

# Monthly Environmental Report

Environmental Science Report



## October 2025

October brought a welcome change from the recent below normal rainfall conditions, with regional rainfall finishing in the normal range (103% of average). While the Ruahine Ranges received significantly above average rainfall (146%), most other regions recorded rainfall within the normal range (within 20% of average October rainfall). This is a significant and needed shift from the deficits recorded in August and September. A high number of lightning strikes were also recorded in the north of the region early in the month - typical of Spring.

However, despite this recent rain, the region's hydrology is still showing the strain of the prolonged dry spell. River flows (64% of normal) and soil moisture levels both remain well below average. Groundwater conditions also continue to be of particular concern in the Heretaunga and Ruataniwha Plains, with a vast number of monitoring sites recording below-normal or lowest-ever conditions. On the temperature front, October was warmer than usual, with daytime temperatures more than 2 °C above average and night-time temperatures around 1 °C above average across much of the region. Air quality remained good, with no exceedances of PM<sub>10</sub> standards recorded in any of the airsheds this month. Meanwhile, sea-surface temperatures recorded from our buoy show that ocean temperatures stayed below average, continuing the overall trends seen around the North Island in September.

**Dr Nithin Bala Murali**

**Climate Scientist**

## Short summary

Very warm; normal rainfall fails to ease very dry conditions.

### November to January Forecast

**Temperature** Above average or near average

**Rain** Near normal

**River flows** Below or near normal

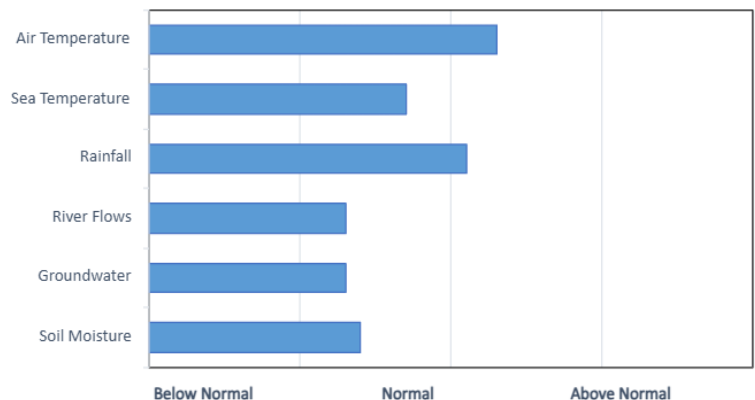
**Soil moisture** Below or near normal

Source: NIWA

### For more information

[www.hbrc.govt.nz](http://www.hbrc.govt.nz)

Ph: 06 835 9200



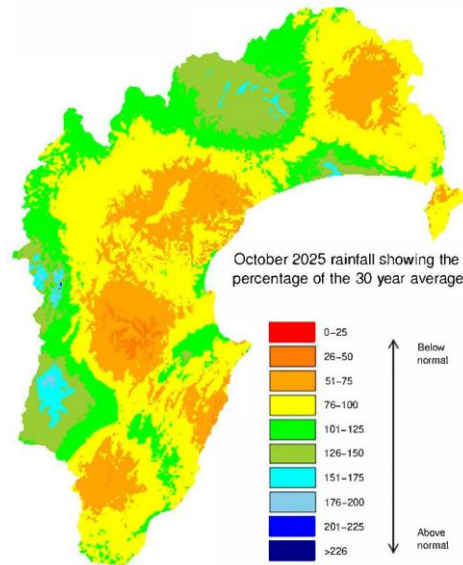
# RAINFALL

Above average rainfall in the ranges and normal rainfall in the rest of the region.

Lightning counts come from the Blitzortung.org lightning network to which HBRC contributes.

## Percentage of normal October rainfall (30 year average) for areas in the region:

Waikaremoana	120%
Northern HB	96%
Tangoio	80%
Kaweka	119%
Ruahine	146%
Heretaunga Plains	86%
Ruataniwha Plains	97%
<u>Southern HB</u>	<u>84%</u>
Hawke's Bay Region	103%



For a more detailed rainfall report click [here](#).  
and for a five-year monthly summary click [here](#).

# AIR TEMPERATURES

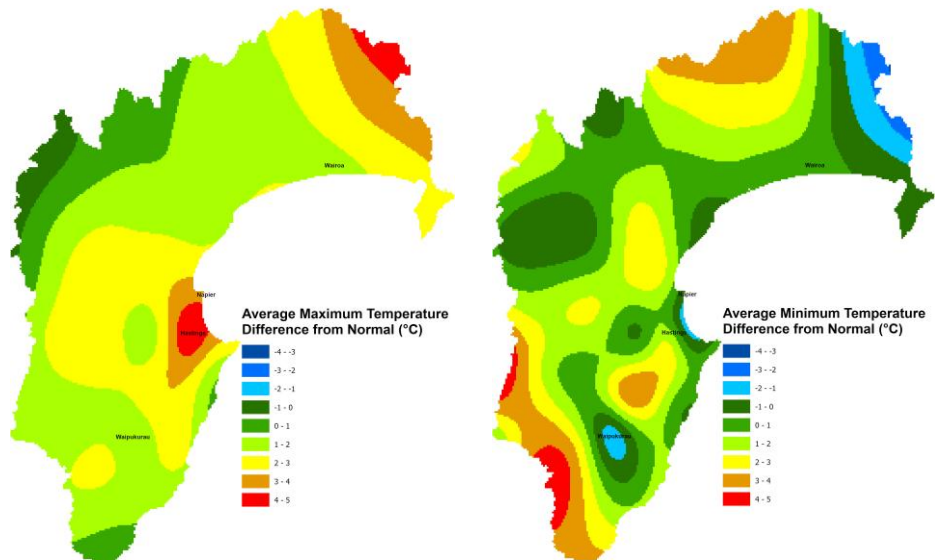
Warmer than usual (especially days)

**Mean Difference from Normal**  
Maximum Temperature: **2.3°C**  
Minimum Temperature: **1°C**

Mean Daily Maximum: **19.1°C**  
Mean Daily Minimum: **8.4°C**

Highest Daily: **31.6°C**  
**Location: Whakatu EWS (NIWA)**

Lowest Daily: **-1.1°C**  
**Location: Taharua**

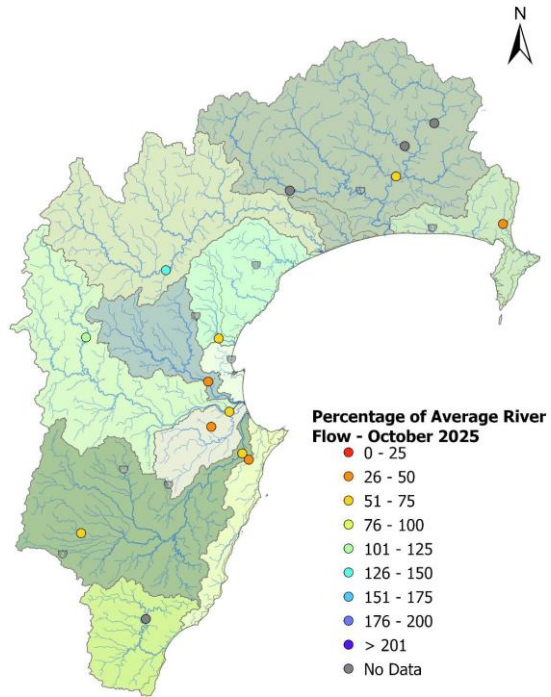


# RIVER FLOW

## Percentage of average October flows for areas in the region:

Northern Coast – Mahia	43%
Northern HB – Hangaroa River	No data
Northern HB – Wairoa River	56%
Northern HB – Waiau River	No data
Mohaka	140%
Esk-Central Coast	57%
Tūtaekuri	36%
Karamu	41%
Ngaruroro – Chesterhope	69%
Ngaruroro - Kuripapango	114%
Southern Coast	39%
Tukituki – Tukipo River	59%
Tukituki – Red Bridge	54%
Porangahau	No data
<b>Hawke’s Bay Region</b>	<b>64%</b>

For a more detailed river flow report click [here](#).



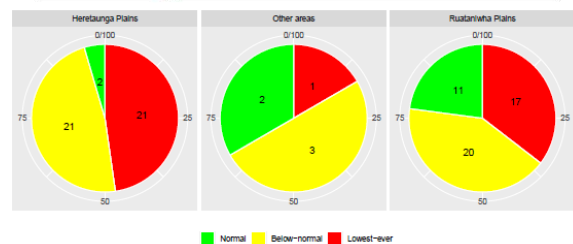
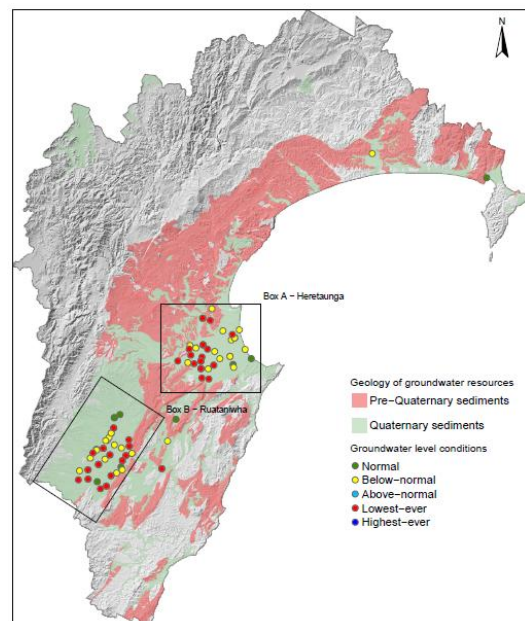
# GROUNDWATER & SOIL MOISTURE

**Soil Moisture:** Below normal for most of the region. For a more detailed soil moisture report click [here](#).

## Current state of Groundwater levels:

This report compares groundwater levels measured in October with historic readings to evaluate current monthly conditions. To assess these conditions, we have grouped groundwater levels at each well relative to their monthly percentiles. Groundwater levels measuring between their monthly minimum and 25<sup>th</sup> percentile are considered below-normal, groundwater levels measuring between the 25<sup>th</sup> and 75<sup>th</sup> percentiles are classed as normal, and groundwater levels measuring between the 75<sup>th</sup>-maximum are considered above normal. Wells with less than 5 years of record are excluded from the analysis.

The pie-plots below summarise the groundwater level conditions for the Hawke’s Bay region. For these plots the Hawke’s Bay region has been divided into two areas representing the Heretaunga Plains and Ruataniwha Plains. Each segment of the pie-plot represents a groundwater level condition with the size of the segment proportional to the quantity they represent. Each segment has been labeled to show the number of wells represented by that category.



Normal Below-normal Lowest-ever

## AIR QUALITY

No exceedances reported.

Figure 1: PM10 levels in the Napier, Hastings and Awatoto airsheds during October 2025.

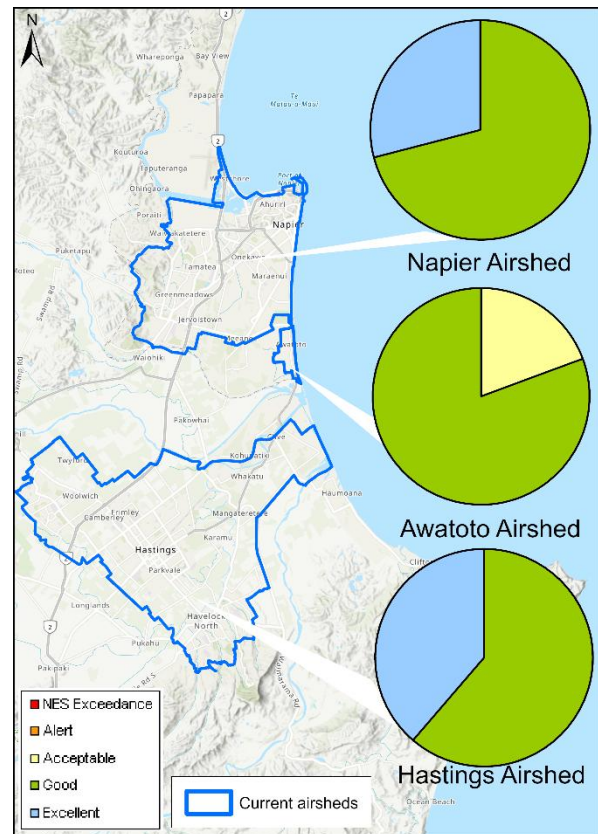
PM10 exceedances: The National Environmental Standard (NES) for particulate matter (PM10) of 50 micrograms per cubic metre (24-hour average) was not exceeded in the Awatoto, Napier or Hastings airsheds during October 2025.

The monitoring sites are located at:

- Marewa Park in the Napier airshed.
- St Johns College in the Hastings airshed.
- Waitangi Road in the Awatoto airshed.

Further information is available at [www.hbrc.govt.nz](http://www.hbrc.govt.nz).

For a more detailed air quality report click [here](#).



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## SEA SURFACE TEMPERATURES

The average sea surface temperature (SST) for Hawke's Bay in October 2025 was 14.1°C. This was 0.48°C lower than the long term average for this month\*.

This data was collected from the HBRC coastal water quality monitoring buoy HAWQ<sub>i</sub> which has been located 4km off the coast of Whirinaki since December 2012. HAWQ<sub>i</sub> collects data on water temperature, salinity and clarity at a range of depths as well as weather information. Check out real time data from HAWQ<sub>i</sub> [here](#).

\*Note that long term data has experienced some patchiness due to the challenges of electronic devices interacting with salt water and servicing requirements so the long-term average in this instance only includes 7 prior October's.

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## LONGER FORECAST

The unsettled westerly flow, which has plagued spring, should wane and La Niña conditions become more prominent. La Niña brings the region easterly winds and more potential for rain from moisture laden storms. However, we can also have long spells of fine weather, especially when high pressure systems block storms from hitting Hawke's Bay. A negative Indian Ocean Dipole is continuing throughout spring and it's common to see it together with La Niña. Sea surface temperatures along New Zealand's east coast are cooler than average.

The outlook for the next three months is higher than normal sea level pressure over southern and eastern New Zealand and lower to the northwest. The pattern suggests more northeasterlies and a greater chance the onshore wind flow will deliver rain. But if the high pressure is too dominant then the region may miss out, which gives the forecast of near normal rainfall a good dollop of uncertainty. We could continue being relatively dry or even become really wet from a tropical storm. The risk of ex-tropical cyclones coming near the country will be elevated this season (November to April). The region's cooler seas will moderate temperatures but a northerly aspect to the flow brings warmth so average or above temperatures are likely.

**Dr Kathleen Kozyniak**

**Team Leader Air and Land Science**