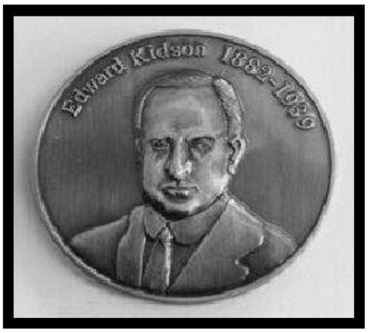
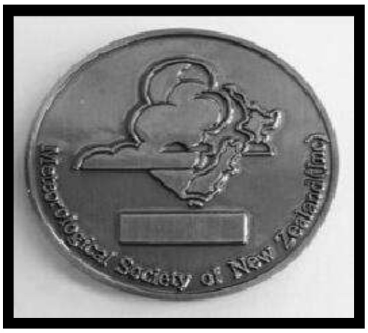




Call For Nominations

(Deadline, July31,2009)

The Edward Kidson Medal

The Meteorological Society of New Zealand (Inc) is now calling for nominations for the Edward Kidson Medal. The award is made every two years and was first awarded in 2003.

The award is named in honour of 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 will be 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 on meteorology and/or climatology, or

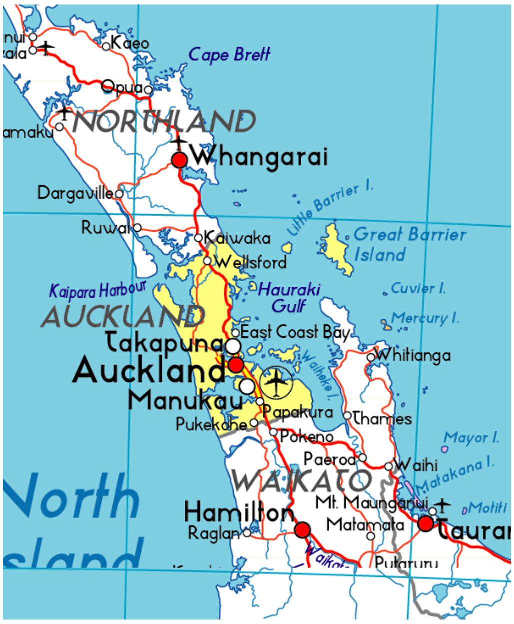
●reports on significant and novel scientific, educational, social or economic application of meteorology and/or climatology.

Nominees for the Edward Kidson medal should normally be New Zealand residents, but others who have a significant connection with New Zealand, particularly in the field of the atmospheric sciences will be considered. All nominations must either be by a current member of the Meteorological Society of New Zealand or include a written endorsement by a current member. Nominations, with supporting statements and including copies of the relevant paper, should be posted or emailed to

The Secretary
Meteorological Society of New Zealand (inc)
PO Box 6523
Marion Square
Wellington 6141
OR metsoc@yahoogroups.com

The deadline for nominations is July31, 2009
The winner, if any, will be announced in September 2009

REGIONAL REPORTS



AUCKLAND

Richard McKenzie of NIWA, a world authority on UV from Lauder, gave a talk on 7 April at NIWA Auckland, open to Met Soc members, on "How to balance your benefits and risks of solar UV exposure"

It is well known that overexposure to UV radiation causes sunburn, which can lead to skin cancer. New Zealand has one of the highest rates of skin cancer in the world. However, there is also a risk from underexposure to UV, since it leads to the production of beneficial vitamin D in our bodies. Many New Zealanders have below-optimum vitamin D for health, and it is not generally available from diet. I investigate relationships between erythemally-weighted UV radiation that leads to sunburn (which can lead to skin cancer) and vitamin D-weighted radiation that is responsible for synthesis of vitamin D (which protects against many conditions including bowel cancer). An algorithm is developed using spectral measurements undertaken at Lauder Central Otago, and is used to relate vitamin D production to the widely-used UV Index. This is then used to calculate the behavioural patterns (exposure times and attire) required to enable the public to optimize their exposure to UV radiation. In the New Zealand summer at noon, there should be sufficient UV to photosynthesize optimal vitamin D in ~1 minute for full body exposure, whereas skin damage occurs after ~15 minutes. Further, while it should be possible to photosynthesise vitamin D in the winter, the amount of skin that must be exposed is larger than from the hands and face alone. This raises the question of whether the action spectrum for vitamin D production is correct, since previous studies have reported that production of vitamin D is not possible in the winter at mid-latitudes. However, evidence suggests that some supplementation of vitamin D is desirable, at least in the south island winter. I describe how a new HRC-funded research project involving NIWA addresses these questions by tracking personal UV exposure and relating this to vitamin D status.

The presentation is based on a paper that will soon appear in photochem photobiol website at www.photobiology.org .

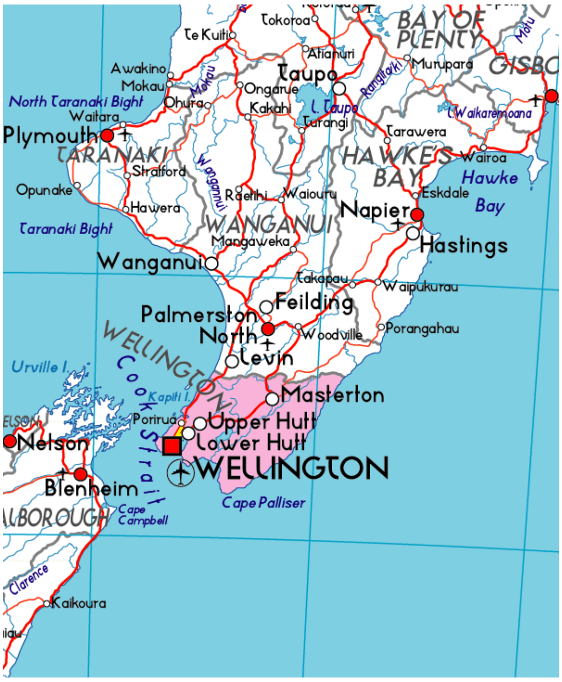
For a pdf of this PowerPoint check out http://tinyurl.com/n6kxo8 (use newsletter password)

CLIMATE AND HEALTH

Guest speaker: Dr. Glenn McGregor gave a talk at NIWA, Auckland on 19 June entitled "Heat waves - Causes, consequences, and responses".

Principal climate and health research questions of interest to Glenn are (a) what is the role of climate as a stressor on health? (b) are climate based predictions of health outcomes possible for a range of timescales? (c) to what extent might climate variability and change affect health and existing or predicted stresses on health? (d) what are the uncertainties associated with climate change related health projections? (e) what is the nature of the interaction between extreme weather and climate anomalies and the urban socio-economic landscape in terms of health outcomes? (f) does society possess the capacity to adapt to climate variability and change through modifications to health infrastructure, management and policy by adopting specific adaptive measures?

Glenn has been involved with numerous climate and health research projects, such as seasonal climate forecasting and health in the UK, investigating London's urban heat island, experimental heat health watch warning systems for 5 European cities, as well as the development and testing of summer season health forecasting models.



WELLINGTON

At our Special General Meeting held in Wellington on 18 March, there were two brief seminars.

1. Mike Revell, our President, spoke on "The Meteorology of the recent Australian bushfires" Mike was in Melbourne on what is now known as "Black Saturday" and in this talk he described what it feels like to be in 46.8 degrees with 100 km an hour winds. For a pdf of this PowerPoint check out http://tinyurl.com/nxz78p (use newsletter password)

2. James Renwick presented a PowerPoint compiled by Joe Kidston and Sam Dean (our Secretary), on "Climate Change and the SAM/HLM" . This talk investigated trends in the Southern Annular Mode, and the possibilities of a poleward shift of the jetstream
For a pdf of this PowerPoint check out http://tinyurl.com/n25tqs (use newsletter password)

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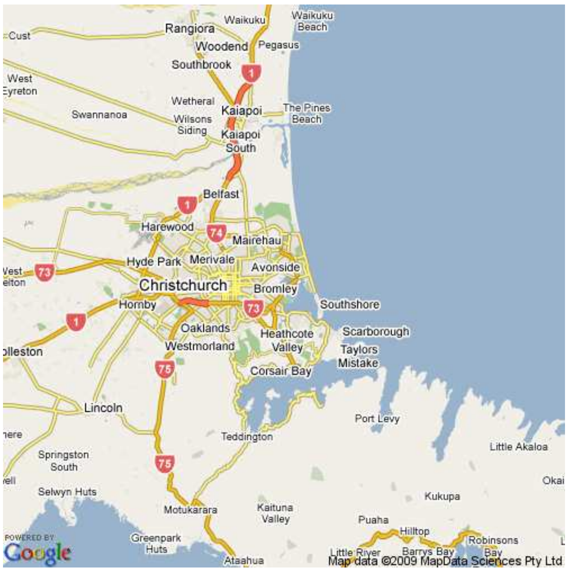
CHRISTCHURCH (Met soc Vice President Mikhail Titov)

The Christchurch branch of the Meteorological Society of New Zealand recently held several interesting lectures and presentations at the Department of Geography (the University of Canterbury). Most of the scientific activity was at the beginning of the first semester and before winter student's exams.

Prof. Nigel Tapper (Head of Department of the Environmental Science, Monash University, Australia) as visiting Erskine Fellow of the department made two presentations:
1) "The climate change – urban climate nexus: some reflections from Melbourne, Australia" (10 of March 2009)". Prof. Tapper showed very serious problems with water in Melbourne and outlined a possibility of the Australian government to use stormy waters. This possibility is now under development at his department;
2) "Aeolian Dust in the Environment: Towards New Understandings of Some Critical Impacts" (31 of March 2009).



Dr. Steve George (University of Canterbury) made a presentation "Ozone and Temperature over Antarctica: Co-variability and Change" (17 of March 2009) showing the results of numerical modelling over Antarctic with application of MM5 and RAMS.
Visiting Erskine Fellow Dr. Jim Hansom (University of Glasgow, Scotland) presented very interesting research: "Copying with sea level change?" and showed (using GIS) change of big cities (like London) street topography regarding to Global Warming and subsequent potential remarkable increase of sea level.
Prof. Glenn McGregor (School of Geography, Geology & Environmental Science (SGGES), University of Auckland) made a presentation "Heat Waves: Causes, Consequences and Responses" (15 of June 2009). Originally this presentation was proposed on 18 of May but was postponed on one month. Prof. Glenn McGregor has displayed the most hazardous consequences associated with heat waves in different areas (health, engineering, hydrology-biology). For more about this talk see the Auckland report.

It's dangerous to talk about the weather

MEDIA WATCH
Tom Frewen

Trust bureaucracy to breathe fire and brimstone and make it rain cats and dogs

Jim Salinger and I went to the same school, a private college with a dress code requiring caps to be worn absolutely level on the head and socks to be pulled up to the knee. Punishment for disobedience included detention, caning and, in persistent cases, expulsion.

I can't speak for Jim but it left me with nothing but contempt for petty rules, especially when they're enforced for no good reason or for some ulterior motive.

Jim's expulsion last week by the National Institute of Water and Atmospheric Research (Niwa) sparked suspicions of a political motive. Was he the victim of a change in government and a more sceptical view of global warming?

A pioneer in climate research, starting in the mid-1970s, Jim had acquired an international reputation. As Matthew Dearnaley noted in the *New Zealand Herald* on Saturday, his work helped the Intergovernmental Panel on Climate Change (IPCC), of which he's a member, win the 2007 Nobel Peace Prize (shared with former US vice-president, Al Gore).

But the reason that Jim, who had worked for the government for 27 years, was given just three and a half hours to clear his desk last Thursday, was not political. It was bureaucratic.

Although they are as fascist and hierarchical as their predecessors, the new state sector bureaucracies are less tolerant of eccentrics and mavericks. Niwa is the very model of the modern bureaucracy shaped from the clay of the old public service departments by Wellington mandarins in the State Services Commission and the Crown Company Monitoring Advisory Unit (CCMAU).

" After breaking the rules a couple of times, he received two disciplinary letters. Then he called TVNZ's Jim Hickey from the West Coast to tell him the rivers were in flood. Sounds harmless but it was enough for NIWA to fire him

Following the template established during Helen Clark's first term, they gave Niwa a new board chaired by Sue Suckling of Christchurch, a Restaurant Brands director and strategic business consultant with a sound track record in both public and private sector boardrooms.

Next step – the most important and fun part of governance – was the appointment of a new chief executive. John Morgan, chief executive of state-owned enterprise AgriQuality, was chosen for his "wealth of experience in guiding companies to world-leading positions in their fields." He took up his new position exactly two years ago yesterday, on April 30, 2007.

According to the template, the board and chief executive then embarked on a programme of corporatisation, racheting up directors' allowances and executive salaries to attract top talent. NIWA's 2007-2008 annual report reveals the number of employees on \$100,000-\$110,000 doubled from 24 to 51 while those on \$110,000-\$120,000 tripled from ten to 30.

Appropriately rewarded for their skills and experience, the newly-created senior management team set about beefing up their human resources, communications and marketing departments ready for their first big task: the re-branding exercise.

As well as new letterheads and logos, the re-branding exercise can also involve whole buildings. NIWA's move into flash new headquarters in Auckland's viaduct harbour was celebrated by its new National minister, Wayne Mapp, as an expression of the Crown research institute's confidence in the future and its profile in the science community.

"The new building shows an organisation that it's strong and confident," said Dr Mapp when he officially opened the refitted City Market Building (net contract rental: \$3 million a year) on February 25.

On the communications and marketing fronts, chief executive John Morgan identified a key challenge in the 2007-2008 annual report.

"Something we recognise is that the science sector is not too good at promoting itself. We need to better [sic] communicate our science. Niwa's duty is to be experts and confidently present facts.

"This can be a challenge," Mr Morgan added ominously, "in a media environment where personal opinions and controversy often gain profile."

He could only have been referring to Jim who, as Paul Gorman reported in *The Press* on Monday, had earlier in the year been praised by his employers for being the public "face of NIWA."

But that was before Jim was hogtied by a new corporate communications strategy based on commercial contracts with media organisations and designed to protect NIWA's association with politically embarrassing "personal opinions and controversy." Restricted to commenting on his specialist research area, and even then only after getting permission from management, Jim was told to stop talking about the weather.

Paul Gorman quotes him as saying that he'd been told to "knuckle under, I'm the tall poppy, stand back from media stuff."

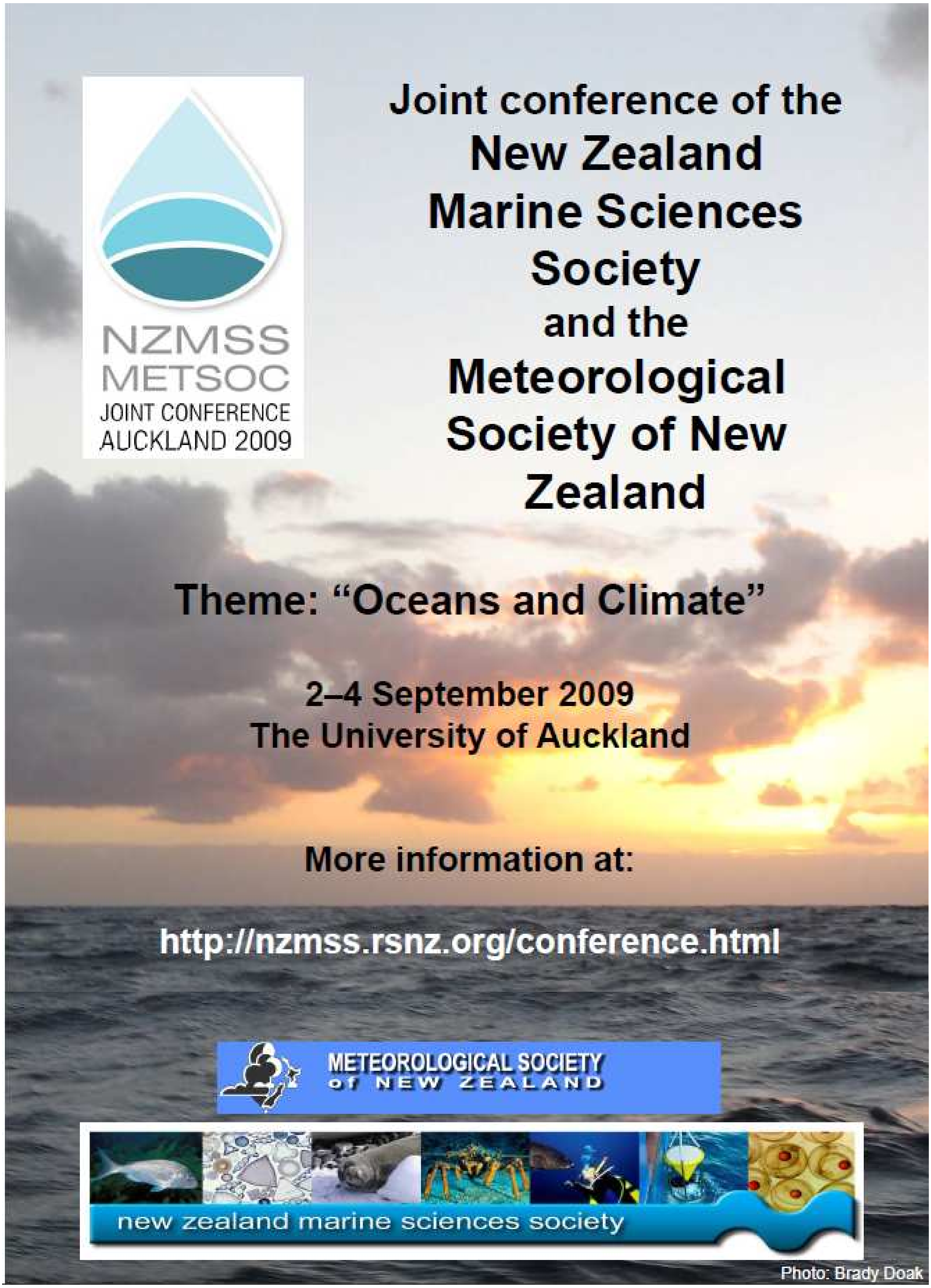
But still in strong demand as one of the media's "go-to" experts on weather and climate stories, Jim found it hard to step back from his role as the "face of NIWA." After breaking the rules a couple of times, he received two disciplinary letters. Then he called TVNZ's Jim Hickey from the West Coast to tell him the rivers were in flood. Sounds harmless but it was enough for NIWA to fire him. He's hired a lawyer and it will be up to the Employment Relations Authority to decide whether his dismissal was justified. It is entirely appropriate, given the circumstances, that the judgment will depend entirely, not on common sense, but on whether the bureaucracy obeyed its own rules.

Our old school, meanwhile, is establishing a "wall of fame" to celebrate its most distinguished former pupils. I'm nominating Jim Salinger.

tomfrewen@paradise.net.nz

Following NIWA's recent dismissal of Jim Salinger, our President wrote a letter of support to Jim in recognition of the huge contribution that Jim has made over the past 20 years to the Met Society, including being our Secretary (a sometimes thankless role!) for most of ten years, President for two, general committee member for many more, including now, and a professional conference planner in the past and this year, helping to organise our upcoming conference wit the NZMSS Conference to be held in Auckland in September.

We consider Jim to be a valuable committee member, colleague, and scientist. We hope that his enthusiasm and dedication to science will not be dampened by recent events and that he will continue to be an active committee member and a significant positive influence on our Society.


NZMSS
METSOC
JOINT CONFERENCE
AUCKLAND 2009
Joint conference of the
New Zealand
Marine Sciences
Society
and the
Meteorological
Society of New
Zealand
Theme: "Oceans and Climate"
2–4 September 2009
The University of Auckland
More information at:
http://nzmss.rsnz.org/conference.html
METEOROLOGICAL SOCIETY
of NEW ZEALAND
new zealand marine sciences society
Photo: Brady Doak

SEASONAL ANALYSIS, By Rupert Wood

<u>Introduction</u>

The following tables use a minor modification of an idea from the "USA Today" weather almanacs to define the temperature seasons for a particular location. Given a suitable quantity (say at least 30 years' worth) of daily maximum and minimum temperature observations, calculate the means from these two values, and then compute the average of those means for each day of the year. The highest and lowest of these 366 values define the annual temperature range (but see the comment below on a slight modification of this definition). Calculate the 1/4 and 3/4 marks on the scale. All values above the 3/4 line are "summer" ones, all those below the 1/4 line are "winter" ones, and the remainder are assigned to spring and autumn. For example, if the top value is 20.0 and the bottom one 10.0, the two boundaries are at 12.5 and 17.5.

<u>The NZ data used</u>

32 locations were selected. Raw data was downloaded from NIWA's CliFlo database. Wherever possible, at least 30 years of data were used, consistent with avoiding hybrid sites if feasible, with the data as current as possible. In the case of Alexandra, several site changes made it necessary to use data prior to 1983. It is unlikely that patterns there have changed much since then. When examining the daily means, it was found that these have significant daily fluctuations even on 50+-year timescales, so to avoid outlier effects the top and bottom values used were the averages of the warmest and coolest 7-day periods, instead of those for single days.

Table 1 lists the stations, the length and completeness of the raw data, and the dates of the warmest and coolest 14-day periods of the year. These dates cannot be taken too literally in light of the fact that there are sometimes some close contenders for the extreme 14-day values, but the consistency of the early July dates for the coldest fortnight is striking. Even in the case of Kaitaia, July is the coldest month, though the July-August difference is small. There is considerably more variation in the dates of the warmest fortnight, reflecting the fact that January and February are equally warm for the country as a whole, with northernmost places warmest in February and a large portion of the south warmest in January.

<u>Season data</u>

Table 2 shows the start and duration of each season. The table is ordered by average seasonal latency (defined later – smallest values at the top), to show up the contrasts better. The length of a season is a measure of the amount of clustering in that part of the temperature spectrum, with summer slightly longer than winter on average, but with quite a large range over the sites for both (44 days for summer, 26 days for winter). For summer and winter lengths, there is quite a strong association with the overall latency – entries high in the table generally have longer summer periods and shorter winter ones, and conversely near the bottom. If one compares summer start with summer length, there is a very strong association – earlier starts correlate very highly with longer durations, so there is no correspondingly earlier finish.

Table 1: Station list

Station	# years	% complete	Warmest 14-day	Coolest 14-day
Alexandra	53	99.8	25 Jan=>07 Feb	02 Jul=>15 Jul
Blenheim	37	99.9	26 Jan=>08 Feb	04 Jul=>17 Jul
Christchurch Aero	54	100.0	21 Jan=>03 Feb	03 Jul=>16 Jul
Craigieburn Forest	37	97.9	29 Jan=>11 Feb	01 Jul=>14 Jul
Gisborne Aero	58	99.9	18 Jan=>31 Jan	03 Jul=>16 Jul
Hamilton, Ruakura	57	99.5	05 Feb=>18 Feb	05 Jul=>18 Jul
Hokitika Aero	45	100.0	07 Feb=>20 Feb	04 Jul=>17 Jul
Invercargill Aero	60	99.9	30 Jan=>12 Feb	04 Jul=>17 Jul
Kaikoura	37	99.8	22 Jan=>04 Feb	04 Jul=>17 Jul
Kaitaia	23	99.8	08 Feb=>21 Feb	11 Aug=>24 Aug
Kerikeri	27	98.0	02 Feb=>15 Feb	01 Jul=>14 Jul
Masterton	48	98.5	26 Jan=>08 Feb	04 Jul=>17 Jul
Milford Sound	60	98.8	05 Feb=>18 Feb	05 Jul=>18 Jul
Mt Cook Village	40	98.4	30 Jan=>12 Feb	05 Jul=>18 Jul
Dunedin, Musselburgh	60	99.9	29 Jan=>11 Feb	04 Jul=>17 Jul
Napier	69	99.2	22 Jan=>04 Feb	04 Jul=>17 Jul
Nelson Aero	65	95.3	22 Jan=>04 Feb	03 Jul=>16 Jul
New Plymouth Aero	48	99.9	04 Feb=>17 Feb	04 Jul=>17 Jul
Opotiki	54	96.0	30 Jan=>12 Feb	01 Jul=>14 Jul
Auckland, Owairaka	57	99.1	10 Feb=>23 Feb	03 Jul=>16 Jul
Palmerston North	69	99.7	30 Jan=>12 Feb	04 Jul=>17 Jul
Queenstown	60	99.1	09 Jan=>22 Jan	04 Jul=>17 Jul
Rotoiti	34	97.9	05 Feb=>18 Feb	03 Jul=>16 Jul
Rotorua Aero	37	99.9	30 Jan=>12 Feb	01 Jul=>14 Jul
Taupo	44	98.0	27 Jan=>09 Feb	04 Jul=>17 Jul
Tauranga Aero	47	99.3	27 Jan=>09 Feb	05 Jul=>18 Jul
Lake Tekapo	45	98.5	27 Jan=>09 Feb	05 Jul=>18 Jul
Timaru	60	99.6	20 Jan=>02 Feb	04 Jul=>17 Jul
Waiouru	37	96.9	30 Jan=>12 Feb	02 Jul=>15 Jul
Wanganui	37	99.2	17 Jan=>30 Jan	28 Jun=>11 Jul
Wellington, Kelburn	78	100.0	22 Jan=>04 Feb	04 Jul=>17 Jul
Westport Aero	43	98.1	10 Feb=>23 Feb	03 Jul=>16 Jul

Spring lengths are shorter than summer or winter ones, with autumn by far the shortest (as expected), autumn also having the least variability in length (though it anti-correlates quite strongly with duration). Alexandra stands out for summer values at the top of the table, with Kaitaia and Kerikeri most noteworthy at the other end. The winter start dates do not vary very much, but like the summer ones they correlate quite strongly with latency. The winter lengths at Alexandra, Tekapo and Milford are considerably shorter than at Kaitaia. This is in turn reflected in a range of 35 days in the spring start dates, between Alexandra and Kaitaia.

I have made an attempt to explain more of the variations between sites in the next section, where latency is defined.

Latency (seasonal delay)

This is a simple formula for the lateness or delay of a season, using the equinox/solstice as a baseline.
For a given season, the midpoint date is taken, and the average date of the equinox or solstice is subtracted from it. For New Zealand, the expectation is that allowing for latitudes, the smallish distances from the sea, and the prevailing winds, the highest values will be in western and northern areas, more particularly in the North Island, with smaller values (i.e. less effect from the ocean and prevailing windflows) in eastern districts and inland areas, especially in the South Island, given the barrier provided by the Alps. While the differences across the majority of the country are not large, the overall range is quite high for a small maritime country, and it is interesting to try and make some sense of it. Spring shows the greatest variability, while autumn has the least.

Table 3 gives values for each season, with the average of these determining the order of the site listing. Alexandra heads the list, with its spring and to a lesser extent summer values being easily the lowest. Its valley basin location allows fogs and hoar frosts, which are common in winter, but the occurrences are skewed to the early part of the cool season – August is much sunnier than May on average, and the July-September period is Alexandra's driest. August is 2.3C warmer than July on average, while June is only 0.2C warmer than July. Spring northwesterlies contribute to its early start for summer. Queenstown's winter is less affected by fogs than Alexandra's, but the mountainous surroundings may help to keep
its latency numbers low by increasing the importance of available daylight. It may seem surprising that Invercargill ranks so high on the list, but April-June is its wettest and rainiest period, with a marked drop to the driest part, July-September, while April-June is also the cloudiest period. To a lesser extent Milford Sound has a similar rainfall difference between April-May and July-August, but the Queenstown factor may apply as well. Tekapo values are no lower than those on the Canterbury coast, with the spring northwesterly overspill effects and late summer rainfall minima probably a factor in that result. With seven times Tekapo's rainfall, the values for the Mt Cook settlement in an overspill rainfall region are nevertheless very similar to Tekapo.

Table 2: Seasons

STATION	SUMMER Start	SUMMER Length	AUTUMN Start	AUTUMN Length	WINTER Start	WINTER Length	SPRING Start	SPRING Length
Alexandra	11-Nov	136	27-Mar	55	21-May	93	22-Aug	81
Queenstown	27-Nov	120	27-Mar	54	20-May	102	30-Aug	89
Invercargill Aero	26-Nov	122	28-Mar	55	22-May	100	30-Aug	88
Milford Sound	30-Nov	121	31-Mar	54	24-May	95	27-Aug	95
Rotoiti	1-Dec	111	22-Mar	62	23-May	105	5-Sep	87
Christchurch Aero	30-Nov	114	24-Mar	61	24-May	103	4-Sep	87
Lake Tekapo	28-Nov	120	28-Mar	61	28-May	93	29-Aug	91
Timaru	26-Nov	124	30-Mar	54	23-May	103	3-Sep	84
Mt Cook Village	2-Dec	114	26-Mar	60	25-May	98	31-Aug	93
Craigieburn Forest	7-Dec	105	22-Mar	61	22-May	105	4-Sep	94
Dunedin,Musselburgh	29-Nov	123	1-Apr	53	24-May	101	2-Sep	88
Wanganui	30-Nov	117	27-Mar	58	24-May	105	6-Sep	85
Blenheim	27-Nov	122	29-Mar	60	28-May	99	4-Sep	84
Napier	1-Dec	110	21-Mar	66	26-May	107	10-Sep	82
Taupo	1-Dec	112	23-Mar	62	24-May	109	10-Sep	82
Nelson Aero	1-Dec	116	27-Mar	59	25-May	104	6-Sep	86
Masterton	9-Dec	100	19-Mar	65	23-May	109	9-Sep	91
Gisborne Aero	2-Dec	109	21-Mar	66	26-May	109	12-Sep	81
Hamilton, Ruakura	5-Dec	109	24-Mar	65	28-May	102	7-Sep	89
Waiouru	6-Dec	105	21-Mar	65	25-May	111	13-Sep	84
Palmerston North	5-Dec	113	28-Mar	60	27-May	104	8-Sep	88
Rotorua Aero	5-Dec	111	26-Mar	61	26-May	109	12-Sep	84
Hokitika Aero	12-Dec	109	31-Mar	55	25-May	102	4-Sep	99
Kaikoura	7-Dec	109	26-Mar	66	31-May	106	14-Sep	84
Tauranga Aero	11-Dec	105	26-Mar	63	28-May	108	13-Sep	89
New Plymouth Aero	14-Dec	101	25-Mar	67	31-May	101	9-Sep	96
Westport Aero	14-Dec	106	30-Mar	56	25-May	110	12-Sep	93
Wellington, Kelburn	11-Dec	108	29-Mar	60	28-May	108	13-Sep	89
Opotiki	9-Dec	113	1-Apr	57	28-May	110	15-Sep	85
Auckland, Owairaka	11-Dec	108	29-Mar	62	30-May	111	18-Sep	84
Kerikeri	17-Dec	101	28-Mar	63	30-May	113	20-Sep	88
Kaitaia	25-Dec	92	27-Mar	64	30-May	119	26-Sep	90
Average	4-Dec	112.1	26-Mar	60.3	26-May	104.8	7-Sep	87.8
Range in days	44	44	13	13	11	26	35	18

Table 3: Seasonal and average latencies

STATION	SUM	AUT	WIN	SPR	Average
Alexandra	27.0	34.0	15.0	8.5	21.1
Queenstown	35.0	33.5	18.5	20.5	26.9
Invercargill Aero	35.0	35.0	19.5	20.0	27.4
Milford Sound	38.5	37.5	19.0	20.5	28.9
Rotoiti	34.5	32.5	23.0	25.5	28.9
Christchurch Aero	35.0	34.0	23.0	24.5	29.1
Lake Tekapo	36.0	38.0	22.0	20.5	29.1
Timaru	36.0	36.5	22.0	22.0	29.1
Mt Cook Village	37.0	35.5	21.5	23.5	29.4
Craigieburn Forest	37.5	32.0	22.0	28.0	29.9
Dunedin, Musselburgh	38.5	38.0	22.0	23.0	30.4
Wanganui	36.5	35.5	24.0	25.5	30.4
Blenheim	36.0	38.5	25.0	23.0	30.6
Napier	34.0	33.5	27.0	28.0	30.6
Taupo	35.0	33.5	26.0	28.0	30.6
Nelson Aero	37.0	36.0	24.5	26.0	30.9
Masterton	37.0	31.0	25.0	31.5	31.1
Gisborne Aero	34.5	33.5	28.0	29.5	31.4
Hamilton, Ruakura	37.5	36.0	26.5	28.5	32.1
Waiouru	36.5	33.0	28.0	32.0	32.4
Palmerston North	39.5	37.5	26.5	29.0	33.1
Rotorua Aero	38.5	36.0	28.0	31.0	33.4
Hokitika Aero	44.5	38.0	23.5	30.5	34.1
Kaikoura	39.5	38.5	31.5	33.0	35.6
Tauranga Aero	41.5	37.0	29.5	34.5	35.6
New Plymouth Aero	42.5	38.0	29.0	34.0	35.9
Westport Aero	45.0	37.5	27.5	35.5	36.4
Wellington, Kelburn	43.0	38.5	29.5	34.5	36.4
Opotiki	43.5	40.0	30.5	34.5	37.1
Auckland, Owairaka	43.0	39.5	33.0	37.0	38.1
Kerikeri	45.5	39.0	34.0	41.0	39.9
Kaitaia	49.0	38.5	37.0	48.0	43.1
Averages	38.4	36.1	25.7	28.5	32.2
Std Devs	4.4	2.4	4.8	7.4	4.3
Range	22.0	9.0	22.0	39.5	22.0

Values on the South Island east coast from Dunedin northwards and for Blenheim and Nelson vary little, with the latter places being sheltered from prevailing winds. Those in the east coast of the North Island are only very slightly higher. Kaikoura is an anomaly, probably because of the very exposed coastal headland where the station is sited. It could be of interest to extract data for Akaroa for a comparison. It is not clear to me why Wanganui is not lower in the list. Palmerston North, Waiouru, Hamilton and Rotorua are intermediate between the eastern values and the remainder – Westland, Bay of Plenty, Wellington, the west of the North Island from Taranaki north, and Northland. Bay of Plenty locations have in common with the western ones a spring which is cloudier and more unsettled than late autumn. The values in Northland are clearly highest, especially in the case of spring.

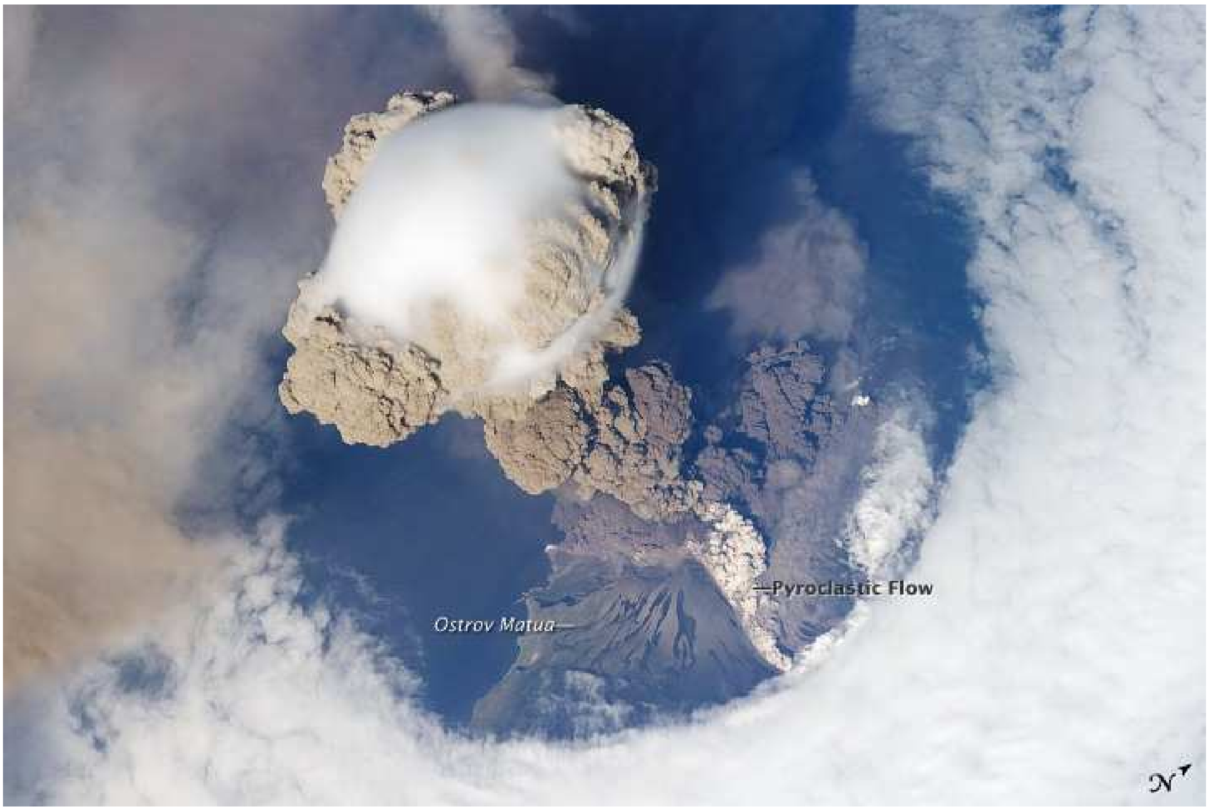
<u>Composite summary table</u>

For the sake of completeness, Table 4 combines the seasonal tables, with dates in day-number format, and the latency data. There may be some factors of interest that have not been remarked on above, and any feedback on this would be welcomed.

<u>Conclusion</u>

The values calculated in these tables seem to be in good general accordance with general understanding of New Zealand climatology, but there are some cases that need more explaining, as detailed above.

Addendum: Re: May 2009:
May NZ average 1971-2000 is 10.80C and June average 1971-2000 is 8.58C
In 2009 the May NZ average was 9.0C (our THIRD coldest May on record - May 1959 was 8.4C and May 1913 7.7C).
Roughly speaking, it's as if we dived into June-like temperatures about 25 days early.



Sarychev Peak Erption , Kuril Islands , 12 June 2009

http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=38985

Following the publication of this photograph, the atmospheric and volcanic features it captured generated debate among meteorologists, geoscientists, and volcanologists who viewed it. Post-publication, scientists have proposed—and disagreed about—three possible explanations for the hole in the cloud deck above the volcano.

One explanation is that the hole in the clouds has nothing to do with the eruption at all. In places where islands are surrounded by oceans with cool surface temperatures, it is common for a sheet of clouds to form and drift with the low-level winds. When the cloud layer encounters an island, the moist air closer to the surface is forced upward. Because the air above the marine layer is dry, the clouds evaporate, leaving a hole in the cloud deck. These openings, or wakes, in the clouds can extend far downwind of the island, sometimes wrapping into swirling eddies called von Karman vortices.

The other two possibilities that scientists have offered appeared in the original caption. One is that the shockwave from the eruption shoved up the overlying atmosphere and disturbed the cloud deck, either making a hole or widening an existing opening. The final possibility is that as the plume rises, air flows down around the sides like water flowing off the back of a surfacing dolphin. As air sinks, it tends to warm; clouds in the air evaporate.