

## Australian Actuaries Climate Index records mildest winter in five years with warm temperatures and low levels of wind

21 October 2020

- Australian Actuaries Climate Index shows a benign winter, with Index dropping to levels last seen in 2015.
- But the reprieve from wild weather may be short-lived; above average rainfall and a 66% chance of more tropical cyclones than average have been forecast by the Bureau of Meteorology<sup>1</sup>.

The Australian Actuaries Climate Index, which measures the occurrence of extreme weather conditions and sea levels, showed winter was relatively benign across most of Australia, with the Index falling to levels not seen since winter 2015.

The Index, which was launched in November 2018, tracks these extremes and how they change over time compared with a reference period. The reference period is 1981 to 2010.

Through winter, it shows temperatures were more benign than the reference period average. Extreme high temperatures occurred less often, indicative of fewer extremely hot 24 hour day/night periods. However, the extreme low temperature index continued to be positive, indicative of minimum temperatures being warmer than the reference period average. According to the Bureau of Meteorology, the season was the sixth warmest winter on record<sup>2</sup>.

Only four out of 12 regions experienced extreme rainfall that was above the reference period average.

"The winter of 2020 is a reminder that despite a long-term trend of increasing temperatures and lower rainfall, thankfully not every season will see extreme weather," said Rade Musulin, lead collator of the Index.

However, Mr Musulin said Australia may be about to see increased rain and tropical cyclones as we move into summer and 2021. This is the result of the El Nino-Southern Oscillation (ENSO) weather system, which entered a La Niña phase in mid-September. Some past La Niña seasons have seen extreme events, including Cyclone Tracy in 1974 and the Queensland floods in 2010-2011<sup>3</sup>.

Despite a season of relative calm, Actuaries Institute President Hoa Bui said it remains critical that the Australian government, businesses and communities continue to focus on risk mitigation as part of climate change preparedness.

"The Royal Commission into National Natural Disaster Arrangements is due to report later this month, and we anticipate the Commission will make recommendations to mitigate the future impacts of climate change given the evidence presented," Ms Bui said.

APRA Executive Board Member and Head of Insurance, Geoff Summerhayes, said in a recent speech that the task of preparing communities that face increased likelihood of natural disasters is becoming more urgent. Australia's insurers will pay out about \$5.4 billion from around 300,000 claims related to last summer's bushfires, floods and hailstorms.

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<sup>1</sup> <http://www.bom.gov.au/climate/outlooks/#/overview/summary/> & <http://www.bom.gov.au/climate/cyclones/australia/>

<sup>2</sup> <http://www.bom.gov.au/climate/current/season/aus/summary.shtml>

<sup>3</sup> <http://www.bom.gov.au/climate/updates/articles/a020.shtml>



The Actuaries Institute launched the Index to help all stakeholders better understand changes in weather and what they mean over the long term, said Institute Chief Executive, Elayne Grace. "The world's climate is warming at the fastest rate in modern history," Ms Grace said.

"Climate change has major environmental, economic and social impacts and these impacts are increasing over time."

"What gets measured gets managed. We need to measure those changes so that businesses, including insurers and financial institutions with long-term commitments, local governments that manage land use and building development, and communities can better deal with those risks."

Another finding from the Index is that extreme wind conditions were also below the reference period average, for every region across Australia through the winter.

The Australian Actuaries Climate Index is updated every quarter. It shows changes in the frequency, or rate of occurrence, of extreme high and low temperatures, heavy precipitation, dry days, strong winds and changes in sea levels across 12 regions that are climatically similar.

It is calculated by Finity Consulting for the Actuaries Institute at the end of each season, following the release of data from the Bureau of Meteorology.

Each season is compared to the same season in previous years and against a reference period of 1981-2010.

*Footnote: References to temperatures, dryness etc. are based on the data underlying the AACI, which tracks changes in the frequency of extreme high and low temperatures, heavy precipitation, dry days, strong wind and changes in sea level, mainly concentrating on the 99th percentile of observations.*

**A link to the AACI is [here](#).**

**Rade Musulin, Convenor of the Actuaries Institute Climate Change Working Group and Principal at Finity Consulting, is available for comment.**

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#### **About the Actuaries Institute**

As the sole professional body for Members in Australia and overseas, the Actuaries Institute represents the interests of the profession to government, business and the community. Actuaries assess risks through long-term analyses, modelling and scenario planning across a wide range of business problems. This unrivalled expertise enables the profession to comment on a range of business-related issues including enterprise risk management and prudential regulation, retirement income policy, finance and investment, general insurance, life insurance and health financing.



Figure 1 – Australian Actuaries Climate Index: Overall Index

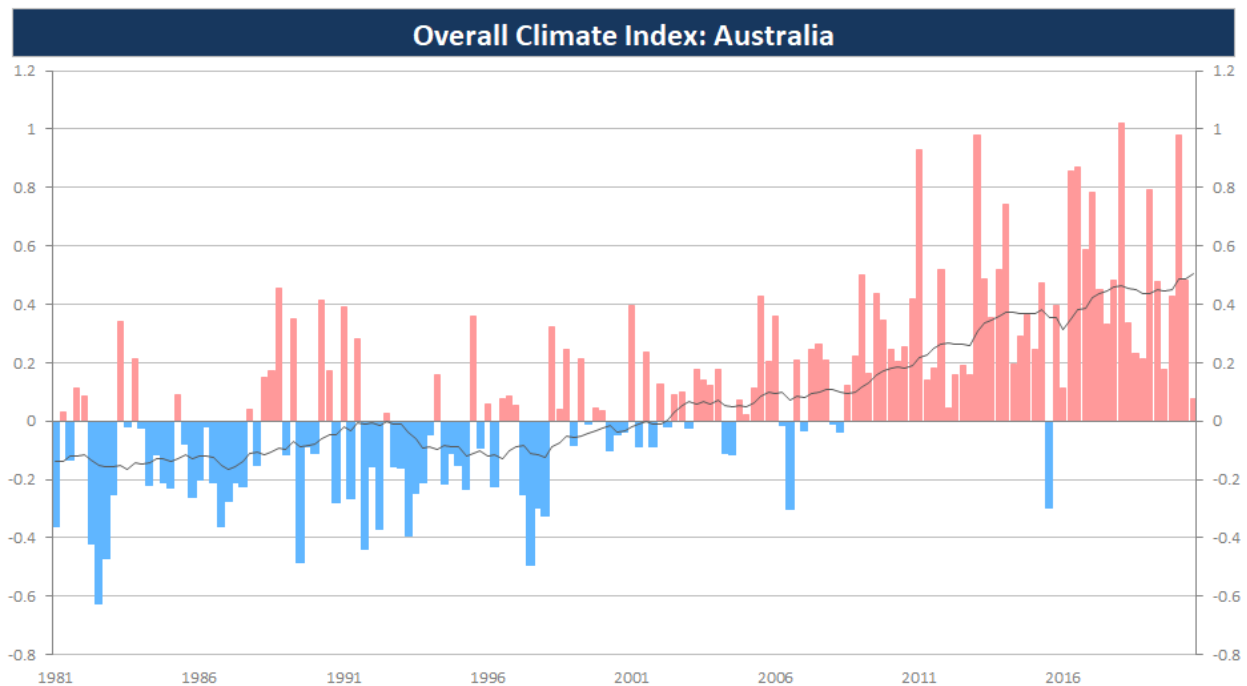


Figure 2 - Australian Actuaries Climate Index: Extreme Low Temperature

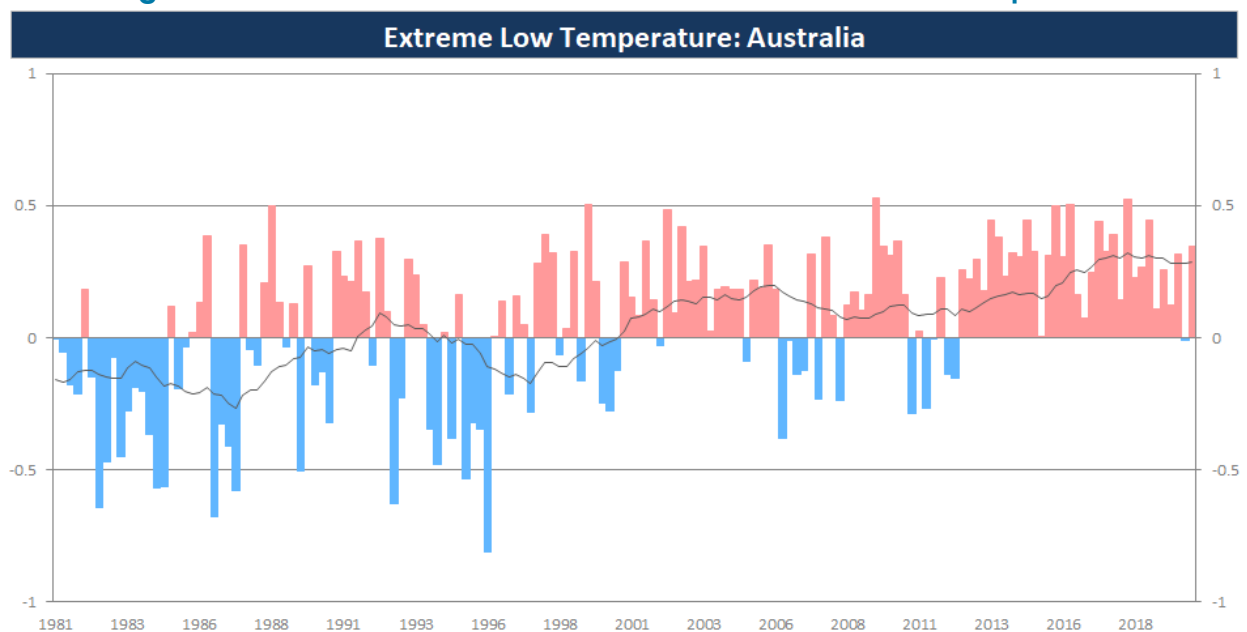
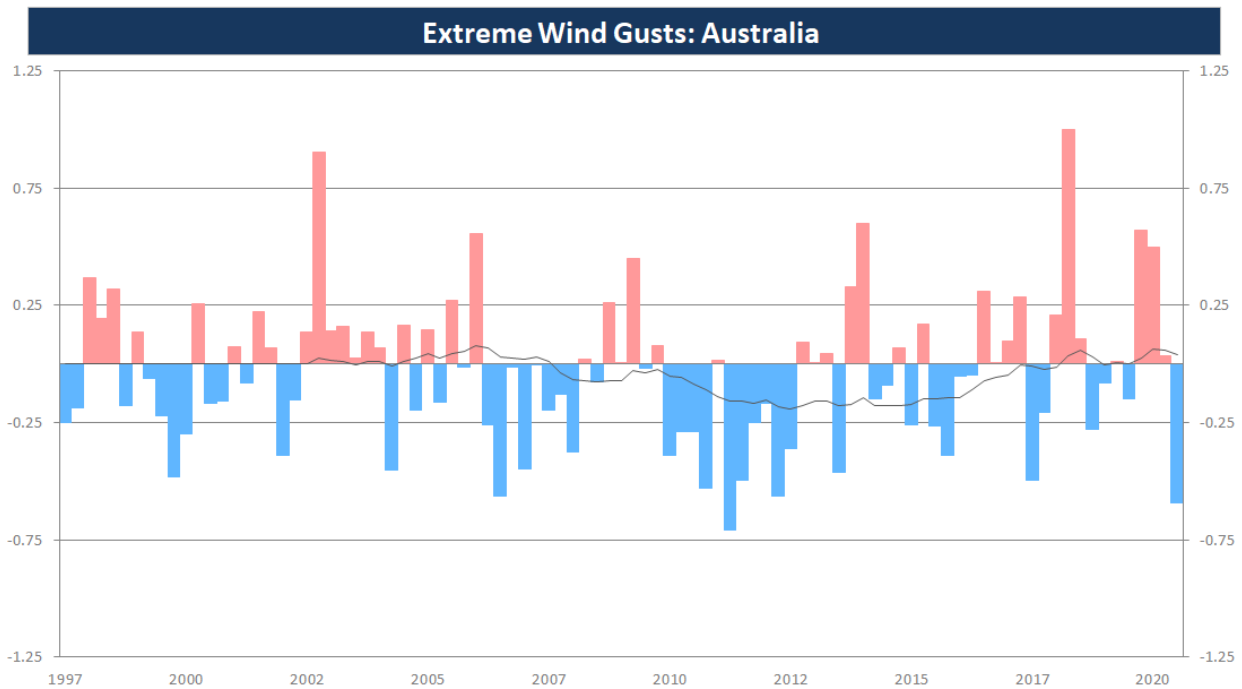




Figure 3 - Australian Actuaries Climate Index: Extreme Wind



Notes to charts: Red bars indicate a reading which is above the reference period average and blue bars indicate a reading which is below the reference period average. The black line shows the five-year moving average and provides a robust measure of how the index and weather extremes are trending over the longer term. Further details on calculation and interpretation are available in the Design Documentation [here](#).