In the last 30 years in the Central West

- Annual rainfall has been relatively stable
- Dry years have occurred 11 times and wet years have occurred seven times
- Rainfall has decreased in the autumn and spring months
- Summer rainfall has been reliable; autumn has been unreliable
- Dry years have occurred 11 times and wet years have occurred seven times
- The autumn break typically occurred by the start of June around Gilgandra, Dubbo and Nyngan, not until later in June around Forbes, and late June to early July around Condobolin in the southwest
- Spring frosts have been more common and have been occurring later
- There have been more hot days, with more consecutive days above 38 °C.

The Central West at a glance

The Central West region covers 6.3 million hectares, with around 80% of land under agricultural production. It is a major broadacre cropping region, producing cotton, cereals, pulses and oilseeds, as well as livestock for meat and wool. Horticulture — citrus and vegetable production — and the nursery industry are also substantial contributors to the regional economy. Agricultural production in the region was valued at almost $1.59 billion in 2017–18.

A guide to weather and climate in the Central West

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.

A climate guide for agriculture

Central West, New South Wales
Annual rainfall in the Central West has been relatively stable

Annual rainfall in the South West has been relatively stable, recording an average of around 400 mm in both the past 30 years (1989–2018) and the previous 30 years (1959–1988).

Annual rainfall in the Central West has remained relatively stable, recording an average of around 520 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 Dubbo and Forbes. Although the average annual rainfall has remained stable, the distribution across the year has changed (see next section).

In the past 30 years (1989–2018), dry years (lowest 30%) have occurred 11 times and wet years (highest 30%) have occurred seven 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 seven times and wet years occurred 11 times.

Rainfall reliability maps for the past 30 years (1989–2018) show summer rainfall in the Central West has been only moderately reliable (light blue areas), changing by about 60–90 mm (40% to 60%) from year to year. This is in contrast to winter and spring rainfall, which has been less reliable (light red areas), especially in the north. Although there have been some wet autumns in the past 30 years, autumn rainfall has been unreliable across the region (red areas).

For more information on future projections, visit the Climate Change in Australia website > www.climatechangeinaustralia.gov.au

Rainfall has decreased in the autumn and spring months

Rainfall in the late autumn and early spring months decreased at Dubbo and Forbes between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). Rainfall in June, and to a lesser degree, November and December, has increased. Other locations around the Central West region showed a similar pattern. Over the past 30 years, winter growing season rainfall (April to October inclusive) for Dubbo was 305 mm; 27 mm lower than the 332 mm average for the previous 30-year period (1959–1988). For Forbes, growing season rainfall has declined 41 mm over the same period. Smaller decreases in growing season rainfall were seen at Parkes (21 mm) and Coonabarabran (5 mm).

Timing of the autumn break in the Central West region

In the Central West, the autumn break can be defined as at least 25 mm over three days prior to the commencement of the winter cropping season. The map shows that over the past 30 years (1989–2018), the break typically occurred by the start of June around Gilgandra, Dubbo and Nyngan (green areas), not until later in June around Forbes, and late June to early July around Condobolin in the southwest. In parts of the region’s east, and south west of Condoblin in the past 30 years, the autumn break has been occurring around one month later than it did in the period 1959–1988.
Frost

Later and more frequent frosts

The number of potential frosts in late winter and early spring has increased at Dubbo and Parkes between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). At Dubbo, frost frequency in August and September increased with an average of six more nights with the potential for frost between 1989–2018 compared to 1959–1988. August and September frost nights at Parkes have increased by an average of 10 nights per year between these periods.

Dubbo’s frost risk has typically ended by the end of September, but early October frosts have happened about once every second year. Parkes has seen a large change in the timing of potential frosts over the past 30 years. The timing of the last frost at Parkes during 1989–2018 has been similar to the timing at Dubbo, almost a month later than the latest frost experienced during 1959–1998. More frosty nights have tended to occur through dry winter and spring periods, when soil moisture is low and cloud cover infrequent. On average, the Central West region has had 23 more cold season (April–October) frost nights during a dry winter than a wet one. When considering just spring months, there is little difference in potential frost nights between wet and dry years.

Temperature

The Central West has experienced 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 Forbes. Forbes experienced an average of 11 days per year above 38 °C between 1989–2018, compared to an average of seven days per year above 38 °C between 1959–1988. Instances of consecutive days above 38 °C have also been more frequent in the past 30 years. In 2009 and 2019, Parkes (not shown) experienced periods of 10 or more days in a row above 38 °C. In January 2019, the period above the 38 °C threshold lasted 30 days. Since January 2001, unprecedented temperatures of 45 °C have been recorded for Parkes four times, with 2001 the first time on record that Parkes had reached 45 °C.

Over the past 60 years in the Central West region, the number of days above 38 °C has increased. It should be noted that the 1930s and 1940s were also a very warm period.