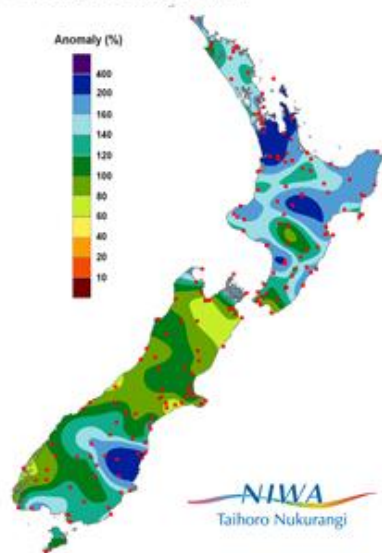


New Zealand Climate Update No 142, April 2011

Current climate – March 2011

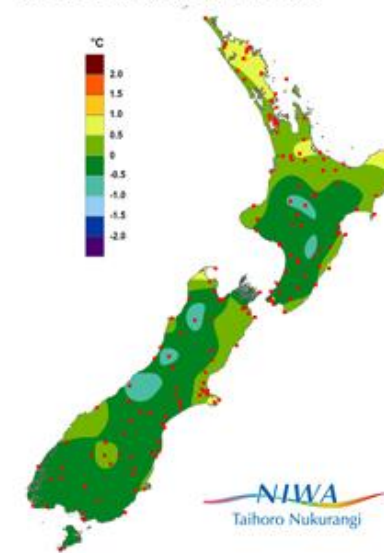
Overall in March 2011, anticyclones ('highs') dominated to the east of New Zealand, bringing more northeasterly winds than normal to the country. The first week of the month was unsettled, as were the periods March 21–22 and 26–27. This resulted in high rainfall totals overall across the North Island, as well as for the Marlborough Sounds, coastal Southland, and most of Otago. But autumnal anticyclones brought dry, settled weather to many areas for the remainder of the month.

Percentage of average rainfall



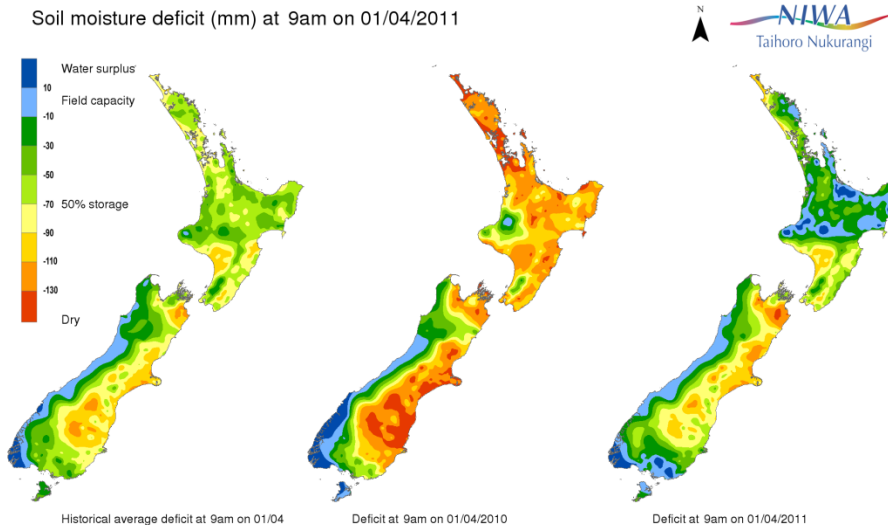
Percentage of normal rainfall, March 2011

Departure from average air temperature



Departure from average air temperature for March 2011.

Soil moisture deficit (mm) at 9am on 01/04/2011



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

Rainfall

March rainfall totals were well above normal (more than 150 percent of normal) across almost all of the North Island, as well as in the Marlborough Sounds, coastal Southland and much of Otago. Rainfall totals were generally near normal elsewhere in the South Island, except in Marlborough (where totals ranged between 60 and 80 percent of March normal). At the end of March, significant soil moisture deficit (deficit more than 110 mm) remained in the Tasman District, Marlborough and parts of Canterbury.

Air temperature

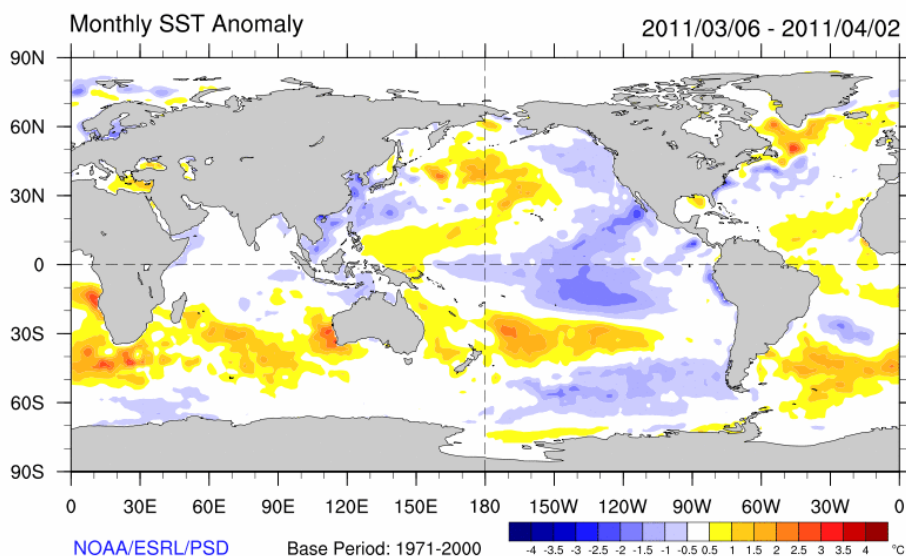
Monthly mean temperatures were above average (between 0.5°C and 1.2°C above March average) in eastern coastal areas between North Cape and East Cape. But for the vast majority of New Zealand, March temperatures were near average (within 0.5°C of March average), reflecting the contrast between prevailing northeast winds bringing generally warm air onto the country and an extremely cold southerly outbreak which affected much of New Zealand on 6 March. Small pockets of below average temperatures (between 0.5°C and 1.2°C below March average) were experienced around the Central Plateau, as well as in alpine areas of Westland. The New Zealand national average temperature was 15.8°C (equal to the 1971–2000 March average).

Sunshine

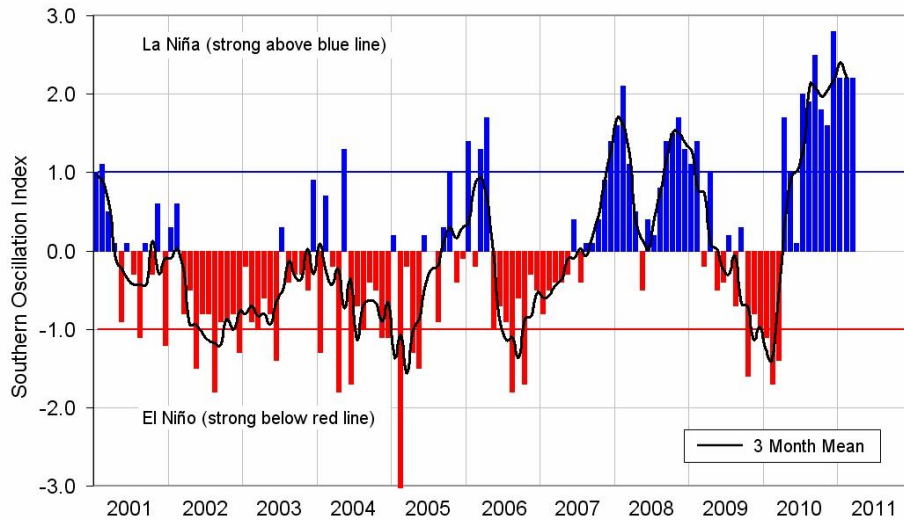
March sunshine totals were well above normal on the west coast of the South Island (more than 125 percent of March normal). It was the sunniest March on record for Greymouth. Auckland, the Bay of Plenty, Central Plateau, Hawkes Bay, Kapiti Coast and Wellington, Southland and Canterbury were also sunny, with totals between 110 and 124 percent of normal. In contrast, Northland and North Otago had less than 90 percent of normal March sunshine. Elsewhere, March sunshine was 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 6th March to 2nd April 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: SOI mean values: March SOI +2.2; January to March average +2.2.

Outlook April to June 2011

Temperatures are likely to be average or above average in the east of the South Island, and above average in all other regions.

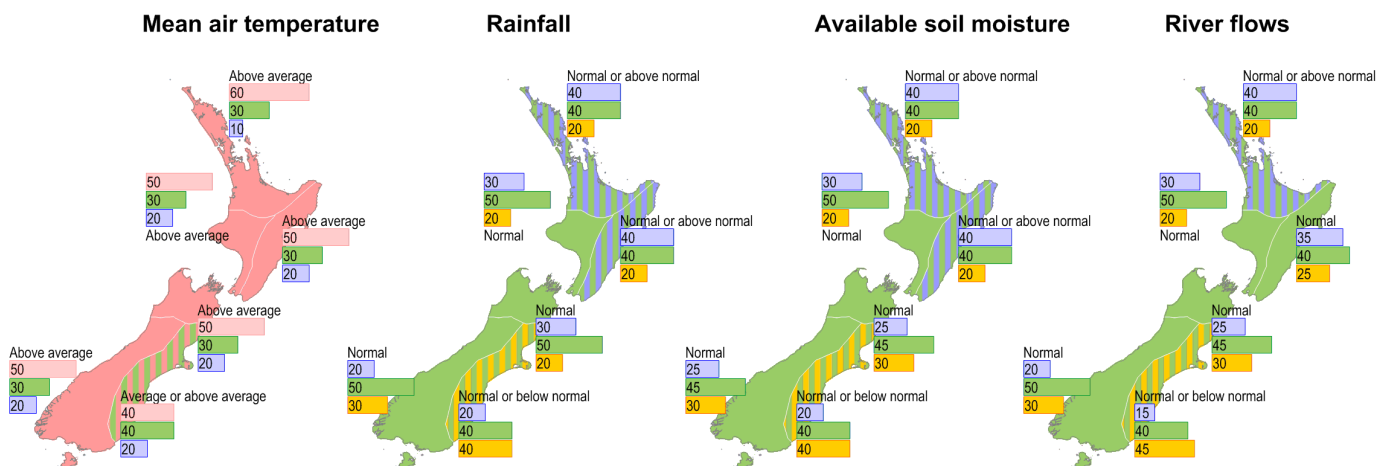
Seasonal rainfall is likely to be normal or above normal in the north and east of the North Island, normal or below normal in the east of the South Island, and near normal elsewhere.

Soil moisture levels are likely to be normal or above normal in the north and east of the North Island, normal or below normal in the east of the South Island, and near normal elsewhere.

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

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

Outlook for April-June 2011



Key to maps (example interpretation)

Below normal
 Upper tercile: 20% chance of above normal 20
 Middle tercile: 30% chance of normal 30
 Lower tercile: 50% chance of below normal 50

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

The climate we predicted (January to March 2011) and what happened

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

Outcome: The majority of the North Island received above normal rainfall apart from areas west of Auckland, southern Hawkes Bay, parts of the Wairarapa, the Wellington region and central Manawatu where normal rainfall was recorded. The north of the South Island, including parts of the Tasman, Marlborough, Buller and Kaikoura Districts, received below normal rainfall. South Otago, much of the Westcoast, the South Canterbury coast and parts of eastern Southland receive above normal rainfall. All other areas of the South Island received normal rainfall.

Predicted air temperature: Temperatures are very likely to be above average for the time of year for most districts of the country, apart from eastern districts of both islands where average or above average temperatures are likely.

Outcome: The majority of the North Island experienced above average temperatures apart from areas northwest of Auckland, parts of central Waikato, southern Hawkes Bay, the Wairarapa and parts of the Wellington region where normal temperatures were experienced. The majority of the South Island experienced near normal temperatures apart from parts of the Tasman, Marlborough, Buller and Kaikoura Districts where above average temperatures were recorded.

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

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