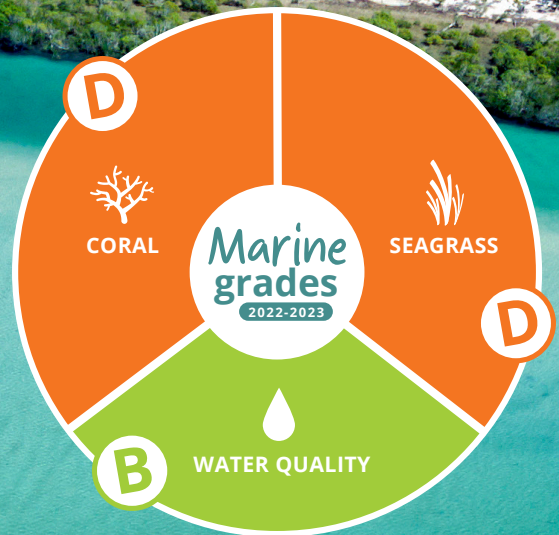


# Marine report

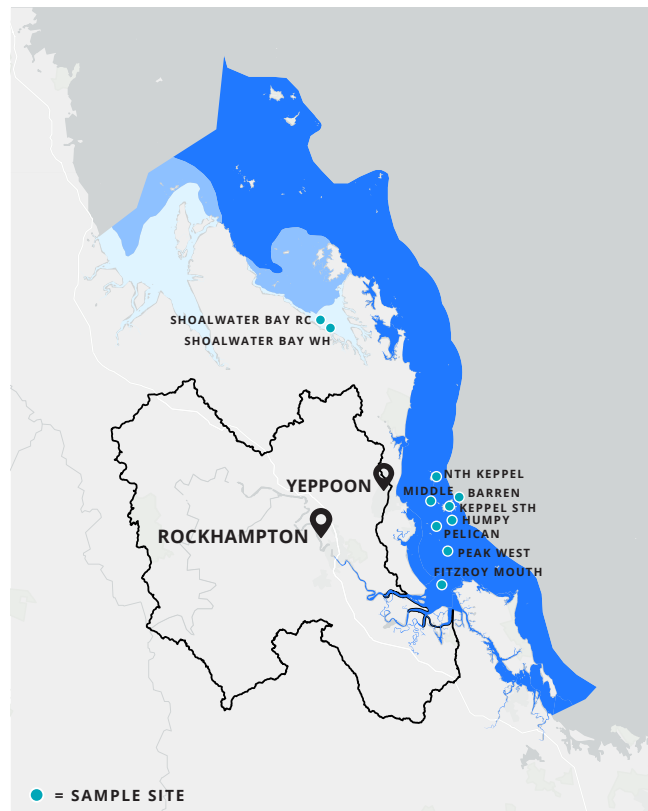
2022-2023



## Summary

Our marine monitoring tracks the condition and trends of inshore waters, focusing on water quality, coral, and seagrass. The grading is supported by the Marine Monitoring Program (hosted by GBRMPA) and water quality efforts led by the Great Barrier Reef Foundation and key partners, including AIMS and James Cook University.

The Coral Index remained “poor” in 2023, showing no improvement since 2020, with declines in Juvenile Coral and Macroalgae, despite a moderate rise in Coral Cover. Seagrass conditions in the Fitzroy region also deteriorated, remaining “poor” in 2022–23, with Resilience and Abundance scores low, particularly in reef intertidal habitats. Water Quality scored ‘good’ in 2022-23, showing trends along the sampling transect with generally higher concentrations in the Fitzroy River mouth. Seasonal differences were observed for certain indicators, becoming less pronounced further offshore.



### MMP REPORTS PUBLISHED BY THE GREAT BARRIER REEF MARINE PARK AUTHORITY

#### Coral:

Thompson, A., Davidson, J., Logan, M., Thompson, C., 2024, Marine Monitoring Program Annual Report for Inshore Coral Reef Monitoring: 2022–23. Report for the Great Barrier Reef Marine Park Authority, Great Barrier Reef Marine Park Authority, Townsville. 149 pp.

#### Seagrass:

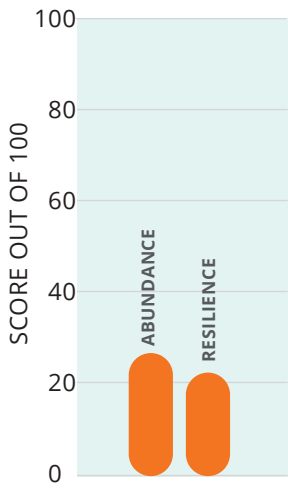
McKenzie, L.J., Collier, C.J, Langlois, L.A., Brien, H. and Yoshida, R.L. 2024, Marine Monitoring Program: Annual Report for Inshore Seagrass Monitoring 2022–23. Report for the Great Barrier Reef Marine Park Authority, Great Barrier Reef Marine Park Authority, Townsville. 178pp.

#### Water Quality:

Gruber, R., Waterhouse, J., Petus, C., Howley, C., Lewis, S., Moran, D., James, C., Logan, M., Bove, U., Brady, B., Choukroun, S., Connellan, K., Davidson, J., Mellors, J., O’Callaghan, M., O’Dea, C., Shellberg, J., Tracey, D., Zagorskis, I., 2024. Great Barrier Reef Marine Monitoring Program Inshore Water Quality Monitoring: Annual Report 2022–23. Great Barrier Reef Marine Park Authority, Townsville. 298 pp.



# Seagrass D



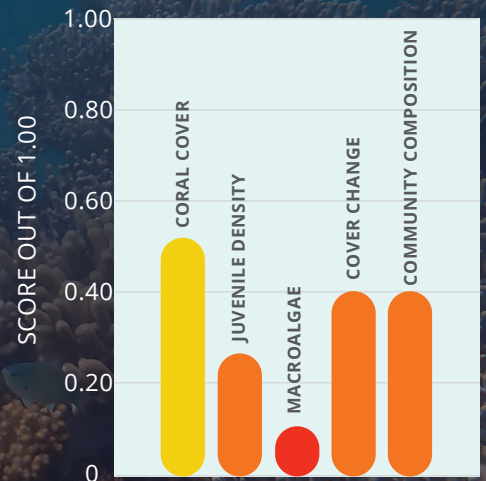
SEAGRASS

Seagrass condition in the Fitzroy NRM region deteriorated slightly in 2022–23, remaining poor for the third consecutive year. Both Abundance and Resilience scored poorly. Although one estuarine site showed marginal improvement, overall Abundance continued to decline, particularly at reef intertidal sites. Resilience also dropped to its second lowest level recorded, with variations between habitats—some estuarine and coastal sites improved, while others worsened.



# Coral D

The Coral Index remained 'poor' in 2023, with no improvement following a recovery phase from 2014 to 2020. Since 2020, Juvenile Coral and Macroalgae scores at 5m depths have declined, while Coral Cover has shown gradual improvement but still falls within the 'moderate' range, with inconsistent results across reefs. Although floods and storms caused a 'very poor' Coral Index low in 2014, Macroalgae scores have remained 'very poor,' while Cover Change, Coral Cover, and Composition have improved.



CORAL



WATER QUALITY

# Water Quality B

The Water Quality (WQ) Index has rated water quality as 'good' since 2020, including in 2022–23. This index is divided into three categories; Water Clarity which includes Turbidity, Secchi Depth and Total Suspended Solids (TSS); Productivity which includes Chlorophyll-a (Chl-a) and Nitrogen Oxides (NOx); and Particulate Nutrients which includes Particulate Nitrogen (PN) and Particulate Phosphorus (PP). Sampling along a transect showed high levels of Chl-a, NOx, TSS, and Particulate Nutrients near the river mouth, decreasing further offshore. Secchi Depth followed a similar pattern, with clearer waters away from the river mouth. Seasonal differences were noted, with higher Chl-a, TSS, PN, and PP during the dry season, although these variations lessened offshore. These patterns were likely due to physical forces rather than river discharge, as it was a year of near-median flow.

