

New Zealand weather and climate news

These clips come courtesy of MetService

MetService focus

Bye bye rain, hello fine and frosty days

MetService shift forecaster Larissa Marintchenko said there was a chance of showers with southwesterly winds in Auckland on Tuesday, but these will clear up from Wednesday where it would be fine with light winds. It would be a welcome change from the wet and cloudy weather hanging over Auckland at the weekend.

https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=12081290

Frosty, fog-covered start to the morning as temperatures dip well below zero degrees for parts of the country

"[Waiouru] was colder even than Mount Cook, which got to negative seven," MetService meteorologist Claire Flynn said.

<https://www.tvnz.co.nz/one-news/new-zealand/frosty-fog-covered-start-morning-temperatures-dip-well-below-zero-degrees-parts-country>

Flights resume as Auckland fog clears

MetService lead meteorologist Mark Todd said in the North Island the fog stretched from Auckland through Waikato, Waitomo and Taumarunui.

<https://www.odt.co.nz/news/national/flights-resume-auckland-fog-clears>

A couple more frosty starts before rain

"We were reasonably lucky last night. There was quite a bit of cloud around. It put a cap on some places, so they didn't get as cold," MetService meteorologist Cameron Coutts said.

<https://www.stuff.co.nz/national/105081876/a-couple-more-frosty-starts-before-rain>

Extreme weather (and other news) – Australia and Pacific

NZ's foreign minister announces next steps in 'Pacific reset' aid strategy

New Zealand's foreign minister says it is looking to completely re-shape its aid spending, announcing the establishment of a "Strategic International Development Fund."

<https://www.radionz.co.nz/international/pacific-news/360841/nz-s-foreign-minister-announces-next-steps-in-pacific-reset-aid-strategy>

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

Taiwan could see 3-5 storms until December: CWB

Taipei, June 29 (CNA) There could be three to five tropical storms affecting Taiwan from now to the end of the year, which is higher than the average for this period, the Central Weather Bureau (CWB) said Friday.

<http://focustaiwan.tw/news/asoc/201806290016.aspx>

Surge in dust storms in India due to change in global wind patterns

Changing global wind patterns due to warming up of Arctic region is one of the reasons for the surge in dust storms in northern and central India.

<https://www.indiatoday.in/india/story/surge-in-dust-storms-in-india-due-to-change-in-global-wind-patterns-1272436-2018-06-28>

Climate change can cost India 2.8% of GDP by 2050: World Bank

Report says that 10 districts in Central India will be worst hit

<https://www.thehindubusinessline.com/economy/climate-change-can-cost-india-28-of-gdp-by-2050-world-bank/article24282307.ece>

Severe Tropical Storm Prapiroon to unleash flooding, strong winds on southern Japan, Korean Peninsula

Severe Tropical Storm Prapiroon will bring potentially flooding rain and strong wind to southern Japan and South Korea during the beginning of the week.

<https://www.accuweather.com/en/weather-news/tropical-storm-prapiroon-to-unleash-flooding-strong-winds-on-southern-japan-korean-peninsula/70005356>

Extreme weather (and other news) – Americas and Europe

PM calls for sustainability of weather forecast stations

<http://www.thecitizen.co.tz/News/PM-calls-for-sustainability-of-weather-forecast-stations/1840340-4638166-lejlpqz/index.html>

Hottest day in Glasgow since records began as city hits 31.9C

Meteorologists have confirmed that Glasgow has had its warmest ever day as the temperature in the city topped 31.9C.

<https://www.scotsman.com/regions/glasgow-strathclyde/hottest-day-in-glasgow-since-records-began-as-city-hits-31-9c-1-4761564>

International news and research

Honeywell's 757 Storm Chasing in Asia

Honeywell's Boeing 757 "Connected Aircraft" testbed is in Asia completing a three-week mission to collect crucial weather data.

Unlike the "Power of Connected" World Tour last year, during which the aircraft visited more than a dozen countries in North America, Europe, and Asia and demonstrated the capabilities of the Connected Aircraft, this year's deployment to Asia is primarily to collect vital scientific weather patterns and data over Southeast Asia.

<https://www.ainonline.com/aviation-news/aerospace/2018-06-27/honeywells-757-storm-chasing-asia>

The Weather Channel Used VR to Simulate a Shockingly Realistic Tornado

Viewers typically don't tune into The Weather Channel for action-packed thrills, but a shockingly realistic simulation of a tornado that recently aired on live television delivered just that.

<http://mentalfloss.com/article/549351/weather-channel-used-vr-simulate-shockingly-realistic-tornado>

Rosebud Water Resources Office enlists Mesonet to monitor weather and water cycle

BROOKINGS — The Rosebud Sioux Tribe Water Resources Office has partnered with the Mesonet at SDState, South Dakota State University's statewide weather network, to install a new weather station near Rosebud.

<https://www.farmforum.net/2018/06/29/rosebud-water-resources-office-enlists-mesonet-to-monitor-weather-and-water-cycle/>

The art of monsoon forecasting in India, and the science behind it

After decades of 'scientific guesswork', India Meteorological Department (IMD) is beginning to use supercomputer simulation-driven methods for monsoon forecasting in the last couple of years

<https://www.livemint.com/Politics/Z10z9lZHnne1RgoRtVvUEK/The-art-of-monsoon-forecasting-in-India-and-the-science-beh.html>

Super El Nino could well have had an Indian Ocean trigger, say Japanese researchers

The super 'El Ninos' (the likes of 1972, 1982 and 1997) with devastating impacts worldwide could well have been the handiwork of a villain traced to no farther away than in the Indian Ocean.

<https://www.thehindubusinessline.com/news/super-el-nino-could-well-have-had-an-indian-ocean-trigger-say-japanese-researchers/article24287144.ece>

A city in Oman may have just had the hottest night ever recorded on Earth

The high temperature there peaked at 121.6 degrees on Tuesday, falling about 2 degrees short of the all-time heat record for Oman of 123.4 degrees.

<https://www.wgrz.com/article/news/nation-world/a-city-in-oman-may-have-just-had-the-hottest-night-ever-recorded-on-earth/507-568956897>

'Hygrometer' alerts you to muggy weather

Web Log: It's not the heat, it's the humidity that gets you - as this app will tell you

<https://www.irishtimes.com/business/technology/hygrometer-alerts-you-to-muggy-weather-1.3544615>

WMO

WMO Executive Council endorses integrated health services

WMO Executive Council has given its backing to plans to ramp up action to support integrated health services, given the high impact of extreme weather, air and water quality and climate change on health.

[Read more here](#)

Divino Moura of Brazil wins IMO Prize

The World Meteorological Organization has named Antonio Divino Moura of Brazil as the winner of its top scientific prize for outstanding work in meteorology and climatology and scientific research.

[Read more here](#)

Business development / commodities / infrastructure etc

Understory Launches Weather Intelligence Storm Estimates

Revolutionary new product predicts claim volume and indemnity with a 95 percent accuracy rate

<https://www.businesswire.com/news/home/20180628005143/en/Understory-Launches-Weather-Intelligence-Storm-Estimates>

Sompo launches weather risk management solutions for real estate, hospitality

Sompo International Holdings has announced that it now offers a new suite of weather-driven risk management products suited for the real estate and hospitality sectors.

<https://www.insurancebusinessmag.com/us/news/hospitality/sompo-launches-weather-risk-management-solutions-for-real-estate-hospitality-104556.aspx>

Private weather forecasters lack viable business models

What private firms do to shore up their bottom-line is offer niche services to power, banking and insurance companies

<https://www.livemint.com/Politics/55GBQyZomt1nvvSyNejeJM/Private-weather-forecasters-lack-viable-business-models.html>

Communications/social media

AccuWeather's new podcasts: Get a behind-the-scenes peek into the world of weather, receive top daily trending stories

AccuWeather has recently launched two new audio products – AccuWeather Weekly and AccuWeather Daily podcasts – offering listeners insight on both the stories behind the weather and the daily top weather-related stories on AccuWeather.com, respectively.

<https://www.accuweather.com/en/weather-news/the-accuweather-podcast-how-you-can-listen-to-the-stories-behind-the-storms/70005317>

Lightning

Lightning Safety in the spotlight

Lightning is the second weather-related cause of death in Georgia behind tornadoes, according to Ready Georgia.

<http://times-herald.com/news/2018/06/lightning-safety-in-the-spotlight>

Transport/roading/shipping/freight

What's causing New Zealand's fatal crashes?

Loss of control, speeding, and driving under the influence of alcohol and drugs are the leading causes of fatal car crashes, Ministry of Transport figures show.

In 2015, losing control of the vehicle and speeding caused about a third of all crashes that resulted in deaths.

<https://www.stuff.co.nz/business/industries/105069920/Whats-causing-New-Zealands-fatal-crashes>

Innovation and technologies (inc data and new products)

StormGeo and ThoughtWorks Partner to Deliver Digital Transformation in Weather Intelligence and Decision Support Services

StormGeo benefits from ThoughtWorks' best-in-class software development, bringing improved performance and efficiency to StormGeo clients

[Read more here](#)

Why are all my weather apps different?

Forecasting is more accurate than ever, but mobile apps can still disagree wildly. What causes the difference – and which one is best?

<https://www.theguardian.com/technology/2018/jun/30/weather-forecast-apps-smartphone-predictions-forecasting>

Te reo

Language the key to knowing a person - te reo Māori expert Sir Tīmoti Kāretu

Māori language expert Sir Tīmoti Kāretu believes if you truly want to get to know a person, you need to know their language.

<https://www.radionz.co.nz/news/te-manu-korihi/360648/language-the-key-to-knowing-a-person-te-reo-maori-expert-sir-timoti-karetu>

Journals online

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doi:10.1038/s41558-018-0199-5

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Andrew D. King, Markus G. Donat, Sophie C. Lewis, Benjamin J. Henley, Daniel M. Mitchell et al.

doi:10.1038/s41558-018-0191-0

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doi:10.1038/s41558-018-0212-z

Perspectives

Achieving a climate justice pathway to 1.5 °C pp564 - 569

Mary Robinson & Tara Shine

doi:10.1038/s41558-018-0189-7

Action needs to be taken to limit the impacts of climate change, however, human rights and the right to development need to be preserved. This Perspective weighs the risks of action and inaction on achieving a just transition to a low-carbon world.

The ability of societies to adapt to twenty-first-century sea-level rise pp570 - 578

Jochen Hinkel, Jeroen C. J. H. Aerts, Sally Brown, Jose A. Jiménez, Daniel Lincke et al.
doi:10.1038/s41558-018-0176-z

This Perspective provides a comparative analysis of how well six cities and regions with different coastal and social characteristics and adaptation constraints will be able to adapt to sea-level rise, considering technological, economic, financial, and social factors.

Biological responses to the press and pulse of climate trends and extreme events pp579 - 587

R. M. B. Harris, L. J. Beaumont, T. R. Vance, C. R. Tozer, T. A. Remenyi et al.
doi:10.1038/s41558-018-0187-9

A press–pulse framework is used to understand the interactive ecological effects of gradual climate trends and extreme weather events. Australian case studies include population collapses, loss of relictual communities and novel ecosystems.

Letters

Macroeconomic impact of stranded fossil fuel assets pp588 - 593

J.-F. Mercure, H. Pollitt, J. E. Viñuales, N. R. Edwards, P. B. Holden et al.
doi:10.1038/s41558-018-0182-1

New fossil fuel investments may become stranded if demand for fossil fuel declines due to technological change. This could amount to a discounted global wealth loss of US\$1–4 trillion, with the negative impact for producer countries amplified by climate mitigation policies of consumer countries.

Global economic response to river floods pp594 - 598

Sven Norman Willner, Christian Otto & Anders Levermann
doi:10.1038/s41558-018-0173-2

Economic losses due to river floods are expected to increase globally in the next 20 years. Direct local losses and indirect losses propagated through a global supply network are derived.

Arctic sea-ice change tied to its mean state through thermodynamic processes pp599 - 603

François Massonnet, Martin Vancoppenolle, Hugues Goosse, David Docquier, Thierry Fichefet et al.

doi:10.1038/s41558-018-0204-z

Projections of Arctic sea-ice loss vary significantly between global circulation models. Analysis of the CMIP5 ensemble reveals that these differences can be related to background ice thickness and corresponding growth/melt processes, and not variations in the sea-ice model used.

Higher CO2 concentrations increase extreme event risk in a 1.5 °C world pp604 - 608

Hugh S. Baker, Richard J. Millar, David J. Karoly, Urs Beyerle, Benoit P. Guillod et al.
doi:10.1038/s41558-018-0190-1

A 1.5 °C temperature target can have varying atmospheric CO2 concentrations associated with it. GCM simulations reveal CO2 increases have a direct impact on climate extremes, highlighting the need for climate policy to complement temperature goals with CO2 targets.

Climate–carbon cycle uncertainties and the Paris Agreement pp609 - 613

P. B. Holden, N. R. Edwards, A. Ridgwell, R. D. Wilkinson, K. Fraedrich et al.
doi:10.1038/s41558-018-0197-7

A reasonable interpretation of the Paris Agreement may well still be technically achievable without the need for net negative emissions or excessively stringent policies according to climate–carbon-cycle modelling.

Articles

Relationships among conspiratorial beliefs, conservatism and climate scepticism across nations pp614 - 620

Matthew J. Hornsey, Emily A. Harris & Kelly S. Fielding
doi:10.1038/s41558-018-0157-2

This study shows that relationships between climate scepticism and indices of conspiratorial and conservative ideology are stronger and more consistent in the United States than in 24 other nations, with the majority of nations showing weak relationships.

The global potential for converting renewable electricity to negative-CO2-emissions hydrogen pp621 - 625

Greg H. Rau, Heather D. Willauer & Zhiyong Jason Ren
doi:10.1038/s41558-018-0203-0

Combining saline water electrolysis with mineral weathering powered by non-fossil electricity could produce low-cost, negative-CO2-emissions energy.

Residual fossil CO2 emissions in 1.5–2 °C pathways pp626 - 633

Gunnar Luderer, Zoi Vrontisi, Christoph Bertram, Oreane Y. Edelenbosch, Robert C. Pietzcker et

al.

doi:10.1038/s41558-018-0198-6

Residual CO₂ emissions from fossil fuels limit the likelihood of meeting the goals of the Paris Agreement. A sector-level assessment of residual emissions using an ensemble of IAMs indicates that 640–950 GtCO₂ removal will be required to constrain warming to 1.5 °C.

Arctic warming hotspot in the northern Barents Sea linked to declining sea-ice import pp634 - 639

Sigrid Lind, Randi B. Ingvaldsen & Tore Furevik

doi:10.1038/s41558-018-0205-y

The northern Barents Sea has warmed rapidly in recent decades. Hydrographic observations suggest increases in ocean temperature—particularly after the mid-2000s—can be linked to reduced sea-ice import, freshwater loss, weakened stratification and increased upward heat fluxes from the deep Atlantic layer.

Partitioning global land evapotranspiration using CMIP5 models constrained by observations pp640 - 646

Xu Lian, Shilong Piao, Chris Huntingford, Yue Li, Zhenzhong Zeng et al.

doi:10.1038/s41558-018-0207-9

The ratio of plant transpiration to total terrestrial evapotranspiration (T/ET) captures the role of vegetation in surface–atmosphere interactions. An emergent constraint approach strongly increases existing model T/ET estimates with implications for river flows.

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Thanks to our regular contributors.