

Urban heat



South Australia's environmental trend and condition report cards 2023

Liveability | Urban



Trend
Stable



Condition
Fair

★ ★ ☆ Reliability
☆☆☆ Fair

STATE

Trend

Urban heat in metropolitan Adelaide remained stable between 2014 and 2023.

Urban heat intensity measures the additional heat in the landscape attributable to urban development. Trend is calculated by comparing relative changes in urban heat intensity between 1 January 2014 and 1 January 2023 in urban areas and non-urban reference sites.

The average urban heat intensity in Metropolitan Adelaide has increased by 0.2°C, indicating an overall stable trend. Trend classes are assigned based on changes greater than a threshold of 0.5°C, while changes less than 0.5°C are considered stable (top figure).

The greatest warming occurred in Campbelltown and Norwood, Payneham and St Peters. Northern LGAs are also getting worse over this period. The only LGA classified as getting better is Onkaparinga. There is significant variation within LGAs, showing localised areas of warming and cooling between 2014 and 2023. Changes to land surfaces and the built environment or changing vegetation cover drive urban heat intensity trends at a local scale.

Condition

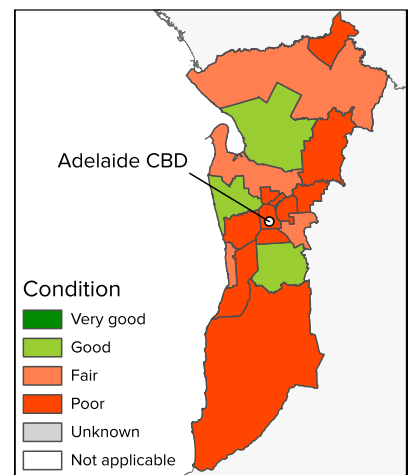
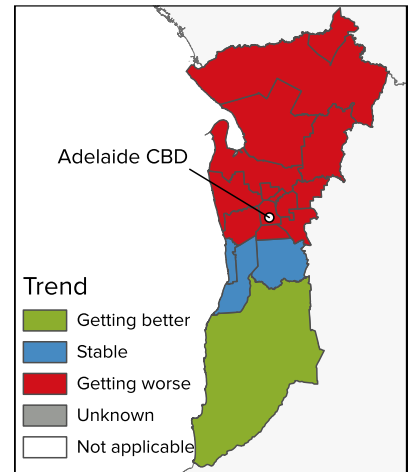
The condition of urban heat across metropolitan Adelaide is rated as fair.

Condition represents the urban heat intensity for the summer of 2022–23. Condition classes are based on levels of urban heat intensity averaged across the entire study area and for each LGA (bottom figure).

Across metropolitan Adelaide, the average urban heat intensity modelled for 1 January 2023 was 3.2°C, indicating an overall fair condition. Urban heat intensities for individual LGAs range from good (+1.8°C) to poor (+6.0°C).

Urban heat varies significantly at the local scale, driven by differences in the land surface and proportion of trees, green spaces and built environment.

Overall, urban heat in metropolitan Adelaide is stable but many localised areas are getting worse.



Why is urban heat important?

Average maximum temperatures, and the frequency and duration of heatwaves are increasing as our climate changes. Metropolitan Adelaide's population is at risk of heat related death or illness. High temperatures can impact most severely on communities with low socioeconomic status. These communities are often less able to escape or mitigate the effects of urban heat through lack of access to open public green spaces, cost of air-conditioning or working manual, outdoor jobs. Individuals with chronic health conditions are also particularly vulnerable to heat related morbidity and mortality.

What are the drivers?

Urban heat intensity is generally higher in areas with high proportions of heat retaining (often hard and impermeable) surfaces such as roads, carparks, buildings and bare paddocks. Lower urban heat intensity is associated with vegetation cover, waterbodies and cool infrastructure, e.g. light coloured roofs. With metropolitan Adelaide's increasing population, the demand for more housing and associated public services is driving the loss of vegetation and green open spaces and an increase in hard surfaces, buildings and other infrastructure. This is leading to increased urban heat intensity.

What is being done?

The Government of South Australia has adopted planning policies aimed at encouraging tree planting on private land. There is also a current review into tree protection laws to explore opportunities for greater retention of existing mature trees. Many LGAs have adopted the current target in the 30-Year Plan for Greater Adelaide of a 20% increase in urban green cover by 2045 and are continuing to increase plantings on public land. Green Adelaide's Urban Greening Strategy (in development) will identify and prioritise areas to increase tree canopy cover and reduce hard surfaces.

For further information see: [technical information](#)



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