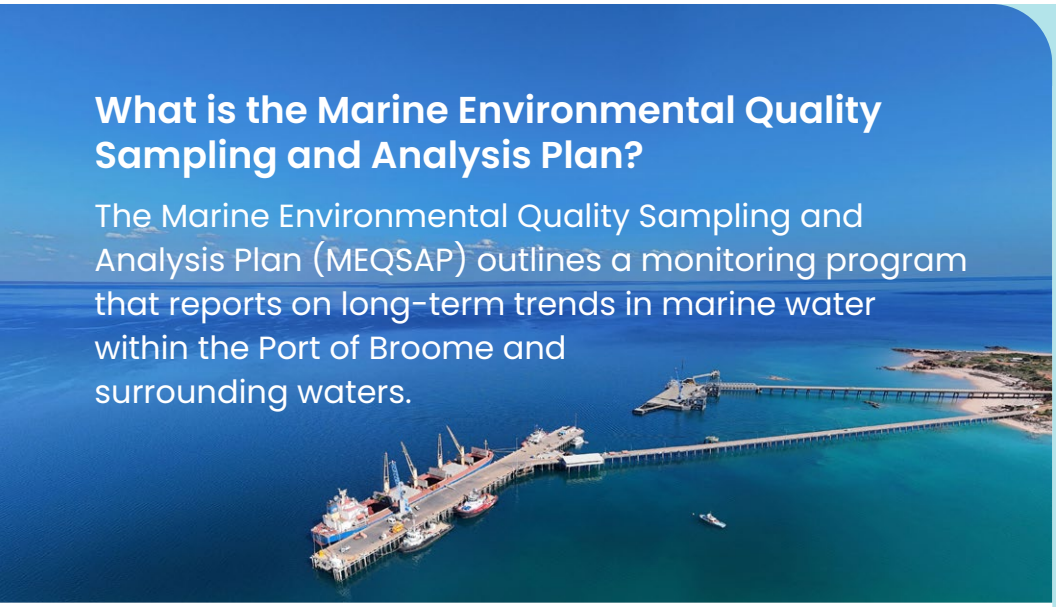
Marine Environmental Quality Sampling and Analysis Plan

2026 Annual report card

KIMBERLEY PORTS AUTHORITY

What is the Marine Environmental Quality Sampling and Analysis Plan?

The Marine Environmental Quality Sampling and Analysis Plan (MEQSAP) outlines a monitoring program that reports on long-term trends in marine water within the Port of Broome and surrounding waters.



Why is the program important?

Marine monitoring is an important part of environmental stewardship. It is the essential first step towards mitigating environmental risk, preserving ecosystem integrity, and protecting recreational and cultural values, including in the adjacent Yawuru Nagulagun/Roebuck Bay Marine Park.

How do we monitor?

Our ongoing marine monitoring involves regular sampling of marine water and sediment quality. Data is then assessed to determine if environmental values are being protected.

What are levels of ecological protection?

The Port of Broome and surrounding waters are categorised into three levels of ecological protection. Areas of conservation significance may be assigned the maximum level, while others with societal uses may be assigned a lower level.

The levels influence how we set up our program, position sample sites and assess results.

How do we use the data?

The data will be used to help protect the environmental values of the region and to better inform future environmental management.

More about the program

Our monitoring program follows leading practice marine science methodology. Building on a five-year baseline period, our ongoing surveillance monitoring reports against targeted environmental quality criteria. The criteria are designed to determine whether environmental quality objectives have been met or whether management measures are required. This process ensures a comprehensive understanding of the marine environment and enables a scientific approach to assessing environmental impact.

2026 highlights

- ✓ 2026 marks the third annual period of sampling and analysis at the Port of Broome under the MEQSAP.
- ✓ Overall, environmental quality objectives were met, meaning environmental values were protected (see page 2). This means all environmental quality objectives have been achieved since sampling began in 2024.
- ✓ We maintained a healthy marine environment alongside a busy port, with more than 1 million tonnes of throughput and 831 vessels passing through the port in FY26. Our results reflect our strong environmental management practices, which enable us to meet the diverse environmental quality objectives identified overleaf.
- ✓ Monitoring of mangrove communities and subtidal benthic communities and habitat indicated that data in 2026 largely matched the data and mapping from 2024 and 2025.

The MEQSAP is an initiative of Kimberley Ports Authority, developed in consultation with Western Australian marine science consultancy O2 Marine in 2023. O2 Marine continues to implement the plan, including monitoring, analysis and reporting results throughout the year.

Find out more or give feedback:
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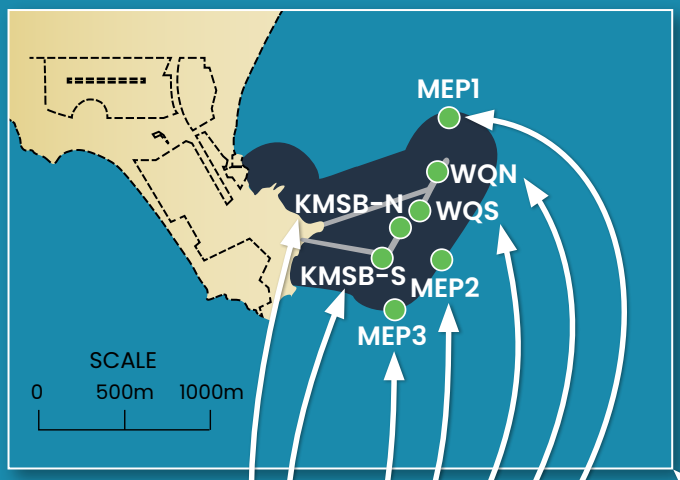



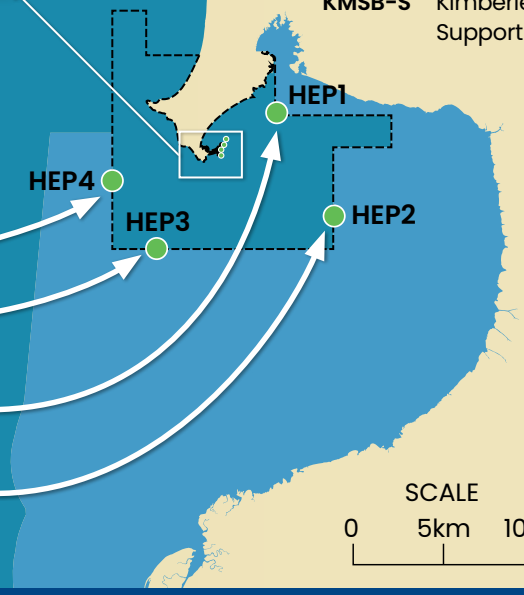

Levels of ecological protection

- Moderate
- High
- Maximum
- Port of Broome port boundary
- Sample locations

Monitoring site descriptions

MEP	Moderate ecological protection
HEP	High ecological protection
WQN	Water quality north
WQS	Water quality south
KMSB-N	Kimberley Marine Support Base north
KMSB-S	Kimberley Marine Support Base south

SCALE
0 5km 10km N

Overall results

Environmental quality objectives (EQO)

Water quality Water quality is suitable to maintain a healthy ecosystem.

Recreation The area is protected from any ill effects caused by poor water quality.

Aesthetics The aesthetic appeal of the environment is protected.

Status of objective



- **EQO achieved**
- **EQO at risk** (further investigation may be required)
- **EQO not achieved**
- **EQO not assessed**

Kimberley Ports Authority has selected monitoring sites on the port waters and marine park boundary, and environmental quality criteria in consultation with the Department of Biodiversity, Conservation and Attractions (DBCA), with the intent of sharing analysis results with the Department.

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Understanding environmental quality objectives

Environmental quality objectives (EQO) are developed to ensure protection of the environmental values that are important to the community and other port stakeholders. EQO relevant to the Port of Broome include:

- EQO1: Maintenance of ecosystem integrity
- EQO4: Maintenance of primary recreation values
- EQO6: Maintenance of the aesthetic appeal of the environment.

Ecosystem integrity

Ecosystem integrity relates to the biodiversity, biomass and abundance of biota within our marine environment, as well as how an ecosystem functions, including its food chains and nutrient cycles.

Measurements of water quality provide an indication of whether the port's ecosystem integrity is being maintained. For example, if the water quality EQO is achieved at site MEP1, this demonstrates excellent ecosystem integrity based on water quality testing against environmental quality criteria (EQC).

Primary recreation values

Primary recreation values refer to all recreational activities where a person comes into frequent and direct contact with the water.

The EQC under primary recreation values are intended to protect people undertaking these activities in port waters from any ill effects caused by poor water quality.

Aesthetic appeal

The maintenance of aesthetic appeal focuses on protecting the aesthetic values or visual amenity of the water.

By safeguarding these visual qualities — like odour and colour — marine environments remain attractive for recreation, tourism and cultural appreciation, and support environmental stewardship and ecosystem health.

2026 results

	Wet season sample	Dry season sample
	Percentage of times each season met the EQC value for: • *Maintenance of ecosystem integrity (EQO1)* • *Maintenance of primary recreation (EQO4)* • *Maintenance of aesthetic appeal of the environment (EQO6)*	
Chlorophyll-'a'	100%	100%
Metals	100%	100%
Score*	**100%**	**100%**
Grade	**A**	**A**

** End score determined by calculating an average % for each season.*
A = 80-100%. A water quality index of 'A' indicates excellent ecosystem integrity.

Additional EQO achieved

If EQO1, EQO4 and EQO6 are maintained, the following EQOs are generally considered maintained or achieved:

- EQO2: Maintenance of seafood safe for human consumption
- EQO5: Maintenance of secondary recreation values
- EQO7: Maintenance of cultural and spiritual values of the marine environment.

As each site within the Port of Broome achieved its EQO status for EQO1, EQO4 and EQO6 across the wet and dry seasons, EQO2, EQO5 and EQO7 are therefore also achieved.