

HEALTHY RIVERS TO REEF PARTNERSHIP MACKAY-WHITSUNDAY-ISAAC

Working together for healthy rivers and Reef, contributing to a prosperous Mackay-Whitsunday-Isaac region

ACKNOWLEDGEMENT OF COUNTRY

The Partnership acknowledges the continuing land and sea country management of the **Traditional Owner groups** within the Mackay-Whitsunday-Isaac region and Great Barrier Reef whose rich cultures, heritage values, enduring connections, and shared efforts protect the land and Reef for future generations.







KOINMERBURRA

VIBAR



Vision

Working together for healthy rivers and Reef, contributing to a prosperous Mackay-Whitsunday-Isaac region.

Purpose

To provide a complete picture of our region's waterway condition and advocate for improved waterway health.



Objectives

- Engaged partners that collaborate on innovative ideas and actions to improve waterway health.
- Advocate for investment to increase our understanding of waterway conditions to prioritise and inform decision making.
- Identify, collate, integrate, and analyse existing data from waterway monitoring programs and translate it into understandable messages and stories for the public.
- Celebrate and inspire actions that improve waterway health.



10 Years of Data

10 Years of Collaboration

10 Years of Community

10 Report Cards for MWI

10 Tech Reports

Providing locally relevant data at a regional level

Filling data gaps

Investing in the region

Engagement, education, and awareness raising









Regional Report Cards

- Enables management priorities and actions to occur at a regional scale.
- Understand and fill regional data gaps.
- Advocate for regional priorities.
- Community education of local waterway health issues.



Connection to Paddock to Reef

SIMILARITIES

Shared data sources including Catchment Loads Monitoring Program (CLMP) and Marine Monitoring Program (MMP).

DIFFERENCES

P2R uses modelled data and report progress to targets, whereas RRCs use monitoring data and report waterway condition.

RRCs fill data gaps with regional sources and purpose-built monitoring programs.





Where does our data come from?

- Gov't, research, industry, citizen science, Partnership funded
- Over 30 data providers / programs
- More than \$4 million worth of data collated from a range of sources annually
- July 1st June 30th to cover wet season in one reporting cycle







WHAT GOES INTO A GRADE?

To arrive at a grade, indicators are selected based on the environment type (freshwater, estuary, inshore, and offshore marine) and external influences specific to our region. Each indicator is given a score, and these scores are averaged into a final grade that ranges from A (Very Good) to E (Very Poor).

All of our results undergo a rigorous review process with regional and national experts. You can read more about the Report Card by visiting our FAQs online.

Grade Indicator category One or more related

indicators are combined to produce an indicator category

Grades B C Ε D NO MONITORING/ INSUFFICIENT **VERY GOOD** GOOD MODERATE POOR **VERY POOR** DATA Conditions Most conditions do frequently meet not meet guidelines, guidelines, with with most critical most critical habitats severely habitats intact impacted and and close to predeparted from predevelopment levels. development levels.



Regional Overview

- The latest Report Card (released in 2024) revealed a range of waterway health scores from A to C across the region's 18 key graded areas, reflecting results for 5 freshwater basins, 8 estuary areas and 5 marine zones.
- For only the second time in **10 years**, there is no overarching 'D' grade to be seen in the region.
- Region extends from Home Hill in the north (north of Bowen just below Ayr) to Flaggy Rock Creek in the south (south of Carmila).
- Linking freshwater basins, estuaries, and the reef & marine zones.





Key messages 2024 Mackay (sample only)



Water quality grades are 'moderate (C)' for the seventh consecutive year in the O'Connell Basin, and the tenth consecutive year in the Pioneer Basin.

Water quality in the Central Marine Zone scored 'moderate' for the fourth consecutive year, and both coral cover and juvenile recruitment improved.

A trend of decreasing DIN concentrations was evident in the Pioneer Basin, with the score for this indicator improving for a fourth consecutive year.

The Murray/St Helens Creek estuary recorded its lowest chl-a score since the Report Card's inception. Check out our Report Card Technical Results



Additional, in-depth information in our technical results can be used to support project proposals and more!

Pesticides in both the Proserpine and Plane basins are 'very poor (E)' for the seventh year in a row.

Vines Creek estuary was one of only two estuaries that received a grade change this year, improving from 'moderate' to 'good' due to improvements in all water quality indicators.

Key messages 2024 Whitsunday Coastal (sample only)

WHITSUNDAY COASTAL REGION



Don Basin water quality improved from 'poor' to 'moderate' and pesticides improved from 'poor' to 'good'.

Pesticides in the Proserpine Basin were 'very poor' for the seventh year in a row. The main contributors were imidacloprid (an insecticide) and diuron (a herbicide).

Fish barrier and impoundment length scores (habitat modification index) in the Proserpine Basin improved due to the removal of a large sand dam.

In the Don Basin, a significant wetland area, wetland extent scored 'very good'. However, this result included modified wetlands, reflecting the conversion of estuarine wetlands to freshwater wetlands through damming or bunding. Check out our Report Card Technical Results



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Whitsunday Inshore Marine was the only zone to record a grade change in water quality, improving from 'poor' to 'moderate' influenced by decreased concentrations of nutrients, chl-a and the inclusion of pesticide data.

High turbidity was a continued cause for concern to coral communities in the Whitsunday Inshore Marine Zone.

Key messages 2024 Mackay Isaac Coastal (sample only)



Nutrients and sediment in the Plane Basin both recorded score improvements.

Pesticides in the Plane Basin were 'very poor' for the seventh year in a row.

The overall grade for water quality improved at Sandy Creek from 'moderate' to 'good', driven by improvements in pesticides and decreased concentrations of chl-a. It was also the second year in a row that DIN improved at this estuary.

The pesticide grade for Rocky Dam Creek declined from 'moderate' to 'poor' due to increased risk from diuron. Check out our Report Card Technical Results



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Improved fish barrier scores at Sandy Creek estuary were driven by the construction of a rock ramp fishway.

Meadows in the Southern Inshore Marine Zone continued to show evidence of high usage by dugongs and turtles, with numerous feeding trails and animal presence detected during surveys.

MAG



source: Bureau of Meteorology.



Monthly temperature in the Mackay Whitsunday Isaac basin for the 2023 financial year



Figure 74. Annual sea surface temperature (SST). Monthly SST in Mackay-Whitsunday-Isaac in comparison to the long-

Exploring Water Quality – Freshwater Basin (example)

Indicator — Overall Water Quality

Grade 📕 Very Good (81-100) 📕 Good (61-80) 🦰 Moderate (41-60) 🦲 Poor (21-40) 📕 Very Poor (0-20)









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Indicator — Pesticides







Table 1. Results for water quality indicator categories and final water quality index scores in freshwater basins for the 2024 Report Card (2022–23 data).

	2024 Report Card (2022-23 data)			
Freshwater Basin	Sediments	Nutrients	Pesticides	Water Quality Index
Don	59	51	68	59
Proserpine			18	
O'Connell	59	60	37	52
Pioneer	71	59	27	52
Plane	59	33	18	37
Very Poor = 0 to <21 Poor = 21 to <41 Moderate = 41 to <61 Good = 61 to <81 Very Good = 81 to 100				

Very Poor = 0 to <21 | Poor = 21 to <41 | Moderate = 41 to <61 | Good = 61 to <81 | Very Good = 81 to 100 | No score/data gap</p>



2022









Pesticide proportional contribution per freshwater basin



Chl-a in all regional estuaries 2022/23

Chl-a in Gregory Estuary from 2014/15 – 2022/23

Exploring Coral – Marine (example)



Indicator — Overall Coral

Indicator · · Cover Change — Coral Cover – Juvenile Recruitment · - Macroalgae

Grade Very Good (81-100) Good (61-80) Moderate (41-60) Poor (21-40) Very Poor (0-20)







Central Zone coral indicator scores

Central Zone coral overall scores

Check out our Report Card Technical Results



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Utilising the Report Card Technical Results

The Partnership Technical Results provide a high level of detail and context for all presented scores, grades and indices.

The Tech Results may be utilised to:

- Support regional investment (results have been used by Partners in funding applications to support a case for targeted on-ground works)
- Identify regional priorities
- Drive regional decision-making
- Inform research and reporting

The Tech Results provide:

- **Context for each indicator and score** incl geography, climate, and catchment pressures impacting scores.
- Historic graphs showing change over 10 years for each indicator at each site
- Accompanied by *Methods Report* describing site selection and monitoring techniques used for each indicator

Spotlight on Southern Inshore Monitoring Program

- Funded by Partner **Dalrymple Bay Coal Terminal Pty Ltd** (DBCT P/L) and **Dalrymple Bay Infrastructure** (DBI).
- Established to address an identified data gap for the Southern Inshore zone, which historically has been a critical missing piece of regional information. Prior to 2017, there was no information for this zone
- Working towards a **10 Year data set** (now approaching 8 years of data).







2017

2019

2022

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

Coral and pesticides scores 2020 reported for the first time in the 2019 Report Card.

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

DBCT Pty and DBI commit 2023 to funding the program from FY24 to FY26.

Urban Water Stewardship Framework (UWSF)

- The Urban Water Stewardship Framework (UWSF), developed by DESI, is a tool for assessing the level of practice being applied to managing erosion during construction, stormwater runoff, and sewage treatment discharges, relative to best practice and legislative standards.
- UWSF data can be used to assess practice level at local government, through to regional, and whole of Reef catchment scale.
- The latest combined MWI Grade is a
 C minimum industry standard and moderate risk to water quality.







STEMPunks[®] STEM Schools Innovation Challenge – Healthy Rivers to Reef

Schools in the Mackay-Whitsunday-Isaac (MWI) region are taking part in a unique program that aims to inspire students in the fields of STEM, science & sustainability using local waterway data.



- Working to inspire an interest in STEM and environmental science amongst students Years 6 – 9
- Program based on local information (Report Card) and delivered with local Partners in conjunction with facilitator
- Round 1 (Mackay) commenced July 2024 with 500+ students reached
- Supported by Healthy Rivers to Reef, STEM Punks Education and Queensland Government -Engaging Science Grants.











Project Blueprint water quality in the Whitsundays

SCIENCE



TOURISM

Water Quality monitoring in two sites in the Whitsunday Inshore area, Cairn Beach and Tongue Bay, filling a known water quality data gap and supporting science engagement and traditional knowledge sharing.

TRADITIONAL

OWNERS





THANK YOU

