

**Consideration of the Auditor General's
Report 20: 2014-15 - *Managing water
quality in Great Barrier Reef catchments***

**Report No. 22, 55th Parliament
Agriculture and Environment Committee
August 2016**

Agriculture and Environment Committee

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Chair's foreword

This report provides the committee's consideration of the Auditor General's Report 20: 2014-15 *Managing water quality in Great Barrier Reef catchments*.

On behalf of the committee, I thank the Auditor General and staff of the Queensland Audit Office, the Department of Environment and Heritage Protection, Agforce and Canegrowers Queensland for their assistance with the committee's examination.

I commend this report to the House.

A handwritten signature in black ink, appearing to read 'Glenn Butcher', followed by a period.

Glenn Butcher MP

Chair

August 2016

Abbreviations

AIMS	Australian Institute of Marine Science
BMP	Best management practice
DEHP	Department of Environment and Heritage Protection
OGBR	Office of the Great Barrier Reef
QAO	Queensland Audit Office
Reef Plan	Reef Water Quality Protection Plan

Recommendation

Recommendation 1

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The committee recommends the Legislative Assembly notes the contents of this report.

1 Introduction

1.1 Role of the committee

The Agriculture and Environment Committee (the committee) is a portfolio committee appointed by a resolution of the Legislative Assembly on 27 March 2015. The committee's primary areas of responsibility are:

- Agriculture and Fisheries
- Environment and Heritage Protection
- National Parks and the Great Barrier Reef.¹

According to section 94(1)(a) of the *Parliament of Queensland Act 2001*, the committee has responsibility within its portfolio areas for -

The assessment of the integrity, economy, efficiency and effectiveness of government financial management by:

- examining government financial documents, and
- considering the annual and other reports of the Auditor-General.

1.2 Referral of the Auditor General's report

Standing Order 194B provides the Committee of the Legislative Assembly shall as soon as practicable after a report of the Auditor-General is tabled in the Assembly, refer that report to the relevant portfolio committee(s) for consideration.

A portfolio committee may deal with this type of referral by considering and reporting on the matter and making recommendations about it to the Assembly.²

On 16 July 2015, the Auditor-General's [Report 20: 2014-15 Managing water quality in Great Barrier Reef catchments](#) was tabled and referred to the committee for consideration and report.

1.3 The committee's processes

For its consideration of the report, the committee:

- received private briefings on 15 July 2015 by Agforce and Canegrowers Queensland on grazing and Smartcane best management programs - both industry-led programs designed to reduce adverse environmental impacts associated with Agricultural industries.
- received private briefings on 11 September 2015 by the Queensland Audit Office (QAO) and the Department of Environment and Heritage Protection (DEHP) on the audit methodology, audit findings and the Government's implementation of recommendations.
- Received a public briefing on 28 October 2015 by DEHP's Office of the Great Barrier Reef on the findings and methodology for the [Great Barrier Reef report card 2014](#). The report card covered the most recent assessment of reef water quality based on assessments of the combined results of all [Reef Plan](#) actions to address water quality in the Great Barrier Reef up to June 2014. The [transcript](#) of the briefing and the department's [PowerPoint slides](#) are available from the committee's web pages. The department's update report provided to the committee on work in response to the Auditor-General's Report No. 20 is also available from the committee's webpages.

¹ Schedule 6 of the [Standing Rules and Orders of the Legislative Assembly of Queensland](#).

² *Parliament of Queensland Act 2001*, s 92(3).

- considered the final report of the Great Barrier Reef Water Science Taskforce,³ which is an expert advisory group established in May 2015 by the Queensland Government.

³ The Great Barrier Reef Water Science Taskforce terms of reference, membership, reports and other information are available at <http://www.gbr.qld.gov.au/taskforce/>.

2 The audit report

Auditor-General's Report No. 20 presents the findings of a performance audit by the Queensland Audit Office (QAO) to determine whether the adverse impact of broad scale land use on the quality of water entering the Great Barrier Reef is declining. The following information is from the audit report.

The Great Barrier Reef (the reef) is one of the world's great natural attractions, the world's largest coral reef system and an area of rich biological diversity. The reef supports Queensland's regional economies, contributing \$5.6 billion per annum through tourism, recreation, commercial fishing and scientific research.

The reef is impacted by 35 major catchments draining 424,000 square kilometres of coastal Queensland. Agriculture within these catchments contributes another \$4.7 billion to Queensland's economy annually, predominantly through grazing and sugarcane production.

Reef degradation

The Australian Institute of Marine Science (AIMS) reported a loss of approximately 50 percent of coral cover between 1985 and 2012 for reefs adjacent to developed coasts with no observed decline in coral cover in the relatively undeveloped Cape York region. The AIMS attributed the coral loss to storm damage (48 percent), Crown-of-thorns starfish (42 percent) and bleaching (10 percent).

Inshore coral reef ecosystems are directly and negatively affected by increases in turbidity and sedimentation that reduce the light over inshore coral reefs and sea-grass ecosystems, especially after extreme weather events. Excessive levels of nutrients and sediment caused by run-off from agriculture in coastal areas adjacent to the reef contribute to crown-of-thorns starfish outbreaks and coral bleaching which in turn lead to loss of coral cover.

Monitoring by the Great Barrier Reef Marine Park Authority identified that the inner reefs (closer to shore) had the greatest decline in coral cover, particularly in the Wet Tropics, Fitzroy and Burdekin catchments. Coral health was assessed as very poor in the Fitzroy, poor in the Wet Tropics and Burdekin, and moderate in the Mackay-Whitsunday catchment. Cape York and Burnett-Mary were not assessed.

Water quality and agriculture

In 2008 a multi-disciplinary science group assessment concluded that sugarcane and grazing were the two agricultural industries contributing the most to poor water quality. In 2013, the group noted significant increases compared to pre-European settlement conditions in mean annual sediment loads (3.2 to 5.5 fold), mean annual total nitrogen loads (2.0 to 5.7 fold) and mean annual total phosphorous loads (2.5 to 8.9 fold) from 100 years of farming and land clearing in reef catchments.

The response

Since 2003, the Queensland and Australian governments have coordinated their resources under the Reef Water Quality Protection Plan (the Reef Plan) to improve the quality of water entering the reef and the reef's resilience, by detailing a list of actions and deliverables for lead and supporting agencies. The Reef Plan is a collaboration between the Australian and Queensland governments. Each government has its own actions to deliver in conjunction with natural resource management bodies, agricultural industries and landholders.

Legislation

Queensland's territorial responsibility extends three nautical miles offshore, at which point the Australian Government's responsibilities begin.

The *Environment Protection Act 1994 (Qld)* tasks the Department of Environment and Heritage Protection (DEHP) with reducing the impact of agricultural activities (diffuse source) on the quality of water entering the reef.

In 2012, the Queensland Government ceased enforcing regulations administered by DEHP that required producers (primarily sugarcane farmers and graziers) in specific high risk reef catchments to maintain records on production practices and limit certain practices. This was while industry-led voluntary Best Management Practice (BMP) programs were being developed and implemented. The government at the time committed to review the need for regulations once the BMP programs were able to demonstrate their effectiveness in improving water quality.

Reef Plan goals

The goals of the Reef Plan have shifted over time from halting the decline in the quality of water entering the reef to ensuring that by 2020 the quality of water entering the reef from broad scale land use has no detrimental impact on the health and resilience of the Great Barrier Reef.

The Great Barrier Reef Report Card released in June 2014 stated that the goal to 'halt and reverse the decline in water quality entering the reef' had been achieved.

Rather than broadly addressing all sources of pollution (diffuse and point source), the 2013 Reef Plan focused on reducing diffuse source pollution from agricultural activities such as grazing, sugarcane, grain cropping and other horticultural uses in catchments that flow into the reef.

In March 2015, the Australian and Queensland governments released the *Reef 2050 Long-Term Sustainability Plan*⁴, an overarching strategy for reef management incorporating the Reef Plan.

2.1 Audit findings and conclusions

The Auditor-General's report raised serious concerns about the efforts by successive Queensland governments since 2003 to address poor water quality in the Great Barrier Reef catchments. Central to the lack of progress, the audit flagged the absence of a central authority and clear accountabilities for the delivery and achievement of water quality projects across the government.

As noted in the audit report, the quality of catchment waters has a critical bearing on the health and sustainability of the reef.

The audit report disputed the veracity of claims in the Great Barrier Reef Report Card, released in June 2014, that the goal to 'halt and reverse the decline in water quality entering the reef' has been achieved. It also raised concerns about efforts to improve agricultural land management practices, and whether the right balance between industry-led voluntary approaches and regulatory enforcement has been achieved.

The audit report also noted gaps in knowledge between the paddock and the end of the river catchments, the need to account for climatic variability in modelling and the lack of adequate water monitoring sites.

The key findings from the audit are as follows:

Program governance and design

- There is no single point of accountability for the effective and efficient delivery of Queensland's Reef Plan programs.

⁴ Australian Government and Queensland Government (2015) *Reef 2050 Long-Term Sustainability Plan* [Canberra] [Brisbane] < <http://www.environment.gov.au/marine/great-barrier-reef/long-term-sustainability-plan> accessed 7 July 2016>.

- Queensland's programs, which pre-date the Reef Plan, have not been tailored or adjusted to maximise the achievement of water quality outcomes under the Reef Plan.
- Many of the state's programs have other primary objectives, with water quality a secondary benefit.
- Aggregate spend on Reef Plan at a state level is not tracked and reported and therefore there is uncertainty as to how much is actually spent each year on the Reef Plan. Agencies rely on estimates to report Reef Plan expenditure.
- Water quality improvements rely heavily on research and development. Currently the demands for research are greater than the funding available and there is uncertainty as to whether priority research and development needs are being appropriately addressed.

Land management practices

- The 2013 Reef Plan places a high emphasis on voluntary actions and market-based drivers to achieve outcomes without clear mechanisms to support this approach.
- Industry participation in voluntary programs has been slow, particularly for the Smartcane Best Management Practice program. The rates of participation are not at levels needed to effectively contribute to the achievement of the Reef Plan water quality targets.
- The balance between productivity, profitability and environmental stewardship is tilted heavily towards the former two in order to encourage participation.
- The misalignment of state improvement programs with Australian Government incentive programs limits the ability of BMP programs to drive change.

Monitoring and reporting change

- The modelling is complicated and sophisticated, but well respected and provides the opportunity to model potential impacts of the Australian and Queensland governments' investment and actions to the quality of water entering the reef.
- Although improvements in the quality and accuracy of data used as inputs to the model have been made, there are further gaps to be closed.
- The land management change data are not collected consistently, verified on the ground or independently audited to provide a high level of confidence in their accuracy.
- Erosion caused by gully, scalds and stream banks is not well understood or measured despite research indicating it may contribute sizable amounts of sediment entering the reef.
- Ecological processes between the paddock and marine environments, such as those provided by wetlands, are not extensively monitored and well understood.
- The lack of water quality monitoring sites across the catchments results in lower levels of confidence that the quality of water entering the reef is actually improving.
- There is no long-term monitoring to determine the full extent of pollutants leaching into groundwater.
- The level of uncertainty or confidence in reported data is not communicated in the tier one reef report card and is insufficiently reported in the tiers two and three reports.

2.2 Audit recommendations

The audit report made five recommendations for the Queensland Government to implement:

1. the newly formed Office of the Great Barrier Reef be provided with sufficient and appropriate management and administrative authority, so that it can be properly made

responsible and held accountable for Queensland's reef management strategies and programs.

2. the design and implementation of the suite of programs attributed to the Reef Plan is reviewed to establish they are the most effective and efficient.
3. catchment monitoring is expanded to aid in determining the effectiveness of practice management change and to enhance the confidence in modelled outcomes.
4. a rigorous verification process is applied to data on land management practice change, and deficiencies in model inputs be addressed, to improve confidence in, and the accuracy of, inputs into catchment modelling.
5. unambiguous references be included in the tier one reef report card which disclose the degree of uncertainty and levels of potential variability in the reported results.

3 Findings from the Great Barrier Reef Report Card 2014⁵

To assist its examination of the audit report, the committee sought a briefing by DEHP on the findings of the latest 2014 Reef Report Card released in September 2015. The public briefing was held on 28 October 2015 in the Parliamentary Annexe.

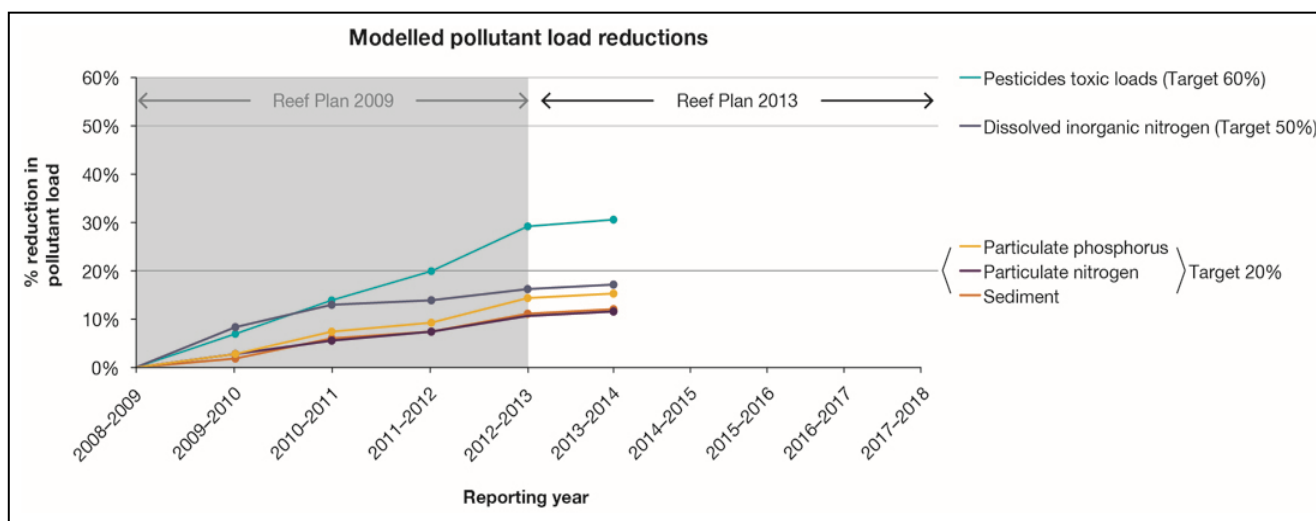
3.1 Key findings

The 2014 Reef Report Card assessed the combined results of all Reef Plan actions up to June 2014 as well as changes in riparian and wetland extent between 2009 and 2013. Overall, the results are consistent with the findings of the QAO audit and showed declining water quality and the need to accelerate the rate of change and drive innovation to meet the water quality improvement targets:

- As at June 2014 the area of land managed under BMP systems for each industry across the Great Barrier Reef was:
 - **sugarcane** - approximately 13% for nutrients (60,000 hectares), 30% for pesticides (123,000 hectares) and 23% for soil (101,000 hectares)
 - **grazing erosion** - approximately 28 per cent for pastures (8.6 million hectares), 47% for stream banks (14.5 million hectares) and 24% for gullies (7.4 million hectares)
 - **horticulture** - approximately 23% for nutrients (20,000 hectares), 45% for pesticides (39,000 hectares) and 71% for soil (61,000 hectares)
- The grains pesticide target was exceeded (91%) in the Burdekin region
- Overall loss of wetlands continued between 2009 and 2013 (330 hectares, less than 0.1%), although the rate of loss was lower than the previous periods
- Overall forest loss in riparian areas continued between 2009 and 2013 (31,000 hectares, 0.4%), with an increased rate of loss compared to the previous periods
- The ground cover target was exceeded across all regions in 2013-2014. However, there were significant areas of low cover, which pose a high risk for sediment loss, particularly in areas of the Burdekin and Fitzroy regions that were drought declared
- Modelled annual average load reductions across the Great Barrier Reef from 2009 to 2014 were:
 - sediment 12%
 - particulate nitrogen 11.5%
 - particulate phosphorus 14.5%
 - dissolved inorganic nitrogen 17%
 - pesticides 30.5%
- The particulate phosphorus target was exceeded (20%) in the Wet Tropics region, and
- The overall condition of the inshore marine environment remained poor in 2013-2014. Inshore seagrass showed signs of recovery in some regions, but remained in poor condition overall. Inshore coral reefs also remained in poor condition, although there were modest improvements in juvenile coral density.

⁵ Australian Government and Queensland Government (2015) *Great Barrier Reef Report Card 2014*, [Canberra] [Brisbane], September, <<http://www.reefplan.qld.gov.au/measuring-success/report-cards/2014> accessed 11 October 2015>.

The figure below from the Reef Report Card 2014 plots progress in reducing pollutant loads relative to agreed reduction targets.



Source: Great Barrier Reef Report Card 2014

3.2 Management practice indicators

Management practices are assessed in terms of their relative water quality risk from Low to High. The area managed using best management practice systems as at June 2014 is defined as the area managed under Low and Moderate-Low risk levels.

A standardised scoring system was developed for each key indicator in the report card. The scoring system is used to access and communicate progress towards the catchment targets using the following categories:

Results—colour coding

Very good	Good	Moderate
Poor	Very poor	No data

Sugarcane

Area of sugarcane lands managed using best management practice systems as at June 2014.

Target: 90% by 2018.

Region	Pesticides		Nutrients		Soil
Great Barrier Reef	30%	Poor	13%	Very poor	23%
Wet Tropics	22%	Very poor	9%	Very poor	45%
Burdekin	26%	Poor	10%	Very poor	17%
Mackay Whitsunday	37%	Poor	20%	Very poor	41%
Burnett Mary	42%		13%	Very poor	39%

Grazing

Area of grazing lands managed using best management practice systems as at June 2014.

Target: 90% by 2018.

Region	Pastures	Streambanks	Gullies
Great Barrier Reef	28% Poor	47%	24%
Cape York	20%	28% Poor	34%
Wet Tropics	21%	82%	3%
Burdekin	30% Poor	62%	26%
Mackay Whitsunday	39% Poor	19%	37%
Fitzroy	22%	35% Poor	20%
Burnett Mary	46%	44% Poor	30%

Horticulture

Area of horticulture lands managed using best management practice systems as at June 2014.

Target: 90% by 2018.

Region	Pesticides	Nutrients	Soil
Great Barrier Reef	45% Poor	23% Poor	71%
Cape York	No data	No data	No data
Wet Tropics (bananas only)	No data	52%	53%
Burdekin	60%	17%	67%
Mackay Whitsunday	No data	No data	No data
Fitzroy	25% Poor	8%	60%
Burnett Mary	36% Poor	32%	74%

Grains

Area of grains managed using best management practice systems as at June 2014. Note: grains are only grown in two regions.

Target: 90% by 2018.

Region	Pesticides	Nutrients	Soil
Burdekin	91%	48%	31% Poor
Fitzroy	70%	54%	42% Poor

4 The Government's implementation of audit recommendations

In its May 2015 response to the audit report, the Queensland Government accepted all five recommendations. To assist the committee, DEHP provided advice on work to address the audit findings and recommendations. This advice is available from the committee's webpages.⁶

The Queensland Government also committed to a range of initiatives to improve reef water quality plus an additional \$100 million in funding (including \$10 million to establish three net-free fishing zones) to improve reef water quality.⁷

The following sections discuss the implementation of the five recommendations from the QAO audit report based on advice provided by DEHP.

⁶ Department of Environment and Heritage Protection, 2015, [Agriculture and Environment Committee – Private briefing Update on progress](#), 28 October.

⁷ Department of Environment and Heritage Protection, 2016, Progress on Queensland Government Great Barrier Reef Commitments < <http://www.gbr.qld.gov.au/documents/commitments-progress.pdf> accessed 11 June 2016>.

4.1 Audit recommendation 1

- *the newly formed Office of the Great Barrier Reef be provided with sufficient and appropriate management and administrative authority, so that it can be properly made responsible and held accountable for Queensland's reef management strategies and programs*

The Office of the Great Barrier Reef (OGBR) was established within DEHP on 11 May 2015 and is responsible for overseeing implementation of the Queensland Government's reef management strategies and programs.

The office implements and coordinates reef management strategies and programs including the Queensland Government's actions under the Reef 2050 Long-Term Sustainability Plan (Reef 2050 Plan) and the Reef Water Quality Protection Plan. The OGBR also provides secretariat support for the Great Barrier Reef Water Science Taskforce.

At the committee's 2015 estimates hearings, Minister Miles advised the committee on the importance of the OGBR to ensuring water quality improvements are achieved as well as the office's budget, staffing and reporting arrangements:⁸

The establishment of the office reflects the importance this government places on protecting the reef and ensuring that actions are in place to meet our commitments to improving the water quality in the Great Barrier Reef.

And:

The Queensland Audit Office performance audit on managing water quality in the Great Barrier Reef highlighted the need for a more coordinated approach to water quality programs and a greater sense of urgency and purpose. The QAO recognised that the Office of the Great Barrier Reef, established by this government, was a positive step towards ensuring true accountability for Queensland's reef management strategies and programs.

I want to emphasise that the Office of the Great Barrier Reef is not a costly statutory body. It is a small, high-powered unit reporting directly to my director-general. The 2015-16 budget for the office is \$4.19 million. The budget covers staffing and operating costs for the office, support for the Great Barrier Reef Water Science Taskforce, support for the Mackay-Whitsunday Healthy Rivers to Reef Partnership and the Gladstone Healthy Harbour Partnership, and the development of report cards for Cairns and Townsville. Several funding sources support the office including \$683,000 from the Saving the Great Barrier Reef election commitment, just over \$1 million from special purpose funding transferred from the Department of the Premier and Cabinet, \$832,000 from within the department and just over \$1.5 million of limited life funding including \$45,000 carried over from last financial year to support the existing and new regional water quality report cards.

There are 19 positions in the office; 12 of the positions have been transferred from within EHP, four have been transferred from DPC and three new positions have been created and are under recruitment. The office includes people with project management, policy communications and stakeholder engagement skills and many have a strong science background to ensure practical outcomes are delivered. My director-general chairs the Great Barrier Reef IDC, which includes senior executives from all relevant Queensland government agencies. The office provides secretariat support for this committee and meets regularly with officers from other government departments to coordinate reef related activities.

⁸ Hon Dr Steven Miles MP, 2015, *2015-16 Estimates hearings transcript*, pp. 48-9.

A new Reef-Interdepartmental committee, chaired by the Director-General of DEHP, has been established to improve coordination and governance for reef improvement activities.

4.2 Audit recommendation 2

- *the design and implementation of the suite of programs attributed to the Reef Plan is reviewed to establish they are the most effective and efficient*

The Great Barrier Reef Science Taskforce was established in May 2015.⁹ The taskforce is providing independent advice to the government about meeting its water quality targets to achieve up to an 80% reduction in nitrogen run-off and up to a 50% reduction in sediment run-off from key catchments by 2025. The taskforce also provides advice on the priority areas for investing the remaining \$90 million of additional Queensland Government funding for the reef. The taskforce is chaired by Dr Geoff Garrett AO FTSE, Queensland Chief Scientist.

The taskforce released an interim report in December 2015, and a final report with recommendations in May 2016.¹⁰ The final report notes the efforts and progress that have been made, and that the results achieved are well short of the targets set.

The taskforce report highlights:

- the scale of the task at hand and the leadership and management challenges ahead
- the need for every sector to contribute to water quality improvements and collaborate including farmers, graziers, developers, the resources sector, community member and tourism
- the need to transform the way the land is managed
- the need for significant additional funding and clearly defined accountabilities with a strong focus on innovation, new technologies and different ways of thinking

The report notes that transformational change is needed over the next five to ten years if the water quality targets are to be achieved, and that reef water outcomes will occur when there is a fundamental shift in the way the land is managed such as alternative crops, better fertilisers, better application of fertilisers and repurposing or land use conversion of some areas.¹¹

The taskforce recommendations include enhanced communication, increased levels of agricultural extension and innovation, expanded monitoring, financial and other incentives, and staged and targeted regulations:

1. Review targets in 2016, feeding into the review of the Reef Water Quality Protection Plan.
2. Substantially improve communication and information to build understanding of the pressures on the reef and to support management practice and social change.
3. Invest in more effective, targeted and coordinated extension to support large scale land management practice change.
4. Establish greater use of incentives and market approaches to support water quality improvements.
5. Implement staged regulations to reduce water pollution throughout the reef regions.
6. Better align science and fund development of new ideas and solutions.

⁹ Department of Environment and Heritage Protection, 2015, Great Barrier Reef Science Taskforce – Terms of reference <available at www.dehp.qld.gov.au accessed 5 July 2016>.

¹⁰ Department of Environment and Heritage Protection, 2016, *Final Report – Great Barrier Reef Science Taskforce*, July. < <http://www.gbr.qld.gov.au/documents/gbrwst-finalreport-2016.pdf> accessed 8 July 2016>.

¹¹ Department of Environment and Heritage Protection, 2016, *Final Report – Great Barrier Reef Science Taskforce*, p.26.

7. Fund additional long-term and finer-scale catchment monitoring, modelling and reporting for improved decision making and adaptive management.
8. Implement two, well facilitated major integrated projects (MIPS) in pollutant 'hot spot' areas to evaluate the most effective combination of tools to inform the design of future programs.
9. Investment planning: Develop a strategic investment plan and establish reef-friendly public-private partnerships.
10. Simplify and strengthen governance and clarify roles and responsibilities within and between the Queensland and Australian Governments.

The Minister in response to questions from the committee during the 2016-17 budget estimates hearings advised:¹²

Modelling of catchment loads for the 2014-15 Reef Water Quality Protection Plan report card—which is due to be released in September 2016—unfortunately shows only limited additional progress in reduction in sediment and dissolved inorganic nitrogen run-off. That is why our new initiatives are so crucial. The government has committed an additional \$90 million over the next four years to improve reef water quality and work towards the targets.

And:

The task force's recommendations will guide government investment over the next four years and it will focus predominantly on on-ground management efforts to reduce sediment and nitrogen run-off. A total of \$21.7 million will be allocated in the 2016-17 year.

The Minister explained that the government will invest up to \$33.5 million for two major integrated projects, plus up to:

- \$9 million for innovation, knowledge and science to support the development, scaling up and rolling out of new technologies and approaches
- \$20 million for increased and improved extension
- \$11 million to ramp up monitoring efforts to provide more comprehensive information to farmers.

The Minister stated:

It is anticipated that this increased targeted investment, together with our ongoing \$25 million a year investment in other reef water quality investments, including the BMP program, will strengthen progress towards the targets.¹³

The government is also seeking to leverage its investment with public and private philanthropic funding.

The committee also questioned the Minister about the resources the Queensland Government is providing for the BMP program, and how support is being integrated into existing regulations that apply to Queensland farmers.

Minister Miles told the committee:¹⁴

- *DEHP will continue to work collaboratively with agricultural industries to identify and assist with the adoption of improved land management practices which will improve the water quality of run-off in reef catchments and improve the profitability of farming businesses*

¹² Hon Dr Steven Miles, 2016, 2016-17 *Estimates hearings proof transcript*, p.60.

¹³ Hon Dr Steven Miles, 2016, 2016-17 *Estimates hearings proof transcript*, p.60.

¹⁴ Hon Dr Steven Miles, 2016, 2016-17 *Estimates hearings proof transcript*, pp.60-1.

- *participation in the voluntary industry-led BMP program has been increasing since 2012. As at 7 July there are 1,090 graziers in the Burdekin, Fitzroy and Burnett-Mary catchments engaging in the Grazing BMP program, which covers nearly 10.6 million hectares.*
- *over 1,300 cane farming businesses covering over 240,000 hectares, which represents over 50 per cent of the cane growing area in reef catchments, are now participating in the Smartcane BMP program, with 199 cane growing businesses covering over 32,000 hectares having also completed the accreditation phase in the three core modules*
- *While the ambitious target set for the cane BMP uptake has not yet been achieved, there has been a significant increase in both participation and accreditations in the program in the 2015-16 year. The sugarcane industry also remains committed to its agreement to update nutrient management standards in the Smartcane BMP by 2017 to more closely reflect the standards required to help achieve reef water quality targets*
- *DEHP has a renewed compliance program in relation to reef protection regulations with a focus on assisting cane farmers in the high priority catchments of the Wet Tropics and the Burdekin to increase the adoption of soil testing practices and ensure they follow the regulated standards for nitrogen and phosphorus fertiliser application*
- *the compliance program recognises the good performance of cane farmers and graziers who have adopted and are using best practice through the Smartcane and Grazing BMP programs. Those producers already accredited under a BMP or equivalent program who continue to apply those standards will not be the focus of the compliance program, and cane farmers who have completed a Smartcane BMP self-assessment and are actively working towards accreditation will not be subject to farm visits for up to 12 months, providing time for them to achieve accreditation.*
- *In 2015 DEHP also committed to three years of funding to support further uptake of the Banana BMP program. Currently, growers farming over 6,200 hectares—about 55 per cent of land under banana production in the Wet Tropics—are participating in the BMP program.*

4.3 Audit recommendation 3

- *catchment monitoring is expanded to aid in determining the effectiveness of practice management change and to enhance the confidence in modelled outcomes*

The taskforce report recommended improvements in water quality monitoring. The Queensland and Australian Governments are investing in the piloting of monitoring at a sub-catchment scale to investigate water quality pollutant changes in response to targeted management.

A steering group co-chaired by the DEHP Director-General and the CEO of the Great Barrier Reef Marine Park Authority is considering how to integrate monitoring programs in the catchment and marine environments and address gaps in the monitoring network.

4.4 Audit recommendation 4

- *a rigorous verification process is applied to data on land management practice change, and deficiencies in model inputs be addressed, to improve confidence in, and the accuracy of, inputs into catchment modelling*

DEHP advised the committee that enhancements to the [Paddock to Reef Integrated Monitoring, Modelling and Reporting Program](#) since 2013 have improved the data capture and reporting process for land management practice changes and the accuracy of catchment modelling. Most land management change data are now spatially explicit which reduces the need for modellers to make assumptions about improvements in sub-catchments. Reported management use changes in the sugarcane industry are now cross referenced against independent data on fertilizer and pesticide usage to improve accuracy. The implementation of this recommendation is ongoing.

4.5 Audit recommendation 5

- *unambiguous references be included in the tier one reef report card which disclose the degree of uncertainty and levels of potential variability in the reported results*

This recommendation was implemented in September 2015. The Reef Report Card 2014 included, for the first time, information to indicate the degree of uncertainty and levels of potential variability (confidence) in key indicators.

5 Committee comment

Improving water quality in reef catchments is crucial to ensuring the future health and survival of the iconic Great Barrier Reef and protecting those coastal communities and industries that depend on it.

The Auditor General's report no. 20 of 2014-15 from a QAO strategic audit of the management of water quality in the reef's catchments has highlighted the pressures on reef catchments and the challenges ahead for government and agricultural industries seeking to reduce sediment, nutrient and pesticide run-off into the reef waters. The Reef Report Card 2014 released in 2015 highlights the scale and extent of water quality improvements that are required to meet agreed targets and the scope for improvements required in farming and land use practices in reef catchments.

The audit made five recommendations to the Government. All five recommendations have been implemented or are the subject of substantial ongoing work. The committee also notes the substantial increase in funding by the Government for programs to improve reef water quality.

The reforms implemented since the audit was released reflect strong commitments by the Government in partnership with the grazing, sugarcane and other agricultural industries and stakeholders to reduce nitrogen and phosphorous run-off and sediment run-off that are urgently required.

The committee notes the good progress being made by agricultural industries in the adoption of BMP programs, with nearly 10.6 million hectares of grazing land in the Burdekin, Fitzroy and Burnett-Mary catchments now covered by the grazing BMP. Over 240,000 hectares (over 50%) of cane growing areas in reef catchments are covered by the Smartcane BMP and 6,200 hectares (55%) of land under banana cultivation in the Wet Tropics is now covered by the banana BMP program.

The establishment of the dedicated Office of the Great Barrier Reef is a positive step forward for ensuring that programs across government are working effectively and that funds invested will help to achieve water quality improvement for the reef catchments.

The report of the Great Barrier Reef Science Taskforce, established in relation to *Recommendation 2* from the audit, has provided further frank advice to the Government towards achieving its ambitious 2025 water quality improvement targets. The committee welcomes the Taskforce's findings, particularly its call for a more collaborative approach by all industries, and recommendations for enhanced communication, increased levels of agricultural extension and innovation, expanded water quality monitoring, greater financial and other incentives, and staged and targeted regulations.

Having a mix of incentives and regulations in place that recognises those farmers who adopt best management practices promises to be a better approach for farmers and graziers on whom the achievement of water quality improvements for the reef will largely depend.

Recommendation 1

The committee recommends the Legislative Assembly notes the contents of this report.

