the following day. The "cold gusty wind" would have been a local valley wind.

Moist incoming air from the Tasman Sea is shunted upwards when it encounters the western foothills - this rising air cools and its moisture falls out as rain. Then, after encountering the crest of the Southern Alps, some of it descends about as far as it ascended. The falling air warms, so clouds evaporate. This produces several effects:

1. Immediately east of the Southern Alps there can be a cloud-free zone positioned parallel to the divide. This produces an arch of clear air that lets the light of the setting sun through to sidelight the clouds- the Canterbury arch.

2: Not all the air flowing over the mountains descends -- some continues blowing on out to the east--- but its trip over the mountains induces a hiccup in the smooth air flow, and this hiccup gets repeated downstream --- so the air flows in ripples or corrugations. Within these ripples, where the air goes up it cools into cloud, and where the air goes down it warms into clear air. So the top of the ripples are all marked by lens shaped clouds called *Altocumulus lenticularis*. The wind blows over the Southern Alps in layers, some slightly faster or at different directions than others. Each layer has its own set of ripples, so the ripples pile up or stack on each other like plates.

3: Diagonally-slanted cloud base: When going up or down, dry air changes temperature faster than moist air. Moisture has rained out of the air when it was on the western side of the alps so the sinking air starts off with less moisture than it had when it started to rise. The air descends as much and as fast (maybe faster thanks to gravity) as it ascended but because it rises moist and sinks dry it ends up warmer. This is the foehn effect. The cloud base is progressively higher the further east it goes, due to less moisture.

4: Roll clouds: Some of the air descending on the east side of the Alps actually tumbles down, causing vertical rolls to show in the cloud as swirls and dangling protrusions.

5: A cold front helps these effects by bringing a broad band of cloud that marks the boundary between warm air and a colder region. Southerly winds help produce more roll clouds upon their arrival. As for a Jetstream - that's a river of wind that blows at about 8 to km high-- well above the Southern Alps--- it helps *lenticular* clouds form when it's around, but it isn't necessary.

Image from <http://satellite.landcareresearch.co.nz/noaa-db/2005/mar/1d02035.jpg>

LETTERS: THE UNEXPLAINED

Hi Bob,

Does the MetSoc have a mailing list were one can put questions/observations and the likes?

Lately, I've noticed some strange behaviour of the soil temperatures. At the moment the soil temperatures are around the 13degC at 7AM As the day gets on this rises to around 14-15degC.

But, as you can see from the graph attached, there is a sharp drop of up to 2 degC just after 11am.

Initially I thought there was something wrong with my weather station and/or electronic thermometer but then I observed the same phenomena with the glass thermometer which is sitting about 15cm away from the electronic one and also 10cm into the soil.

The only thing I can correlate it with is the strong drop of the humidity as the day gets on. And this temperature phenomena only seem to coincide with bright sunshine, which confuses me. I thought the sun was supposed to warm the soil.

Can you perhaps shine some light on this issue.

Thanks, Frits Schouten.

Frits web site is at <http://ps.gen.nz/~hamgap/summary.gif>

Editors Note: We've discounted nearby pipes and irrigation devices, and still can not think of an explanation or an experiment to test what's going on. If anyone can think of a solution please let me know at bobmcd@extra.co.nz

Media clips (graphics lost)

Straight Furrow 28 June 2005

Herald on Sunday 26 Jun 2005

Kapiti Observer 16 Jun 2005

ODT 10 June 2005

Kapiti New 1 June 2006

Dominion Post 8 Jun 2005

Central Districts Farmer

NZ Herald

Chatham Islander

Chatham Islander

Wanganui Chronicle 9 July 2005

Marlborough Express 8 July 2005

Westport News 6 July

Dunedin Star 14 Jul 2005

Northern Advocate 11 July

Rodney Times 7 July

Herald 13 June 2005

NZ Herald 10 June 2005

North Shore Times 12 Aug 2005

Otago Daily Times 27 Aug 2005

New Zealand Herald 29 Aug 2005

Otago Daily Times 4 June 2005

The Press 31 Aug 2005

NZ Herald 31 Aug 2005

NZ Herald 31 Aug 2005

NZ Herald 29 Aug 2005