

Photo: Lamberts Beach by Rebecca Hammer



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.

We are proud to work with the Traditional Owners of our Partnership region.



HEALTHY RIVERS TO
REEF PARTNERSHIP
MACKAY-WHITSUNDAY-ISAAC

THE MACKAY – WHITSUNDAY – ISAAC 2025 REPORT CARD

Reporting on waterway health data collected between July 2023 and June 2024



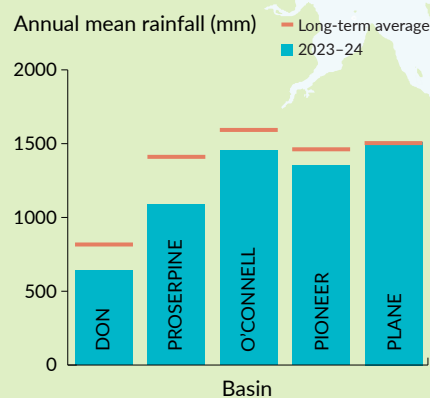
CLIMATE

Rainfall

Rainfall in the region was slightly below the long-term mean in all basins, but still considered average. The Proserpine Basin recorded the greatest difference from the average rainfall at 77% of the long-term mean. During the 2023-24 reporting season, annual rainfall in most basins was lower than the previous reporting year, except for Plane Basin which recorded similar rainfall levels. The Mackay-Whitsunday-Isaac (MWI) region experienced high rainfall in July 2023.

Temperature

Since records began in 1910, Australia's climate has warmed by 1.5°C, with every decade warmer than the one before since 1950. Nationwide, the 2023-24 financial year was the warmest on record. This was reflected locally, with all basins in the MWI region experiencing annual air temperatures that were very much above average (within the 90th percentile of the long-term average). Much of the region was also impacted by high sea surface temperatures with accumulated heat stress increasing the likelihood of severe bleaching. The fifth mass coral bleaching event to occur in the Great Barrier Reef in the past 10 years was declared during this reporting period, in March 2024.



ABOUT THE REPORT CARD

This Report Card assesses the condition of waterways in the MWI region based on data collected between **July 2023 and June 2024**.

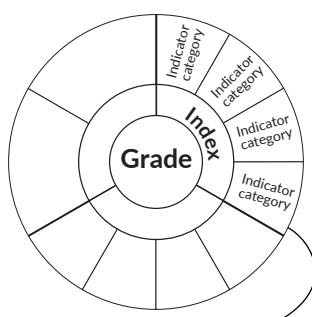
We assess the condition of freshwater, estuary, and marine environments, and include human dimensions such as cultural heritage, litter and urban water management.

By understanding how climate, population, development, and land use affect our waterways at a regional level, we can inform management responses and actions tailored to our local area. We aim to improve or maintain ecological health, while also supporting the important industries and social systems that rely on our waterways.

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 from 1 to 100, 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.



One or more related indicators are combined to produce an indicator category

Grades

A	B	C	D	E	
VERY GOOD	GOOD	MODERATE	POOR	VERY POOR	NO MONITORING/INSUFFICIENT DATA
100-81	61-80	41-60	21-40	0-20	

Conditions frequently meet guidelines, with most critical habitats intact and close to pre-development levels.

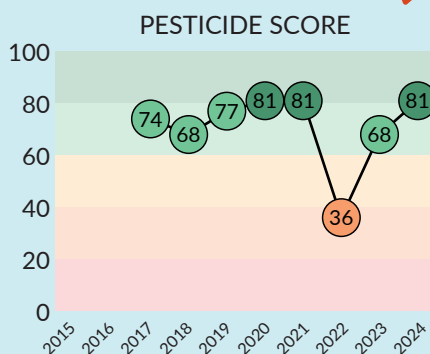


Most conditions **do not meet guidelines**, with most **critical habitats severely impacted** and departed from pre-development levels.

RESULTS OVER TIME

This year, we have included data trends for indicators of interest for the first time!

Note: Graphs are extracted from the 2025 Technical Report and may appear without supporting context and information. For full detail and the complete suite of graphs for each report card grade please refer to the 2025 Technical Report, available online at healthyriverstoreef.org.au



WHERE DOES OUR DATA COME FROM?

We use the best available science and integrate a range of Reef-wide and regional monitoring programs from governments, industry, research organisations, and citizen science groups.

We draw on information from existing and Partnership-funded monitoring programs, which vary in their data collection cycles. Most of the data used in this Report Card is collected annually, however there are some data sets that are only collected every three to four years depending on what's appropriate for the indicator. In these cases, we assess conditions based on when the data was last collected.

FILLING VITAL DATA GAPS

The [Southern Inshore Monitoring Program](#) is one of our key Partnership-led projects. It was established in 2017 to collect data on water quality, seagrass and coral in the Southern Inshore Marine Zone. Prior to this program, there was very little data collected in this area. The Report Card is a key driver in filling this knowledge gap, with continued funding and support from Dalrymple Bay Coal Terminal Pty Ltd and Dalrymple Bay Infrastructure. Read more on page 13. ➡



CHECK OUT OUR NEW ONLINE DASHBOARD



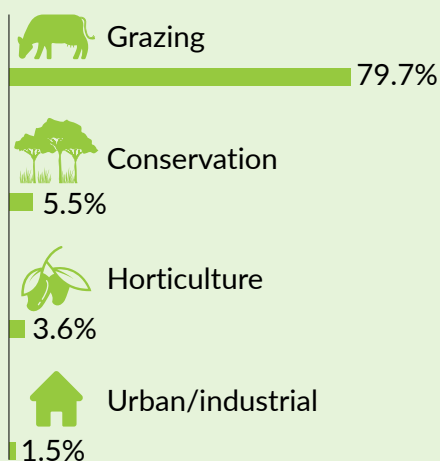
We've collated 10 years of reporting data into an interactive online dashboard.

FRESHWATER AND ESTUARY



DON BASIN

LAND USE



KEY TREND

Since Report Card inception there has been a general increasing trend in Chlorophyll-*a* (chl-*a*) concentrations in most estuaries. Chl-*a* is a sign of algal growth in the water and a key indicator of waterway health.

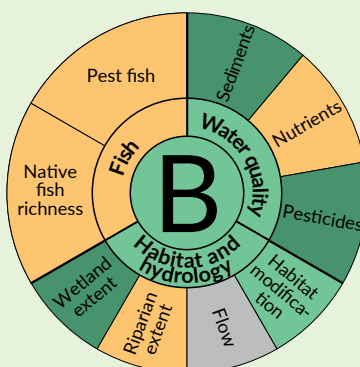
We need further research to understand why there is an increasing trend in our region.

DON FRESHWATER

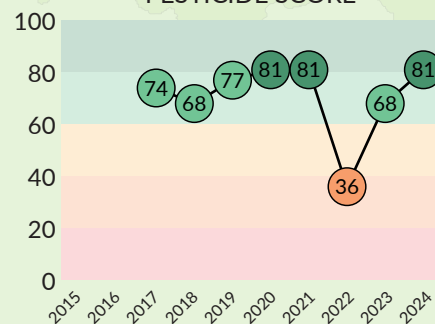
The Don Basin overall grade was good for the eighth consecutive year, and water quality was good for the second year in a row.

Pesticides improved for the second year, influenced by decreased detection of metsulfuron-methyl.

Overall fish score declined. This was due to a decrease in the number of native fish species counted in surveys, and an increase in the proportion of non-indigenous fish, including pest fish. There was an observed increase in alien fish species such as Mosquito Fish, Guppies, and Tilapia.

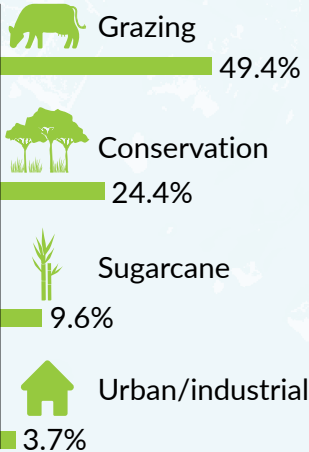


PESTICIDE SCORE



PROSERPINE BASIN

LAND USE



LEARN MORE

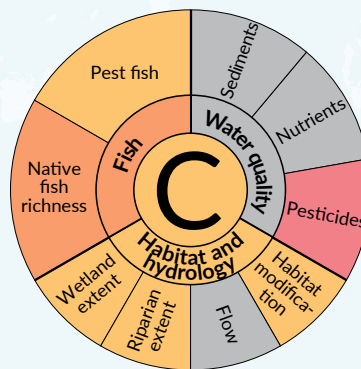
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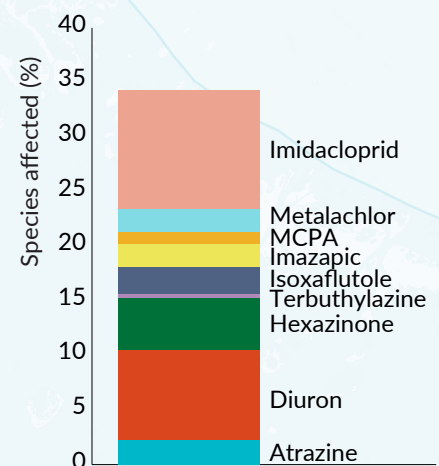
PROSERPINE FRESHWATER

The overall Proserpine Basin grade dropped from good to moderate for the first time in seven years due to its fish score, which went from good to poor.

Pesticides remain a key concern in the Proserpine Basin. The graph (right) shows the proportion of different chemicals contributing to the overall pesticide risk at the sampling site for this basin. Pesticide Risk Metric expresses risk as the percentage of aquatic species that may be adversely affected by the mixture of pesticides.



PESTICIDE RISK METRIC 2023-24

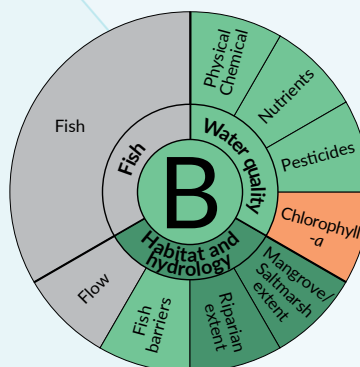


GREGORY RIVER ESTUARY

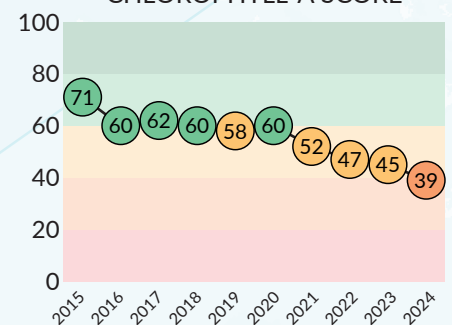
The Gregory River Estuary overall and water quality indicator grade remained good.

However, a general increasing trend for chl-a concentrations resulted in a drop in the chl-a indicator score, from moderate to poor. No obvious reasons have been identified. Continued monitoring may help determine if this is due to natural variability or other causes.

Pesticides in the Gregory River remained good, though the score dropped due to detections of diuron and atrazine at levels that cause risk to aquatic ecosystems.



CHLOROPHYLL-A SCORE



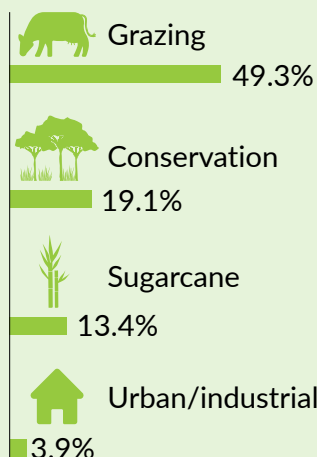
GRADES



FRESHWATER AND ESTUARY

O'CONNELL BASIN

LAND USE

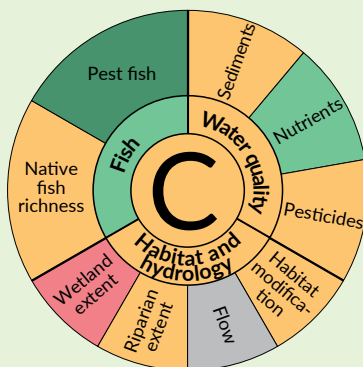


O'CONNELL FRESHWATER

The O'Connell Basin overall and water quality indicator grade remained moderate.

Pesticides improved from poor to moderate, reflecting decreased recorded concentrations of atrazine and imidacloprid.

Nutrients were good and sediment remained moderate, though concentrations were recorded above guideline values in specific months.



LEARN MORE



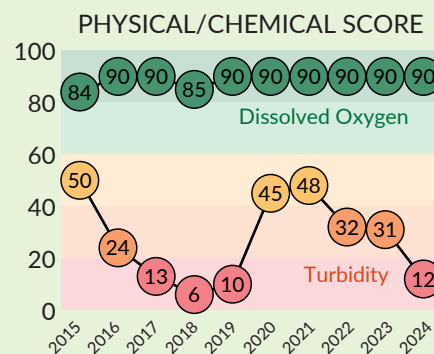
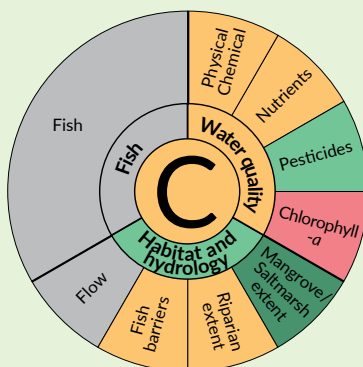
Visit our interactive results dashboard at healthyriverstoreef.org.au

MURRAY ST HELENS CREEK ESTUARY

Murray and St Helens Creek Estuary overall grade and water quality grade remained moderate, however chl-a declined from poor to very poor, the lowest of all estuaries.

Pesticides were good with pesticide risk primarily from the Murray catchment.

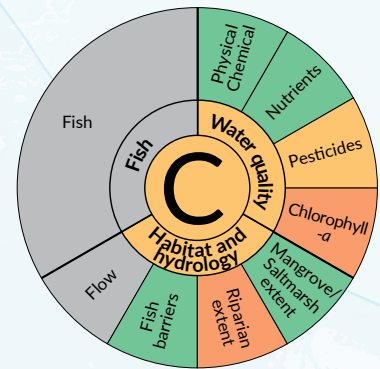
Murray/St Helens experienced a decline in turbidity score which dropped from poor to very poor, the lowest of all estuaries where turbidity was recorded. Dissolved oxygen was very good.



O'CONNELL RIVER ESTUARY

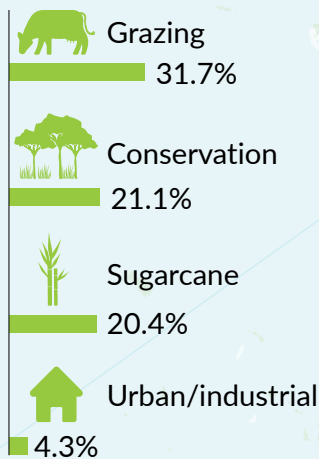
The O'Connell River Estuary overall and water quality indicator grade remained moderate. Nutrients were good for the ninth consecutive year. Dissolved Inorganic Nitrogen (DIN) improved from good to very good and decreased concentrations of FRP (Filterable Reactive Phosphorus) were recorded.

Pesticides improved from poor to moderate with decreased concentrations of imidacloprid, diuron and atrazine. Chl-*a* dropped from moderate to poor, and scores continue a steady declining trend.



PIONEER BASIN

LAND USE

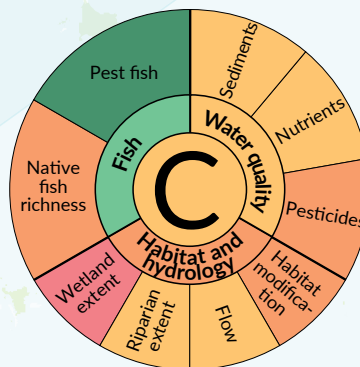
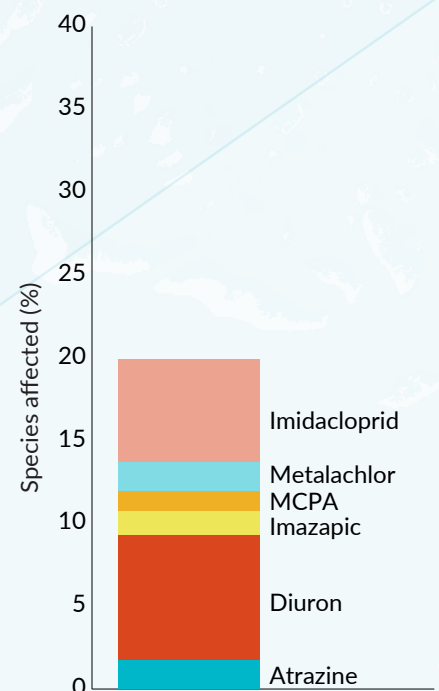


PIONEER FRESHWATER

The Pioneer Basin remained moderate for both overall condition and water quality, however score declines were recorded for pesticides, DIN, and sediment. Pesticides remained a key concern with imidacloprid and diuron key contributors.

The graph (right) shows the proportion of different chemicals contributing to the overall pesticide risk at the sampling site for this basin. Pesticide Risk Metric expresses risk as the percentage of aquatic species that may be adversely affected by the mixture of pesticides.

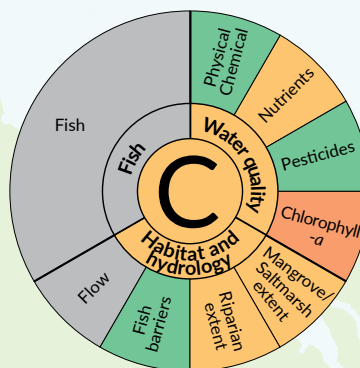
PESTICIDE RISK METRIC 2023-24



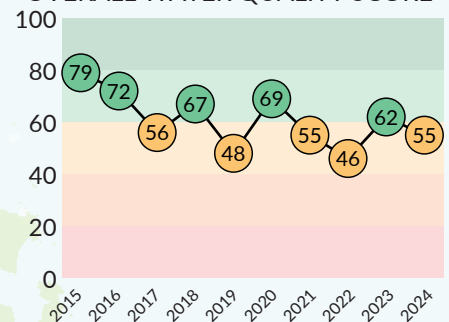
VINES CREEK ESTUARY

Vines Creek recorded the only overall estuary grade change, declining from good to moderate.

The drop in grade was influenced by declines in water quality indicators including nutrients and chl-*a*.



OVERALL WATER QUALITY SCORE



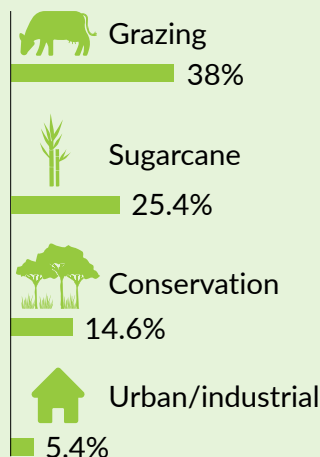
GRADES



FRESHWATER AND ESTUARY

PLANE BASIN

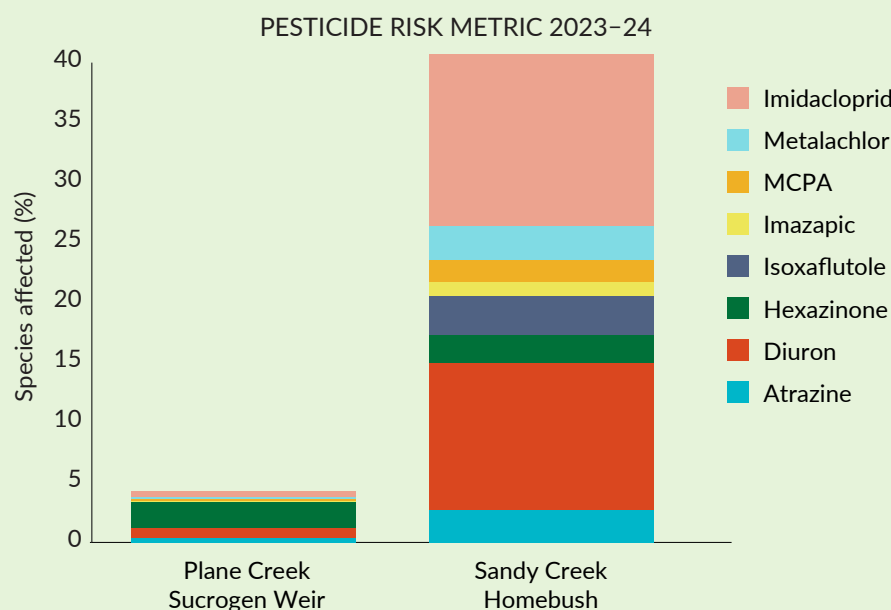
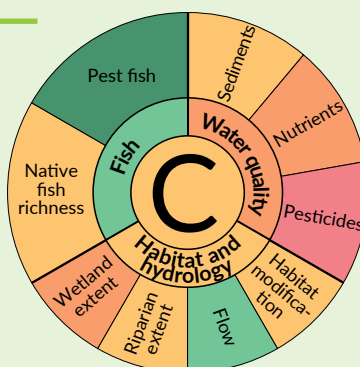
LAND USE



PLANE FRESHWATER

The Plane Basin overall grade remained moderate with a poor water quality grade. This encompasses Sandy and Plane Creeks.

Nutrients were poor and overall pesticides were very poor for the seventh consecutive year. However, at the Plane Creek site (Sucrogen Weir), pesticides improved from moderate to good, influenced by reduced concentrations of imidacloprid and diuron.



This graph shows the proportion of different chemicals contributing to the overall pesticide risk at a particular sampling site. Pesticide Risk Metric expresses risk as the percentage of aquatic species that may be adversely affected by the mixture of pesticides.

POSITIVE SIGN

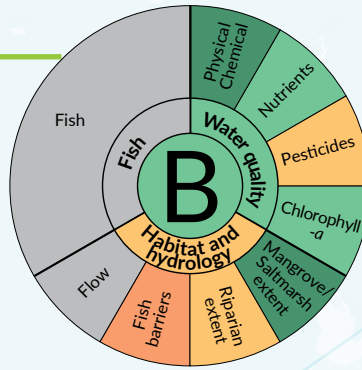
There is now statistical evidence to suggest agricultural extension and farm practice improvements are having a positive impact. There has been a significant decrease of PSII herbicide concentrations (such as diuron and atrazine) and associated pesticide risk at Sandy Creek since 2016.

In parallel, there has been a statistically significant increase in the concentrations of other types of herbicides and insecticides that may be less toxic than PSII herbicides, but still pose a risk to aquatic ecosystems.

PLANE CREEK ESTUARY

Plane Creek Estuary overall and water quality grade remained good.

Nutrients were good but DIN dropped from good to moderate due to increased concentrations. FRP was very good.



LEARN MORE

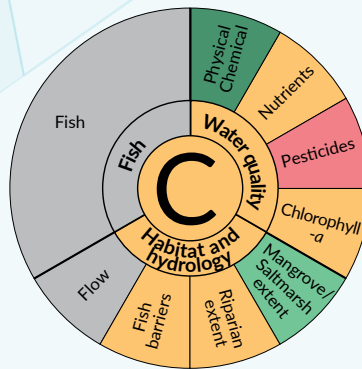


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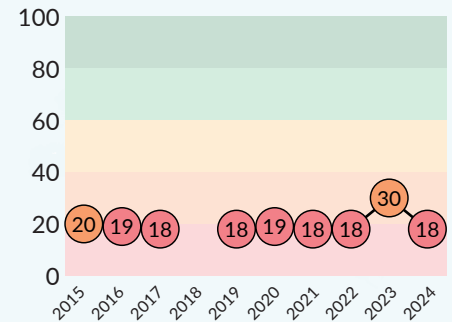
SANDY CREEK ESTUARY

Sandy Creek Estuary overall grade remained moderate, but water quality dropped from good to moderate. This was influenced by a decline in pesticides from poor to very poor, and chl-a which had the largest score decline of all estuaries, from good to moderate.

Pesticides dropped from poor to very poor. Diuron, imidacloprid, and to a lesser extent, metolachlor, imazapic, and atrazine were contributors.



PESTICIDES SCORE

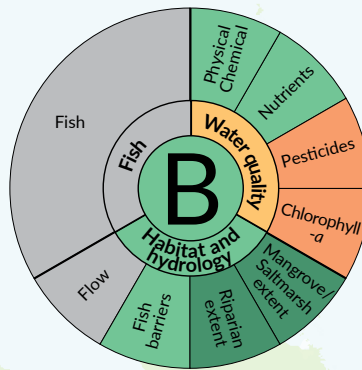


ROCKY DAM CREEK ESTUARY

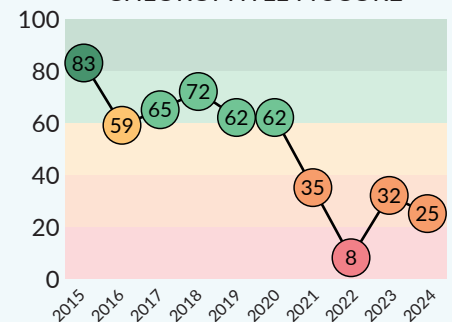
Rocky Dam Creek overall grade remained good. Water quality remained moderate, with pesticides improving from poor to moderate. Diuron was the key contributor to pesticide risk.

There was a score decline for dissolved oxygen from very good to good.

Chl-a has experienced a general decreasing trend over time, down from very good in 2015.



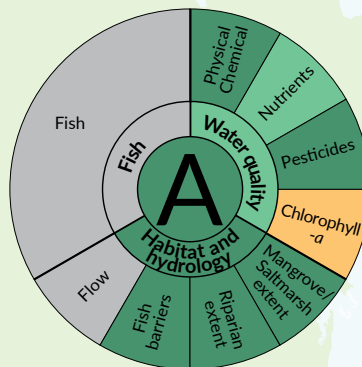
CHLOROPHYLL-A SCORE



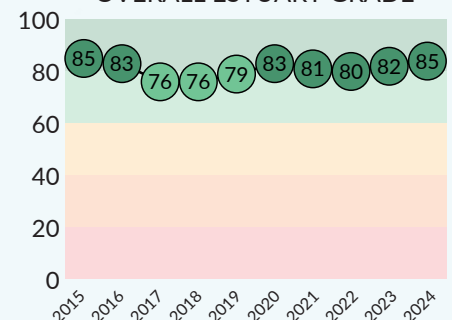
CARMILA CREEK ESTUARY

Carmila Creek Estuary overall grade remained very good.

Pesticides were very good, and nutrients were good. Carmila Creek estuary saw improvements in Chl-a for the second consecutive year and was one of just two estuaries to record an improvement in this indicator.



OVERALL ESTUARY GRADE



GRADES

A

VERY GOOD

B

GOOD

C

MODERATE

D

POOR

E

VERY POOR

NO MONITORING/
INSUFFICIENT DATA

MARINE

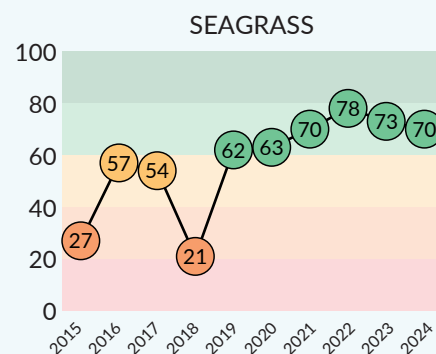
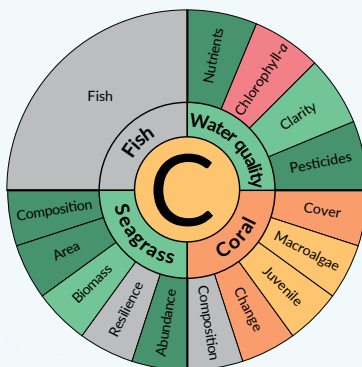
NORTHERN INSHORE

The Northern Inshore Zone recorded the only water quality grade improvement across the four inshore zones, increasing from moderate to good, driven by an improvement in nutrients grade from moderate to very good.

Chl-a, however, declined to very poor, influenced primarily by a grade decline at Holbourne Island dropping from good to poor.

Coral and seagrass indicator grades remain the same as last year, however there was improvement driven by increased juvenile recruitment at both Holbourne Island and Camp Island.

Seagrass remains good for the sixth consecutive year.



LEARN MORE



Visit our interactive results dashboard at healthyriverstoreef.org.au

OFFSHORE MARINE ZONE

NORTHERN INSHORE MARINE ZONE

 15 islands

WHITSUNDAY INSHORE MARINE ZONE

 127 islands

Bowen

Holbourne Island

Gloucester Island

Airlie Beach

Shute Harbour

Long Island

Lindeman Island

Hayman Island

Hook Island

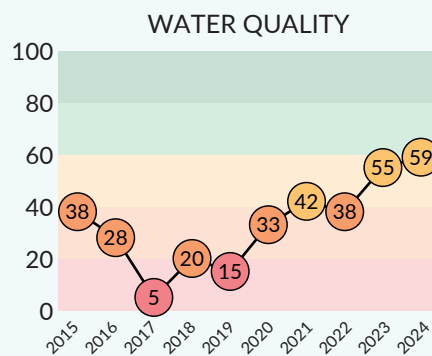
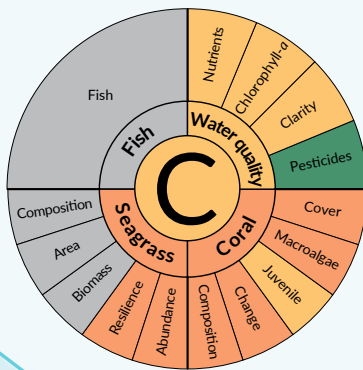
Whitsunday Island

WHITSUNDAY INSHORE

Overall water quality for the Whitsunday Inshore Zone remained moderate, despite nutrients and clarity grades both improving from poor to moderate.

The recovery of coral communities since the severe impacts of Cyclone Debbie in 2017 has been slow. At a reef level, grade improvement at Hayman Island (from moderate to good) was influenced by improved species composition and macroalgae scores, while grade decline at Shute Harbour (from good to moderate) was influenced by increased macroalgae cover and decreased juvenile recruitment.

Seagrass remained poor for the sixth consecutive year, however improvement was seen at Lindeman Island coastal meadow which improved from poor to good. Elevated sea surface temperatures and reduced light availability has hindered recovery, further impeded by low seagrass abundances causing increased sand movement across meadows.



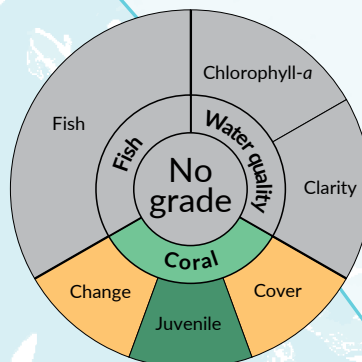
DID YOU KNOW?

Under strong discharge conditions, the inshore waters of the Whitsunday Islands are influenced by our regional rivers (mainly Pioneer and O'Connell rivers) while the offshore marine area is influenced primarily by the Fitzroy River.

OFFSHORE MARINE

Offshore coral remained good for the fifth consecutive year. Scores were driven by on-going very good grades for juvenile coral densities and moderate grades for coral cover and cover change.

This zone does not have a water quality grade, as the dashboard used to report this indicator was decommissioned. We are working to identify new data sources to be included in future reporting years.



A REPORT CARD FIRST

Project Blueprint monitoring data has been included in the Report Card for the first time! Through collaboration with tourism operators, Traditional Owners and community, this project involves the collection of water quality data at two sites in the Whitsundays – Cairn Beach and Tongue Bay.

The inclusion of these two sites in the Report Card has increased the representative sample for water quality in this zone, adding further confidence to the results.

Project Blueprint is proudly funded by the Healthy Rivers to Reef Partnership in collaboration with BHP Mitsubishi Alliance (BMA) and North Queensland Bulk Ports Corporation, with historic funding provided through the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation. Additional project contributors include Red Cat Adventures, Ocean Rafting, JCU TropWATER, the Whitsunday Charter Boat Industry Association, and Reef Catchments.



GRADES

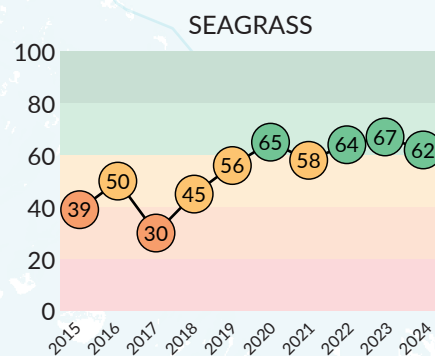
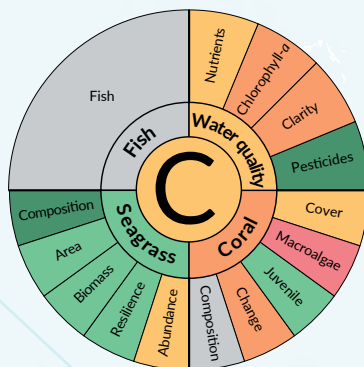
A	VERY GOOD	B	GOOD	C	MODERATE	D	POOR	E	VERY POOR	NO MONITORING/INSUFFICIENT DATA
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MARINE

CENTRAL INSHORE

In the Central Inshore Zone, all water quality indicator grades stayed the same, although there were score improvements for nutrients and clarity. Chl-a continues to be an issue with most monitoring sites in the Central Zone recording poor or very poor.

Overall coral grade declined from moderate to poor, driven by a decline in macroalgae grade from poor to very poor.



123 islands

Blacksmith Island

Ingot Islets

Rabbit Island

Brampton Island

Scawfell Island

Keswick and St Bees Islands

CENTRAL INSHORE MARINE ZONE

Penrith Island

Mackay

Flat Top Island
Round Island

Prudhoe Island

Sarina Inlet

Henderson Island

Temple Island

SOUTHERN INSHORE MARINE ZONE

Middle Island

Aquila Island



70 islands

Clairview

LEARN MORE

Visit our interactive results dashboard at healthyriverstoreef.org.au



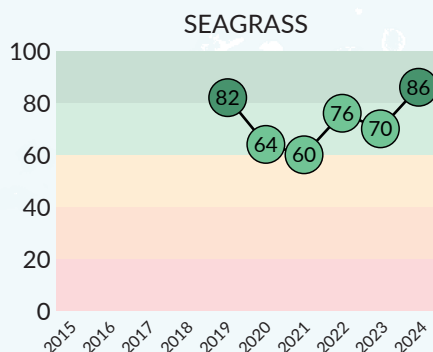
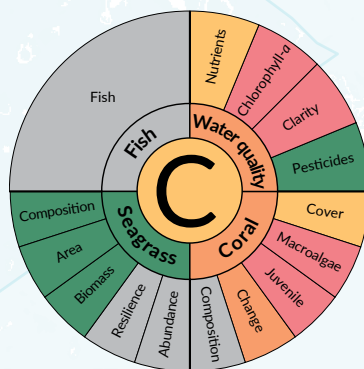
SOUTHERN INSHORE

In the Southern Zone, nutrients improved from very poor to moderate, which resulted in the largest water quality score increase of all the inshore zones.

Water clarity remained very poor for the seventh year in a row. This pattern is likely driven by the geophysical differences in this zone, where the proximity to silt-laden shallows and the large tidal range accompanied by strong currents often causes sediment to become resuspended in the water column.

Coral cover increased despite a severe bleaching event in early 2024 where 3% of corals were bleached, in comparison to 41% of corals bleached during a similar heat stress event in 2020. This may indicate that the coral that survived previous bleaching events represents a hardier population more tolerant to heat waves. Resilience of these ecologically isolated coral communities continues to be challenged by high cover of macroalgae and low density of juvenile hard corals, where persistent algae cover impedes hard coral recruitment.

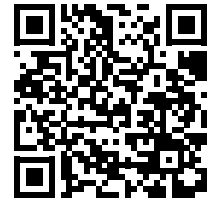
Southern Inshore is the highest scoring zone for seagrass, and the only zone to score very good this year. This was due to the biomass indicator improving from good to very good, bringing the overall seagrass grade up to very good.



Learn more about the Southern Inshore Monitoring Program

This leading water quality, seagrass and coral monitoring program is truly partner-led, addressing a key data gap in the Isaac coastal region. Collaborations like this are only possible with the involvement of a wide range of stakeholders, from our primary funders at Dalrymple Bay Coal Terminal Pty Ltd and Dalrymple Bay Infrastructure, to the many researchers we work with including JCU TropWATER, Australian Institute of Marine Science and the University of Queensland.

Watch the video



MARINE PESTICIDES

Pesticides scored very good across all four inshore marine zones. Diuron and metolachlor were found in concentrations above guideline values in grab samples at Flat Top Island and Sarina Inlet in January 2024. Grab sample results provide reference to passive polar samplers and demonstrate that although potential spikes in concentration can cause short-term risk, dilution in the marine environment is such that the annual risk to marine species is 'very low'.

Long-term trends in the region suggest that concentrations of several PSII herbicides are increasing at monitoring sites within the Great Barrier Reef Marine Park, potentially due to the long half-lives of these herbicides in the marine environment.

GRADES

A

VERY GOOD

B

GOOD

C

MODERATE

D

POOR

E

VERY POOR

F

 NO MONITORING/
INSUFFICIENT DATA



URBAN WATER STEWARDSHIP FRAMEWORK RESULTS

The Urban Water Stewardship Framework (UWSF), developed by the Department of the Environment, Tourism, Science and Innovation (DETSI), 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.

Having a better understanding of how regional councils address nutrient and fine sediment loads from urban landscapes to the Great Barrier Reef lagoon is an important part of working together as a region toward water quality improvements.

The grade shown here is based on assessments undertaken in 2024-25 with councils in the Mackay, Whitsunday and Isaac region. The MWI region scored an overall C grade, which implies a management practice level in line with minimum industry standards. This means complying with necessary regulations (for regulated activities) and applying management practices to non-regulated activities that, although may not be best practice, are in line with those commonly used in Queensland. It is worth noting that maintaining a minimum practice standard may be the appropriate response for some activities based on local constraints and the need to give other management issues more priority.

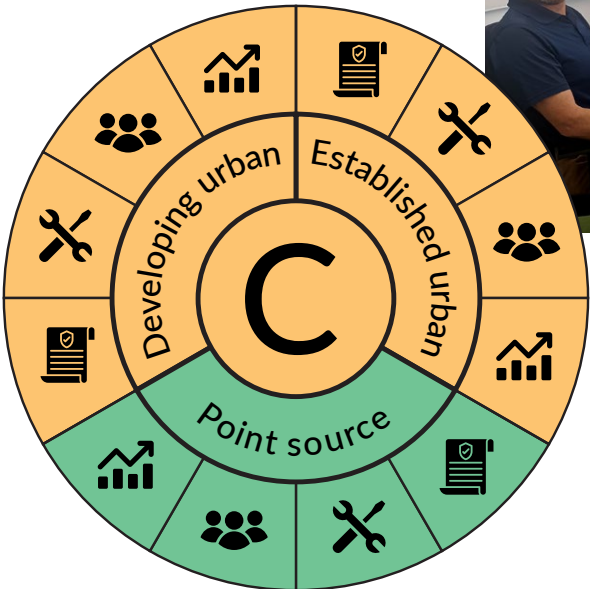
Having a C grade for urban water management poses a moderate risk to water quality, with conditions expected to stay the same or deteriorate slightly under current management practices.

The Developing Urban and Established Urban components of the framework both received an overall rating of C, while the Point Source component received an overall rating of B. The latter represents a level of management considered to be current industry best practice and stewardship in terms of protecting water quality.

All elements in the Developing Urban and Established Urban components received a grade of C in 2024-25. The 'Policy, Planning and Governance' element for Established Urban showed improvement, increasing from a D grade in both 2020-21 and 2022-23, to a C in 2024-25. This change suggests that management activities related to this element have strengthened, and that additional support was provided to the responsible management group to help drive this.



The 2024-25 UWSF grade for the Mackay, Whitsunday and Isaac regional councils.



A	Above best practice		Policy, planning and governance
B	Current best practice		Infrastructure management and maintenance
C	Minimum standard		Social approaches
D	Superseded standard		Monitoring and evaluation

2024 REEFCLEAN RESULTS

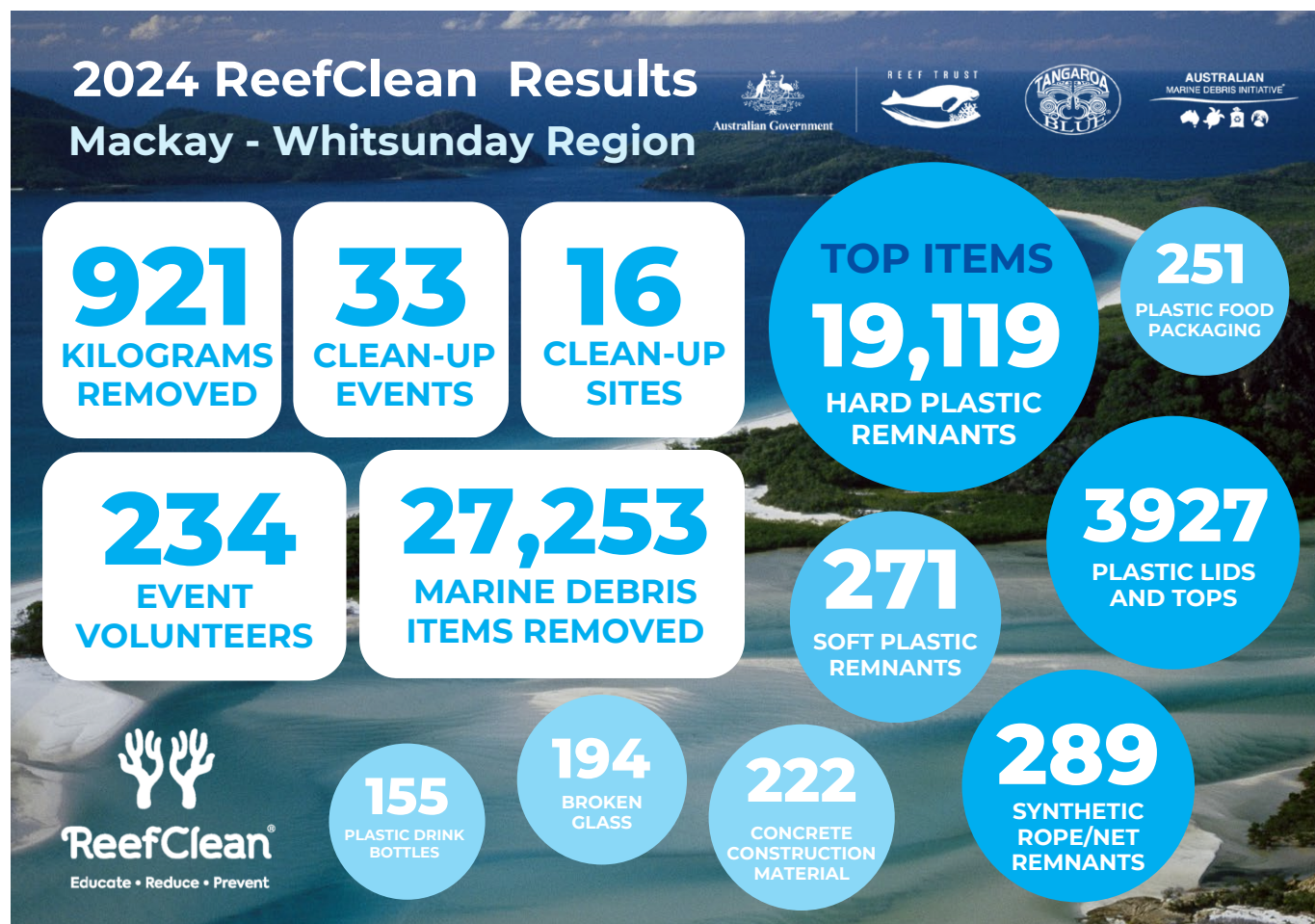
MACKAY WHITSUNDAY REGION

Marine debris is harmful to the Reef ecosystem and impacts a wide variety of marine and coastal wildlife through entanglement, habitat degradation, ingestion and chemical exposure. Human activities that rely on a healthy marine environment, such as fishing, recreation and tourism, are also impacted.

Since 2019, ReefClean has reduced marine debris in the Great Barrier Reef region through a range of targeted and integrated activities, including clean-ups, site monitoring, source reduction plans, data analysis and community awareness initiatives.

Data from the ReefClean program is entered into the Australian Marine Debris Initiative Database, providing useful, regionally specific information about the type and quantities of marine debris found. This data can be used to inform management actions and source reduction plans tailored to the local area.

ReefClean is funded by the Australian Government's Reef Trust and is delivered by Tangaroa Blue Foundation in partnership with a variety of organisations.



A number of report cards are produced in relation to the environmental condition of the Great Barrier Reef, including this one, with different purposes and coverage.

The **Reef Water Quality Report Card**, jointly produced by the Queensland and Australian governments, focuses on tracking towards the **Reef 2050 Water Quality Improvement Plan** targets (www.reefplan.qld.gov.au). The regional report cards form an important part of this framework by providing an annual snapshot of ecosystem health and water quality conditions of local waterways.



ABOUT US

Launched in 2014, the MWI Healthy Rivers to Reef Partnership has a shared vision of healthy rivers and Reef contributing to a prosperous region. The Partnership is a collaboration between community, Traditional Owners, farmers and fishers, industry, science, tourism, and all levels of government who recognise that more can be achieved by working together.

JOIN US

Is your organisation interested in becoming a partner? Contact us to find out how you can help build and shape our community's understanding of waterway health and how we respond.

ACKNOWLEDGEMENTS

The Partnership acknowledges the extensive input into the science behind the Report Card from the Regional Report Card Technical Working Group, the Reef 2050 Plan Independent Science Panel, and our data providers and collaborators, including: Australian Government, Australian Institute of Marine Science, Bureau of Meteorology, Commonwealth Scientific and Industrial Research Organisation, Central Queensland University, Queensland Government, the Great Barrier Reef Marine Park Authority, James Cook University, The University of Queensland, University of New South Wales, North Queensland Bulk Ports, Reef Check Australia, Seagrass Watch, Australian Marine Debris Initiative.



Australian Government



Queensland Government



BHP Mitsubishi Alliance



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Want to learn more about waterway health?
 Visit: www.healthyriverstoreef.org.au

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