

## **New Zealand weather and climate news**

*(MetService focus)*

### **Wet and windy start to rollercoaster weather week**

"We're going to see the rain coming fine by the afternoon, that's for most of the country," said MetService forecaster Toporo Marsters.

### **Heavy rain, 110kmh winds could bring slips, flooding and powerline damage**

MetService meteorologist Andrew James previously said the bad weather was due to a complex low-pressure system in the Tasman Sea that would move over the entire country on Sunday and into Monday.

### **Weather to force Mother's Day celebrations indoors**

Stuff.co.nz

The system will continue to move over the country and bring rain to the eastern parts in the evening, MetService meteorologist Andrew James said.

### **Auckland weather: crews still working to restore power to some homes**

Some Auckland homes remain without power this morning after strong winds yesterday evening and through the night.

### **Low weather system packing a punch this evening, bringing heavy rain and strong winds to many**

Last week, temperatures were warmer than average for May due to a predominant northerly flow, MetService meteorologist Stephen Glassey said.

### **Drizzly start but mild week for Hawke's Bay**

But meteorologist Stephen Glassey said while Hawke's Bay's temperatures won't reach 24 degrees like last Friday, the mild weather is set to continue.

### **Rain pummels Richmond, mall hit by flooding**

Stuff.co.nz

MetService meteorologist Gerrit Keyser said 42mm of rain fell on Richmond between 4pm and 6pm, the bulk of which – 39mm – hit the town between ...

## **Fog restrictions cancel and delay flights out of Auckland Airport, delay ferries**

Stuff.co.nz

MetService said it was expecting the fog to clear mid to late morning. ... Auckland and up to Northland," MetService meteorologist Tui McInnes said.

## **Forecasters worry thousands at risk from storms due to 5G cellphone network disruption**

Stuff.co.nz

New Zealanders' exposure to dangerous weather could increase if 5G cellphone technology has the effect on weather satellites that international ...

## **Warmer spells forecast for winter**

Otago Daily Times

A weak, central Pacific El Nino climate cycle continued during April, and patterns of enhanced rainfall persisted around the International Dateline, ...

## **2019 New Zealand Snow Season Outlook**

Mountainwatch (press release) (blog)

MODELS FAVOUR THE SOUTH WHILE EL NINO TEETERS. After a few dustings of snow this year already, the slopes are back to bare tussock. We're ...

## **Companies plan ahead for global helium shortage**

Stuff.co.nz

A global helium shortage could burst the bubble for all the businesses that rely on the gas to lift weather balloons, large blimps, and, yes, the balloons ...

## ***MetOcean***

### **Oceans hit by bigger waves and winds over past 33 years, study finds**

The Victorian coastline is set to be battered by a massive swell today, with waves as high as 15 metres predicted in some parts of the state.

**WMO**

## **Multi-Hazard Early Warning Conference confronts cascading impacts of extreme weather and other natural hazards and of climate change**

Climate change, population increase, urbanization and environmental degradation are amplifying the impact of extreme weather, water and climate events such as tropical cyclones, floods and extreme...

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

### **Two projects in Federated States of Micronesia and Marshalls**

However, many ports lack suitable infrastructure, making travel in bad weather or at ... The grant for Marshall Islands will be jointly implemented by the country's Ministry of Transport and Communications, Ministry of Finance and ...

### **North Pacific islands countries to get improved ports**

However, many ports lack suitable infrastructure, making travel in bad weather or at night particularly dangerous. This increases the vulnerability of ...

## **How WA is on track to have Australia's most advanced weather forecasting system**

Australians are famously fond of talking about the weather. The topic serves as both a great unifier and obsession — particularly when a heatwave, cold snap or wild storm strikes.

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

### **New report shows alarming weather changes in South Africa**

BusinessTech

South Africa is already experiencing significant effects of climate change, particularly as a result of increased temperatures and water variability.

### **Japan weather bureau sees 80% chance of El Nino continuing into summer**

Reuters

TOKYO (Reuters) - Japan's weather bureau on Friday said the El Nino weather pattern was continuing, with an 80% chance it would stretch into the ...

### **Singapore at 'moderate risk' of severe haze in 2019: Report**

TODAYonline

While 2019 is forecasted to be an El Nino year, its effect is not expected to be as strong as in past years. The study also noted that Indonesia has ...

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

#### Meteorologist: US has seen wettest 12-month period on record

News 12 New Jersey

A meteorologist with Climate Central says that the United States has seen a lot of rain over the past 12 months – breaking an old record. “This is the ...

#### UK weather forecast – Parts of Britain to be lashed by hail and thunder before it heats up next week

The Sun

THUNDER and hail could lash parts of the UK today before the temperatures start to heat up next week. Met Office forecasters said showers are ...

### **International news and research**

#### Storm water banking could help Texas manage floods and droughts

A study has quantified the amount of water flowing in major Texas rivers during heavy rains and found that there is enough room in coastal aquifers to store most of it. This discovery means that capturing and storing water could be a feasible option for partially mitigating floods and droughts, which are both expected to increase in frequency and intensity as the climate changes.

#### Increased Demand across Automated Weather Observing System Market Driven by Technological ...

openPR (press release)

The automated weather observing system provides high operational safety by ... These factors are significantly fueling the growth of automated weather ... various aviation reports that are useful for pilot and airport aviation authority.

#### Hurricane categories - why they're useful and where they fall short

WECT

WILMINGTON, NC (WECT) - Since the 1950s, meteorologists have categorized hurricane intensity with the Saffir-Simpson Scale. The scale has utility, ...

Austria's Central Institution for Meteorology and Geodynamics Improves Weather Nowcasting With ...

Yahoo Finance

This project focuses on improving meteorological products including local nowcasts for weather, wind power yield assessments and air quality ...

Aviation

Rocket Lab To Launch Multiple Satellites On A Rideshare Mission Next Month

Rocket Lab has announced that its next launch will be a rideshare mission for the company Spaceflight, taking multiple satellites into orbit.

Passengers set to claim up to \$20k for lost luggage under a new draft civil aviation bill

TVNZ

Transport Minister Phil Twyford said the shake-up will "modernise" key pieces of aviation legislation, including rules on drone use. The minister is ...

Business/Insurance

Understory Gets Weather Reporting On Track With \$5.25M Investment

Crunchbase News

Currently, businesses rely largely on government data and old infrastructures to run their weather-related operations. For example, to measure rain, ...

**Energy and Mining**

Indji's new "Plan of the Day" dashboard forecasts critical weather & lightning threats

Windpower Engineering (press release)

Indji Systems, an environmental threat-monitoring and alerting provider for the energy sector, has launched an hour-by-hour forecast lightning for its ...

The Impact Of Tropical Weather On LNG Operations

Forbes

Transporting natural gas from the Gulf of Mexico or East Coast terminals can be expensive and inefficient, particularly when weather impedes shipping, ...

GNS welcomes new energy development centre in Taranaki

GNS Science welcomes today's announcement by the Prime Minister of the establishment of a National New-Energy Development Centre in Taranaki.

### **Government (regional and national)**

Aiming to reframe governmental success

Otago Daily Times

Treasury has had a go and constructed a "Living Standards Framework," the foundations of which are four pillars: natural capital, human capital, social ...

### **Hydrology / Flooding**

What's the difference between flooding and flash flooding?

ABC 4

There is a reason, as meteorologists, we try to engrain that saying into your mind. Flash flooding is one of the most prevalent spring and summertime ...

### **Lightning**

Father sues Melaka United, FAM over son's lightning strike death

The Malaysian Insight

This undated handout from Marco Petrovski today shows Australian goalkeeper Stefan Petrovski during a football training session in Sydney, Australia ...

### **Satellites and radar**

5G signals to get in the way of satellites broadcasting weather forecasts

Boscalicious

Weather satellites use certain radio frequency bands in the electromagnetic spectrum to monitor water vapor in the atmosphere, but bands near these ...

Satellites, oceanic tools help IMD shadow cyclones

DNA India

The India Meteorological Department (IMD) has earned plaudits from home and abroad for its early warnings on the extremely severe cyclonic storm ...

[Constellation of weather satellites to cover the globe](#)

Phys.Org

Want more accurate weather forecasts? You're in luck: Last month, researchers at CU Boulder saw the fruits of their labors launch aboard a new ...

[How Atmospheric Satellite Soundings Transformed Weather Prediction](#)

WeatherNation

Weather balloons collected critical information for weather forecasting. ... Weather satellites now take hundreds of thousands of soundings a day.

Innovation and technologies (inc data and new products)

[Nova Energy & Plume launch family-friendly WiFi controls](#)

FutureFive New Zealand

Nova Energy and smart home internet platform Plume have teamed up to offer New Zealanders a new range of family-friendly internet services and ...

[The scientists saw a serious danger in 5G technology](#)

[www.MICetimes.asia](#) (press release)

The scientists saw a serious danger in 5G technology ... they believe that the launch of a new mobile standard can seriously affect weather forecasting.

[The best weather apps you can put on your phone](#)

Popular Science

The Android and iOS app stores offer a whole host of options ready and willing to provide all manner of weather forecasts and meteorological data for ...

[Why organisations need to create a digital workplace 'A-team'](#)

Gartner lists ways to ensure the success of digital workplace programmes

[Read more](#)

[Your smartphone's wireless signal can be used to forecast the weather](#)

Fast Company

We all have a reasonable understanding of how weather forecasting works. Satellites and ground-based radar monitor weather conditions across the ...

[Cutting-edge technologies against floods, fires and extreme weather events](#)

ReliefWeb

Big Data to process information in real-time during disasters, Artificial Intelligence applied to language filtering and a mobile app to alert citizens are ...

[Huawei, OUC to jointly work on climate change, weather forecast](#)

Chinadaily USA

China's tech giant Huawei and Ocean University of China (OUC), signed a cooperative agreement to jointly work on climate change and ...

## **Space weather**

[How space weather affects weather on Earth](#)

WHP Harrisburg

But why are all these people talking about space weather? ... “The GPS satellites can be significantly affected by a space weather event, so much so ...

El Nino / La Nina

[New study reveals “extraordinary change” in El Niño possibly linked to climate change](#)

Discover Magazine (blog)

In a first, researchers have used chemical fingerprints locked within coral skeletons to build a season-by-season record of El Niño episodes dating ...

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

[NZ introduces groundbreaking zero carbon bill, including targets for agricultural methane](#)



Robert McLachlan, Massey University

New Zealand's government has released a bill that sets targets to bring long-lived greenhouse gases to net zero by 2050 and reduce emissions of the shorter-lived methane by 10% within a decade.

#### Occurrence of back-to-back heat waves likely to accelerate with climate change

Researchers have provided the first estimation of the potential damage from back-to-back, or compound, heat waves, which the authors found will increase as global warming continues. But government warning systems and health-care outreach do not currently calculate the risks of sequential heat waves. Instead, risk and response are determined by the severity of individual episodes of extreme temperatures.

#### Climate change research funding on offer

The Ministry for Primary industries is calling for applications to the 2019/20 funding round for the Sustainable Land Management and Climate Change (SLMACC) Research Programme.

#### Māori seek direct input into govt's climate change policy

Māori leaders in the fight for climate change say the government needs to let Māori determine climate change policy - not just be consulted.

### **Journal and articles online**

### **Meteorological Applications**

#### Accepted Articles

Accepted, unedited articles published online and citable. The final edited and typeset Version of Record will appear in the future.

#### Sensitivity of Weather Research and Forecasting model to downscaling schemes in ensemble rainfall estimation

Junyi Cai, Jingxuan Zhu, Qiang Dai, Qiqi Yang, Shuliang Zhang

First Published: 08 May 2019

## **Meteorological Applications**

### Early View

Online Version of Record before inclusion in an issue

### Application of a Bayesian inflation approach to EnSRF radar data assimilation to improve the analysis and forecasting of an MCS

Shibo Gao, Jinzhong Min, Limin Liu, Chuanyou Ren

Version of Record online: 10 May 2019

A spatially and temporally varying Bayesian inflation algorithm was applied to the assimilation of the real radar data of a mesoscale convective system (MCS) using the ensemble square root filter (EnSRF) within the advanced regional prediction system (ARPS). The results indicated that the analysis and forecast of the MCS using the Bayesian inflation method appeared better than when using the multiplicative inflation method. Quantitative reflectivity and precipitation forecast skill were also improved in the Bayesian inflation experiment.

### Observed changes in climate extremes in Nigeria

Imoleayo E. Gbode, Oluwafemi E. Adeyeri, Kaah P. Menang, Joseph D. K. Intsiful, Vincent O. Ajayi, Jerome A. Omotosho, Akintomide A. Akinsanola

Version of Record online: 09 May 2019

The spatio-temporal variation in the observed trends of climate indices over Nigeria shows a significant increase in the frequencies of warm spell, warm days and nights and decreasing cold spell, cold days and nights over the three climatic zones delineated. A significant increase in annual total precipitation was found in some stations across the Guinea coast and Sahel zones. Changes in consecutive dry days and consecutive wet days are non-significant in most stations. Also, a significant increase in extremely wet days was observed in a few stations across the three climatic zones. The implication of the observed warming could, however, result in thermal discomfort of lives in areas with significant positive trends. This could also exert pressure on the economy's power sector, as energy demand for cooling will increase. The increase in total annual precipitation will potentially be favourable for hydropower generation and increase the availability of the potable water supply for both industrial and domestic uses in the country. However, the increase in consecutive dry days and the decrease in consecutive wet days are dangerous for agricultural practices and, hence, food security.

### Predicting impacts of climate change on the potential distribution of two interacting species in the forests of western Iran

Mansoureh Malekian, Maedeh Sadeghi

Version of Record online: 09 May 2019

Predicting the distribution of suitable habitats for species under climate change is essential for planning conservation strategies. The Persian squirrel is a poorly known species in the Middle East which is distributed in oak-dominated forests of western Iran. It might not be immediately obvious what a bushy-tailed rodent living in the forests of Iran can tell us about climate impacts. However, our results show the loss of suitable habitats for both species. Our results can help to identify priority areas for the long term conservation of species and should be used to inform adaptive conservation management in the face of future climate change.

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The Importance of Unresolved Biases in Twentieth-Century Sea Surface Temperature Observations

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The Climatological Impact of Recurving North Atlantic Tropical Cyclones on Downstream Extreme Precipitation Events

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Multicase Assessment of the Impacts of Horizontal and Vertical Grid Spacing, and Turbulence Closure Model, on Subkilometer-Scale Simulations of Atmospheric Bores during PECAN

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The Relationship between Convective Bursts and Warm-Core Intensification in a Nonhydrostatic Simulation of Typhoon Lionrock (2016)

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Observed Variations of the Atmospheric Boundary Layer and Stratocumulus over a Warm Eddy in the Kuroshio Extension

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Thanks to our regular contributors