



Regional Weather and Climate Guide

In the last 30 years in South East Queensland

- ☁ Annual rainfall has decreased by 8%
- ☁ Dry years have occurred 14 times and wet years eight times
- ☁ There has been a decrease in rainfall in the winter and spring months
- ☁ Summer rainfall is reliable; autumn is unreliable
- ☁ Useful rain events have occurred four times per year on average
- ❄ There have been more frosts and they have been occurring later
- 🌡 There have been more hot days, with more consecutive days above 38 °C



South East Queensland region at a glance

The South East Queensland region covers around 2.7 million hectares, of which 53% is under agricultural production. The region supports a diverse mix of agricultural enterprises, including fruit and vegetable production, livestock (sheep, cattle and pigs), wool, milk, eggs and nursery products. The region contributed around \$1.58 billion to the Australian economy in 2017–18.

Natural Environments  Low Level Production  Dryland Production  Irrigated Production  Intensive Uses  Water Bodies 

A guide to weather and climate in South East Queensland

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
South East, Queensland





Annual Rainfall

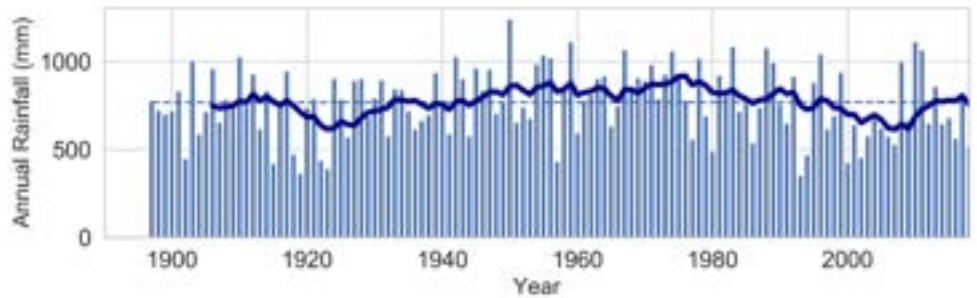
Annual rainfall in South East Queensland has decreased by 8%

Annual rainfall in South East Queensland has decreased by around 90 mm (8%) from about 1120 mm to about 1030 mm over the past 30 years (1989–2018) when compared to the previous 30 years (1959–1988).

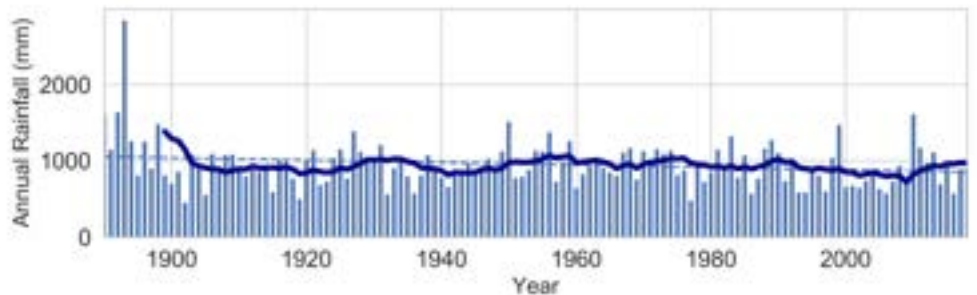
The charts show annual rainfall (blue bars), with a 10-year running average (solid blue line) for Gatton and Kilcoy. Although there has been a decrease in annual rainfall in the past 30 years, it is within the range of natural variability.

In the past 30 years (1989–2018), dry years (lowest 30%) have occurred 14 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 eight of these dry years in

Gatton Annual Rainfall 1897 - 2018



Kilcoy Post Office Annual Rainfall 1890 - 2018



the recent period. During the previous 30-year period (1959–1988),

dry years occurred five times and wet years occurred 11 times.

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 > www.bom.gov.au/climate/climate-guides/#faq

South East Queensland summer rainfall is reliable; autumn is unreliable

Rainfall reliability maps for the past 30 years (1989–2018) show summer rainfall has been moderately reliable across the south and west region (blue areas), with about 165 mm difference from one year to the next. This represents around 39% of the summer average, which is 413 mm. Spring is also moderately reliable, especially in the south west. This is in contrast to winter rainfall, which has been less reliable (beige and light red areas). Autumn rainfall has been unreliable across the region (beige and light red areas). The only exception are coastal areas that experienced moderately reliable rainfall in autumn (blue areas).

Winter



Spring



Summer



Autumn



Average Change in Seasonal Rainfall From Year to Year





Rainfall Timing

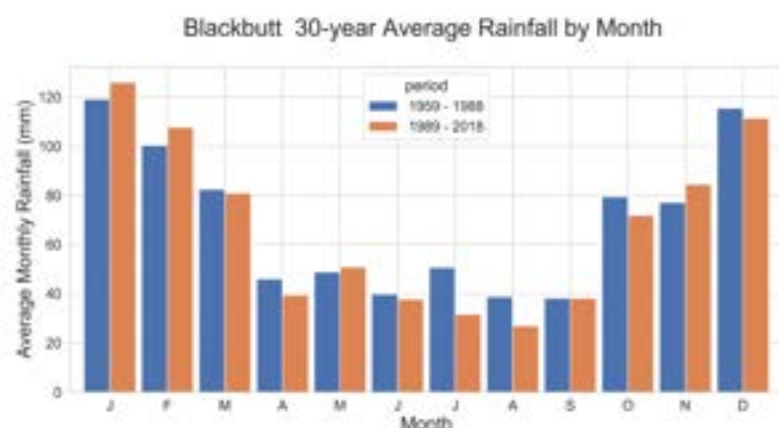
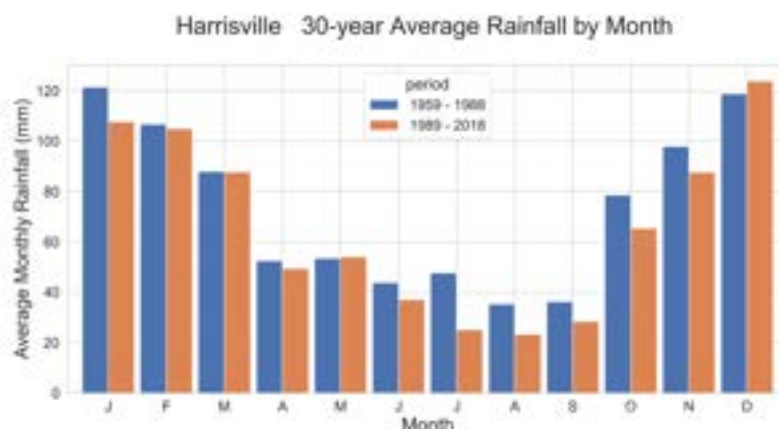
There has been a decrease in rainfall in the winter and spring months

Rainfall in winter and spring decreased at Harrisville and Blackbutt between 1989–2018 (orange bars) compared with 1959–1988 (blue bars).

Over the past 30 years, summer rainfall (December to April inclusive) for Harrisville was 472 mm; 16 mm lower than the 488 mm average for the previous 30-year period (1959–1988).

For Blackbutt, summer rainfall remained stable, changing by 2 mm from 463 mm to 465 mm over the same period.

Over the same 30-year periods, winter rainfall from May to November decreased by 72 mm for Harrisville, from 393 mm to 321 mm, while Blackbutt's winter rainfall decreased by 31 mm, from 373 mm to 342 mm.



For more information on the latest observations and science behind these changes, refer to the State of the Climate Report
> www.bom.gov.au/state-of-the-climate/

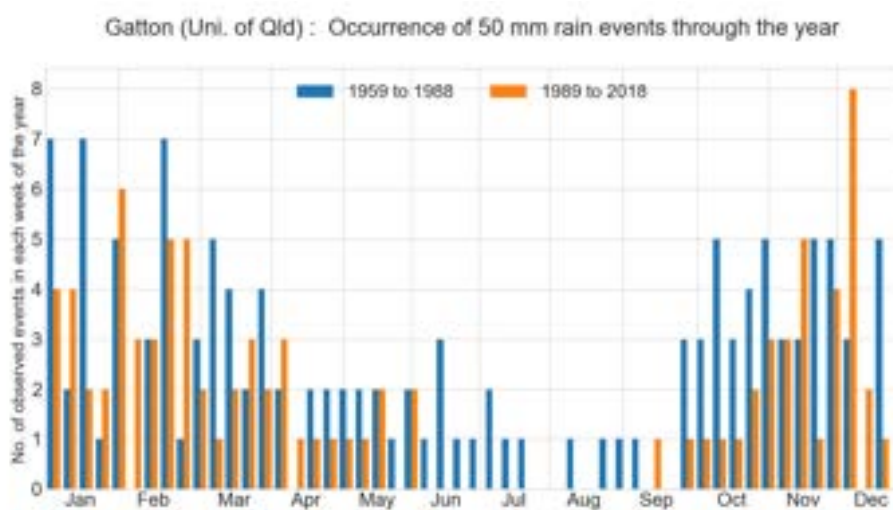
Useful rain events have occurred an average of four times a year

At Gatton, 57% of rain events of 50 mm or more occur over summer (December through February).

The chart shows the total number of 50 mm rainfall events over a 30-year period at Gatton.

While heavy rainfall events are more likely over the summer months they can happen at any time of the year.

On average, four 50 mm (single or multi-day) events occur every wet season, but this can range from zero to nine. There have been three years since 1900 that have not had at least one 50 mm rain event, representing about a 3% risk in any year of this occurring. In the period 1959–1988, there were an average of about one 50 mm rain event every other year in the winter months



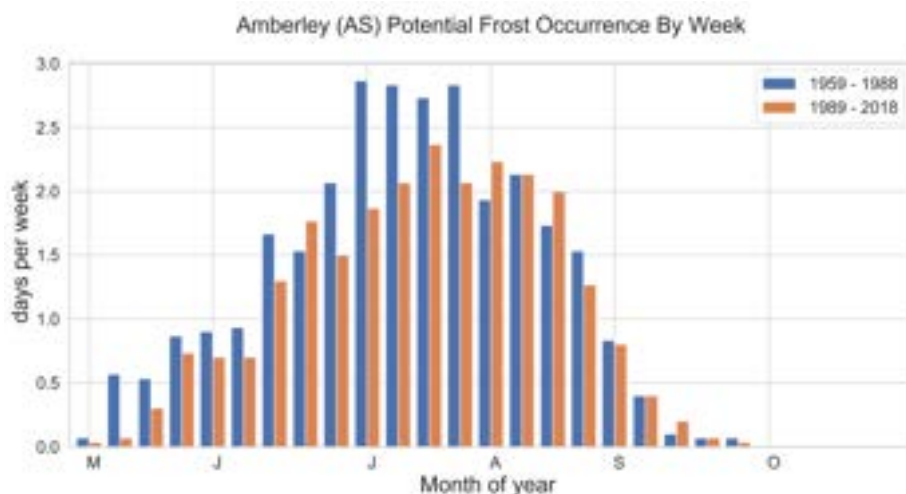
(June–August). In the last 30 years however, there were a total of only two 50 mm rainfall events in winter, or an average of one every 15 years, both in the first week of June. The number of 50 mm or

more events occurring in spring has also decreased, from about one event each year in the period 1959–1988 to about one event every two years in the period 1989–2018.

Frost

Fewer frosts

The number of potential frosts decreased at Amberley between 1989–2018 (orange bars) compared to 1959–1988 (blue bars), with an average of four less nights with the potential for frost between 1989–2018 compared to 1959–1988. The change in frost risk is characterised by a reduction in frosts in May, June and July. In 1989–2018 Amberley's frost risk typically ended by the end of August, but would occasionally continue through September. This is unchanged from the 1959–1988 average last frost date. More frosty nights tend to occur through dry winter and spring



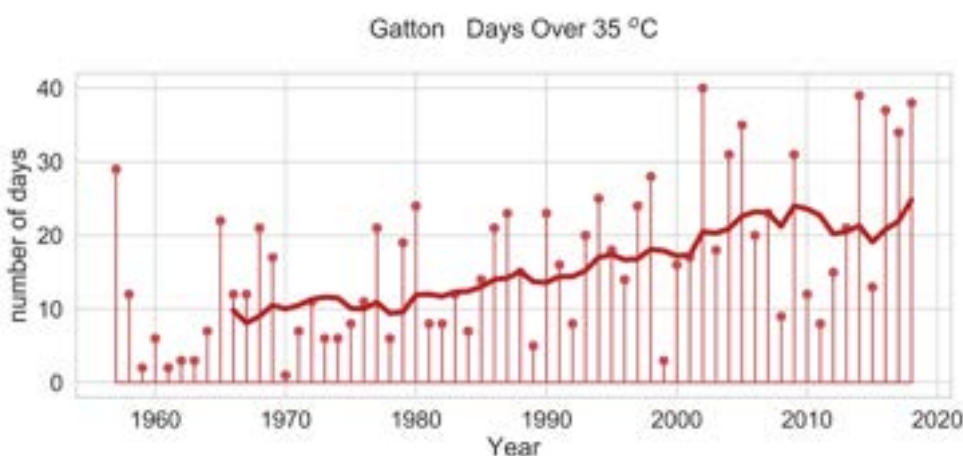
periods, when soil moisture is low, and cloud cover infrequent. On average, Amberley experiences

one more spring frost nights following a dry winter than following a wet winter.

Temperature

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

The chart shows the annual number of days above 35 °C (red bars), with a 10-year running average (solid red line) for Gatton. Gatton experienced an average of 21 days per year above 35 °C between 1989–2018, compared to an average of 11 days per year above 35 °C between 1959–1988. Since 1989, temperatures of 43 °C have been recorded for Gatton five times, twice in 1994 and 2014 and once in 2017. In the previous 30-year period, the temperature exceeded 43 °C in Gatton twice, both times in 1972. Instances of consecutive days above 38 °C have also been more



frequent in the past 30 years. In 1994 and 1996, Gatton experienced periods of six or more days in a row above 38 °C. A run

of six or more days above 38 °C is unusual at Gatton and had not happened since temperature records began in Gatton.

Regional Weather and Climate Guides are produced as a partnership between Bureau of Meteorology, CSIRO and FarmLink



© 2019 Bureau of Meteorology and the CSIRO. The information contained in this publication cannot be reproduced without the written permission of Bureau of Meteorology and the CSIRO. Requests and enquiries concerning reproduction and rights should be addressed to the Bureau of Meteorology. **DISCLAIMER:** The information contained in this publication is offered by the Bureau of Meteorology and CSIRO solely to provide general information. While all due care has been taken in compiling the information, the Bureau of Meteorology and CSIRO and its employees, accept no liability resulting from the interpretation or use of the information. Information contained in this document is subject to change without notice.