



# Coral Monitoring in the Mackay – Whitsunday Isaac Region

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Australian Government

Great Barrier Reef Marine Park Authority



#### Acknowledgement



I acknowledge the Yuwi people as the traditional owners of the land here in Mackay and acknowledge the deep and timeless connection between Aboriginal and Torres Strait Islander people and their sea country and pay my respects to Elders past, present and future, in all the areas in which we work.



## Outline

- Brief description of how reefs are monitored and the indicators used to assess their condition
- A focus on the condition of reefs in the Whitsunday Islands that inform the P2R Reef Report Card
- A brief overview of the condition of southern inshore reefs monitored for the Healthy Rivers to Reef Partnership that inform the Mackay Whitsunday Isaac Regional Report Card





Marine Monitoring Program AIMS The Reef Authority Part of the Paddock to Reef Integrated Monitoring , Modelling and Reporting Program



AIMS Long-term Monitoring Program

Southern Inshore Monitoring Program
AIMS
Dalrymple Bay Coal Terminal Pty Ltd
Dalrymple Bay Infrastructure
Healthy Rivers to Reef Partnership

North Queensland Bulk Ports

# **Cumulative pressures influence the Reef**









Australian Government

AUSTRALIAN INSTITUTE OF MARINE SCIENCE



Map generation: AIMS 04-Sep-2020





Data: eReefs CSIRO GBR1 Hydro y, amic Model \$2.0 Map generation: AIMS 04-Sep-2020

### **Pressures and damage**





### Cover of coral and algae





#### **Juvenile corals**





Cyclones





#### **Temperature stress**









## Whitsunday – impacts to coral cover





# Whitsunday – Coral condition 2023





#### Indicator

- Cover change
- Composition
- Coral cover
- Juvenile coral
- Macroalgae
- Coral Index

#### Historically low

Slowly recovering Slowly recovering Most changed Slowly recovering



# Variable condition 2023







#### Major damage, transition to macroalgae

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Trend in hard coral composition





AIMS: Australia's tropical marine research agency.

Access to most recent information

**Double Cone Island** 

#### Major damage, recovery via recruitment







2022









AIMS: Australia's tropical marine research agency.

Access to most recent information https://apps.aims.gov.au/reef-monitoring

#### Minor damage, recovery via growth





AIMS: Australia's tropical marine research agency.

Access to most recent information https://apps.aims.gov.au/reef-monitoring/

### **Southern Inshore Zone 2023**





#### SOUTHERN INSHORE MONITORING PROGRAM



Filling a key data gap by monitoring water quality, coral and seagrass in the coastal waters near Carmila.



Funded by Dalrymple Bay Coal Terminal and Dalrymple Bay Infrastructure.









#### **Temperature stress**









# Southern inshore reefs – cover 2023





Most reefs have very high levels of Macroalgae and low hard coral cover

# Summary of inshore coral communities



Whitsunday Islands:

- Cyclones have been the primary cause of coral cover loss on inshore reefs
- Recovery since cyclone Debbie has been slow but highly variable and most evident where existing corals survived and continued to grow
- Juvenile corals are appearing in good numbers at some reefs but are limited at others where macroalgae have taken hold
- The region has again been exposed to high water temperatures resulting in mass coral bleaching surveys in 2024 suggest minimal impact.

Southern Inshore Zone:

- Most reefs have persistently low coral cover, low numbers of juvenile corals, and high macroalgae cover.
- Henderson Island is an exception and is recovering from severe bleaching in 2020.

#### Access to information



- Annual reports from the MMP available through the Reef Authority website: <u>http://www.gbrmpa.gov.au/our-work/our-programs-and-projects/reef-2050-marine-monitoring-program</u>,
- Up-to-date survey results and data summaries are available through the AIMS website: <u>https://www.aims.gov.au/measuring-change</u>
- These results are a major component of the coral scores in Mackay Whitsunday Isaac Regional Report Card, and the Reef Water Quality Report Card.







Australian Government Great Barrier Reef Marine Park Authority





HEALTHY RIVERS TO REEF PARTNERSHIP MACKAY-WHITSUNDAY-ISAAC





