

New Zealand weather and climate news

These clips are provided courtesy of MetService

MetService

Your weather: Heavy snow closes roads in the South Island, rain and thunderstorms to start the week

MetService lead forecaster **Michael Martens** said snow was forecast down to 200m in parts of the far south, as temperatures plummeted through the day.

https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=12077133

Heavy rain causes chaos in Northland, flooding roads and closing schools

MetService meteorologist **Stephen Glassey** said the flooding was due to heavy rainfall overnight and earlier on Thursday morning.

Since Wednesday morning, parts of Northland had received 150 millimetres of rain, he said.

<https://www.stuff.co.nz/auckland/104893981/heavy-rain-causes-chaos-in-northland>

Bring your plants in overnight, MetService says it'll be a cold and frosty morning

MetService meteorologist **Brian Mercer** says such low temperatures can cause severe ground frost.

"It's not just the grass, but the whole first layer of ground becomes frozen solid."

<https://www.stuff.co.nz/national/104952775/bring-your-plants-in-overnight-metservice-says-itll-be-a-cold-and-frosty-morning>

Our Great Outdoors: 5 deaths, 500 rescues, 4000 tramping injuries every year

More than one in every 300 trampers in New Zealand was injured while walking in the outdoors past year, new research has found.

The Mountain Safety Council (MSC) spent about 15 months on the extensive report, called A Walk In The Park? It was supplied exclusively to *Stuff* before its release in early July.

<https://www.stuff.co.nz/travel/104923204/extensive-report-delves-deep-into-kiwi-tramping-incident-data>

Federated Mountain Clubs attack Mountain Safety Council over tramping report

A new tramping report has created a chasm in the relationship between the Mountain Safety Council (MSC) and one of its member groups.

Federated Mountain Clubs (FMC), which helped set MSC and is one of 27 member groups, is questioning the relevance of the organisation after the release of [A Walk in the Park?](#) – MSC's third major piece of research since a 2015 restructure.

<https://www.stuff.co.nz/travel/104965776/Federated-Mountain-Clubs-attack-Mountain-Safety-Council-over-tramping-report>

Stadium chief executive admits 'more questions needed to be asked' after ice hockey match cancelled

Westpac Stadium chief executive Shane Harmon says Sunday's cancelled ice hockey match between the USA and Canada was the most difficult event he has been faced with in his 20 years in the industry.

The match, which was to be Wellington's first international ice hockey game, was eventually scrapped on Sunday afternoon following two earlier postponements from its original Saturday afternoon start time.

<https://www.stuff.co.nz/sport/other-sports/104965168/Stadium-chief-executive-admits-more-questions-needed-to-be-asked-after-ice-hockey-match-cancelled>

Summer drought sends Taranaki to bottom of regional economic scorecard

The worst summer drought in Taranaki in 40 years helped push the province to the bottom of the list of consumer confidence amongst all regions in the country.

<https://www.stuff.co.nz/business/104964291/Summer-drought-sends-Taranaki-to-bottom-of-regional-economic-scorecard>

MetOcean

Tidetech Unveils 'Data Cube' for Voyage Optimization

Provider of metocean data to the maritime industry Tidetech Commercial Marine Pty Ltd says it is enhancing the scope of its services in response to a growing demand for marine weather data.

<https://www.marinelink.com/news/tidetech-unveils-data-cube-voyage-438766>

Surf, sand, and rising tides: Waikato research looks at impact of climate change on coasts

Raglan's Ngarunui Beach is crumbling.

Winter storms and angry waves have attacked the shores and now the escarpment, where erosion has occurred, is nearly two metres tall.

<https://www.stuff.co.nz/environment/climate-news/104840212/surf-sand-and-rising-tides-waikato-research-looks-at-impact-of-climate-change-on-coasts>

NIWA

Issue: June 2018

Welcome to the New Zealand Climate Update for June 2018. [The full update](#) is on the NIWA website.

The in-depth [three month outlook](#) is also on our website.

Extreme weather (and other news) – Australia and Pacific

BOM meteorologist says warmer weather will hang around

A MUCH warmer start was a welcome introduction to the weekend even if it was a little wet this morning.

<https://www.dailymercury.com.au/news/bom-meteorologist-says-warmer-weather-will-hang-ar/3449638/>

New report card highlights climate change impact

The latest research on the region's marine environment has been highlighted by a new report card summarising the health of the Pacific Ocean and the impacts of climate change.

<https://www.radionz.co.nz/international/pacific-news/360179/new-report-card-highlights-climate-change-impact>

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

New weather forecasting technology in Kaski soon

Department of Hydrology and Meteorology, and Green Forest Programme are all set to install weather forecasting technology, targeting small farmers in collaboration with Small Earth Nepal at Puranchaur of Pokhara Lekhnath Metropolitan City, Kaski.

<https://thehimalayantimes.com/nepal/new-weather-forecasting-technology-in-kaski-soon/>

Weather balloon flown from Kirtipur

KATHMANDU: The Department of Hydrology and Meteorology in association with Central Department of Hydrology and Meteorology at Tribhuvan University flew a radiosonde balloon from Kirtipur to collect weather information.

<https://thehimalayantimes.com/kathmandu/weather-balloon-flown-from-kirtipur/>

Extreme weather (and other news) – Americas and Europe

European Centre for Medium-Range Weather Forecasts (ECMWF)

Plans for forecasting centre move could enhance Reading University as world-leading weather and climate research hub. Plans to build a new headquarters for a world-leading weather forecasting centre at the University of Reading have taken a step forward after detailed investigation work was backed.

<https://www.reading.co.uk/european-centre-for-medium-range-weather-forecasts/>

Dominican Republic hit by an 'easterly wave'

Africa builds them. The Atlantic winds them up. Some of them become hurricanes.

<https://www.aljazeera.com/news/2018/06/dominican-republic-hit-easterly-wave-180624095503866.html>

International news and research

New method makes weather forecasts right as rain

MU researchers harness modern radar capabilities to account for evaporation, create more accurate rain forecasts

https://www.eurekalert.org/pub_releases/2018-06/uom-nmm061518.php

Thorpe, A. and D. Rogers, 0: **The Future of the Global Weather Enterprise: Opportunities and Risks**. *Bull. Amer. Meteor. Soc.*

Changes to the global weather enterprise are providing opportunities and risks for its future development.

The Global Weather Enterprise (GWE) encompasses the scientific research, technology, observations, modelling, forecasting, and forecast products that need to come together to provide accurate and reliable weather information and services that save lives, protect infrastructure, and enhance economic output. It is a value chain from weather observations to ultimately the creation of actionable analysis-and-forecast weather information of huge benefit to society. The GWE is a supreme exemplar of the value of international co-operation, public-private engagement, and scientific and technological know-how. It has been a successful enterprise but one that has ever-increasing requirements for continual improvement as population density increases and climate change takes place so that the impacts of weather hazards can be mitigated as far as possible. However, the GWE is undergoing a period of significant change arising, for example, from the growing need for more accurate and reliable weather information, advances coming from science and technology, and the expansion of private sector capabilities. These changes offer real opportunities for the GWE but also present a number of obstacles and risks that could, if not addressed, stifle this development, adversely impacting the societies it aims to serve. This essay aims to catalyse the GWE to address the issues collectively, by dialogue, engagement and mutual understanding.

<https://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-17-0194.1>

Mitigating the Urban Heat Island Effect on Social Housing residents- the Cooling Communities Project

18 Jun 2018

Mike Collins, Kathryn Skidmore, Mariela Mendoza, Helen Everleigh

State of Australian Cities National Conference, 28-30 November 2017, Adelaide, South Australia

Australian Cities Research Network

During a period where global fossil fuel corporations and national governments such as Australia and the US continue to avoid or delay tackling global warming, cities and local governments have been increasingly showing leadership in both mitigation of, and adaptation to, climate change (Gleeson et al, 2016). Moreland, an inner-city municipality in Melbourne's north, recently developed an Urban Heat Island Effect (UHIE) Action Plan. This was in response to research which

revealed that Moreland suburbs suffer excessive summertime heat, with temperatures reaching over 50 degrees Celsius. Research that informed the Action Plan revealed that social housing residents in the community are particularly vulnerable to heat stress due to a combination of factors such as health conditions, housing stock and being more likely to be in a particularly 'hot' part of the municipality. The Cooling Communities project aimed to mitigate the impact of the UHIE on residents in ten social housing residences.

<http://apo.org.au/node/178781>

How My Time Tracking Mosquitoes Led to Tracking Lightning

In 2012, I was in Ethiopia working on a research project—collecting and studying mosquitoes to learn more about their behavior in an effort to eradicate malaria. The disease kills more than half a million people, mostly children, in Africa every year. The project was based in Mali—an area with an extremely dry climate from October to April. As surface waters disappear, the mosquito population collapses. Reproduction is no longer possible as eggs and larvae need ponds and puddles to survive. Normally, an adult mosquito would survive a maximum of four weeks.

<http://www.stormgeo.com/solutions/renewables/articles/how-my-time-tracking-mosquitoes-led-to-tracking-lightning/>

TV weather presenters don ties to highlight global warming

BERLIN (AP) — TV weather presenters around the world have teamed up to highlight the impact of climate change by wearing ties, pendants and badges with "warming stripes" while on air.

https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=12076281

Using tree-fall patterns to calculate tornado wind speed

Research presented at the 103rd Annual Meeting of the Ecological Society of America

https://www.eurekalert.org/pub_releases/2018-06/esoa-utp062218.php

Scientists from Lomonosov MSU creating a web-atlas of wind and wave energy

They started creating a web-atlas of available wind and wave energy for the coastal zone of the Russian seas

https://www.eurekalert.org/pub_releases/2018-06/lmsu-sfl062218.php

Summer Could Trigger Major Earthquakes (It's Not Why You Think)

On Aug. 24, 2014, an earthquake ripped through Northern California's Napa-Sonoma Valley. It was the largest in the San Francisco Bay Area in 25 years, leaving two dead and hundreds injured and causing damage that cost half a billion dollars.

<https://www.livescience.com/62890-groundwater-levels-major-earthquakes.html>

'Extreme meteorologist' Reed Timmer gets paid to drive into tornadoes

When the National Weather Service issues a tornado warning, most people hunker down and pray. But not professional storm chaser Reed Timmer.

<https://www.cnbc.com/2018/06/22/extreme-meteorologist-reed-timmer-gets-paid-to-drive-into-tornadoes.html>

WMO

Ocean science and observations in focus at Executive Council

New report card shows state of ocean observing system

A new Ocean Observing System report card provides a snapshot of ocean observations, which are critical to predict and manage extreme weather and coastal hazards as well as to monitor the state of our seas.

[Read more here](#)

WMO issues Annual Report: services for decision-making

WMO has issued its annual report for 2017: Services for Decision-Making. The report, issued during the Executive Council meeting, includes sections on the knowledge-base; information for decision-making; supporting sustainable development; and WMO's budgets, staffing and structure.

[Read more here](#)

Business development / commodities / infrastructure etc

Kiwi tech's big China hope

Technology columnist Richard MacManus takes a deeper look at the opportunities in China for New Zealand technology companies and finds we have a few advantages

<https://www.newsroom.co.nz/2018/06/18/123451/china-is-the-new-promised-land-for-startups>

Aviation

Rocket Lab readies for second attempt to make it 'two out of two'

Space-launch firm Rocket Lab will try again to achieve lift-off on Monday afternoon.

It was forced on Saturday to postpone what is being billed as its first commercial flight and its second to put satellites into orbit.

<https://www.stuff.co.nz/business/industries/104969577/rocket-lab-readies-for-second-attempt-to-make-it-two-out-of-two>

Helping Heathrow

The Met Office is continuing to assist with the smooth running of Heathrow Airport after signing a new 7-year contract to provide on-site meteorologists and bespoke forecasts for the airfield.

<https://www.metoffice.gov.uk/news/releases/2018/heathrow-contract>

Kim, J., R. Sharman, M. Strahan, J.W. Scheck, C. Bartholomew, J.C. Cheung, P. Buchanan, and N. Gait, 0: Improvements in Non-Convective Aviation Turbulence Prediction for the World Area Forecast System (WAFS). *Bull. Amer. Meteor. Soc.*, **0**, <https://doi.org/10.1175/BAMS-D-17-0117.1>

A multi-diagnostic-based en-route non-convective turbulence forecasting algorithm has been developed to provide better predictions of clear-air turbulence and mountain wave turbulence for use in global strategic flight planning.

For the next generation of the World Area Forecast System (WAFS), the global Graphical Turbulence Guidance (G-GTG) has been developed using global Numerical Weather Prediction (NWP) model outputs as an input to compute a set of turbulence diagnostics, identifying strong spatial gradients of meteorological variables associated with Clear-Air Turbulence (CAT) and Mountain Wave Turbulence (MWT). The G-GTG provides an atmospheric turbulence intensity metric of energy dissipation rate to the 1/3 power (EDR; $m^{2/3} s^{-1}$), which is the International Civil Aviation Organization (ICAO) standard for aircraft reporting. Deterministic CAT and MWT EDR forecasts are derived from ensembles of calibrated multiple CAT and MWT diagnostics respectively, with the final forecast provided by the grid point by grid point maximum of the CAT and MWT ensemble means. In addition, a probabilistic EDR forecast is produced by the percentage agreement of the individual CAT and MWT diagnostics that exceed a certain EDR threshold for turbulence (i.e., multi-diagnostic ensemble). Objective evaluations of the G-GTG against global in situ EDR measurement data show that both deterministic and probabilistic G-

GTG significantly improve the current WAFS CAT product, mainly because the G-GTG takes into account turbulence from various sources related to CAT and MWT. The probabilistic G-GTG forecast is more reliable at predicting Light-Or-Greater (EDR > 0.15) than Moderate-Or-Greater (EDR > 0.22)-level turbulence, although it suffers from over-forecasting. This will be improved in the future when we use this methodology with NWP ensembles and more observation data available for calibration. We expect that the new G-GTG forecasts will be beneficial to aviation users globally.

<https://journals.ametsoc.org/doi/abs/10.1175/BAMS-D-17-0117.1?af=R>

Communications/social media

Phan, M.D., B.E. Montz, S. Curtis, and T.M. Rickenbach, O: **Weather on the Go: An Assessment of Smartphone Mobile Weather Applications Use among College Students.** *Bull. Amer. Meteor. Soc.*,

A survey of undergraduate students was undertaken to examine preferences and behaviors relating to modern sources of daily weather forecast information and to establish smartphones applications as an important medium.

Millions of people in the United States regularly acquire information from weather forecasts for a wide variety of reasons. The rapid growth in mobile device technology has created a convenient means for people to retrieve this data, and in recent years, mobile weather applications (MWAs) have quickly gained popularity. Research on weather sources, however, has been unable to sufficiently capture the importance of this form of information gathering. As use of these apps continues to grow, it is important to gain insight on the usefulness of MWAs to consumers. To better examine MWA preferences and behaviors relating to acquired weather information, a survey of 308 undergraduate students from three different universities throughout the southeast United States was undertaken. Analyses of the survey showed that smartphone MWAs are the primary weather forecast source among college students. Additionally, MWA users tend to seek short-term forecast information, like the hourly forecast, from their apps and spend very little time using the app itself. Results also provide insight on daily MWA use by college students as well as perceptions of and preferential choices for specific MWA features and designs.

The information gathered from this study will allow other researchers to better evaluate and understand the changing landscape of weather information acquisition and how this relates to the uses, perceptions, and values people garner from forecasts. Organizations that provide weather forecasts have an ever-growing arsenal of resources to disseminate information, making research of this topic extremely valuable for future development of weather communication technology.

<https://journals.ametsoc.org/doi/abs/10.1175/BAMS-D-18-0020.1?af=R>

Energy and Mining

Record-breaking weather impacts power generation

A combination of the hottest month on record and an early snow melt led to a lower proportion of renewable electricity generation and higher levels of other sources of generation in the first quarter of 2018 compared to the same the quarter last year, according to the New Zealand Energy Quarterly released today by the Ministry of Business, Innovation and Employment.

<http://www.scoop.co.nz/stories/BU1806/S00492/record-breaking-weather-impacts-power-generation.htm>

Farming/horticulture

Haigh, T., V. Koundinya, C. Hart, J. Klink, M. Lemos, A.S. Mase, L. Prokopy, A. Singh, D. Todey, and M. Widhalm, 0: Provision of Climate Services for Agriculture: Public and Private Pathways to Farm Decision-making. *Bull. Amer. Meteor. Soc.*, 0

In a U.S. Corn Belt study, we found that agricultural advisors are engaged and critical users of climate information, while gaps remain in providing salient climate information to farmers.

The pathways between climate information producers and agricultural decision makers are evolving and becoming more complex, with information increasingly flowing through both public and for-profit intermediaries and organizations. This study characterizes the various channels of climate information flow, and the needs and preferences of information intermediaries and end users. We use data from a 2016 survey of farmers and agricultural advisors in 12 U.S. Corn Belt states to evaluate perceptions of climate information and its usability. Our findings reinforce the view that much of weather and climate information is not reaching farmers explicitly, but also suggest that farmers may not be aware of the extent to which the information is packaged with seed, input, or management recommendations. For farmers who are using weather and climate information, private services such as subscription and free tools and applications (apps) are as influential as publicly provided services. On the other hand, we find that agricultural advisors are engaged users and transformers of both public and private sources of weather/climate information, and that they choose sources of information based on qualities of salience and credibility. Our results suggest that climate information providers could improve use of information in agriculture by engaging advisors as well as farmers as key stakeholders and by strategically employing multiple delivery pathways through the private as well as the public sectors.

<https://journals.ametsoc.org/doi/abs/10.1175/BAMS-D-17-0253.1?af=R>

Lightning

US lightning deaths peak during summer

Five people have been struck and killed by lightning so far this year in the United States, with all five of the deaths occurring in the South.

<https://www.accuweather.com/en/weather-news/summer-is-the-most-dangerous-time-for-lightning-5-fatalities-reported-in-southern-us-this-year/70005266>

Transport/roading/shipping/freight

Too wet? Too cold? Too hot? This is how weather affects the trips we make

What sorts of weather lead us to change our daily travel behaviour? How do we respond to scorching heatwaves, sapping humidity, snow and frost, strong winds, or torrential rain? International research shows weather is important in shaping our everyday movements.

[Read more here](#)

Safety first says Fiji shipping captain

A Fiji shipping captain says passenger safety and comfort is taken very seriously by both operators and the Maritime Safety Authority.

<https://www.radionz.co.nz/international/pacific-news/360321/safety-first-says-fiji-shipping-captain>

Weather in pictures

Frozen knees and numb fingers: A photographer's pain to capture the perfect frosty morning

Chris McFerran admits he may be in a very small minority when it comes to wishing for forecasts of sub-zero temperatures and thick fog.

<http://www.abc.net.au/news/2018-06-23/the-secrets-of-capturing-perfect-winter-frost-photos/9896128>

Emergency preparedness / disaster planning / resilience

Local government level climate change adaptation and disaster resilience in Queensland

18 Jun 2018

[Aysin Dedekorkut-Howes](#)

Australian Cities Research Network

As climate change is increasing the frequency and severity of natural disasters resilience is becoming more and more important. While the need for an intergovernmental approach to adapt to climate change impacts and achieve disaster resilience is widely acknowledged, higher levels of government often delegate the responsibility to local governments without much guidance or support. This paper examines local level barriers to climate change adaptation policies and resilience practice in Queensland, Australia through policy review and a survey of Queensland local governments on how they coordinate their planning activities at different levels. Specifically, the survey asks the respondents the severity of the risks natural disasters and climate change pose to their local governments, the actions they are undertaking to deal with them, the barriers they encounter as well as the mechanisms they use for intergovernmental coordination. The results will help identify the weaknesses of the current planning system in responding to the challenges of disaster resilience and climate change adaptation and the opportunities for improving the ways we plan and coordinate planning to improve resilience in advance of disasters so as to help speed up recovery when they occur.

<http://apo.org.au/node/178801>

==--==--==--==**Thanks to MetService for these clips**==--==--==--==