# Palmerston Lakes Water Quality Report Card Q3 2023

## AT A GLANCE

✓ Harvesting *Salvinia* has improved the water quality of lakes recently harvested

✓ Water quality has generally improved in most lakes

✗ High nutrient load present in some lakes which may lead to algae growth

**Water quality surveys were undertaken across 18 Palmerston Lakes on 12 September 2023. Monitoring is undertaken quarterly as per the Lakes Management Plan.**

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

**Water quality at Durack Lakes 7B, 7C, 8, 9, 10B, Sanctuary Lakes B & C have met the criteria to be listed as good.**

**High nutrient loads were recorded in Lakes 3, 4, 5, 7a and Durack Heights lake.**

**Physical parameters at all sites were within acceptable limits.**


## 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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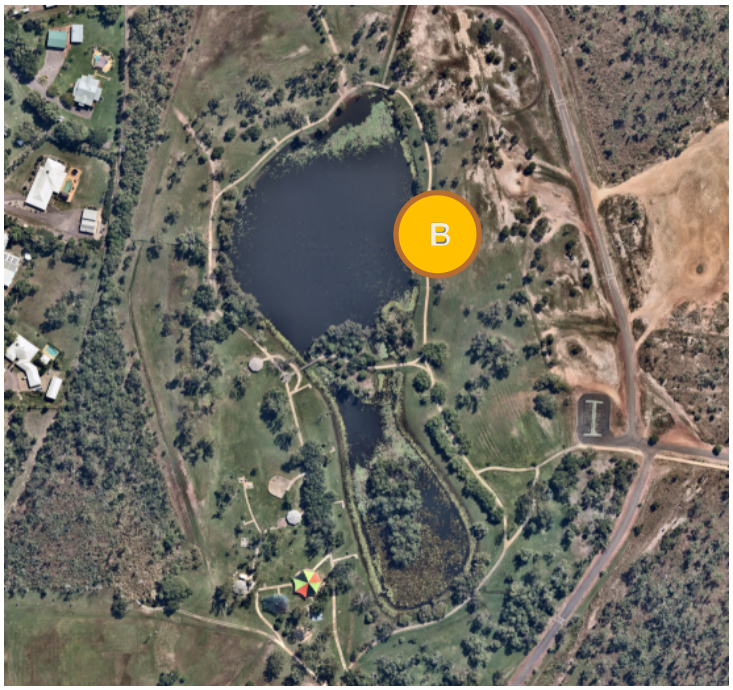



## How does this report card work?

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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