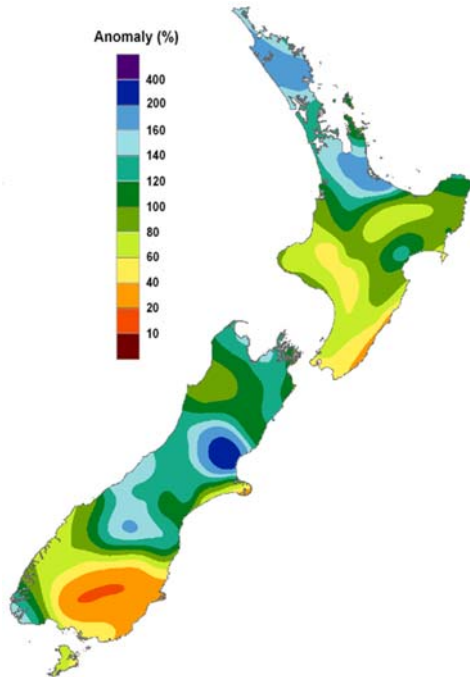


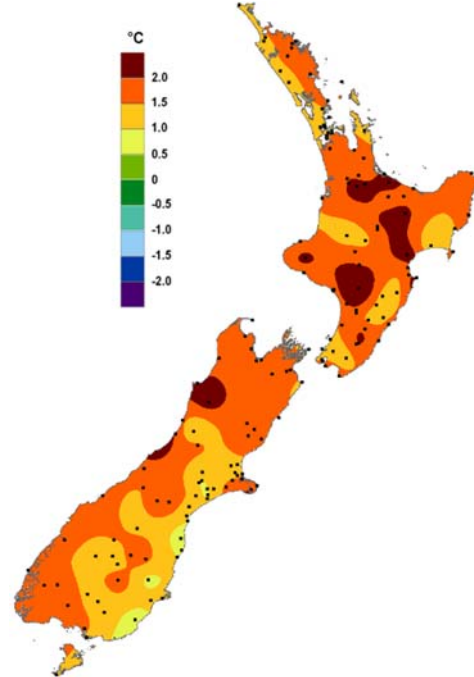
## New Zealand Climate Update No 181, July 2014

### Current climate – June 2014

June 2014 was characterised by higher than normal mean sea level pressure (MSLP) values from New Zealand, and in particular, points east and southeast of the country to the Dateline. Meanwhile, lower than normal MSLP were present to the west and southwest of New Zealand.

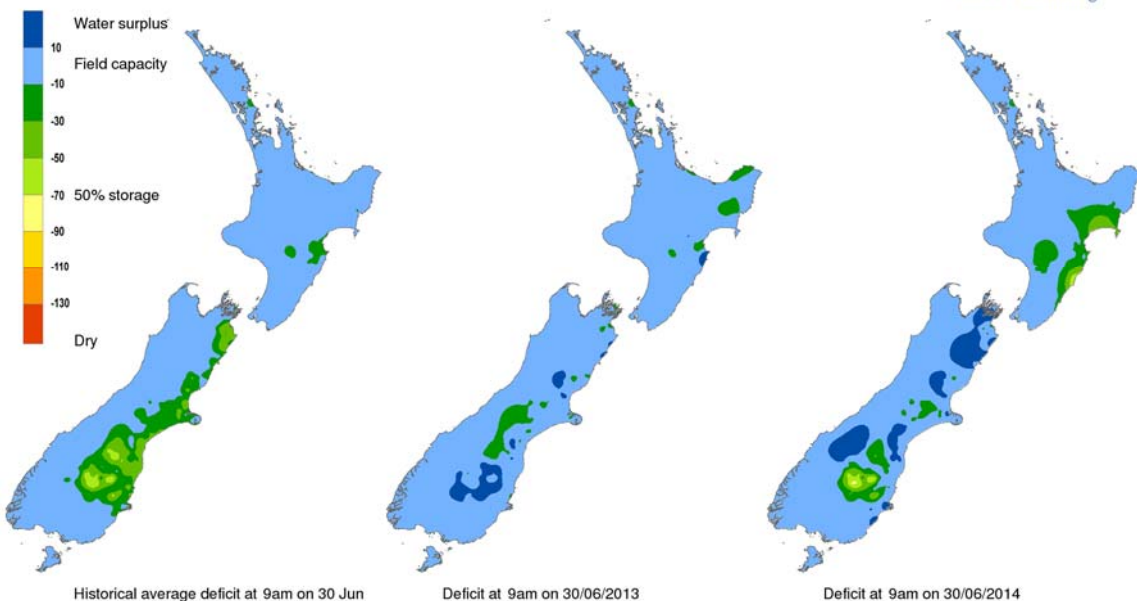


Percentage of normal rainfall, June 2014



Departure from average air temperature for June 2014

Soil moisture deficit (mm) at 9am on 30/06/2014



Historical average deficit at 9am on 30 Jun

Deficit at 9am on 30/06/2013

Deficit at 9am on 30/06/2014

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

## Rainfall

Early winter rain was above normal (120-149% of June normal) to well above normal (150% or greater of the June normal) for most of the Northland, Auckland, Waikato and coastal Bay of Plenty regions. Conversely, below (50-79% of June normal) to well below normal rainfall (less than 50% of June normal) for much of the Taranaki, interior Bay of Plenty, and south coastal Hawke's Bay as well as much of the Manawatu-Wanganui regions. South Island rainfall was just as wide ranging with parts of eastern Canterbury, coastal Marlborough and Nelson regions receiving above or well above normal rainfall for June. Meanwhile, below or well below rainfall was recorded in a good part of the Otago and Southland regions. Most other locations in New Zealand received near normal June rainfall (within 20% of normal).

## Air temperature

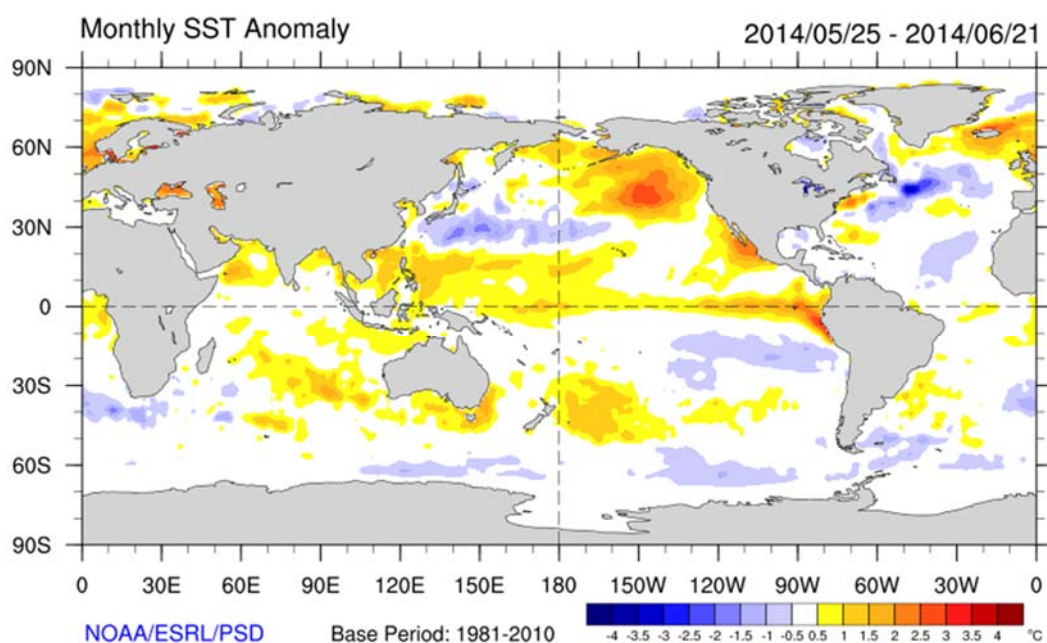
It was an exceptionally warm start to winter in terms of both intensity and coverage with just about all of New Zealand, from the top of the North Island to the bottom of the South Island, reporting above normal (0.51-1.20°C above average) to well above normal (more than 1.20°C above average) temperatures for June. In fact, dozens of climate stations placed in the top four for warmest June ever recorded, with New Zealand's Seven Station Series recording the warmest June on record of 10.3°C.

## Sunshine

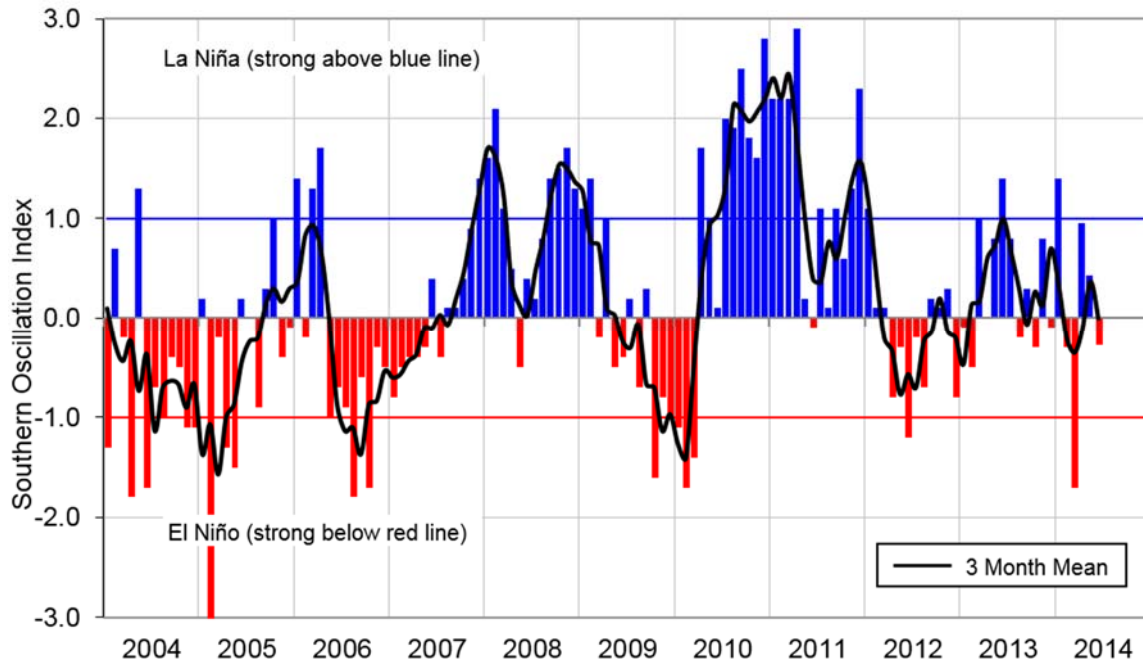
Near normal (within 10% of June normal) or above normal (110-125% of June normal) June sunshine hours were recorded for most parts of the North Island. There were even few locations that experienced well above average sunshine for the month (more than 125% of June normal), mostly in the Manawatu-Wanganui region. Sunshine for the South Island was, on average, comparatively less plentiful. Much of the island experienced near normal (within 10% of June normal) or below normal sunshine (75-89% of June normal), with well below normal sunshine recorded in Nelson (less than 75% of June normal). However, nestled within that zone was Cheviot in northern Canterbury, which received well above normal sunshine for June. Well above normal sunshine was also experienced in Queenstown.

## Global setting

While above normal sea surface temperatures across the Tropical Pacific Ocean have crossed El Niño thresholds, most atmospheric indicators (e.g. sea level pressure, convection, trade winds) have remained at neutral levels, indicating that El Niño conditions have not yet become fully established.



Differences from average global sea surface temperatures for 8th of June 2014 to 5th of July 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: June SOI -0.3; April to June average +0.4.

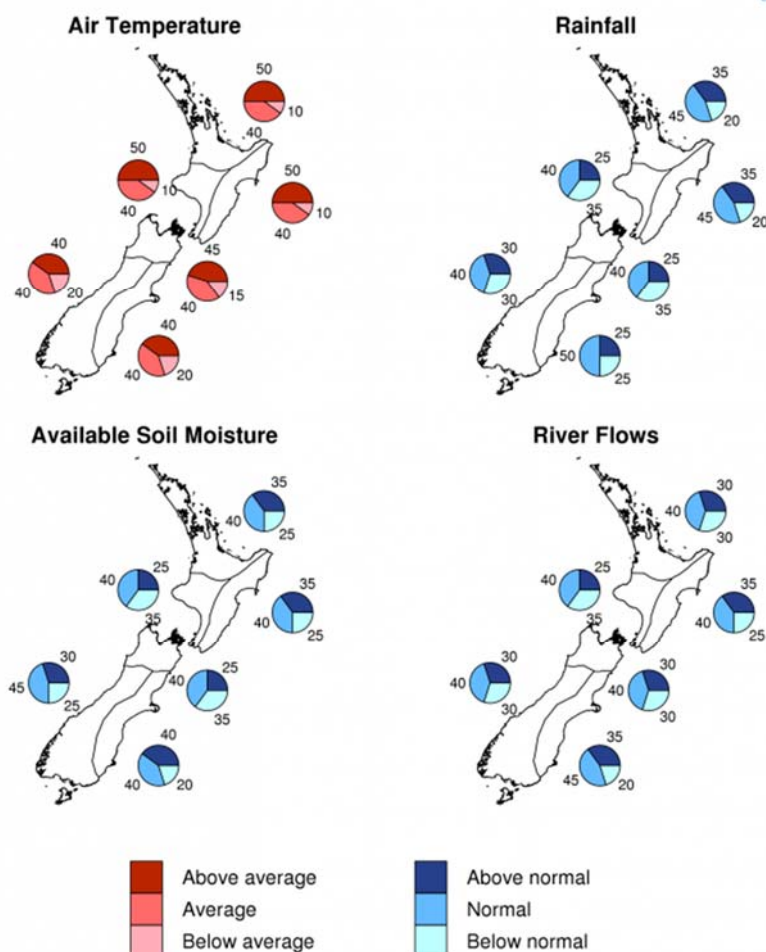
## Outlook – July to September 2014

**Temperatures** are forecast to be above average for all regions across the North Island, and average or above average for all regions across the South Island.

**Rainfall** is likely to be normal or below normal for the west of the North Island and the north of the South Island. Near-normal rainfall is expected for all other regions.

**Soil moisture levels** are about equally likely to be normal or above normal in the north and east of the North Island and the east of the South Island, and near normal in the west of the South Island. Normal or below normal soil moistures are expected in the west of the North Island and the north of the South Island.

**River flows** are likely to be near normal or above normal in east of the North Island, and near normal or below normal in west of the North Island. For all remaining regions, river flows are likely to be in the near normal range.



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

## The climate we predicted (April to June) and what happened

**Predicted rainfall:** Rainfall totals are equally likely (40% chance) to be normal or below normal in the southwest of the North Island and the north of the South Island, likely (35-40% chance) to be normal or below normal in the north of the North Island and the west of the South Island, and most likely (40%) to be near normal for the remaining regions.

**Outcome:** For the North Island near normal rainfall was recorded for many regions. Above average rainfall was recorded in northern Waikato, coastal Taranaki, Kapiti and Masterton. In the South Island, near normal rainfall was recorded in Buller, coastal Southland and the south-eastern portion of the Otago region. Rainfall was above normal for the remainder of the South Island with anomalies in excess of 160% in eastern Nelson-Marlborough, Canterbury and south Westland regions.

**Predicted air temperature:** Temperatures are likely (35-40% chance) to be average or below average for the north and west of both Islands, while near average temperatures are most likely (40-45%) for the eastern regions of both islands. Cold snaps and frosts can be expected in many parts of the country as autumn progresses.

**Outcome:** Actual temperatures for the forecast period were above average for the majority of New Zealand with parts of the central North Island, Hauraki, Buller and southern Westland recording anomalies in excess of 1.5°C. The western Far North, Selwyn and inland northern Otago were the only districts to record average temperatures

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

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