The Alinytjara Wilurara region covers around 28.3 million hectares, of which 0.2% is under agricultural production. The region mainly supports cattle, sheep and wool production, and contributed around $2.3 million 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 Alinytjara Wilurara has increased by 18%

Annual rainfall in the Alinytjara Wilurara has increased by around 40 mm (18%) from about 200 mm to about 240 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 Cook and Eucla.

In the past 30 years (1989–2018), dry years (lowest 30%) have occurred six times and wet years (highest 30%) have occurred 14 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 11 times.

Rainfall reliability maps for the past 30 years (1989–2018) show that winter rainfall has been moderately reliable only south of Ooldea/Cook (blue areas), with usually about 20 mm difference in this region from one year to the next. Winter rainfall becomes progressively less reliable further north into the region (beige to red areas). Rainfall is unreliable across the entire region for all other seasons of the year (light red and red areas), and although there have been some wet seasons in the past 30 years, rainfall has not been reliable from year to year.

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

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Rainfall in the summer and early autumn months increased at Eucla and Tarcoola between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). Over the past 30 years, summer rainfall (December to April inclusive) for Eucla was 137 mm; 37 mm higher than the 100 mm average for the previous 30-year period (1959–1988). At Tarcoola, summer rainfall has increased by 25 mm over the same period, from 62 mm to 87 mm. Monthly rainfall averages at Cook and Ernabella (Pukatja) and Wiluna (not shown) reveal a similar pattern of increasing summer rainfall over the past 30 years. Over the same 30-year periods, winter rainfall (May to November inclusive) increased by 13 mm at Eucla, from 179 mm to 192 mm. At Tarcoola, winter rainfall decreased by 7 mm, from 108 mm to 101 mm.

Useful rain events have occurred an average of eight times per year

In the Alinytjara Wilurara, 10mm of rainfall is a critical threshold for feed growth to begin. On average Eucla received 7 rainfall events of 10 or more mm each year. Since the 1970’s the number of events each year has trended up to an average of 10 per year, inline with increasing annual total rainfall.
Frost

There have been fewer frosts

The number of potential frosts has decreased at Ernabella (Pukatja) between 1989–2018 (orange bars) compared with 1959–1988 (blue bars). At Ernabella (Pukatja), the frost frequency has decreased by nine nights, from 32 nights in the period 1959–1988 to 23 nights in the period 1989–2018.

More frosty nights have tended to occur through dry winter and spring periods, when soil moisture is low and cloud cover infrequent.

Temperature

Alinytjara Wilurara has had a slight increase in hot days in inland areas

The charts show the annual number of days above 38 °C (red bars), with a 10-year running average (solid red line) for Ernabella (Pukatja) and Nullarbor. In the North of Alinytjara Wilurara, at Ernabella (Pukatja), there has been a steady increase in days above 38 °C, from 19 days per year in the 1960s to 25 per year since 2010. A similar pattern appears to be emerging at Nullarbor, although records only go back to 1986.

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