

# Seagrass snapshot: Talinup-Goorbilyup (Hardy Inlet) 2023–24

Through the Healthy Estuaries WA program, the Department of Water and Environmental Regulation (the department) monitors the condition and area of seagrass in five estuaries in south-west Western Australia (WA), including Hardy Inlet.

This snapshot provides an update on the distribution and density of seagrass in Hardy Inlet in January 2024. It updates information from previous years available at [estuaries.dwer.wa.gov.au/seagrass](https://estuaries.dwer.wa.gov.au/seagrass).

Understanding seagrass condition helps to guide how we manage our estuaries

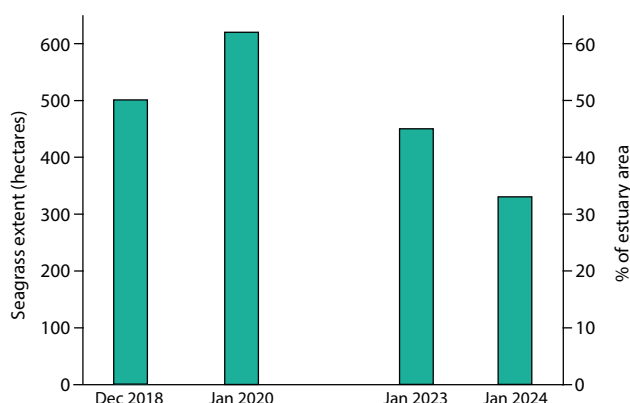
Hardy Inlet is a permanently open estuary in the south-west of Western Australia, near Augusta. The estuary has one of the largest catchment areas in the South West, receiving freshwater flow from the Blackwood and Scott Rivers. Estuarine habitat stretches inland to the lower rivers as saline marine water can travel about 40 kilometres upstream in the Blackwood River and 8 kilometres upstream in the Scott River. Water quality in the catchment has been impacted by land clearing and agricultural activities, and may continue to be further exacerbated by the changing climate. The estuary has been showing signs of eutrophication since the 2000s, including blooms of macroalgae and potentially toxic cyanobacteria, resulting in low oxygen levels, swimming closures and fish kills.

Seagrass meadows provide food and habitat for animals and produce oxygen, making them an important part of estuary ecosystems. The condition and location of the seagrass meadows in the estuary can change over time, typically in response to changes in water quality and depth. *Ruppia megacarpa* is the dominant species of seagrass found in Hardy Inlet. Other species, including *Halophila* and *Zostera*, are also present in small patches.

## Seagrass over time

- Seagrass was first surveyed in the estuary in 1974 and 1975. *Ruppia* was present in the shallow waters throughout the lower and upper estuary, as well as in Swan Lake.
- In 2000, the distribution and extent of seagrass in the estuary was similar to historical surveys. The percentage cover of seagrass was less than 10 per cent in most of the meadows, while the maximum cover recorded was 60 per cent.
- In 2008, seagrass extent expanded to also include the lower basin. Seagrass cover was generally sparse, but some meadows near Thomas Island, west of Point Pedder, and in the lower basin had high cover (more than 75 per cent).

The department has monitored seagrass with consistent methods since December 2018. Seagrass distribution was estimated to cover almost 50 per cent of the estuary area in December 2018, which increased to 61 per cent in January 2020. In recent years, less seagrass has been observed in the estuary.



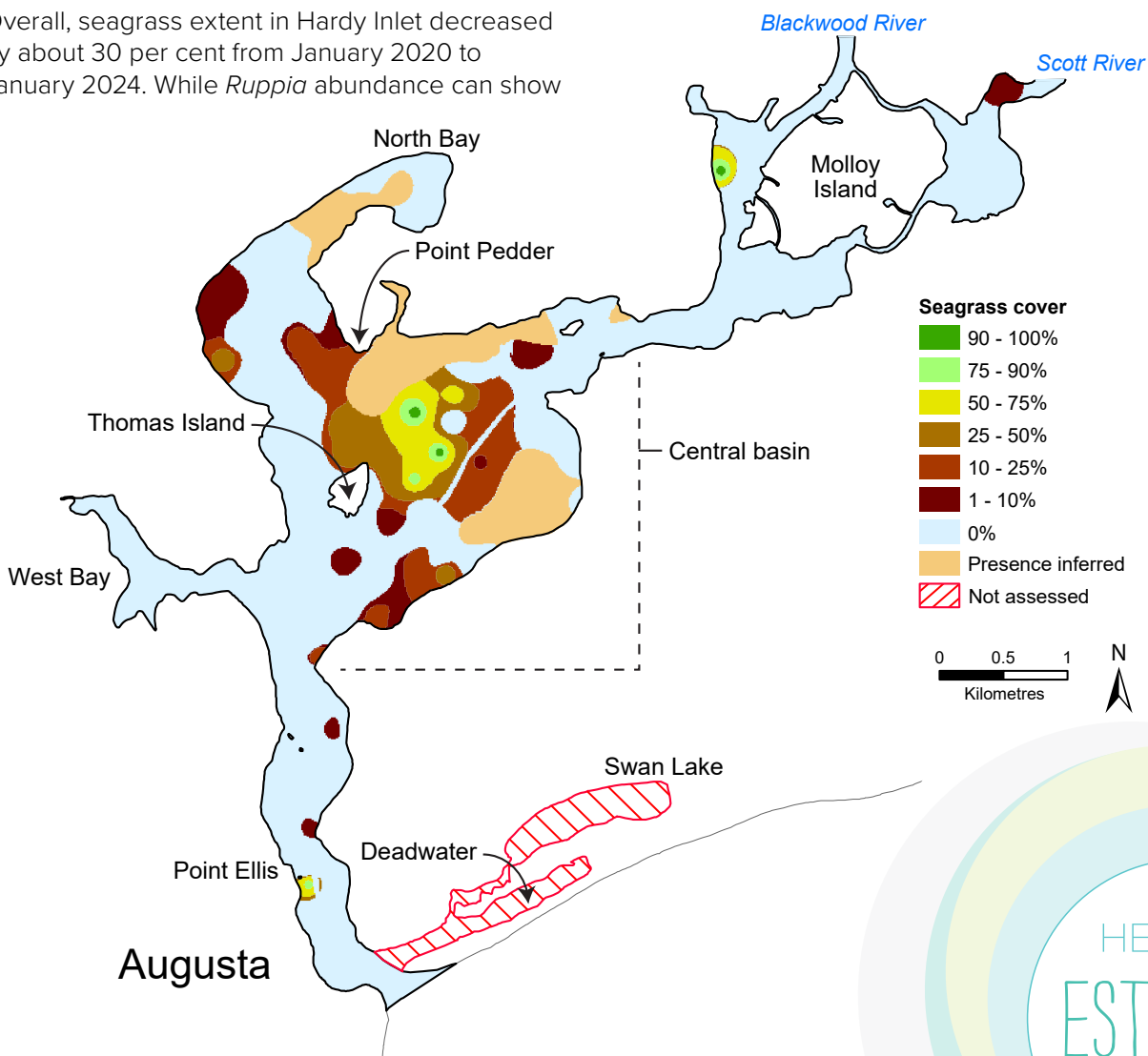
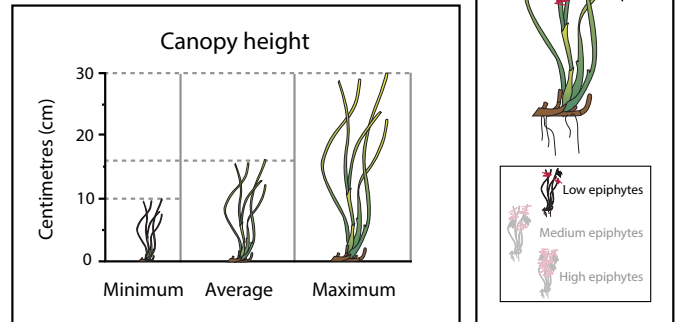
# Seagrass distribution in January 2024

Seagrass was estimated to cover 331 hectares in January 2024, which is 33 per cent of the total estuary area. This indicates a 12 per cent decline in seagrass extent since January 2023, particularly in the lower central basin and north of Point Ellis. Seagrass cover was generally sparse throughout the estuary, with a few isolated areas of dense meadows in the central basin close to Thomas Island, near Point Ellis, and west of Molloy Island. While seagrass has historically been observed in North Bay and surrounding Molloy Island, seagrass continued to decline in these areas in January 2024. Seagrass remains absent from West Bay.

The seagrass canopy height ranged between 10 and 30 centimetres, with an average height of about 15 centimetres. The abundance of small organisms growing on the seagrass leaves (epiphytes)<sup>1</sup> was generally low across the estuary in January 2024; however, the epiphyte cover was medium to high on the dense seagrass meadows observed around Thomas Island.

Overall, seagrass extent in Hardy Inlet decreased by about 30 per cent from January 2020 to January 2024. While *Ruppia* abundance can show

large inter-annual variation, seedbank studies reveal Hardy Inlet seagrass has limited capacity for recovery. Continued efforts to improve water quality and reduce macroalgal blooms, such as those underway through the Healthy Estuaries WA program, are essential to improve seagrass condition.



<sup>2</sup> Epiphytes can reduce light availability and affect seagrass growth.