

# New Zealand records seventh-hottest year, with extreme weather more likely

It has been nearly four years since New Zealand experienced a month with below-average temperatures, researchers say



Six of New Zealand's eight warmest years on record have occurred since 2013. Photograph: Hagen Hopkins/Getty Images

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Tue 12 Jan 2021 02:15 GMT

New Zealand recorded its seventh-hottest year on record in 2020, and marked nearly four years since it experienced a month with below-average temperatures.

The National Institute of Water and Atmospheric Research (Niwa) has been collecting New Zealand's temperature records since the early 1900s, and said on Tuesday that above-average temperatures were becoming increasingly common.

The nationwide average temperature for 2020 was 13.24 degrees Celsius, just shy of the country's hottest year on record, 2016, when the average temperature was 13.45C: or 0.84C above the 1981–2010 annual average.

Niwa's principal scientist for forecasting, Chris Brandolino, said climate change was exacerbating natural warming phenomena such as el Niño, and making events such as excessive rainfall, long dry spells and hotter temperatures worse.

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“Six of the eight warmest years on records have occurred since 2013 – this is consistent with climate change.”

Brandolino said New Zealand's 2020 was consistent with the rest of the world, with 88% of the year experiencing above-average temperatures.

“Yes climate change is real and what we have seen this year is consistent with climate change. Our temperatures have warmed by a whole degree over the last century,” Brandolino said.

“We did see [marine] species that are commonly not seen in our oceans. Warmer oceans means warmer air temperatures [on land]; and more water vapour in the air, which increases the risk of extreme rainfall events.”

Six months of 2020 featured above-average temperatures, and Brandolino said it had been 47 months since New Zealand experienced a month with below-average temperatures.

The outlook over the next three months was for above-average temperatures with extended dry spells and potentially “significant rain events”.

Brandolino said multiple reports commissioned in New Zealand pointed towards a warming climate with a range of outcomes depending on “what we decide to do as a global society”.

“Generally, we're looking at a warmer climate, a rise in sea levels ... and warming ocean temperatures. In addition to that more extreme rainfall events – at both ends of the spectrum.”

A number of significant weather events occurred in 2020.

In March, agriculture minister Damien O'Connor declared a drought in the North Island, upper South Island, and the Chatham Islands as a large-scale adverse event, releasing up to \$2m in government funding to support farmers and growers through to June 2021.

This was followed by the hottest winter on record, leading to a number of ski fields struggling to operate, with the depth of snow at Mueller Hut near Mount Cook the shallowest in a decade, with less than 45% of the average depth.

Significant flooding caused severe damage in Napier in November, and several heavy and prolonged rainfall events in the lower South Island throughout the Christmas break resulted in widespread crop damage, wiping out 50% of the country's cherry crop.

Marine species not commonly seen in New Zealand waters were also spotted, lured by the warm ocean temperatures.

Prime minister Jacinda Ardern has described the fight against climate change as **her generation's nuclear-free moment**.

Late last year, Ardern **declared a climate change emergency** and committed to a carbon-neutral government by 2025, in what she called "one of the greatest challenges of our time".

"This declaration is an acknowledgement of the next generation. An acknowledgement of the burden that they will carry if we do not get this right and do not take action now," she said. "It is up to us to make sure we demonstrate a plan for action, and a reason for hope."

New Zealand contributes just 0.17% of global emissions but that is high for its size, placing it 17th out of 32 OECD countries. Its net emissions have risen by 60% in the past two decades.

The nation's biggest source of CO<sub>2</sub> emissions is road transport but most greenhouse gases stem from agriculture.