Palmerston Lakes
Water Quality Report Card
# Q2 2024

city of
PALMERSTON

AT A GLANCE

✔ Total phosphorus has greatly improved in almost all lakes

✔ Dissolved oxygen levels have improved since last round

✔ Turbidity in all lakes, except Sanctuary B, has improved

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

Water quality surveys were undertaken across 18 Palmerston Lakes on 11 June 2024. Monitoring is undertaken quarterly as per the Lakes Management Plan.

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

Sanctuary B's poor water quality readings this round may not be an accurate representation of water quality, as an aquatic weed harvester was operating during sampling.

High nitrogen loads were recorded in Durack Lakes 7A and 9, Sanctuary Lakes A and B, and the Durack Heights Lake.
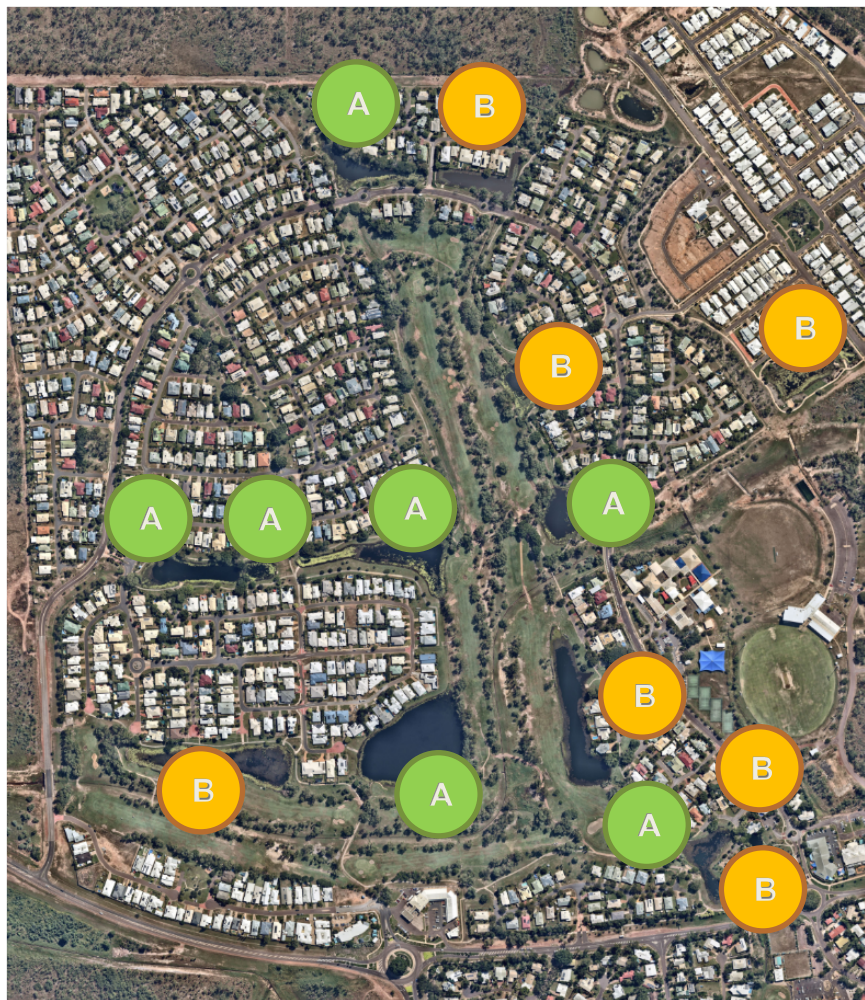
LAKE CONDITION RATING

A — **GOOD**
Lake is well oxygenated, and 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
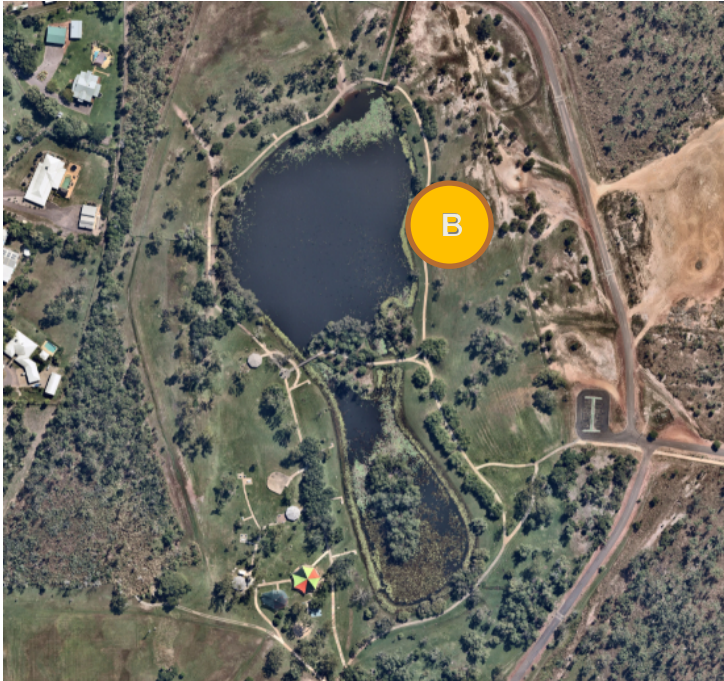
D — **VERY POOR**
Lake is poorly oxygenated, and has high nutrients, high turbidity, and algae and Salvinia growth

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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