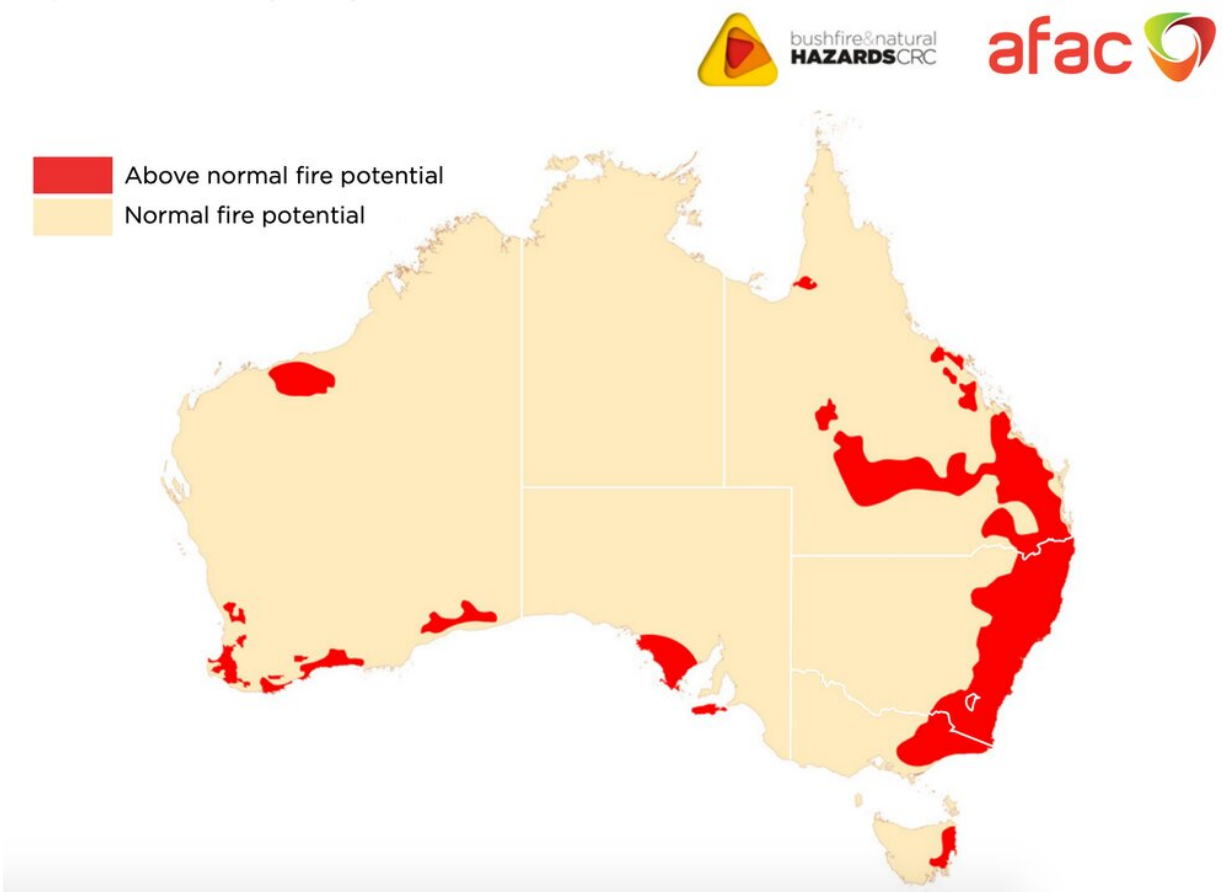


Australia could see fewer cyclones, but more heat and fire risk in coming months

October 14 2019, by Jonathan Pollock, Andrew B. Watkins, Catherine Ganter and Paul Gregory



Australian seasonal bushfire outlook, as of August 2019. Vast areas of Australia, particularly the east coast, have an above-normal fire potential this season. Credit: Bushfire and Natural Hazards CRC/Australasian Fire and Emergency Service Authorities Council

Northern Australia is likely to see fewer cyclones than usual this season, but hot, dry weather will increase the risk of fire and heatwaves across eastern and southern Australia.

The Bureau of Meteorology today released its forecast for the [tropical cyclone season](#), which officially runs from November 1 to April 30.

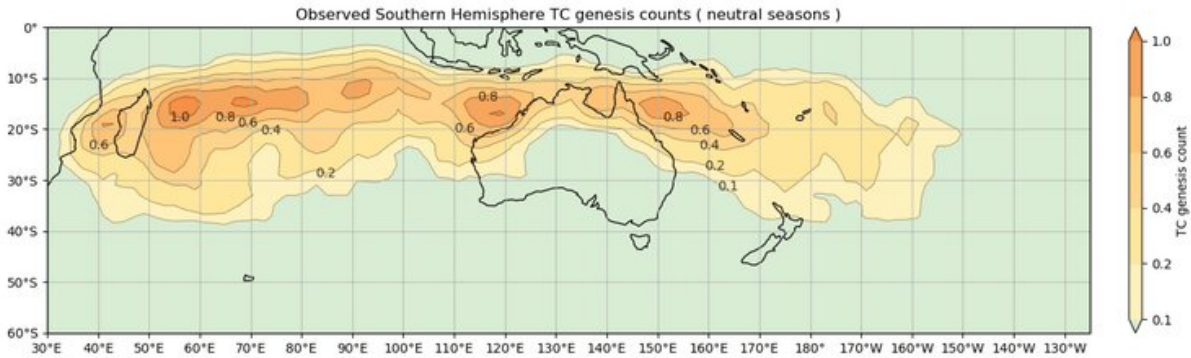
Also published today is the October to April [Severe Weather Outlook](#), which examines the risk of other [weather](#) extremes like flooding, heatwaves and bushfires.

Warmer oceans means more cyclones

On average, 11 tropical cyclones form each [season](#) in the Australian region. Around four of those cross the coast. The [total number](#) each season is roughly related to how much cooler or warmer than average the [tropical oceans](#) near Australia are during the [cyclone](#) season.

One of the biggest drivers of change in ocean temperatures is the El Niño–Southern Oscillation, or ENSO. During La Niña phases of ENSO, the warmest waters in the equatorial Pacific build up in the western Pacific and to the north of Australia. That region then becomes the focus for more cloud, rainfall and tropical cyclones.

But during El Niño, the warmest water shifts towards the central Pacific and away from northern Australia. This decreases the likelihood of cyclones in our region.



Map showing the average number of tropical cyclones through the Australian region and surrounding waters in ENSO-neutral years, using all years of data from the 1969-70 to 2017-18 tropical cyclone season.

And when ENSO is neutral, there is little push towards above or below average numbers of cyclones.

Temperatures in the tropical Pacific Ocean have been ENSO-neutral since April and are likely to stay [neutral until at least February 2020](#). However, some tropical patterns are El Niño-like, including higher-than-average air pressure at Darwin. This may be related to the current [record-strong positive Indian Ocean Dipole](#) – another of Australia's major climate drivers—and the cooler waters surrounding northern Australia.

The neutral ENSO phase alongside higher-than-average air pressure over northern Australia means we expect fewer-than-average [tropical cyclones](#) in the Australian region this season. The bureau's Tropical Cyclone Season Outlook model predicts a 65% chance of fewer-than-average cyclones.

At least one tropical cyclone has crossed the Australian coast every season since reliable records began in the 1970s, so people across

northern Australia need to be prepared every year. In ENSO-neutral cyclone seasons, this first cyclone crossing typically occurs in late December.

Other severe weather

While cyclones are one of the key concerns during the coming months, the summer months also bring the threat of several other forms of severe weather, including bushfires, heatwaves and flooding rain.

With dry soils inland, and hence little moisture available to cool the air, and a forecast for [clear skies and warmer days](#), there is an increased chance that heat will build up over central Australia during the spring and summer months. This increases the chance of heatwaves across eastern and southern Australia when that hot air is drawn towards the coast by passing weather systems.

Likewise, the dry landscape and the chance of extreme heat also raise the risk of more bushfires throughout similar parts of Australia, especially on windy days. And with fewer natural firebreaks such as full rivers and streams, even greater care is needed in some areas.

Widespread floods are less likely this season. This is because of forecast below-average rainfall and also because dry soils mean the first rains will soak into the ground rather than run across the landscape.

However, as we saw in [northern Queensland in January and February this year](#), when up to 2 meters of rainfall fell in less than 10 days, localized flooding can occur in any wet season if a tropical low parks itself in one location for any length of time.

Most of all, it's always important to follow advice from emergency services on what to do before, during and after severe weather. [Know](#)

[your weather, know your risk and be prepared](#). You can stay up to date with the latest forecast and warnings on the bureau's website and [subscribe](#) to receive climate information emails.

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