Climate

Projected rainfall

SA trend and condition report card 2020

STATEWIDE

Trend
Getting worse

Condition
Not applicable

Reliability
Fair

Trend

Average annual rainfall across South Australia is projected to decrease by between 5% and 15% by 2050 under plausible emissions scenarios.

Under an intermediate emissions scenario, average annual rainfall is projected to decline by between 3% and 9% by 2030, and by between 5% and 11% by 2050. Changes are greater under a high emissions scenario, particularly later in the century, with projected rainfall declines of between 4% and 8% by 2030, and between 7% and 15% by 2050 (top figure).

In all regions across the state, the projected decline in spring rainfall is greater than the projected decline in the annual average. Under an intermediate emissions scenario, average spring rainfall is projected to decline by between 13% and 19% by 2030, and by between 14% and 21% by 2050. Changes are greater under a high emissions scenario, particularly later in the century, with projected declines of between 8% and 17% by 2030, and between 18% and 28% by 2050 (bottom figure).

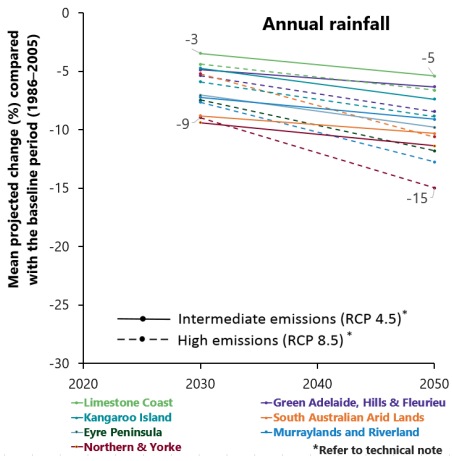
Condition

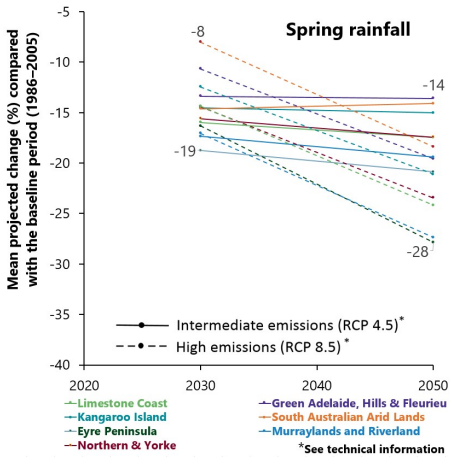
Because this assessment is of projected rainfall under likely climate scenarios, a condition rating is not applicable.

This assessment draws from the SA Climate Ready rainfall projections for South Australia. The projected changes are relative to a baseline period spanning 1986–2005.

The projections are from a range of global climate models under two scenarios of global atmospheric greenhouse gas concentrations (representing intermediate and high greenhouse gas emission scenarios). Note that each model projects some variability around the averages shown.

Annual and spring rainfall across South Australia is projected to decline significantly by 2050.





Why is climate important?

Climate affects almost every part of our lives. Communities, industries, landscapes and ecosystems all develop with a tolerance for a range of climate variation. If the climate changes beyond that range of tolerance, then they must either adapt, migrate, transform or decline.

One example of the effect of a warming climate is declining rainfall in mid-latitudes (including South Australia), which will follow a widening of the tropics in a warmer planet.

What are the drivers?

According to the Australian Academy of Science, 'Earth's climate has changed over the past century. The atmosphere and oceans have warmed, sea levels have risen, and glaciers and ice sheets have decreased in size. The best available evidence indicates that greenhouse gas emissions from human activities are the main cause. Continuing increases in greenhouse gases will produce further warming and other changes in Earth's physical environment and ecosystems.'

What is being done?

Climate change projections, including rainfall projections, are periodically improved and updated in line with advancements in climate modelling.

Management actions in response to the changing climate include those that mitigate the state's emissions as part of a global effort to stem further change in the global climate. To accelerate the transition to net zero emissions by 2050, the South Australian Government has set an interim goal to reduce the state's net emissions by more than 50% from 2005 levels by 2030.

For further information, see Technical information