

# CLEVELAND BAY Information summary

Data from July 2019 to June 2020

Since July 2017, the Dry Tropics Partnership for Healthy Waters has been collating data across the Townsville Dry Tropics region on waterway health, including the marine environments. In Cleveland Bay, habitat (seagrass and coral) and water quality are measured, with a summary of the findings for this bay outlined below.

## Grading and scoring

Indicators (shown in outer ring of the coaster) are measured and aggregated into indicator categories (middle ring of the coaster). Indicator categories are then aggregated into overall indices (centre of the coaster). Grades are represented by colours.

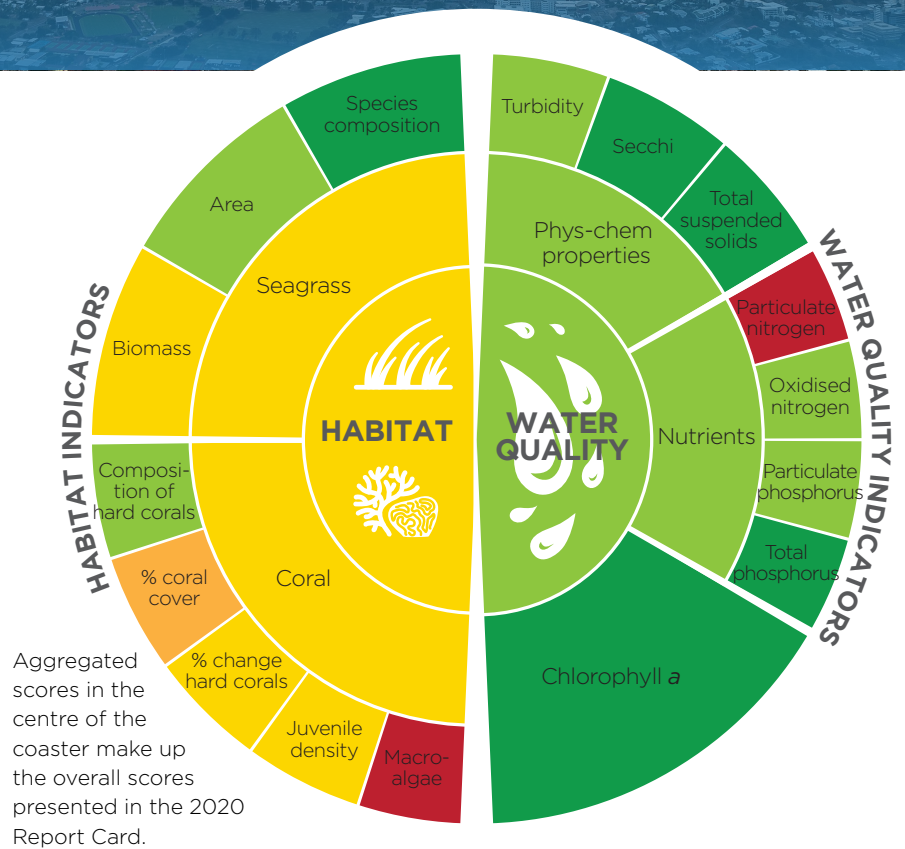
- A** Very good - 81 to 90
- B** Good - 61 to 81
- C** Moderate - 41-61
- D** Poor - 21 to 41
- E** Very poor - 0 to 21
- Not enough information  
(scores are capped at 90)

## Habitat extent results

Overall, the habitat index (average of coral and seagrass scores) was in a moderate condition.

### Coral scores

Percent coral cover was measured at five sites. However, Geoffrey Bay was the only reef where all five indicators were measured; thus the scores for Geoffrey Bay represent the scores for all of Cleveland Bay. Coral was in a moderate condition, with moderate scores for the percent change in hard coral and juvenile density. There was high macroalgae at Geoffrey Bay, with macroalgae generally indicating poor water quality. Overall coral cover was poor for Cleveland Bay, with Florence Bay and Geoffrey Bay having poor coral cover and the other three reefs receiving a moderate score for this indicator.



## Seagrass scores

Ten monitoring meadows were sampled within Cleveland Bay.

Overall, seagrass meadows within Cleveland Bay were in a moderate condition. Species composition and meadow area were graded as good or very good for eight of the ten meadows. Biomass was the lowest scoring indicator, with Geoffrey Bay and Nelly Bay meadows receiving a poor score for biomass, whilst five meadows were in a moderate condition for biomass. Three meadows were in a good condition in relation to biomass.

\*Biomass is the total quantity or weight of organisms over a given area or volume.



# WATER QUALITY RESULTS

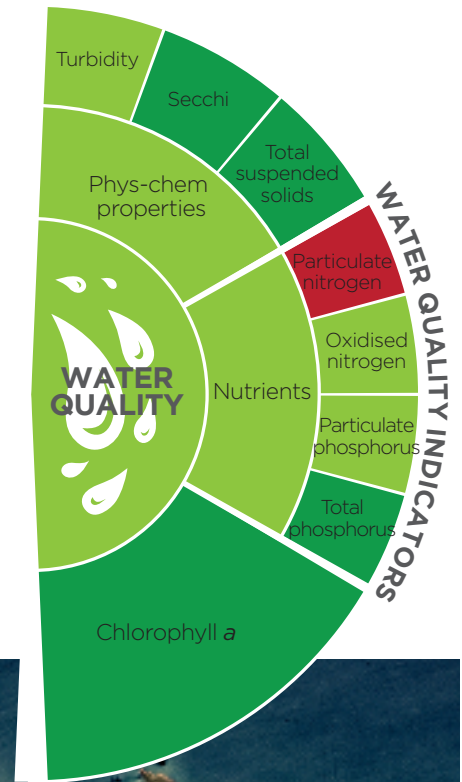
## What was measured?



Port of Townsville

Within Cleveland Bay, water quality was measured at three sites, which were enclosed coastal waters, open coastal waters and Magnetic Island (see map for site locations). Water quality was sampled at three to five locations at each site. Nutrients and physical-chemical (phys-chem) properties were compared to the regional water quality objectives (WQOs). Overall, water quality was graded as good relative to the WQOs. The coasters below provide detailed scores for the three water types in the Bay. The sites below are averaged together to make up overall water quality scores.

For more information about WQOs, see our website.



## Magnetic Island

Nutrient and phys-chem properties were measured at Geoffrey Bay six times during the year, whilst loggers continuously recorded turbidity data at Geoffrey Bay and Arthur Bay. Geoffrey Bay received a poor score for nutrients, due to the very poor results for nitrogen compared to the WQOs. Turbidity was graded as good at Geoffrey Bay and moderate at Arthur Bay. Total suspended sediments (TSS) were graded as very good at Geoffrey Bay.



## Open coastal waters

Four locations were monitored within open coastal waters. Overall, open coastal waters received a very good grade, with very good grades for all measures of water quality.

## Enclosed coastal waters

Overall, the enclosed coastal site received a very good grade for water quality, with very good scores relating to nutrient and chlorophyll *a* concentrations. Five locations were monitored within enclosed coastal waters. Secchi (water clarity) and total suspended solids were graded as very good and good. Turbidity was graded as poor. This result was mainly due to one site close to Sandfly Creek Estuary having very turbid waters. The high turbidity levels are likely due to natural causes, including wind and wave resuspension of sediments.

Many partners are working together to improve waterway health. The report card helps to identify areas that require a management response. Management actions undertaken by Partners are highlighted in the Management Response Report. For more details on the Management Response Report, the 2019-2020 Results Report, and the Dry Tropics Partnership for Healthy Waters, check out the Partnership's website: [drytropicshealthywaters.org](http://drytropicshealthywaters.org)