

Palmerston Lakes

Water Quality Report Card

AT A GLANCE

- ✘ Some lakes still covered in floating water plants, including declared weed, *salvinia*
- ✔ Plant harvester is making good progress clearing floating plants from lakes and water quality has improved in harvested lakes
- ✔ Harvesting schedule now available on City of Palmerston website

Water quality surveys were undertaken across all 17 Palmerston Lakes between 26 and 29 July 2021. Monitoring is undertaken quarterly as per the Palmerston Lakes, Lake Management Plan. An additional lake was added to the monitoring program this quarter; Durack Heights lake, sampled on 24 August.

Water quality in the Durack Lakes was mixed, with ratings ranging from **VERY POOR** to **GOOD**. Notably, Lake 6, which received a **VERY POOR** rating during the previous quarterly monitoring round in February 2021, now has a **GOOD** rating. Water quality in this lake has improved following aquatic plant harvesting and removal.

The Durack Heights lake received a **VERY POOR** rating due to low oxygen and large coverage of floating plants.

Sanctuary Lakes ratings were mixed, with a **GOOD** rating in the upper lake, and **FAIR** rating in the lower two lakes. The section of lake behind the island had a **POOR** rating.

Marlow Lagoon received a **FAIR** rating.



LAKE CONDITION RATING

GOOD

A Lake is dominated by macrophytes, had low turbidity and is well oxygenated throughout the water column during both day and night

FAIR

B Lake is dominated by macrophytes but shows some unhealthy features such as areas of floating plants and algae. Water column is well oxygenated during both day and night.

POOR

C Lake is dominated by macrophytes but plant growth is throughout most of the water column and is stratified and bottom layer is anoxic, and/or there are large areas of floating plants covering the lake, and/or the lake is dominated by phytoplankton and is turbid

VERY POOR

D Lake is dominated by floating plants and water column is low in oxygen or the lake is dominated by phytoplankton and/or cyanobacteria, is very turbid and oxygen is low throughout the water column

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How does this report card work?

Each of the 18 lakes are surveyed and assessed factors such as DO measured throughout the water column, total water depth, description of the type and extent of water plants present and other notable findings relevant to lake conditions.

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, taken from the *Townsville Constructed Lakes Design Guideline* (DesignFlow and RPS 2010).

A healthy lake is typically dominated by macrophytes (i.e. emergent and submerged water plants); as opposed to floating water plants (e.g. *salvinia*, lilies, algae) or 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.

