

## **My latest Weathereye from John Maunder**

<https://www.sunlive.co.nz/blogs/13716-global-temperatures-1996-july-2019.html>

=====

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

**These clips come courtesy of MetService Library**

*(MetService focus)*

#### **Cloudy skies false signs for sunny week ahead for Hawke's Bay**

New Zealand Herald

Cloudy skies will kick off the week for Hawke's Bay but things are only going to get better, **MetService** says. **MetService** Meteorologist Andy Best said ...

#### **Weather: Incredible wave clouds forming over New Zealand**

Newshub

... in the flow, mostly generated as the winds blow over higher ground then rapidly descend in the lee of the hills," **MetService** said in a Facebook post.

#### **Rain, hail or shine: Forecasting the weather still 'very tricky'**

Stuff.co.nz

When unexpected downpours, snow, or extreme winds hit, the reliability of our weather forecasts can be called into question. Extreme weather events ...

#### **Auckland rain record this month looking less likely thanks to fine weather**

New Zealand Herald

**MetService** meteorologist Curtis Hayes said rain accumulations recorded at the Auckland Airport showed a total of 186mm of rain had fallen between ...

#### **Computer weather forecasts may struggle with warming Antarctic skies**

Weather forecasting models may find it difficult to cope with the kind of rapid warming some say is now happening above the Antarctic.

Blue Skies Weather and the National Institute of Water and Atmospheric Research (Niwa) believe the exceptionally rare sudden stratospheric warming (SSW) event predicted last week is under way and could last into next month.

### **Avalanche management "cross between art and science"**

Ethan Mikkelsen is standing atop Mt Ruapehu about to set off 1kg of high explosive - and it's all in the name of safety.

*Stuff* has been given an extraordinary insight into the work of Mikkelsen, and his fellow Mt Ruapehu safety services ski patrol members, by Andy Hoyle, the safety and environment general manager.

### **MetOcean**

### **First Look: China's \$26-Million Wavepool is Up and Running (And Barreling)**

Surflines.com Surf News

Our proprietary forecasting models and team of **meteorologists** provide detailed forecasts for thousands of breaks — except wavepools — around the ...

### **WMO**

### **BMKG (Indonesia) breaks the national record of manually drawing 365 streamline maps in a day**

Posted:

As a part of activities to commemorate the 72nd Indonesian Meteorology, Climatology and Geophysics Day (HMKG), BMKG has organized a unique, educational, and creative activity to create 365 streamline...

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

### **Catastrophic Queensland floods killed 600,000 cattle and devastated native species**

In February, about 600,000 cattle were killed by catastrophic flooding across north Queensland's Carpentaria Gulf plains.

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

### **Protecting Singapore from rising sea levels could cost S\$100 bln**

The low-lying island-state needs to make preparations to mitigate the impact of global warming, its prime minister said

### **In 5 years, focus on issuing impact-based weather forecasts, better risk management, says IMD chief**

The Indian Express

According to the IMD DG, the **demand** for specific **weather** forecasts from sectors like agriculture, health, water resources and **energy** was on the rise.

### **National meteorological policy on cards to minimise disaster losses**

The New Indian Express

Also in the pipeline is improving weather forecast by increasing number of observatories and expanding **weather network** coverage from present ...

### **UAE to participate in GCC Meteorology and Climate Standing Committee Meeting**

MENAFN.COM

The UAE delegation will be headed by Dr. Abdulla Al Mandous, Executive Director of the NCM and the President of Regional Association II (ASIA) of ...

### **Philippine Airborne Campaign Targets Weather, Climate Science**

Space Daily

The study seeks to tackle some of the most difficult **weather** and climate .... institution focused on atmospheric and Earth science in Southeast **Asia**.

### **Tropical depression to strike Philippines into Wednesday, threaten China, Vietnam later this week**

AccuWeather.com

A continued west-northwest track will take the storm quickly across northern Luzon and into the **South China Sea** by Wednesday. A second tropical ...

## ***International news and research***

### **Why Trump can't bomb a hurricane - or seed it either**

AccuWeather.com (blog)

**Cloud seeding** was tried with hurricanes a few times, resulting in spectacular failures. In 1947, we attempted to modify a hurricane that was moving out ...

### **'Futile and obviously dangerous': Meteorologists react to Trump suggesting nukes to stop hurricanes**

Washington Examiner

"Over my 35 years as a **meteorologist** I have received calls & handwritten letters from people proposing this. I gently try to explain to them that ...

### **Chipping away at how ice forms could keep windshields, power lines ice-free**

Phys.Org

Silver iodide is so effective at promoting ice formation that it's used for **cloud seeding** to stimulate rainfall during droughts. Ice formation, or nucleation, ...

### **World's First Compact Weather Station Specifically Designed for Measuring Solar Efficiency Unveiled**

New Kerala

The **technology** is specifically designed for PV efficiency monitoring, putting the PVMet 500 in its own class with RainWise's advanced **weather** ...

### **The Strange Places We've Seen Recent Tropical Cyclones**

The Weather Channel

According to NOAA's historical database, as reported by **Weather** ... this was the first known tropical cyclone to landfall in **Thailand** in either January, ...

### **Forecasting dusty conditions months in advance**

Posted: 21 Aug 2019 08:50 AM PDT

A researcher has developed an advanced technique for forecasting dusty conditions months before they occur, promising transportation managers, climatologists and people suffering health issues much more time to prepare for dusty conditions.

### Ocean temperatures turbocharge April tornadoes over Great Plains region

Posted: 21 Aug 2019 11:27 AM PDT

Do climate shifts influence tornados over North America? New research found that Pacific and Atlantic ocean temperatures in April can influence large-scale weather patterns as well as the frequency of tornadoes over the Great Plains region.

### Monster hailstorm blamed for 500+ deaths didn't happen, says study

The Weather Network

Some 5,000 metres above sea level in the Himalayan mountains sits the site of one of the most lethal hailstorms of all time. At least, that's what ...

### How Weather Forecasts Are Made

Meteorologists are better at their jobs than you might think. Here's how heaps of data are turned into a forecast relevant to you.

### Weather balloons vital for climate science but pollution they create poses dilemma for BOM

Among rubbish found on a remote Australian beach, there is a tangle of plastic and rubber that resembles anything but a vital piece of technology.

### The great failure of the climate models

Washington Examiner

Christy compared the average model projections since 1979 to the most reliable observations — those made by satellites and weather balloons over ...

### New Weather Webpage Gives Customers Insight into Meteorological Matters, Gauges the Potential ...

Business Wire (press release)

New Weather Webpage Gives Customers Insight into Meteorological Matters, Gauges the Potential for the Need to Call a Public Safety Power Shutoff.

## **Aviation**

### **Air NZ and Cathay Pacific extend strategic agreement**

Scoop.co.nz

Air New Zealand and Cathay Pacific have welcomed the decision by the Minister of **Transport Phil Twyford** to re-authorise their joint venture alliance ...

### **Invercargill jet link to Auckland launched**

History was made last night as Invercargill Airport became the first regional airport of its kind to host a regular jet service in New Zealand.

### **The Aviation Weather Forecasting Services Market to experience an impressive growth to reach ...**

openPR (press release)

The global **aviation weather forecasting** services market is projected to grow at an impressive growth rate over the next five years to reach US\$ 447.6 ...

### **Nav Canada transitions to international format for NOTAMs**

ATWOnline

In addition to the new format, notices now obtained from the Nav Canada **Aviation Weather** Web Site will be available using a NOTAM retrieval tool on ...

### **Baron Launches New API Website for Aviation**

AVweb

Huntsville, AL – Baron, the worldwide provider of critical **weather** intelligence, announces the launch of the new Baron **Weather** API for **Aviation** ...

## **Business/Insurance**

### **Vaisala Digital Renews Focus and Reorganizes Operations**

Yahoo Finance

To drive business performance and **innovation** speed, Vaisala Digital ... to support its customers to make best decisions in **weather** critical operations.

Expand use of **weather** data to help **businesses** flourish in various fields

The Japan News

Private **weather** news **companies** provide services with detailed forecasts by adding their own observation data to the JMA's data. This information is ...

## **Communications/social media**

### **New rural broadband and mobile services in twenty locations**

Spark, Vodafone and 2degrees announce new rural broadband and mobile services in twenty locations

Spark, Vodafone and 2degrees today announced that new rural broadband and mobile services are now live into twenty rural locations across New Zealand.

## **Health**

### Rising summer heat could soon endanger travelers on annual Muslim pilgrimage

Over two million Muslim travelers just finished the annual religious pilgrimage to Mecca, Saudi Arabia, traveling during some of the country's hottest weather. New research finds pilgrims in future summers may have to endure heat and humidity extreme enough to endanger their health.

### Health care workers unprepared for magnitude of climate change

An epidemic of chronic kidney disease that has killed tens of thousands of agricultural workers worldwide, is just one of many ailments poised to strike as a result of climate change, according to researchers.

## **History**

### **4 hurricanes in 6 weeks? It Happened to Florida 15 Years Ago**

WeatherNation

[Aerial photo of destroyed homes in Punta Gorda, following Hurricane ... [Doppler radar image of Hurricane Ivan at landfall on September 16, 2004.

## **Hydrology / Flooding**

### **New reports highlight flood risk under climate change**

Two reports released today by NIWA and the Deep South National Science Challenge reveal new information about how many New Zealanders, how many buildings and how much infrastructure could be affected by extreme river and coastal flooding from storms and sea-level rise.

### **River flooding in Canterbury potentially most damaging in NZ**

The people and economy of Canterbury have more to lose from serious river flooding than anywhere else in New Zealand, a new report reveals.

### **'100-year' floods will happen every 1 to 30 years, according to new flood maps**

Posted: 22 Aug 2019 01:50 PM PDT

Researchers have developed new maps that predict coastal flooding for every county on the Eastern and Gulf Coasts and find 100-year floods could become annual occurrences in New England; and happen every one to 30 years along the southeast Atlantic and Gulf of Mexico shorelines.

### **Lightning**

#### **Multiple people struck by lightning at golf Tour Championship in Georgia**

FoxReno.com

U.S. Secretary of State Mike Pompeo is presented with flowers as he boards his plane to depart for **Australia** from Don Mueang International Airport, ...

#### **Record-breaking lightning 418 miles long spotted**

National Geographic

One evening while working, Michael Peterson found himself staring at an enormous spider. But Peterson, a remote sensing scientist at Los Alamos ...

#### **Tourist falls to death after lightning knocks him off Tatra mountains peak**

ABC News

Five people have been killed by **lightning** strikes across mountains in southern Poland and Slovakia, including one man who fell down the side of a ...

### **Satellites and radar**

American ISPs fined \$75000 for fuzzing airport's **weather radar** by stealing spectrum

The Register

Three ISPs will be fined \$25,000 apiece by America's broadband watchdog, the FCC, **for** interfering with **weather** signals **in** Puerto Rico.

### **Space weather**

### **ALMA shows what's inside Jupiter's storms**

Swirling clouds, big colorful belts, giant storms -- the beautiful and turbulent atmosphere of Jupiter has been showcased many times. But what is going on below the clouds? What is causing the many storms and eruptions that we see on the 'surface' of the planet? To see this, visible light is not enough. We need to study Jupiter using radio waves.

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

#### Navigation Apps for Sailing

Cruising World

New Zealand-based **PredictWind's** two products, **PredictWind** app and **PredictWind** Offshore app, deliver a huge amount of utility. Coastal cruisers ...

#### Dubai's smart traffic system project now 65% complete, RTA says

Gulf News

... 116 cameras, 100 incidents detection systems, 114-transit time and speed computing devices, and 17 **Road Weather** Information Systems (RWIS).

### **Qatar's 'cool pavement' project aims to reduce road temperatures**

The material is being tested on a 200-metre stretch of road near Souq Waqif, a popular tourist destination.

#### State Farm Mutual Automobile Insurance Assigned Patent for Reconstructing Accident Scene ...

Insurance News Net

The virtual reconstruction may include images of vehicles and/or **road, weather**, traffic, or construction conditions at the time of the accident.

## ADB funds China's smart transport development pilot

Smart Energy (press release)

The smart sustainable transport system will comprise real-time traffic and **road-weather** monitoring, a multimodal transportation systems management ...

## Innovation and technologies and AI

### GeoInnovation Awards honour geospatial **innovation** in Indonesia

Geospatial World (press release) (blog)

BMKG created an **innovative Weather** Traffic Prediction application, a **weather** information product produced from the NDF system (National Digital ...

## Weather in pictures

### This stunning storm-chasing video was filmed across 30,000 miles in 3 months

'From Darkness to Light' is a love letter to the majestic, occasionally terrifying art-in-progress constantly churning above our heads.

## Climate change / global warming / sea level rise

### Heatwaves and heavy rain predicted to last longer with climate change

Both the intensity and duration of extreme weather will worsen further in the northern hemisphere as temperatures rise, scientists warn

### The case for retreat in the battle against climate change

With sea levels rising rapidly, researchers advocate for a managed pull back from coastlines

### Heat Will Kill Thousands in Chinese Cities Each Year From Climate Change

As Europe's latest heat wave showed, climate change is scorching the Earth. The World Meteorological Organization suspects the period from 2015 to 2019 will be the warmest five years on record. China is particularly in trouble. As temperatures soar across the world, heat waves are expected to happen more often there.

## **Cloud seeding / Geoengineering**

### **UAE leads world in producing rain**

Khaleej Times

The UAE Research Programme for Rain Enhancement Science continues to advance new knowledge related to cloud seeding, through dynamic, ...

## **Safety/ wellbeing**

### **State of the nation's workplace health revealed**

*New Zealand lost around 7.4 million working days at a cost of \$1.79 billion in 2018*

Research released today by Southern Cross and BusinessNZ has revealed the latest picture of health and wellness in the New Zealand workplace.1

### **4 Mindfulness Tips to Start Reducing Stress In Your Life Today**

Use these techniques to ensure better daily mental and physical health.

## **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.

---

## **RESEARCH ARTICLES**

### **Major factors affecting the snow simulations by Jules in New Zealand**

Yang Yang, M. Uddstrom, R. Turner, M. Revell

First Published: 19 August

=====

### **Welcome to AMS News You Can Use.**

Each week, we send out a sampling of recent news and items of interest in meteorology and related fields, as covered by various media outlets.

August 27, 2019

#### Conjuring catastrophes: Inside the world's largest hurricane simulator

August 27, 2019 - Digital Trends

It's a clear summer day in South Florida but a storm rages inside the SUSTAIN Laboratory at the University of Miami's (UM) Rosenstiel School of Marine and Atmospheric Science, where the world's biggest hurricane simulation tank is in full swing.

[Read MORE](#)

#### NOAA orders new Hurricane Hunter jet and turboprop aircraft

August 26, 2019 - NOAA

This \$40.7 million contract award is for the base airframe, which will be modified for use in supporting hurricane and tropical storm forecasts, atmospheric research, and other NOAA missions.

[Read MORE](#)

#### NASA-NOAA satellite finds heavy rainmaking ability in tropical storm Dorian

August 26, 2019 - [Phys.org](#)

NASA-NOAA's Suomi NPP satellite passed over Tropical Storm Dorian as it triggered warnings and watches for the islands of the Eastern Caribbean Sea.

[Read MORE](#)

[It's Not Just Brazil; Satellites Show Fires Across Bolivia's Amazon And In Central Africa Too](#)

August 26, 2019 - Forbes

While everyone watches the Brazilian Amazon burn, fires also continue to spread throughout tropical rainforests worldwide.

[Read MORE](#)

[America Has Gotten Bad at Predicting Weather—But There's a Plan to Fix It](#)

August 26, 2019 - Observer

If any innovations are happening in weather modeling, NOAA wants to be able to use them—immediately.

[Read MORE](#)

[With hurricane forecasts improved, research focus turns to explaining storm risk to public](#)

August 25, 2019 - [NOLA.com](#)

Forecasters had correctly predicted that Barry, which briefly reached hurricane strength that morning — July 13 — would form in the Gulf a week earlier. But complex weather patterns made it difficult to explain its threats to the public.

[Read MORE](#)

[The Amazon Rainforest is burning. Here's why there are so many fires and what it all means for the planet.](#)

August 24, 2019 - Business Insider

The world's largest rainforest is ablaze. On Tuesday, a new fire started every minute in Brazil.

[Read MORE](#)

Using facial recognition technology for hailstorms

August 24, 2019 - Daily Herald

Technology similar to what Facebook uses for recommending what friends you should "tag" may soon be coming to hailstorms.

Read MORE

Climate change prompts wildlife movement, researchers say

August 24, 2019 - San Francisco Chronicle

A recently published study by University of Florida researcher Brett Scheffers and Gretta Pecl of the University of Tasmania suggests that wildlife is on the move as a result of climate change, and Florida's fauna seem to be following the observed trends.

Read MORE

Weather and Climate Leaders Convene at UAlbany for AMS Summer Meeting

August 21, 2019 - University of Albany

Weather and climate leaders in academia, industry and government joined for a two-day conference at the University at Albany last week.

Read MORE

=====

NATURE CLIMATE CHANGE magazine

September 2019 Volume 9, Issue 9

Editorial

Sustainable land use for mitigation p643  
doi:10.1038/s41558-019-0575-9

## Comment

Tackling climate change with blockchain pp644 - 645  
Peter Howson  
doi:10.1038/s41558-019-0567-9

## Books & Arts

The future when we don't do enough p646  
Cassandra L. Thiel  
doi:10.1038/s41558-019-0565-y

## Research Highlights

Climate and food goals p647  
Alyssa Findlay  
doi:10.1038/s41558-019-0571-0

National frames p647  
Adam Yeeles  
doi:10.1038/s41558-019-0572-z

Temperature definitions matter p647  
Baird Langenbrunner  
doi:10.1038/s41558-019-0573-y

Benefits of a pea and tonic p647  
Bronwyn Wake  
doi:10.1038/s41558-019-0574-x

## News & Views

Wasting less electricity before use pp648 - 649  
Constantine Samaras  
doi:10.1038/s41558-019-0558-x

Midlatitudes unaffected by sea ice loss pp649 - 650  
John C. Fyfe  
doi:10.1038/s41558-019-0560-3

A canary in the Southern Ocean pp651 - 652  
Nicolas Metzl  
doi:10.1038/s41558-019-0562-1

#### Matters Arising

Implausible projections overestimate near-term Bitcoin CO2 emissions pp653 - 654  
Eric Masanet, Arman Shehabi, Nuoa Lei, Harald Vranken, Jonathan Koomey et al.  
doi:10.1038/s41558-019-0535-4

Rational mining limits Bitcoin emissions p655  
Nicolas Houy  
doi:10.1038/s41558-019-0533-6

Could Bitcoin emissions push global warming above 2 °C? pp656 - 657  
Lars Dittmar & Aaron Praktiknjo  
doi:10.1038/s41558-019-0534-5

Mora et al. reply pp658 - 659  
Camilo Mora, Randi L. Rollins, Katie Taladay, Michael B. Kantar, Mason K. Chock et al.  
doi:10.1038/s41558-019-0538-1

#### Letters

The climate mitigation opportunity behind global power transmission and distribution pp660 - 665  
Kavita Surana & Sarah M. Jordaan  
doi:10.1038/s41558-019-0544-3

Additional electricity generation is required to compensate for losses from inefficient transmission and distribution infrastructure. In this study, emissions from compensatory generation and the potential for reductions are estimated for 142 countries.

Summer weather becomes more persistent in a 2 °C world pp666 - 671

Peter Pfleiderer, Carl-Friedrich Schleussner, Kai Kornhuber & Dim Coumou  
doi:10.1038/s41558-019-0555-0

Climate models project an increase in summer weather persistence for the northern mid-latitudes. In a 2 °C world, two-week-long hot-and-dry conditions increase by up to 20% for eastern North America. The chance of a week of heavy rainfall increases by 26%, adding to the risk of extremes in the future.

Antarctic iceberg impacts on future Southern Hemisphere climate pp672 - 677

Fabian Schloesser, Tobias Friedrich, Axel Timmermann, Robert M. DeConto & David Pollard  
doi:10.1038/s41558-019-0546-1

Climate change will increase meltwater and iceberg discharge from Antarctica, with implications for future climate and sea levels. Iceberg melt will partly offset greenhouse warming in the Southern Ocean and dampen the positive feedback loop between ice-sheet melting and subsurface warming.

Enhanced oceanic CO<sub>2</sub> uptake along the rapidly changing West Antarctic Peninsula pp678 - 683

Michael S. Brown, David R. Munro, Colette J. Feehan, Colm Sweeney, Hugh W. Ducklow et al.  
doi:10.1038/s41558-019-0552-3

Along the West Antarctic Peninsula, a 25-year dataset indicates that oceanic CO<sub>2</sub> uptake depends on upper ocean stability and phytoplankton dynamics. Diatoms achieve high oceanic CO<sub>2</sub> uptake and uptake efficiency. There has been a nearly fivefold increase in oceanic CO<sub>2</sub> uptake due to sea ice changes.

Nitrogen and phosphorus constrain the CO<sub>2</sub> fertilization of global plant biomass pp684 - 689

César Terrer, Robert B. Jackson, I. Colin Prentice, Trevor F. Keenan, Christina Kaiser et al.  
doi:10.1038/s41558-019-0545-2

Elevated CO<sub>2</sub> increases plant biomass, providing a negative feedback on global warming. Nutrient availability was found to drive the magnitude of this effect for the majority of vegetation globally, and analyses indicated that CO<sub>2</sub> will continue to fertilize plant growth in the next century.

How contemporary bioclimatic and human controls change global fire regimes pp690 - 696

Douglas I. Kelley, Ioannis Bistinas, Rhys Whitley, Chantelle Burton, Toby R. Marthews et al.  
doi:10.1038/s41558-019-0540-7

Fires play an important role in ecosystem dynamics. Long-term controls on global burnt area include fuel continuity and moisture, with ignitions and human activity becoming dominant in specific ecosystems. Changes in fuel continuity and moisture are the main drivers of changes of fire globally.

## Articles

### Minimal influence of reduced Arctic sea ice on coincident cold winters in mid-latitudes pp697 - 704

Russell Blackport, James A. Screen, Karin van der Wiel & Richard Bintanja  
doi:10.1038/s41558-019-0551-4

Two independent methods, applied to observations and climate models, suggest that changes in atmospheric circulation drive cold winters in mid-latitudes and coincident mild Arctic winters. Reduced Arctic sea ice causes Arctic warming but has minimal influence on the severity of mid-latitude winters.

### Persistent acceleration in global sea-level rise since the 1960s pp705 - 710

Sönke Dangendorf, Carling Hay, Francisco M. Calafat, Marta Marcos, Christopher G. Piecuch et al.  
doi:10.1038/s41558-019-0531-8

Satellite altimetry shows global mean sea-level rise acceleration; however, sparse tide-gauge data limit understanding of the longer-term trend. A hybrid method of reconstruction for 1900–2015 shows acceleration since the 1960s, linked to increases and shifts in Southern Hemisphere westerly winds.

### Robustness and uncertainties in global multivariate wind-wave climate projections pp711 - 718

Joao Morim, Mark Hemer, Xiaolan L. Wang, Nick Cartwright, Claire Trenham et al.  
doi:10.1038/s41558-019-0542-5

There are large uncertainties in wind-wave climate projections that need to be resolved to allow adaptation planning. A multi-method ensemble of global wave climate projections shows robust changes in wave height, period and direction that put 50% of the global coast at risk.

### Emergence of anthropogenic signals in the ocean carbon cycle pp719 - 725

Sarah Schlunegger, Keith B. Rodgers, Jorge L. Sarmiento, Thomas L. Frölicher, John P. Dunne et al.  
doi:10.1038/s41558-019-0553-2

The components of the ocean carbon cycle will respond differently to climate change, with anthropogenic impacts first seen on processes sensitive to chemical changes—the calcium carbonate pump and oceanic uptake of CO<sub>2</sub>—with the soft-tissue pump (sensitive to the ocean's physical state) emerging later.

## Amendments & Corrections

### Author Correction: Sea-level driven land conversion and the formation of ghost forests p726

Matthew L. Kirwan & Keryn B. Gedan  
doi:10.1038/s41558-019-0568-8

Publisher Correction: Reduced probability of ice-free summers for 1.5 °C compared to 2 °C  
warming p726

Alexandra Jahn

doi:10.1038/s41558-019-0569-7 \

=====

My latest Weathereye from John Maunder

<https://www.sunlive.co.nz/blogs/13716-global-temperatures-1996-july-2019.html>

=====

**Thanks to all our contributors**