

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

### ***MetService Mentions***

#### **Farewell summer? Warm temperatures on the way out**

MetService is forecasting temperatures up to 30degC for the next few days. However, on Wednesday a cool southerly will sweep the country, bringing with it some relief from the heat.

#### **Mixed bag of weather in store for New Zealand following summery week**

"For some places it will be quite warm, those in the east on Monday and Tuesday are looking for temperatures up towards 30C," MetService meteorologist Peter Little said.

#### **Temperature drop on the way**

"The warmth returns at the beginning of this week as a northwesterly flow spreads over the country ahead of an approaching front," MetService meteorologist Peter Little said.

#### **Waitangi Day weather: Cool in south, warm in north**

MetService meteorologist James Millward said Friday's cold front had broken up the heat and more average temperatures could be expected in the coming week.

#### **Hot night in Dunedin: 28degC at 2am**

MetService meteorologist James Millward said the balmy conditions were caused by a northwesterly, which came through bringing warm air off the Southern Alps.

#### **Cold snap ends New Zealand's heatwave, with rain on horizon**

MetService meteorologist Mark Bowe said the front was sitting over the central part of the country, and would likely bring wind and showers to parts of the North Island over the weekend.

#### **Summer heatwave: Levin records high temperatures and town clock is confused**

MetService meteorologist Angus Hines said 32.6 degrees was the second highest temperature in New Zealand recorded that day, behind Taumarunui with 33.6 degrees.

#### **Summer weather: Can this heatwave officially be called a heatwave yet?**

MetService meteorologist Lisa Murray said some respite from the heat was coming for parts of the country in the form of a punchy southern system.

## **Mount Cooking! Heatwave blasts through South Island with summer temperatures nearing mid-30s**

Meteorologist Ravi Kandula said over the weekend that the heat would mostly be confined to the South Island - mainly central parts of Otago, Blenheim and Kaikōura.

## **Water restrictions in place throughout the country**

MetService said temperatures in Auckland reached 30C and 35C yesterday afternoon.

MetService meteorologist Georgina Griffiths said widespread was the key to the heat.

## **If this heatwave is New Zealand's future, are we ready for it?**

What we've been experiencing this week is a taste of what's projected for later this century. Are our towns and cities ready for it?

## **Revealed: Where in New Zealand the heatwave is now an official one**

New Zealand has sweltered in the grip of a heatwave this week: and now people in some parts of the country can say they've experienced an official one.

## **Strange Auckland haze caused by Australian bushfire smoke particles**

MetService told Newshub that smoke particles from those bushfires were responsible for a strange haze obscuring long-distance views in Auckland on Thursday, having been blown to New Zealand by strong westerly winds.

## **Jim Salinger: A polar vortex in the US, a heatwave here**

As parts of the Southern Hemisphere in Australasia swelter, the mid-west has been plunged into a frigid cold snap.

## **The ups and downs of NZ's first ozone-measuring Dobson spectrophotometer**

It looks like it could have come out of the Tardis of the first Doctor Who – an attempt at appearing technologically modern that long ago became an anachronism.

## **Blistering hot: Road surface temperatures pass 62C in parts of South Island**

Anyone out and about in parts of the South Island is being told to keep their shoes on, as road surfaces hit sizzling temperatures of up to 62C.

**MetOcean**

## **Variations in seafloor create freak ocean waves**

Researchers have found that abrupt variations in the seafloor can cause dangerous ocean waves known as rogue or freak waves -- waves so catastrophic that they were once thought to be the figments of seafarers' imaginations.

## **New York launches metocean surveys with floating lidars**

February 1 (Renewables Now) - The New York State Energy and Research Development Authority (NYSERDA) on Thursday unveiled two contracts with Ocean Tech Services and DNV GL for using floating lidar technology to study the metocean conditions off New York's coast

## **NIWA**

### **Roll on summer in New Zealand: warmth, humidity here until April**

Climate scientists are predicting a bumper summer, with warmth and humidity set to stick around everywhere for the next three months at least.

Niwa's outlook for February to April forecast above average temperatures for all regions – but with plenty of potential for big deluges.

### **NIWA Outlook: February – April 2019**

#### Outlook Summary

- The atmospheric circulation around New Zealand is forecast to be characterised by slightly higher than normal pressure to the southwest and southeast of New Zealand and lower pressure than normal to the northeast of the country. Weak easterly-quarter air flows are favoured.

#### **The heatwave in numbers**

NIWA has crunched the data on this week's heatwave and come up with the following record breakers:

Highest temperature: Hanmer Forest 38.4C

Warmest temperature in Aotearoa so far this summer was recorded at Hanmer Forest on 31st January. This is Hanmer Forest's warmest temperature on record (data since 1906). It is also the highest January temperature in NZ since Alexandra reached 38.7°C last year (on 30 January 2018) and the 18th-equal warmest for all months in NZ.

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

#### **How much coffee would you drink in a year?**

If you find the weekly grocery shop a chore, imagine one to last a year on the ice.

Two hundred kilograms of coffee beans, 100 cans of peaches and 1900 rolls of toilet paper have just arrived at Scott Base in Antarctica.

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

#### **'Unprecedented' flooding to hit northeast Australia**

(3rd UPDATE) 'It's basically not just a one-in-20-year event, it's a one-in-100-year event,' says Queensland Premier Anastacia Palaszczuk

#### **Sodden Townsville, Australia on edge as dam floodgates open and residents flee homes**

Residents in sodden Townsville, Australia have been urged to seek higher ground as heavy downpours forced the floodgates to the city's swollen Ross River Dam to be completely opened.

#### **Australia swelters through its hottest month on record, with January mean temperature exceeding 30C**

It's official: January 2019 was Australia's hottest-ever month on record going all the way back to 1910, according to the monthly climate review released by the Bureau of Meteorology (BOM).

#### **Vaisala to Provide Australian Bureau of Meteorology with Next Generation Automatic Sounding Systems**

Vaisala, a global leader in environmental and industrial measurements, has signed a contract with the Australian Bureau of Meteorology (BoM) for 13 Vaisala AUTOSONDE® AS41 automatic sounding systems. This is the world's largest single order of such systems with the first installation scheduled for March 2019.

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

#### **Tokyo 2020 plans weather monitoring after heatstroke fears**

Tokyo 2020 organisers on Thursday unveiled plans for a centre to monitor extreme weather, after concerns the city's scorching summer could cause heatstroke or even deaths during the Games.

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

#### **US counts the cost as polar vortex retreats, with temperatures to rise by 30C**

Dangerous freezing conditions that hit the northern US this week have retreated, but not before exacting a human toll: more than two dozen weather-related deaths in eight states, and hundreds of injuries, including frostbite, broken bones and heart attacks.

### **AccuWeather estimates polar vortex could have \$5 billion impact on U.S. economy**

STATE COLLEGE, Pa. — As a large area of the Midwest, including West Virginia, continued to deal with near- or below-zero temperatures and biting wind chills Thursday, AccuWeather gave an estimate for the impact of the extreme weather on the country's economy.

### **A look at 5 of the costliest winter weather events in US history**

The polar vortex Opens a New Window. that has been gripping the Midwest for almost a week is set to cost the economy as much as \$14 billion, according to new estimates from AccuWeather. Opens a New Window.

And, while much of that will be recouped, up to \$5 billion of that could be permanently lost.

### **New weather research law will improve U.S. safety and economic competitiveness**

New funding authorization won bipartisan backing

### **International news and research**

#### **When extreme weather wipes out wildlife, the fallout can last for years**

The recent heatwaves have proved deadly to many Australian animals, from feral horses to flying foxes.

#### **Japanese meteorologist Toshio Koike and his award-winning Tibet exploration**

Tibet, a distant, mysterious land, is known as the planet's "third pole" for its vast icefields. Even minor environmental disturbances here can have a significant impact on global water circulation and climate.

The unique environment attracted Japanese hydro meteorologist Toshio Koike to China in the early '90s, at the invitation of the Chinese Academy of Sciences (CAS).

### **The New Language of Climate Change**

Scientists and meteorologists on the front lines of the climate wars are testing a new strategy to get through to the skeptics and outright deniers.

### **Four Reasons Why 'But My Weather App Said' Is So Frustrating**

Over the past few days, the Atlanta area has been preparing for a very minor winter weather threat as a cold front plows through the state on Tuesday. Many meteorologists like me have clearly stated that it was not going to be a major weather event and would affect parts of the state differently.

### **XShip Analytics Forecasts IBM Has Real-Time Weather Down**

XShip Design and Analytics will integrate real-time weather data from IBM with its XShip performance platform.

### **How Forensic Meteorologists are Assisting with Florida First-Party Property Cases**

Every day the impact technology has on our daily lives increases. The legal profession is not immune to the inundation of technological advances. A prime example of the collision of law and technology is how forensic meteorology impacts first-party property insurance cases.

### **National Weather Service Dropping High Seas and Storm Warnings on WWV/WWVH**

The National Weather Service (NWS) is discontinuing its high seas and storm warnings transmitted via National Institute of Science and Technology (NIST) WWV/WWVH time and frequency-standard HF transmissions, starting January 31 at 1800 UTC. The NWS warnings are aimed at the Atlantic, the Gulf of Mexico, and the Pacific.

### **The pace at which the world's permafrost soils are warming**

Global warming is leaving more and more apparent scars in the world's permafrost regions. As the new global comparative study conducted by the international permafrost network GTN-P shows, in all regions with permafrost soils the temperature of the frozen ground at a depth of more than 10 meters rose by an average of 0.3 degrees Celsius between 2007 and 2016 -- in the Arctic and Antarctic, as well as the high mountain ranges of Europe and Central Asia.

### **Modern Weather Forecasts Are Stunningly Accurate**

The polar vortex is just the latest example of how reliable five-day forecasts have become.

### **Groundhog Day 2019: Punxsutawney Phil's forecast is in**

Spring is coming early!

### **Meteorologists doubt groundhog's predictive powers**

With mostly sunny skies forecast for central Pennsylvania, meteorologists expect Punxsutawney Phil the groundhog will predict six more weeks of winter today on Groundhog Day.

### **How loud booms can fool people into thinking there's an earthquake when it's very cold**

During extreme cold events, you may hear a loud boom and you may feel like you experienced an earthquake.

However, this event was more likely a cryoseism, also known as an ice quake or a frost quake.

### **Stop Hating On the Weather Forecast**

It's actually pretty accurate now, even further in advance. The Midwest had plenty of warning this cold front was coming.

## **WMO**

### **The weather in January: a month of extremes**

The month of January has been marked by high impact weather in many parts of the world, including dangerous and extreme cold in North America, record heat and wildfires in Australia, high...

Aviation

### **Passing aircraft wing extra snow and rain out of clouds**

Planes flying over rain or snow can intensify the precipitation by as much as 10-fold, according to a new study. The rain- and snow-bursts are not caused by emissions from the aircraft but are the peculiar consequence of the aircrafts' wings passing through clouds of supercooled water droplets in cloud layers above a layer of active rain or snow.

### **The shadow chasers**

One remarkable night on board a flying telescope.

We are level at 34,000 feet," says mission director Karina Leppik, addressing her crew on their radio headsets. "Do you guys have any issues with me opening the door?"

### **Communications/social media**

### **Beating up the heating up?**

If ever the weather deserves to hog the headlines, it's when record high temperatures roll in and a bona-fide heatwave has us in its grip. But did the media over-egg a story which mostly spoke for itself?

### **Energy and Mining**

### **Hydrogen in New Zealand study**

A new study on hydrogen in New Zealand explores how hydrogen technologies could be used in New Zealand to help decarbonise the economy, as well as its potential as a lower emissions export fuel to decarbonise other economies. It examines both 'green' hydrogen produced from renewable electricity, and hydrogen produced from natural gas coupled with carbon capture and storage.

## **Farming/horticulture/Aquaculture**

### **Running Dry: Can the Regions thrive without irrigation?**

The irrigation industry argues that water schemes are not only essential to maintain New Zealand living standards and farmers livelihoods, but can actually improve the environment, by evening out the impact of weather cycles and maintaining water levels in rivers. But critics say irrigation ruins rivers and undermining New Zealand's clean green image. The Government last year removed state funding from big schemes, but is still backing smaller projects. Rural reporter Eric Frykberg has been exploring what the changes might mean for some of New Zealand's sun-baked areas.

### **How climate change is threatening New Zealand's wine industry**

The pinot noir grape is to the world-renowned Martinborough winery Ata Rangi what rock'n'roll is to the Rolling Stones – not just its chosen creative vehicle, but the thing around which its whole identity has been moulded. So when its founder Clive Paton invokes a future where pinot might not play a part, it does more than give pause for thought. You start to wonder if the world isn't going to hell in a handcart.

## **Transport/roading/shipping/freight**

### **Port of Rotterdam will capture weather conditions in real time**

With a new platform, port authorities in Rotterdam will send signals regarding weather and water conditions in real time to make freight planning easier. There is huge potential, says the port, which sees a future when sensors are used on everything from sailings to quays.

Innovation and technologies (inc data and new products)

### **Telecom and Media Firms Selling Data Are Facing Backlash**

Data privacy battles are heating up now that a group of US senators have asked regulators to investigate how telecom firms sell people's location data.

### **Athenium Analytics releases weather-risk product for construction**

Designed in collaboration with the Associated General Contractors of America, GaugeConstruction helps general contractors and subcontractors measure, mitigate and manage weather risk -- and plan projects with increased confidence.

### **China deploys new rocket-launching robotic ship, but it's not built for war**

When one of the world's superpowers deploys a robotic ship capable of launching rockets it's safe to assume that it's going to raise plenty of eyebrows. Well, that's exactly what China just did, but this particular vessel isn't concerned with protecting territory to fending off invaders.

### **Cutting-edge Saildrone may help improve weather forecasts**

NEWPORT, R.I. (WPRI) — A University of Rhode Island (URI) oceanography professor is hoping to learn more about the Gulf Stream and to improve weather forecasting with the help of some cutting-edge technology.

Climate change / global warming / sea level rise

### **Sea level rise likely to damage inland water infrastructure**

Water New Zealand says that rising sea levels will have a huge impact on water infrastructure many kilometres inland from the coast.

### **What needs to change in a changing climate: managing risk requires decisive policy and innovative technology**

A 'Canada Next: 12 ways to get ahead of disruption' report

17 Jan 2019

Glen Hodgson

Public Policy Forum

Summary and recommendations:

Climate change is creating a growing array of economic and societal costs and risks, including severe flooding and forest fires, threats to infrastructure, and the risk of stranded assets in oil and gas production and distribution worth many billions of dollars. At the same time, potential opportunities exist in the low-carbon economy as public and private organizations develop innovative, disruptive technologies.

Managing climate change risk will be critically important to Canada and the international community for decades to come, as evidenced by the fact that other jurisdictions are already moving forward with effective regulatory and policy practices. Innovative public policy and

technology will be required in Canada to address and manage climate change risks, and to promote faster adaptation without sacrificing robust economic growth.

While we have made a strong start in addressing the consequences of climate change, the Government of Canada needs to focus its policies on completing and implementing key transitions, such as:

establish carbon pricing and revenue cycling, as well as complementary smart regulations where pricing requires support  
significantly expand public investment in infrastructure to reflect the increased frequency of extreme weather events and their related impacts  
enhance regulatory oversight to avoid stranded assets  
foster the development and commercialization of technologies that reduce greenhouse gas (GHG) emissions  
promote public and private procurement of technologies that reduce GHG emissions without relying on these technologies to meet emissions targets.

• **Farmed fish dying, grape harvest weeks early – just some of the effects of last summer’s heatwave in NZ**

Jim Salinger, University of Tasmania; James Renwick, Victoria University of Wellington

Analysis of last summer's heatwave shows it killed farmed salmon and decimated kelp forests, as well as shifting grape harvests and fish spawning times forward by several weeks.

**Cloud seeding / Geoengineering**

**IRGC Forms Drone Unit for Cloud Seeding**

TEHRAN (Tasnim) – The Islamic Revolution Guards Corps (IRGC) Aerospace Force has created a drone unit to carry out cloud seeding projects in different parts of Iran, an official said.

Journal and articles online

**Quarterly Journal of the Royal Meteorological Society**

**Accepted Articles**

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

Atmospheric sensitivity to marginal-ice-zone drag: local and global responses

Ian A. Renfrew, Andrew D. Elvidge, John M. Edwards

First Published: 26 January 2019

Spatio-temporal variability of rainfall in a high tropical island: patterns and large-scale drivers in Réunion Island

A. Réchou, O. Flores, G. Jumaux, V. Duflot, O. Bousquet, C. Pouppeville, F. Bonnardot

First Published: 25 January 2019

Radiation, surface temperature and evaporation over wet surfaces

Yuting Yang, Michael L. Roderick

First Published: 24 January 2019



Open Access

Vortex dynamics of stratospheric sudden warmings: a reanalysis data study using PV contour integral diagnostics

F. Kwasniok, R. Beaumont, J. Thuburn

First Published: 22 January 2019

Improving initial condition perturbations in a convection-permitting ensemble prediction system

Endi Keresturi, Yong Wang, Florian Meier, Florian Weidle, Christoph Wittmann, Aitor Atencia

First Published: 22 January 2019

MJO Modulation and its Predictability of Boreal Summer Tropical Cyclone Genesis over Northwest Pacific in Met Office Hadley Centre and Beijing Climate Center Seasonal Prediction Systems

Chongbo Zhao, Hong-Li Ren, Rosie Eade, Yujie Wu, Jie Wu, Craig MacLachlan

First Published: 22 January 2019

From reliable weather forecasts to skilful climate response: a dynamical systems approach

H.M. Christensen, J. Berner

First Published: 22 January 2019

Estimation of 3D wet refractivity by tomography, combining GNSS and NWP data. First results from assimilation of wet refractivity into NWP

Estera Trzcina, Witold Rohm

First Published: 22 January 2019

On the hypothesized outflow control of tropical cyclone intensification

Michael T. Montgomery, John Persing, Roger K. Smith

First Published: 22 January 2019

A universal wind profile for the inversion-capped neutral atmospheric boundary layer

Mark Kelly, Roberto Alessio Cersosimo, Jacob Berg

First Published: 22 January 2019

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