The South West (WA) region covers around 4.3 million hectares, of which 52% is under agricultural production. The region supports a diverse mix of agricultural enterprises, including broadacre cropping, horticulture, wine grapes, and grazing of cattle and sheep. The region contributed around $1.56 billion to the Australian economy in 2017–18.

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 South West has decreased

Annual rainfall in the South West has decreased by around 50 mm (-6%) from about 740 mm to about 690 mm over the past 30 years (1989–2018) when compared to the previous 30 years (1959–1988). The charts show annual rainfall (blue bars), with a 10-year running average (solid blue line) for Bridgetown and Katanning. Although there has been a decrease in annual rainfall in the past 30 years, it is within the range of natural variability. In the past 30 years (1989–2018), dry years (lowest 30%) have occurred 15 times and wet years (highest 30%) have occurred three times, while the remaining years were in the average range. During the previous 30-year period (1959–1988), dry years occurred 11 times and wet years occurred 10 times.

Rainfall reliability maps for the past 30 years (1989–2018) show winter rainfall has been reliable across the region (blue areas), with about 80 mm difference from one year to the next. Spring is also moderately reliable (lighter blue areas). Autumn has been less reliable in the east of the region around Katanning (beige and red areas). Although there have been some wet summers in the past 30 years, summer rainfall has been unreliable across the region from year to year (red areas).

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

Want to know more about the guides? Try Frequently Asked Questions at.

South West winter rainfall is reliable; summer is unreliable

Rainfall reliability maps for the past 30 years (1989–2018) show winter rainfall has been reliable across the region (blue areas), with about 80 mm difference from one year to the next. Spring is also moderately reliable (lighter blue areas). Autumn has been less reliable in the east of the region around Katanning (beige and red areas). Although there have been some wet summers in the past 30 years, summer rainfall has been unreliable across the region from year to year (red areas).
There has been a decrease in rainfall in autumn and early winter months

Rainfall in the autumn months decreased at Katanning and Narrogin between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). Over the past 30 years, winter rainfall (April to October inclusive) for Katanning was 350 mm; 45 mm lower than the 395 mm average for the previous 30-year period (1959–1988). For Narrogin, winter rainfall has decreased by 60 mm over the same period, from 412 mm to 352 mm.

Over the same 30-year periods, summer rainfall (November to March inclusive) remained stable at Katanning around 102 mm, but at Narrogin it increased by 9 mm, from 91 mm to 100 mm.

Timing of the Autumn Break in the South West

In the South West, the autumn break can be defined as at least 25 mm over three days prior to the commencement of sowing. The map shows that over the past 30 years (1989–2018) the break typically occurs by the first and second week of May in the west of the region around Bunbury and Margaret River (blue and teal areas), late May and early June through the centre of the region around Bridgetown, and not until mid to late June in much of the region’s east (light green to yellow areas). It may not occur at all in some years north east of Katanning (grey area). In the far south of the region in the last 30 years, the autumn break has been coming about two later than it did in the previous 30-year period.
Frost

There have been fewer spring frosts

The number of potential frosts in spring has decreased at Bridgetown between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). At Narrogin, frost frequency has increased over the winter and early spring months. Averaged across the region, potential frost days decreased by eight days, from 29 days for the period 1959–1988 to 21 days for the period 1989–2018.

Narrogin’s frost risk has typically ended by the last week of September, while Bridgetown’s frost risk has ended by the first week of October. The latest potential frost night recorded at Narrogin in the last 30 years was the 2nd of November 2018, and for Bridgetown, the 7th of November 2018.

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 region has had around seven more total frost nights during a dry year than during wetter years.

Temperature

Daytime temperatures relatively stable; nighttime temperatures increased

The chart shows the annual number of days above 35 °C (red bars), with a 10-year running average (solid red line) for Katanning. Katanning experienced an average of 16 days per year above 35 °C between 1989–2018, compared to an average of 15 days per year above 38 °C between 1959–1988. While daytime temperatures in this region have remained relatively stable across the two 30-year periods, the number of nights over 20 °C has increased. Since 1989, temperatures exceeding 42 °C have been recorded for Katanning 14 times.

In the previous 30-year period, the temperature exceeded 42 °C at Katanning 10 times. Instances of consecutive days above 40 °C have also been more frequent in the past 30 years. In 1989, 1991 and 1997, Katanning experienced three periods of three or more days in a row above 40 °C. A run of three or more days above 40 °C is unusual at Katanning and had not happened since 1969.