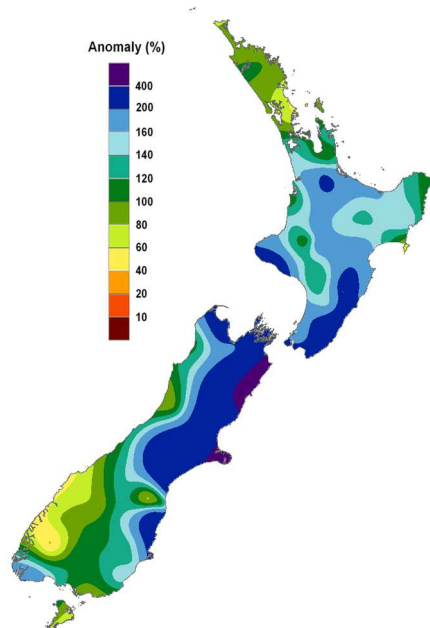


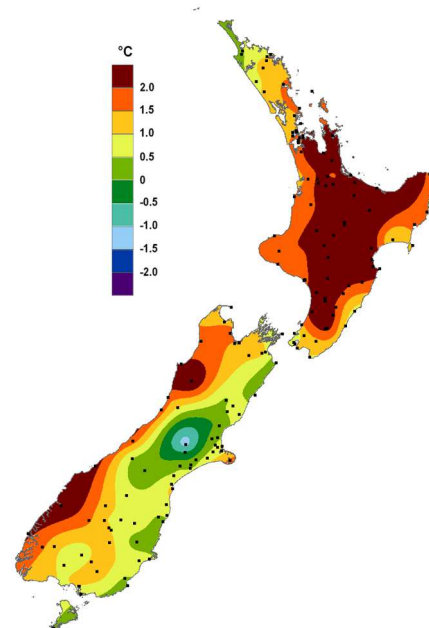
New Zealand Climate Update No 179, May 2014

Current climate – April 2014

April 2014 was characterised by higher pressure than normal to the southeast of New Zealand with lower than normal pressures over the Tasman Sea. This pressure pattern resulted in north-easterly quarter wind flow anomalies for most parts of the country, with the exception of the north of the North Island, where lower pressures in the Tasman resulted in anomalous north-westerly airflows.

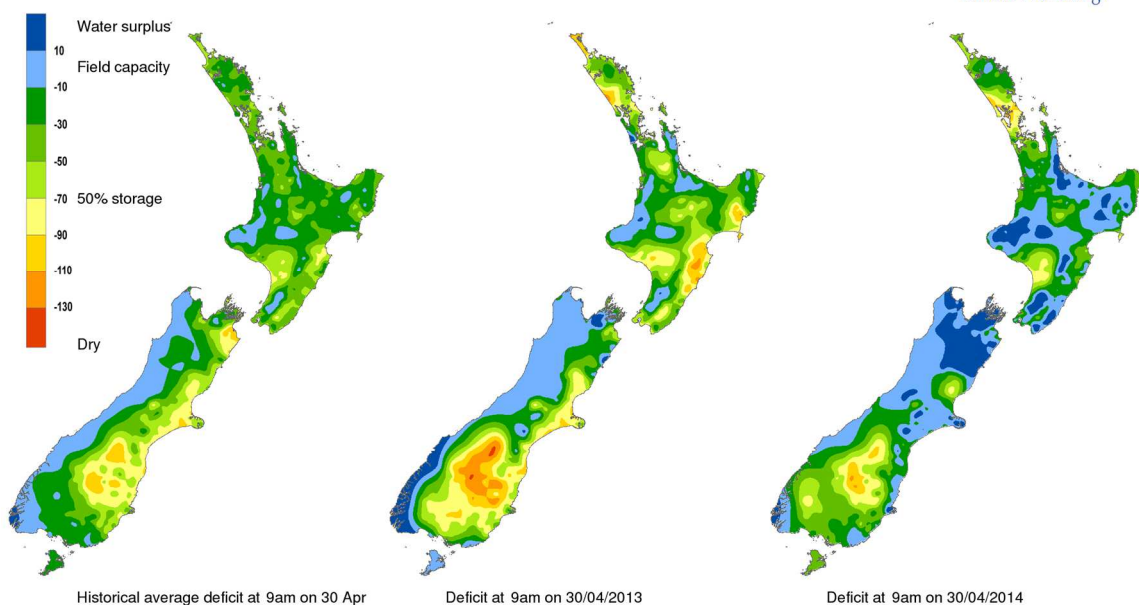


Percentage of normal rainfall, April 2014



Departure from average air temperature for April 2014

Soil moisture deficit (mm) at 9am on 30/04/2014



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

Rainfall

In terms of rainfall, April featured a much welcome change for many areas of New Zealand, chiefly the North Island. Many areas that were in desperate need of rain received above normal (120 to 150% of normal) or much above normal (more than 150% of normal) rainfall for the month. This was echoed for a large part of the South Island, however there the rain was not so welcome for most locations. This is particularly true for parts of the Tasman, Nelson, Canterbury and Marlborough regions where the wet April followed a wet March. For some locations, the rainfall was exceptional compared to normal with three to five times the April normal falling at some of the aforementioned areas.

Air temperature

It was an abnormally warm month for a significant part of the country with much of the North Island experiencing mean temperatures well above average (more than 1.2°C above April average). There were only a handful of locations on the North Island that experienced normal (within 0.5°C of April average) with no locations reporting below average temperatures (0.5 to 1.2°C below April average). The South Island also experienced a warm April. However, while well above average temperatures were common, especially for the west coast of the South Island, they were not as extensive for the island as a whole. Still, outside of that area, above normal or normal temperatures were recorded for much of the South Island. Unlike the North Island, there were a few isolated pockets of below normal mean temperatures observed for the month. The nation-wide average temperature in April 2014 was 14.5°C (1.1°C above the 1971-2000 April average from NIWA's seven station temperature series which begins in 1909).

Sunshine

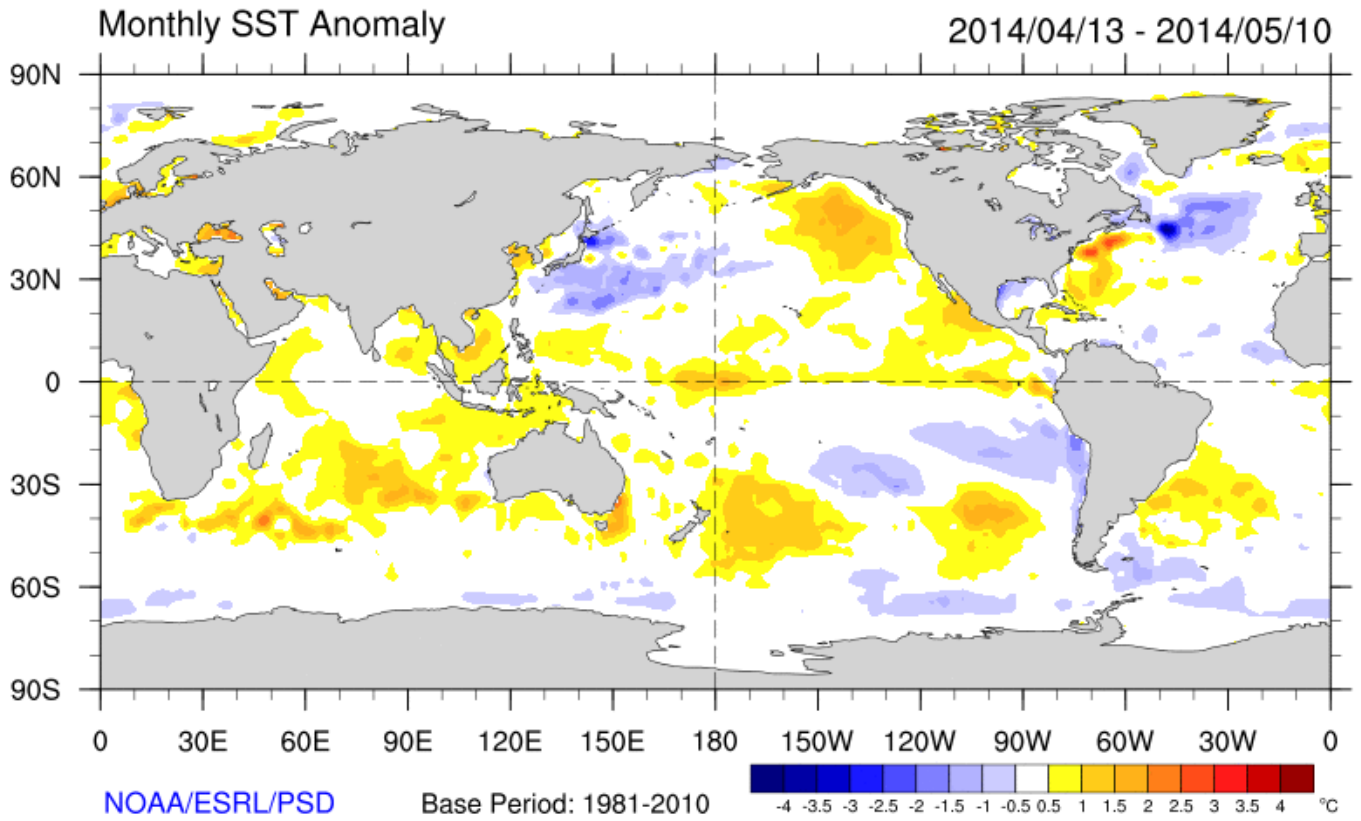
With the abundant April rainfall came a lack of sunshine for much of the country as below normal sunshine (75 to 89% of April normal) to well below sunshine (less than 75% of April normal) was recorded for most of the country. The sunshine was especially absent for the South Island where only the far southern part of the island managed to receive near normal values (within 10% of April normal). Near normal sunshine was also restricted on the North Island and was limited to areas from the Waikato to Northland, with even a few splashes of above normal sunshine in these areas (110 to 124% of April normal).

Global setting

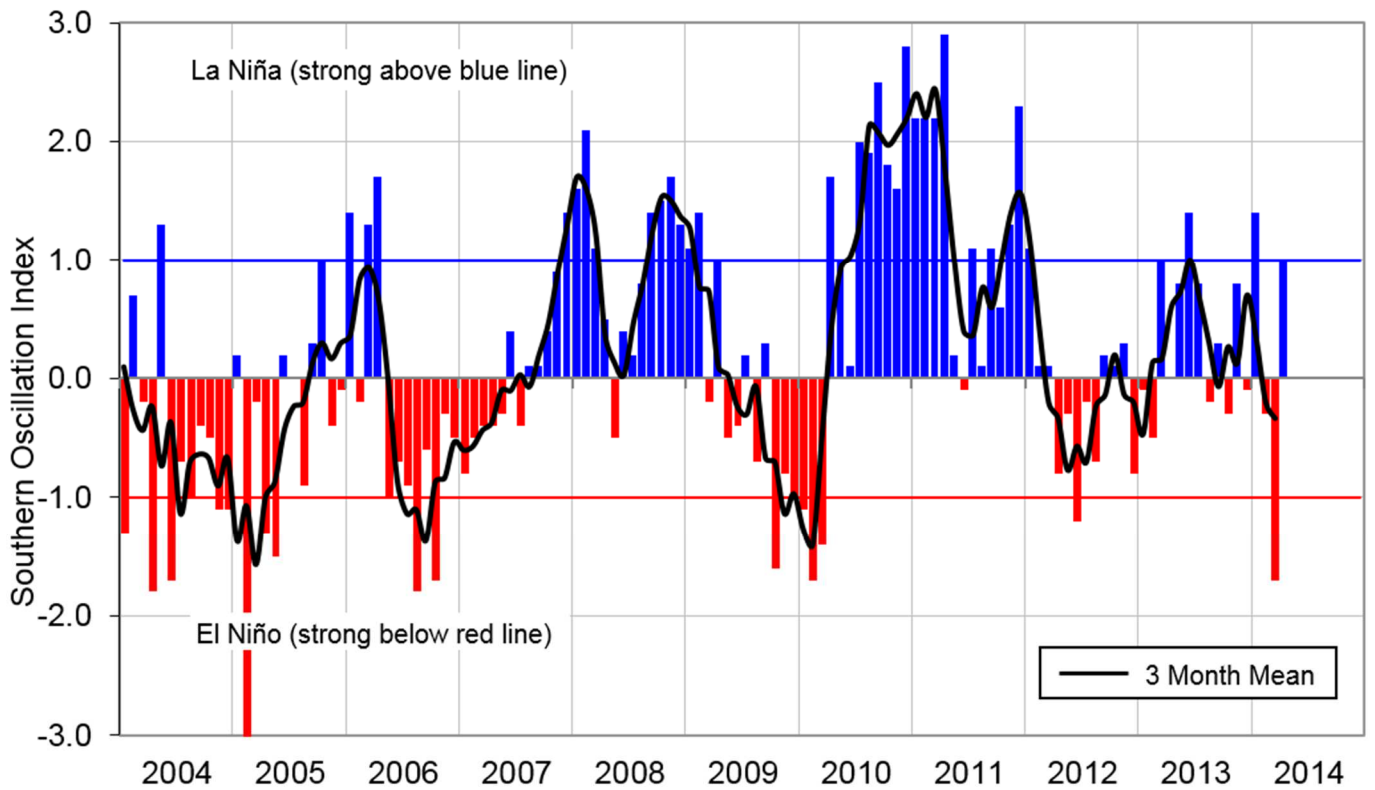
ENSO-neutral conditions (neither El Niño nor La Niña) continued in the equatorial Pacific Ocean in April 2014. However, above normal sea surface temperatures along the equator now cover a significant part of the central and far eastern Pacific; and these warm anomalies are consistent with developing El Niño conditions.

International guidance indicates that ENSO-neutral conditions are the most likely outcome for May-July 2014, although following this period El Niño appears increasingly likely with 11 of the 14 models monitored by NIWA predicting El Niño conditions over August-October 2014.

During May-July 2014, mean sea level pressures are expected to be slightly lower than normal over New Zealand with higher than normal pressures to the south-east and lower than normal pressures to the north of the country. These pressure patterns are expected to be accompanied by mixed wind flows and perturbed conditions from time to time.



Differences from average global sea surface temperatures for 13th of April 2014 to 10th of May 2014. Map courtesy of NOAA Climate Diagnostics Centre (<http://www.cdc.noaa.gov/map/images/sst/sst.anom.month.gif>).



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). SOI mean values: April SOI +1.0; February to April average -0.3.

Outlook – May to July 2014

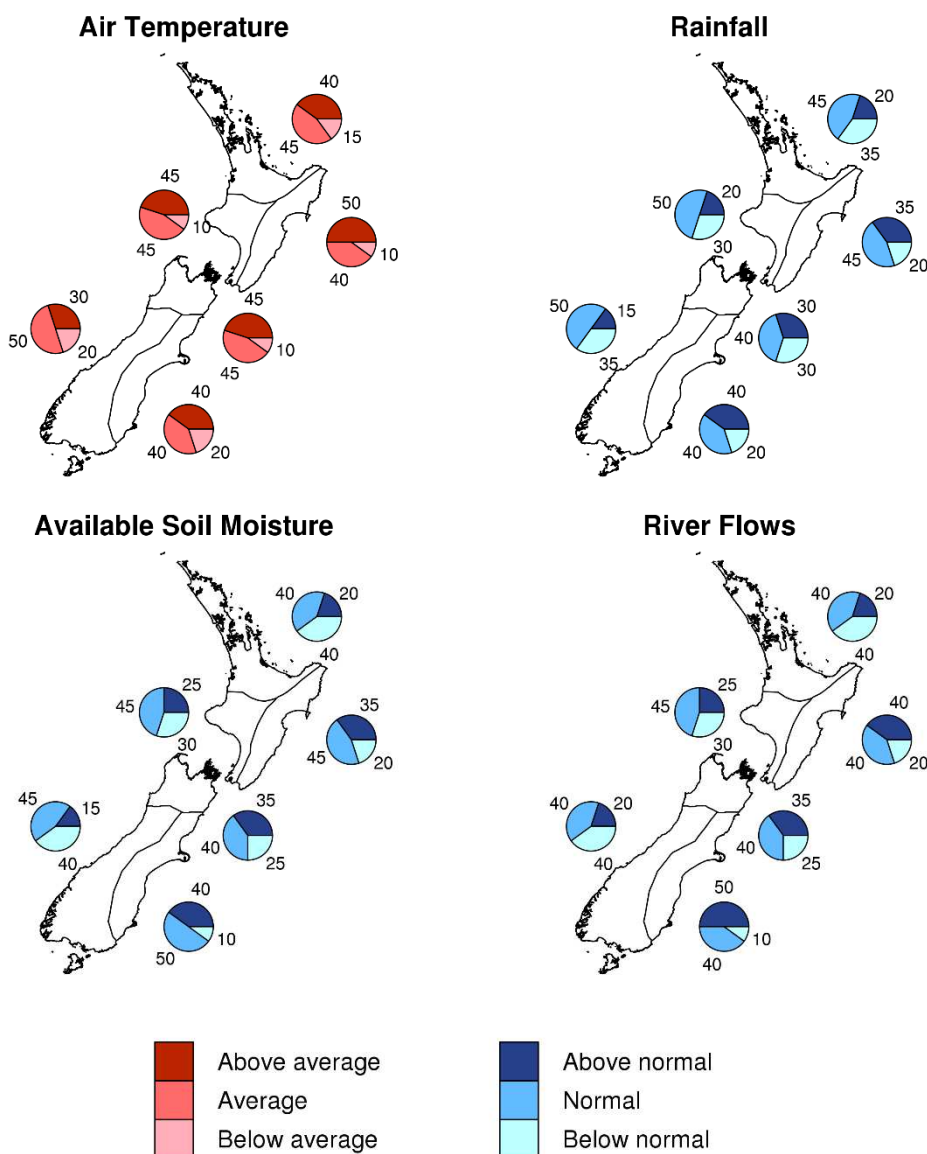
Temperatures are forecast to be average for the west of the South Island, above average for the east of the North Island, and average or above average for all remaining regions of New Zealand. Cold snaps and frosts can still be expected in some parts of the country as autumn advances into winter.

Rainfall is likely to be in the near-normal range for all regions, except the east of the South Island where normal or above normal rainfall is forecast.

Soil moisture levels levels are most likely to be normal or below in the north of the North Island and west of the South Island, normal or above in the north of the South Island and near normal for all remaining regions.

River flows are most likely to be normal or below in the north of the North Island and west of the South Island, normal or above normal in the east of the North Island and the north of the South Island, above normal in the east of the South Island, and near normal in the west of the North Island.

Outlook for May - July 2014



Graphical representation of the regional probabilities, Seasonal Climate Outlook, May - July 2014.

The climate we predicted (February to April) and what happened

Predicted rainfall: Rainfall totals are equally likely (40% chance) to be normal or above normal in the north of the North Island, equally likely (40% chance) to be normal or below normal in the north and west of the South Island, and most likely (40-50%) to be near normal for all remaining regions.

Outcome: Actual rainfall for the forecast period was less than expected across most regions of the North Island, with rainfall totals reaching less than 60% of normal in parts of Ruapehu, the Waitomo and New Plymouth as well as the Kaipara, Rodney and the extreme North of Gisborne. On the other hand, above normal rainfall (> 120% of normal) was recorded in the southeast of the North Island (South Wairarapa, Carterton and Masterton). In the South Island, rainfall was below normal in the southwest of the South Island (less than 80 % than normal), however the north and east of the South Island experienced mostly above normal rainfall, with totals exceeding two times the normal for Christchurch and the Banks Peninsula as well as the coastal regions of Hurunui and the Kaikoura

Predicted air temperature: Temperatures are equally likely (40% chance) to be average or above average for all North Island regions, equally likely (40% chance) to be average or below average in the west of the South Island, and most likely (50% chance) to be near average in other South Island regions.

Outcome: Actual temperatures for the forecast period were above average (anomalies above 0.5°C) for most parts of the North Island, although isolated pockets of normal temperatures were recorded in the Far North as well as the coastal regions of Gisborne, Wairoa, Central Hawkes Bay and Tararua. In the South Island, warmer than normal temperatures were recorded in the southwest region as well as Buller, where well above normal temperatures (over 1.0°C above normal) were recorded locally. The north and east the South Island experienced mostly average temperatures (anomalies in the range -0.5°C to +0.5°C).

For more information about NIWA's climate work, visit:

www.niwa.co.nz/our-science/climate