In the last 30 years in the Northern and Yorke region

- Annual rainfall has been stable
- Dry years have occurred seven times and wet years nine times
- There has been a decrease in rainfall in the autumn months
- Winter rainfall has been reliable; summer has been unreliable
- The autumn break occurred early-to-mid May through the centre of the region, mid-to-late May on the peninsula and early to mid-June north and east of Orroroo
- There have been more frosts and they have been coming later
- There have been more hot days, with more consecutive days above 40 °C

Northern and Yorke region at a glance

The Northern and Yorke region covers around 5 million hectares, of which 91% is under agricultural production. It is a major broadacre cropping and grazing region, along with dairy, hay production and wine grapes. The region contributed around $1.5 billion to the Australian economy in 2017–18.

A guide to weather and climate in the Northern and Yorke region

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 in the Northern and Yorke region has been stable

Annual rainfall in the Northern and Yorke region has been stable, recording an average of around 380 mm in both the past 30 years (1989–2018) and the previous 30 years (1959–1988). The charts show annual rainfall (blue bars), with a 10-year running average (solid blue line) for Warooka and Orroroo. Although the average annual rainfall has been stable, it still fluctuates from year to year with natural variability.

In the past 30 years (1989–2018), dry years (lowest 30%) have occurred seven times and wet years (highest 30%) have occurred nine times, while the remaining years were in the average range. Note the Millennium drought accounted for three of these dry years in the recent period. During the previous 30-year period (1959–1988), dry years occurred nine times and wet years occurred seven times.

Northern and Yorke winter rainfall is reliable; summer is unreliable

Rainfall reliability maps for the past 30 years (1989–2018) show winter rainfall has been moderately reliable across the region (blue areas), with usually about 40 mm difference from one year to the next. Autumn rainfall is reliable on the peninsula (blue areas), but is unreliable through the centre of the region and in the north (beige and red areas). Similarly, spring rainfall is also unreliable, particularly in the north. Although there have been some wet summers over the past 30 years, summer rainfall has not been reliable from year to year (red areas).
There has been a decrease in rainfall in the autumn months

Rainfall in the autumn months decreased at Crystal Brook and Maitland between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). In the northern part of the region, rainfall has also decreased in spring. Further south and into the peninsula, monthly average rainfall totals have increased in the spring months.

Over the past 30 years, winter rainfall (May to November inclusive) for Crystal Brook was 260 mm, 36 mm lower than the 296 mm average for the previous 30-year period (1959–1988). For Maitland, winter rainfall has increased by 6 mm over the same period, from 364 mm to 370 mm. Over the same 30-year periods, summer rainfall (December to April inclusive) increased by 9 mm at Crystal Brook, from 104 mm to 113 mm. At Maitland, summer rainfall decreased by 3 mm, from 126 mm to 123 mm.

Timing of the autumn break in the Northern and Yorke region

In the Northern and Yorke region, the autumn break can be defined as at least 15 mm of rainfall over three days, prior to the commencement of sowing. The map shows that over the past 30 years (1989–2018), the break typically occurred in early to mid May through the centre of the region around Crystal Brook (blue to teal areas), mid-to-late May on the peninsula (green areas) and not until early to mid-June north and east of Orroroo (light green and yellow areas). Across the peninsula and in the north east over the past 30 years, the average autumn break has occurred a little earlier than it did in the previous 30-year period (1959–1988).
**Frost**

**Later and more frequent frosts**

The graphs show the number of potential frosts at Orroroo and Snowtown between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). Frost frequency increased in winter and spring, with an average of two more nights at Orroroo between 1989–2018 compared to 1959–1988.

In Snowtown the frost risk has remained unchanged with both periods having a total frost risk of 31 days per year. More frosty nights have tended to occur through dry winter and spring periods, when soil moisture is low and cloud cover infrequent.

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**Temperature**

**Northern and Yorke region has had more hot days in the past 30 years**

The chart shows the annual number of days above 38 °C (red bars), with a 10-year running average (solid red line) for Maitland. Maitland experienced an average of seven days per year above 38 °C between 1989–2018, compared to an average of four days per year above 38 °C between 1959–1988.

Since 1989, temperatures of 44 °C have been recorded for Maitland three times, in 2009, 2013 and again in 2019. The recorded temperature had not reached 44 °C in Maitland before 2009. Instances of consecutive days above 40 °C have also been more frequent in the past 30 years.

In 2009 and 2014, Maitland experienced periods of five or more days in a row above 40 °C. A run of five or more days above 40 °C is unusual at Maitland and had not happened there since temperature records began in 1957.