

# What's the difference between La Niña and El Niño?

## Australia's climate is influenced by two alternating weather patterns, La Niña and El Niño, with a La Niña event happening at the moment.

La Niña and El Niño are weather patterns that are measured by the Southern Oscillation Index, which records interactions between the atmosphere and the ocean air.

Australia is presently experiencing a La Niña event, which involves cooling ocean surface temperatures in the central and equatorial eastern tropical Pacific Ocean, alongside high winds, low pressure systems and higher rainfall[1].

It may also mean more frequent storms, floods and cyclones, especially across NSW, Queensland and the Northern Territory. The Queensland floods of 2010 and 2011 and Cyclone Yasi in 2011 all occurred during La Niña cycles[2].

By contrast, an El Niño weather pattern is when sea temperatures become warmer than the air across the central and eastern tropical(?) Pacific Ocean. At this time, prevailing trade winds tend to blow weakly from east to west or even from west to east[3].

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Understanding how La Niña and El Niño operate can help businesses plan for future weather events.

### El Niño is associated with:

- Lower than average rainfall.
- Higher temperatures and more extreme temperatures.
- Lower risk of cyclones.
- Higher fire danger[4].

[1] Climate Driver Update, Bureau of Meteorology, accessed 05/01/21, <http://www.bom.gov.au/climate/enso/>

[2] Record breaking La Niña events, Bureau of Meteorology, accessed 05/01/21, <http://www.bom.gov.au/climate/enso/history/ln-2010-12/>

[3] What is El Niño and what does it mean for Australia?, Bureau of Meteorology, accessed 05/01/21, <http://www.bom.gov.au/climate/updates/articles/a008-el-nino-and-australia.shtml>

[4] Ibid.

## What happens during a La Niña cycle?

A La Niña cycle happens when the Southern Oscillation Index reaches a threshold of +7. As at 5 January 2021, the index was at +18.8[5].

Climate models associated with La Niña and El Niño are not perfect; however in early January 2021, the Bureau of Meteorology issued advice to indicate the Southern Oscillation Index has peaked[6]. So while higher than average rainfall is still likely for the 2020/2021 summer, wet conditions have been forecast to abate. The risk of damaging floods and cyclones has also lessened.

## What happens during an El Niño cycle?

An El Niño cycle is characterised by the Southern Oscillation Index falling below -8. When the index is above -8 and below +7 the system is said to be neither in El Niño nor La Niña.

Bushfire events often occur during the El Niño cycle, with the Ash Wednesday fires in 1983 and the major bushfires of 2002 to 2003 and 2006 and 2007 taking place during El Niño periods. The bushfires that happened in 2019 up until August that year were during an El Niño event[7]. But other factors, such as rising temperatures, also contributed to the 2019/2020 fire season[8].

### Limitations of La Niña and El Niño in predicting weather



It's important to understand the La Niña and El Niño weather systems are only one of a number of different variables that influence the climate and the weather. Barometric pressure and local geography are just two of the other factors that come into play.

An understanding of weather patterns enables businesses whose operations are influenced by weather such as agriculture, construction and tourism to plan ahead, so when reasonably predictable weather events occur, they are prepared.

It's important for businesses to understand how their insurance cover could respond in the event of weather events caused by La Niña and El Niño such as fire, flood and cyclones. Check with your Steadfast broker to ensure you know what cover you have and how it can protect your business.

[5] Ibid

[6] Op. cit.

[7] August 2019 El Niño update, climate.gov, accessed 05/01/2021, <https://www.climate.gov/news-features/blogs/enso/august-2019-el-niño-update-stick-fork-it>

[8] Unpacking the national bushfire and climate summit 2020, Climate Council, accessed 05/01/21, <https://www.climatecouncil.org.au/unpacking-national-bushfire-climate-summit-2020/>

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