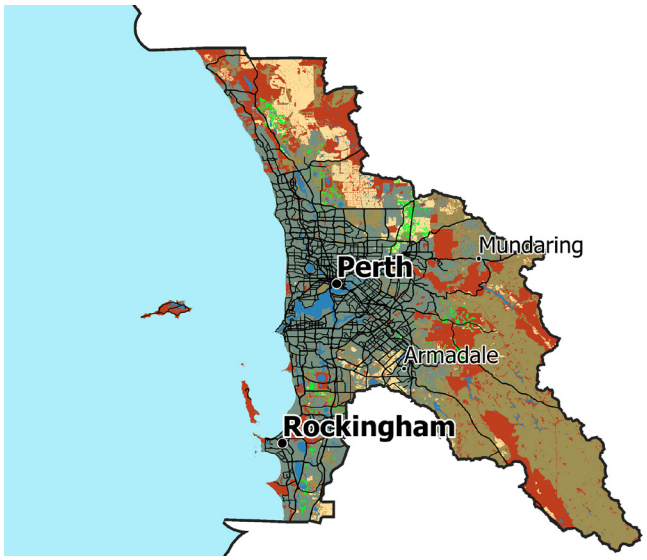
Regional Weather and Climate Guide

In the last 30 years in the Perth region

- Annual rainfall has decreased by 9%
- Dry years have occurred 15 times and wet years twice
- Rainfall has decreased in the autumn and winter months
- Winter rainfall has been reliable; summer has been unreliable
- The autumn break typically occurred in the first week of May over the southern part of the region and the second week of May in the region's north
- The number of winter frosts increased and they occurred earlier
- There have been more hot days



The Perth region at a glance

The Perth region covers around 0.5 million hectares, of which 14% is under agricultural production. The region supports a diverse mix of agricultural enterprises, including horticulture, nurseries, livestock, eggs and broadacre cropping. The region contributed around $241 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 in the Perth region

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

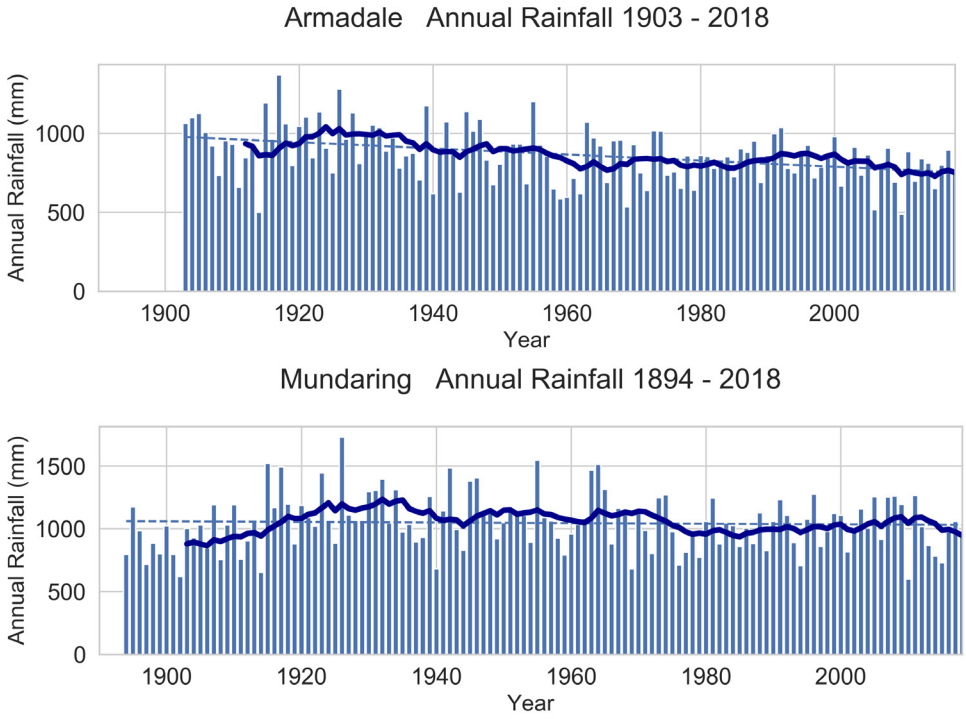
Perth, Western Australia

Annual Rainfall

Annual rainfall in the Perth region has decreased by 9%

Annual rainfall in the Perth region has decreased by around 70 mm (9%) from about 860 mm to about 790 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 Armadale and Mundaring. 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 twice, while the remaining years were in the average range. Note the Millennium drought accounted for eight of these dry years in the recent period. During the previous 30-year period (1959–1988), dry years occurred 11 times and wet years occurred seven times.

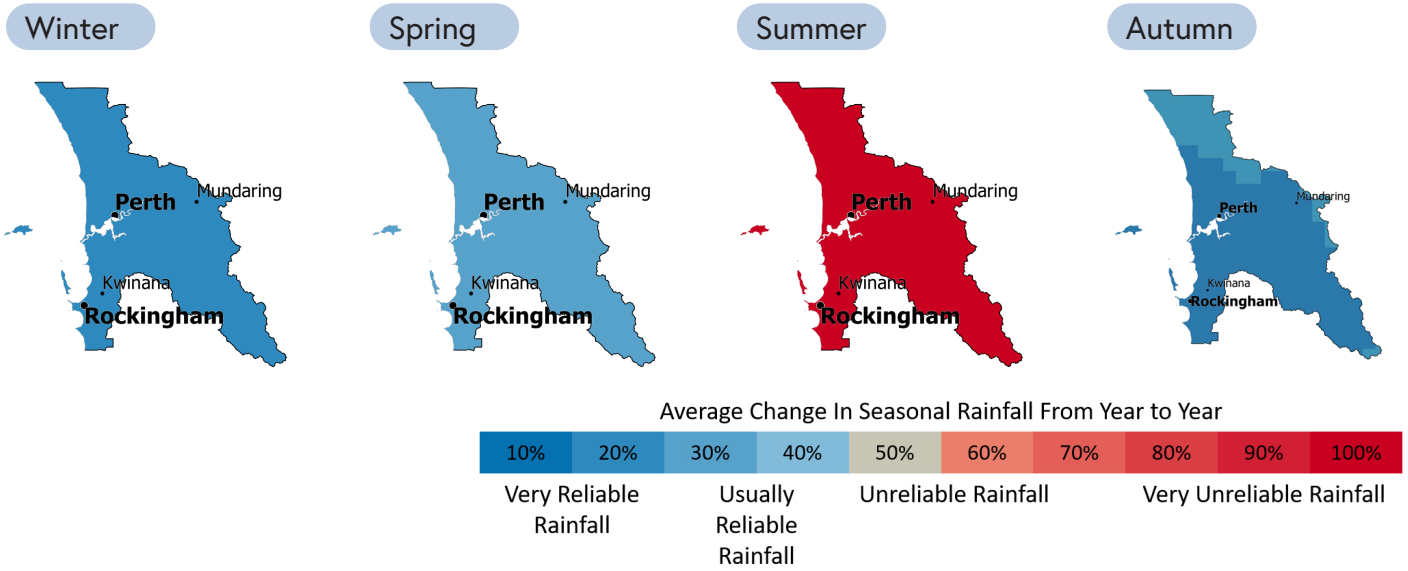


For more information on future projections, visit the Climate Change in Australia website
> www.climatechangeinaustralia.gov.au

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

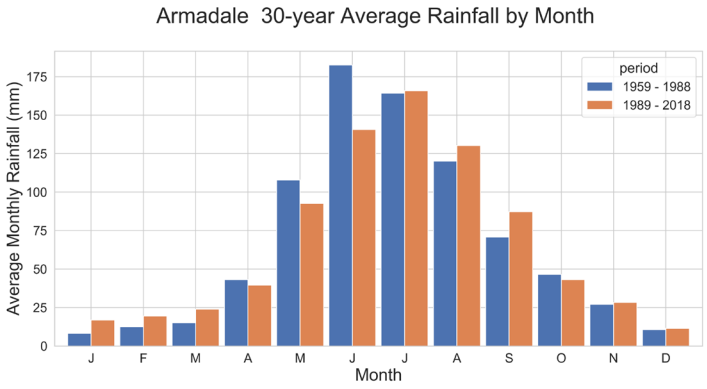
Perth winter rainfall is reliable; summer is unreliable

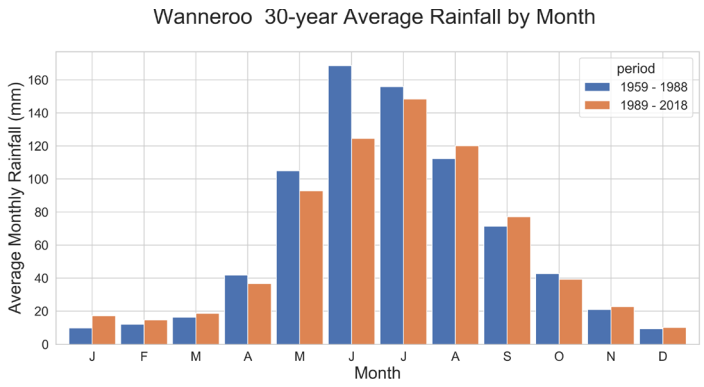
Rainfall reliability maps for the past 30 years (1989–2018) show winter rainfall has been reliable across the region (dark blue area), with about 120 mm difference from one year to the next. Spring and autumn have also been moderately reliable (light blue area). Although there have been some wet summers in the past 30 years, summer rainfall has been unreliable across the region from year to year (red area).



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

Rainfall in the late autumn and early winter months decreased at Armadale and Wanneroo between 1989–2018 (orange bars) compared with 1959–1988 (blue bars).
Over the past 30 years, winter rainfall (April to October inclusive) for Wanneroo was 639 mm, 59 mm lower than the 698 mm average for the previous 30-year period (1959–1988). For Armadale, winter rainfall has decreased by 36 mm over the same period, from 735 mm to 699 mm.
Over the same 30-year periods, summer rainfall (November to March inclusive) increased by 27 mm at Armadale, from 73 mm to 100 mm, and by 15 mm at Wanneroo, from 69 mm to 84 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/

Timing of the autumn break in the Perth region

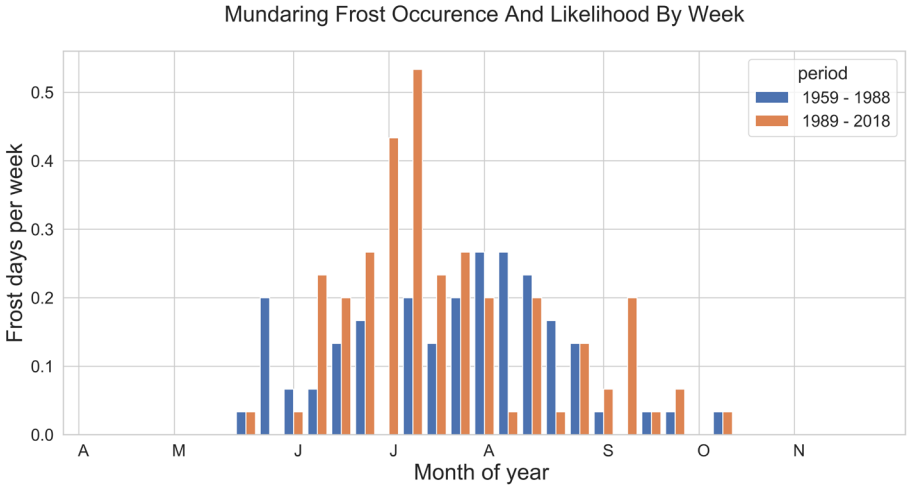
In the Perth region, the autumn break can be defined as at least 15 mm of rainfall over three days, prior to the commencement of the winter cropping season. The map shows that over the past 30 years (1989–2018), the break typically occurred in the first week of May over much of the southern part of the region (blue area) and not until the second week of May in the region's north (teal areas).

Weeks after 1 April	4	5
Autumn Break Usually Occurred After...	5 May	12 May

Frost

Earlier and more frequent frosts

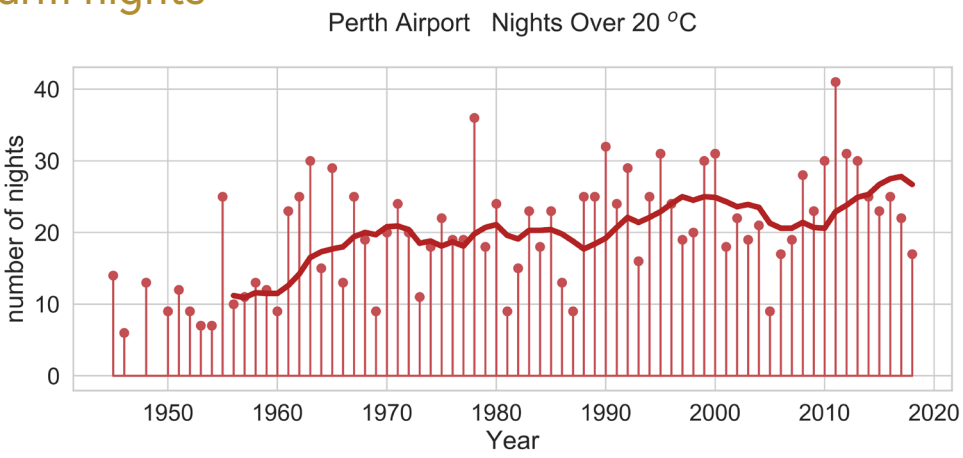
The number of potential frosts has increased at Mundaring between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). Frost frequency increased in winter, with an average of one more winter night at Mundaring with the potential for frost between 1989–2018 compared to 1959–1988.
Mundaring's frost risk has typically ended by the first week of August. The latest potential frost night recorded for Mundaring was the 22nd of September 2018.
More frosty nights have tended to occur through dry winter periods, when soil moisture is low and cloud cover infrequent. On average, the region has had around eight more total frost nights during a dry winter than during wetter seasons.



Temperature

There have been more warm nights

The chart shows the annual number of nights above 20 °C (red bars), with a 10-year running average (solid red line) for Perth Airport.
Perth Airport experienced an average of 24 nights per year above 20 °C between 1989–2018, compared to an average of 19 nights per year above 20 °C between 1959–1988.



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