

AUSTRALIAN ACTUARIES CLIMATE INDEX HITS RECORD HIGH

24 JULY 2025

A substantial rise in sea levels driven by ex-tropical Cyclone Alfred, torrential rain and warmer water temperatures have pushed the Australian Actuaries Climate Index (AACI) to a record high in autumn 2025.

While Cyclone Alfred struck in Queensland, the cyclone's biggest effect on sea levels was felt further south. The Index, which measures the frequency of extreme weather conditions and sea levels and how they vary over time, recorded its highest ever extreme sea level measurement for Victoria and the southern part of New South Wales and the second highest result for the northern part of New South Wales. The low pressure system caused waves of up to eight metres at the cyclone's location and sea levels up to 60cm above normal along New South Wales' north and Queensland's southern coastlines.

Another likely contributor to the higher sea levels during autumn was the warmer sea surface temperatures – reported by the Bureau of Meteorology of up to 3 °C above average along Australia's southern and eastern coasts. As warm ocean waters expand, sea levels rise.

Rade Musulin, lead collator of the AACI, said the Index's findings were a timely reminder of the potential risks rising sea levels can pose.

“Sea level rises are becoming inexorable. This is a warning we need to pay very careful attention to, given there's more and more coastal properties that are going to become exposed to this over the coming decades,” he said.

“The quarterly result is a timely reminder of the need for governments, business, communities and households to step up action and investment in climate change adaptation and resilience.

“While this season the standout message from the Index was sea level rise, across recent years it has showed other extremes, such as increased heavy rainfall, warm temperatures and consecutive dry days, that we need to be prepared for.”

The Institute recognises climate change, and responses to it, pose both risks and opportunities for communities and the economy.

It advocates for timely, co-ordinated and significant investment in adaptation and resilience, given that significant additional warming, extreme weather and rising sea levels are inevitable, exposing Australia to increased risks, impacts and costs. Key measures include reform of land use planning and building codes so these consider the future climate.

Recognising climate change is a global issue and to limit further longer-term impacts, the Institute supports the key aim of the Paris Agreement and calls for urgent co-ordinated global action to limit temperature rises to the maximum practical extent.

Rade Musulin, lead collator of the AACI and Principal at Finity Consulting, is available for comment.

Further analysis on the latest AACI findings can be found [here](#).

The Institute's Public Policy Statement on Climate Change can be found [here](#).

The Institute's letter on Policy considerations for the Government in the Climate Change and Energy portfolio in this term is [here](#).

For media inquiries, please contact:

**Eleanor Pearson
Sodali & Co**

eleanor.pearson@sodali.com

M: +61 400 886 772 | T: +61 2 9066 4071

About the AACI

The Index measures the frequency of extreme weather conditions and sea levels across Australia and how these vary over time. Components cover extreme high and low temperatures, extreme rainfall, consecutive dry days, extreme wind and sea level. The Index was launched in November 2018 by the Actuaries Institute and is updated four times a year by Finity Consulting for the Actuaries Institute.

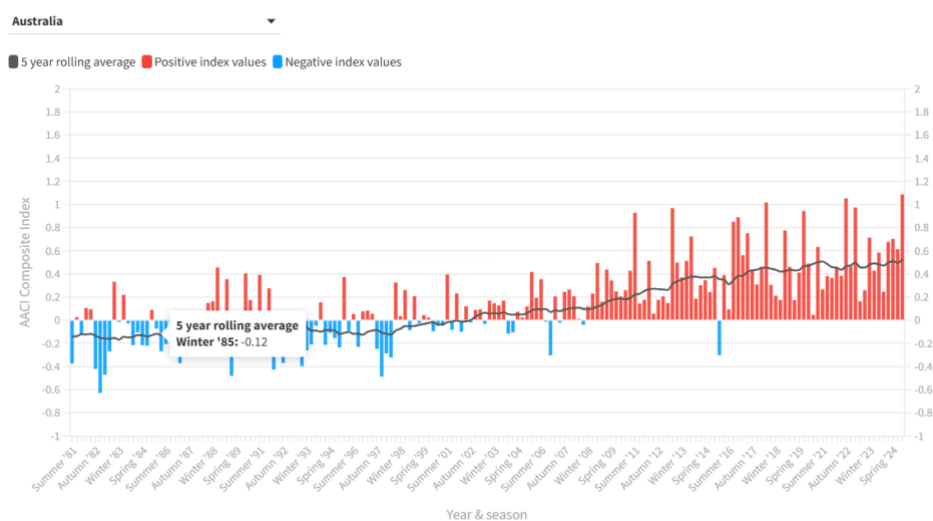
Unlike many other measures, the AACI focuses on changes in the extremes. This is a more relevant metric for the insurance industry (and others) than averages, as it correlates more closely with damage. This is done by measuring how often we observe the current quarter's observations exceeding the 99th percentile of the corresponding observations in the reference period of 1981-2010. More details and full results can be found [here](#).

The purpose of the AACI is to provide a publicly available and objective measure of extreme weather conditions and is one way in which the actuarial profession can contribute to the assessment of climate risk. Alongside the [North American Actuaries Climate Index](#), it is one of two climate indices produced globally on behalf of actuarial associations and has been referenced extensively in the media and other reports.

Appendix:

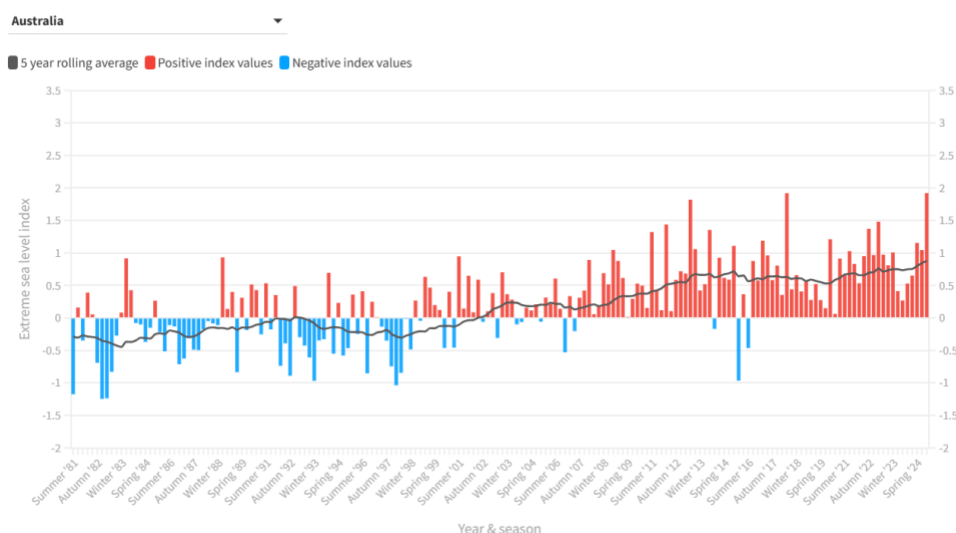
Australia records highest ever Climate Index in Autumn 2025

Australian Actuaries Climate Index: Composite Index



Record high extreme sea level index in the Autumn of 2025 driven by the East & South Coasts

Australian Actuaries Climate Index: Sea level



About the Actuaries Institute and the Profession

As the peak professional body for actuaries in Australia, the Actuaries Institute represents the profession to government, business and the community. Our members work in a wide range of fields including insurance, superannuation and retirement incomes, enterprise risk management, data analytics and AI, climate change and sustainability, and government services.

Actuaries use data for good by harnessing the evidence to navigate into the future and make a positive impact. They think deeply about the issue at hand, whether it's advising on commercial strategy, influencing policy, or designing new products. Actuaries are adept at balancing interests of stakeholders, clients and communities. They're called upon to give insight on complex problems and they'll look at the full picture. Actuaries analyse the data and model scenarios to form robust and outcome-centred advice.

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