

New Zealand weather and climate news

Courtesy of MetService Library

MetService mentions

[A belated summer finally comes for Wellington as high pressure hovers over central NZ](#)

Stuff.co.nz

MetService is forecasting at least seven relatively sunny days for Wellington, with 20 to 21 degrees Celsius highs each day and just a bit of cloud, and ...

[New Metservice weather radar of help in Southland flooding](#)

New Zealand Herald

Metservice's new **weather radar** station near Hindon had a significant effect on how local authorities dealt with recent flooding. Dunedin City Council 3 ...

[Heavy rain on the way to Bay of Plenty](#)

theinformant.co.nz

MetService said precipitation amounts could close to warning standards, and an update will be released at 9 am on Sunday. Residents are encouraged ...

[Watch: Tornado-like cloud forms near Taupo](#)

New Zealand Herald

Taupo had been expecting rain and possible thunderstorms today but had instead remained largely dry, forecaster **MetService** said. However, the ...

[Hey, Niwa – what happened to our long, hot summer?](#)

Stuff.co.nz

MetService is reporting that by Sunday most of the country would see a break in the wet weather, and there would be a bout of more settled weather ...

[NIWA](#)

[**NIWA Heads To Antarctica For Critical Climate, Ocean Research**](#)

NIWA's flagship research vessel Tangaroa leaves today on a six-week voyage to Antarctica, making it one of the few full scientific expeditions to the continent since the global outbreak of COVID-19.

[**WMO**](#)

[**Workshop of Global Multi-Hazard Alert System in Asia was held online - China Meteorological Administration**](#)

Posted:

On December 15, Workshop of 2020 Global Multi-Hazard Alert System in Asia (GMAS-A) was held online. The theme of this event is the challenges and opportunities confronted by elevating the early...

[**Record-breaking 2020 ozone hole closes**](#)

Posted:

The record-breaking 2020 Antarctic ozone hole finally closed at the end of December after an exceptional season due to naturally occurring meteorological conditions and the continued presence of...

[**62nd issue of the TCC News - Japan Meteorological Agency**](#)

Posted:

The Tokyo Climate Center (TCC) of the Japan Meteorological Agency (JMA) has released the 62nd issue of the TCC News on the TCC website. This issue covers: - El Nino Outlook (December 2020 - June...

[**CMA and WMO consult on further promoting "Belt and Road" cooperation - China Meteorological Administration**](#)

Posted:

On December 22, China Meteorological Administration (CMA) and World Meteorological Organization (WMO) held the fourth consultative meeting on implementation of the Letter of Intent between WMO and...

[The Observatory Successfully Patented the Design of Automatic Weather Station - Hong Kong Observatory](#)

Posted:

The Hong Kong Observatory successfully registered a patent in Hong Kong for its in-house developed bollard design for automatic weather station (AWS) in December 2020. With the new design, various...

[Extreme weather \(and other news\) – Australia and the Pacific](#)

[Hawai'i drought during El Niño winter? Not always, according to new research](#)

Posted: 07 Jan 2021 08:24 AM PST

El Niño events have long been perceived as a driver for low rainfall in the winter and spring in Hawai'i, creating a six-month wet-season drought. However, a recent study revealed the connection between Hawai'i winter rainfall and El Niño is not as straightforward as previously thought.

[Water being shipped to drought-stricken northern Cook Island](#)

An emergency shipment of water is being sent to the northern Cook Island of Tongareva, where the drought situation is described as desperate.

[Extreme weather \(and other news\) – Asia and the Middle East, Africa](#)

[Malaysia: Worsening Flood Kills Six, Displaces Over 46000 People](#)

Republic World

The **Malaysian meteorological department** has issued a severe warning that the heavy rainfall would continue till January 12. Six dead. As of the ...

[Extreme weather \(and other news\) – Americas and Europe](#)

[**Spanish snow storm Filomena kills four, traps thousands in cars and airports**](#)

A persistent blizzard has blanketed large parts of Spain with 50-year record levels of snow, killing at least four people and leaving thousands trapped in cars, train stations and airports.

[**Research confirms increase in river flooding and droughts in US, Canada**](#)

Research demonstrates that increases in the frequency of both high- and low-flow extreme streamflow events 'are, in fact, widespread.'

International news and research

[**German storms to be given more diverse names after online campaign**](#)

Euronews

In Germany, storms are not solely named by meteorologists, and any citizen can participate at a cost between €240 and €360, depending on the ...

[**Atmospheric carbon dioxide to pass iconic threshold in 2021: UK Met office**](#)

Xinhua

La Nina event is part of the climate pattern known as El Nino Southern Oscillation, a scientific term that describes the oscillating temperature changes ...

[**2020 Shatters Billion Dollar Weather Disasters Record - Why It Matters To Biden's Secretary Of**](#)

...

Forbes

We have NOAA to thank for a host of services including weather forecasts, climate assessments, satellites, fisheries information, and ocean monitoring ...

[**70 years of research leads to this forecasting method used by CBS19 Chief Meteorologist Brett**](#)

...

CBS19.tv KYTX

What if I told you we could see into the future of weather forecasting? I've been working for more than a decade with a team of meteorologists who trust ...

[Will global warming bring a change in the winds? Dust from the deep sea provides a clue](#)

Posted: 06 Jan 2021 08:20 AM PST

Climate researchers describe a new method of tracking the ancient history of the westerly winds--a proxy for what we may experience in a future warming world.

[Imminent sudden stratospheric warming to occur, bringing increased risk of snow over coming weeks](#)

Posted: 05 Jan 2021 08:18 AM PST

A new study helps to shed light on the winter weather we may soon have in store following a dramatic meteorological event currently unfolding high above the North Pole.

[Here's why meteorologists launch weather balloons every day](#)

Yahoo News

Synchronized weather balloon launches have helped **meteorologists** create forecasts over the past 150 years, and now the old tradition is going high ...

[Here are some of the first snowflakes ever photographed](#)

Photographer Wilson 'Snowflake' Bentley took the first picture of a snowflake in 1885

Aviation

[Taking the chill off icy build-up on planes and wind turbines](#)

Posted: 17 Dec 2020 11:52 AM PST

New research is changing the way aircraft and wind turbine operators are addressing the risks related to ice build-up. A team has broadened the scope and functionality of their ice sensors.

Business/Insurance

[How insurance can help combat climate change](#)

January 6, 2021 | Podcast

In the transition to a green economy, the insurance industry can play a critical role in helping stakeholders manage risk.

[Zurich NA launches construction **weather** parametric **insurance**](#)

Reinsurance News

Zurich North America has launched a Construction **Weather** Parametric **Insurance** product for project owners and contractors, due to the growth of ...

Climate change / global warming

[Economist: Who should pay for climate change costs?](#)

Insurance Business Australia

As climate change impacts Australia's **weather** for the worse, Denniss wants to find out if homeowners, taxpayers, or **companies** should pick up the tab ...

Cloud seeding / Geoengineering

[China uses Wing Loong II variant for weather modification work](#)

Flightglobal

The UAV, designated Ganlin-1, is equipped to modify weather through **cloud seeding**, according to a report by official news agency Xinhua. Ganlin 1 ...

Innovation and technologies and AI

[Windows 10's taskbar is getting a big update with new **weather** and news widget](#)

The Verge

You'll be able to quickly glance at the **weather** without having to open the Start menu, install a third-party app, or check online. The taskbar feature will ...

[BreezoMeter Delivers Air Quality Data to Yahoo **Weather** App Users Around the World](#)

Odessa American

... leader in **innovation**, commerce and content led by its ecosystem of premium brands like Yahoo, TechCrunch and RYOT – to deliver Yahoo **Weather** ...

Lightning

[1771 lightning deaths in Financial Year '20, says report](#)

Times of India

This despite the fact that India has 82 lightning detectors, apps that deliver alert notifications for upcoming lightning ... observations, inputs from network of Doppler and other radars, and inputs from lightning detection sensors.

[Transport/roading/shipping/freight](#)

Weather routing reduces container loss risk

07 Jan 2021by Martyn Wingrove

Investing in weather and vessel motion forecasting can prevent lost containers and damaged vessels for container ship operators

Journal and articles online

[Sub-km scale numerical weather prediction model simulations of radiation fog](#)

Daniel K.E. Smith, Ian A. Renfrew, Stephen R. Dorling, Jeremy D. Price, Ian A. Boutle

Version of Record online: 30 November 2020

Fog remains a challenge to forecast accurately using numerical weather prediction. We evaluate the performance of the Met Office Unified Model (MetUM) at both kilometre and subkilometre (sub-km) grid lengths. MetUM produces valleys that are too warm and hills that are too cold, leading to valleys that do not have enough fog and hills that have too much. The

sub-km scale configurations generally outperform the km scale, but they are highly sensitive to the soil thermal conductivity.

[Which precipitation forecasts to use? Deterministic versus coarser-resolution ensemble NWP models](#)

Pengcheng Zhao, Quan J. Wang, Wenyan Wu, Qichun Yang

Version of Record online: 28 December 2020

This study focuses on the comparative analysis of deterministic numerical weather prediction (NWP) forecasts and coarser-resolution ensemble NWP forecasts. A comprehensive comparison between these two kinds of forecasts is of significant reference value to both forecast users and NWP model developers. Our results suggest that for precipitation, coarser-resolution ensemble forecasts overall outperform deterministic forecasts, both before and after post-processing, under different types of climate conditions.

[Development of a prototype real-time sting-jet precursor tool for forecasters](#)

Suzanne L. Gray, Oscar Martínez-Alvarado, Duncan Ackerley, Dan Suri

Version of Record online: 23 December 2020

Sting jets in European windstorms can cause damaging winds and gusts, but the resolution of global ensemble prediction systems is too coarse to represent them. Here we describe the development of a tool applied to outputs from these systems that forecasters can use to identify favourable conditions for sting-jet occurrence several days ahead. Plots generated by this tool have been available to Met Office forecasters since autumn 2019, and we demonstrate its usefulness for storm Brendan from January 2020.

Damaging surface winds in some European storms have been attributed to descending mesoscale airstreams termed sting jets. The development of a prototype real-time tool that Met Office forecasters can use to identify favourable conditions for sting jet occurrence in extratropical cyclones is presented. The motivation is to improve national severe weather warnings. We have previously developed a convective-instability-based tool to identify sting-jet precursors for research purposes and applied it to storms in reanalyses and climate models with insufficient spatial resolution to represent sting jets. Here we describe the challenges of applying this research-derived diagnostic to output from an operational forecast system and demonstrate its usefulness for a recent winter storm. Through close collaboration with the researchers and forecasters from the Met Office, the diagnostic has been adapted to work on output from the Met Office's operational global ensemble forecasts as it becomes available. Since autumn 2019, forecasters have been able to view graphical output informing them

whether storms impacting the UK and Europe (up to 7 days in the future) have the precursor. The tool has already proven useful in informing guidance for severe weather warnings, including those issued by the Met Office's impact-based National Severe Weather Warning Service that goes out to seven days ahead and is the primary hazardous weather warning service for the public and emergency responders.

[A percentile-based approach to rainfall scenario construction for surface-water flood forecasts](#)

Steven J. Böing, Cathryn E. Birch, Benjamin L. Rabb, Kay L. Shelton

e1963 | First Published: 22 November 2020

A novel technique to produce reasonable worst-case rainfall scenarios from ensemble forecasts is presented. This type of scenario is relevant for predicting the risk of localized, intense rainfall events with a duration between 15 min and several hours, which can cause surface-water (pluvial) flooding. The figure shows results from this novel neighbourhood processing technique for a single forecast. Maximum hourly accumulations in each grid box are converted to a reasonable worst-case maximum hourly accumulation for each grid box.

[Evaluating atmospheric icing forecasts with ground-based ceilometer profiles](#)

Karoliina Hämäläinen, Anne Hirsikko, Ari Leskinen, Mika Komppula, Ewan J. O'Connor, Sami Niemelä

e1964 | First Published: 20 November 2020

Detecting atmospheric icing with in-situ mast measurements is difficult due to the harsh conditions involved. The study uses a new approach for detecting atmospheric icing using ground-based ceilometer attenuated backscatter profiles that can then be used to verify forecasts from an atmospheric icing model. The results encourage the wider adoption of these observations and verification method.

[Evaluation of a roughness length parametrization accounting for wind–wave alignment in a coupled atmosphere–wave model](#)

S. Porchetta, O. Temel, J.C. Warner, D. Muñoz-Esparza, J. Monbaliu, J. van Beeck, N. van Lipzig

Version of Record online: 15 December 2020

The evaluation of a bulk roughness length parametrization accounting for wind–wave alignment in a coupled mesoscale atmosphere–wave model shows an improved wind estimation at typical hub height. Moreover, the power production estimation of an offshore wind turbine improves when this roughness length parametrization is included. This study was evaluated by wind and wave measurements taken at the FINO1 measurement mast, located in the North Sea.