

The Climate Update

A monthly newsletter from the National Climate Centre

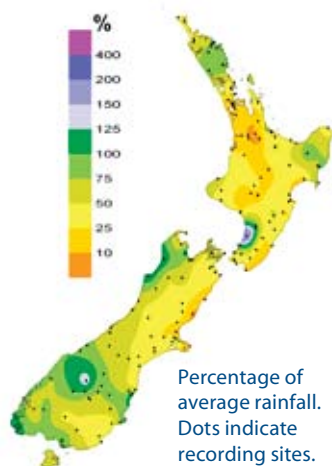


January climate – high temperatures and below normal rainfall in most places. Low river and stream flows almost everywhere.

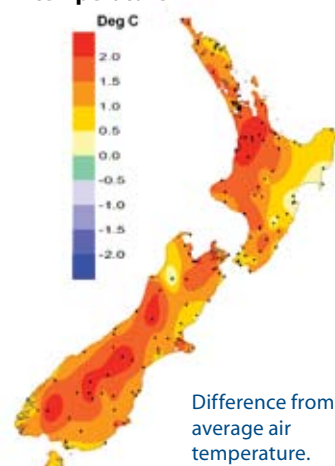
Outlook for February to April – air temperatures are likely to be above average across the country. Rainfall is expected to be normal over the North Island and the north of the South Island, and below normal elsewhere. Normal or below normal soil moisture and river flows are likely in the North Island and the top of the South Island. In the remainder of the South Island, below normal soil moisture and river flows are very likely.

New Zealand climate in January

Rainfall



Air temperature



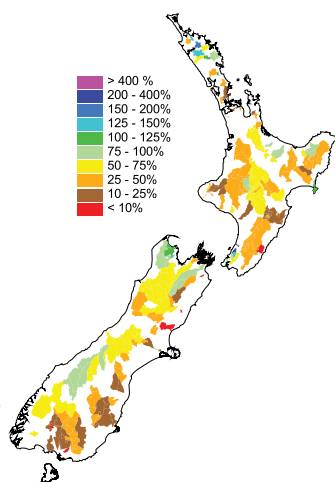
January was an unusually warm month, with temperatures 2 °C or more above average in Waikato, King Country, Nelson, and in inland South Island. The national average temperature of 18.3 °C was 1.3 °C above the historical normal.

Extremely low rainfall occurred in many areas, with totals of less than 10 mm recorded in the Hauraki Plains, Waikato, King Country, coastal Marlborough and parts of north Canterbury. In Waikato it was the driest January in over 100 years of records.

For more information see www.niwascience.co.nz/ncc/cs/mclisum_08_01

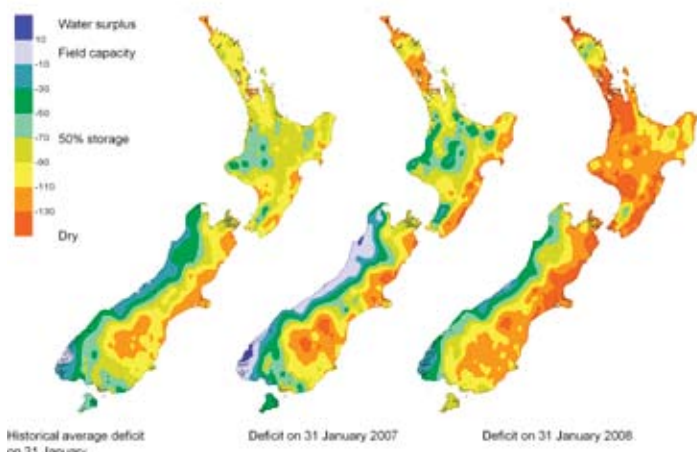
River flows

River flows were variable across Northland with some flooding, but below average to very dry everywhere else in the country



Percentage of average January river and stream flows in monitored catchments. NIWA field teams, regional and district councils, and hydropower companies are thanked for providing data.

Soil moisture deficit



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

By the end of January soil moisture deficits of more than 130 mm had developed in many North Island districts. Similar deficits persisted during January in the South Island from Marlborough to central and inland south Canterbury.

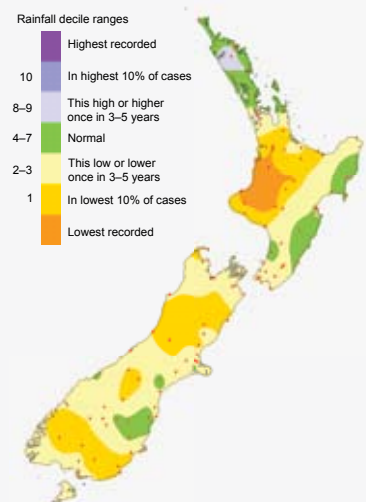
November to January – the climate we predicted and what happened

Rainfall

Predicted: Normal or above normal in the northern North Island, normal or below normal over most of the South Island, and near normal elsewhere.

Outcome: Above normal in parts of Northland, normal in some eastern regions of the North Island and Otago, below normal elsewhere

November to January rainfall

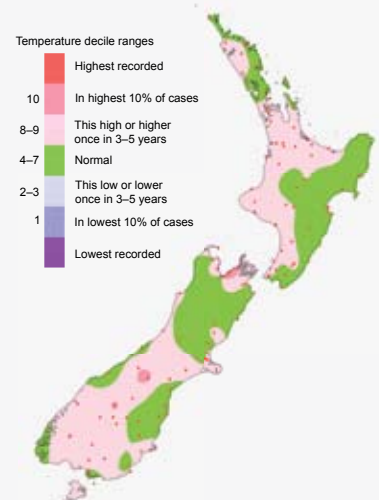


Air temperature

Predicted: Above average or average in all regions.

Outcome: Many districts above average, with average temperatures elsewhere

November to January temperature

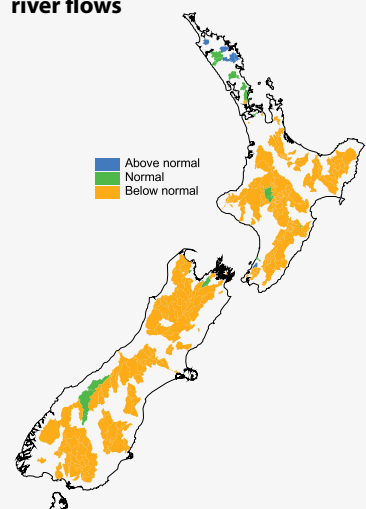


River flows

Predicted: Normal or above normal stream flows in the northern North Island; normal or below normal in the west, south, and east of the South Island; normal elsewhere.

Outcome: Stream flows were mostly below normal, except in Northland.

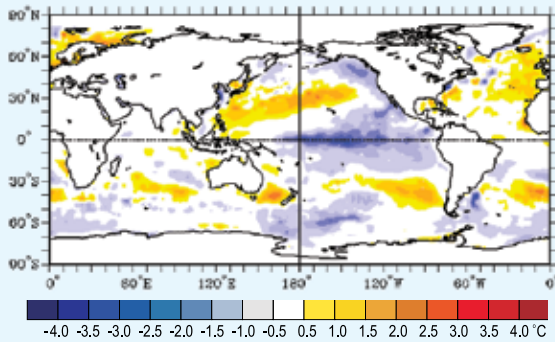
November to January river flows



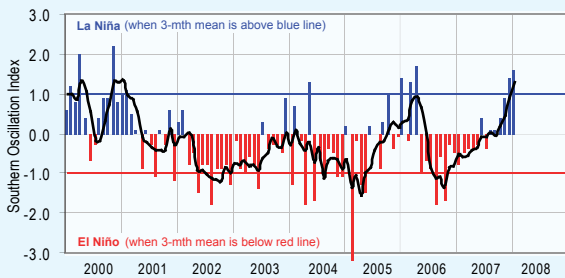
Global setting and climate outlook

La Niña likely to remain until autumn

A moderate to strong La Niña episode is in progress across the entire equatorial and tropical Pacific, and is very likely to persist through autumn 2008. Below normal sea surface temperatures extend from 160° E to the South American coast, while a 'horseshoe' shaped pattern of relatively warm surface water continues in the extra-tropics of both hemispheres.



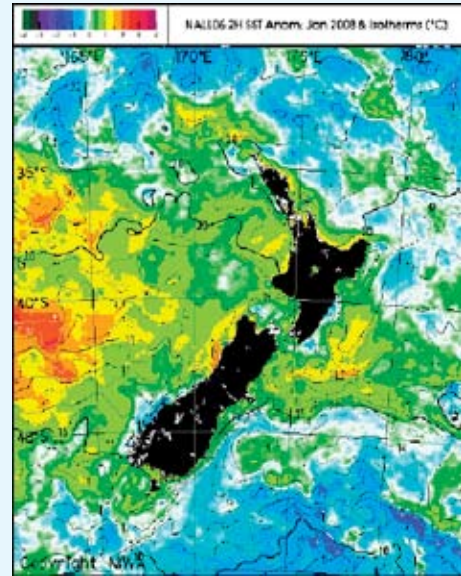
Difference from average global sea surface temperatures for January 2008. Map courtesy of NOAA Climate Diagnostics Centre.



Monthly values of the Southern Oscillation Index (SOI), a measure of the changes in atmospheric pressures across the Pacific, and the three-month mean (black line).
SOI mean values:
January: +1.6
November to January: +1.3

Sea surface temperatures around New Zealand

Sea surface temperature (SST) anomalies (differences from normal) in the New Zealand region are positive and consistent with a La Niña event. The January SST anomaly in the New Zealand box was +0.4 °C, with the November to January average anomaly about +0.2 °C. The most persistent positive anomalies are still west of the country in the mid and southern Tasman Sea. SST around New Zealand are expected to remain close to or above normal during the next three months



Differences from normal January surface temperatures in the seas around New Zealand.

Outlook for February to April 2008

In the New Zealand region late summer mean sea level pressures are expected to be higher than normal over and east of New Zealand and the Tasman Sea, and lower than normal to the north, with more easterly winds on to northern New Zealand, and lighter winds than normal across the South Island.

Air temperatures are likely to be above average across the country. Rainfall is expected to be normal over the North Island and north

of the South Island, and below normal elsewhere. Normal or below normal soil moisture and river flows are likely in the North Island and the top of the South Island. In the remainder of the South Island, below normal soil moisture and river flows are very likely.

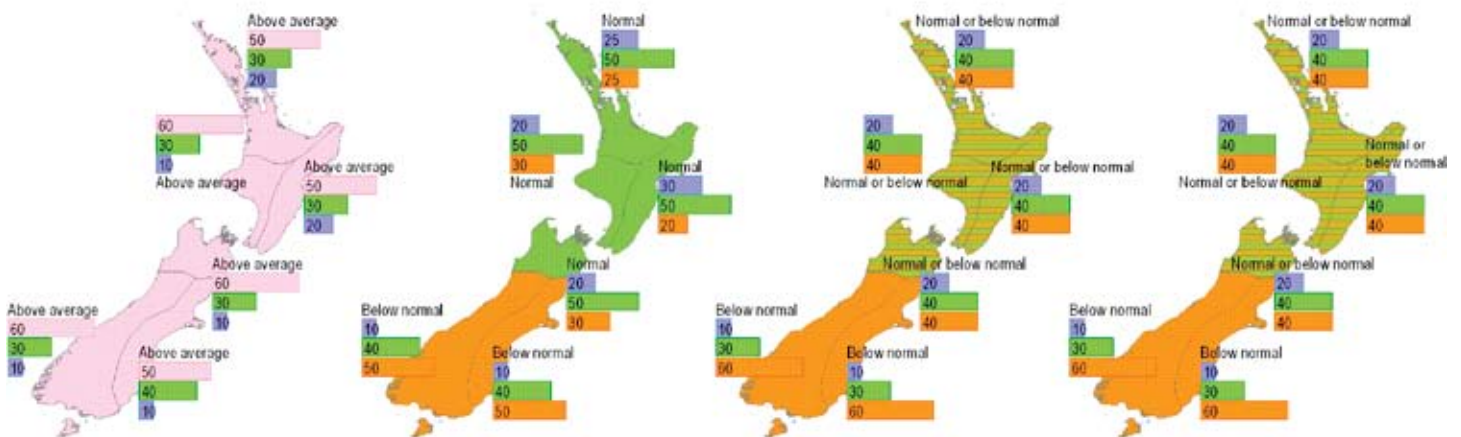
Through to May 2008, in addition to the earlier event this tropical cyclone season (cyclone Funa), there remains a significant chance of at least one more ex-tropical cyclone passing close to the country.

Mean air temperature

Rainfall

Available soil moisture

River flows



How to interpret these maps

In the example here 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).

Below normal	20% chance of above normal
30	30% chance of normal
50	50% chance of below normal

Accessing NIWA's climate data and products – one-day training course

Making the most of the National Climate Database and its tools to understand and visualise climate data

Access to NIWA's National Climate Database was made free in July 2007. In that month the number of rows of data extracted from the database quadrupled.

NIWA is now offering a 'Familiarisation Course' to explain how these data are measured, collected, and quality checked, and how the myriad types of data can be extracted from the database. A hands-on exercise is included.

The course will also demonstrate climate datasets. These are derived to help summarise and understand the data.

- GIS raster grids
- Virtual climate station data
- High Intensity Rainfall Design System (HIRDS)
- Tier-2 climate stations
- ClimateExplorer, the web-based system for accessing climate products

A field trip to an automatic weather station will be included to demonstrate the key steps to building the data archive, from calibrated field measurements to communications, quality control, and accessibility.

Trainer: Andrew Tait, Leader, National Climate Centre, together with other NIWA scientists

Duration: 1 day

Level: Suitable for both new and regular users

Date: 4 April 2008

Location: Christchurch

Cost: \$400 + GST

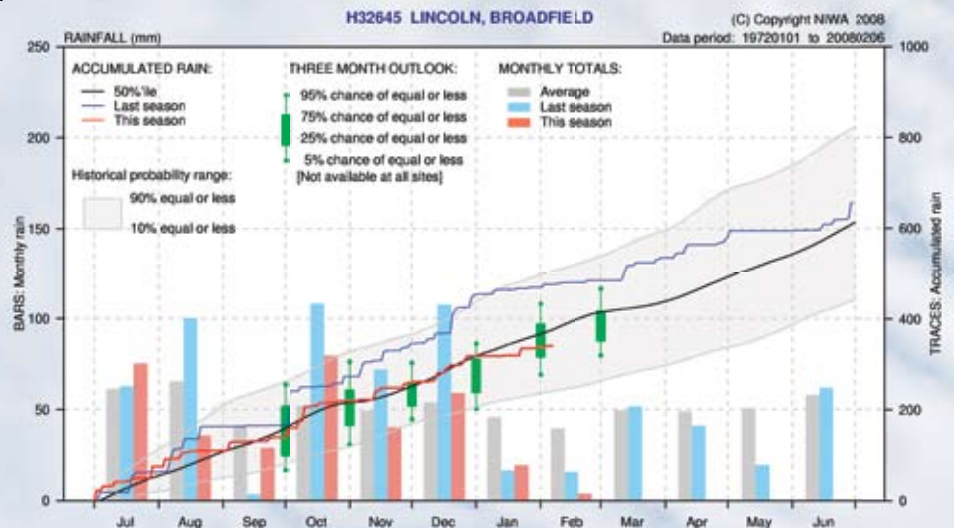
To register for this course please go to:

<http://www.niwa.co.nz/edu/unitech/training#climate>

and use the Registration Form at the bottom of the page.

For further information contact Andrew Tait:

0-4-386 0562, a.tait@niwa.co.nz



Red Tractor Estate vineyard on the Cromwell Wanaka highway.

Cover photo: *Steve LeGal*

The Climate Update is a monthly newsletter from NIWA's National Climate Centre, and is published by NIWA, Private Bag 14901, Wellington. It is also available on the web. Comments and ideas are welcome. Please contact Alan Porteous, Editor
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