

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

These clips are courtesy of MetService Library

### ***MetService***

#### **Weather watchers' challenge to keep the public interested - rain, hail or shine**

At the joint Meteorological Society-Hydrological Society conference in Christchurch, MetService communications meteorologist Lisa Murray explained the difficulties of getting the public to engage with forecasts.

<https://www.stuff.co.nz/environment/climate-news/109086270/weather-watchers-challenge-to-keep-the-public-interested--rain-hail-or-shine>

#### **Summer snow on Mount Ruapehu**

MetService meteorologist Agnes Hines says the snowfall has reached as low as the Turoa ski field on Mount Ruapehu.

<https://www.sunlive.co.nz/news/194907-summer-snow-on-mount-ruapehu.html>

#### **Morning of wild weather causes disruption in New Plymouth**

Met Service meteorologist James Millward said the region saw some "decent rain fall" and low cloud, which would have affected the flight paths.

<https://www.stuff.co.nz/taranaki-daily-news/news/109068788/Morning-of-wild-weather-causes-disruption-in-New-Plymouth>

#### **How does the MetService count lightning strikes?**

Forecaster James Millward said a nationwide tracking network records the number of electrical discharges from cloud to cloud, and cloud to ground, which determined where storms were.

<https://www.stuff.co.nz/national/109075408/how-does-the-metservice-count-lightning-strikes>

#### **Cold front brings risk of thunderstorms and hail across North Island**

The bad weather is due to arrive around 8am and will cover most of Auckland, MetService Meteorologist James Millward said.

<https://www.stuff.co.nz/national/109065305/risk-of-thunderstorms-and-hail-foggy-start-for-south-island-east-coast>

### **Four injured after lightning strike hits Hamilton school**

MetService meteorologist Georgina Griffiths said followers on social media commonly posted pictures of damage from lightning strikes, often to fences.

[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=12170466](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=12170466)

### **Hamilton farmer 'bloody lucky' after four cows killed by lightning**

A Hamilton farmer says he and his boss had a lucky escape after four of their cows were struck by lightning and killed.

<https://www.radionz.co.nz/news/national/377484/hamilton-farmer-bloody-lucky-after-four-cows-killed-by-lightning>

### **Man's lucky escape after lightning hits his Auckland home**

A man was at home when lightning struck his house, exploding a lamp and propelling shattered glass around the lounge where he was sitting.

Richard Maud from Gulf Harbour in north Auckland said he felt he had a fortunate escape, after the dramatic event about 9.30am on Tuesday as a major storm hit Auckland.

<https://www.stuff.co.nz/auckland/109075866/mans-lucky-escape-after-lightning-hits-his-auckland-home>

### **World Weather Watch**

**Eric Brenstrum is back to take a look at the big weather stories from around the world.**

<https://www.radionz.co.nz/national/programmes/nights/audio/2018674141/world-weather-watch>

### **Wettest December hour on record: Person hurt by lightning, flights delayed, schools closed as storm rages across Auckland**

A short but brutal storm has delivered two hours of thunder, lightning and heavy downpours to Auckland.

<https://www.stuff.co.nz/auckland/109065041/thunderstorms-hit-auckland-during-morning-commute>

### **School grounds flooded following Wairarapa weather bomb**

A weather bomb has resulted in flash flooding around Gladstone School near Carterton.

<https://www.stuff.co.nz/national/109036910/flash-flood-drenches-town-and-takes-out-road>

### **Rainfall records during a very wet November in the south**

Oamaru received more than five times its average November rainfall, during a remarkably wet month across much of the South Island, Niwa's monthly climate summary shows.

<https://www.stuff.co.nz/national/109067240/rainfall-records-during-a-very-wet-november-in-the-south>

### **Warning of possible surface flooding in Southland**

MetService said a series of troughs over the Tasman Sea would move eastwards across the country today and a deepening low was forecast to cross the lower South Island overnight tonight and Wednesday morning.

<https://www.odt.co.nz/regions/south-otago/storms-soaking-parts-south>

### **Wild weather causes problems across the South**

Wild weather across the southern region yesterday caused disruption and damage that could take up to two weeks to repair.

<https://www.odt.co.nz/news/dunedin/wild-weather-causes-problems-across-south>

### **Dry next week for most but that could be as good as December gets**

Forecast dry weather over much of the country next week may be as good as it gets in December.

In its outlook for the month, MetService said high pressure and cooler southerlies would prevail next week. Most regions were expected to have relatively dry conditions, except eastern regions of the North Island and possibly also the Marlborough coast.

<https://www.stuff.co.nz/national/109131032/dry-next-week-for-most-but-that-could-be-as-good-as-december-gets>

## **Biggest summer yet for Bay of Plenty**

Tens of thousands of visitors are expected to flock to the Bay of Plenty this summer to enjoy the impressive line-up of events with promoters saying undoubtedly "it will be the biggest summer yet".

[https://www.nzherald.co.nz/bay-of-plenty-times/news/article.cfm?c\\_id=1503343&objectid=12168248](https://www.nzherald.co.nz/bay-of-plenty-times/news/article.cfm?c_id=1503343&objectid=12168248)

## **A \$50 million summer for Wellington with high-profile event line up**

Wellington is gearing up for a \$50 million season with another event joining the packed summer calendar – and hopes of more to come.

<https://www.stuff.co.nz/dominion-post/108987524/A-50-million-summer-for-Wellington-with-high-profile-event-line-up>

## **Water shortages predicted for Southland despite fifth severe weather warning**

Southland has been hit by thunderstorms for five days in a row but Environment Southland is warning residents to prepare for possible water shortages this summer.

<https://www.stuff.co.nz/national/109069946/Water-shortages-predicted-for-Southland-despite-fifth-severe-weather-warning>

## **MetOcean**

### **Scientists acknowledge key errors in study of how fast the oceans are warming**

Scientists behind a major study that claimed the Earth's oceans are warming faster than previously thought now say their work contained inadvertent errors that made their conclusions seem more certain than they actually are.

[https://www.nzherald.co.nz/environment/news/article.cfm?c\\_id=39&objectid=12171074&ref=rss](https://www.nzherald.co.nz/environment/news/article.cfm?c_id=39&objectid=12171074&ref=rss)

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

### **Queensland heatwave smashes BOM November records, Stradbroke Island keeps burning**

If you thought summer had started early in Queensland this year, you were right, with temperatures hitting high 30s and into the 40s last month sending records tumbling.

<https://www.abc.net.au/news/2018-12-04/queensland-bushfire-heatwave-breaks-bom-weather-records/10573464>

### **The Cook Islands is embracing technology for climate action**

Fishing and planting are our communities' livelihoods. In this, weather is everything. If the weather takes a turn for the worse while I am at sea, it can be a safety issue. If I am unable to catch enough fish to feed my family and provide for my community, then how can we survive? With the remoteness of our island, we must be resilient. We must adapt for our existence, and if technology is the pathway then let's learn how to use it.

<https://reliefweb.int/report/cook-islands/cook-islands-embracing-technology-climate-action>

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

#### **Sandbags among new measures to help cope with monsoon season: PUB**

SINGAPORE: PUB will offer sandbags to about 600 residents and businesses in flood-prone areas during the upcoming monsoon season, the national water agency said in a media release on Friday (Nov 30).

<https://www.channelnewsasia.com/news/singapore/sandbags-residents-businesses-flood-prone-areas-pub-monsoon-10983978>

#### **Extreme weather events killed over 70,000 people in India, 5.2 lakh across world in 20 years: Report**

In the 20-year period between 1998 and 2017, India lost, on an average, 3,660 people every year, with a total of 73,212 casualties.

<https://indianexpress.com/article/india/extreme-weather-events-killed-over-70000-in-india-5-2-lakh-people-in-20-years-report-5478880/>

#### **ASEAN nations hard hit by natural disasters**

2017 was a devastating year for countries most vulnerable to natural disasters. Throughout the year, a high frequency of catastrophic flooding, hurricanes, storms and wildfires ravaged the world, incurring double the economic loss and cost as opposed to similar disasters that occurred in 2016. According to insurance and reinsurance firm Munich Re, natural disasters in 2017 globally cost an estimated US\$340 billion, the second-highest annual loss ever recorded.

<https://theaseanpost.com/article/asean-nations-hard-hit-natural-disasters>

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

### **Upgrade of Irish coastal buoys to aid weather forecasting**

Marine data buoy network is used to help predict extreme weather events

<https://www.irishtimes.com/news/environment/upgrade-of-irish-coastal-buoys-to-aid-weather-forecasting-1.3718993>

### **International news and research**

#### **Rick Franza: Weather and the Economy...Using Forecasts Effectively**

While we often are critical of weather forecasters for their seeming lack of accuracy, we are thankful for their forecasts, particularly in severe weather. Such forecasts provide us warnings of potential dangers, allowing us time to protect our belongings and/or potentially evacuate to escape physical harm. Even in milder weather, such forecasts help guide us to dress appropriately for the temperature and potential precipitation.

<https://www.augustachronicle.com/business/20181201/rick-franza-weather-and-economyusing-forecasts-effectively>

#### **ORU's new \$850,000 supercomputer has the brains to tackle weather forecasting, physics and more**

Oral Roberts University has a new supercomputer of titanic proportions.

The machine, named Titan, will offer ORU students across many fields of study the opportunity to collaborate on projects with the aid of its speedy processing power.

[https://www.tulsaworld.com/news/local/oru-s-new-supercomputer-has-the-brains-to-tackle-weather/article\\_01859997-4ed6-5e1b-93d9-cf4817714c8b.html](https://www.tulsaworld.com/news/local/oru-s-new-supercomputer-has-the-brains-to-tackle-weather/article_01859997-4ed6-5e1b-93d9-cf4817714c8b.html)

#### **Heavy Rains and Hurricanes Clear a Path for Supercharged Mold**

Warmer temperatures and rising CO2 can also ramp up some fungal toxins and allergens

[Read more here](#)

#### **David Brown named director of AgWeatherNet**

Washington State University soil scientist David Brown has been selected as the new director of AgWeatherNet, Washington's agricultural weather network.

<https://www.goodfruit.com/david-brown-named-director-of-agweathernet/>

## **WMO**

### **WMO climate statement: past 4 years warmest on record**

The long-term warming trend has continued in 2018, with the average global temperature set to be the fourth highest on record. The 20 warmest years on record have been in the past 22 years, with the top four in the past four years, according to the World Meteorological Organization (WMO).

[Read more here](#)

### **Climate change impacts highlight need for action at COP24**

The annual United Nations climate change conference has opened with calls for urgent action to prevent runaway climate change and devastating impacts for the planet.

[Read more here](#)

## **Aviation**

### **Australia's first commercial orbital launch facility to be built in South Australia**

NewSpace company Southern Launch will begin developing the infrastructure to deploy nanosatellites from the Eyre Peninsula in South Australia

<http://theleadsouthaustralia.com.au/industries/space-industry/australias-first-commercial-orbital-launch-facility-to-be-built-in-south-australia/>

## **Communications/social media**

The Weather Channel Uses Animation to Show Dangers of Storm Surge

Lifelike scenario demonstrates what flooding could look like on your street

<https://www.pewtrusts.org/en/research-and-analysis/articles/2018/12/03/the-weather-channel-uses-animation-to-show-dangers-of-storm-surge>

## **Clouds**

**Cloud streets, what causes these funky cloud highways?**

Tuesday, December 4, 2018, 6:44 PM - This is something you don't see everyday. How can a cloud formation create such a perfectly uniform row-like structure? The answer can be appropriately explained with a little help from some science, as we attempt to describe this relatively poorly understood feature.

<https://www.theweathernetwork.com/news/articles/cloud-rolls-street-washington-factory-weather-nebraska-climate-science-seattle-omaha/118140>

## **Farming/horticulture**

### **Rain hurting South Canterbury potato production**

A wet November has mushed up to 10 per cent of one South Canterbury potato farmer's crop.

As the region sloshed through its second-wettest November since records began 137 years ago, potato grower Jeff Bleeker, a supplier to Makikihi Fries, said significant surface water had caused seeds to rot.

<https://www.stuff.co.nz/timaru-herald/news/109069649/rain-hurting-south-canterbury-potato-production>

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

### **Sea level rise threatens major NZ infrastructure - report**

The burden of sea-level rise will weigh on the most vulnerable unless a new approach is developed and legislated, a new report says

<https://www.radionz.co.nz/news/national/377600/sea-level-rise-threatens-major-nz-infrastructure-report>

### **Govt's commercially focused \$100M green investment fund**

Dec. 5 (BusinessDesk) - The government's \$100 million Green Investment Finance fund, launched today, will concentrate its efforts on decarbonisation investments outside renewable energy, Green Party co-leader James Shaw says.

<http://www.scoop.co.nz/stories/BU1812/S00133/govts-commercially-focused-100m-green-investment-fund.htm>

## **Health**

### **Can sudden weather change cause strokes?**

A collaborative study led by a neurologist at Rush University Medical Center and an environmental scientist at the University of Illinois at Chicago suggests that weather patterns that cause dramatic changes in barometric pressure may increase the incidence of a type of stroke known as spontaneous intracerebral hemorrhage, that is, the rupture of a blood vessel in the brain.

<https://medicalxpress.com/news/2018-12-sudden-weather.html>

## **Hydrology**

### **Design for flooding: how cities can make room for water**

Science is clearly showing that the world is shifting towards a more unstable climate. Weather events like the flash floods in Sydney last week will be more frequent and extreme, while the intervals between them will become shorter. With rising sea levels and frequent floods, water landscapes will become part of our urban routine.

<https://theconversation.com/design-for-flooding-how-cities-can-make-room-for-water-105844>

## **Lightning**

### **The science of lightning with Chris Brandolino**

What is lightning, where does it come from, and what should you do in the middle of a lightning storm? NIWA meteorologist Chris Brandolino joins us to answer all these questions, and more.

<https://www.radionz.co.nz/national/programmes/afternoons/audio/2018674076/the-science-of-lightning-with-chris-brandolino>

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

### **Climate change adds to nuclear threat in Pacific**

A Nobel Peace Prize winning anti-nuclear weapons campaigner says climate change increases the risk of nuclear disaster.

<https://www.radionz.co.nz/international/pacific-news/377502/climate-change-adds-to-nuclear-threat-in-pacific>

### **Defence Force: We need to prepare for climate change**

The Defence Force will be stretched beyond capacity as global warming brings humanitarian disasters and violent conflict to the South Pacific.

<https://www.stuff.co.nz/environment/climate-news/109067137/Defence-Force-We-need-to-prepare-for-climate-change>

## **Be prepared: climate change and the Queensland bushfire threat**

26 Sep 2016

Lesley Hughes, David Alexander

Climate Council of Australia

Extreme fire weather and longer fire seasons have been observed since the 1970s across much of Australia including Queensland, particularly along the east coast (CSIRO and BoM 2014). While bushfires are typically smaller and less damaging in Queensland than in the southern part of the continent (Risk Frontiers 2011), bushfires in the state have caused numerous deaths and losses of property and infrastructure, and have negatively affected agricultural and forestry production (Ellis et al. 2004).

Queensland's most populated region, the southeast (including cities of Brisbane and the Gold Coast) has a medium to high bushfire risk at the rural–urban fringe (city outskirts) (Browne and Minnerly 2015), where a large proportion of growth has been accommodated in the post-war period (Low Choy and Sutherland 2010). This fire risk has been increasing substantially in recent decades. More than 50% of Queensland extreme fire days over the period 1945 to 2007 have occurred since 1990, with extreme fire days most prevalent in the southeast of the state (RFS and QRFS 2007).

Fire threats to tropical and subtropical Queensland have also been increasing. Weekly bushfire frequencies in Australia have increased by 40% between 2008 and 2013, with tropical and subtropical Queensland the most severely affected (Dutta et al. 2016). The rainforests in these regions are extremely sensitive to bushfires, and any increase in fire incidence could have severe impacts on biodiversity (AIC 2004).

Fire risk in the arid regions of Australia, including parts of west Queensland, are dependent on fuel availability, which is determined, in turn, by episodic rainfall (CSIRO and BoM 2015). Rainfall is subject to high inter-annual variability, driven by tropical cyclone activity and large-scale El Niño patterns, meaning there is less certainty associated with long-term predictions of fire weather (CSIRO and BoM 2015).

<http://apo.org.au/system/files/208576/apo-nid208576-1061356.pdf>

**Here's How Much Climate Change Could Cost the U.S.**

Warming could exact a major economic toll, but reducing emissions and adapting to changes can alleviate those costs

[Read more here](#)

### **Hottest summer drove Southern Alps' biggest ever ice loss - scientist**

What was the hottest summer on record drove the biggest seasonal melt ever recorded at the Southern Alps, Dr Jim Salinger says.

[https://www.nzherald.co.nz/climate-change/news/article.cfm?c\\_id=26&objectid=12172299&ref=rss](https://www.nzherald.co.nz/climate-change/news/article.cfm?c_id=26&objectid=12172299&ref=rss)

### **Sir David Attenborough: Climate change is 'our greatest threat in thousands of years'**

UN Secretary-General Antonio Guterres issued a dramatic appeal to world leaders to take the threat of global warming seriously and to act boldly to avert a catastrophic rise in temperatures before the end of the century.

<https://www.stuff.co.nz/environment/climate-news/109064701/sir-david-attenborough-climate-change-is-our-greatest-threat-in-thousands-of-years>

### **Journal and articles online**

Policy Quarterly

[https://www.victoria.ac.nz/data/assets/pdf\\_file/0004/1713622/PQ-November-2018-Final.pdf](https://www.victoria.ac.nz/data/assets/pdf_file/0004/1713622/PQ-November-2018-Final.pdf)

Table of Contents Alert

**Journal of Applied Meteorology and Climatology - Volume: 57, Number: 11 (November 2018)**

ARTICLES

[A Statistical Analysis of Tropical Upper-Tropospheric Trough Cells over the Western North Pacific during 2006–15](#)

Dian Wen, Ying Li, Da-Lin Zhang, Lin Xue, and Na Wei

[Radar-Derived Structural and Precipitation Characteristics of ZDR Columns within Warm-Season Convection over the United Kingdom](#)

David M. Plummer, Jeffrey R. French, David C. Leon, Alan M. Blyth, Sonia Lasher-Trapp, Lindsay J. Bennett, David R. L. Dufton, Robert C. Jackson, and Ryan R. Neely

Characteristics of Background Error Covariance of Soil Moisture and Atmospheric States in Strongly Coupled Land–Atmosphere Data Assimilation

Liao-Fan Lin and Zhaoxia Pu

The Effect of Urban Density and Vegetation Cover on the Heat Island of a Subtropical City

Sarah Chapman, Marcus Thatcher, Alvaro Salazar, James E. M. Watson, and Clive A. McAlpine

Understanding the Abrupt Climate Change in the Mid-1970s from a Phase-Space Transform Perspective

Tanlong Dai, Wenjie Dong, Yan Guo, Tao Hong, Dong Ji, Shili Yang, Di Tian, Xiaohang Wen, and Xian Zhu

Examining WRF's Sensitivity to Contemporary Land-Use Datasets across the Contiguous United States Using Dynamical Downscaling

Megan S. Mallard, Tanya L. Spero, and Stephany M. Taylor

A Stochastic Precipitation Generator Conditioned by a Climate Index

Alejandra De Vera and Rafael Terra

Nonparametric Methodology to Estimate Precipitating Ice from Multiple-Frequency Radar Reflectivity Observations

Mircea Grecu, Lin Tian, Gerald M. Heymsfield, Ali Tokay, William S. Olson, Andrew J. Heymsfield, and Aaron Bansemer

Mechanisms for Wind Direction Changes in the Very Stable Boundary Layer

D. Finn, R. M. Eckman, Z. Gao, and H. Liu

Evaluation of the Wyoming Weather Modification Pilot Project (WWMPP) Using Two Approaches: Traditional Statistics and Ensemble Modeling

Roy M. Rasmussen, Sarah A. Tessendorf, Lulin Xue, Courtney Weeks, Kyoko Ikeda, Scott Landolt, Dan Breed, Terry Deshler, and Barry Lawrence

Predictability of Characteristics of Temporal Variation in Surface Solar Irradiance Using Cloud Properties Derived from Satellite Observations

Takeshi Watanabe and Daisuke Nohara

[Analysis of the Planetary Boundary Layer Height during DISCOVER-AQ Baltimore–Washington, D.C., with Lidar and High-Resolution WRF Modeling](#)

Jennifer D. Hegarty, Jasper Lewis, Erica L. McGrath-Spangler, John Henderson, Amy Jo Scarino, Philip DeCola, Richard Ferrare, Micheal Hicks, Rebecca D. Adams-Selin, and Ellsworth J. Welton

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December 4, 2018

News

[The Weather Channel Uses Animation to Show Dangers of Storm Surge](#)

December 4, 2018 - The Pew Charitable Trusts

The animation, known as immersive mixed reality (IMR), is the same technology used in the popular video game Fortnite, which places people in hyper-realistic environments.

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[NASA catches newborn Tropical Cyclone Owen's rainfall, observed by GPM satellite](#)

December 3, 2018 - EurekAlert!

Tropical Cyclone Owen formed in the Southern Pacific Ocean's Coral Sea southwest of the Solomon Islands when the GPM core observatory satellite passed above and analyzed its rainfall.

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### [Six Lessons Revealed from the 2018 Atlantic Hurricane Season](#)

December 4, 2018 - Forbes

The 2018 season will certainly be remembered for Hurricane Florence and Hurricane Michael, but the season gave us 15 named storms.

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### [With Increasing Storms, Atlantic Hurricane Season Needs to Expand and Begin on May 15](#)

December 4, 2018 - The Washington Post

As meteorologists digest the lessons of a punishing 2018 hurricane season, there are ongoing conversations about how to improve public tropical cyclone threat messaging.

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### [Leaders gathering in Poland stress the need to win public support for climate measures](#)

December 3, 2018 - Pittsburgh Post-Gazette

As leaders attending the U.N.'s annual climate summit heard fresh warnings about the dire consequences of leaving global warming unchecked, a new issue emerged Monday as a pressing concern...

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### [Dissecting a hurricane: What makes a superstorm?](#)

December 3, 2018 - The Christian Science Monitor

Today, thanks to daring pilots and advancing technology, scientists and the public are gaining valuable insight into the making of a cyclone.

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[This New NASA Mission Will Create an Unprecedented, 3D Map of Earth's Forests](#)

December 3, 2018 - Earther - Nature for Nerds - Gizmodo

A team of researchers is sending a high-tech reconnaissance operative to the International Space Station to figure out how much carbon is stored in our planet's trees.

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[California's 2018 Wildfires Have Emitted A Year's Worth of Power Pollution](#)

December 3, 2018 - Yale Environment 360

California's record-breaking 2018 wildfire season has released emissions equivalent to about 68 million tons of carbon dioxide into the atmosphere...

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[Bush Had a Lasting Impact on Climate and Air Policy](#)

December 3, 2018 - Scientific American

The late 41st president started the national climate assessment and enacted policies to target acid rain.

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[Americans Have Planted So Much Corn That It's Changing the Weather](#)

December 3, 2018 - Atlas Obscura

Corn farmers in eastern Nebraska have long claimed weather patterns are changing, but in an unexpected way.

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## Scientists call for eight steps to increase soil carbon for climate action and food security

December 3, 2018 - Phys.org

Leading scientists call for action to increase global soil carbon, in advance of the annual climate summit of the United Nations Framework Convention on Climate Change (UNFCCC) in Katowice, Poland (COP24) and World Soil Day (5 Dec).

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## Dry is the new normal: Southwest U.S. has gotten drier and more prone to droughts

December 1, 2018 - Krqe.com

A few large weather systems make all the difference between a wet and a dry year in the Southwest. Coming during the winter and spring, they account for the bulk of the rain and snow the regions receives.

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## Magnetic Sun Storms Could Hold the Secret to Natural Gas Prices

December 1, 2018 - Bloomberg

Magnetic storms on its surface can generate dark-looking areas called sunspots, blemishes that wax and wane in roughly 11-year cycles and may hold clues for predicting weather patterns...

[Read MORE](#)

## Monster Earthquake Rocks Anchorage, Alaska

November 30, 2018 - Yahoo! News

A powerful earthquake struck the Anchorage, Alaska area Friday morning. Early reports show a 7.0 rating on the Richter scale. No casualties have yet been reported.

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## Alaska's deadliest earthquakes throughout the years

November 30, 2018 - MSN.com

Alaska was hit with a 7.0-magnitude earthquake Friday, centered just north of Anchorage. The quake sent cracks up the walls of buildings and ripped up major roads.

[Read MORE](#)

### [Here's How Much Every Major Natural Disaster Cost Americans in 2017](#)

November 30, 2018 - The Cheat Sheet

Just a few months ago, experts pointed to 2016 as a record-breaking year for natural disasters and corresponding economic damages. But a new report from the National Oceanic and Atmospheric Administration (NOAA) says that 2017 blew all other years out of the water...

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### [Indian rocket launches 31 satellites](#)

November 29, 2018 - Spaceflight Now

India's Polar Satellite Launch Vehicle lifted off Thursday and deployed in orbit a hyperspectral Earth-imaging satellite designed to assess vegetation, soil conditions and pollution in rich detail, then maneuvered to a lower altitude to release 30 more smallsats...

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### [Researchers under-predicted a slightly above-average 2018 Atlantic hurricane season](#)

November 29, 2018 - Phys.org

Of most note during the 2018 Atlantic hurricane season were Hurricanes Florence and Michael, which brought death and destruction to the Carolinas and Florida Panhandle and other parts of the southeastern United States, respectively.

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### [Can new science save dying coral reefs?](#)

November 29, 2018 - National Geographic

Thirty miles off the coast of Queensland, Australia, a small piece of history was made last summer: Scientists transplanted hundreds of nursery-grown coral fragments onto the beleaguered Great Barrier Reef.

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[Researchers rise to challenge of predicting hail, tornadoes three weeks in advance](#)

November 29, 2018 - Phys.org

Colorado State University atmospheric scientists demonstrate the ability to make skillful predictions of severe weather across the Plains and southeastern United States, including hail and tornadoes, in that coveted 2-to-5-weeks-in-advance period.

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[OK, we have a climate problem —Now what?](#)

November 28, 2018 - The Hill

The report answers the “so what” question about climate change by detailing its consequences for Americans. It shows how we are already being forced to make tough decisions and how we’ll have to struggle to contain the damage.

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[How Satellites and Big Data Are Predicting the Behavior of Hurricanes and Other Natural Disasters](#)

November 27, 2018 - Smithsonian.com

Leveraging machine learning could help diminish the damages of storms and wildfires.

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[Southern Africa must brace itself for more tropical cyclones in the future](#)

November 27, 2018 - Phys.org

The trend in the South Indian Ocean is shifting. Category 5 tropical cyclones didn't exist in this ocean before 1994. They were recorded for the North Atlantic, North Pacific and South Pacific Oceans throughout most of the 20th century.

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[Scientists reveal substantial water loss in global landlocked regions](#)

November 30, 2018 - ScienceDaily

A new study reveals that water storage declines in global landlocked basins has aggravated local water stress and caused potential sea level rise.

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