

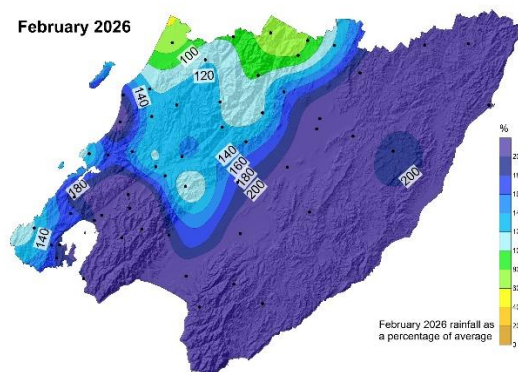
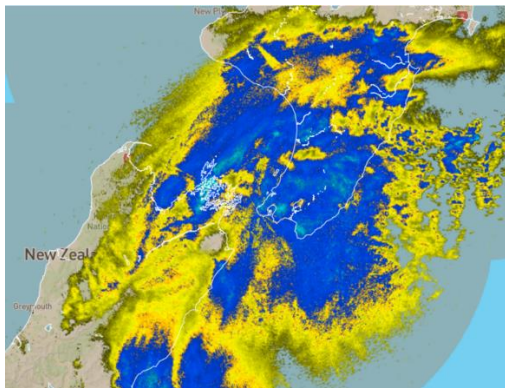
Climate drivers and seasonal outlook for the Wellington Region

Summer 2025-26 summary
Autumn 2026 outlook

Release date: 27 March 2026

Knowledge and Insights

A stylized illustration of a weather system. A large teal cloud dominates the upper half, with a yellow lightning bolt striking down from its base. Below the cloud, light blue raindrops are falling. The bottom of the image shows a landscape with a green hill on the left and a yellow field on the right, all set against a dark teal background.



On the evening of Sunday 15 February, the Wellington radar showed that virtually the entire region was experiencing heavy rainfall simultaneously. A subtropical low was approaching from the northeast on that night, eventually forming a rare loop trajectory around Castlepoint before continuing its main path to the south. This cyclone caused wind gusts close to 200 km/h in Wellington and the eastern Wairarapa coast, with flooding and significant damage on the south coast around Ngawi. Rainfall totals for this storm brought the monthly accumulation for most of the Wairarapa to well above 200% the long-term average. Source: Radar image courtesy of MetService (left) at 9:30pm on Sunday 15 February 2026. Image to the right shows the February rainfall anomaly as percentage of long-term average, using the GWRC rainfall network.



Overview

Summer 2025-2026

Summer 2026 was once again plagued by a rather unsettled La Niña flow, with much greater than normal rainfall (second highest summer rainfall on record in Castlepoint) and colder than average temperatures for the most part. Although not many temperature records were broken, the mean maximum (diurnal) temperature was about a degree below average on the eastern coast. The mean wind speed was slightly above the seasonal average on the eastern and southern coasts, but the highlight was the extreme wind gusts during severe weather events. Wind gust records were broken in January (131 km/h in Paraparaumu) and during a potent subtropical low that hit the east coast mid-February (176 km/h in Castlepoint and 143 km/h on Mana Island). Importantly, the February gusts corresponded to southerlies, which makes it rarer as winds of this magnitude are usually associated with north-westerly events. The 15 February subtropical low was also associated with flooding and damage on the southern and eastern coasts, as well as quite a bit of wind damage north of Wellington and in the Hutt Valley. At Cape Turnagain, about 55 km north of Castlepoint, the wind gusts measured on 16 February reached an impressive 241 km/h, this being the strongest south-westerly gust ever measured in that very windy location.

Climate drivers

After a very unusual La Niña for the second consecutive summer (with summer 24/25 classed as just under the official threshold), the climate drivers are now moving towards neutral conditions. The oceanic temperature anomalies are currently very warm in the western Tasman as well as to the north-east of New Zealand. Importantly, ENSO models are now strongly predicting a new El Niño event forming from winter onwards, even though the forecasting accuracy is low this time of the year and it's still too early to know for sure the exact timing and intensity of this new development.

Climate outlook for autumn 2026

International climate models agree that La Niña will continue to rapidly dissipate throughout autumn with some lingering effects. These include a high chance of further easterly events and subtropical disturbances coming from the north. Once this transition is settled, most models are predicting a return of the positive ENSO (i.e., El Niño) phase. However, it's still too early to know precise details of onset, duration and intensity of this new development. Variable rainfall and near average temperatures are expected, with low confidence for the total seasonal accumulation.



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1. Climate drivers

1.1 El Niño – Southern Oscillation (ENSO)

The ensemble projections of the Australian climate model below show that the ENSO event is predicted to start shifting towards a possible new El Niño from late autumn onwards.

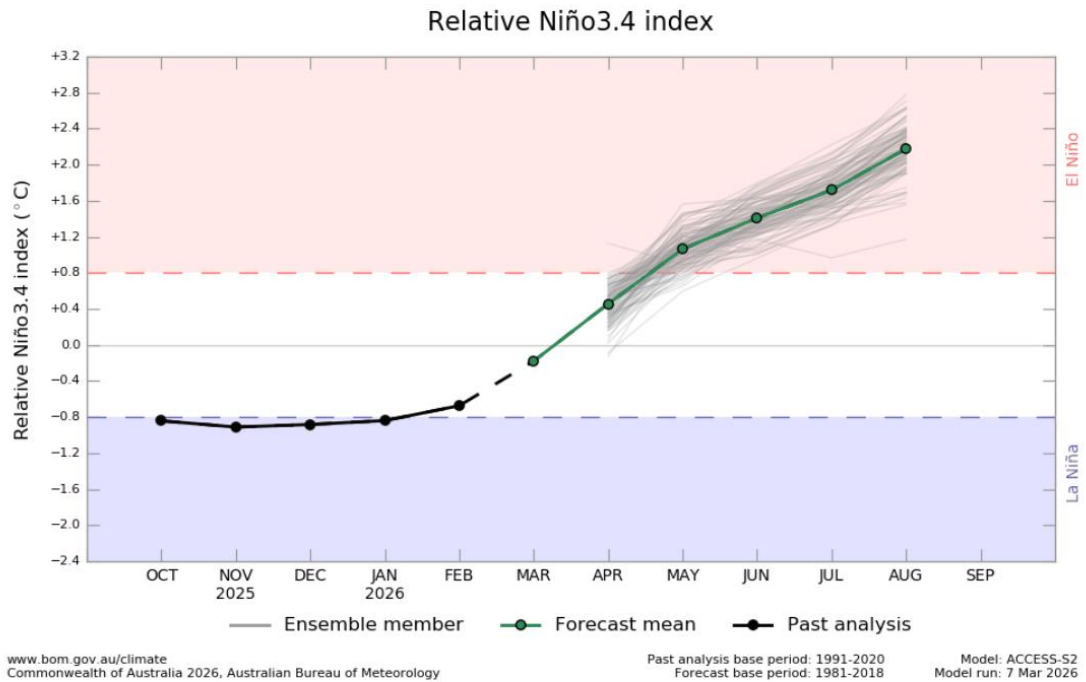


Figure 1.1: Average modelled projections (in green) show that the ENSO phenomenon is expected to initially shift from a weak La Niña to neutral during autumn. After that, the long-term model guidance suggests a strong possibility of a new El Niño (i.e., warm phase) developing towards winter and spring. It is, however, still too early to know for sure what the potential magnitude of this new event might be at this stage, as the predictability skills are rather low this time of the year. Source: Australian Bureau of Meteorology.

1.2 Sea Surface Temperature (SST) anomalies

The SST anomalies and the total Sea Ice Extent (SIE, in white) are shown in Figure 1.2, as of 8 March 2026.

The overall pattern shows a weak La Niña signature transitioning back to a neutral ENSO, with a weak equatorial cold tongue of warm water now re-emerging around the Peruvian coast. This signal, as discussed earlier, will most likely lead to a new El Niño development from winter onwards. Meanwhile, marine heatwave conditions continue to prevail mostly to the north-east of New Zealand, and within the western Tasman Sea. Antarctic sea ice has reached its minimum within the current annual cycle, sitting at a negative anomaly not as extreme as what was observed back in 2025.

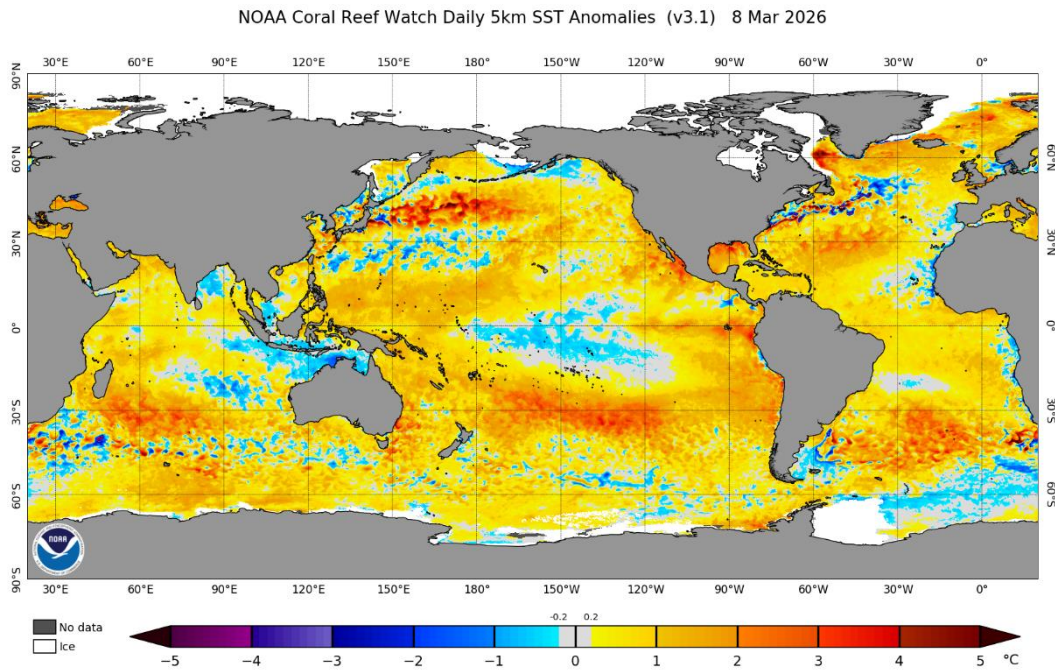


Figure 1.2: Sea Surface Temperature (SST) anomalies as of 8 March 2026. Sea ice coverage is shown in white. The Equatorial Pacific (ENSO) shows a gradual return to neutral ENSO conditions, but marine heatwaves persist in the Tasman and to the northeast of New Zealand. Sea Ice Extent (in white) is slightly below average for this time of the year, with a less extreme reduction compared to 2025. Source: NOAA.

1.3 Southern Annular Mode (SAM)

The SAM is the natural pressure oscillation between mid-latitudes and the Antarctic region. Normally, positive SAM is associated with high pressures around the North Island keeping the weather stable and dry/cloud-free (especially in summer), whereas the opposite is expected when the SAM is negative.

The SAM has been in the positive phase for the most part of summer, especially into the new year. Although, locally around New Zealand we have had a blocking pattern resembling a negative SAM phase, with high pressure to the south and low pressure to the north. Figure 1.3 shows the summer average sea level pressure anomaly with a blocking system east of New Zealand. This system was responsible for the unusual southerly bursts and very wet La Niña summer.

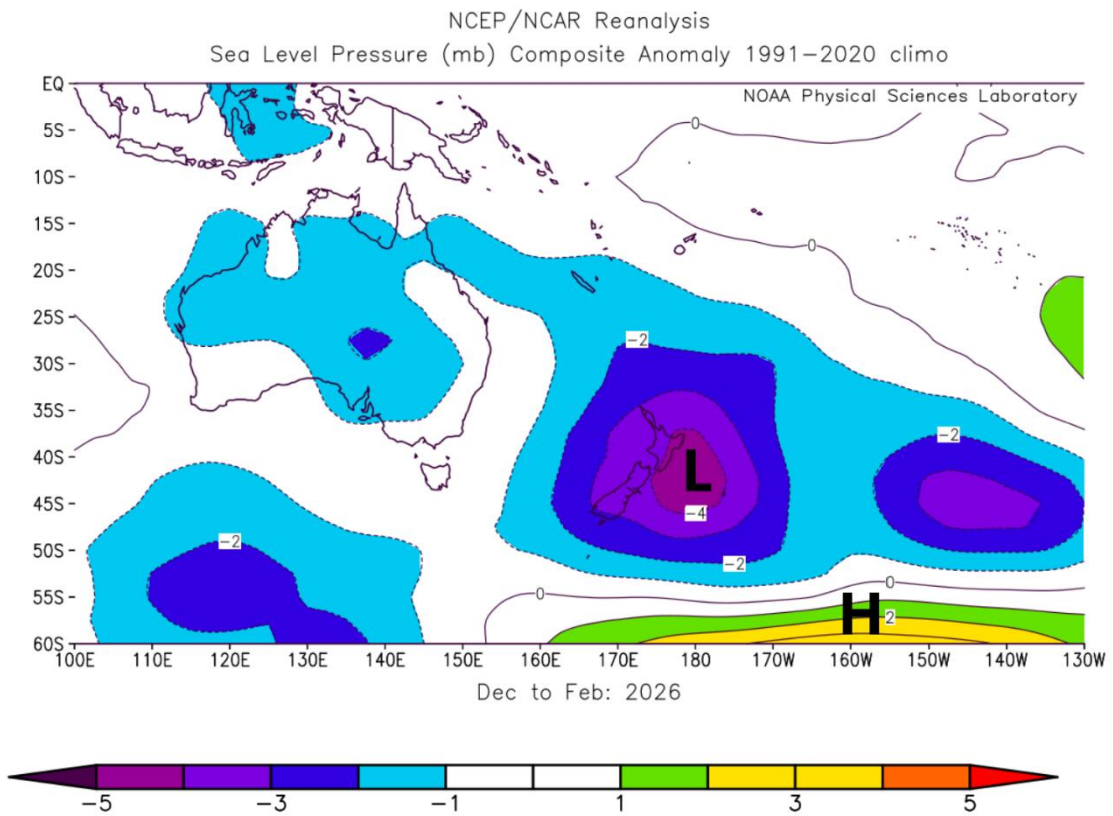


Figure 1.3: Mean sea level pressure anomaly map (hPa) for summer 2025-2026. The 'L' and 'H' indicate the centre of the anomalous low and high pressure forming a blocking pattern east of New Zealand. This system was responsible for creating a very unusual La Niña circulation, with strong southerly flow events in between mixed flows, below average temperature and much above average rainfall. This pattern was not predicted by the climate models. Source: NCEP Reanalysis.



2. Seasonal variability and outlook

2.1 Trend analysis

The graphs below (Figure 2.1) show summaries of seasonal climate change and variability for Wellington and Wairarapa using reference climate stations, chosen based on length of data record and availability.

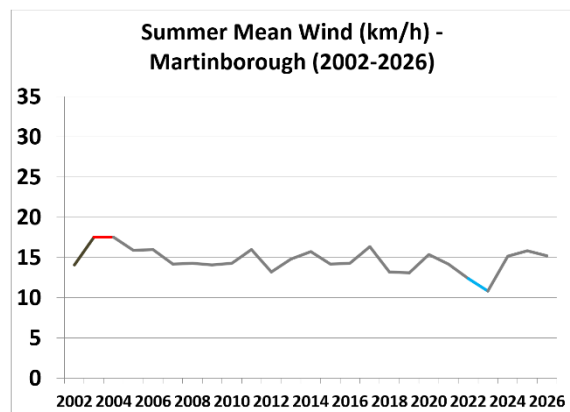
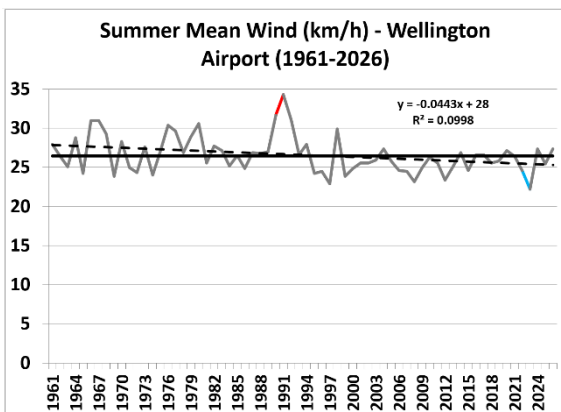
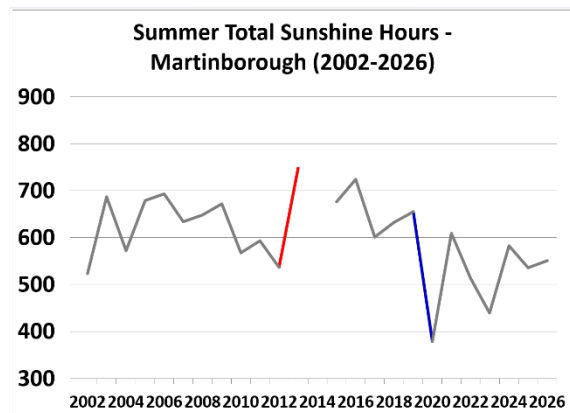
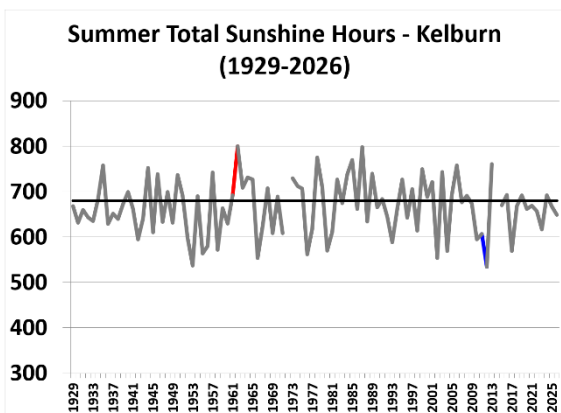
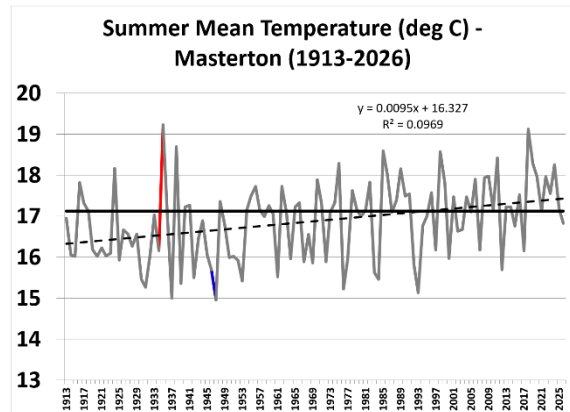
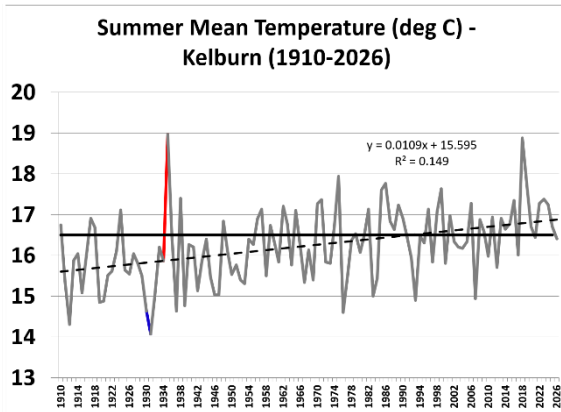
The key climate variables shown are mean temperature, total sunshine hours, mean wind, total rainfall and total number of rain days (above 0.1 mm). Temperature measurements go back to the 1910s, allowing for a meaningful analysis of climate change trends. Most other variables also have long periods of measurement greater than 50 years, except sunshine hours and wind for the Wairarapa; these are only available for less than two decades, which is a very short period climatologically and does not allow for an analysis of trends yet.

The red and blue bars show the extreme years of the entire measurement period. Red indicates seasons that were warmer, drier, sunnier and windier than average (i.e., extreme hot/dry), and blue indicates seasons that were colder, wetter, cloudier and less windy than average (i.e., extreme cold/wet). The reference climatological average (1981-2010) is shown by a horizontal bar where available.

An analysis of linear trends associated with climate change is plotted onto the graph only when the trends are statistically different from zero at the 99% confidence level.

The climate change and variability summary for summer 2026 is as follows:

- Statistically significant trends are seen only for temperature and wind, meaning that summer is getting warmer and less windy due to ongoing climate change. The long-term historical warming trend is about one degree per century for both Wellington and Wairarapa;
- Summer 2026 mean temperatures were near average for Wellington and below average for Wairarapa;
- Sunshine hours were below average for both Wellington and Wairarapa;
- Seasonal average wind speed was near average for both Wellington and Wairarapa;
- Total seasonal rainfall was well above average for both Wellington and Wairarapa;
- Total seasonal rain days were near average for Wellington and above average for the Wairarapa.



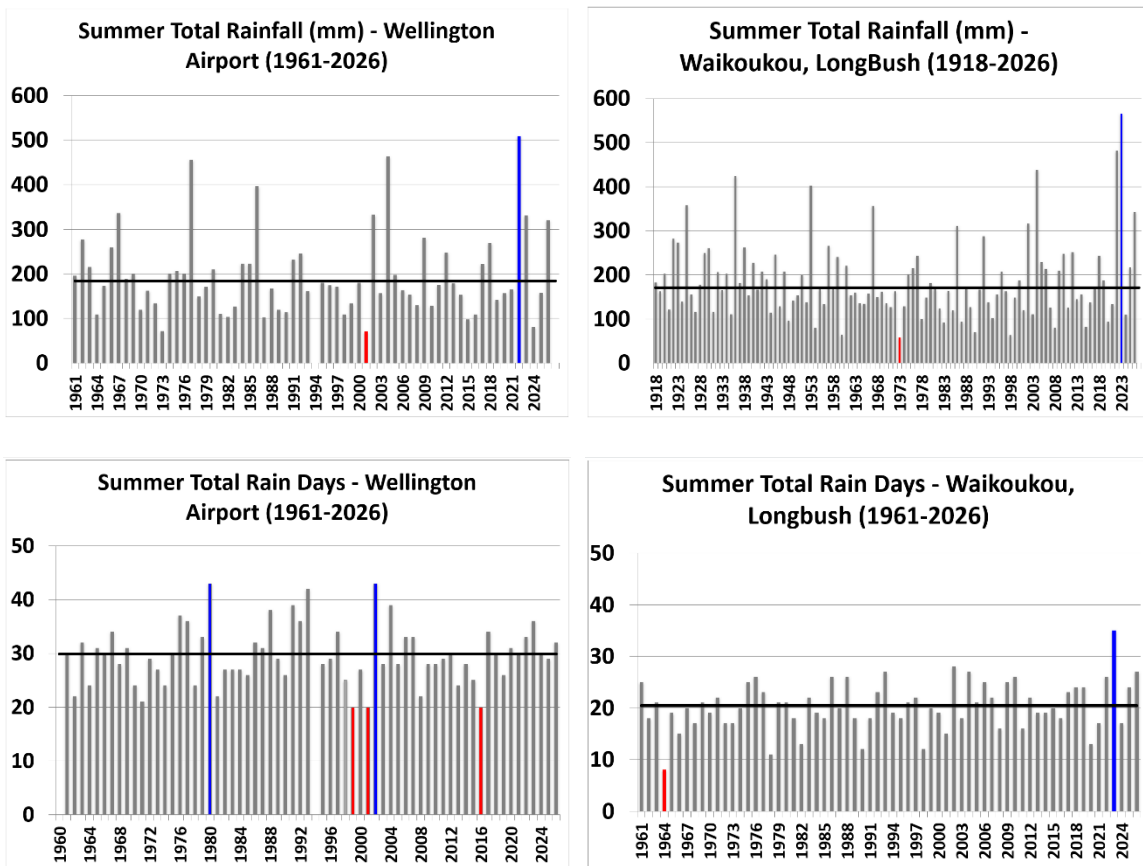


Figure 2.1: Climate change and variability graphs for summer in Wellington and the Wairarapa. The thick horizontal line shows the 1981-2010 average (where available), and the dashed line shows the linear trend. Trends are plotted only when statistically significant at 99% confidence level. For all graphs, the bright red and blue bars show the extreme min and max values for each time series (red for warm, dry, sunny and windier and blue for cool, wet, cloudy and calmer). The key variables shown are mean temperature, total number of sunshine hours, mean wind speed, total rainfall and total number of rain days (>0.1mm for Wellington and > 1mm for Waikoukou). Missing bars means that no reliable mean seasonal data was available for that particular year.



2.2 Seasonal Outlook

- Residual La Niña still driving some easterly flows, progressively returning to a more westerly regime towards the beginning of winter
- Moderate risk of further tropical disturbances, with atmospheric rivers and subtropical lows possible on both coasts
- Near average temperature and rainfall, but irregular distribution with high chances of additional heavy rainfall events
- El Niño (i.e. warm ENSO phase) virtually certain from winter onwards, but still too early to know the potential magnitude and impacts

Whaitua*	Variables	Climate outlook for autumn 2026*
Wellington Harbour & Hutt Valley	Temperature: Rainfall:	Near average. Around average, with irregular distribution. Moderate change of additional easterly flows and subtropical lows with potential flooding events
Te Awarua-o-Porirua	Temperature: Rainfall:	Near average. Around average, with irregular distribution. Moderate change of additional easterly flows and subtropical lows with potential flooding events
Kāpiti Coast	Temperature: Rainfall:	Near average. Around average, with irregular distribution. Moderate change of additional easterly flows and subtropical lows with potential flooding events
Ruamāhanga	Temperature: Rainfall:	Near or below average. Around average, with irregular distribution. Moderate change of additional easterly flows and subtropical lows with potential flooding events
Wairarapa Coast	Temperature: Rainfall:	Near or below average. Around average, with irregular distribution. Moderate change of additional easterly flows and subtropical lows with potential flooding events

*Whaitua are the whole catchment areas (<https://www.gw.govt.nz/environment/freshwater/protecting-the-waters-of-your-area/>).

Refer also to the drought monitor for our catchments: <https://www.gw.govt.nz/environment/environmental-data-hub/climate-monitoring/drought-check/>

Appendix 1 – Seasonal temperature and wind anomalies for selected stations

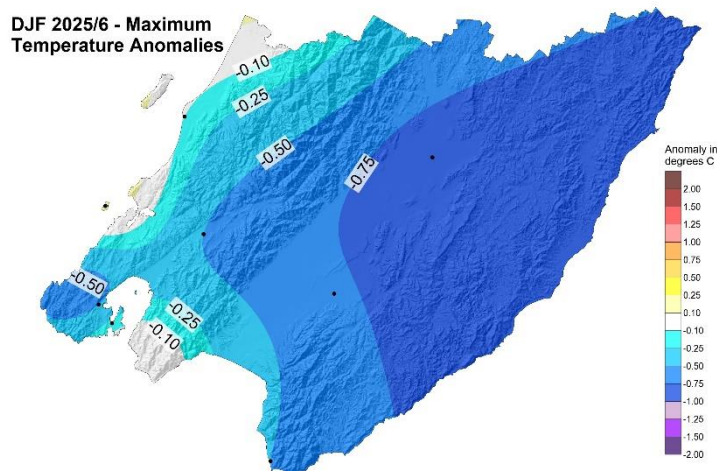
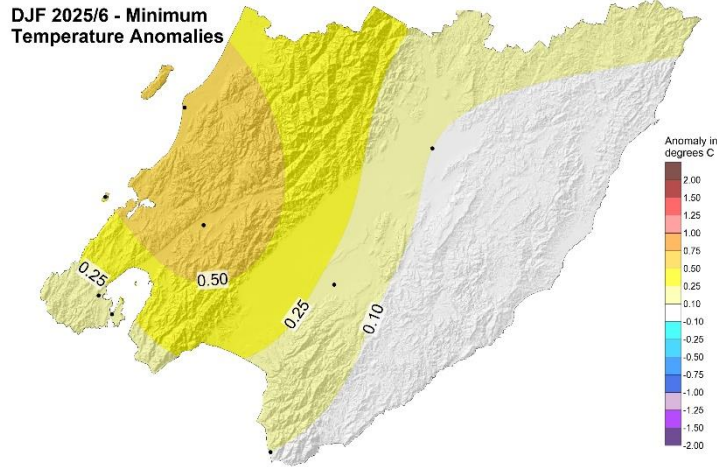
Table 1: Temperature anomalies (°C) for summer (DJF) 2025-2026 relative to the 1991-2020 climatology. Significant positive and negative anomalies (greater than 0.5°C magnitude) are highlighted in red (warmer than average) or blue (colder than average).

Dec-Jan-Feb 2026	Min T	Max T
Castlepoint	N/A	N/A
Kelburn	0.2	-0.5
Masterton	0.1	-0.9
Ngawi	0.1	-0.5
Paraparaumu	0.6	-0.1
Wellington Airport	0.2	-0.2
Martinborough	0.2	-0.7
Mana Island	0.5	0.2
Upper Hutt	0.7	-0.5

Table 2: Wind anomalies (%) for summer (DJF) 2025-2026 relative to the 1981-2010 climatology. Significant positive and negative anomalies (greater than 5%) are highlighted in red (windier than average) and blue (calmer than average).

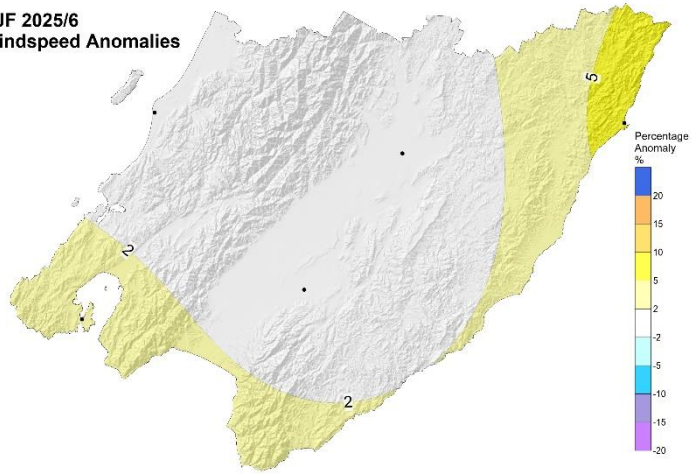
Dec-Jan-Feb 2026	Wind %
Castlepoint	6.0
Masterton	-1.1
Ngawi	N/A
Paraparaumu	0
Wellington Airport	3.5
Martinborough	0.4

Appendix 2 – Seasonal anomaly maps relative to the long-term average (1991-2020)

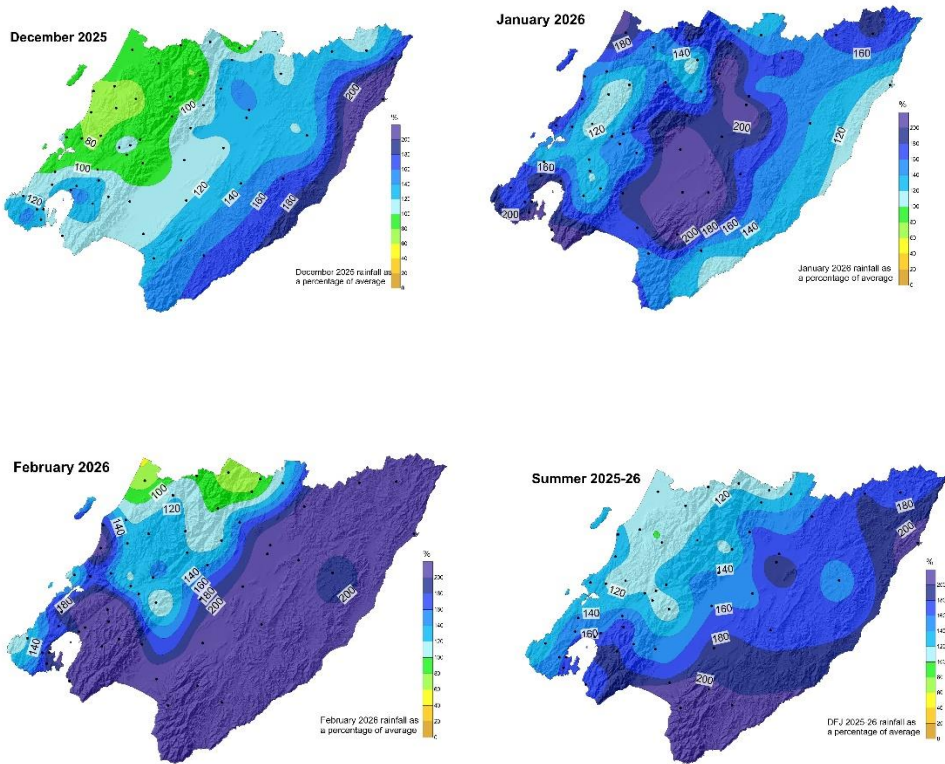


Min and Max Temperature anomalies (°C)

**DJF 2025/6
Windspeed Anomalies**



Wind anomalies (%)



Rainfall anomalies (%)

GWRC's climate science tools

- **Seasonal climate hub**
<https://www.gw.govt.nz/environment/environmental-data-hub/climate-monitoring/>
- **Daily climate maps**
<https://graphs.gw.govt.nz/envmon/daily-climate-maps?view=rainfall-table>
- **Drought Monitor**
<https://www.gw.govt.nz/environment/environmental-data-hub/climate-monitoring/drought-check/>
- **Climate change impacts (reports and mapping tools)**
<https://www.gw.govt.nz/environment/climate-change/impacts-on-our-region/>

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