

Murray Mouth barrage outflow and dredging



South Australia's environmental trend and condition report cards 2023

Water | Surface water



Trend
Getting better



Condition
Poor

☆☆☆ Reliability
☆☆☆ Very good

STATE

Trend

While barrage outflows to the Murray Mouth have improved since the Millennium Drought, dredging has remained necessary.

Barrage outflows that support the openness of the Murray Mouth have increased (top figure). However, despite the improved outflows, dredging to remove sand has still been required to keep the Murray Mouth open.

The Murray–Darling Basin Authority calculated that the minimum annual water flow required to keep the Murray Mouth open is 730 gigalitres per year (GL/year). This minimum outflow target has been met 44% more often since 2012 due to a combination of the breaking of the Millennium Drought and the delivery of water for the environment through the Basin Plan.

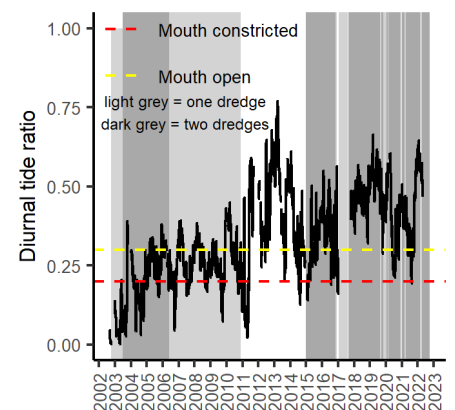
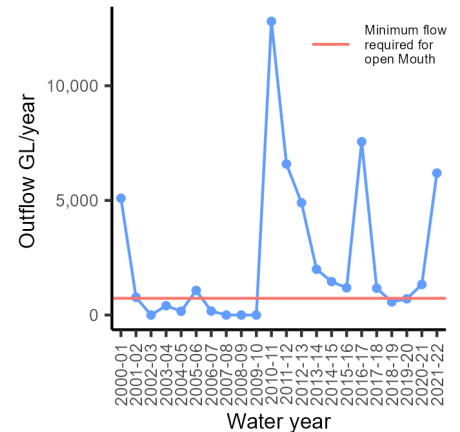
Condition

The condition of the Murray Mouth is rated as poor because dredging has been required to keep the Mouth open.

The condition of the Murray Mouth was considerably improved by 2021–22 due to higher flows delivered through the barrages, but dredging was still required.

The diurnal tidal ratio is an indicator of Murray Mouth openness. It is a measure of how well water is exchanged through the Murray Mouth between the estuarine and marine environments. Two dredges were operating for most of the 7 years from 2015 to 2022, with critically low diurnal tide ratios observed in 2014, 2015 and 2017 (bottom figure).

Flows through the Murray Mouth have improved, but dredging has remained necessary to keep the Murray Mouth open.



Why is an open Murray Mouth important?

An open Murray Mouth provides connection between the freshwater environments (River Murray and Lower Lakes), the estuary (Coorong) and marine environments (Southern Ocean). This connection is important for flushing excess salt (targeted at 2 million tonnes per year) and nutrients from the river system, as well as maintaining the quality of water in the Coorong. It is also important for native fauna (e.g. diadromous fish) that need to move between the Coorong and the ocean.

What are the pressures?

Without sufficient freshwater flow through the barrages and Murray Mouth, sand deposition from the ocean results in the Murray Mouth silting up and closing. Water resource development throughout the Murray–Darling Basin has greatly reduced the flows that reach the Murray Mouth, leading to increased sand deposition and a reliance on dredging to maintain an open Murray Mouth. Without dredging, the Murray Mouth will close more often and the benefits of the connection between the estuary and the ocean will be lost.

What is being done?

The Murray–Darling Basin Plan seeks to provide barrage outflows to the Coorong, Lower Lakes and Murray Mouth to ensure that the Murray Mouth remains open without the need for dredging in at least 95% of years. Insufficient barrage outflow between 2015 to 2022 meant that continuous dredging was required to maintain an open Murray Mouth.

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



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