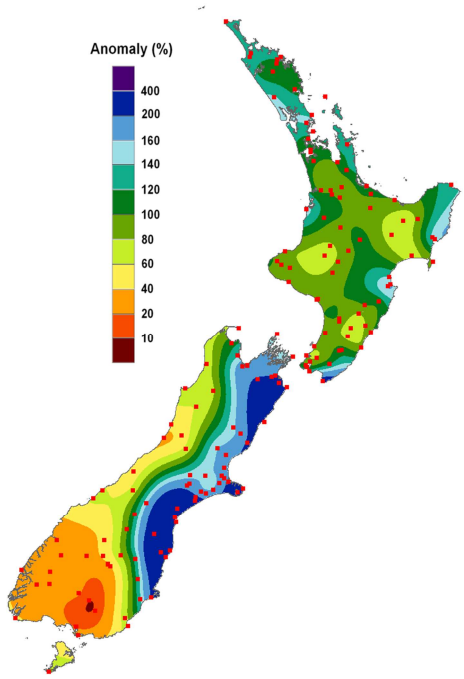
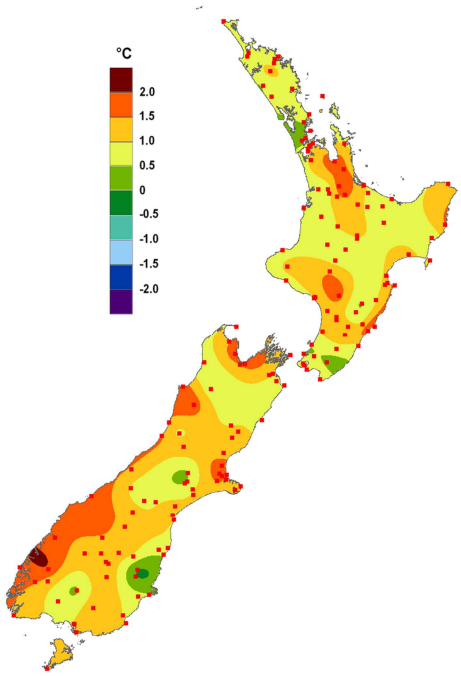
New Zealand Climate Update No 159, September 2012

Current climate – August 2012

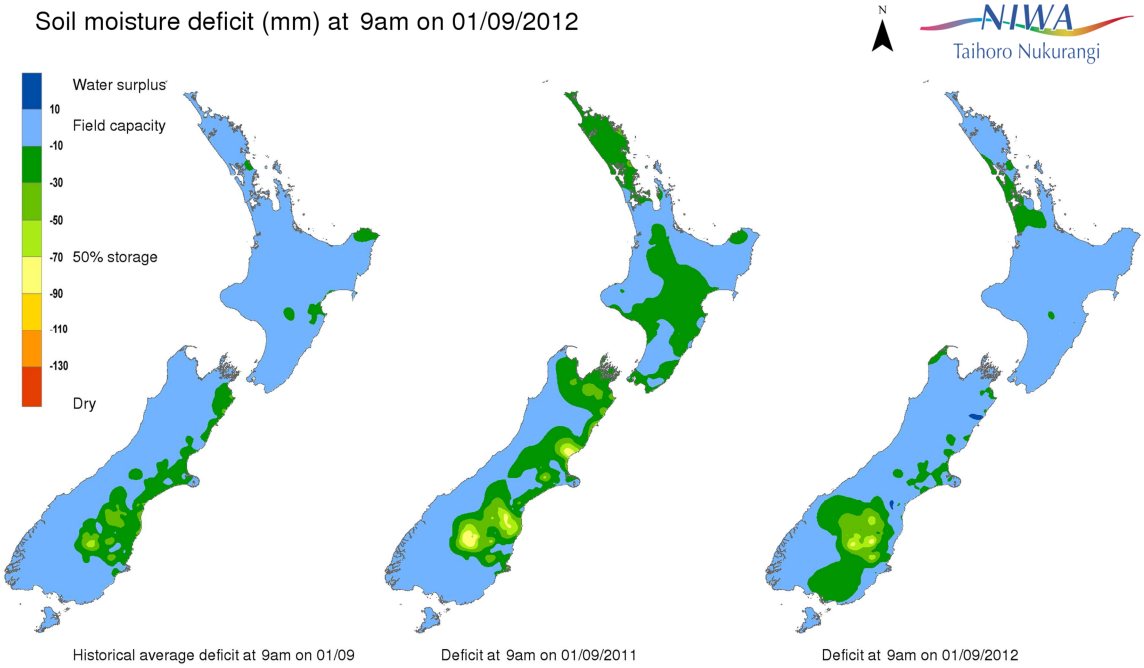
August 2012 was dominated by more northeast winds than normal over New Zealand, squeezed between higher than normal pressures southeast of the country, and lower pressures than usual over the mid Tasman Sea. The northeasterly winds also produced a very large contrast in rainfall across the Southern Alps.



Percentage of normal rainfall, August 2012



Departure from average air temperature for August 2012



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

Rainfall

It was an extremely wet August (with more than 200 percent of August normal rainfall recorded) in the north and east of the South Island, namely Nelson, Marlborough, Canterbury and north Otago. Some areas received treble (300 percent of) August normal rainfall, such as in Timaru, which recorded its third wettest August since 1881. In contrast, it was very dry over the west and south of the South Island (with less than 50 percent of August normal rainfall south of Westport), showing the effects of prevailing northeasterly winds. Record low or near-record low August rainfall was seen across Southland.

For the north and east of the North Island, it was a rather wet August. Above normal rainfall was experienced in Northland, Auckland, Coromandel, Gisborne, and parts of the Bay of Plenty, Hawkes Bay and the Wairarapa. Elsewhere in the North Island (and for the Buller region of the South Island), near normal rainfall was generally recorded.

Air temperature

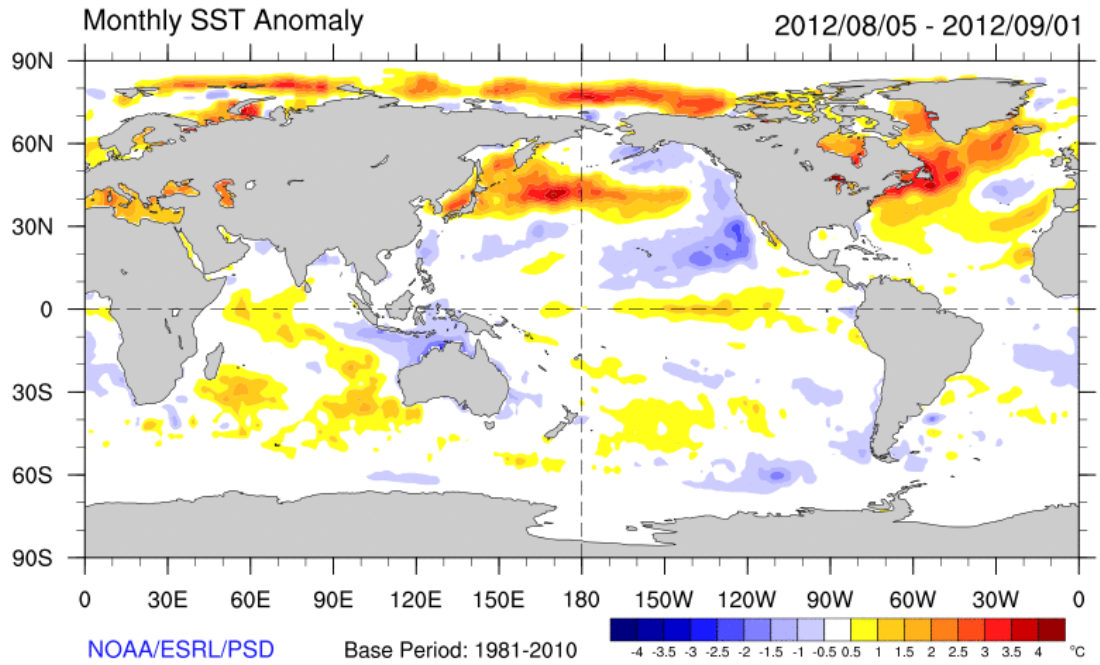
The frequent northeast winds during the month produced an unusually mild August. Well above average temperatures were observed in Nelson/Marlborough, along the West Coast of the South Island, in Southland and in Central Otago, around Christchurch, Timaru, and Oamaru, in parts of Hawkes Bay, in the Firth of Thames, and between Ohakune to Palmerston North. It was the warmest August on record for Leigh, Ohakune, Westport, Haast, Milford Sound, Nelson, and Secretary Island. Elsewhere, temperatures were typically above average, too. The nation-wide average temperature in August 2012 was 9.9°C (1.2°C above the 1971-2000 August average), using NIWA's seven-station temperature series which begins in 1909.

Sunshine

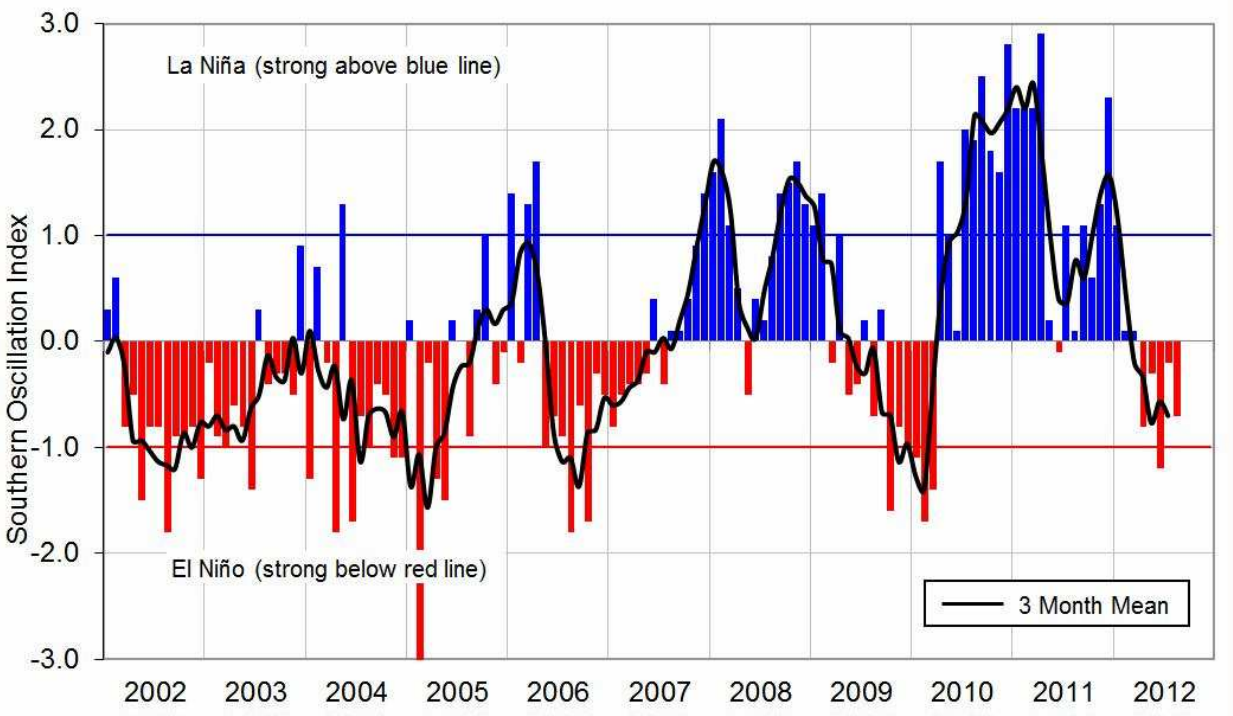
It was a very sunny August for the south and west of the South Island, reflecting the high frequency of northeasterly winds during the month. It was the sunniest August on record for Queenstown, and the second-sunniest August on record for Balclutha. It was also a sunnier than usual August for the western North Island between Auckland and Taumarunui. In contrast, it was a rather dull August between Taranaki and Wellington, for Nelson and Marlborough, and the eastern South Island. It was the cloudiest August on record at Takaka. Elsewhere, sunshine totals were generally near normal.

Global setting

Borderline El Niño conditions are present in the tropical Pacific, and a weak short-lived El Niño is predicted for the spring and summer periods. However, the seasonal forecast models do not yet show any sign of the enhanced southwesterly and westerly airflow over New Zealand that is usually associated with El Niño events.



Differences from average global sea surface temperatures for 5th August to 1st September 2012. Map courtesy of NOAA Climate Diagnostics Centre (http://www.cdc.noaa.gov/map/images/sst/sst.anom.month.gif).



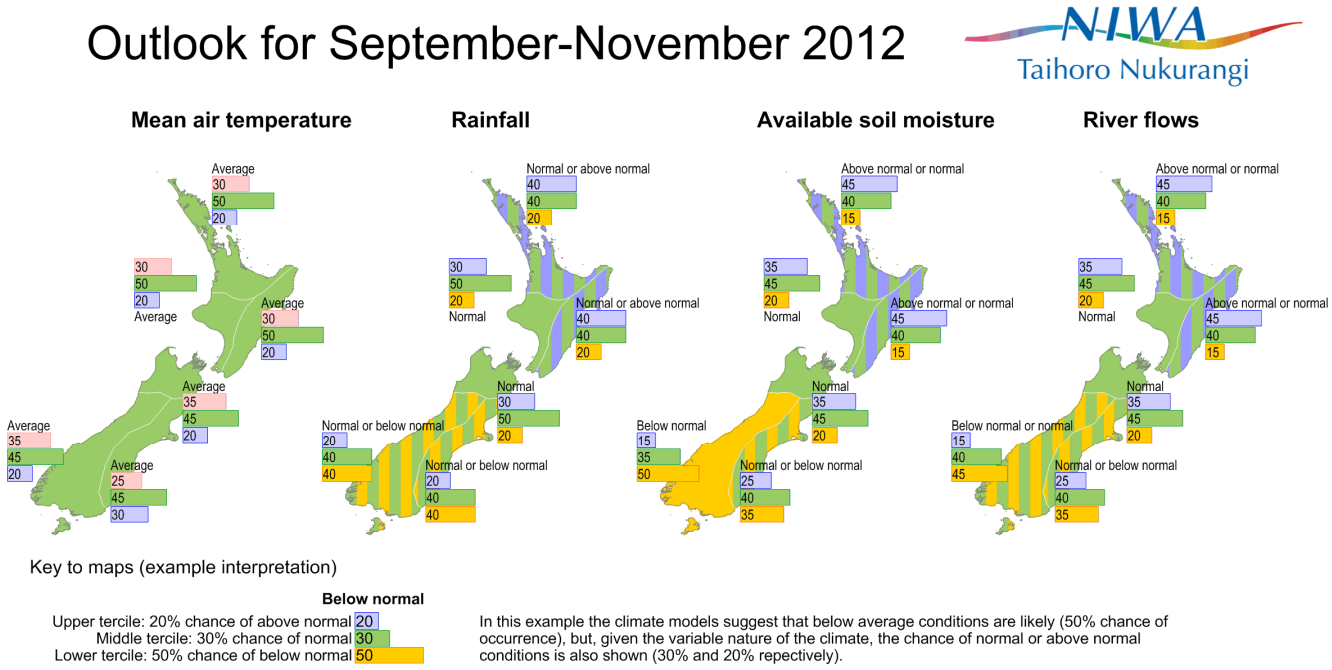
Monthly values of the Southern Oscillation Index (SOI), a measure of changes in atmospheric pressures across the Pacific, and the 3-month mean (black line). SOI mean values: August SOI -0.7; June to August average -0.7.

Outlook September to November 2012

Sea temperatures around New Zealand are likely to be near normal for the season as a whole.

Temperatures are likely to be near average in all regions.

Seasonal rainfall, soil moisture and river flows are likely to be above normal or near normal in the north and east of the North Island, near normal in the west of the North Island and in Nelson-Marlborough, and near or below normal in remaining South Island regions.



The climate we predicted (June to August) and what happened

Predicted rainfall: Rainfall totals are likely to be below normal in the eastern South Island, normal or below normal for Nelson/Marlborough, as well as the west and north of the North Island. Near normal winter rainfall totals are predicted for the South Island West Coast, and the eastern North Island.
Outcome: For the South Island above normal rainfall fell in Nelson, Marlborough, Canterbury and eastern Otago while normal to below normal rainfall was recorded for the West Coast and Southland, due to the frequent northeasterly events. For the North Island above normal rainfall fell in south Auckland, north Waikato, the Western Bay of Plenty and southern Hawkes Bay while below normal rainfall was recorded for parts of the Waikato, Taranaki, Manawatu and northern Hawkes Bay. Near normal rainfall observations were recorded elsewhere.

Predicted air temperature: Temperatures are likely to be near average overall for all regions of the country.
Outcome: Temperatures were above average for almost all coastal areas around the South Island. Parts of Manawatu, Taranaki, northern Hawkes Bay, western Bay of Plenty, south Auckland and Northland also recorded above average temperatures. Below average temperatures were observed over parts of south Hawkes Bay and northern Wairarapa. Near average temperatures were recorded elsewhere.

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

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