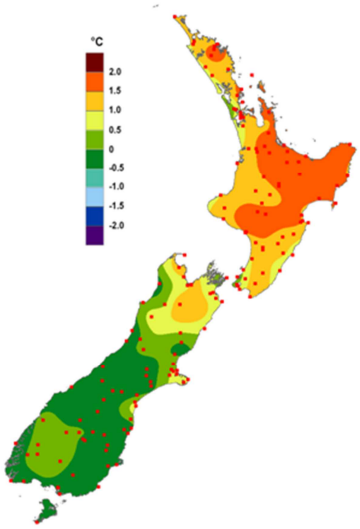
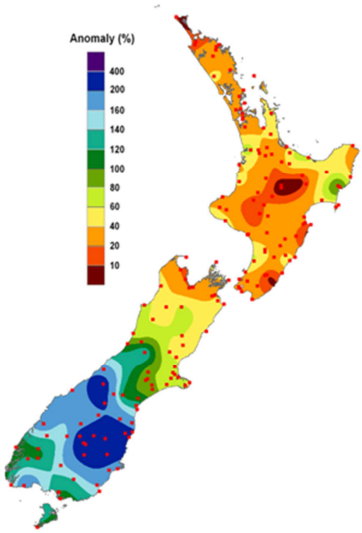
New Zealand Climate Update No 141, March 2011

Current climate – February 2011

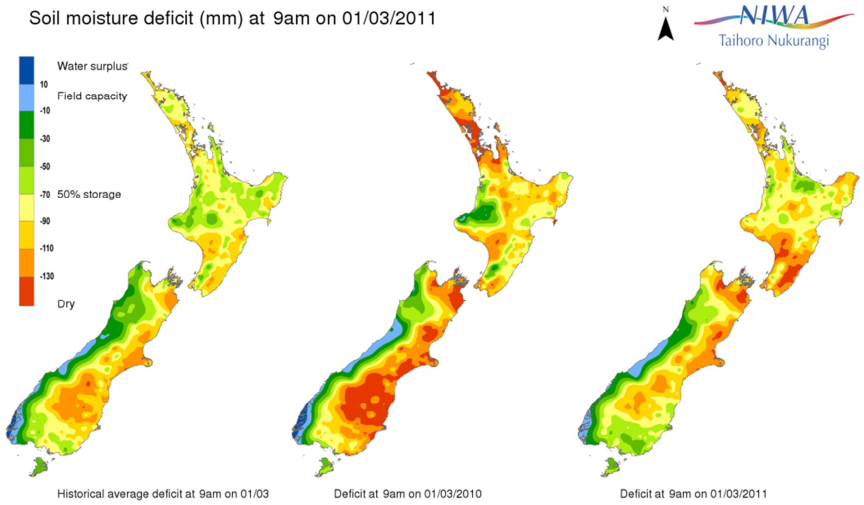
Weather conditions were generally settled over the North Island during February 2011, with more northwest winds than usual over the South Island. It was an extremely dry February for parts of Northland and Auckland, the Central Plateau, parts of southern Hawkes Bay and the Wairarapa, and parts of Marlborough, with rainfalls less than 20 percent of February normal in these regions.



Percentage of normal rainfall, February 2011



Departure from average air temperature for February 2011.



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

Rainfall

Rainfall was well below normal (less than 50 percent of February normal) across much of the North Island, as well as in Nelson. In contrast, it was a record wet month for Central Otago, with more than double normal February rainfall. Elsewhere over the southern half of the South Island, rainfall was also above normal (between 120 and 150 percent of normal). At the end of February, significant soil moisture deficits (deficit more than 110 mm) were evident in southern Taranaki, Manawatu, Kapiti Coast, Wellington, Wairarapa, Nelson, Marlborough and North Canterbury.

Air temperature

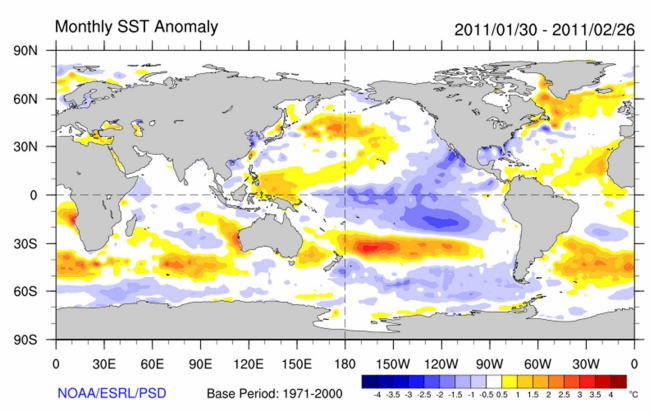
Monthly mean temperatures were well above average (more than 1.2°C above average) across the North Island and in parts of Nelson and Marlborough. In contrast, monthly mean temperatures were close to February average (within 0.5°C of average) for the remainder of the South Island. The first half of February was scorching warm, with record-breaking heat experienced between 2 and 7 February at numerous locations over the entire length of the country – but cooler conditions prevailed in the second half of the month. Timaru recorded 41.3°C on the 6th, a new February and also all-time temperature record there since records began in 1885. The New Zealand national average temperature was 17.9°C (0.7°C above the 1971–2000 February average).

Sunshine

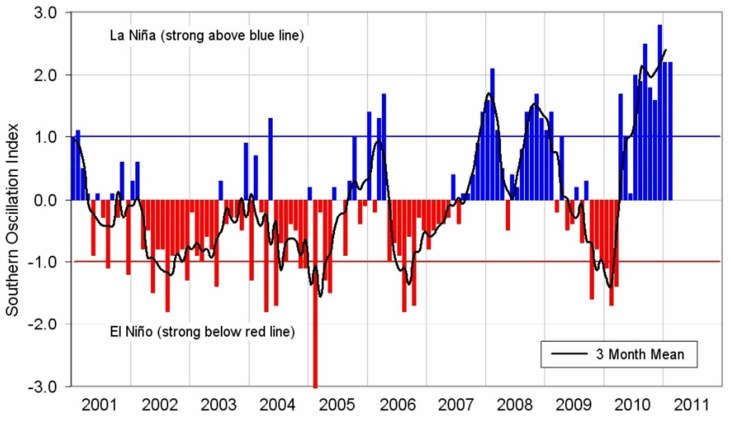
February sunshine totals were above normal (between 110 and 125 percent of February normal) in Northland and over the northern half of the South Island. In contrast, below normal sunshine totals (between 75 and 90 percent of February normal) were experienced over the southern half of the South Island. Elsewhere, sunshine totals in February were close to normal.

Global setting

The strong La Niña event continues in the tropical Pacific, but is showing signs of easing. Neutral conditions are likely in the tropical Pacific by winter. During March-May, mean sea level pressures are likely to be below normal to the north of New Zealand and above normal to the east and south of the country, with weaker westerlies across New Zealand.



Differences from average global sea surface temperatures for 30th January to 26th February 2011. 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: February SOI +2.2; December to February average +2.4.

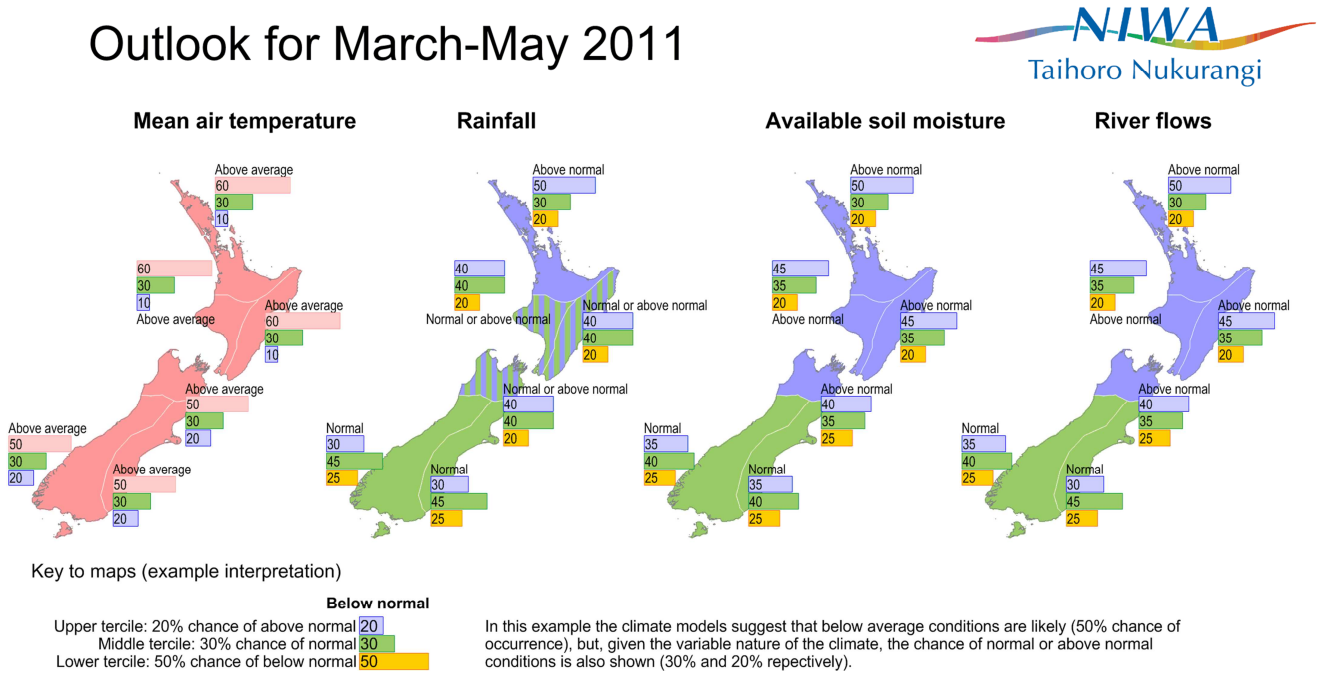
Outlook March to May 2011

Temperatures are likely or very likely to be above average in all regions.

Seasonal rainfall is likely to be above normal in the northern North Island, normal or above normal in the remainder of the North Island and the northern South Island, and near normal elsewhere.

Soil moisture levels and river flows are likely to be above normal in the North Island and the north of the South Island, and are likely to be near normal in the rest of the South Island.

Tropical cyclone activity is likely to be near- or above-normal for the rest of this season (through to May).



The climate we predicted (December 2010 to February 2011) and what happened

Predicted rainfall: Seasonal rainfall is likely to be below normal in the western South Island, normal or below normal in the north of the South Island, normal or above normal in the north and east of the North Island, and normal elsewhere.

Outcome: Rainfall totals were above normal for western, central and northern parts of the North Island. Normal rainfall totals were recorded in Manuwatu, East Cape, southern Hawkes Bay and the Wellington Region. In the South Island parts of Marlborough, Tasman, central and southern West Coast, south Canterbury, Otago and Southland recorded above normal rainfall totals. Westport, Buller, North Canterbury, parts of South Canterbury, southwest Southland and Stewart Island recorded normal or below normal rainfall.

Predicted air temperature: On average for summer (December-February), temperatures are likely to be near or above average in all districts.

Outcome: Temperatures were above average for the majority of the North Island, the top of the South Island, coastal Canterbury, parts of Otago, western Southland and Stewart Island. Normal temperatures were recorded elsewhere.

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

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