In the last 30 years in the Alice

- Annual rainfall has increased by 13%
- Dry years have occurred five times and wet years 11 times
- There has been an increase in rainfall in late spring and summer
- Rainfall has been unreliable year round
- Useful rain events have occurred an average of once a year
- There have been more hot days, with more consecutive days above 42 °C

Alice NT region at a glance

The Alice region covers around 55 million hectares, of which 37% is under agricultural production. Grazing cattle account for than 95% of the region’s agriculture, with the remaining output made up with grapes, mangoes and other horticultural products. The region contributed around $54.6 million to the Australian economy in 2015–16. This guide covers the Central Desert, MacDonnell and Alice Springs LGAs.

A guide to weather and climate in the Alice

Primary producers make decisions using their knowledge and expectations of regional weather patterns. The purpose of this guide is to provide an insight into the region’s climate and an understanding of changes that have occurred through recent periods. This information can potentially assist primary producers and rural communities make better informed decisions for their business and livelihoods. This guide is part of a series of guides produced for every Natural Resource Management area around Australia.
Annual Rainfall

Annual rainfall in the Alice has increased by around 13%

Annual rainfall in the Southern NT/Alice region has increased by around 40 mm (13%) from about 290 mm to about 330 mm over the past 30 years (1989–2018) when compared to the previous 30 years (1959–1988). This represents a significant increase in annual rainfall totals. The charts show annual rainfall (blue bars), with a 10-year running average (solid blue line) for Alice Springs and Ngaanyatjarra-Giles. In the past 30 years (1989–2018), dry years (lowest 30%) have occurred five times and wet years (highest 30%) have occurred 11 times, while the remaining years were in the average range. During the previous 30-year period (1959–1988), dry years occurred eight times and wet years occurred 12 times.

Rainfall reliability maps for the past 30 years (1989–2018) show that the majority of the region experiences low and unreliable rainfall across all seasons of the year (red areas). Summer rainfall (Dec–Feb) is slightly more reliable as occasional tropical rainfall events make their way to the northern fringe of this region (beige and blue areas).

For more information on future projections, visit the Climate Change in Australia website > [www.climatechangeinaustralia.gov.au](http://www.climatechangeinaustralia.gov.au)


Alice rainfall is unreliable year round

Rainfall reliability maps for the past 30 years (1989–2018) show that the majority of the region experiences low and unreliable rainfall across all seasons of the year (red areas). Summer rainfall (Dec–Feb) is slightly more reliable as occasional tropical rainfall events make their way to the northern fringe of this region (beige and blue areas).
There has been an increase in rainfall in late spring and summer

Rainfall remained relatively stable at Alice Springs between 1989–2018 (orange bars) compared with 1959–1988 (blue bars), although the distribution changed, with increases in summer rainfall and decreases in March and the winter months. At Ngaanyatjarra-Giles, rainfall increased in the late spring and summer months, with monthly average rainfall for December more than doubling between the two 30-year periods, from 30 mm (1959–1988) to 65 mm (1989–2018). Over the past 30 years, summer rainfall (December to April inclusive) for Alice Springs remained steady at 185 mm compared to the previous 30-year period (1959–1988). For Ngaanyatjarra-Giles, summer rainfall increased by 48 mm over the same period, from 156 mm to 204 mm.

Useful rain events have occurred an average of once per year

At Alice Springs, two thirds of single or multi-day rain events of 50 mm or more occur over summer (Dec–Feb). On average, one such event occurs every year (July–June), but this can range from zero to seven. There have been 37 summer seasons since 1900 that have not had a 50 mm rain event, which represents about a 31% risk in any year of this occurring.
Evaporation

Evaporation rates have increased in all months of the year

The graphs show the mean monthly evaporation and water balance (rainfall minus evaporation) between 1989–2018 (orange bars) compared with 1959–1988 (blue bars) for Alice Springs and Ngaanyatjarra–Giles. Overall, there has been an increase in annual evaporation totals. At Alice Springs, evaporation rates in spring and autumn have increased by 10–20 mm for each month in the past 30 years (1989–2018) when compared to the previous 30 years (1959–1988). Other months show an increase in evaporation by less than 10 mm each month. At Ngaanyatjarra–Giles, evaporation rates in December and January show a small decrease over the past 30 years (1989–2018) when compared to the previous 30 years (1959–1988), but increased across all other months of the year.

Temperature

The Alice has experienced more hot days in the past 30 years

The chart shows the annual number of days above 38 °C for Alice Springs. Alice experienced an average of 49 days per year above 38 °C between 1989–2018, compared to an average of 41 days per year above 38 °C between 1959–1988. Since 1989, temperatures of 44 °C have been recorded for Alice Springs 24 times, once each in 1990, 1994, 1998 and 2001, three times in 2004, 2013 and 2014, five times in 2018, and six times in 2019. Previously, temperatures of 44 °C were recorded at Alice Springs four times, three times in 1960 and once in 1983. Instances of consecutive days above 42 °C have also been more frequent since 1989. In 2013 and twice in 2019, Alice Springs experienced periods of nine or more days in a row above 42 °C. A run of nine or more days above 42 °C is unusual at Alice Springs and had not been recorded before.