

State of the Environment

Environmental Science Report



JULY 2024

Even though it may have felt wet at times, July was fairly dry. The region recorded 75% of the average July rainfall, with the Ruahine and Kaweka areas receiving only about 50% of their average rainfall. While most areas fell short of their long-term average, some, like Northern Hawke’s Bay and the Ruataniwha Plains, received about 90-110%, placing them in the normal category (within 20% of their averages).

River flows were below normal, and soil moisture levels remained near or above normal levels for July. Groundwater levels across the region were within the normal range.

July’s temperatures were pleasantly mild. Daytime temperatures were 0.6°C warmer than usual, while nighttime temperatures were 0.4°C above average. July was another good month for air quality, with no exceedances in PM10 recorded at any of our monitoring sites, despite some close calls at our Hastings site towards the end of the month.

Dr. Nariefa Abraham-Bennet

Senior Climate Scientist

Short summary

Fairly dry and warm.

August to October Forecast

Temperature Near or above average

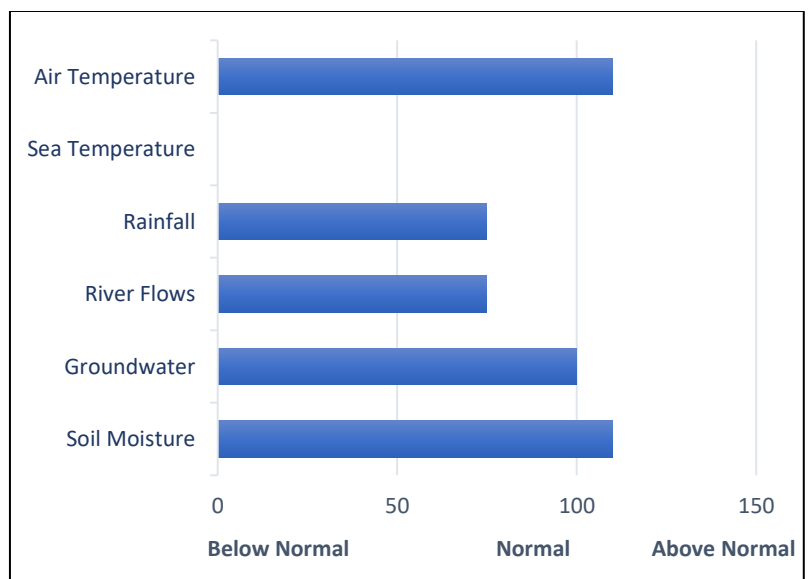
Rain Near or above normal

River flows Near or below normal

Soil moisture Near normal

Sea Surface Temperature -

The average sea surface temperature (SST) for Hawke’s Bay in July 2024 is unavailable due to the HBRC coastal water quality monitoring buoy HAWQ1 being removed for servicing.



RAINFALL

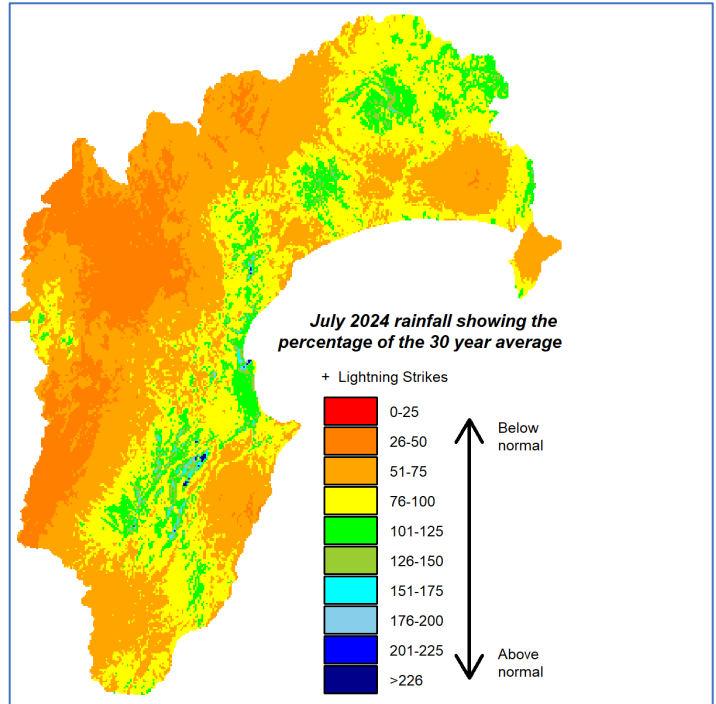
Below normal. No cloud to ground lightning strikes.

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

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

Waikaremoana	78%
Northern HB	90%
Tangoio	66%
Kaweka	52%
Ruahine	50%
Heretaunga Plains	77%
Ruataniwha Plains	108%
Southern HB	76%
Hawke's Bay Region	75%

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



AIR TEMPERATURES

Temperatures

Above average days and almost nights as well.

Mean Difference from Normal

Maximum Temperature: 0.6°C

Minimum Temperature: 0.4°C

Mean Daily Maximum: 12.6°C

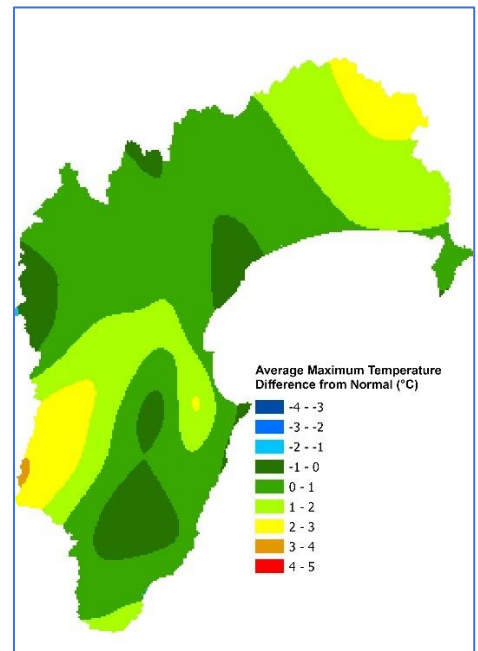
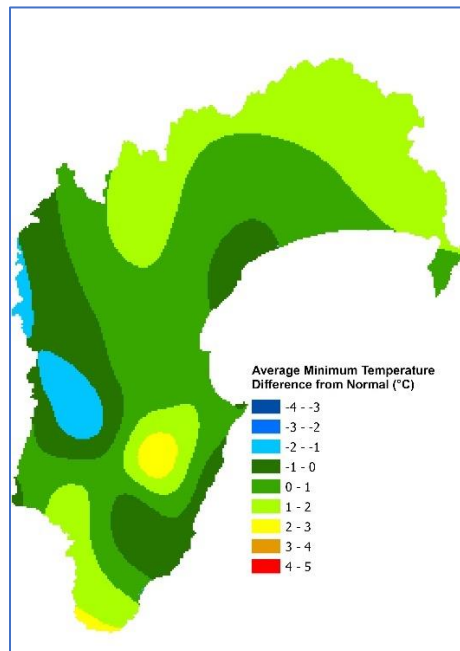
Mean Daily Minimum: 4.4°C

Highest Daily: 19.8 °C

Location: Whakatu EWS (NIWA)

Lowest Daily: -5.5 °C

Location: Taharua Climate

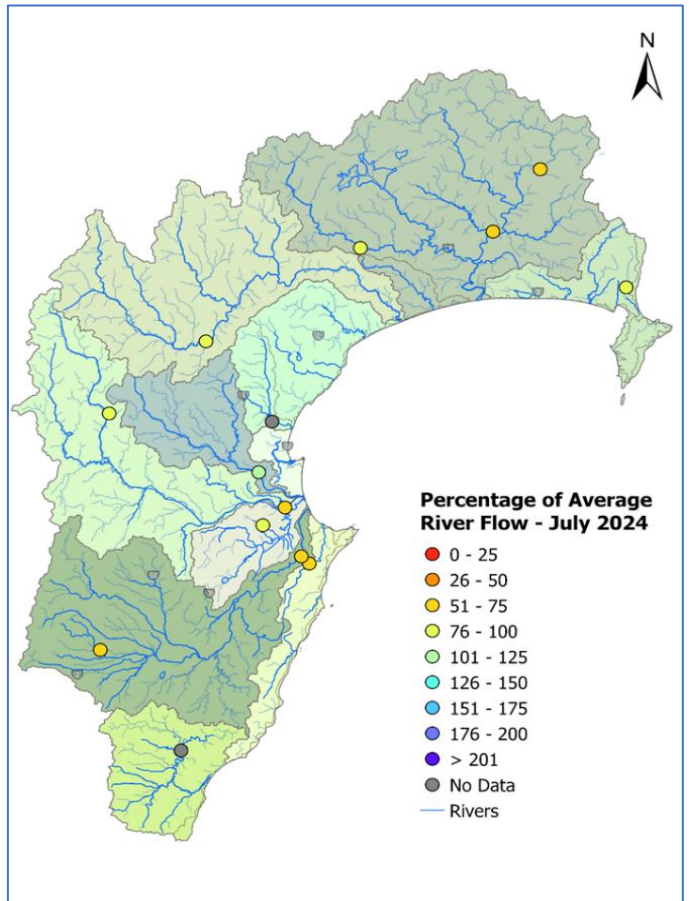


RIVER FLOW

Percentage of average July flows for areas in the region:

Northern Coast – Mahia	88%
Northern HB – Hangaroa River	66%
Northern HB – Wairoa River	71%
Northern HB – Waiau River	77%
Mohaka	87%
Esk-Central Coast	No data
Tūtaekuri	107%
Karamu	80%
Ngaruroro – Chesterhope	59%
Southern Coast	64%
Tukituki – Tukipo River	58%
Tukituki – Red Bridge	63%
Porangahau	No data
Hawke’s Bay Region	75%

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

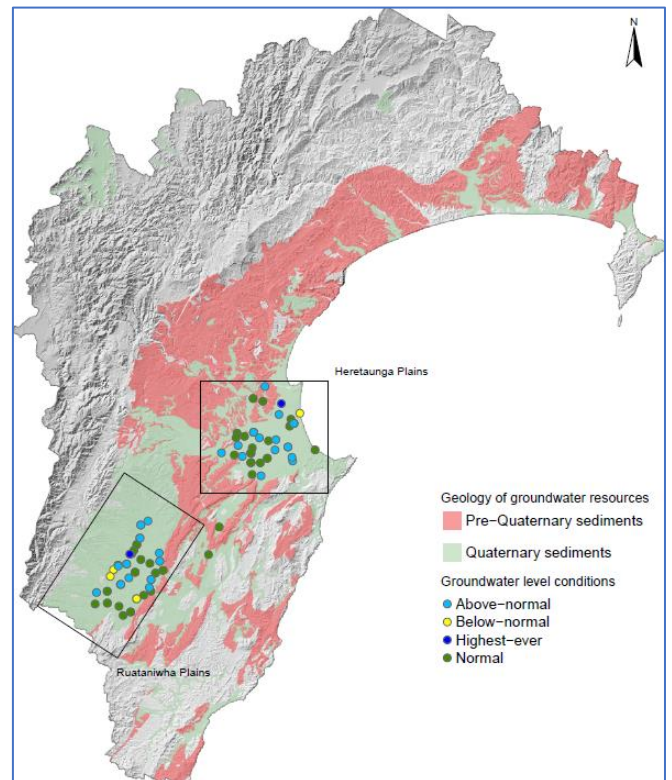
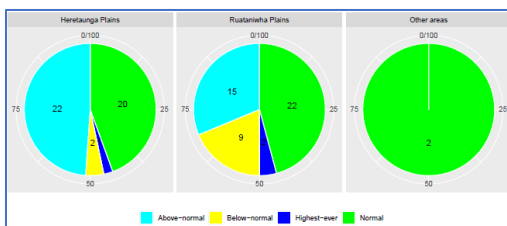


GROUNDWATER & SOIL MOISTURE

Soil Moisture: Near or above normal.
For a more detailed soil moisture report click [here](#).

Current state of Groundwater levels:
This report compares groundwater levels in July with historic readings to evaluate current 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 25th percentile are considered below-normal, groundwater levels measuring between the 25th and 75th percentiles are classed as normal, and groundwater levels measuring between the 75th-maximum are considered above-normal. Wells with less than 5 years of record are excluded from the analysis.



AIR QUALITY

Air Quality: No exceedances.

PM₁₀ exceedances:

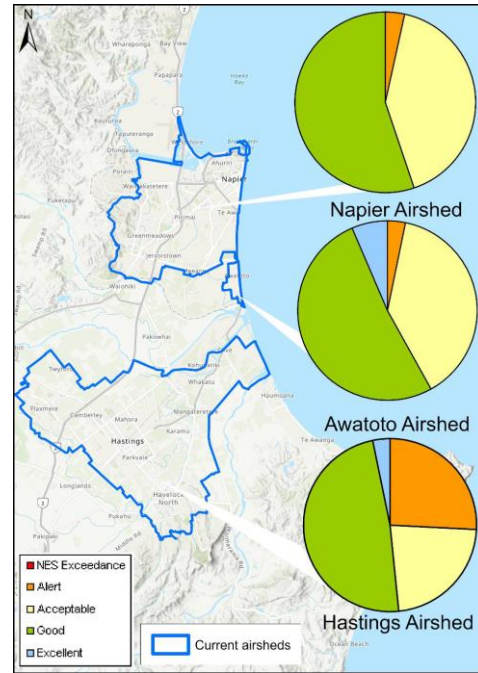
The National Environmental Standard (NES) for particulate matter (PM₁₀) of 50 micrograms per cubic metre (24-hour average) was not exceeded in the Awatoto, Napier or Hastings airsheds during July 2024.

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

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



LONGER FORECAST

A La Niña event, while not 100% guaranteed, seems likely to develop in spring. So too a negative Indian Ocean Dipole. Both suggest we're less likely to have below normal rainfall, though again it's not guaranteed. The seasonal outlook has been thrown a curve ball by the sudden stratospheric warming (SSW) event occurring over Antarctica, which can push colder air and unsettled weather in New Zealand's direction. On the other hand, the Madden-Julian Oscillation could be active in the seas north of the country mid to late August and raise the risk of rain-heavy tropical air coming our way in that time. Sea temperatures around the nation have been near or above normal.

The predicted pressure pattern for the next three months has near-normal pressure over New Zealand, with lower pressure to the northwest and southeast and higher pressure to the northeast and southwest. Rainfall is forecast to be near or above normal because the climate players mentioned can raise the potential for rain activity to head the country's way. Temperatures are expected to be near or above normal overall, but bursts of polar air will throw in some cold shocks.

Dr Kathleen Kozyniak

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