



Wet Tropics
Waterways

REPORT CARD 2025

Reporting on data from
July 2023 to June 2024

Celebrating 10 years

Overview

This is the 10th annual Wet Tropics Waterway Health Report Card released by Wet Tropics Waterways.

The pilot report card, which reported on 2014-15 data, highlighted several monitoring gaps. Since then, these knowledge gaps have been addressed with long-term monitoring programs to build a comprehensive picture of changes in waterway health across our region. It also highlights emerging issues and trends.

To view all results in detail, visit our website:

wettropicswaterways.org.au

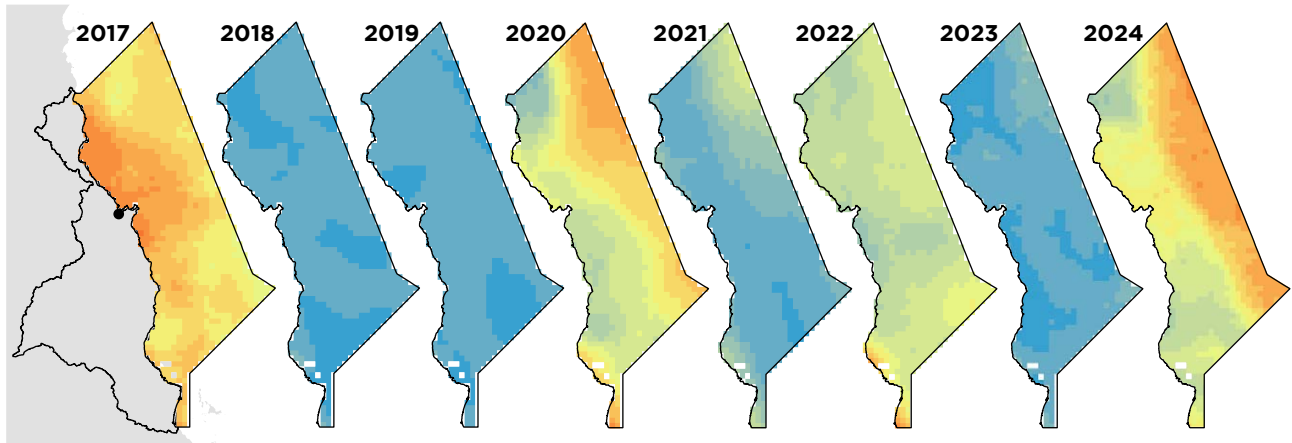
RAINFALL

In December 2023 Severe Tropical Cyclone Jasper caused widespread and significant flooding across the region. After making landfall as a Category 2 cyclone near Wujal Wujal, in the north of the region, it tracked slowly inland, causing prolonged and intense rainfall. More than two metres of rain fell in the Daintree, Mossman and Barron catchments, leading to extensive riverine flooding and landslides.

SEA SURFACE TEMPERATURES

Sea surface temperatures in 2023-24 reached the highest levels for the likelihood of coral bleaching observed in the past five years.

Degree heating weeks
0 <1 <2 <3 <4 <5 <6 <7 <8 <9 <10 <11 <12 <13 <14
low risk high risk



Annual degree heating week estimates for the Wet Tropics inshore and offshore marine environments. This indicates the likelihood of coral bleaching. Data are the annual maximum degree heating week estimates for each ~25 km² pixel. Data sourced from: <https://coralreefwatch.noaa.gov/>.

WATER QUALITY

The floods caused higher loads of nutrients and fine sediment to be flushed into estuaries and the reef. End-of-catchment loads of dissolved inorganic nitrogen (DIN) were at very high levels for most rivers in the region.

Marine zones

Elevated concentrations of nutrients and sediments were recorded during the wet season, peaking in the week following Tropical Cyclone Jasper's landfall. In the north zone, sampling was delayed due to poor weather conditions. However, satellite imagery showed significant flood plumes.

True colour satellite images of the Barron flood plume from 24 December 2023. Source: <https://dataspace.copernicus.eu/explore-data/data-collections/sentinel-data/sentinel-2>





MANGROVES

MangroveWatch assessments indicated a decline in mangrove condition in the Barron estuary due to impacts associated with Cyclone Jasper and in the Russell-Mulgrave due to shoreline erosion. In contrast, mangrove condition in the Moresby remained 'very good' with the canopy cover measure improving from 'good' to 'very good'.

SEAGRASS

While seagrass condition had previously been improving in Trinity Inlet, there was a decline in 2023-24, due to increased rainfall and reduced light availability. In the Moresby estuary, there were signs of improvement in seagrass meadows, associated with restoration efforts, even though overall seagrass condition declined.

CORAL

Coral condition declined across all inshore zones, although grades remained moderate overall.

Inshore coral communities were impacted by storm and wave damage from Tropical Cyclone Jasper (north) and Tropical Cyclone Kirrily (south).

Low salinity levels at Snapper Island, caused by prolonged flooding in the Daintree River catchment and southerly coastal currents, resulted in all corals being killed on the southern reef.

Average total coral cover in the northern zone fell sharply, from 51% to 21%.

FISH

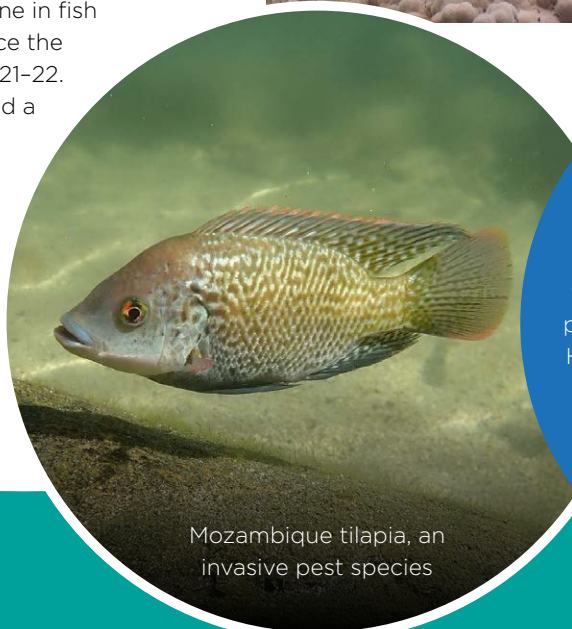
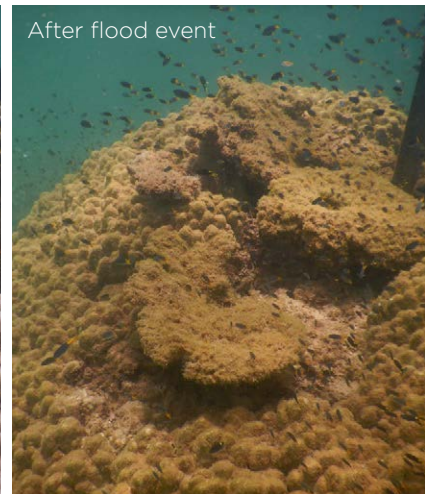
The Daintree Basin received the highest score on the fish index. Several species, including the barhead pipefish and freshwater moray, were only detected in the Daintree Basin. The Bloomfield River cod, endemic to the upper Bloomfield catchment, was also detected.

In contrast, the Murray and Mulgrave basins showed a substantial decline in fish index scores since the last survey in 2021-22. The Mulgrave had a poorer score for introduced fish and recorded two additional pest species — swordtail and Mozambique tilapia.

Before flood event



After flood event



Mozambique tilapia, an invasive pest species

ALGAE

Increases in Chlorophyll a, which is an indicator for the amount of algae in the water column, has increased over the past four years in the Daintree, Moresby and Hinchinbrook estuaries, with Trinity Inlet now also affected. The causes of this trend are being investigated as similar patterns are emerging in other reef regions.

Waterway grades 2023-24

This Report Card is part of a framework that is tracking progress towards the Reef 2050 Water Quality Improvement Plan targets. Go to www.wettropicswaterways.org.au/report-cards for more information.

Great Barrier Reef Outlook Report

Reef wide. Released every 5 years.

Reef Water Quality Report Card

Reef wide (inshore). Released every 1 to 2 years.

Regional Report Cards

Released annually.



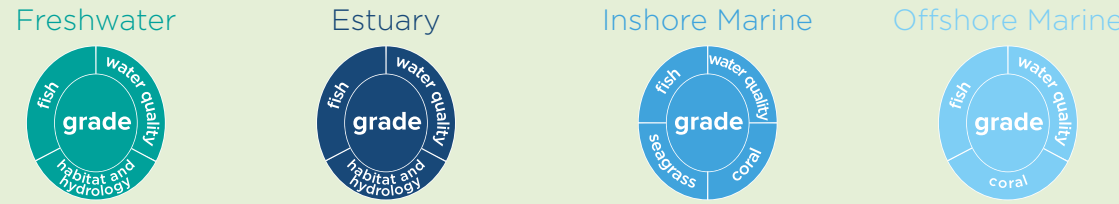
These grades are based on multiple indicators. For more information go to: wettropicswaterways.org.au/report-card

Regional drivers

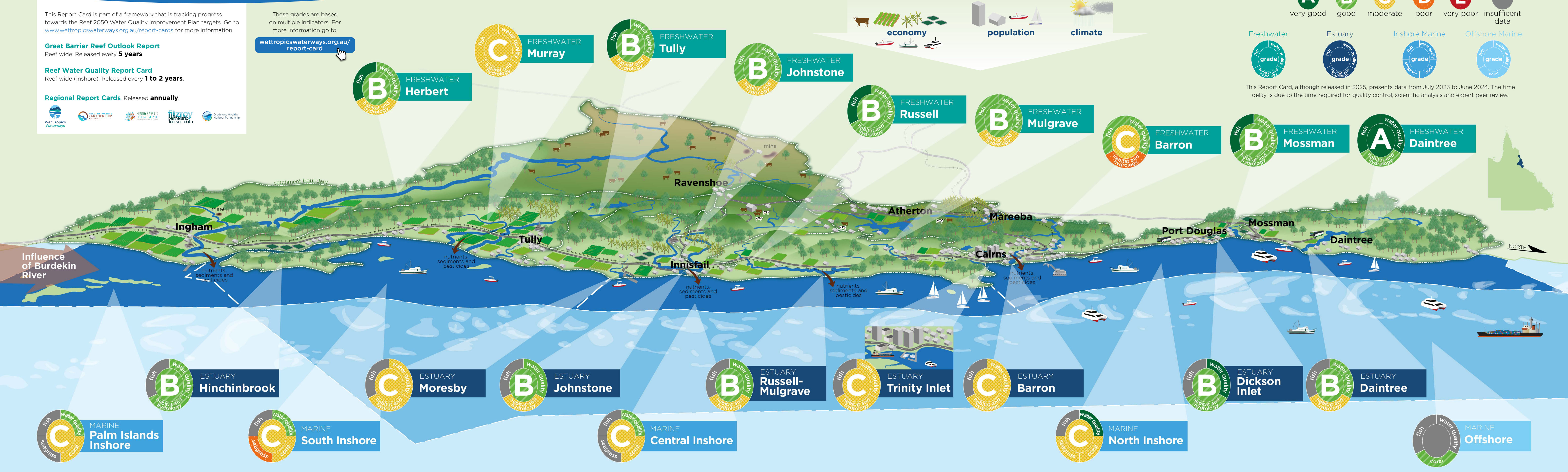
Key pressures on waterways in the Wet Tropics are driven by human activities such as urban and agricultural land use, and weather extremes.



Legend



This Report Card, although released in 2025, presents data from July 2023 to June 2024. The time delay is due to the time required for quality control, scientific analysis and expert peer review.





Wet Tropics Waterways

Wet Tropics Waterways is an initiative of the **Reef 2050 Long-Term Sustainability Plan**. We are one of five regional partnerships that produce a region-specific report card each year to track the health of the local rivers and estuaries that flow to the Great Barrier Reef. Find out more about joining the Wet Tropics Waterways partnership by emailing us at info@wettropicswaterways.org.au or go to our website.

Partnering for healthy tropical waterways and vibrant communities

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Acknowledgement of Country

Wet Tropics Waterways respectfully acknowledges the Traditional Custodians and First Nations People of the land and water on which we work and live.



This map is designed to present the diversity of Traditional Owner groups within the Wet Tropics and does not represent an accurate map of Indigenous tribal boundaries. For matters of Native Title, contact the North Queensland Land Council or view the Commonwealth & Queensland National Native Title Tribunal website for further information. Artist: Melanie Hava.

Thanks to our partners



Queensland Government



Australian Government



Acknowledgements

Wet Tropics Waterways would like to acknowledge the following organisations for their contribution to the Wet Tropics Report Card: Regional Report Card Technical Working Group, Reef Independent Science Panel; Australian Institute of Marine Science; Queensland Government Department of the Environment, Tourism, Science and Innovation; James Cook University; CSIRO; Queensland Government Department of Local Government, Water and Volunteers. We would also like to thank the many other organisations that support and contribute to the release of the Report Card.

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Photo credits

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To find out how you can join the Wet Tropics Waterways Partnership contact:

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