Department of **Water and Environmental Regulation**
Department of **Primary Industries and Regional Development**
GOVERNMENT OF WESTERN AUSTRALIA

HEALTHY ESTUARIES WA

Water quality snapshot: Miaritch (Oyster Harbour) 2025–26

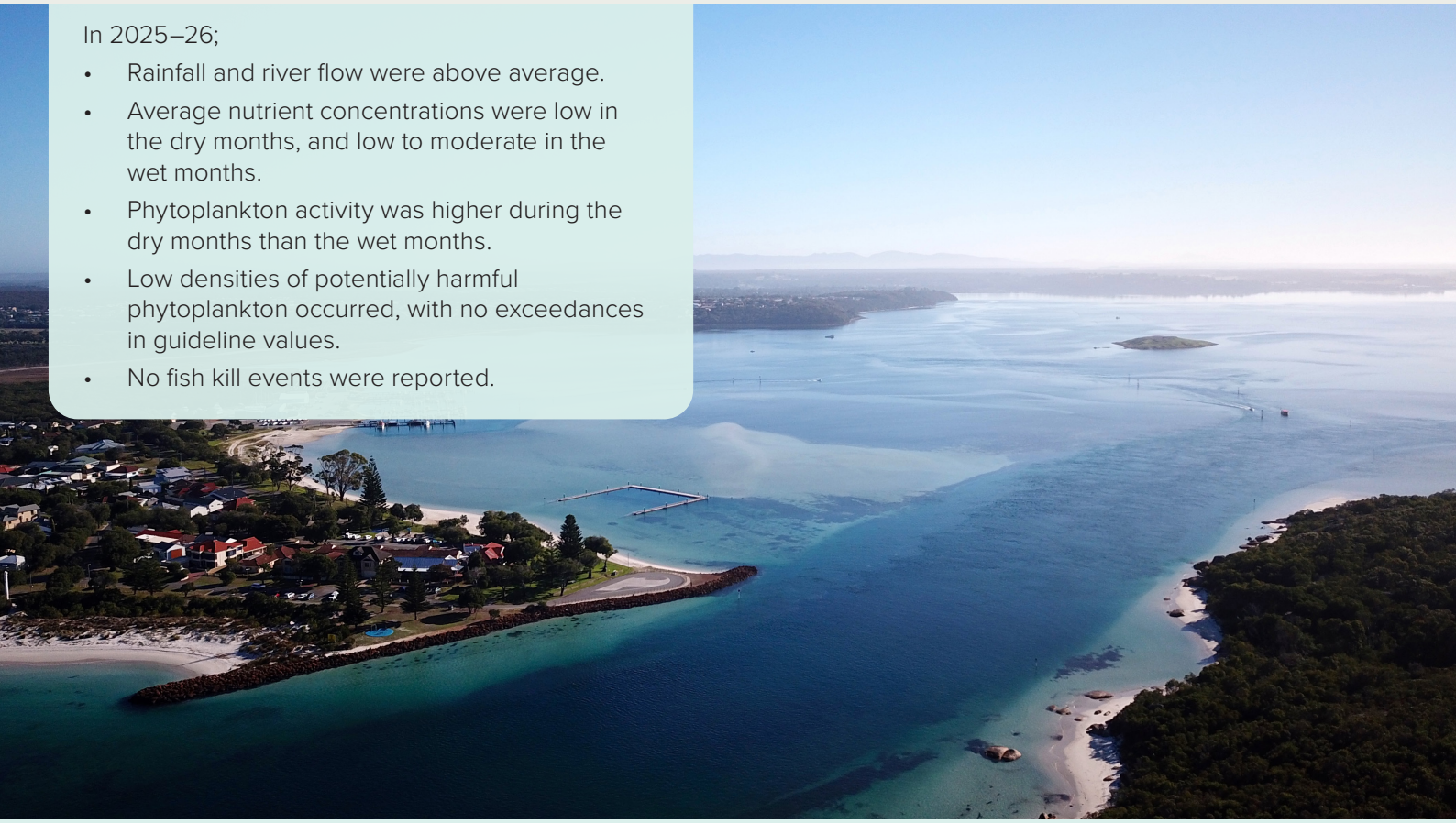
This snapshot summarises the condition in Oyster Harbour from June 2025 to May 2026 and compares it to the previous four years. It highlights the main factors that influence estuary health, including rainfall and river flow, and shows how the harbour responds through changes in water quality and phytoplankton activity.

We use the time period June to May to account for the influence of winter river flows on summer estuary conditions. In this snapshot we split the estuary year into wet (Jun – Oct) and dry (Nov – May).

Understanding estuary condition and monitoring for change helps to guide how we manage our estuaries

In 2025–26;

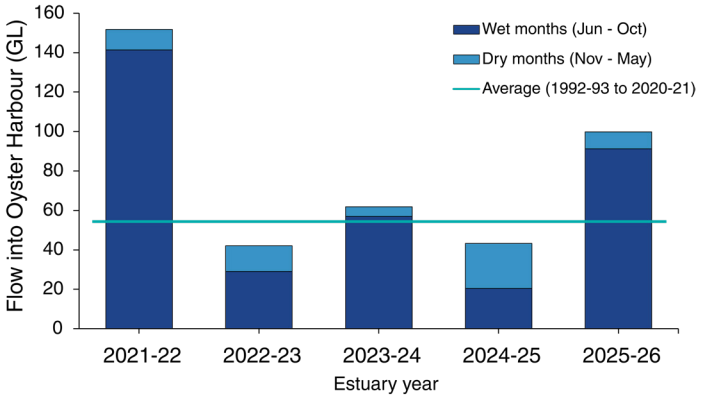
- Rainfall and river flow were above average.
- Average nutrient concentrations were low in the dry months, and low to moderate in the wet months.
- Phytoplankton activity was higher during the dry months than the wet months.
- Low densities of potentially harmful phytoplankton occurred, with no exceedances in guideline values.
- No fish kill events were reported.



Flow into the harbour

2025-26 was a wet year, with 986 mm of rainfall recorded, slightly above the 46-year average of 868 mm.

River flow into Oyster Harbour was also greater than the long-term average. The total river flow in 2025-26 was about two times larger than the flow in the previous three estuary years, respectively. As expected, the flow in the dry months was smaller than during the wet months. The 2024-25 estuary year saw the largest dry month rainfall at 430 mm, whereas the same year saw the smallest wet month rainfall of 428 mm.



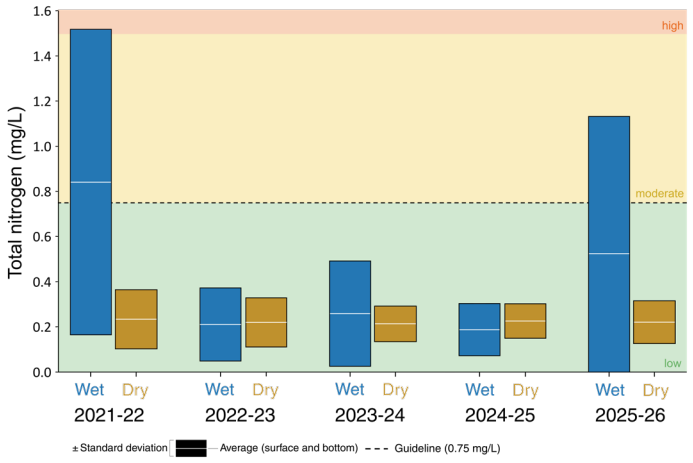
Nutrients in the harbour

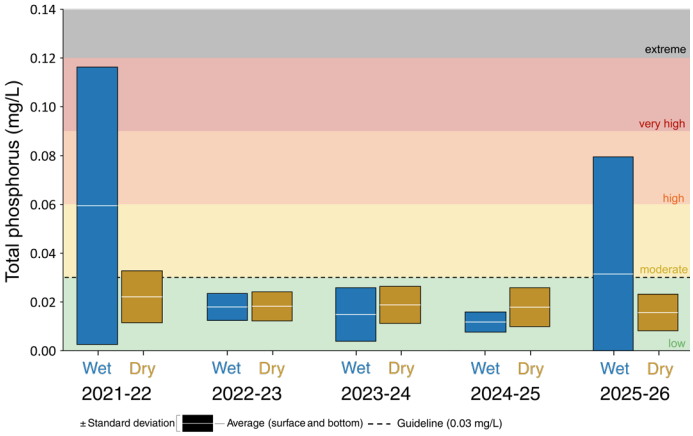
Nitrogen and phosphorus are important nutrients for plant growth. However, when an estuary has too much of these nutrients it can lead to excessive growth of phytoplankton and/or macroalgae.

Most nutrients enter the harbour from the surrounding catchment during winter when river flows are at their largest. As a result, nutrient concentrations in the harbour are usually higher during the wet months than the dry months.

In 2025-26, average nitrogen concentrations were low in the wet and the dry months, while phosphorus concentrations were moderate during wet months and low during dry months[1].

As 2025-26 was a wet year, average nutrient concentrations were higher in the wet months than the dry months. A similar pattern was seen in 2021-22, which was also a wet year. In contrast, during the other three drier years, average nitrogen and phosphorus concentrations were low and showed little difference between the wet and the dry months.





[1] We use ANZECC (2000) water quality guidelines for estuaries in south-west Australia to assess the health of Oyster Harbour in terms of nutrient concentrations and phytoplankton activity. We categorise concentrations below the guideline values as low (green area in figures). Above the guideline values there are four more categories. For more information see our Condition reports (https://estuaries.dwer.wa.gov.au/publications/).

Phytoplankton activity

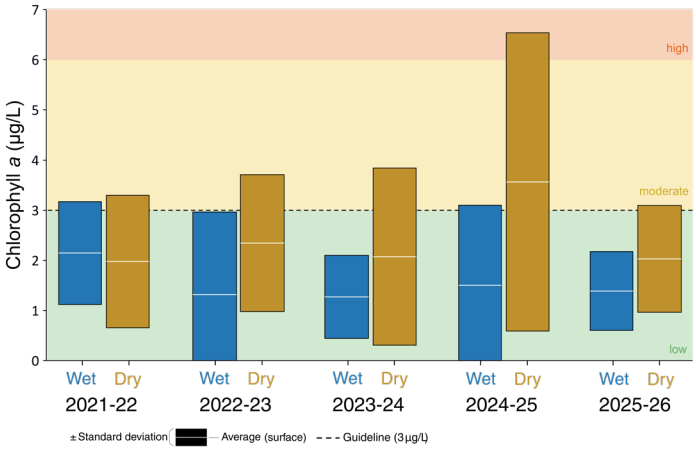
Phytoplankton, which includes microalgae, are a natural and important part of a healthy estuary. However, when there is an oversupply of nutrients, phytoplankton can grow excessively, leading to poorer water quality and impacts on aquatic fauna, human health and recreational use of the estuary. We assess phytoplankton activity by measuring the concentration of chlorophyll *a*, a photosynthetic pigment found in phytoplankton.

In 2025–26, average phytoplankton activity was low in the wet and dry months which is typical for Oyster Harbour.

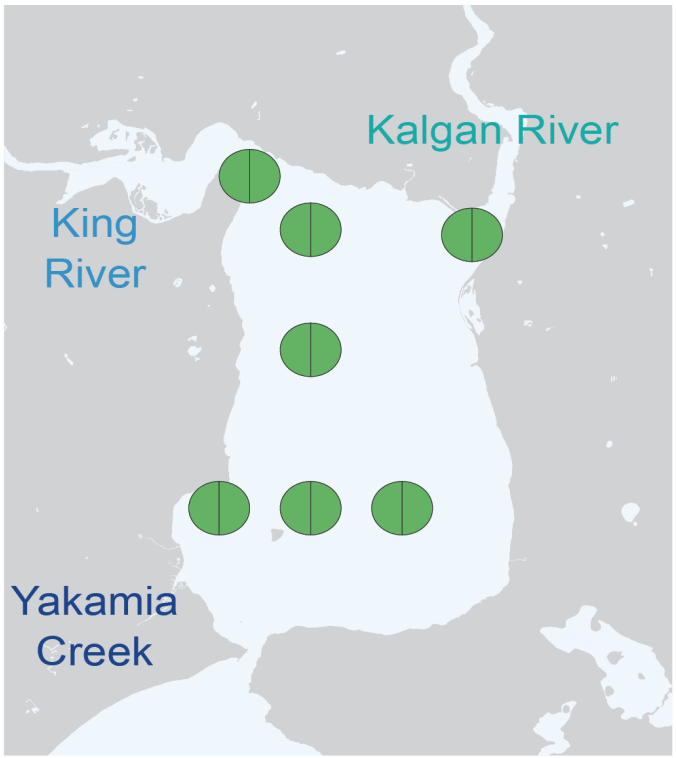
Despite being low overall, phytoplankton activity was generally higher during the dry months. This suggests that sufficient nutrients were available to support growth, with warmer water and increased sunlight stimulating phytoplankton growth.

Within the last five years, 2024–25 was a notable exception, with average phytoplankton activity reaching moderate levels during the dry months. This increase was likely associated with larger than usual river flows, which delivered additional nutrients to the harbour.

Comparing phytoplankton activity across our monitoring sites helps us understand how water quality differs across Oyster Harbour. In 2025-26, phytoplankton activity was low at all sites during both the wet and dry months. Even though nutrient concentrations were higher during the wet months, the environmental conditions at the time did not support excessive phytoplankton growth.



2025–26



Surface chlorophyll *a* average (µg/L)

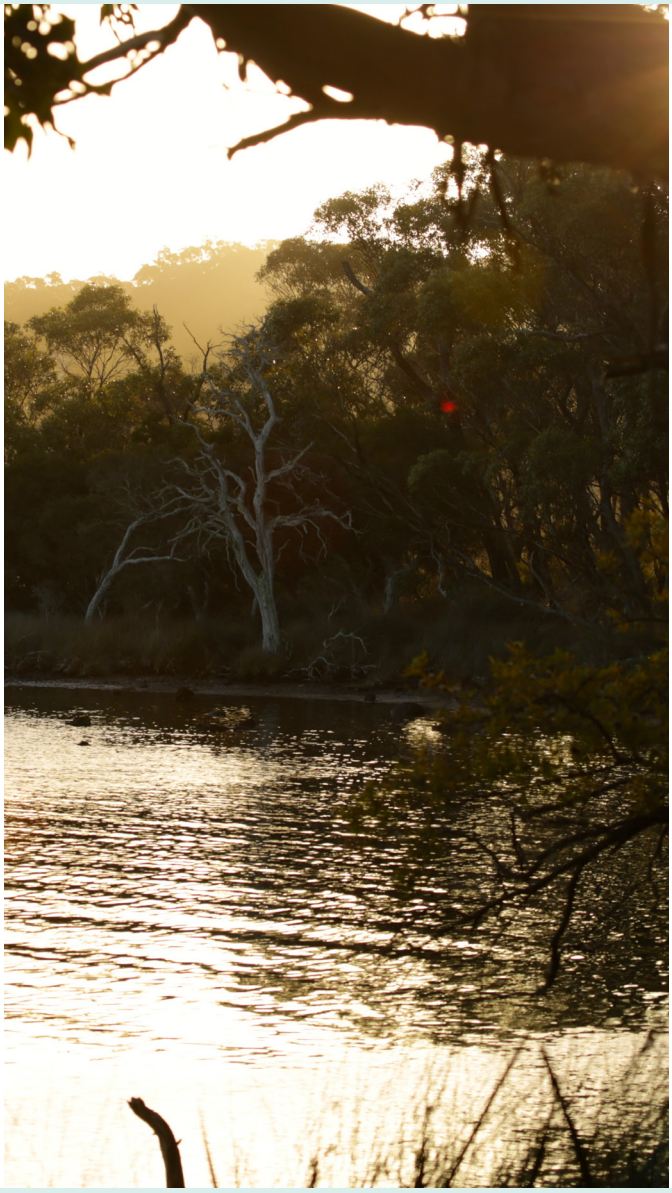
- Low (≤ 3)
- Moderate (>3 to ≤ 6)
- High (>6 to ≤ 9)
- Very high (>9 to ≤ 12)
- Extreme (≥ 12)

wet (Jun–Oct) dry (Nov–May)

Exceedances of Phytoplankton Environmental Guidelines

While chlorophyll a indicates overall phytoplankton activity, we also examine water samples under a microscope to identify the types of phytoplankton present, including any potentially harmful species. These are species that may pose a risk to human health or aquatic fauna, when present at densities above specific guideline values[2].

In 2025–26, low densities of potentially harmful phytoplankton were detected in Oyster Harbour with all results below guideline values.



Fish kills

There were no fish kills reported in Oyster Harbour during the 2025-26 estuary year.

More information

Healthy Estuaries WA works with local partners to improve Oyster Harbour's health by reducing nutrient inputs from agriculture, removing nutrients from waterways and improving scientific understanding to support management decisions. For more information on Healthy Estuaries WA and Oyster Harbour visit estuaries.dwer.wa.gov.au/oyster-harbour/.

This is a data report that presents monitoring results and observed outcomes. It does not interpret the processes driving water quality patterns. For more detailed interpretations, see our Estuary Condition Reports, Catchment Nutrient Reports, and Seagrass Reports on our publication's library (estuaries.dwer.wa.gov.au/publications/).

[2] Department of Water and Environmental Regulation (unpublished), Phytoplankton Environmental Guidelines (PEG) (2024), Phytoplankton Ecology Unit, Government of Western Australia, Perth.