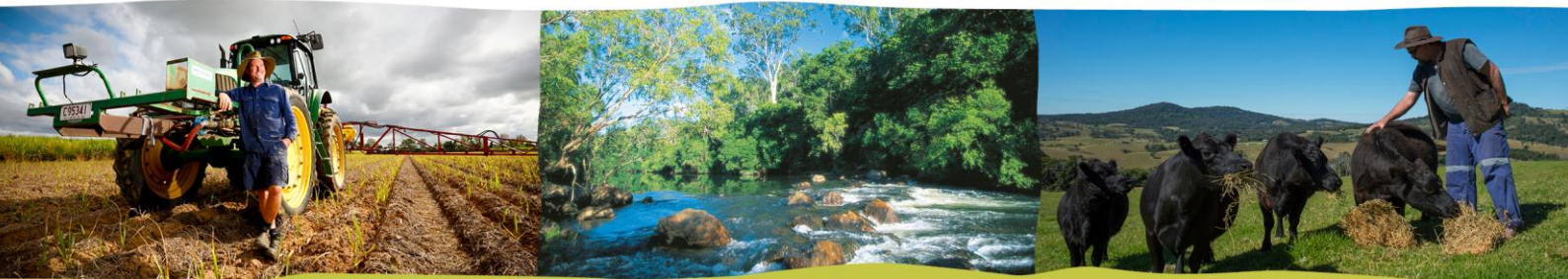


Frequently asked questions



Great Barrier Reef Report Card 2015



Australian Government



Queensland Government

Why does this year's report card look different to last year's?

Report Card 2015 is the first time A, B, C, D, E grades have been used. This makes it easy to see progress towards targets and the condition of the inshore waters of the Great Barrier Reef. It is also more consistent with other regional report cards in Queensland. Previous report cards have used the same five tier scale, but used categories of very good, good, moderate, poor and very poor.

This year's report card also shows trends in marine indicators so it is easier to see at a glance whether inshore marine condition is improving, declining or stable.

The report card has been significantly simplified based on feedback on previous report cards and includes clearer key messages. The report card is also complemented with other communications products (like an animation) to help better communicate the key messages.

What are the highlights?

Report Card 2015 shows some real positives, but also some areas where more effort is needed.

Positive areas:

- almost half the horticulture and grains land across the Great Barrier Reef catchments is already managed using best management practice systems
- ground cover scored an A overall because the target was exceeded in all regions except the Burdekin, noting however that there are significant areas of low groundcover in the Burdekin and Fitzroy regions due to the drought
- more than halfway to the 2018 targets for sediment and pesticides
- coral and water quality improved from a D to C, in part due to some recent drier years, which gave the reef a chance to recover after a number of floods and tropical cyclones

Areas where more effort is needed:

- an increase in adoption of best management practices is needed in cane and grazing industries
- for the cane industry, more efficient use of fertiliser is needed to improve progress towards the nitrogen reduction target as nitrogen is linked to outbreaks of coral eating crown-of-thorns starfish.

Why are the targets for 2018 when the Reef 2050 Plan has targets for 2025?

The Reef Water Quality Protection Plan has been in place since 2003 and outlines governments' commitments to improve reef water quality. This plan is the basis of the water quality targets and commitments within the Reef 2050 Plan.

The 2018 targets in the Reef Water Quality Protection Plan 2013 are to reduce nitrogen by 50%, pesticides by 60% and sediment (and particulate nutrients) by 20%. These targets are included in the Reef 2050 Plan as a step on the way to the more ambitious 2025 targets to reduce nitrogen by up to 80% and sediment by up to 50% in key catchments.

A review of the Reef Water Quality Protection Plan is currently underway, which includes a review of the targets. This will be completed by mid-2017.

Currently, the targets do not take account of regional differences and may be beyond what the reef needs for some basins. For example, the basins in Cape York are less disturbed than other catchments and it is expected that much lower targets will be needed to ensure reef health in that region. The review will better define the targets at a basin scale and allow better targeting of effort and resources to address key pollution 'hot spots'.

Refinement of the water quality targets will be based on scenario modelling using catchment and marine water quality modelling to provide an understanding of the pollutant reductions that would be needed to achieve the marine water quality guidelines set by the Great Barrier Reef Marine Park Authority. The intention is to establish targets for each of the 35 basins flowing into the reef as part of the Reef Water Quality Protection Plan update in mid-2017.

What period of time does the Report Card cover?

Report Card 2015 assesses the reported results of Reef Water Quality Protection Plan actions up to June 2015.

How do the results compare to last year?

There has been limited progress in the adoption of best management practices which resulted in small average annual pollutant load reductions overall. The best regional result for 2014-15 was an estimated 4% reduction in dissolved inorganic nitrogen in the Burdekin. The Burdekin region also had the highest modelled load reduction for pesticides with 3.6%. The Fitzroy region achieved the greatest reduction in sediment with 1%.

Why is the bleaching event not reported on in this report card?

These results are for 2014-15 financial year and do not pick up the impacts from the worst mass coral bleaching event on record which occurred in the summer of 2015-16. More information on the results of this event will be available in coming months and the outcome will also be seen in next year's report card.

Why are the Fitzroy results not as good as some other regions?

The Fitzroy region is the largest region in the reef catchment – one and a half times the size of Tasmania. Making changes across an area this large is challenging and will take time. The slow progress towards targets is a direct result of the small area of land that recorded improved practices relative to the total size of the catchment.

In fact, it should be acknowledged that the Fitzroy region achieved the greatest reduction in sediment loads compared to other regions (an additional 1% sediment reduction since last year). The recent costings report completed for the GBR Water Science Taskforce showed the Fitzroy would be the most expensive region in which to achieve the targets (\$5.6 billion of the \$8.2 billion total cost), specifically because of the costs of remediating gullies in the region. This indicates the need to continue investing in innovation to find alternative, cost effective solutions that can be rolled out as current actions are completed.

The condition of inshore seagrass in the Fitzroy region declined to very poor in 2014-15, and has generally been on a declining trajectory since 2005-06 as a result of repeated extreme weather events. Abundance remained poor in 2014-15, reproductive effort remained very poor, and nutrient status decreased to poor, which may have been an effect of tropical cyclone Marcia.

Why is the progress towards the load reduction targets slow?

As the modelling is based on the reported area of land management change it reflects incremental improvements in estimated pollutant load reductions.

The reported load reductions are a conservative estimate of reductions, as not all results from all programs are included. It is expected that over coming years, results from additional programs such as the industry led Best Management Practice programs, Reef Trust investments and the Queensland Natural Resource Management Investment Program will be incorporated into the modelling and help demonstrate accelerated progress.

Why is there no data in some areas like Cape York and Burnett Mary?

The Marine Monitoring Program run by the Great Barrier Reef Marine Park Authority (GBRMPA) provides the inshore marine assessment for the Report Card. The program does not assess inshore corals for Cape York or the Burnett Mary region. Remote sensing of marine water quality has not been sufficiently validated in these regions so the data is not used in the Report Card.

Why is there only one management practice indicator for each industry this year?

The management practice indicators were simplified in the Great Barrier Reef summary report card to show an overall average rating. More details about the sugarcane, horticulture and grains management components (pesticides, soil and nutrients) and grazing management components (pastures, streambanks and gullies) are available in the detailed results on the website.

Why aren't the particulate nutrient targets reported?

Progress towards the particulate nutrient targets (particulate nitrogen and particulate phosphorus) is available in the detailed results on the website. These are closely linked to the sediment target which is covered in the summary report card.

Why are riparian and wetlands not included in this report card?

Changes in the extent of riparian vegetation and extent of natural wetlands are only reported every four years. The latest results are detailed in Report Card 2014.

How are the confidence ratings determined?

Assessing and reporting confidence in the report card indicators drives continuous improvement in the program over time. It also shows where there is high or low confidence in different indicators. The Paddock to Reef Coordination and Advisory Group developed a multi-criteria analysis approach to qualitatively score the confidence in each key indicator used in the report card. The approach combines the use of expert opinion and direct measures of error for program components, where available. The Reef Water Quality Protection Plan Independent Science Panel provided oversight and reviewed the method.

Why is the marine water quality confidence score so low?

The Reef Water Quality Protection Plan Independent Science Panel has low confidence in the water quality metric which relies on remote sensing from satellite imagery to assess inshore marine waters. Remote sensing works well for measuring things like ground cover and tree cover. However, it does not perform as well in the inshore marine environment because cloud cover and high turbidity makes it difficult to assess sediment and nutrients.

A new approach is needed for water quality monitoring that responds to significant changes in river flows and pollutant loads.

Priority work will be undertaken to:

- test the e-Reefs marine water quality model for its ability to deliver a better water quality assessment than reporting based on remote sensing
- assess whether actual water quality monitoring data should be included in the report card
- consider including an indicator of light because light is important for coral and seagrass productivity.

The work will start shortly with the aim to complete it for Report Card 2016.

Why have you added coral composition to the marine coaster?

A change to the way in which the marine coral metric is calculated has been introduced for Report Card 2015. These changes were introduced following a review of the Great Barrier Reef Marine Park Authority's Marine Monitoring Program (MMP) in 2013.

Major changes include:

- adding a community composition indicator (e.g. the diversity of coral species)
- introducing thresholds that recognise corals vary across regions
- including data for inshore coral communities from the Australian Institute of Marine Science long-term-monitoring program, which has not been included previously.

What programs contributed to the progress to targets?

Report Card 2015 details the area of land managed using best management practice systems based on improvements reported through the Australian Government Reef Program. Many other programs, including Queensland Government extension activities, Reef Trust projects and industry Best Management Practice programs, are engaging landholders but learning new skills and implementing new farming practices takes time. These programs are expected to report the extent of implemented farm management improvements for Report Card 2016.

Why does ground cover get an 'A' when land clearing has increased?

Maintaining ground cover is critical for improving water quality. The Reef Water Quality Protection Plan 2013 has a target of '*minimum 70 per cent late dry season ground cover on grazing lands*' as this reduces the risk of erosion and runoff. The report card assesses ground cover using satellite imagery analysis of grazing lands. It is important to note this analysis does not report on tree clearing. The ground cover results measure the proportion of bare land and the proportion of land with pastures (green cover) and plant litter (non-green cover). The ground cover reporting data removes the influence of trees and shrubs to provide estimates of ground cover only.

Compliance with Queensland's vegetation management framework is monitored through the [Statewide Landcover and Trees Study](#).

What programs will be picked up in future report cards?

Future report cards will pick up additional land management practice change reported through Reef Trust projects, systems repair projects, industry led Best Management Practice programs, ongoing investment in extension and education, Queensland's Regional Natural Resource Management Investment Program and other projects where data is available.

What improvements are planned?

Additional catchment monitoring sites will also be introduced in 2016-17 and 2017-18. Additional information or indicators may also be included in future report cards linked to the development of the Reef Integrated Monitoring and Reporting Program (e.g. information about the condition of mid and outer shelf reefs may be included in future report cards).

What is the total cost to achieve the 2025 targets in the Reef 2050 Long-Term Sustainability Plan?

Through the 'Costs of achieving the water quality targets for the Great Barrier Reef' project, a consortium of economic and water quality experts estimated the total cost to meet the fine sediment and dissolved inorganic nitrogen targets in four out of the five regions investigated and to make good progress in the Wet Tropics by 2025.

The total cost was around \$8.2 billion; however, the cost reduces significantly to approximately \$3.86 billion for 75% progress towards the targets and falls further to \$623 million for 50% progress.

These costs are significantly lower than their proportional contribution to the full target because the lower targets can be met through a broader selection of lower cost actions.

The costings report was the first time this type of assessment has been done and will help guide future investment decisions. The report also emphasised the need to continue investing in innovation to find alternative, cost effective solutions that can be rolled out as current actions are completed to reduce the overall costs.

How will the costing study help better target investment?

The costings study and a range of other tools will be used to target investment to achieve the maximum pollution reductions and will support future policy and investment decision making linked to the long-term protection of the Great Barrier Reef.

Why is the focus just on farmers and graziers?

While the largest contribution to nutrient, sediment and pesticide runoff is from broad scale agriculture, it is important that all industries minimise runoff to the reef. It is recognised that everyone, not just farmers, need to play their part in improving water quality.

Moving forward, the governments will be working with councils, industry and communities to identify actions they can take to improve the quality of water flowing from the catchment to the reef. This will be picked up in the next Reef Water Quality Protection Plan, which is due to be completed by mid-2017.

Some activities in the marine environment can have locally significant impacts, such as dredging for port operations. These activities are tightly regulated by the Queensland and Australian governments. Actions to further improve management of these activities are included in the Reef 2050 Plan.

What is the Reef Water Quality Protection Plan and how does it relate to the Reef 2050 Plan?

The Reef Water Quality Protection Plan has been in place since 2003 (and was updated in 2009 and 2013) and outlines both governments' commitments to improve reef water quality. It has been adopted into (and is nested under) the Reef 2050 Plan.

The review of the Reef Water Quality Protection Plan has been brought forward from 2018 to June 2017. This will achieve a more complete alignment with the Reef 2050 Plan, and will take account of the recommendations from the Queensland Great Barrier Reef Water Science Taskforce and incorporate the investments being made through the Reef Trust.

The original scope of the Plan was limited to agricultural runoff as this is the primary contributor to water quality impacts. The new scope for the Plan will cover all land based contributions, including urban runoff, point source discharge and industrial discharge. The Reef 2050 Plan will continue to address water quality impacts from activities within the marine environment such as dredging and marine discharges.

The process for reviewing the Reef Water Quality Protection Plan will include updating the Scientific Consensus Statement, developing new targets for the 35 basins that drain into the reef, identifying further actions and updating the five-year joint government investment strategy.

What is the Paddock to Reef program?

The Paddock to Reef Integrated Monitoring, Modelling and Reporting Program (Paddock to Reef program) is a collaboration involving the Australian and Queensland governments, industry, regional natural resource management bodies and research organisations. It is a highly innovative approach to integrating data and information on management practices, catchment indicators, water quality loads and the health of the Great Barrier Reef. The objective of the program is to measure and report on the progress towards the Reef Water Quality Protection Plan's goal and targets.

Approximately \$8 million a year is spent on monitoring, modelling and reporting as part of the Paddock to Reef program. This cost is shared equally between the Australian and Queensland governments. This is a small investment to help safeguard the health of the Great Barrier Reef, a natural wonder which generates about \$6 billion per year for the Australian economy.

How does the Reef Report Card relate to regional healthy waterways report cards and the Reef Integrated Monitoring and Reporting Program?

There are a range of monitoring and reporting products that address the key issues for the Great Barrier Reef. This includes:

- the reef-wide five-yearly Great Barrier Reef Outlook Report, which reports on the overall condition of the reef, factors influencing the reef, management effectiveness and risk
- the annual reef-wide Reef Water Quality Protection Plan Report Card, which reports on progress towards management practice, catchment indicator and water quality targets, as well as inshore marine health
- annual regional report cards, which provide finer scale local information relating to freshwater, estuary and marine condition, and integrate data from local government, ports, universities and other partners
- reporting in response to reef health incidents at variable scales and locations (e.g. bleaching reports).



A key focus over the last 18 months has been improving the coordination and alignment of reef-wide and catchment information to inform regional reporting. The principle is to ensure that data is collected once and used for multiple reporting purposes. Work is also underway to inform the development of new on-line reporting tools to reduce time lags between data collection and the publishing of results, and to improve accessibility to data.

Are the scoring systems the same across different report cards?

Most of the report cards take a consistent approach to scoring, although some earlier regional report cards (Fitzroy and Gladstone) have a slightly different scoring system. The Queensland Government supports a number of regional report card partnerships and is promoting a consistent approach wherever possible. All new report cards are aiming to adopt standardised report card scoring categories, and existing partnerships are considering this as part of regular technical reviews.

Why can't the report card come out more quickly?

To ensure quality results are reported, there is significant work that goes into data collection, validation, analysis, reviews and reporting. The Queensland and Australian governments have committed to releasing the annual Great Barrier Reef Report Card within 12 months of the data collection. The next report card is expected to be released by September 2017.

Why are 'best practices' different between the report card and industry led Best Management Practice (BMP) programs?

Progress towards the Reef Water Quality Protection Plan management practice adoption target is reported using industry specific management practice frameworks (water quality risk frameworks).

Practices are ranked from low risk (innovative practices that have the lowest water quality risk) to high risk (superseded practices that have the highest water quality risk) for sugarcane, horticulture and grains. For grazing, they are ranked from very low soil erosion and water quality risk to moderate-to-high soil erosion and water quality risk. The frameworks allocate a percentage weighting to each practice depending upon its relative potential influence on off-farm water quality. They are evidence based and link to a range of existing research. More details are available in the [water quality risk frameworks](#).

Reef Water Quality Protection Plan - Water Quality Risk Framework

Lowest risk, commercial feasibility may be unproven	Moderate-low risk	Moderate risk	High risk
Innovative	Best Practice	Minimum	Superseded

Industry BMP programs (generalised)

Above Industry Standard	Industry Standard	Below Industry Standard
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Under the industry BMPs (for cane, grazing and grains), most practices that are described as 'at industry standard' align with moderate risk in the Reef Plan framework. Practices that are 'above industry standard' generally align with the moderate-low or lowest risk under the Reef Plan framework. The only major exception is the nutrient standard within the SmartCane BMP which does not currently align with 'best practice' under the Reef Plan framework. Over time, it is expected that this will become industry standard.

Why do we use modelling, not just monitoring?

Monitored pollutant loads leaving catchments vary significantly from year-to-year, mainly due to differences in annual rainfall and runoff. Therefore, catchment modelling is used to estimate the long-term annual pollutant load reductions due to the adoption of improved land management practices. This removes the impact of factors such as climate variability. Research suggests time lags to monitor the improvements from land management practice change could range from years for pesticides up to decades for nutrients and sediments, due to the high level of climate variability. The models use measured changes in on-ground management and well-documented and accepted methods and assumptions. Long-term water quality monitoring data is used to validate and improve the models, continuously improving confidence in the estimates of water quality over time.

Have the results been independently reviewed?

The Reef Plan Independent Science Panel reviews and provides scientific advice on key elements of the Paddock to Reef program including the program design and major outputs such as the annual Reef Report Cards. Technical review and advice, with a focus on coordination and integration are provided by the Paddock to Reef Coordination and Advisory Group. In addition, each part of the program undergoes additional peer and external review processes. For example the Source Catchments modelling framework has been reviewed extensively with independent reviewers finding that the modelling approach is best practice and highly innovative.