

Liberty is here for you.
Today. Tomorrow. Together.

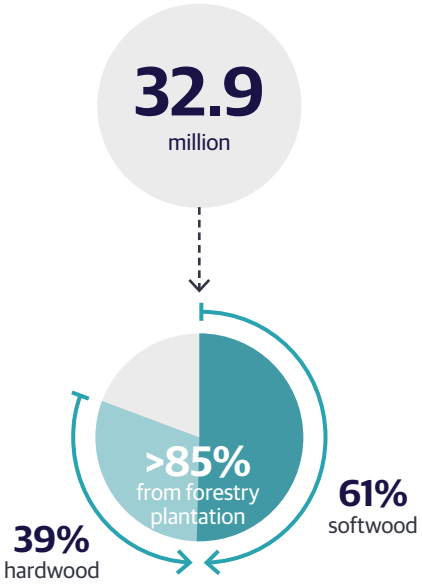
For more information, please visit:
libertyinternational.com/au

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Office locations

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Average m³ of logs harvested per year



Weather trends

As weather patterns become less predictable, a wide range of Australian businesses are looking to weather insurance for financial protection from unexpected extreme weather conditions.

This Liberty weather newsletter covers a range of climatic subjects that are commonly asked about by brokers and their clients in Australia. In this edition we cover:

1. **Liberty's innovative satellite technology solution for forestry plantations**
2. **La Niña and the expected weather impacts**
3. **Australia's extreme weather trends**

Liberty provides a range of innovative parametric weather solutions, including products specifically designed for construction companies, outdoor event operators and forestry plantations.

Be it accumulated rainfall, wind speed direction or average temperature, there is a wide range of scenarios where our weather parametric insurance can be considered. Every policy is customised for each client, providing a tailored form of financial protection against losses or damages incurred because of adverse, measurable weather conditions.

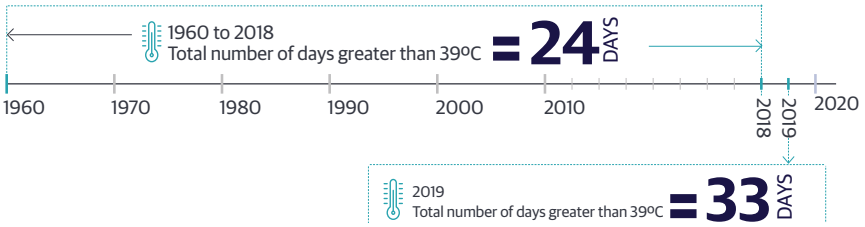
1. Forestry plantation bushfire risk

Forestry plantations produce more than 85% of the 32.9 million cubic metres of logs harvested in Australia on average each year. The majority of plantation logs are derived from softwood plantations compared to hardwood plantations.

During the 2019/20 bushfires, 6.7% of all commercial forestry plantations in Australia were burnt. In New South Wales, 24% of all plantations were burnt, and in South Australia it was 10%.[1]

There is a significant trend in some regions of southern Australia towards more days with weather conditions conducive to extreme bushfires.

In summer, we now see a greater frequency of very hot days compared to earlier decades. In terms of national daily average maximum temperatures, there were 33 days that exceeded 39°C in 2019, more than the number observed from 1960 to 2018 combined, which totalled 24 days. (BOM Climate Change Report 2020).[2]



1 Australian Government Department of Agriculture, Water and the Environment accessed at https://www.awe.gov.au/abares/forestsaustralia/forest-data-maps-and-tools/fire-data#area-of-forests-in-fire-area-by-forest-category-and-jurisdiction

2 Australian Bureau of Meteorology State of the Climate Report 2020 accessed at http://www.bom.gov.au/state-of-the-climate/





The forestry plantation industry is significantly impacted by bushfires. Liberty has developed a market leading use of satellite technology to provide cover for bushfire risks.

Once the smoke has dispersed, we process images before and after a bushfire event to determine the burnt area. To achieve this, we use two different sources of images, the first to determine the area burned. The second source is then used to determine the severity of the damage to a grid size of 30 metres by 30 metres.

Forestry plantations can also utilise Liberty's other weather index products to provide protection from hail, wind, rainfall and cloud cover.

2. Increased rainfall from La Niña

What causes La Niña?

La Niña occurs when equatorial trade winds become stronger, changing ocean surface currents and drawing cooler deep water up from below. This results in a cooling of the central and eastern tropical Pacific Ocean. The enhanced trade winds also help to pile up warm surface waters in the western Pacific and to the north of Australia.

The warming of ocean temperatures in the western Pacific means the area becomes more favourable for rising air, cloud development and rainfall. As a result, heavy rainfall can occur to the north of Australia. Conversely, over the eastern and central tropical Pacific, air descends over the cooler waters, meaning the region is less favourable for cloud and rain. The air rising in the west and descending in the east enhances an atmospheric circulation – called the Walker circulation – which can result in changes to the climate felt across the globe

La Niña typically means:

- Increased rainfall across much of Australia
- Cooler daytime temperatures (south of the tropics)
- Warmer overnight temperatures (in the north)
- Shift in temperature extremes
- Decreased frost risk
- Greater tropical cyclone numbers
- Earlier monsoon onset



12 OUT OF 18
La Niña events have resulted in floods



What can we expect to experience?

The relationship between La Niña strength and rainfall is closely linked. The greater the sea surface temperature and Southern Oscillation Index difference from normal, the larger the rainfall response.

Australia's wettest year on record

1974 + 2010-2012

The wettest years on record for Australia occurred during the strong 2010–2012 and 1974 La Niña events. The 2010–2012 La Niña event was particularly devastating in terms of widespread flooding across Australia, although the influence of the Indian Ocean likely also increased the widespread rainfall effect.

The presence of La Niña increases the chance of widespread flooding. Of the 18 La Niña events since 1900 (including multi-year events), 12 have resulted in floods for some parts of Australia, with the east coast experiencing twice as many severe floods during La Niña years than El Niño years.

Since 1900

18 La Niña events

Winter–Spring rainfall **= 22%** above average

+

Severe flooding during:
1955 | 1988 | 1998 | 2010

The six wettest winter–spring periods on record for eastern Australia occurred during La Niña years. In the Murray–Darling Basin, winter–spring rainfall averaged over all 18 La Niña events (including multi-year events) since 1900 was 22 per cent higher with the severe floods of 1955, 1988, 1998 and 2010 all associated with La Niña.

Increased tropical cyclone numbers

During La Niña, there are typically more tropical cyclones in the Australia region, with twice as many making landfall than during El Niño years on average.

The first cyclone to cross the Australian coast also tends to occur earlier in the season. The only years with multiple severe tropical cyclone landfalls in Queensland have been La Niña years.

Deeper relative snow cover

La Niña years tend to have more varied snow depths in Australia's alpine regions than El Niño years, and are less reliable than neutral years.

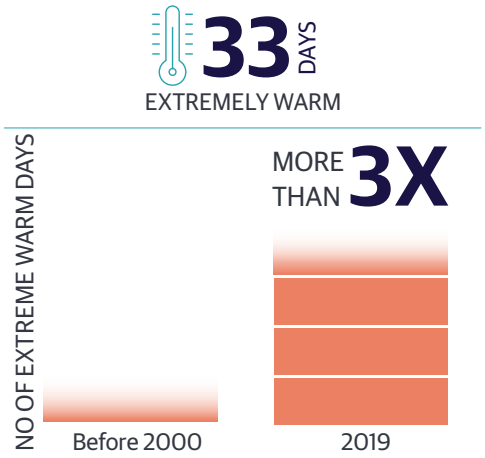
While La Niña usually brings above-average precipitation, temperatures can sometimes be too high and hence it may fall as rain rather than snow at high elevations, reducing snow depths. This has become more common in recent decades, with seven of the past eight La Niña years producing lower than average maximum snow depths.



3. Extreme weather trends

Unexpected weather events present risks to many businesses. The frequency and the intensity of extreme weather patterns have increased in Australia including:

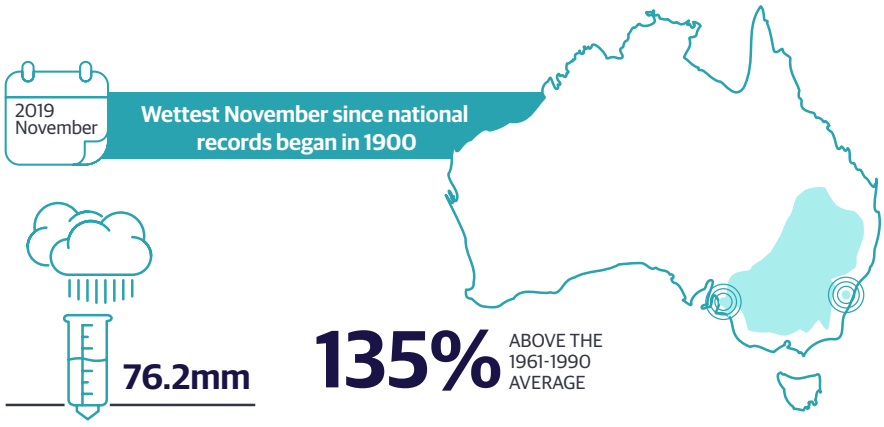
In 2019...



In 2019, Australia experienced 43 extremely warm days, more than triple the number in any of years prior to 2000.

Increase in history of heavy rainfall events

Observations show that there has been an increase in the intensity of heavy rainfall events in Australia. The intensity of short-duration (hourly) extreme rainfall events has increased by around 10 per cent or more in some regions and in recent decades, with larger increases typically observed in the north of the country. As the climate warms, heavy rainfall events are expected to continue to become more intense.



Wettest November since national records began in 1900

It was also the wettest November on record for New South Wales and South Australia, and for the Murray-Darling Basin.

Many locations had their wettest November on record, particularly in inland New South Wales and the ACT, southern Queensland, and northern and western South Australia. In some of these locations (including Bathurst) November 2019 was the wettest month on record.



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 and deficit rainfall
- excess and deficit temperature
- humidity
- wind – speed, direction and maximum gust

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

We're part of the Liberty Mutual Group, a Fortune Global 500 company that's been in business since 1912 with an S&P A+ financial strength rating

Global reach. Financial strength. Local authority.

Distinct, complex and constantly evolving – every business is as unique as their 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 business and government organisations across Australia – helping protect what they earn, build and own.

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