



Trend
Getting worse



Condition
Fair

★★★ Reliability
☆☆☆ Good

STATE

Trend

Sea levels along South Australia's coast rose by an average rate of around 2 mm per year between 1966 and 2022. The rate of sea level rise is increasing and from 1993 to 2022 was between 3 mm and 5 mm per year in some locations.

Trends of gradual rise in sea level have been observed in all long-term sea level gauge records in South Australia (top figure).

Measurements are stated relative to a local fixed reference height, which in some cases may be changing over time due to slow changes in the elevation of the land level at the location. Hence, in some locations, the vertical movement of the local reference point is a component of the observed rise.

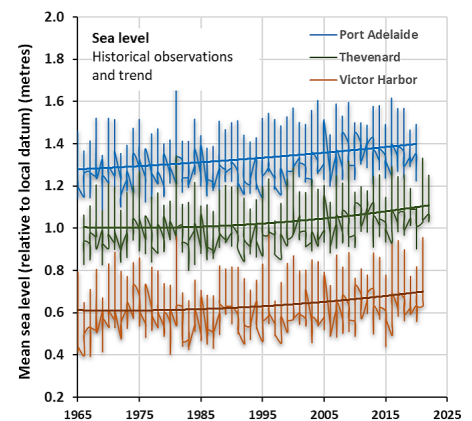
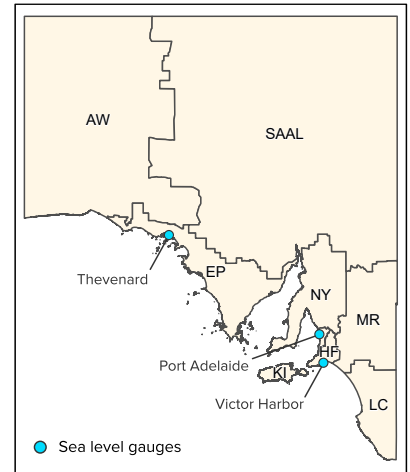
Consistent satellite records since 1993 have enabled comparison with sea levels from long-term sea level gauge records and improved estimates of the rates of change of sea level.

Condition

The condition is rated as fair as the observed changes in sea level do not currently impact on most social, economic and environmental values.

Mean sea levels at tide gauges at Thevenard, Port Adelaide and Victor Harbor were 10–12 cm higher in 2017–2021 compared to sea levels in 1965–1969 (bottom figure).

Sea levels along South Australia's coast are rising, and the rate of rise is increasing.



Why is sea level important?

Coastal environments and infrastructure are typically resilient to only the natural variations in sea levels that occur due to tides and occasional storm surges.

Climate change is causing a rise in sea levels globally, this subjects low-lying coastal environments and infrastructure to an increased vulnerability to erosion and seawater inundation. Relatively small changes in mean sea level can result in major increases in the frequency and extent of seawater flooding events.

What are the drivers?

Most of the observed sea level rise is due to thermal expansion of oceans due to a rise in water temperature and the melting of glaciers and continental ice sheets due to global climate change, with some additional contributions from changes in the mass of water stored on land.

Greenhouse gas emissions from human activities are the main cause of warming atmosphere and oceans. Continuing increases in greenhouse gases will produce further warming and consequent changes in Earth's physical environment.

What is being done?

An array of tide gauge stations monitor sea levels around the coastline of Australia to identify long-term changes.

Land surface elevation mapping of the South Australian coastline is maintained by the Department for Environment and Water to enable the assessment of risks of rising sea level to coastal communities and infrastructure. This is used to map sea flood hazards along sections of the state's coastline for a range of sea level rise scenarios.

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



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Government of South Australia