In the last 30 years in South East NSW

- Annual rainfall has decreased slightly
- Rainfall has decreased in the autumn and spring months
- Spring rainfall has been reliable; autumn rainfall has been unreliable
- Dry years have occurred eight times and wet years eight times
- Rainfall leading into autumn has decreased slightly
- There have been fewer frosts
- There have been more hot days, with more consecutive days above 35 °C

South East NSW at a glance

The South East region covers 5.6 million hectares, of which 58% is under agricultural production. It is highly diverse and supports a variety of land uses including grazing (sheep, beef), dairy, cropping and horticulture. The region contributed $733 million to the Australian economy in 2017–18.

A guide to weather and climate in South East NSW

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 South East NSW has decreased slightly

Annual rainfall in South East NSW has decreased by around 70 mm (-8%) from about 870 mm to about 800 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 Bega and Yass. While overall the regional average decreased, in Yass annual rainfall increased 9 mm across the two periods, from 684 mm in 1959–1988 to 693 mm in 1989–2018. In the past 30 years (1989–2018), dry years (lowest 30%) have occurred eight times and wet years (highest 30%) have occurred eight times, while the remaining years were in the average range. Note the Millennium drought accounted for six 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 16 times.

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


South East NSW spring rainfall is reliable; autumn is unreliable

Rainfall reliability maps for the past 30 years (1989–2018) show spring rainfall has been moderately reliable across the region (blue areas), with usually about 80 mm difference from one year to the next. Summer rainfall is also reasonably reliable, with the exception of the coastal region around Bega (beige and red areas). Winter rainfall is reliable in the west of the region around Yass, but unreliable in the eastern coastal areas and high country around Cooma. Although there have been some wet autumns in the past 30 years, autumn rainfall has not been reliable from year to year.
Rainfall in the autumn and spring months decreased at Goulburn and Nowra between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). Over the past 30 years, summer rainfall from December to April was 335 mm at Goulburn, 43 mm lower than the 378 mm average for 1959–1988. At Nowra, summer rainfall decreased 146 mm over the same period, from 675 mm to 529 mm. Over the same 30-year periods, winter rainfall between May and November decreased by 38 mm for Goulburn, from 318 mm to 280 mm, while Nowra’s winter rainfall was 62 mm lower, from 506 mm to 444 mm.

Rainfall leading into autumn has decreased slightly

The South East NSW region is a summer-dominant rainfall system, however much of the rain received during the summer months evaporates. A minimum of 100 mm from February to April is generally required to carry the season through to August, provided conditions are not too hot. The South East usually gets around 220 mm in the period February-April, but this varies on average by more than +/- 100 mm from year to year. The average February-April rainfall has decreased slightly, from 225 mm for 1959–1988 to 218 mm for the period 1989–2018, a drop of 7 mm (3%). Variability has also increased during this time.
Frost

Fewer frosts

The number of potential frosts has decreased at Goulburn and Yass between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). Frost frequency decreased in spring, with an average of three fewer spring nights at Goulburn and two fewer spring nights at Yass with the potential for frost between 1989–2018 compared to 1959–1988.

The frost risk at Goulburn and Yass has typically ended by the last week of October. Both locations have seen potential frost nights as late as the last week of November. The latest potential frost night recorded for Yass was November 27, 1992.

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 12 more total frost nights during a dry winter and spring than during wetter seasons. This includes about three additional frost nights in spring and a later end to the frost risk.

Temperature

South East NSW has experienced more hot days in the past 30 years

The chart shows the annual number of days above 35 °C (red bars) for Goulburn. Goulburn experienced an average of seven days per year above 35 °C between 1989–2018, compared to an average of only three days per year above 35 °C between 1959–1988. Since 1997, temperatures of 40 °C or higher have been recorded for Goulburn seven times. Goulburn’s temperature record does not show any days above 40 °C prior to 1997.

Instances of consecutive days above 35 °C have also been more frequent in the past 30 years. In 1999, 2004, 2013, 2014 and 2018, Goulburn experienced periods of five days in a row above 35 °C. A run of five or more days above 35 °C was unusual at Goulburn and had not happened since 1979.