

Seagrass snapshot: Nullaki (Wilson 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 Wilson Inlet.

This snapshot provides an update on the distribution and density of seagrass in Wilson Inlet in December 2023. It updates information from previous years, forming part of a collection which is available at estuaries.dwer.wa.gov.au/seagrass.

Understanding seagrass
condition helps to guide
how we manage
our estuaries

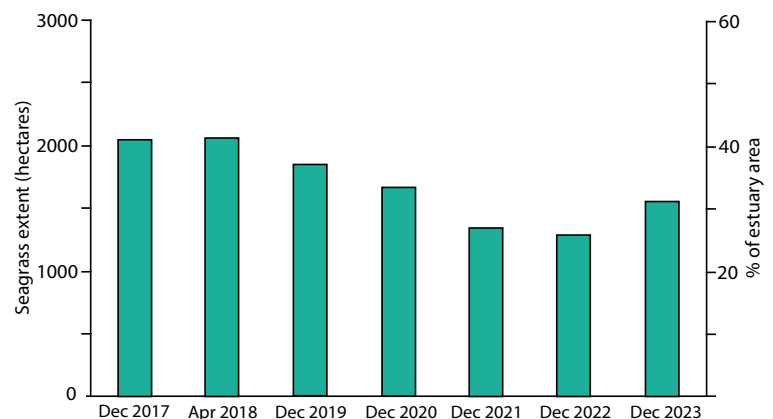
Wilson Inlet is a shallow lagoon on the south coast of Western Australia, near Denmark. The estuary closes seasonally because of a sandbar which isolates it from the ocean, often for several months of the year. The sandbar is artificially opened in winter most years to mitigate flooding. Seagrass condition can be affected by the opening and closing of the sandbar as well as seasonal changes and environmental conditions. In 2023, for the first time on record the channel had remained open for more than a year, from June 2021 to January 2023.^{1,2} The bar was opened again in June 2023, and the sandbar reformed in February 2024.

Ruppia megacarpa is the only species of seagrass found in Wilson Inlet. Maintaining healthy seagrass meadows is crucial for overall estuary health, as they provide food and habitat for animals, and improve water quality by producing oxygen and absorbing excess nutrients. However, striking a balance is key. In the past, an overabundance of seagrass has been problematic, leading to mass die-offs, causing water quality issues and the accumulation of wrack along shorelines. Ongoing monitoring is critical to track estuary health over time and inform effective management practices.



Seagrass over time

- Excessive nutrients in the estuary led to the extreme growth of seagrass in the 1970s.
- Studies have mapped seagrass in the estuary using various methods, with estimated areas ranging from 1,638 hectares in 1994 to 2,640 hectares in 2007.
- The department has monitored seagrass with consistent methods since December 2017.
- Seagrass extent has been declining since 2017, reaching its lowest distribution in 2022 – about 27 per cent of the estuary area.
- In 2023, seagrass extent increased in the estuary; however, the density of seagrass coverage was lower than in previous surveys.



¹ See the [Water quality snapshot: Nullaki \(Wilson Inlet\) 2021–22](https://estuaries.dwer.wa.gov.au/water-quality-snapshot-nullaki-wilson-inlet-2021-22) on wa.gov.au for more information

² Learn more about the Wilson Inlet sandbar: estuaries.dwer.wa.gov.au/estuary/wilson-inlet/estuary/the-bar

Seagrass distribution in December 2023

Seagrass in Wilson Inlet was estimated to cover 1,554 hectares in December 2023, which is about 32 per cent of the total estuary area. Seagrass is typically found in shallow areas of the estuary, with just more than 88 per cent growing in water less than 2 metres deep at the time of the survey.

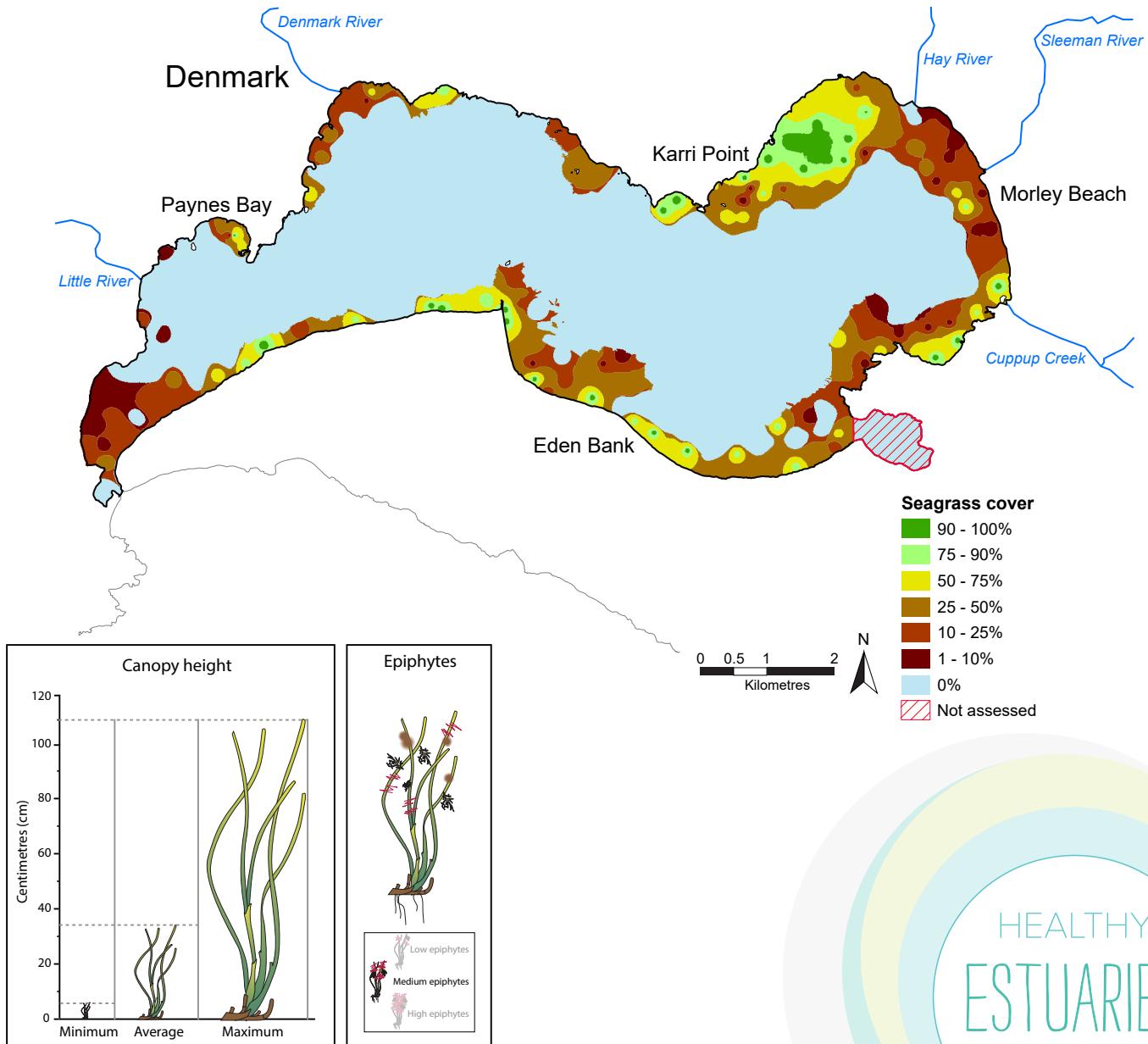
Seagrass meadows are continuing to recover in some parts of the estuary, particularly in Eden Bank (see map for locations) where seagrass was mostly absent in December 2022. In contrast, seagrass near the estuary mouth, at Denmark River and at Morley Beach showed a considerable decrease in cover since December 2022. Areas close to Karri Point continue to have the densest meadows.

The average height of seagrass canopy in Wilson Inlet was about 30 centimetres, which is consistent with observations in December 2022. The maximum canopy height was observed close to Karri Point

where dense seagrass meadows exceeded 1 metre in height.

On average, the cover of small organisms growing on seagrass leaves (epiphytes)² was considered medium across the estuary in December 2023. However, high epiphyte cover was observed on the recovering seagrass meadows at Eden Bank.

Overall, in December 2023, seagrass in Wilson Inlet was in a good and stable condition. Seagrass showed signs of recovery in some areas within the estuary, whilst other areas decreased in cover compared with December 2022. *Ruppia megacarpa* responds quickly to changes in estuary conditions, and while some fluctuations in extent are typical in a dynamic estuary, monitoring changes in seagrass health over time provides insight into the overall condition of Wilson Inlet.



² Epiphytes can reduce light availability and affect seagrass growth.

