New Zealand weather and climate news

Courtesy of MetService Library

MetService mentions

Your weather: A hint of rain, maybe

New Zealand Herald

The last days of summer are expected to dawn hot and dry with a few showers, MetService says. After a scorcher of a weekend - with the mercury ...

Rain on the way but unlikely to end Hawke's Bay's 'Big Dry'

New Zealand Herald

A Metservice spokeswoman said it was a "mixed bag" of weather this week for what was considered to be the meteorological start of autumn.

Northland drought: Water shortage costs Far North District Council $6m and counting

Far North District Council's drought bill is more than $6 million and counting.

The drought has already cost Far North District Council (FNDC) $6.3 million. That figure is increasing by up to $100,000 a day.

A couple of fronts moving north deliver rain

SunLive

MetService is forecasting varied weather for Aotearoa over the weekend, with two fronts bringing rain, but not for the areas that need it. “The upper ...

Timaru hailstorm NZ's 3rd-most destructive storm for the 21st Century

A hailstorm in Timaru last year was the third-most destructive storm so far this century, causing $83 million in damage, the Insurance Council says.

Thunderstorms on the way following dry summers on record

Newstalk ZB

MetService meteorologist Angus Hines said today a heavy rain band was sitting over the South Island's West Coast, where a heavy rain warning was ...

Hot, dry summer breaks records across North Island - but some 'welcome relief' in the forecast

TVNZ

For Auckland, MetService called it "record-breaking low summer rainfall". According to various rain gauges, is either the driest, second-driest or ...

Rain offers little relief to drought-hit regions

Rain is unlikely to be enough to break droughts in the North Island, as the lower North and South Island experience the first of chill of autumn.

Auckland's climate debate: 'It's not going to be pretty'

Richard Hills wants big change in Auckland to meet the challenge of global warming, but he worries that his fellow councillors might not share that view.

Weather: North Island thunderstorm brings 130 lightning strikes in two hours

An early afternoon thunderstorm in the North Island delivered 130 lightning strikes in just two hours on Wednesday.

MetService forecaster Cameron Coutts said in total 590 strikes were recorded over the land and 500 were recorded at sea over 12 hours. He said most happened early on Wednesday afternoon as a thunderstorm rolled through.

Weather: 'Autumnal chill' to bring 10C temperature drop to parts of New Zealand

Newshub

A cold change is on the way for parts of the South Island as southerly winds bring an "autumnal feel". MetService says parts of the South Island's east ...

Weather: 'Southerly flow' to plummet temperatures as low as 3C

Newshub

MetService says most places in the South Island will drop to single-digit temperatures. Overnight lows in parts of Southland and inland Canterbury ...

North drought: Weather records tumble in Northland, Auckland over summer

The drought in Northland and Auckland has smashed weather records, Niwa's summer climate summary shows.

North drought: Auckland breaks record, Whangārei driest summer since WWII

MetService records have confirmed what many in the North Island already know: It has been a very dry summer.

The Detail: The North's heartbreaking drought

If Auckland and Northland go without rain for much longer they will enter the worst drought in their history. The severe dryness has already taken a heavy toll on native wildlife, farm animals, the land and rural communities.

North Island drought unlikely to be unique as climate change grips the globe - MetService

TVNZ

... unlikely to be unique as climate change grips the globe - MetService ... Zealand can expect more drought in the future, according to MetService.

Tree fires as wind gusts in Southland

Otago Daily Times

A MetService forecaster said much higher winds were forecast overnight and on Tuesday morning, but winds gusting at over 30kmh and about 50kmh ...

MetOcean

Evaluation of four global ocean reanalysis products for New Zealand waters–A guide for regional ocean modelling, Joao Marcos Azevedo Correia de Souza, Phellipe Couto, Rafael Soutelino & Moninya Roughan (2020) New Zealand Journal of Marine and Freshwater Research, DOI: 10.1080/00288330.2020.1713179

A comparison between 4 (near) global ocean reanalysis products is presented for the waters around New Zealand. The objective is to provide information for an educated choice of ocean estate estimate. The simulations are compared to satellite and in situ observations, and vertical sections are extracted to evaluate the representation of the main regional boundary currents and their transport. Overall, the Copernicus GLORYS reanalysis exhibits the better performance, with more realistic ocean variability and smaller biases in the water column structure. However, the BlueLink Reanalysis (BRAN) provides more realistic transport estimates of the East Auckland Current, an important boundary current connecting New Zealand to the World Ocean. All simulations have important biases in both temperature and salinity, particularly in coastal regions. Moreover, they are not able to represent coastal currents and processes. Therefore, the present study results emphasise the need for a regional ocean reanalysis and a data assimilative operational forecast system.

An approach to the verification of high-resolution ocean models using spatial methods by Ric Crocker, Jan Maksymczuk, Marion Mittermaier, Marina Tonani, and Christine Pequignet https://www.ocean-sci-discuss.net/os-2020-12/

Short Summary: We assessed the potential benefit of a new verification metric, developed by the atmospheric community, to assess high-resolution ocean models against coarser resolution configurations. Typical verification metrics often do not show any benefit when high-resolution models are compared to lower resolution configurations. The new metric showed improvements in higher resolution models away from the grid-scale. The technique can be applied to both deterministic and ensemble forecasts.

WMO

WMO expects above average temperatures, but no El Niño

Above average temperatures are expected in many parts of the globe in the next few months, even without the presence of a warming El Niño event, according to the World Meteorological Organization

COMS Retirement Information - Korea Meteorological Administration

The Korea Meteorological Administration (KMA) is going to retire Korea's first geostationary meteorological satellite, COMS, or Communication, Ocean and Meteorological Satellite. The COMS'...

WeatherWatch

Coronavirus scare impacts some weather InfoGraphics & maps at WeatherWatch

WeatherWatch.co.nz

The Weather Company in the UK and US will both step up to share responsibility, replacing and creating some InfoGraphics for the New Zealand and ...

WeatherWatch.co.nz launches hugely upgraded new website

WeatherWatch.co.nz

Over a year of work behind the scenes but today WeatherWatch.co.nz ... as WeatherWatch.co.nz gears up to also sell high resolution granular weather ...

Volcano alert/watch

Surakarta airport closes temporarily after Mt. Merapi spews out ash 6000 meters high

Jakarta Post

... according to the Meteorology, Climatology and Geophysics Agency (BMKG). ... As for the impact on aviation, so far only [Adi Soemarmo International ...

Mt Ruapehu's crater lake is heating up, but its 'business as usual'

Stuff.co.nz

The volcanic alert level for Mt Ruapehu remains at Level 1 following a series of "tiny earthquakes" underneath the mountain. Water inside crater lake Te ...

Extreme weather (and other news) – Australia and Pacific

Climate change: Australian summers 'twice as long as winters'

New weather data analysis says climate change has led to major increases in summer temperatures.

Australia's east coast braces for week-long 'rain bomb'

7NEWS.com.au

Australia's east coast braces for week-long 'rain bomb' ... There is currently a severe weather warning in place for heavy rainfall and flash flooding.

After a summer of extremes, here’s what to expect this autumn

The past Australian summer was a season of two contrasting halves. So did the midsummer weather change make a dent in the drought, and is it likely to continue through autumn?

New solar system for Tokelau

Tokelau's solar energy system is set to be upgraded on each of its three atolls.

Jointly funded by the governments of Tokelau and New Zealand, the $NZ9 million ($USD5.7m) system will be installed by New Zealand company Vector PowerSmart.

Record rain in New Caledonia

Weekend rains in New Caledonia and French Polynesia have been record-breaking, says Meteo France.

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

Indonesia spends over 1.4 million USD reducing flood risks in Jakarta

http://en.vietnamplus.vn/ (press release)

The official duration for BPPT's cloud seeding operation started in January and ended on March 1. However, the agency said they are experimenting ...

Extreme weather (and other news) – Americas and Europe

Nearly 50 miles long | WHAS11 News Meteorologists explain the deadly path of the Nashville ...

WHAS11.com

A violent and destructive tornado took a path nearly 50 miles long through downtown Nashville and its surrounding suburbs around 1:50 a.m., ...

UK flood warnings: Heavy rain to cause further flooding this week - Latest maps

Express.co.uk

Storms Ciara, Dennis and Jorge all brought devastating weather conditions to the ... John Curtin, Executive Director for Flood Risk Management at the

Brazil's deadly storm causes landslides, killing at least 23 people with dozens still missing

At least 23 people have been killed and dozens more are missing in Brazil after a storm hit the country's south-eastern coast, causing torrential rain and landslides, authorities have said

International news and research

A Professor Ran A Weather Prediction Model On A $50 Computer

Forbes

Peter Neilly is the IBM Distinguished Engineer and Senior Vice President for Global Forecasting Sciences at The Weather Company. He has Pis ...

A Day In The Life Of A Private Sector Meteorologist

Forbes

Quick, what is the first picture that pops into your head when you think of a meteorologist? Someone standing in front a map, animatedly pointing at

Climate Change Could Add Around $100 Billion to Costs of Extreme Weather

The New York Times

The findings come from the university's Climate Change Business Risk Index, which uses climate modeling data to quantify extreme weather event ...

Intel Powers Fujitsu Supercomputer at Japan's Meteorological Research Institute

insideHPC

It is working to develop technologies for predicting torrential downpours and storms associated with typhoons, while addressing issues such as ...

Advances in deep learning assist with weather prediction

Digital Journal

Accurate weather predictions are essential for modern economies, such as farming and shipping, as well as being required by governments (such as ...

MeT to use Doppler Radars for accurate forecast during Amarnath Yatra

Greater Kashmir

Meteorological Department in J&K will be utilising hi-tech Doppler radar system for the first time during this year's AmarnathYatra to issue more ...

Aviation

NASA Balloon Team Sets Up For Around-The-World Test Flight From New Zealand

After a three-year hiatus, NASA's Scientific Balloon Program is returning to Wanaka, New Zealand, on a quest to perfect its super pressure balloon, or SPB, technology to support science missions for longer flight durations, with flights running up to 100 days.

Riding along with a Stratospheric Telescope

In pursuit of celestial mysteries onboard the world's only airborne observatory

PGF funding to help Rocket Lab up the ante on launches

Rocket Lab says the $8.3 million Provincial Growth Fund investment in Mahia roadworks will allow the space company to launch 120 rockets a year.

Air New Zealand boss Greg Foran on coronavirus: Airline can weather the storm

New Zealand Herald

A tough year for Air New Zealand will get even tougher, but boss Greg Foran says he is confident the airline can "weather the storm" engulfing airlines ...

Air NZ announces further flight cuts in wake of coronavirus outbreak

Air New Zealand has been forced to make further cuts to some of its Asia, Tasman and domestic New Zealand services due to the coronavirus outbreak.

Business/Insurance

2019 Weather Related Loses Reach $118.8m

Provisional results show that insurers spent more than $118.8 million last year supporting their customers recover from the impact of severe weather events, with over 18,000 claims made.

Insurance industry urged to develop new weather risk tools

Insurance Business Australia

Insurance industry urged to develop new weather risk tools ... Insurer, reinsurers, and lenders have been urged to develop weather risk products ... Corporation should invest in industry performance data, including weather station ...

World's financial firms risk $1 trln in losses if slow to act on climate change -report

Oliver Wyman found that few firms in the financial services industry - including insurers and asset managers - were modelling climate risks at a granular level

Iwi investment not maximising returns for members - report

Iwi are too reliant on investments in property and primary industries, restricting returns for their members, according to a new report.

Stories, data, and plans: Preparing for the next pandemic

Even before the current COVID-19 outbreak, a September 2019 report compiled at the request of the United Nations Secretary-General warned that there is a “very real threat” of a pandemic that is spread airborne around the world and could wipe out almost 5 percent of the global economy.

British Wagtech eyes the Cameroonian meteorological market

Business in Cameroon

The meteorological services managed by the Ministry of Transport gives indications on ... for a long time (like the weather station in Buea seen on the illustration picture), and the remaining 3 are operating below the acceptable level.

Barclays launches £50m adverse weather fund to support SMEs and farmers

London Loves Business

Barclays has today announced that it has made a £50m fund available to help small and medium sized enterprises (SMEs) and rural businesses ...

Climate change: EQC weather damage claims could rise by 25 per cent

Government insurance payouts to homeowners whose properties are damaged in weather disasters could jump by up to 25 per cent by the end of this century.

Communications/social media

US reporter turns into 'Weather Wizard' after Facebook Live mishap

A weather presenter in the US was excited to tell viewers about the season's first decent-sized snow dump, but viewers were a little distracted.

TAT releases daily photos of weather situations at attractions across Thailand

Travel Daily

The Tourism Authority of Thailand (TAT) is releasing a daily collection of photos with daytime weather situations at various attractions across Thailand.

Veteran Māori weather presenter Tina Carline mourned

The Māori presenter brought us the latest in weather on TV One weeknights from the 1970s until the early 80s and helped create a pathway for Māori to enter into the television industry.

Coronavirus

Key terms of the coronavirus outbreak, explained: From asymptomatic to zoonotic

With health officials trying to prevent and prepare for the spread of the coronavirus, there is panic and confusion and there are many questions. Here are some key terms and facts to know:

Coronavirus: Your questions to the experts answered

Coronavirus has arrived in New Zealand, with two people diagnosed in Auckland and several others are awaiting test results.

Coronavirus: What does 20 seconds of hand washing look like?

According to the Ministry of Health, the most simple and effective way to protect yourself from infectious disease - like coronavirus - is to wash your hands thoroughly and often.

Coronavirus: Is NZ facing a repeat of the 1918 flu pandemic?

In 1918, the flu pandemic killed 9000 New Zealanders. Are we facing a repeat with the COVID-19 coronavirus?

The short answer is no. COVID-19 is a different virus, though its attack on the human respiratory system is very similar to that of pandemic influenza. It also spreads in a similar way, through droplet infection from coughs and sneezes, and hand-to-hand transmission from surfaces such as handrails, taps and doorknobs.

Coronavirus: The emergency supplies you should actually have at home

In preparation for an emergency, each New Zealand household should have: at least nine litres of water per person, long-lasting foods, and a supply of any necessary prescription medicines.

Which Groups Are Most at Risk from the Coronavirus?

Being elderly, having an underlying illness and possibly being male all increase the risk of dying from an infection with the virus

The industries hit by COVID-19

There's no denying China is a major hub for global manufacturing. But when COVID-19 hit and officials started implementing city- and province-wide shutdowns, many Chinese factories fell silent, with flow-on effects for companies around the world. In this piece for the Asia Media Centre, we round up some of the biggest hits to global supply chains.

CargoMetrics data reveals depth of China cargo collapse | FreightWaves

Just how severely has the coronavirus curtailed cargo flows to and from China, the world's most important trade engine? Chinese government data is both after-the-fact and suspect, but Boston-based big-data company CargoMetrics is now providing a real-time answer

Coronavirus effects on NZ exports to China revealed in first solid stats

The Covid-19 coronavirus has cost about $300 million in lost exports to China in the past month, new statistics suggest.

Fire

Health effects of the Australian bushfires

A viewpoint published in the journal JAMA Internal Medicine February 28, 2020, discusses the lessons learned from the recent Australian bushfires in regards to climate change and public health.

Pretorius, I., A. Sturman, T. Strand, M. Katurji, and G. Pearce, 2020: A Meteorological Study of the Port Hills Fire, Christchurch, New Zealand. J. Appl. Meteor. Climatol., 59, 263–280, https://doi.org/10.1175/JAMC-D-19-0223.1

In February 2017, a wildfire occurred in the Port Hills on the southern boundary of Christchurch city in New Zealand. It was one of the country's most severe fires of the last decade in terms of the scale of evacuation, infrastructure damage, and property loss. On the third day of the fire, fire behavior was unexpectedly active, and two rapid downhill fire-spread events took place, creating a dangerous situation for firefighters. The aim of this paper is to explore the atmospheric processes that influenced the fire behavior at a range of meteorological scales, from the synoptic to meso- and microscales. Meteorological and fire data analyzed include observed data together with model simulations of weather conditions at different scales: 1) the Weather Research and Forecasting (WRF) numerical weather prediction model, which provided the regional context of the fire; and 2) the California Meteorological (CALMET) diagnostic model, which was used to

undertake a higher-resolution investigation of atmospheric processes near the fire. Results indicate that the fire was not strongly seasonally influenced. Instead, it appears the fire conditions were the effect of a specific combination of synoptic weather conditions and local meteorological conditions. The first rapid downhill fire-spread event was the result of airflow interaction with the intricate terrain of the Port Hills under stable nocturnal conditions. The second downhill fire-spread event bears similarities to vorticity-driven lateral spread, because the downhill component of the spread happened on a broad fire flank perpendicular to the surface wind direction and characteristic pyrocumulus convection occurred.

History

The little told story of the Tuskegee weathermen

Seattle Times

The first black weather officers in the Army Air Forces, they counted among their ranks such groundbreaking meteorologists as Charles Anderson, the ...

Satellites and radar

Extreme Weather-Tracking Satellites Prepare for Launch

WIRED

To be sure, the National Oceanic and Atmospheric Administration has used a network of weather satellites to track storms since the mid-1970s. But six ...

Space weather

Space Traffic Management: Better Space Weather Forecasts Needed

Eos

As our use of satellite applications increases (and hence the number of satellites in orbit increases), there is growing recognition, around the world, ...

Transport/roading/shipping/freight

Will wind-assisted propulsion blow the maritime industry away?

Ship Technology

Their research is being conducted with the support of NAPA's weather ... weather data and current weather predictions with a vessel-specific ship ...

Climate change / global warming / sea level rise

World could lose half its sandy beaches by 2100

Sandy beaches make up a third of the worlds coastlines - but we could lose half of them in the next 80 years according to new research published in the journal Nature Climate Change.

Effects of climate change explained

Otago Daily Times

"In 2018, MBIE's Smart Ideas funded EWERAM, the Extreme Weather Event Real-time Attribution Machine, which is working to address this. Within a ...

Cloud seeding / Geoengineering

Scientists demonstrate that cloud seeding can generate snowfall

National Science Foundation (press release)

Scientists have successfully used a combination of radars and snow gauges to measure the impact of cloud seeding on snowfall. The new research ...

Journal and articles online

A Meteorological Study of the Port Hills Fire, Christchurch, New Zealand

Ilze Pretorius, Andrew Sturman, Tara Strand, Marwan Katurji, and Grant Pearce

Chapman, C.C., Lea, M., Meyer, A. et al. Defining Southern Ocean fronts and their influence on biological and physical processes in a changing climate. Nat. Clim. Chang. (2020). https://doi.org/10.1038/s41558-020-0705-4 (Copy provided on request)

Megaflashes: Just How Long Can a Lightning Discharge Get?

Walter A. Lyons, Eric C. Bruning, Tom A. Warner, Donald R. MacGorman, Samantha Edgington, Clemens Tillier, and Janusz Mlynarczyk

Mesoscale to Microscale Simulations over Complex Terrain with the Immersed Boundary Method in the Weather Research and Forecasting Model

David J. Wiersema, Katherine A. Lundquist, and Fotini Katopodes Chow

Tracking Mesoscale Convective Systems that are Potential Candidates for Tropical Cyclogenesis

Kelly M. Núñez Ocasio, Jenni L. Evans, and George S. Young

Examining model error in potential temperature and potential vorticity weather forecasts at different lead times

Oscar Martínez-Alvarado, Claudio Sánchez

Version of Record online: 19 February 2020

We present a comparison of weather forecasts of different lead times, combining an Eulerian flow description and Lagrangian diabatic tracers, and using a theoretical unbiased model as reference. Eulerian changes in potential temperature and potential vorticity are underestimated at the most dynamically and thermodynamically active grid points. The Lagrangian-tracer description reveals very large deviations regardless of the Eulerian change level, and unrealistically similar magnitudes between diabatic changes in the forecasts. Addressing these deviations could lead towards an operational unbiased model.

Radar-based climatology of damaging hailstorms in Brisbane and Sydney, Australia

Robert A. Warren, Hamish A. Ramsay, Steven T. Siems, Michael J. Manton, Justin R. Peter, Alain Protat, Anu Pillalamarri

Version of Record online: 21 January 2020

Using ground-based radar observations, atmospheric soundings, and a unique insurance dataset, we investigate the climatology of damaging hailstorms in two domains centred on the major Australian cities of Brisbane and Sydney. The figure shows the annual frequency of damaging hail in the two domains on a 10 × 10 km2 grid.

On the turbulence structure of deep katabatic flows on a gentle mesoscale slope

Ivana Stiperski, Albert A. M. Holtslag, Manuela Lehner, Sebastian W. Hoch, C. David Whiteman

Version of Record online: 23 January 2020

Persistent relatively deep katabatic flows develop over a shallow mesoscale slope outside the Meteor Crater, Arizona. Their turbulent structure deviates from the structure of shallow katabatic flows in that the small-scale turbulence is strongly attenuated already at heights below the jet maximum. The height of the stable katabatic boundary layer is significantly lower than over flat terrain for the same forcing. The change of turbulence anisotropy below and above the boundary layer provides a new diagnostic of boundary-layer height.

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.

Using social media to measure impacts of named storm events in the United Kingdom and Ireland

M. Spruce, R. Arthur, H. T. P. Williams

e1887 | First Published: 04 February 2020

Despite increasing use of impact-based weather warning systems, the social impacts of extreme weather events lie beyond the reach of conventional meteorological observations and remain difficult to quantify. An analysis of data collected from the social media platform Twitter during named storm events in 2017/2018 finds information on sentiment and topics of discussion during each storm. This demonstrates a novel methodology for improved understanding of the social impacts of extreme weather and for better impact-based forecast validation.

Performance evaluation of sub-daily ensemble precipitation forecasts

Adeleh Saedi, Bahram Saghafian, Saber Moazami, Saleh Aminyavari

e1872 | First Published: 08 January 2020

The results indicated that the models had the best performance in basins 5 and 6, with average performance in basin 7. In terms of prediction of precipitation depth, the European Centre for Medium-Range Weather Forecasts (ECMWF) and the UK Met Office (UKMO) models performed best. Moreover, the models' forecasts were weaker with a 6 hr lead time compared with those with 24 hr, which may be attributed to the inaccurate detection of the initiation time of precipitation by the models.

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John Maunder's Weather Eye

https://www.sunlive.co.nz/blogs/14428-tauranga-february-rainfalls-18982020.html

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Thanks to our regular contributors

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