Palmerston Lakes Water Quality Report Card Q1 2024

AT A GLANCE

- ✓ Harvesting *Salvinia* has maintained the water quality of lakes recently harvested
- ✓ Dissolved oxygen levels were good in most lakes
- ✓ Some lakes showed improvements from the last quarter's rating.
- ✗ High nutrient load present in some lakes which may lead to algae growth

Water quality surveys were undertaken across 18 Palmerston Lakes on 28 March 2024. Monitoring is undertaken quarterly as per the Lakes Management Plan.

Harvesting of *Salvinia* has improved water quality in almost all surveyed lakes.

The only Lake to experience a deterioration in water quality was Marlow Lagoon.

Water quality at Durack Heights, and Durack Lakes 1b, 5, 7A, 7B, 8, 10A, and 10B have seen improved water quality, such that they now meet the criteria to be listed as good.

High nutrient loads were recorded in Lakes, 4, 6, Marlow Lagoon B, and the three Sanctuary Lakes.

LAKE CONDITION RATING

A — GOOD

Lake is well oxygenated, has low turbidity, low nutrients and low Salvinia coverage

B — FAIR

Lake is moderately to well oxygenated but shows some evidence of low water quality, such as high nutrients, turbidity and Salvinia coverage

C — POOR

Lake is moderately to poorly oxygenated with other signs of poor water quality, such as high nutrients, high turbidity, algae and Salvinia coverage

D — VERY POOR

Lake is poorly oxygenated, has high nutrients, high turbidity, algae and Salvinia growth

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How does this report card work?

Each of the 18 lakes are surveyed and assessed based on factors such as dissolved oxygen and turbidity, nutrient concentrations (nitrogen, phosphorus), amount of *Salvinia* surface coverage, and other notable findings relevant to lake condition.

Each lake is given a condition rating based on the characteristics of the lake during the survey. The criteria for this rating is derived from the features of a healthy lake outlined in the *Townsville Constructed Lakes Design Guideline* (DesignFlow and RPS 2010).

A healthy lake is typically dominated by macrophytes (i.e. emergent and submerged rooted water plants); as opposed to floating water plants (e.g. lilies, algae, the declared weed S*alvinia molesta*), microscopic algae (phytoplankton), and cyanobacteria. Macrophyte-dominated lakes help maintain low turbidity via uptake of nutrients and prevention of re-suspension of sediments.

Note that lake characteristics will change seasonally as water plants cycle through periods of growth and die-back. The rating given to each lake will differ between quarterly surveys and consistently poor or very poor ratings will require management action.

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