



HEALTHY RIVERS TO REEF PARTNERSHIP

MACKAY-WHITSUNDAY



Mackay- Whitsunday

2014 PILOT REPORT CARD

The Mackay-Whitsunday region

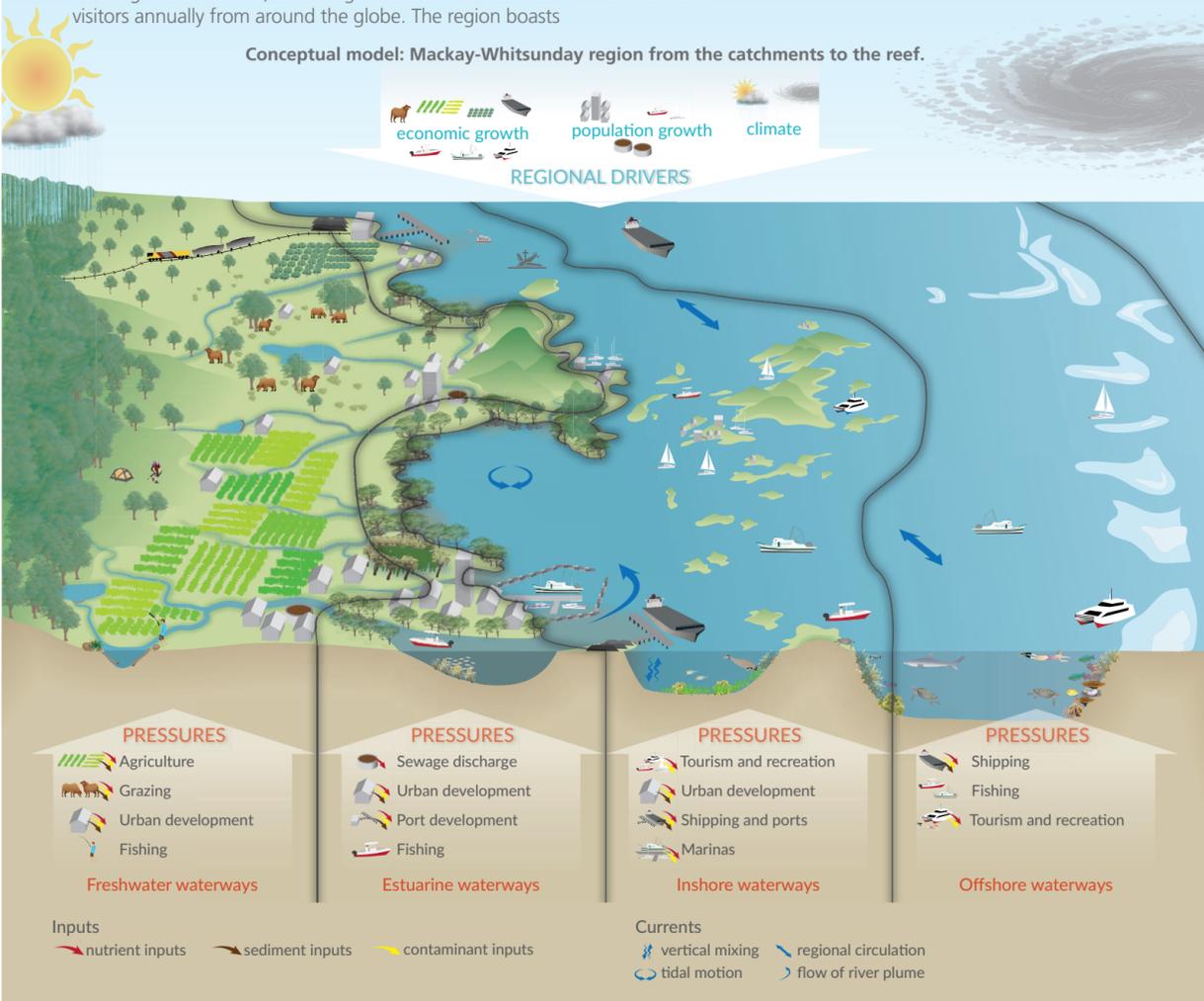
The Mackay-Whitsunday region (the region) is a gateway to the Great Barrier Reef, with 145 tropical islands, and is rich in natural resources that underpin a vibrant community lifestyle and a range of industries.

These natural assets have significant and unique environmental and cultural values, which are at the heart of a strong tourism sector, attracting hundreds of thousands of visitors annually from around the globe. The region boasts

a number of vibrant urban centres, a significant sugarcane industry, and three major ports, as well as smaller marinas and harbours.

The community has a strong and enduring connection with its waterways, from fishing and recreation in freshwaters and estuaries, to diving and boating in the waters of the Great Barrier Reef.

Conceptual model: Mackay-Whitsunday region from the catchments to the reef.



Linkages and pressures | Connecting landscapes and aquatic conditions

Waterways link catchments to the marine environment. This connectivity of the landscape and waterways is vitally important to the ecosystem health of the region and has flow-on effects. The conceptual model above shows the important role of river flows and currents in connecting the region, and the many pressures from activities in the region's catchments and marine areas that can impact on its natural assets.

Often a time lag occurs between the time of these impacts and the time an effect is seen. Frequently, impacts are combined; for example multiple activities may occur at the same time, on top of previous activities as well as extreme weather events (either cyclones or drought). This is known as cumulative impacts. For most ecosystems there is a 'tipping point' – this is the point an ecosystem stops being able to cope with, or adapt to, direct or indirect impacts from pressures, and major changes in the ecosystem occur. In addition to known current impacts, climate change is a recognised major risk for both coastal areas and the Reef. Predicted impacts of climate change include increased frequency of severe cyclones, rising sea levels and increased inundation from storm surges.

Indicators of human activities

Stewardship

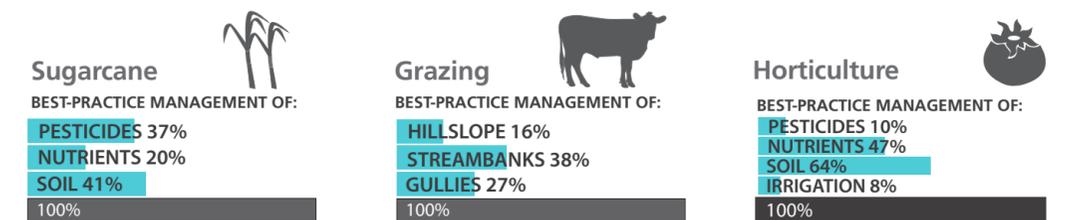
Management of the diverse natural resources in the region is not only the responsibility of our partners, but of the community as a whole. These management efforts are reported below as stewardship.

Agriculture

Agricultural assessments present the proportion of the area of land for each sector under the current best management practice (defined as low or low-moderate risk to water quality) as of June 2014.

Sugarcane and grazing results are for the whole report card area, while the horticulture results are for the Don Basin only. This data is limited to those landholders that successfully implemented Reef Programme (formerly Reef Rescue) Water Quality Grants in the reporting year for the pilot report card region.

Mackay Sugar produces more than 20% of Australia's raw sugar.



These scores represent the uptake of good and improved practices by land managers across the region.

SUGARCANE: 41% of land under sugarcane farming uses best management practices for soil, 37% is under best management practice for pesticides, and only 20% of land is under best management practice for nutrients.

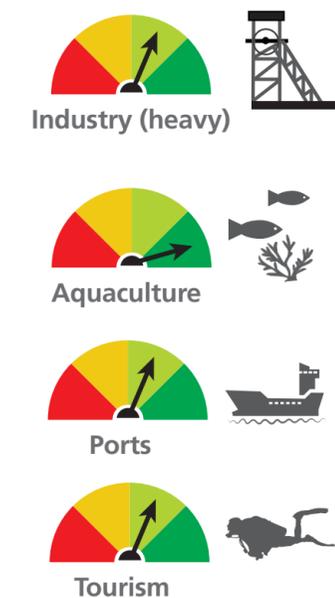
GRAZING: 38% of grazing land is under best management practice for stream banks, 27% of land is under best management practice for gullies, but only 16% is under best management practice for hill slopes.

HORTICULTURE: Of the land under horticulture in the Don Basin, 64% is under best management practice for soil, 47% under best management practice for nutrients, but only 10% under best management practice for pesticides and 8% for irrigation.

Other industries

Stewardship for the below industries was evaluated for a number of criteria, across planning, implementation, and outcomes through consistent reporting frameworks. The overall stewardship rating awarded to the industry is the lowest (i.e. the least effective) of the planning, implementation, and outcomes results for each industry. Legislative requirements were also considered.

Future report cards will include stewardship assessments for urban and fishing. Sugarcane, horticulture and grazing data is from 2013/14. Heavy industry, ports, tourism and aquaculture is 2014/15 data.



Estimated value of \$14B in exports from the 3 major ports.

The region has a large diversity of heavy industry activities, including coal export terminals, sugar mills, meat processing facilities and storage areas for commodities such as mineral sands, petroleum products and grain. These industries are highly regulated and have effective environmental management practices in place to protect ecosystem health and water quality.

Aquaculture in the region produced over 1200 tonnes of product in 2013/14.

The region's aquaculture industry is comprised of a small number of prawn, barramundi and red-claw crayfish farms. The industry is highly regulated, primarily in relation to waste water discharges and the management of biosecurity issues such as disease.

The region's ports accounted for 43% of Queensland's total sea trade in 2013/14.

There are several practices in place to minimise the impact of port-related activities in the region on ecosystem health and water quality. There is a high level of community engagement on environmental issues with significant contribution towards environmental initiatives from port industry bodies.

The region accounts for 43% of all commercial tourism visits to the GBRMP.

The commercial marine tourism industry of the Mackay-Whitsunday region is comprised of a number of operations and activities, including reef cruises and boat tours, organised diving and snorkelling, boat charters, air charters and water based sports. The Whitsunday area has 25 high standard Eco Tourism accredited operations, the highest number of any single location within the GBR.



Report card indicators

The pilot report card indicators have been developed based on an evaluation of existing Queensland environmental ecosystem health and water quality report cards, as well as incorporating local knowledge to ensure the indicators are specific to the region and pressures, and aligned with the Partnership's objectives. This integrated approach to the pilot report card is cutting edge and will allow for greater consistency of interpretation of results across Queensland waterway health report cards.

More comprehensive data and indicators will be released in future years as additional monitoring is undertaken and additional data is available. Indicators and scoring methods will be reviewed and outcomes incorporated into the first report card to be delivered in 2016.

Scoring

Scoring system



Confidence rating

This system rates the level of confidence the technical experts allocate the data feeding into each of the indicators or indicator categories.



Results in the pilot report card should be considered as a preliminary sub-set of indicators used to generate an overall score. Scoring methods will be reviewed before the first report card in 2016.

All indicators and indicator categories are shown in the pilot report card, with grey shading used to indicate data that is not available this year. Further details on the scoring methods for each indicator are outlined in supporting technical information on the Partnership website, visit:

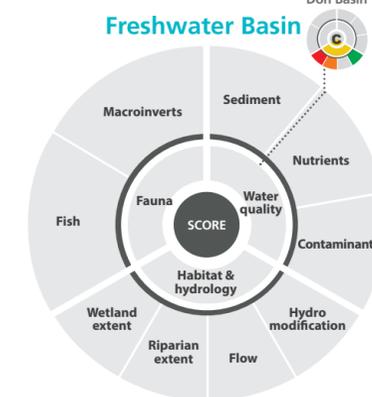
www.healthyrivertoreef.org.au

Using the score card indicators

The coasters below show the indicators that make up the overall score for the relevant Basin, Estuarine, Inshore and Offshore scores on the catchment map opposite.

Basin indicators

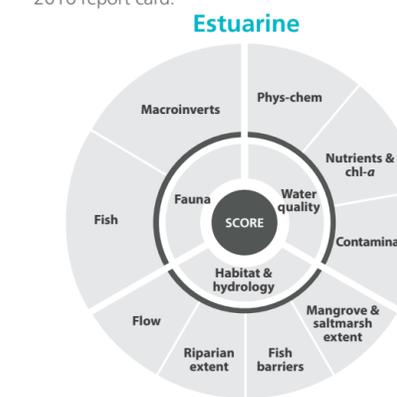
Basin indicators are scored for fauna, habitat and hydrology, and water quality, based on 2013/14 data.



SEDIMENT 4, NUTRIENTS 4, CONTAMINANTS 3, FLOW 3, RIPARIAN EXTENT 3, WETLAND EXTENT 3

Estuarine indicators

Estuarine indicators are scored for fauna, habitat and hydrology, and water quality, based on 2014/15 data. These results will be repeated in the 2016 report card.



PHYS-CHEM 4, NUTRIENTS & CHL-A 4, CONTAMINANTS 3, FLOW 3, RIPARIAN EXTENT 3, MANGROVE SALTMARSH EXTENT 3

Marine indicators

Inshore marine indicators are scored for fish, seagrass, coral, and water quality. Offshore marine indicators are scored for fish, coral and water quality. Both are based on 2013/14 data.



PORT WATER QUALITY 5, CORAL 4, MMP WATER QUALITY 4, SEAGRASS 4



WATER QUALITY 2, CORAL COVER 4, CORAL CHANGE 3, JUVENILE 3, MACROALGAE 4

Waterway health indicators

Basins

Overall grades for the basins ranged from **B (Good)** to **D (Poor)**. Habitat and hydrology ranged from moderate to poor with wetland extent contributing the lowest score in most instances. Water quality data is only available for three of the five basins, the O'Connell, Pioneer and Plane, based on 2013/14 data.

Don **C**
The Don score is **moderate** based on habitat and hydrology with no water quality data available.

Proserpine **C**
The score for the Proserpine is **moderate** based on habitat and hydrology with no water quality data available. The Proserpine basin is the only basin with a good score for wetland extent.

O'Connell **B**
The O'Connell is the only basin with a **good** score due to very good scores for sediment and nutrients in water quality.

Pioneer **D**
The score for the Pioneer is **poor** based on contaminants, hydrological modifications and wetland extent being very poor, while nutrients are very good.

Plane **D**
The score for the Plane is **poor**, consisting of very poor for contaminants, sediment and wetland extent, however hydrological modification is good.

Estuaries

The estuary scores in this pilot report card are based on 2014/15 data.

The overall scores for estuaries is **B (Good)** for the Gregory River, Vines Creek, and Carmila Creek, **C (Moderate)** for Rocky Dam Creek, O'Connell River, Murray and St Helens Creek, and Plane Creek, and **D (Poor)** for Sandy Creek.

Habitat and hydrology scores ranged from good to poor. Riparian extent had the greatest variability of scores ranging from very good for three estuaries to very poor for two estuaries.

The water quality overall score was very good for Vines Creek, good for Gregory and O'Connell Rivers, Murray and St Helens, Plane and Carmila Creeks, and moderate for Sandy and Rocky Dam Creeks, both of which received a score of very poor for contaminants. Sandy, Rocky Dam and Carmila Creeks are strongly influenced by tidal movement, and so have naturally high turbidity.

The fauna indicator for basins, estuaries, and the fish indicator category for marine will be available in future report cards.

Inshore marine

Northern **C**
Water quality is the only indicator category available for this reporting year. The overall water quality score is **moderate**, consisting of moderate water clarity, very poor nutrients and very good contaminants.

Whitsunday **C**
All indicator categories except fish are available for this reporting year. The overall score for the Whitsunday marine zone is **moderate**. This score is based on a moderate score for water quality and coral and poor score for seagrass.

Central **D**
Seagrass is the only available indicator category for this reporting year. The seagrass score is **poor** overall due to poor scores for nutrient status and reproductive effort, and a very poor score for abundance.

Southern
No data is available for this marine zone.

Offshore marine

Offshore **B**
The offshore marine zone score of **good** consists of a very good score for water quality and moderate score for coral.

Rainfall drives the conditions

Our waterways are strongly influenced by rainfall and severe weather events such as cyclones and floods. In a high rainfall year, water quality in the basin and estuaries may be better, however with high rainfall it is likely to reduce marine water quality with river systems being flushed and flood plumes travelling up to hundreds of kilometres. 2013/2014 was a lower than average rainfall year which may have contributed to lower generation of pollutant rates.

Detailed information on the breakdown of results, values and grades and supporting resources to the pilot report card are available online at: www.healthyriverstoreef.org.au

Social satisfaction and value of waterways



The region's communities are strongly connected to their waterways. The social assessment is based on community surveys of approximately 650 respondents, focused on the marine environment. The social results indicate the level of satisfaction that survey respondents feel in terms of their waterways related to their experiences, decision-making (including ability to participate), access, waterway health, and waterway management. The value of waterways presents the results of how respondents value different aspects of the marine environment contributing to their lifestyle, such as aesthetic beauty, opportunities, and access to fresh local seafood. The community's social satisfaction was rated as **B (Good)**. The local community values the waterways as **A (Very good)** in terms of their lifestyle.

Cultural and Economic

The region has a growing economy and has a rich cultural heritage. Cultural indicators will be developed for the next report card in consultation with Traditional Owners and the community. An economic indicator tailored to the region will be developed for the first report card.

Key messages of the pilot report card

Key values and key concerns

This pilot report card has been designed to provide the community with ongoing, relevant information to help improve the long term health of the region's waterways and the adjacent area of the Great Barrier Reef.

The results of the environmental, social and stewardship assessments of the region's waterways paints a mixed picture, with a number of positive results as well as areas of concern.

Importantly, this pilot report card emphasises that the region's community places an exceptionally strong value on waterways for the lifestyle and social benefits they provide. The social assessment also indicates satisfaction in decision-making and experiences, waterway health and management.

The condition of the region's waterways ranged from B's (Good) to D's (Poor). Contaminants have been identified as a key issue in the Pioneer and Plane basins. Wetland extent and riparian vegetation also appear to be a key concern within the region's basins and estuaries. The condition of the Whitsunday inshore marine area (C) is also of concern given this area's importance to the tourism industry.

The lack of data available for the southern inshore reporting zone (east of Carmila) flags the critical need for monitoring programs to be established in this area. In addition, better integration of both coral and seagrass data across the region is required for future report cards.

Stewardship scores within the region are promising but there is still a long way to go to achieve best management practice for all industries within our region.

Format and structure

This pilot report card establishes the format and structure for future report cards. It establishes a benchmark for waterway health, and assesses social satisfaction, community values, and stewardship ratings for the major regional industries for the period of July 2013 to June 2014. The Partnership is seeking community feedback on the content and methods used.

Data

Due to large and varied spatial coverage (i.e. from basins to offshore in multiple catchments), this pilot report card represents the first of its kind for the Great Barrier Reef. The report card has used data from a variety of sources, testing existing methods used by other report cards for analysing and integrating the data for calculation of a score. It highlights significant gaps in understanding, which need to be improved over time. The Partnership will play a key role in facilitating this process. The Reef Water Quality Protection Plan Independent Science Panel has assessed all methods and calculations for the pilot report card.

For further information please go to www.healthyriverstoreef.org.au

Acknowledgement of Country

The Mackay-Whitsunday Healthy Rivers to Reef Partnership acknowledges the continuing land and sea country management and custodianship of the Mackay-Whitsunday region and Great Barrier Reef by Aboriginal and Torres Strait Islander Traditional Owners whose rich cultures, heritage values, enduring connections and shared efforts protect the land and Reef for future generations.



We welcome feedback.

We invite your feedback on the pilot report card. For more information and to stay up to date, visit our website: www.healthyriverstoreef.org.au

Partnership background and history

The Mackay-Whitsunday Healthy Rivers to Reef Partnership was launched in October 2014 as a collaboration between community, industry, agriculture, science, fishers, tourism, Traditional Owners, and government.

It is founded on a shared vision for the region to ensure the region's rivers and Reef are healthy and contribute to a prosperous and iconic region where people visit, live, work, and play.

The Partnership has used the best available independent science, including results from a range of regional waterway and marine monitoring programs. The Reef Water Quality Protection Plan Independent Science Panel has peer reviewed the program design and pilot report card results to ensure confidence in the results.

The pilot report card will help us as a community to work together to determine how and where we can do more to look after our waterways.

Mackay-Whitsunday Healthy Rivers to Reef Partnership

Partner Acknowledgements



Design and layout

- Jane Hawkey, University of Maryland Center for Environmental Science www.ian.umces.edu
- Jaime Newborn, Reef Catchments (Mackay Whitsunday Isaac) Ltd
- Conceptual Model**, Kate Hodge, Hodge Environmental

Photo credits

Cover/Report: Reef Catchments Limited, Explore Whitsundays, Whitsundays Marketing and Development

Artwork: Ngaro / Gia Traditional Owner Nicky-Bidju Pryor

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