



Trend  
**Getting worse**



Condition  
**Fair**



Reliability  
**Very good**

### Trend

**Sea levels along South Australia's coast rose by 1.5–4 mm/year between 1965 and 2016, and the rate of rise is projected to increase in the future.**

Trends of gradual rise in sea level are apparent in observations at all sea level gauges in South Australia (top figure).

Sea level rose 17 cm in the 20th century. However, since 1992, global sea levels have risen 8 cm. Further rises in sea level are projected, with the rate of rise to increase through the 21st century.

The amount of sea level rise projected to occur by 2050 is approximately 22–25 cm compared with the average level during 1986–2005 (bottom figure).

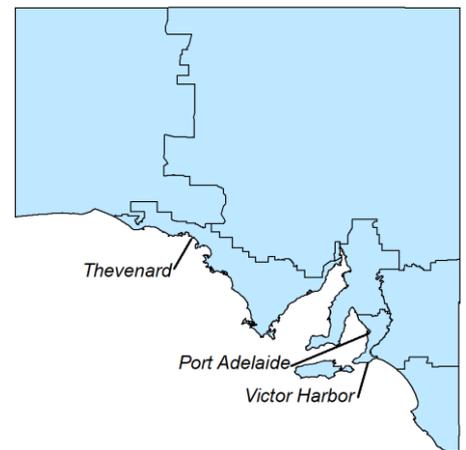
CSIRO and Bureau of Meteorology (BoM) projections for sea level rise indicate that the rate of rise will increase through the century. The rate of rise is affected by the future greenhouse gas emissions scenario.

### Condition

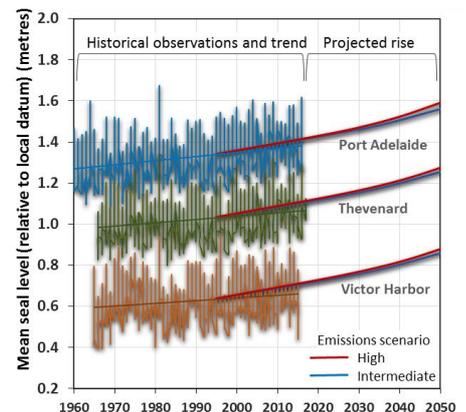
**The condition of sea level is rated as fair because levels currently meet most social, economic and environmental requirements.**

Most of the rise observed is due to thermal expansion of oceans due to a rise in water temperature and the melting of continental ice.

Measurements are stated relative to a local fixed reference height, which in some cases may change over time because of slow changes in the elevation of the land level at the location. This means that in some locations the movement of the local reference point is a component of the observed rise.



**Sea levels along South Australia's coast are rising, and the rate of rise is projected to increase in the future**



### 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, they must either adapt, migrate, transform or decline.

Rising air and water temperatures result in a global rise in sea levels due to thermal expansion of oceans and melting of continental ice, placing some low-lying coastal assets at an increased risk of sea water inundation.

### What are the pressures?

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?

BoM maintains an array of monitoring stations that measure sea level very accurately. BoM's Australian Baseline Sea Level Monitoring Project monitors sea level around the coastline of Australia to identify long-term changes.

High-resolution land surface elevation mapping of the South Australian coastline is maintained by the Department for Environment and Water to enable risks of rising sea level to coastal communities and infrastructure to be assessed.

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

