

The seagrass beds at Clairview are an important feeding area for dugongs and turtles.

FUNDING ENSURES SOUTHERN INSHORE MONITORING CONTINUES

The future of the Southern Inshore Monitoring Program has been secured for an additional three years, thanks to renewed commitment from Dalrymple Bay Coal Terminal Pty Ltd (DBCT P/L) and Dalrymple Bay Infrastructure (DBI).

The Southern Inshore Monitoring Program provides much needed data on seagrass, coral and water quality in coastal waters between Cape Palmerston and Clairview Bluff. The data collected is featured in the annual Healthy Rivers to Reef Partnership Report Card.

In the first three years of the Partnership, there was no data available for the Southern Inshore Marine Zone, and the Partnership sought to establish a monitoring program to change this.

DBCT P/L funded the monitoring program from its inception in 2017, with DBI coming on board as a funding partner in 2019. Both DBCT P/L and DBI have continued to support this program, signing on to provide \$415,000 over three years from July 2023 to June 2026.

DBCT P/L Manager of Safety, Risk and Environment, Ricci Churchill, said investing in the program was important for understanding the regional ecosystem, and the geographical and climatic conditions that affect the area.

"As a founding member of the Healthy Rivers to Reef Partnership, we are proud to have established this monitoring program and continue to support it in partnership with DBI. It shows what can be possible through the Partnership and by investing in your local community.

"We are excited to keep supporting the collection of data so that we can continue to learn and understand how local ecosystems are responding to changing pressures."

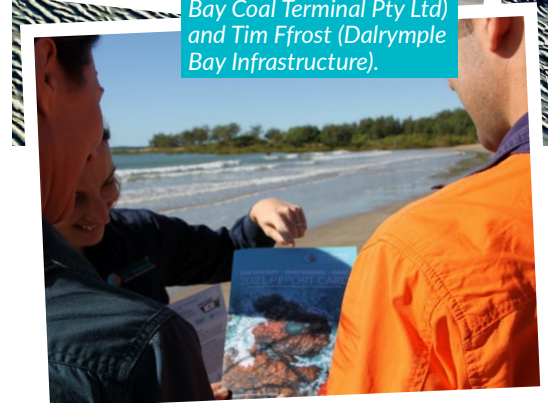
For DBI Site Manager, Tim Ffrost, supporting the program was an important part of their commitment to sustainability and connecting with community partnerships.

"The health of local waterways and the marine environment is a key focus for the terminal, so supporting the Healthy Rivers to Reef Partnership to deliver a robust and reliable monitoring program for the Southern Inshore region is a natural extension of our own obligations.

"By co-funding the Southern Inshore Monitoring Program we are contributing to a vital dataset that can provide insight into how local ecosystems are behaving and inform management actions."



Ricci Churchill (Dalrymple Bay Coal Terminal Pty Ltd) and Tim Ffrost (Dalrymple Bay Infrastructure).



Defining the baseline

The Southern Inshore Monitoring Program is now in its seventh year. So what does the data tell us?

WATER QUALITY

The Southern Inshore Monitoring Program highlights the importance of not only collecting regional data, but also interpreting that data through a regional lens. A high tidal range and the influence of Broad Sound in the Southern Inshore Marine Zone naturally causes sediment resuspension and water turbidity, leading to consistently low water clarity scores. This natural occurrence in turn can influence the condition and ecology of coral and seagrass, which are also monitored through the program.

CORAL

The Southern Inshore Marine Zone is considered a challenging environment for corals as a continental shelf isolates the area from the well-developed carbonate reef structures of the offshore Great Barrier Reef. Coral formations in the Southern Inshore Marine Zone often form from accumulated detritus rather than consolidated structures in the offshore reefs. These factors impact the development, abundance, and diversity of corals. In addition to this, the strong currents caused by high tidal ranges and proximity to the shallow silt-laden Broad Sound to the south, impact coral resilience and recovery.

Despite these conditions, the reefs do show signs of resilience. All five reefs were impacted by a bleaching event in 2020, with declines in coral cover observed in both the 2020 and 2021 surveys. However, the most recent surveys completed in 2022 showed increases in hard coral cover at four of the five reefs, which suggests potential for recovery from stressors.

The Southern Inshore Monitoring Program has helped highlight that the current methodology for assessing the condition of corals in the Great Barrier Reef may not account for the variation in environmental factors that influence coral communities. These discoveries have contributed to the Australian Institute of Marine Science investigating revisions in scoring methodology that more accurately account for variation across environmental gradients. This revision of scoring methodology could result in more realistic thresholds for scoring reef condition in this region in the future.

SEAGRASS

Due to the wide range of environmental conditions that could typically influence seagrass condition (such as El Nino Southern Oscillation or extreme weather events), researchers require 10 years of monitoring to accurately define a baseline. However in 2022, after five years of annual surveys, there was enough data to define an interim baseline and this was used to determine seagrass grades for the Southern Inshore Marine Zone for the first time. Seagrass monitoring so far shows that meadows in this zone have a high degree of biomass variability, which could be due to high feeding patterns of turtles and dugongs. While the above ground biomass in this zone is low compared to some other meadows of the same species in Queensland, it is typical for coastal seagrasses in the MWI region and likely represents the expected state of seagrasses here. The continued use of these meadows by dugongs also indicates they are performing important ecological functions.

SOUTHERN INSHORE MARINE ZONE TIMELINE

2014-2017

No data available. The Partnership identified finding a funding source as a priority.

2017

Southern Inshore Monitoring Program starts with funding from DBCT P/L.

2019

Water quality scores are published for the first time with the release of the 2018 Report Card. DBI becomes a funding partner.

2020

Coral and pesticides scores reported for the first time in the 2019 Report Card.

2022

Seagrass grade is published for the first time in the 2021 Report Card, after the collection of five years' of baseline data.

2023

DBCT P/L and DBI commit to funding the program from FY24 to FY26.



Coral surveys at Henderson Island.



Helicopter survey of seagrasses in the Clairview region.