

WEATHER // TRENDING TOPIC // AUSTRALIA

## Weather Trends

Globally, the summer of 2023 was the warmest in recorded history. In Australia it wasn't the overall hottest, driest, or wettest year on record, but it certainly delivered some wild and unusual weather that had a significant impact on communities and the economy.

As insurers, we're acutely aware of the impact of extreme weather, and the importance of brokers and insurers working with businesses to find solutions to help better prepare for and mitigate those risks.

As well as our traditional property and liability covers, Liberty Specialty Markets (Liberty) is also pioneering a range of innovative parametric insurance covers that provide new ways for businesses to protect themselves from the impact of extreme and unpredictable weather.

In this edition of our weather monitor, we explore:

- ▶ weather extremes in Australia
- ▶ changing climatic patterns in Australia
- ▶ how Liberty's parametric weather insurance is helping protect businesses from interruption caused by weather events.

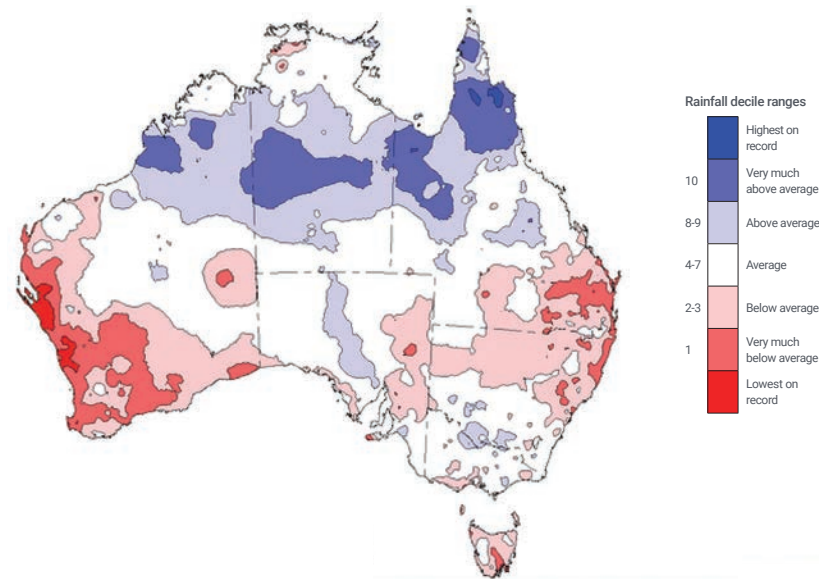
TRENDING  
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# Weather extremes in Australia during 2023

Erratic is a word we'd use to describe the weather across Australia in 2023. The climate system is proving to be more volatile, with extreme weather events becoming more frequent across Australia.

## 2023 rainfall across Australia saw extreme highs and lows



Source: Australian Bureau of Meteorology, the State of Weather and Climate 2023 Report



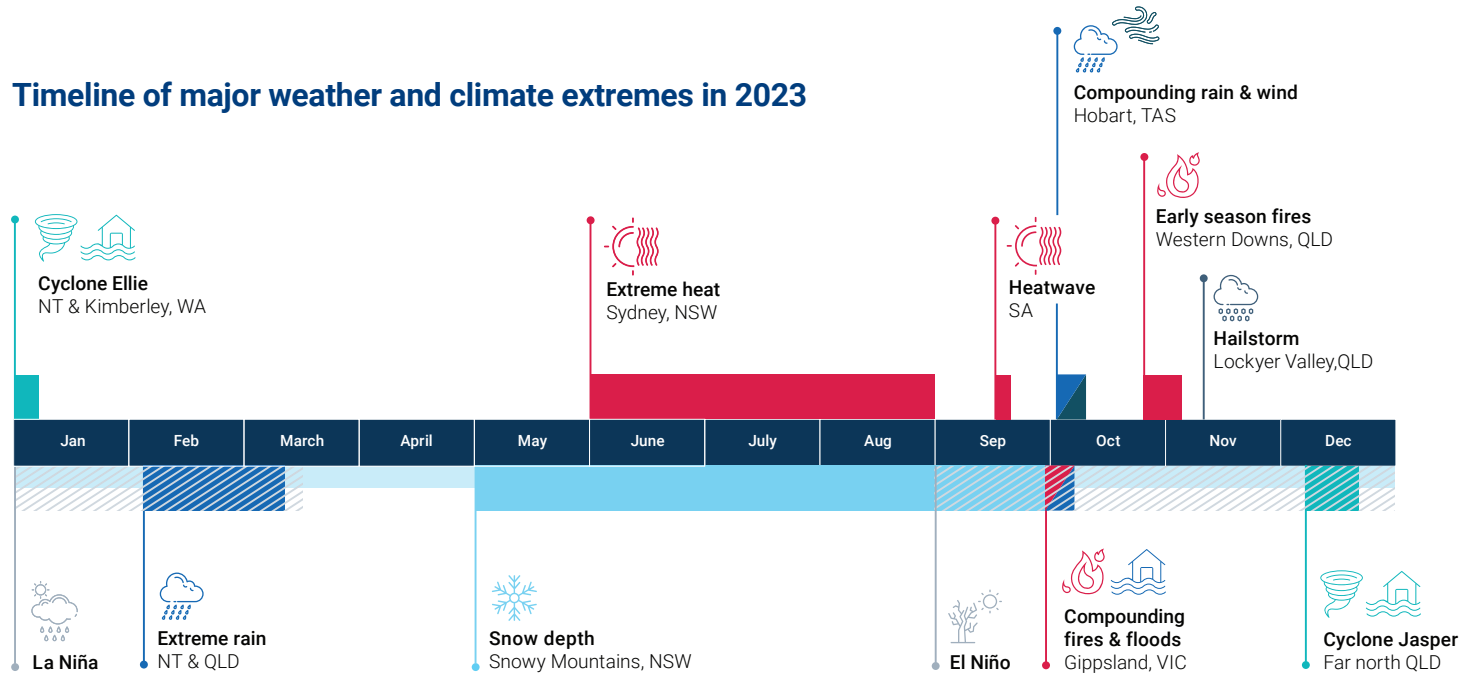
View the Australian Government's 'State of Weather and Climate Extremes 2023' report.

By the Australian Research Council Centre of Excellence for Climate Extremes

April 2024

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## Timeline of major weather and climate extremes in 2023



Source: Australian Bureau of Meteorology, the State of Weather and Climate 2023 Report



In the northern half of the country we saw very heavy rainfall, bringing a 1 in 100 year flooding event of the Fitzroy River and flooding in densely populated parts of Queensland.



By contrast, the lower half of Australia was incredibly dry, with very low rainfall on Australia's west coast.



As the year progressed, we saw bushfires in multiple states cause significant issues, while Cyclone Jasper in Far North Queensland brought between 150mm and 350mm of rainfall in 36 hours.



On the east coast, the term "rapid rain burst" is entering people's vocabulary, with short high intensity periods of rain becoming increasingly normal. Extreme wind gusts are also being experienced, but due to their isolated nature are challenging to observe via official meteorology equipment.

# 2023 Australian weather extremes at a glance

Australia's summer was a mix of storms in the eastern states, flooding in the tropics, and relentless heatwaves in the west.



On average, 2023 was the eighth-hottest year on record in Australia, and the mildest winter on record.



August-October was Australia's driest three-month period on record since 1900. This was immediately followed by three months of above average rainfall for much of the country.



Extreme rain days are increasing – the area of Australia receiving a high proportion of annual rainfall from extreme rain days (greater than the 90th percentile for 24-hour rainfall) has been increasing since the 1970s.



Powerful tropical cyclone Ilsa in April 2023 was so strong that it broke the Bureau of Meteorology's equipment.

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## What is extreme weather and climate?

The Climate Change Authority defines extreme weather and climate events as:

“The occurrence of a value of a weather or climate variable above (or below) a threshold value near the upper (or lower) ends of the range of observed values of the variable. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense.

When a pattern of extreme weather persists for some time, such as a season, it may be classified as an extreme climate event, especially if it yields an average or total that is itself extreme (such as high temperature, drought or heavy rainfall over a season).

For simplicity, both extreme weather events and extreme climate events are referred to collectively as climate extremes.”

## Insurance losses through extreme weather events

The widespread flooding across South East Queensland and New South Wales in early 2022 is now the costliest insured event in Australian history, with [The Insurance Council of Australia](#) reporting losses across over 242,000 claims of \$6bn, and an annual total of \$7.28bn losses from catastrophic events.

Longer term, high temperatures and droughts are forecast to become more common, and while fewer tropical cyclones are expected, they are expected to be of higher intensity. Heavy rainfall events, meanwhile, are expected to become more intense, too.

## Changing climatic patterns in Australia

Globally, the climate is changing. The USA’s [National Oceanic and Atmospheric Administration](#) reports that temperatures have risen an average of 0.06°C per decade since 1850, while the rate of warming since 1982 has been 0.2°C per decade.

In Australia we’ve seen an average temperature increase of  $1.47 \pm 0.24^\circ\text{C}$  since national records began in 1910, while snow depth, snow cover and the number of snow days have decreased in alpine regions since the late 1950s. In the South West of Australia, there has been a decline of approximately 15% in April to October rainfall since 1970, and 19% in May to July.

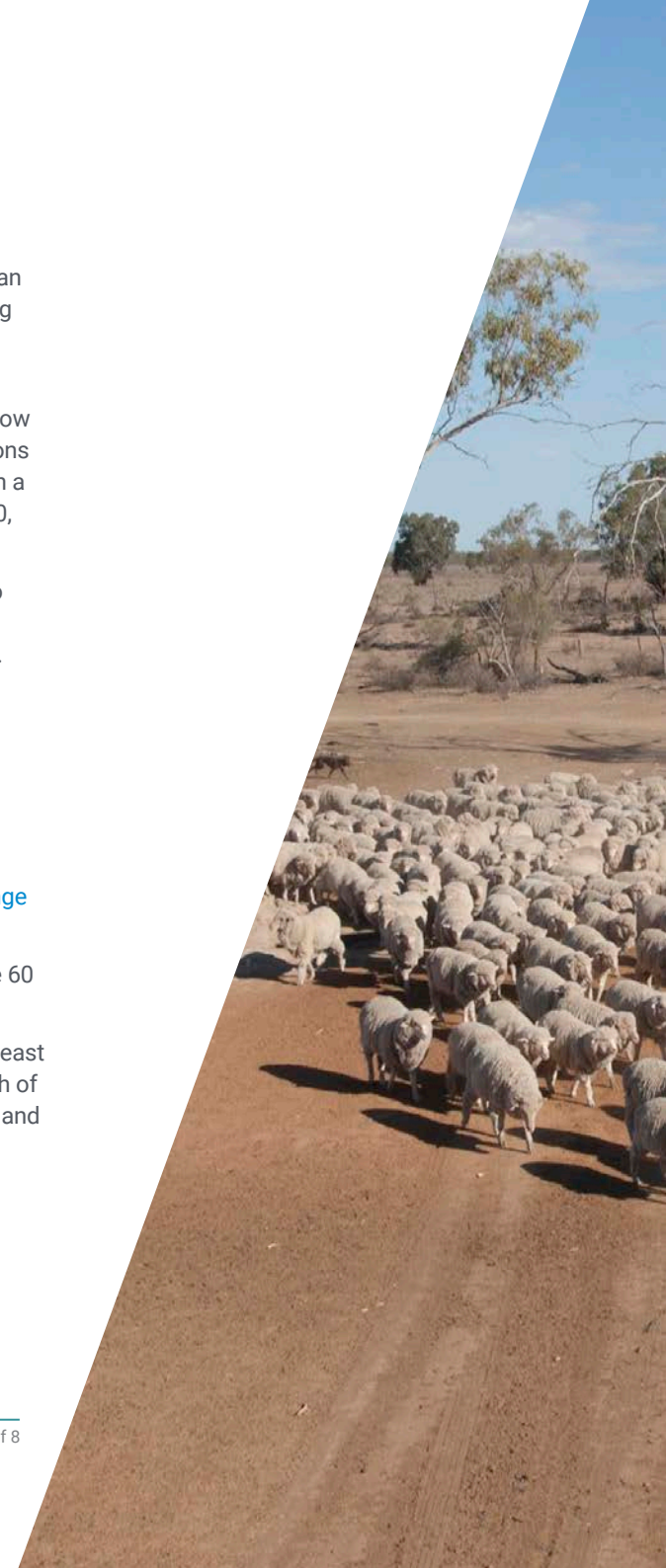
South East Australia has seen a decrease of around 10% in April to October rainfall since the late 1990s, while rainfall and streamflow have increased across parts of northern Australia since the 1970s.

Of course, averages can mask more extreme weather events, and the [Global Water Monitor](#) has found increasing trends of extreme precipitation over periods of five days or fewer have become more common – increasing the risk of events like flash flooding.

## 2024 outlook – and beyond

Looking ahead the Bureau of Meteorology’s [2024 Autumn long-range forecast](#) is predicting:

- ▶ A drier than usual Autumn with April to June rainfall likely to be 60 – 80% below median for most of Australia
- ▶ A warm Autumn, with April to June minimum temperatures at least 2.5 times more likely than normal to be unusually high for much of the coastal east, southern Victoria, Tasmania and western WA and northern NT.





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# Protecting businesses from extreme weather

Many businesses in Australia rely on the weather for consistency in earnings. From farming to construction, retailing to winemaking, business owners need as much weather certainty as possible – and protection against extremes.

Liberty's parametric weather insurance is giving businesses new options to protect their livelihoods that conventional insurance may not offer.

By using new technologies, machine-learning algorithms, various data sources, and satellites, Liberty can provide protection against financial loss caused by a range of defined weather perils.



### **Bushfire insurance for forestry plantations and vineyards**

Liberty's parametric weather insurance enables plantations to be protected against financial loss based on the burnt area values defined at a pre-agreed and precise scale. Our algorithm determines the fire zone, and estimates fire severity to a granular level, to enable measurement of plantation salvage.



### **Smoke taint protection for wine grape growers**

If grapes are exposed to smoke, it can affect taste, resulting in a smoky, ashy, burnt or medicinal flavour. Wine grape growers can protect themselves from financial loss caused by a nearby bushfire.



### **Construction delays caused by weather**

Unexpected delays can have serious consequences in the world of construction, including labour costs and the inability to use machinery. Construction Weather Delay Insurance covers a range of measurable weather-related conditions, including excessive heat, wind and rain.



### **Agriculture yield**

Cover can be purchased against insufficient rainfall, covering a decrease of yield if crops are unable to grow to the same levels as usual.



### **Electricity retailers covered for warmer temperatures**

If you're in the business of heating, then you need cooler weather – but not too cold, as profitability can then decrease. Cover can be provided to provide a safety net against fluctuations.



### **Air conditioning energy use increases**

When summer's hot, aircon use increases – and so do electricity bills too. By insuring against an average maximum temperature, you can offer customers credit on their next bill to protect them against costly usage, creating loyalty and an eye-catching marketing opportunity.



### **Hydro power covered against drought**

Hydro power stations rely on water – and if rainfall slows, they may not be able to meet demand. Cover against insufficient rainfall can protect against loss of revenue through needing to purchase at market price.



### **Wind secured**

Wind turbines are dependent on wind speed, and too much wind can require turbines to grind to a halt. Weather Index Insurance can protect windfarms if there's not enough wind – or if there's too much.





Liberty has specialist weather underwriters in Sydney and Brisbane who can meet with brokers and their clients to tailor weather solutions. Our bespoke policies are customised to each client and can include:

- ▶ excess & deficit rainfall
- ▶ excess & deficit temperature
- ▶ humidity
- ▶ wind – speed, direction and maximum gust
- ▶ sunshine
- ▶ cloud – amount
- ▶ air pressure

We also have industry specific solutions specifically designed for the forestry, construction and events industries.

### Local claims handling

We offer local claims handling managed out of Sydney by senior claims specialist, James Paul.



Hear from James (90 second video) <https://lmi.co/crisisclaims+>

## Global reach. Financial strength. Local authority.

Distinct, complex and constantly evolving – every business is as unique as its insurance needs. To confidently progress in the face of risk and uncertainty requires a level of security you can only achieve through working with specialists.

Liberty offers a breadth of world-class insurance and reinsurance services to brokers and insured clients. We bring value and solutions to more than 26,000 of Asia Pacific’s most significant business and government organisations – helping protect what they earn, build and own.

We’re part of the global Liberty Mutual Group, a Fortune 100 company that’s been in business since 1912 with a Standard & Poor’s ‘A’ rating.

View our office locations



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