

Regional Weather and Climate Guide

In the last 30 years on the North Coast

- ☁️ Annual rainfall has decreased slightly
- ☁️ Dry years have occurred 11 times and wet years 11 times
- ☁️ Monthly average rainfall has been relatively stable
- ☁️ Summer rainfall has been reliable; winter has been unreliable
- 💧 Evaporation has increased at Casino, decreased at Grafton
- ❄️ Spring frosts have been more common and have been occurring later
- 🌡️ There have been more hot days, with more consecutive days above 35 °C



The NSW North Coast at a glance

The NSW North Coast region covers 3.2 million hectares, of which 51% is under agricultural production. It supports a variety of land uses including grazing (beef), dairy, nurseries and horticulture, and is a major producer of sugar cane, avocados and macadamia nuts, along with other smaller horticultural industries. The region contributed \$894 million 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 on the North Coast

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
North Coast, New South Wales

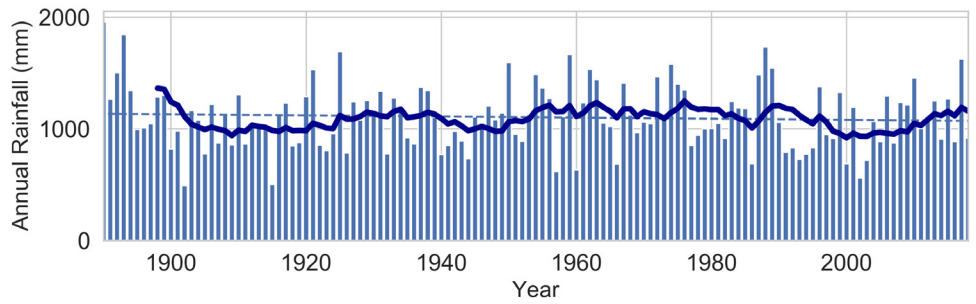




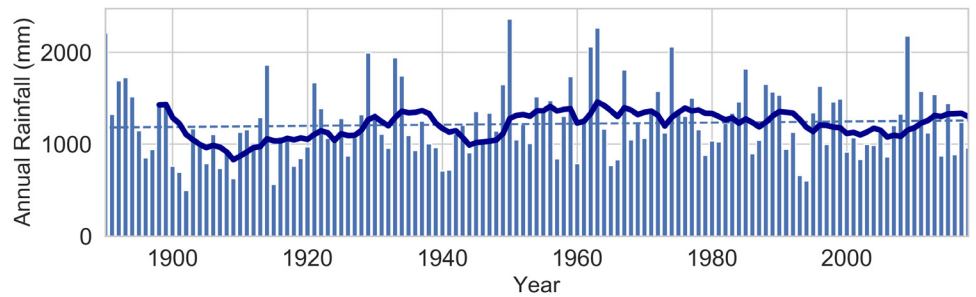
Annual rainfall on the North Coast has decreased slightly

Annual rainfall on the North Coast has decreased by around 90 mm (-7%) from about 1380 mm to about 1290 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 Casino and Kempsey. 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 11 times and wet years (highest 30%) have occurred 11 times, while the remaining years were in the average range. Note the Millennium drought accounted for five of these dry years in the recent period.

Casino Annual Rainfall 1889 - 2018



Kempsey Annual Rainfall 1889 - 2018



During the previous 30-year period (1959–1988), dry years

occurred seven times and wet years occurred 11 times.

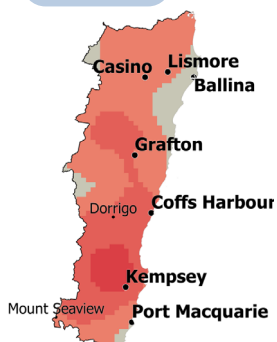
For more information on future projections, visit the Climate Change in Australia website > www.climatechangeinaustralia.gov.au

Want to know more about the guides? Try Frequently Asked Questions at > www.bom.gov.au/climate/climate-guides/#faqs

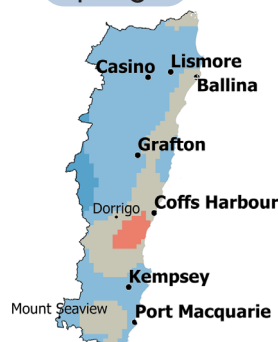
North Coast summer rainfall has been reliable; winter unreliable

Rainfall reliability maps for the past 30 years (1989–2018) show summer rainfall has been moderately reliable across the region (blue areas), with usually about 170 mm difference from one year to the next. This is in contrast to autumn rainfall, which has been less reliable (beige areas). Although there have been some wet winters in the past 30 years, winter rainfall has not been reliable from year to year (red areas).

Winter



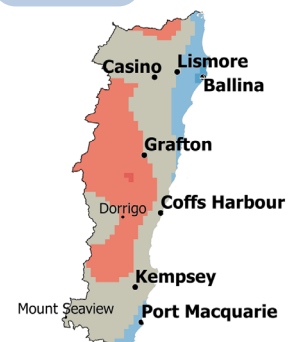
Spring



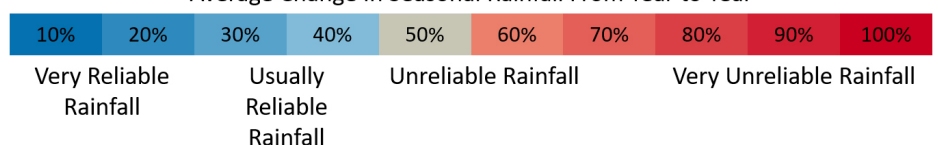
Summer



Autumn



Average Change In Seasonal Rainfall From Year to Year





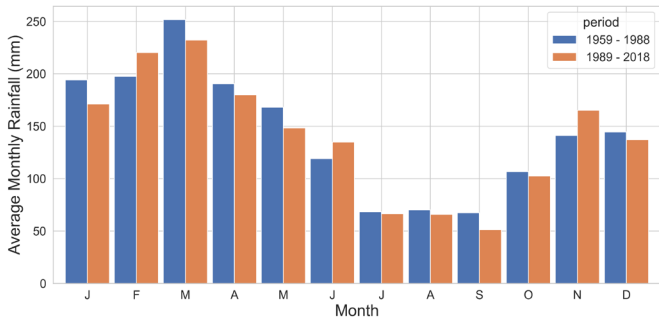
Rainfall Timing

Monthly average rainfall has been relatively stable

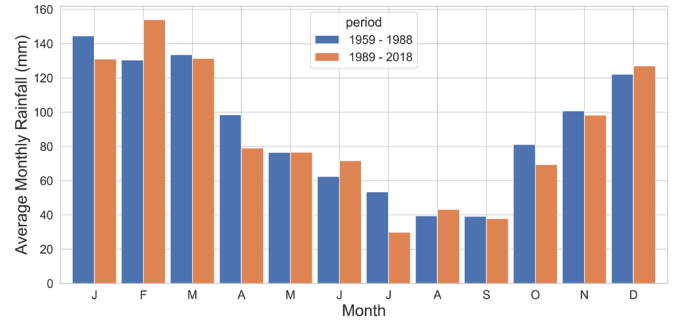
Rainfall across all months has been relatively stable at Coffs Harbour and Grafton between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). Over the past 30 years, summer rainfall from December to April was 941 mm at Coffs Harbour, 38 mm lower than the 979 mm average for 1959–1988. At Grafton, summer rainfall decreased 7 mm over the same period, from 629mm to 622 mm.

Over the same periods, winter rainfall between May and November decreased by 7 mm for Coffs Harbour, from 741 mm to 734 mm, while Grafton’s winter rainfall was 26 mm lower, from 453 mm in 1959–1988 to 427 mm in 1989–2018.

Coffs Harbour 30-year Average Rainfall by Month



Grafton 30-year Average Rainfall by Month



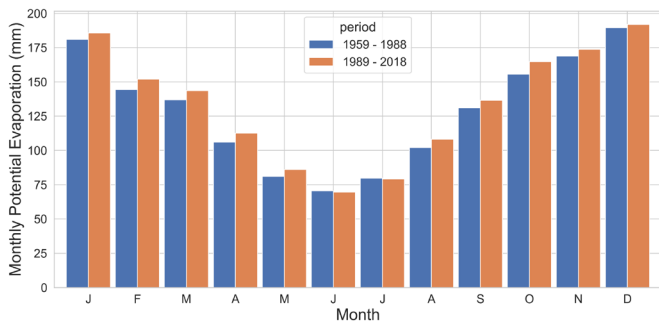
For more information on the latest observations and science behind these changes, refer to the State of the Climate Report > www.bom.gov.au/state-of-the-climate/



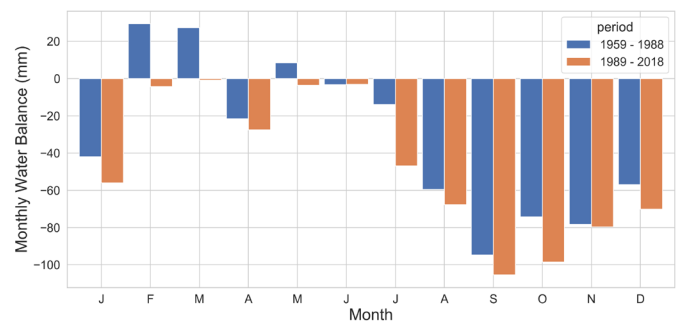
Evaporation

Evaporation has increased in Casino, decreased in Grafton

Casino 30-year Average Potential Evaporation



Casino 30-year Average Water Balance

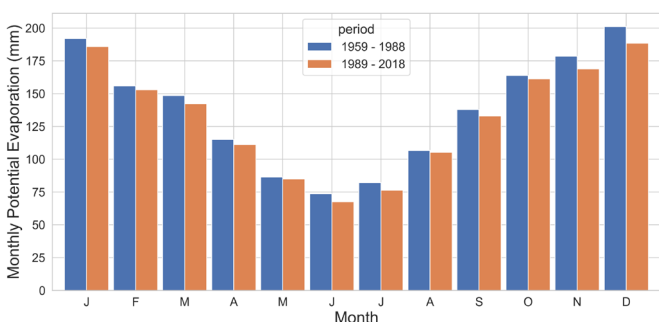


The graphs show potential evaporation and mean monthly water balance (rainfall minus evaporation) between 1989-2018 (orange bars) compared with 1959-1988 (blue bars).

In the past 30 years at Casino, the evaporation rate has increased by around 10 to 15 mm in all months, apart from June and July. However at Grafton, the evaporation rate has decreased in all months.

The pattern at Grafton is consistent with evaporation patterns across the North Coast region.

Grafton 30-year Average Potential Evaporation



Grafton 30-year Average Water Balance

