

## New Zealand weather and climate news

*Courtesy of MetService Library*

### MetService mentions

Auckland's big dry: Claim of 40 days without rain 'probably incorrect' - MetService

Stuff.co.nz

A claim Auckland has had a record-breaking 40 days without rain is "probably incorrect", MetService says. On Saturday, Niwa, the National Institute of ...

Showers forecast for North Island not enough to provide drought relief

Stuff.co.nz

MetService meteorologist Andrew James said despite a few isolated showers on Tuesday and throughout the week, the outlook for the north was dry.

Weather: Kiwis sweat as 'warm and muggy' conditions bring above-average temperatures

Newshub

Credits: Video - Newshub; Image - Getty/MetService. Kiwis are sweating and Tuesday night isn't expected to be any better - nor is the rest of the week.

Warm temperatures, high humidity could mean some sleepless nights

Stuff.co.nz

The remnants of Tropical Cyclone Uesi may have moved away from New Zealand but MetService says the system left behind a "big swathe of high ...

Hot weather causing problems with TV programmes

Stuff.co.nz

Hot weather causing problems with TV programmes ... Television channel three 'a good business' struggling in a skewed market, says MediaWorks ...

Work to start on Otago weather radar

Otago Daily Times

"The detail and accuracy that this new radar will provide is really going to assist the work ORC does around weather events and flooding in the coastal ...

#### Not a cloud in sight: Satellite image shows 'unusual' cloudless New Zealand

Stuff.co.nz

MetService meteorologist Peter Little said satellite imagery showed the lower South Island looking like the bow of a ship "directing the cloud either ...

#### 'Meteorological drought': Niwa

Gisborne Herald

The MetService's Daily Climate charts show most of the district is extremely dry, with only Wairoa and a small area south still not in serious soil ...

#### Tramper deaths at Mt Aspiring National Park in 'extraordinary' weather

Stuff.co.nz

Two trampers found dead in a South Island river is a "worst-case scenario", Conservation Minister Eugenie Sage says. About 12.30pm on Saturday a ...

### **Extreme weather (and other news) – Antarctica and offshore**

#### Ancient Antarctic ice melt increased sea levels by 3+ meters -- and it could happen again

Rising ocean temperatures drove the melting of Antarctic ice sheets and caused extreme sea level rise more than 100,000 years ago, a new international study shows - and the scientists say we're headed in that direction again.

### **Extreme weather (and other news) – Australia and Pacific**

#### Damage assessments begin as Samoa storms ease

Severe weather that has caused flooding and forced schools to close in both Samoa and American Samoa is easing.

The Samoa Meteorological Service said the tropical depression that brought torrential rain and strong winds since Sunday is now moving away

### Schools in Samoa closed as storms hit much of South Pacific

Strong winds and swells as high as four metres are striking the low-lying countries of Tokelau and Tuvalu, while schools in Samoa and American Samoa have been ordered closed amid heavy rain.

### Sydney thunderstorm lights up the night sky as lightning, wind gusts and hail hit NSW

A man has been killed by a flying gas bottle in Sydney's The Rocks as severe thunderstorms hammered parts of New South Wales overnight.

## **Extreme weather (and other news) – Asia and the Middle East, Africa**

### India records highest deaths in Asia due to extreme weather; it leads to migration too, says report

National Herald

India has witnessed the highest number of deaths in Asia because of extreme weather in the last two years leading to large scale migration of people ...

### Building a digital water management system for Thailand

Eco-Business

To overcome this issue, the Thai Ministry of Science & Technology mandated Thailand's Hydro and Agro Informatics Institute to create a roadmap to ...

## **Extreme weather (and other news) – Americas and Europe**

### Stormy weather means West Norfolk business loses millions of its flowers after damage

Lynn News

Lynn port manager Kim Kennedy of Associated British Ports said: "In terms of Storm Ciara, I can confirm two vessel operations were postponed due to ...

### Facing the flames: How Portugal is preparing for increased fire risk

Euronews

Controlled fires and herds of goats are two of the key weapons being deployed in Portugal to adapt to the enhanced risk of forest fires in the country in ...

## Met Office explains why huge lone lightning bolt hit Bristol during Storm Dennis

Bristol Live

Now, the Met Office has told Bristol Live why the city experienced such an intense lightning bolt yesterday evening - and why it wasn't part of a larger ...

## Flooding in the UK isn't an act of God, it's an act of government

The Guardian

But he can protect the Met Office. It is to get another £1.2bn of public money for a “supercomputer”, just six years after getting £97m for a previous one.

## **International news and research**

### For 5 stations over a century old, India to seek recognition from top weather body

Yahoo India News

For instance, IMD-Pune is a WMO-recognised Regional Meteorological Centre for South Asia region. With its expertise and advanced weather ...

### Storm-induced sea level spikes differ in origin on US east, Gulf coasts

Posted: 11 Feb 2020 01:05 PM PST

The Gulf Coast, especially New Orleans, is particularly vulnerable to storm surge. As the climate warms, the region will be even more susceptible to extreme storm surges, according to new research.

### A whirl of new cyclone information

On average, there are nine to 13 tropical cyclones each season in the Australian region. As northern Australia enters its cyclone season, the AIDR Knowledge Hub has a range of new videos, information and localised advice.

### The story of Windguru

SurferToday

Windguru is one of the world's first online weather forecasting websites for ... with more detailed, accurate, reliable, and up-to-date data predictions.

## National Weather Service at 150: 7 Inventions That Improved Forecasting

WeatherNation

Since then, weather forecasting has become far more accurate and timely. As NWS celebrates its 150th birthday, let's take a look at 7 tech ...

## Meteorologists to learn satellite monitoring skills

Times of Oman

Muscat: Meteorologists from across the Middle East have come to Oman to learn to spot weather patterns from satellites by learning about techniques ...

## Met Office developing world's most advanced weather computer

The Guardian

A supercomputer designed to improve extreme weather and climate ... The technology will be managed by the Met Office, with more sophisticated ...

## Scientists build 'British weather proof' solar technology

Metro

Researchers say their co-called 'British weather proof' technology is cheaper, more energy efficient and more flexible than traditional solar panels ...

## Researchers Test Experimental Severe Weather Warning Tools

WeatherNation

[NOAA NSSL] When severe weather threatens, NOAA National Weather Service ... Klockow-McClain said researchers must test not only the technical ...

## Thinning clouds in a warmer world could further amplify climate change

The Weather Network

Sunday, February 16th 2020, 2:33 pm - Clouds could become more scarce as atmospheric temperatures soar, which could dramatically impact how ...

## **Advertising/promotion**

## Aruba using real-time weather ads to lure winter-weary Chicagoans

Chicago Business Journal

The campaign is set up to more emphatically note the “warm weather” ... an award-winning campaign United Airlines (NASDAQ: UAL) introduced in ...

## **Aviation**

### SkyGrid Adds Hyper-Local Weather Data for Safer Drone Operations

PRNewswire (press release)

In addition to advanced weather data, SkyGrid has fueled its system with global airspace intelligence, such as aircraft traffic, airspace classes, flight ...

### Storm Ciara helps plane beat transatlantic flight record

BBC News

Aviation consultant and former BA pilot Alastair Rosenschein said the ... of 260 mph (418 km/h) on Sunday morning, according to BBC Weather.

### The climate crisis will keep making transatlantic flights way faster

A flight from London to New York broke the all-time subsonic transatlantic record thanks to Storm Ciara, but a faster jet stream will actually slow flights down more

### Air NZ to reduce flights through Shanghai and Hong Kong

Air New Zealand is reducing the frequency of its flights through Shanghai and Hong Kong amid Coronavirus due to the changing customer demand.

## **Business/Insurance**

### 'Risks aren't worth it': QBE says parts of planet becoming uninsurable due to climate concerns

WAtoday

"We got out of places like the Philippines, Thailand, Chile, Puerto Rico [where] it was just too much climate change weather impact risk there that the

## Impact of drought, coronavirus could lead to recession - economist

Drought combined with the Covid-19 coronavirus might knock economic growth enough to cause a modest recession, a leading economist says.

## **Energy and Mining**

### How extreme weather can disrupt energy supply

Cosmos

By Natalie Parletta. Future climate variation could produce a gap of up to 34% between renewable energy potential and demand without concerted ...

### How cat videos could cause a 'climate change nightmare'

Data centres processing and storing data, from sending emails to streaming videos, could account for up to 8% of the world's total power demand by 2030, warn experts

## **Health**

### Will summer heat kill the coronavirus?

It has been suggested the covid-19 outbreak could fade as the northern hemisphere warms, but we don't know if this is the case. [Read more](#)

### Got the sniffles? It could be due to snow mould

The Weather Network

Have you been feeling sneezy and stuffy lately? You aren't alone, and it could be due to melting snow combined with a fungus called snow mould.

## **History**

### June Bacon-Bercey: Pioneering Meteorologist and Passionate Supporter of Science

Eos

June Bacon-Bercey, a pioneering meteorologist and passionate supporter of women and minorities in the sciences, was well versed in high-pressure ...

## **Lightning**

### Four Endangered Gorillas Killed By Lightning Strike In Bizarre Accident

Gizmodo Australia

Four rare mountain gorillas have died after being struck by lightning in an equal parts peculiar and unfortunate turn of events for an endangered ...

### Fishing rod hit by lightning

Fishing World

As you can see, lightning and graphite rods make a deadly combo! ... Fishing World is Australia's premier and longest established fishing magazine ...

## **Climate change / global warming / sea level rise**

### Video: How Auckland is planning for climate change

Auckland has declared a 'climate emergency' but how can good planning and science help the city adapt? Watch Eloise Gibson's video report.

## **Journal and articles online**

### Effects of the outer size on tropical cyclone track forecasts

Chi Kit Tang, Johnny C. L. Chan, Munehiko Yamaguchi

e1888 | First Published: 13 February 2020

The track forecast of a tropical cyclone (TC) located near the neutral point of a split subtropical high pressure system under the influence of a nearby trough is difficult and can lead to a large forecast spread among different global numerical weather prediction models. This study aims to identify the effect of the outer wind structure on the TC track forecast by studying the predictions

from major numerical weather prediction and Weather Research and Forecasting model simulations.

The dependence of mountain wave reflection on the abruptness of atmospheric profile variations

M. A. C. Teixeira, J. L. Argáin

First Published: 06 February 2020

Impact of model upgrades on diabatic processes in extratropical cyclones and downstream forecast evolution

Jacob W. Maddison, Suzanne L. Gray, Oscar Martínez-Alvarado, Keith D. Williams

Version of Record online: 05 February 2020

Forecast experiments are run with the Met Office model using operational modifications to parametrization schemes (as opposed to larger, often physically-unrealistic changes) and evolving sea surface temperatures. The development of upper-tropospheric ridges and blocking is shown to depend on the total diabatic heating from parametrized processes of air parcels arriving at upper levels in the warm conveyor belt of an extratropical cyclone. Experiments with stronger total diabatic heating generally develop more amplified upper-tropospheric ridges in the forecast evolution.

Multi-diagnostic multi-model ensemble forecasts of aviation turbulence

Luke N. Storer, Philip G. Gill, Paul D. Williams

e1885 | First Published: 07 February 2020

Turbulence is one of the major weather hazards to aviation. This study combines the multi-diagnostic and the multi-model ensemble approaches that have both been shown to improve turbulence forecasting on their own to show that, by putting them together, greater forecast skill and economic value may be obtained. The results are presented using objective verification of a 12 month global trial.

Weather forecast for the 35th America's Cup (2017) winners based on a limited area model

Christophe Messenger, Roger “Cloud” Badham, Marc Honnorat, François Vandenberghe, Tom Waterhouse, Ian Currie

e1879 | First Published: 03 February 2020

Map of the Bermuda main islands: (a) location of the Bermuda Islands within the Northern Atlantic; (b) location of the Crescent Reef meteorological station; (c) location of the airport

meteorological station; (d) cumulus cloud above the main island as displayed on the (unavailable) AC2017 official website; (e) races site in the Great Sound; and (f) location of the Pearl Island meteorological station.

#### Hourly 4D-Var in the Met Office UKV operational forecast model

Marco Milan, Bruce Macpherson, Robert Tubbs, Gareth Dow, Gordon Inverarity, Marion Mittermaier, Gemma Halloran, Graeme Kelly, Dingmin Li, Adam Maycock, Tim Payne, Chiara Piccolo, Laura Stewart, Marek Wlasak

Version of Record online: 30 January 2020

In this paper we describe the hourly cycling four-dimensional variational data assimilation (4D-Var) implemented operationally in the Met Office's convective-scale UKV forecast model. The new operational system extends this capability to the full UK and surrounding area (shown in the figure), delivering outputs suitable for blending into nowcasting products and for general forecasting of a full range of meteorological variables.

#### The impact of using reconditioned correlated observation-error covariance matrices in the Met Office 1D-Var system

Jemima M. Tabcart, Sarah L. Dance, Amos S. Lawless, Stefano Migliorini, Nancy K. Nichols, Fiona Smith, Joanne A. Waller

Version of Record online: 29 January 2020

The use of correlated observation-error covariance matrices has become widespread in data assimilation algorithms. We find that including correlated observation-error information yields faster convergence in the Met Office 1D-Var routine than the current choice of uncorrelated observation-error covariance matrix for IASI observations. We show that reconditioning methods can be used to improve convergence further, indicating that reconditioning is likely to be of computational benefit for general variational data assimilation implementations.

#### Forecast bias correction through model integration: A dynamical wholesale approach

Jing Chen, Jingzhuo Wang, Jun Du, Yu Xia, Fajing Chen, Li Hongqi

Version of Record online: 27 January 2020

The forecast biases of the ensemble control member for (a) potential temperature  $\theta$  (K), (b) zonal wind  $u$  ( $\text{m}\cdot\text{s}^{-1}$ ), (c) meridional wind  $v$  ( $\text{m}\cdot\text{s}^{-1}$ ), and (d) dimensionless pressure  $\pi$  ( $\pi$ ) on a grid point ( $114^\circ\text{E}$ ,  $31^\circ\text{N}$ ) near 700 hPa level over forecast hours. It is estimated from the 0000 UTC cycle forecasts during 19–28 June 2015 and approximated as the biases for the 72 hr model integration initialized at 0000 UTC 1 July 2015.

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Thanks to our regular contributors

Bob McDavitt

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