



Seasonal Climate Update

Australian Spring — Summer 2023/2024

- An El Niño event is now underway, bringing drier and warmer temperatures across most of Australia.
- Indian Ocean Dipole (IOD) values are strongly positive, reinforcing the below-average rainfall already observed this spring and elevating bushfire risk, particularly across eastern parts of Australia.
- Below-average tropical cyclone and average severe thunderstorm conditions are expected; however, there has been an early start to the South Pacific tropical cyclone season with TC Lola.

Regional climate conditions

The El Niño-Southern Oscillation (ENSO) and IOD are the primary drivers of interannual climate variability in our region.

The Bureau of Meteorology (BOM) has declared an El Niño phase is underway after months of an El Niño alert. The IOD has reached its sixth highest value since the BOM sea surface temperature dataset began in 2001, where all other higher values observed were during the positive IOD event in 2019, with research suggesting a strong link to the bushfire risk.¹

Positive IOD events tend to bring drier springtime conditions across eastern Australia. These conditions are already present with the driest September recorded in Victoria, the second driest in New South Wales (rainfall was 17% of average), and South Australia recorded their seventh driest September on record.

Australia-wide, it was the driest September on record since 1900, and rainfall was below average for most of the southern two-third of the country.

When an El Niño event and positive IOD events are combined, the drying effects are reinforced and typically more widespread across Australia.

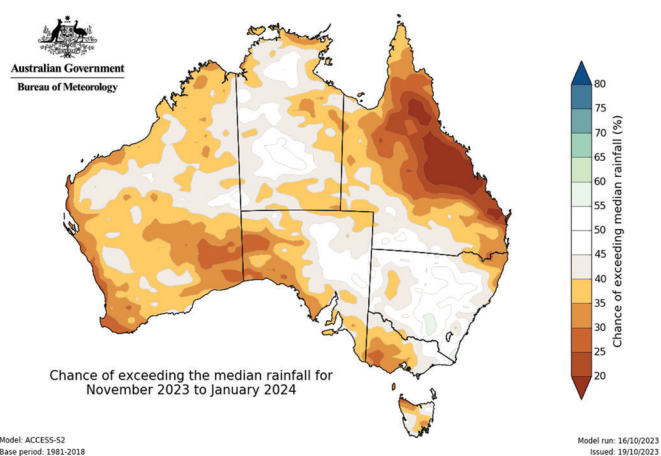


Figure 1: Chance of exceeding median rainfall between November 2023 and January 2024. Driest areas depicted in yellow, orange, and brown colors.²

The November to January maximum and minimum temperatures are very likely to be above average across almost all regions of Australia, as shown in Figures 2 and 3. Warmer than average day and night temperatures are expected across the tropics with an increased likelihood of heatwave events.

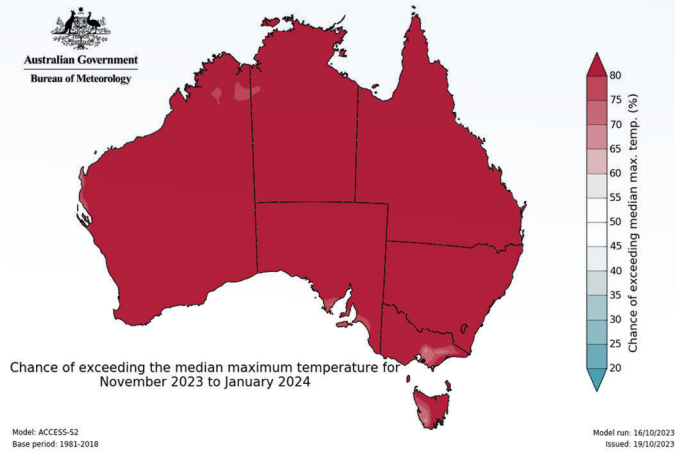


Figure 2: Chance of exceeding median maximum temperature between November 2023 and January 2024. Very likely to exceed the median temperature is the red color.³

Bushfire risk

Most of eastern Queensland, northern, eastern and central New South Wales, central Northern Territory, and northwest Victoria are preconditioned to bushfire. Most of these areas that were already experiencing rainfall deficiencies, have received below-average September rainfall.

These low rainfall and high spring temperatures have driven evaporation stress, reducing the soil moisture levels for most of Australia.

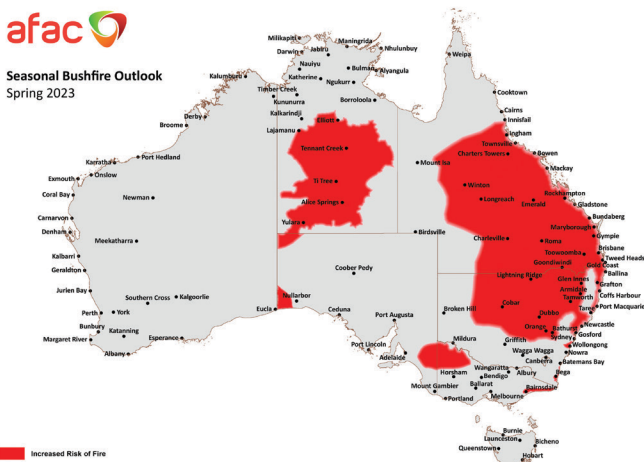


Figure 3: Australian seasonal bushfire outlook. Regions with elevated bushfire risk in red color.⁴

High fuel loads are evident in areas not impacted by the Black Summer bushfires both in the forests of eastern Australia and inland grassland areas. This has resulted from ideal growing conditions over the past three wet La Niña phases. With the forecast of warmer three wet years and additional curing from frost in some inland grassland areas following a dry winter with lower cloud cover. Regions with these vegetation loads are at increased risk of bushfire. Regions impacted by the high intensity of the Black Summer bushfires are seeing steady recovery of fuel loads, quicker in the shrub layer than the canopy, but fire risk is not as high in these areas as in those areas that did not burn in 2019–2020.

There have already been a couple of damaging fire events this season with over 50 structures lost in fires and two lives lost in the Western Downs, Queensland; seven houses and one life lost near Kempsey, northern NSW; and three houses lost near Bermagui, southern NSW. In Gippsland, in Victoria, at least one house was lost to a large bushfire near Briagolong, and a number of properties were inundated by flood along the Thomson River during a remarkable sequence of events. Bushfire emergency warnings were replaced by flood emergency warnings in exceptionally close proximity within 24 hours.



Figure 4: Victoria Emergency alert to communities across southern Victoria of concurrent bushfire and flash flooding warnings.⁵

Other peril risks

The BOM expects reduced tropical cyclone activity for the upcoming Australian tropical cyclone season, in line with atmospheric conditions expected during coupled El Niño and positive IOD events. During reduced-risk years, typically at least one cyclone crosses the Australian coast over the season.

A very rare October tropical cyclone formed in the South Pacific. TC Lola formed on October 22 and is only the seventh system on record to form before the season's traditional start date of November 1. TC Lola caused significant damage across Vanuatu, with gusts up to 295 kilometers per hour and has become the earliest Category 5 tropical cyclone in the Southern Hemisphere.

Severe convective storms with the potential of hailstorms, damaging winds, and flash flooding are more prevalent in the spring to autumn months across eastern Australia. This year is forecast to be normal for severe convective storm-related weather in the spring and summer. While we would expect a reduced occurrence of major large-scale flood events such as we have seen in 2021 and 2022, there remains potential for flash flood events and shorter-duration intense rain events, comparable to that already observed in Gippsland.

Please get in touch if you would like any further information or assistance in assessing the severe weather risk to your portfolio over the 2023–2024 season.

References

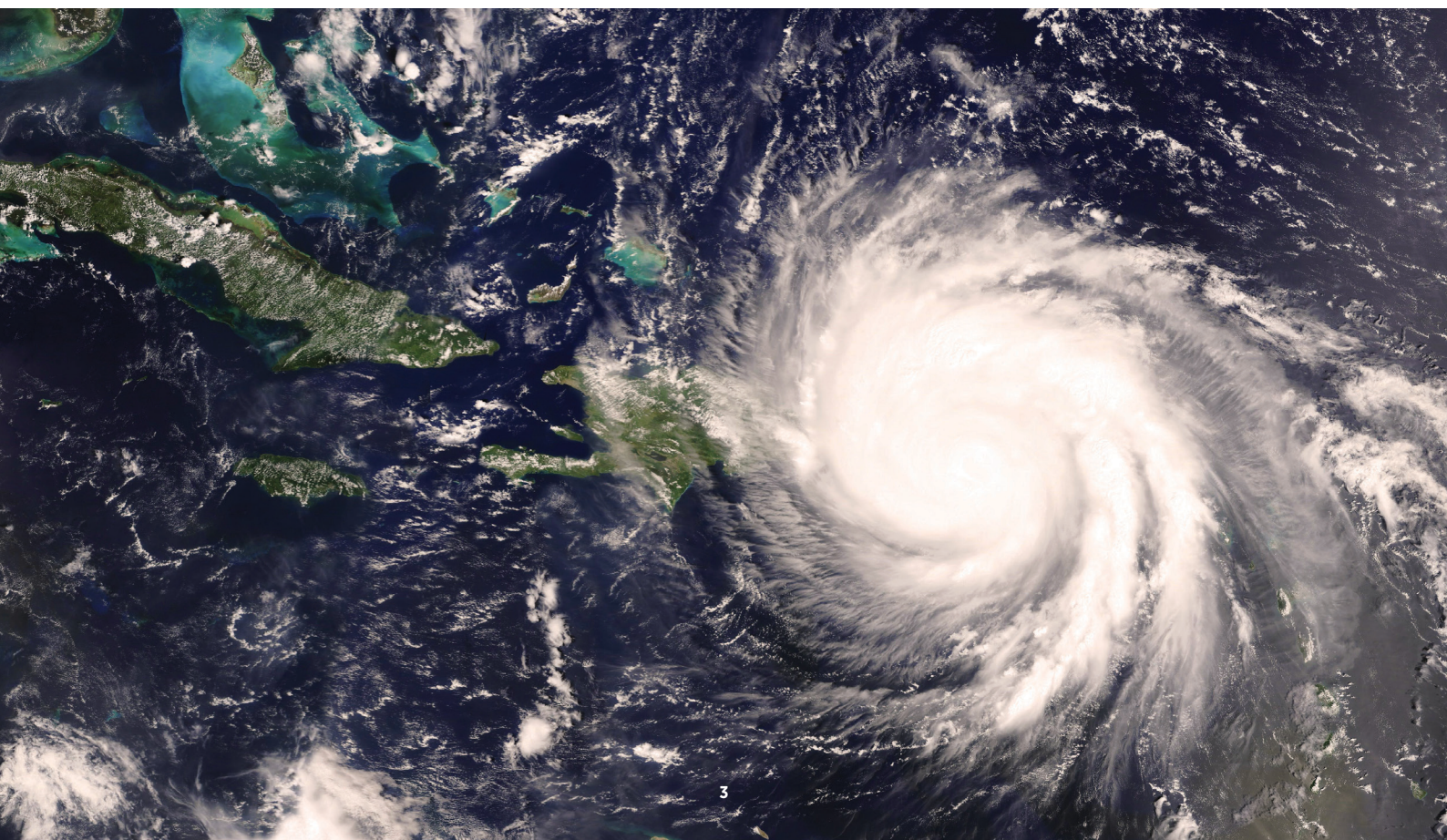
¹[Impact of Australia's catastrophic 2019/20 bushfire season on communities and environment](#). Retrospective analysis and current trends. (2020). Alexander I. Filkov, Tuan Ngo, Stuart Matthews, Simeon Telfer, Trent D. Penman. *Journal of Safety Science and Resilience*.

²[ACCESS-S2, Rainfall Outlook, Exceeding Median Rainfall](#).(October 2023). Australian Bureau of Meteorology. BOM.

³[ACCESS-S2, Rainfall Outlook, Exceeding Median Rainfall](#).(October 2023). Australian Bureau of Meteorology. BOM.

⁴[Seasonal Bushfire Outlook Winter 2023](#). (September 2023). National Council for Fire and Emergency Services. AFAC.

⁵[Victoria Emergency incidents and Warnings Map](#) (October 2023). Victoria State Emergency Service. VICEMERGENCY.



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Krystelle Ho

Catastrophe Risk Analyst
Analytics and Insights

Level 36, 60 Margaret Street

Sydney, NSW 2000

+61 4 0382 8113

krystelle_ho@GallagherRe.com

Dr. Andy Casely

Senior Catastrophe Risk Analyst
Analytics and Insights

Level 36, 60 Margaret Street

Sydney, NSW 2000

+61 4 5895 9995

andy_casely@GallagherRe.com

Dr. Valentina Koschatzky

Senior Research Analyst
Analytics and Insights

Level 36, 60 Margaret Street

Sydney, NSW 2000

+61 4 0310 8297

valentina_koschatzky@GallagherRe.com

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