Number 118, 3 April 2009

NIWA Taihoro Nukurangi

New Zealand Climate Update

Photograph: Omaka barley, ready for grazing, autumn 2009. *Doug Avery, Marlborough*

Current climate – March 2009

Rainfall: Very low March rainfalls were recorded in parts of Wairarapa, Marlborough, north Canterbury, and North and Central Otago. It was also drier than normal in most other areas except for wet spots in western Bay of Plenty and eastern Otago.

Soil moisture: Generally low rainfalls led to falling residual soil moisture by the end of March. Some areas were comparably dry to the drought-like conditions of the same time last year.

Air temperatures: Below average over most of the country during March. Temperatures in the North Island and northern half of the South Island were more than 0.5 °C lower than normal in most places. The national average temperature of 15.1 °C was 0.6 °C below the long-term average for March.

Sunshine: Record hours of bright sunshine for March were recorded in Northland, Auckland, King Country, and the central South Island. It was also sunnier than normal in most other places.

The month was dominated by anticyclonic conditions with relatively dry and cool south to southwesterly air flows over New Zealand.

For more information:
www.niwa.co.nz/ncc/cs/monthly/mclimsum_09_03
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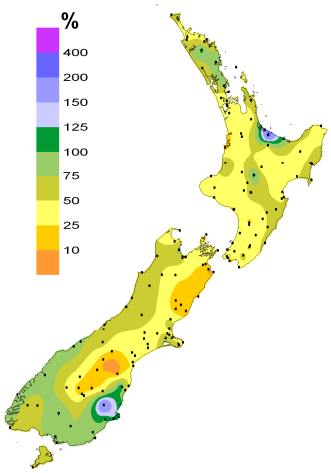
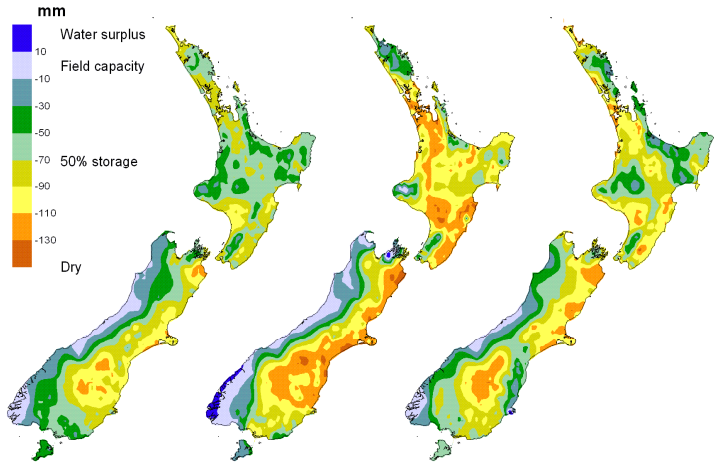
Rainfall



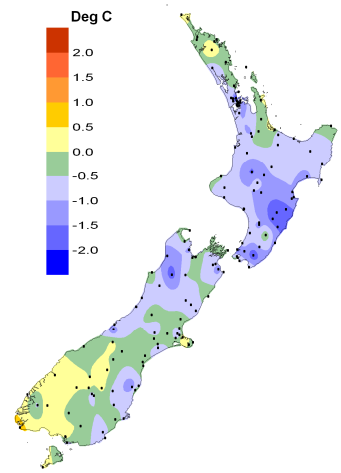
Percentage of normal rainfall for March 2009.

Soil moisture



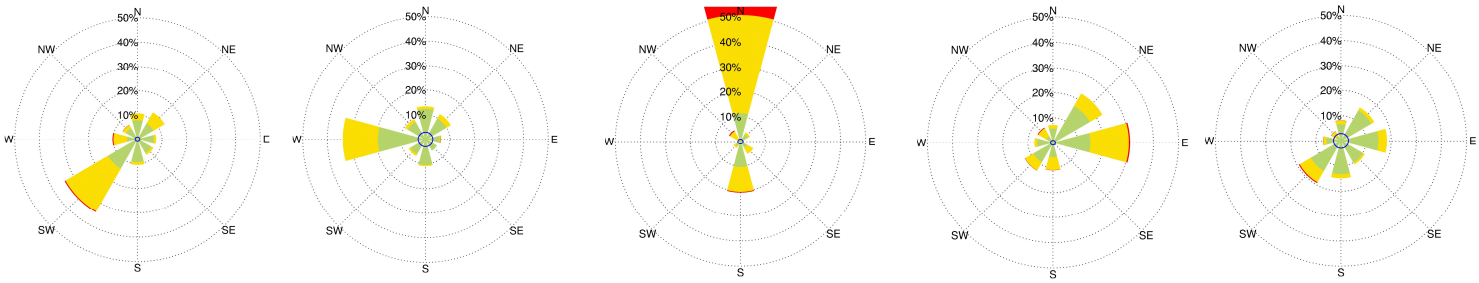
End of month water balance in the pasture root zone for an average soil type where the available water capacity is taken to be 150 mm.

Air temperature



Departure from average air temperature for March 2009.

Focus point: Wind at New Zealand's airports – a summary of hourly observations for summer 2008–09

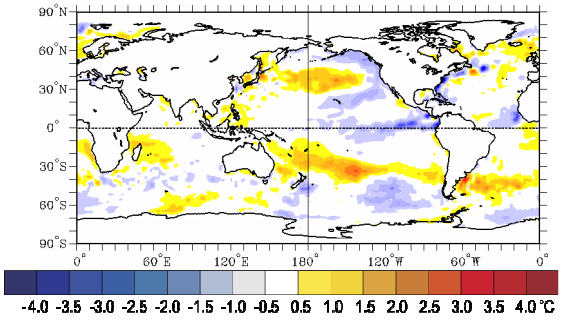


Auckland Airport | **Hamilton Airport** | **Wellington Airport** | **Christchurch Airport** | **Dunedin Airport**

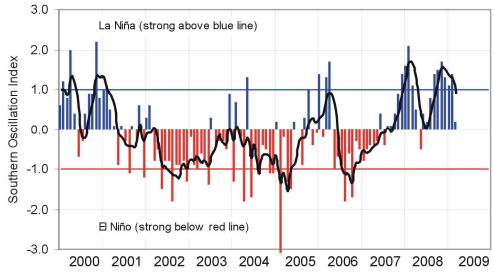
The figures above show the frequency of hourly observations at selected New Zealand airports of wind direction from each octant of the compass, as a percentage of the total number of measurements at each airport. Light winds (0.1–19.9 km/h), moderate winds (20– 39.9 km/h), and strong winds (40 km/h or more) are represented by the green, gold, and red colour bands respectively. The blue inner circles represent the proportion of observations of calm conditions. The data are for 1 December 2008 to 28 February 2009. Predominant wind directions indicated by these data are: Auckland, southwest (34%); Hamilton, west (34%); Wellington, north (60%, off the scale); Christchurch, east, (21%); Dunedin, southwest, (19%). Wellington was the windiest airport, while Dunedin had the highest proportion of light winds. *Note: The data for these figures are preliminary. More extensive data can be sourced from cliflo.niwa.co.nz*

Global setting and climate outlook – April to July 2009

A moderate La Niña in the tropical Pacific is expected to weaken to neutral conditions by the end of May. In the New Zealand region, mean sea level pressures are likely to be higher than normal to the east and south of the country, and lower than normal to the north of New Zealand, resulting in a northeast flow anomaly especially over the North Island.



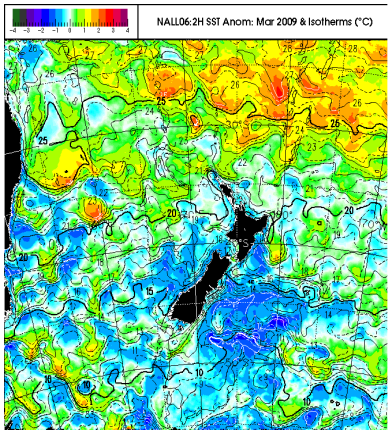
Differences from average global sea surface temperatures for 1 to 28 March 2009. Map courtesy of NOAA Climate Diagnostics Centre.



Monthly values of the Southern Oscillation Index (SOI), a measure of changes in atmospheric pressures across the Pacific, and the 3-month mean (black line). Estimated SOI mean values: March +0.2; January to March average +0.9.

Sea surface temperatures

Surface temperatures in the seas around New Zealand were higher than normal to the north of the country on average for March, and lower than normal to the west and southeast of the South Island. Surface temperatures around the country are expected to be average or slightly above average through to the start of winter.



ABOVE: Differences from normal March surface temperatures in the seas around New Zealand.

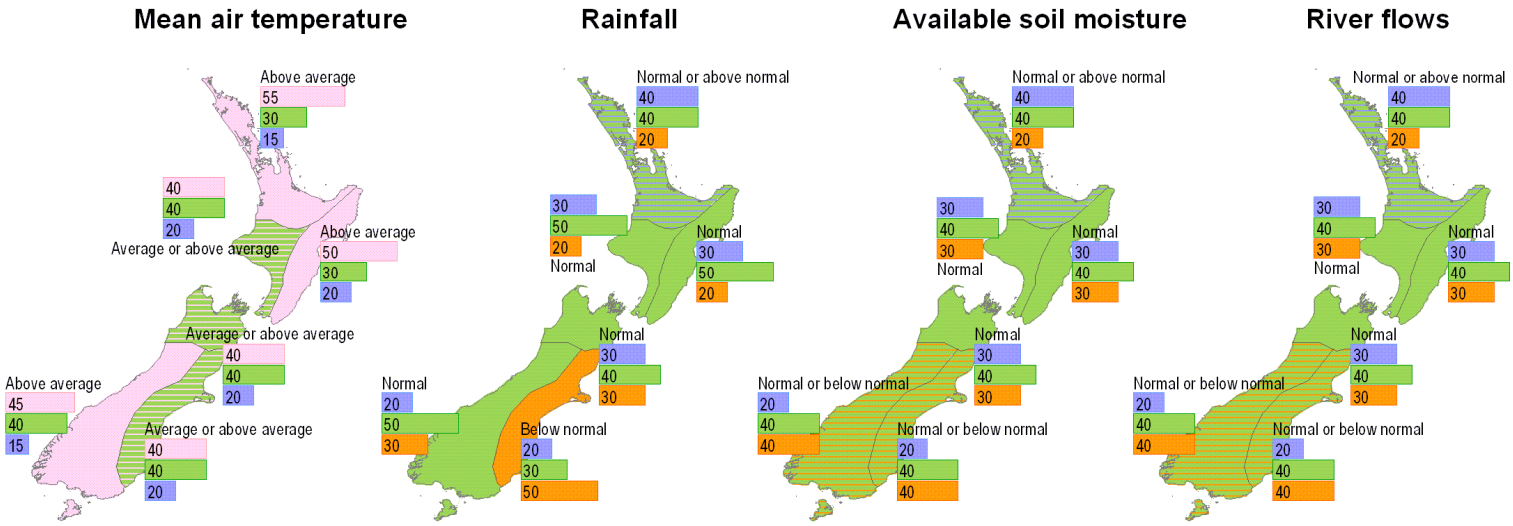
Outlook

In the New Zealand region, mean sea level pressures are likely to be higher than normal to the east and south of the country, and lower than normal to the north of New Zealand, resulting in more northeast winds than usual, especially over the North Island.

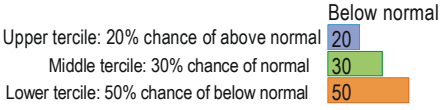
Air temperatures are expected to be average or above average in all regions.

Rainfall is likely to be normal or above normal over the north of the North Island, below normal along the east coast of the South Island, and normal elsewhere. **Soil moisture** and **stream flows** are expected to be normal or above normal in the northern North Island, normal or below normal in the south, west, and east of the South Island, and normal elsewhere.

Outlook for April to June 2009, expressed as conditions and probabilities



How to interpret these maps:



In this example (left), the climate models suggest that below normal conditions are likely (50% chance), but, given the variable nature of the climate, the chance of normal or above normal conditions is also shown (30% and 20% respectively).

January to March – the climate we predicted and what actually happened

Rainfall: Predicted: Normal or above normal in the north and east of the North Island, and below normal in much of the South Island. **Outcome:** Normal or below normal over most of the country; localised wet conditions in Bay of Plenty, Manawatu, and East Otago.

Air temperature: Predicted: Average or above average over New Zealand. **Outcome:** Above average in eastern Northland, Coromandel, Waikato, and Gisborne; mostly near average elsewhere, although a few scattered pockets of lower than normal temperatures.

The New Zealand Climate Update is a monthly newsletter from NIWA's National Climate Centre, and is published by NIWA, Private Bag 14901, Wellington 6241. Comments and ideas are welcome. Please contact Alan Porteous, Editor, email ncc@niwa.co.nz telephone 0-4-386 0300. Visit our web page: www.niwa.co.nz/ncc

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