



# Queensland Government Annual Investment Report 2015-2016

Reef Water Quality Protection Plan





Prepared by: Office of the Great Barrier Reef, Department of Environment and Heritage Protection.

© State of Queensland, 2016. The Queensland Government supports and encourages the dissemination and exchange of its information. The copyright in this publication is licensed under a Creative Commons Attribution 3.0 Australia (CC BY) licence.



Under this licence you are free, without having to seek our permission, to use this publication in accordance with the licence terms. You must keep intact the copyright notice and attribute the State of Queensland as the source of the publication.

For more information on this licence, visit <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Image credits: Tourism Queensland; Great Barrier Reef Marine Park Authority (GRMPA); Queensland Government Department of Environment and Heritage Protection.



# Table of contents

---

Minister's foreword.....	2
Introduction .....	4
Investment summary .....	5
Key achievements .....	6
Measuring success.....	7



# Minister's foreword

---

The Great Barrier Reef is one of Australia's most iconic natural environments and as the world's largest coral reef, it has global significance. It is home to a diverse array of animal and plant life, contributes \$5.7 billion to the Queensland and Australian economies and supports around 69,000 jobs.

The 2015-16 year saw the reef face severe threat from coral bleaching, highlighting more than ever the importance of protecting this natural wonder. We know that coral can recover and better withstand such bleaching events, if other pressures are reduced.

The Queensland Government is taking a number of actions to accelerate our progress in protecting this natural asset. This annual investment report details the achievements made by our ongoing commitment of \$35 million to improving reef water quality in 2015-16. This is the first time that the suite of activity across government has been reported formally and is part of our approach to improving the accountability of government investment and ensuring that cost-effective outcomes are delivered.

This year also saw the Great Barrier Reef Water Science Taskforce undertake its significant program of analysis and consultation to provide advice on how to accelerate progress further to achieve our water quality targets and invest an additional \$90 million over four years.

Work is already underway to implement the recommendations of the Taskforce and the next annual investment plan will combine the ongoing \$35 million with the first year's funding from the additional \$90 million investment, taking our total annual spend in 2016-17 to more than \$56 million.

The 2016-17 year will also see the Queensland and Australian governments work together with our partners to review and update the Reef Water Quality Protection Plan to take account of the advice provided by the Taskforce and map out our shared program of works over the next five years. We know that the cost for achieving the water quality targets is high but we also know that making substantial progress toward those targets is possible with our current level of investment. If we can continue this momentum, we can work to protect this natural wonder.

This annual report is another example of the Queensland Government improving transparency and better planning its investment to ensure we maximise the outcomes for the reef.

## **The Hon. Dr Steven Miles MP**

Minister for Environment and Heritage Protection and  
Minister for National Parks and the Great Barrier Reef









# Introduction

---

The Reef Water Quality Protection Plan is a joint Queensland and Australian government plan to deliver improvements to the quality of water flowing to the Great Barrier Reef. The Queensland Government has an ongoing commitment to invest at least \$35 million per year into activities that contribute to improving reef water quality. This Annual Investment Report provides a summary of the investments that were made in 2015-16.

In 2015, the Queensland Audit Office (QAO) Report 'Managing Water Quality in Great Barrier Reef Catchments' highlighted the need to improve accountability of Queensland's reef management strategies and programs. In response, the Queensland Government established the Office of the Great Barrier Reef (OGBR) which is responsible for overseeing implementation of the government's reef strategies and programs.

The OGBR coordinated the first Queensland Government Annual Investment Plan—*Reef Water Quality Protection Plan (Annual Investment Plan)* for the Queensland Government's contribution to improving reef water quality. This was undertaken in close consultation with other relevant Queensland Government agencies through the Great Barrier Reef Interdepartmental Committee. The Annual Investment Plan committed to producing an Annual Investment Report at the end of each financial year to improve accountability of Queensland's reef investments in response to the QAO Report.

The Queensland Government makes a range of other investments into protecting the reef such as:

- Field Management Program—Department of National Parks, Sport and Racing
- Management of shipping, ports and dredging activity—Department of Transport and Main Roads
- Ensuring the sustainability of future port expansion requirements—Department of State Development
- Ensuring new urban development avoids or minimises adverse impacts on water quality—Department of Infrastructure, Local Government and Planning
- Improving water quality from industrial and point source polluters—Department of Environment and Heritage Protection
- Protecting heritage sites—Department of Environment and Heritage Protection
- Managing fisheries—Department of Agriculture and Fisheries.

These activities are included under the Reef 2050 Long-Term Sustainability Plan (Reef 2050 Plan). The Reef Water Quality Protection Plan forms a nested plan under the water quality theme of the Reef 2050 Plan.



# Investment summary

---

The 2015-2016 Annual Investment Plan detailed \$35.15 million in activities to support the delivery of the Reef Water Quality Protection Plan 2013.

The Queensland Audit Office and the Great Barrier Reef Water Science Taskforce raised concerns about the inclusion of activities within the Queensland Government's \$35 million annual contribution that were not primarily targeted at water quality outcomes.

The first Annual Investment Plan identified areas where improvements could be made to more effectively target investments at water quality outcomes. For example, the Department of Natural Resources and Mines (DNRM) has now developed clearer guidelines for River Improvement Trusts about the types of activities that should be funded to ensure water quality is prioritised. DNRM also worked with regional Natural Resource Management bodies to identify on-ground project opportunities that better align investments to target water quality outcomes where possible. Over future years, further opportunities for realignment and prioritisation will be identified.

The Queensland Government invests in other foundational activities that support the capacity to achieve water quality outcomes or prevent further landscape degradation that would worsen water quality. For example, climate adaptation will support ecosystems to respond to climate change and vegetation management constrains further clearing that could exacerbate erosion.

In 2015-16, program expenditure matched the planned investments with the exception of the Reef Protection Program which funds the Reef Water Quality Science Program, the Best Management Practice Programs and extension services. This program is providing \$55 million over five years with the majority of funding (\$50 million) allocated to the Department of Environment and Heritage Protection. As this is a multi-year funding program, the investment is not evenly spread across the five year program. The Annual Investment Plan included \$10 million to be invested in 2015-16 but around \$8.5 million was actually spent during the financial year. The total \$50 million will still be spent over five years and therefore later years will see a total spend in excess of \$35 million.



# Key achievements



The **Great Barrier Reef Water Science Taskforce** delivered its **final report**

**10** Queensland Government-led Reef 2050 Plan actions **complete** and **35** on track or underway



**Reef Report Card 2014** launched

**3** regional report card partnerships **released** full or pilot report cards



Wet Tropics Healthy Waterways Partnership established

**Environmental values** and **water quality objectives** were **scheduled** for **five reef catchments**



**52%** of cane farming area (400,000 ha), with **3616** producers was managed with participation in the Smartcane BMP




**38%** of grazing area (10.6 million ha), with **1090** graziers was managed with participation in the Grazing BMP



**5** new sugar cane research projects to improve nutrient use efficiency **funded under the EHP—Sugar Research Australia (SRA) research collaboration**

## Regional NRM groups' projects delivered include:

-  **Fitzroy Basin Association** completed **protection** and **restoration activities** in significant **wetlands** and **urban and coastal waterways**.
-  **Burnett Mary Regional Group** completed a **wetland assessment** with assistance from the **Queensland Wetlands Program** and **improved management of 100ha of wetlands on private properties**.
-  **North Qld Dry Tropics** improved **farm productivity, sustainability and landscape resilience** in the **Lower Burdekin delta** by **improving farming practice, knowledge** and **understanding** of the **impacts** of **farm runoff on water quality**.
-  **Terrain NRM in the Wet Tropics region** assisted **Traditional Owner groups** to undertake **water quality improvement activities** such as **enhancing or protecting native vegetation, stream bank rehabilitation works** and **collecting wetland condition data** to inform the **Paddock to Reef Program**.



More than **1450** farmers engaged in extension activities in **priority reef catchments**



**Rural industry bodies** delivered services to **improve irrigation systems** management and promote **precision irrigation techniques**



## Measuring success

The 2015-2016 Annual Investment Plan identified an overarching key performance indicator for the Queensland Government \$35 million investment: to demonstrate a contribution to at least a 1 per cent reduction in sediment, nutrient and pesticide loads to the Great Barrier Reef through its investment. In addition to this overarching objective, key performance indicators were identified for each of the investments that make up the \$35 million contribution.

Reductions in sediment, nutrient and pesticide loads to the Great Barrier Reef are calculated through the annual Great Barrier Reef Report Card. Monitoring information including water quality data and details on investments and the uptake of practice change is collected through the Paddock to Reef program through the financial year. This information is then provided to catchment modellers to estimate the load reductions made through investments against a long-term annual pollutant load. Modelling is used because weather variations year-to-year can cause significant variation in the actual annual loads to the reef, masking the impact of investments.

The data for the 2015-16 year is collected until 30 June 2016 and the modelling and technical work is then undertaken. The Great Barrier Reef Report Card covering the 2015-16 year will be released in mid to late 2017. When this report card is released, it will be possible to report success against the 2015-2016 Annual Investment Plan overarching key performance indicator.

Reporting against each investment detailed in the 2015-2016 Annual Investment Plan and respective key performance indicators is provided in the following table.





Program	Agency	Expenditure	Investment summary	Key performance indicators
<b>PRIORITISING INVESTMENT AND KNOWLEDGE</b>				
<b>Water quality improvement</b>				
Reef 2050 Long-Term Sustainability Plan (Reef 2050 Plan) and Reef Water Quality Protection Plan implementation and governance	EHP	\$1,240,000	The Office of the Great Barrier Reef has coordinated the implementation of the Reef 2050 Plan and Reef Water Quality Protection Plan across the Queensland Government. 10 actions were completed with a further 35 on track or underway. The Reef 2050 Advisory Committee was convened and met five times to provide advice on the implementation of the Reef 2050 Plan.	<p>1. Increase in number of actions underway or complete annually. <span style="float: right;">✔</span></p> <p>This was the first year of implementation of the Reef 2050 Plan with 10 actions completed and a further 35 on-track or underway.</p> <p>2. Annual investment plan produced. <span style="float: right;">✔</span></p> <p>The first Annual Investment Plan for Queensland Government water quality funding was produced and signed off by the Minister for the Great Barrier Reef.</p>
Reef Trust - management and planning	EHP	\$100,000	EHP has worked closely with the Australian Government as it has rolled out Reef Trust funding to ensure alignment with Queensland's objectives and investments.	<p>1. Increase in number of joint projects with the Australian Government annually. <span style="float: right;">✔</span></p> <p>The Queensland Government managed a Phase 2 grazing project on behalf of the Reef Trust.</p> <p>2. Increase in Queensland funds contributed to Reef Trust annually. <span style="float: right;">-</span></p> <p>Queensland did not contribute any funds to Reef Trust in 2015-16, but will in 2016-17.</p>
Reef water quality research and development	EHP	\$2,800,000 (variance from \$3,530,000, funding carried over to 2016-17)	<p>Since 2014, the Reef Water Quality science program has:</p> <ul style="list-style-type: none"> <li>commissioned reviews with respect to current knowledge and gaps in relation to agricultural chemicals management and prioritisation systems,</li> <li>extended or commissioned 34 projects related to improved farm management systems in cane, grazing and bananas (25 in 2015-16)</li> <li>established collaborative research programs with Sugar Research Australia (SRA) and the National Environmental Science Program (NESP), amongst others.</li> </ul>	<p>1. Focus of research and development contributing to Taskforce recommendations. <span style="float: right;">+</span></p> <p>Research, Development and Innovation (RDI) investment is guided by the Reef Water Quality RDI Strategy and Addendum.</p> <p>2. Improved on-ground outcomes deriving from research and development demonstrated. <span style="float: right;">✔</span></p> <p>Projects as part of the Reef Water Quality science program include demonstration and engagement projects relating to the adoption of improved practices.</p>





Key Performance Indicators (KPI) legend

- ✔  
KPI met
- +  
good progress
- delayed
- #  
assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators
Reef water quality offsets	EHP	\$100,000	EHP has worked closely with the Great Barrier Reef Marine Park Authority which is developing a new consistent set of policies for offsets, cumulative impacts and net benefits for activities that impact the Great Barrier Reef.	<p>1. Increase in proportion of offsets that are contributed to Reef Trust.</p> <p>Reef Trust has been established with the intention to be a vehicle for financial offsets but this facility has not been required in 2015-16.</p>
Water quality objectives	EHP	\$300,000	EHP schedules environmental values and water quality objectives (WQOs) under the Environmental Protection (Water) Policy to guide planning and investment activities by providing locally relevant information to complement national water quality guidelines. Water quality objectives are set based on community aspirations (environmental values) for local waterways.	<p>1. Water quality objectives completed for all waters of the Great Barrier Reef catchments and reviewed every five years.</p> <p>WQOs were scheduled for Wet Tropics, Townsville, Mackay-Whitsunday, Capricorn-Curtis Coast, Fitzroy regions and have been drafted for Cape York east, Don, Haughton and Abbot Point. A review and update is underway for Mackay estuaries, Fitzroy and Keppel Bay. WQOs are under development in the Burdekin and east Galilee region.</p>
Reef science oversight	DSITI	\$220,000	<p>Provided strategic oversight and managed projects undertaken by DSITI reef science.</p> <p>Supported the Office of the Great Barrier Reef governance arrangements through participation in science overview committee technical working groups, advice to the Chief Scientist, and review of technical reports, government strategies and discussion papers.</p>	<p>1. Science programs contribute to on-ground improvements.</p> <p>Coordinated DSITI's feedback on the Great Barrier Reef Water Science Taskforce Draft and Final Reports, the Department of Environment and Heritage Protection's Discussion Paper on the Queensland Strategy for Integrated Waterway Health Assessment, Modelling and Reporting 2016-2020, the Addendum to Reef Water Quality Research, Development and Innovation Strategy 2014-15 - 2018-19 and other Reef 2050 Plan reporting requirements.</p> <p>Assisted DNRM to undertake an external independent review of Paddock to Reef paddock modelling and catchment modelling programs.</p> <p>Ensured technical reports were peer reviewed and made available through the government open data portal.</p>





Key Performance Indicators (KPI) legend

-  KPI met
-  good progress
-  delayed
-  assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators
<b>Landscape management to support water quality</b>				
Catchment and regional planning	DNRM	\$350,000	DNRM contributed to the statutory planning framework within the reef catchments by provision of advice to avoid, mitigate and minimise poor water quality outcomes. This advice considers impacts of regulated vegetation removal, instream works, flood control measures, soil and acid sulphate disturbance.	<p>1. Increase in number of catchment and regional plans that align to Reef 2050 Plan objectives and accredited water quality improvement plans.</p> <p>18 new state planning policy compliant planning schemes have commenced in reef catchments. A further nine schemes are yet to be finalised.</p>
Queensland Wetlands Program	DNRM	\$200,000	EHP provides the policy and governance framework for the management of wetlands with the establishment of an overall governance body, the Queensland Wetlands Program Governance Group and a broader Great Barrier Reef Wetlands Network. EHP has rolled out the Walking the Landscape project to establish a comprehensive understanding of how catchments work and understand the role of wetlands in maintaining reef health and developed several resources and strategies to assist with wetlands management.	<p>1. Continued reduction in loss of wetlands.</p>
Wetlands management	EHP	\$200,000		<p>Wetland extent is monitored and reported through the Great Barrier Reef Report Card approximately every four years as an appropriate timeframe for landscape change to be assessed. This is assessment is next expected in the 2019 Great Barrier Reef Report Card.</p> <p>2. Continued improvement in contribution of modified wetlands to ecosystem outcomes.</p> <p>Education and extension materials guide landholders to better manage wetlands. EHP has organised a wetlands treatment forum to gather the latest innovations using modified wetlands for water quality improvement which was held in July 2016.</p>

Key Performance Indicators (KPI) legend

-  KPI met
-  good progress
-  delayed
-  assessed later





Program	Agency	Expenditure	Investment summary	Key performance indicators
Sugar Research Australia (SRA) funding	DAF	\$840,000	<p>These funds supported four new SRA projects, the results of which will influence nutrient and pesticide management and ultimately reef water quality:</p> <ol style="list-style-type: none"> <li>1. Boosting nitrogen-use efficiency in sugarcane through temporal and spatial management options.</li> <li>2. Developing an alternative herbicide management strategy to replace PSII herbicides in the Wet Tropics areas.</li> <li>3. Measuring the profitability and environmental implications when growers transition to industry best management practice.</li> <li>4. Using remote sensing to improve cane grub management in North Queensland.</li> </ol>	<p>1. Improve nutrient management standards as a result of research.</p> <p>The projects that were funded are new and ongoing over several years. The results are not yet available to assess their effectiveness in improving nutrient and pesticide management standards.</p>
Coastal planning	EHP	\$200,000	<p>The reinstatement of coastal planning laws is part of the package of planning reforms being led by the Department of Infrastructure, Local Government and Planning (DILGP) in close collaboration with the Department of Environment and Heritage Protection (EHP). New erosion prone area plans and storm tide inundation mapping for the entire Queensland coast came into operation. EHP is also working closely with DILGP to further revise the State Planning Policy and the State Development Assessment Provisions to ensure they are aligned with the Government's coastal planning policy.</p>	<p>1. Planning decisions reflect water quality outcomes.</p> <p>The State Planning Policy includes the state's interest for water quality, guiding how planning schemes are set and how decisions are made to reflect water quality outcomes. The State Planning Policy is currently under review.</p>
<b>Total</b>		<b>\$6,590,000 (variance from \$7,320,000)</b>		

## Key Performance Indicators (KPI) legend



KPI met



good progress



delayed







assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators
<b>RESPONDING TO THE CHALLENGE</b>				
Best Management Practice (BMP)	EHP	\$4,540,000	<p>The Reef Water Quality program develops, monitors, and evaluates policy and programs to support the effective management of agricultural activities (particularly sugarcane growing, cattle grazing and bananas) to reduce their impact on the water quality of the Great Barrier Reef. Other activities supported by the Industry partnership funding includes the development of management practice standards, partnership projects to demonstrate improved practices, as well as support to align state and federal government programs with respect to nutrient use efficiency, grazing land management and erosion response.</p> <p>The Cane and Grazing BMP programs are voluntary, industry led-processes that assist producers identify practices that help improve the long-term productivity, profitability and sustainability of their enterprise. It also helps identify the steps that incorporate best management practices, thereby allowing industry to demonstrate good environmental management to the wider community. Additional funding is supporting the Banana BMP program, particularly for a record keeping app to improve electronic record-keeping for nutrient and pesticide use, which will help growers improve their on-farm practices.</p> <p>Working groups that support policy, research and program coordination across government, industry and research organisations have been established:</p> <ul style="list-style-type: none"> <li>• Pesticides working group</li> <li>• Sediment working group</li> <li>• Nutrient use steering group</li> </ul>	<p>1. Increase in the area of land managed under BMP.</p> <p>Since commencement of implementation of the BMPs in 2013, the area of land managed in the reef catchments under Smartcane BMP, as at 30 June, is around 52% (244,888 ha); and the area under Grazing BMP is around 38% (10,760,000 hectares)</p> <p>2. Increase in the number of farmers and graziers participating in the BMP.</p> <p>Since commencement of BMP in 2013, a total of 1,376 cane producers are benchmarked in the three core modules of Smartcane BMP and 1,096 graziers are engaged in Grazing BMP. 118 cane producers are accredited in the three core Smartcane BMP modules and 52 grazing businesses are accredited in the five Grazing BMP modules</p> <p>In 2015 EHP committed to provide three years of funding to the Australian Banana Growers' Council (ABGC) to develop a record-keeping app for smartphones and tablets to assist growers' farm records of optimal fertiliser use and chemical application, as part of their Banana BMP program and containment efforts for Panama disease. To date, about 55%, some 6,200ha, of Wet Tropics banana production is included in the BMP program.</p>





Key Performance Indicators (KPI) legend

-  KPI met
-  good progress
-  delayed
-  assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators
Extension and training aligned to BMP programs and regional coordination of on-ground activities	DAF, EHP, DNRM	\$2,390,000 DAF \$1,175,000 EHP (variance from \$2,200,000—approximately \$1 million carried over to 2016-17) \$100,000 DNRM	<p>1. Senior scientists, agronomic specialists and economists provided technical and on-ground support to producers and mentoring to staff delivering extension to the cane, grazing, grains, banana and horticulture BMP programs.</p> <p>2. DAF economists have undertaken economic validation of improved practices, particularly in relation to cane farming practices.</p> <p>3. DAF, in collaboration with NRM groups, assisted in the coordination of extension programs to help improve the efficiency and effectiveness of producer support services. Spatial data from various programs has been collated and utilised to identify where effort has been aligned in relation to areas of water quality improvement priorities.</p> <p>4. DAF has assisted EHP in the development of policy and delivery of reef programs particularly around extension and economic evaluation (i.e. technical review of BMP modules, BMP project management, Reef Interdepartmental Committee).</p>	<p>1. Increase in the number of one-on-one extension visits.</p> <p>Over 1,450 farmers in priority reef catchments have been engaged in extension activities from 2015 to 2016.</p> <p>2. Support the BMP programs through economics, coordination, mentoring, policy advice.</p> <p>The extension program continues to work with BMP facilitators and participants to improve management practices. This supports current reef policy and applies the latest reef science to the broader program of providing a coordinated program to improve on-ground knowledge through one-on-one support, training workshops and practical demonstrations. Independent surveys of DAF's extension efforts undertaken annually show their effectiveness in supporting efficiency, productivity and sustainability, with subsequent benefits to the Great Barrier Reef.</p>

Key Performance Indicators (KPI) legend

-  KPI met
-  good progress
-  delayed
-  assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators
Regional Natural Resource Management groups - local projects	DNRM	\$4,170,000	<p>NRM groups have delivered regional Paddock to Reef activities - collect, collate and provide quality nutrient, pesticide, herbicide, management practice change data and assist in wetland assessments for the Paddock to Reef program.</p> <p>Regional NRM Groups have delivered further activities which contribute to Reef 2050 Plan objectives. For example:</p> <ul style="list-style-type: none"> <li>Fitzroy Basin Association completed protection and restoration activities in significant wetlands and urban and coastal waterways.</li> <li>Burnett Mary Regional Group completed a wetland assessment with assistance from the Queensland Wetlands Program and improved management of 100ha of wetlands on private properties.</li> <li>North Queensland Dry Tropics improved farm productivity, sustainability and landscape resilience in the Lower Burdekin delta by improving farming practice, knowledge and understanding of the impacts of farm run-off on water quality.</li> <li>Terrain NRM in the Wet Tropics region assisted Traditional Owner groups to undertake water quality improvement activities such as enhancing or protecting native vegetation, streambank rehabilitation works and collecting wetland condition data to inform the Paddock to Reef Program.</li> </ul>	<p>1. Finalise realignment of project priorities.</p> <p>Projects for 2016-17 have been realigned in consultation with the OGBR. Regional NRM groups will deliver projects which support Paddock to Reef outcomes as well as projects which align with relevant Water Quality Improvement Plans.</p>

## Key Performance Indicators (KPI) legend



KPI met



good progress



delayed







assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators
Rural water use efficiency – Irrigation Futures Program	DNRM	\$1,430,000	<p>Rural industry bodies continue to deliver services in Great Barrier Reef catchments such as:</p> <p>Precision irrigation:</p> <ul style="list-style-type: none"> <li>Irrigation management information systems providing real time climate and soil-water data</li> <li>Decision support tools to schedule irrigations and maintain records of irrigation events</li> <li>Irrigation system management:</li> <li>Pressurised irrigation system evaluation to determine distribution uniformity</li> <li>Furrow irrigation assessment to quantify inflow rates and runtimes.</li> </ul>	<p>1. Finalise realignment of projects.</p> <p>New agreements with Irrigation Australia Ltd (IAL) and the National Centre for Engineering in Agriculture (NCEA) are in place. NCEA is supporting the industry bodies and developing and facilitating the uptake of contemporary technologies focusing on Great Barrier Reef catchments. IAL is delivering technical support and training for the industry programs and promoting irrigation standards and codes of practice to improve irrigation design and management in the reef catchments.</p>
River Improvement Trusts	DNRM	\$400,000	<p>Funding is paid on completion of projects often in the following financial year. Details of expended funds will be available from the River Improvement Trusts Annual Audit report which will be compiled in 2016-17 to cover this investment.</p>	<p>1. Finalise realignment of projects.</p> <p>Projects are being realigned in consultation with the Office of the Great Barrier Reef with clear guidelines provided to River Improvement Trusts around outcomes that can be delivered to improve water quality.</p>
<b>Total</b>		<b>\$14,205,000 (variance from \$15,200,000)</b>		

Key Performance Indicators (KPI) legend

-  KPI met
-  good progress
-  delayed
-  assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators
<b>EVALUATING PERFORMANCE</b>				
<b>Water quality condition and improvement</b>				
Catchment loads monitoring	DSITI, DNRM	\$1,050,000 DSITI \$740,000 DNRM	<p>Monitored water quality constituents (nutrients, sediments and pesticides) exiting priority Great Barrier Reef catchments and provided high quality pollutant loads data from priority catchments for validation of the Department of Natural Resources and Mines water quality models.</p> <p>Supported the development and release of the 2014 pilot waterway report card for the Mackay Whitsunday Healthy River to Reef Partnership.</p> <p>Commenced support for the development of the pilot waterway report card for the Wet Tropics, and the review and revision of the Mackay Whitsunday report card.</p>	<p>1. Monitoring data validated and provided within agreed timeframes.</p> <p>Assessed and reported pollutant load data as per the Paddock to Reef Program reporting requirements to measure and report on progress towards Reef Water Quality Protection Plan 2013 targets.</p> <p>Engaged government agencies, agricultural industries and regional natural resource management bodies to disseminate yearly program outcomes.</p> <p>DSITI scientists were instrumental in establishing the Sandy Creek Monitoring project to analyse water samples for pesticides and nutrients at the farm scale. The approach has been hailed as a model for future industry and stakeholder-led, small-scale monitoring programs.</p> <p>Supported the development of new regional report cards and further expansion of the regional report card program in future years.</p>
Catchment loads modelling and data management system	DSITI, DNRM	\$360,000 DSITI \$1,280,000 DNRM	<p>Catchment modelling was used to estimate the effectiveness of current and alternative management practices that reduce pollutant loads.</p> <p>Paddock modelling was used to estimate the effectiveness of current and alternative management practices at the field or paddock scales, with the results also used as inputs to the catchment scale modelling.</p> <p>Support for the eReefs project was also provided, along with tools to support sustainable grazing land practices.</p>	<p>1. Modelling data validated and provided within agreed timeframes.</p> <p>The modelling data was validated and provided within agreed timeframes to produce the Great Barrier Reef Report Card for each of the reef catchments and technical reports.</p> <p>Increased complexity of paddock models was used to represent management practices throughout the Great Barrier Reef. This allows us to attempt to represent water quality improvements from a wider range of cane and cropping initiatives.</p> <p>Hydrology calibration for the catchment models was improved, giving more confidence in the generation and transport of pollutants in the catchment models.</p> <p>Improved reporting mechanisms from catchment models to a consistent Great Barrier Reef approach.</p>

Key Performance Indicators (KPI) legend



KPI met



good progress



delayed



assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators
<p>Regional report card partnerships:</p> <ul style="list-style-type: none"> <li>Fitzroy Partnership for River Health</li> <li>Gladstone Healthy Harbour Partnership</li> <li>Mackay-Whitsunday Healthy Rivers to Reef Partnership</li> <li>Wet Tropics Healthy Waterways Partnership</li> </ul>	EHP, DNRM	\$1,500,000 EHP \$120,000 DNRM	The Fitzroy Partnership for River Health released its fifth annual Report Card. The Gladstone Healthy Harbour Partnership released its first annual report card. The Mackay-Whitsunday Healthy Rivers to Reef Partnership released its pilot report card. The Wet Tropics Healthy Waterways Partnership was formed.	<p>1. New report card partnership established each financial year until full coverage of the Great Barrier Reef.</p> <p>The Wet Tropics Healthy Waterways Partnership was established in 2015-16.</p> <p>2. Production of annual report card for each existing partnership.</p> <p>Each existing partnership produced a report card in 2015-16.</p> <p>3. Increasing efficiency and comparability between report cards.</p> <p>The Queensland Strategy for Integrated Waterway Health Assessment, Modelling and Reporting was developed to guide increasing efficiency and comparability and will be completed in the second half of 2016. Science panels for report cards have been reviewed and reduced for efficiencies. Queensland Government is work with other partners through RimRep to ensure a coordinated approach to monitoring and reporting at different scales.</p>
Management practice adoption	DAF	\$430,000	Assessments of farm management data form the basis of pollutant load reduction modelling which in turn informs the investments of the Queensland and Australian governments in Reef Water Quality Protection Plan and the Reef 2050 Plan.	<p>1. Development of new tools to better utilise practice information in investment decisions.</p> <p>Farm management practices were benchmarked and monitored in the grazing, sugarcane, horticulture, grains and banana industries, across 35 major river basins in the Great Barrier Reef catchment. This data forms the basis of pollutant load reduction modelling which informs the investments of the Queensland and Australian governments in Reef Water Quality Protection Plan and the Reef 2050</p> <p>Data collection and analysis for the Great Barrier Reef Report Card 2015 was completed in June 2016. Feedback to both governments and major delivery organisations was provided throughout 2015-16.</p>

Key Performance Indicators (KPI) legend

✓ KPI met

+ good progress

– delayed

# assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators	
Enhanced Fitzroy Monitoring Program	DNRM	\$500,000	Water quality data collected as part of the Pilot Mine Water Release Operational Policy (EHP lead) for 2015-16 wet season has been quality checked and made available on the Fitzroy River website.	1. Monitoring data validated and reported through the Fitzroy River website within agreed timeframes.  Completed (see summary).	✓
<b>Water quality to support water quality</b>					
Ambient water monitoring	DNRM	\$4,800,000	Validated flow data has been provided to support load reporting and to continue to improve calibration of catchment modelling.  Reliable and validated flow and quality data from the ambient network provides a historical dataset to underpin a range of modelling efforts in the reef program, including the eReefs project.	1. Water monitoring infrastructure within Great Barrier Reef catchment produces reliable data.  Completed (see summary).	✓
<b>Landscapes and wetlands</b>					
Landscape monitoring	DSITI	\$760,000	Monitored the levels and changes in ground cover in grazing lands as a measure of the risk to soil erosion.  Developed and tested innovative methods in gully mapping and cropping land use mapping, fire scar mapping and frequency.	1. Monitoring contributes to reef and regional report cards.  Provided efficient methods for high-speed computing and information infrastructure delivery through the Australia's Academic and Research Network and High Performance Computing devices to support report card production.  Undertook additional projects on mapping soil erodibility, sources of bioavailable particulate nutrients, decision support for informed nitrogen management and nutrient use efficiency to inform future reporting.	✓
State Land and Tree Survey (SLATS)	DNRM	\$210,000	Monitored woody vegetation extent and clearing of vegetation in all reef catchments.  Provided statistics and spatial data to support policy and compliance under the Vegetation Management Framework, including provisions for protection of vegetation in key reef catchments.  Provided foundational data for catchment models and prioritising and reporting on on-ground investments.	1. Monitoring contributes to Great Barrier Reef Report Card and regional report cards.  SLATS Report and SLATS Supplementary Report released for 2012-14 change eras (2 eras) and 2014-15 era, including statistics for reef catchments.  Reef Water Quality Protection Plan Riparian vegetation extent reporting completed for 2014 based on vegetation loss statistics from SLATS.  Digital data sets published as Open Data.	✓

Key Performance Indicators (KPI) legend



KPI met



good progress



delayed



assessed later



Program	Agency	Expenditure	Investment summary	Key performance indicators	
Satellite image archive, calibration and systems	DNRM	\$340,000	<p>Provided foundational infrastructure and satellite imagery archive to support production and development of a range of monitoring and reporting spatial data sets including ground cover, vegetation cover (including riparian vegetation), fire scar mapping, crop monitoring and land use mapping.</p> <p>Maintained an appropriate repository of computer processing code to ensure procedural transparency, defensibility and repeatability in the production of foundation monitoring spatial data products.</p> <p>Provided infrastructure and support to field based programs which ensure appropriate levels of calibration and validation of land cover monitoring products derived from satellite imagery.</p> <p>Provided spatial data to support paddock and catchment water quality modelling.</p> <p>Commenced development of a standard LiDAR processing system to produce standard vegetation height and cover products for end users.</p>	<p>1. Monitoring contributes to reef and regional report cards.</p> <p>Satellite image archive maintained for reef catchment areas including ongoing download, processing and storage of Landsat archive, and preliminary development of Sentinel-2 capability. High Performance Computing facility and AARNet high-speed gateway maintained to access, store and process satellite imagery.</p>	✓
Ground cover and riparian mapping	DNRM	\$100,000	<p>Monitored the levels and changes in ground cover in grazing lands as a measure of the risk to soil erosion.</p> <p>Developed and tested innovative methods in gully mapping and cropping land use mapping, fire scar mapping and frequency.</p>	<p>1. Monitoring contributes to Great Barrier Reef Report Card and regional report cards.</p> <p>Preparation and publication of spatial datasets, results and technical reports on ground cover in grazing lands and extent of riparian vegetation for the 2014 and 2015 Great Barrier Reef Report Cards.</p>	✓
Monitoring wetland extent and condition	DSITI, DNRM	\$290,000 DSITI \$150,000 DNRM	<p>Managed the freshwater wetland condition monitoring program for the Queensland Government's Reef Water Quality Protection Plan target of improving wetland values and processes.</p> <p>Provided assessment and advice, including expert witness statements, and updated state-wide mapping on wetlands.</p>	<p>1. Monitoring contributes to reef and regional report cards.</p> <p>Published a case study report and monitoring design report.</p> <p>Data on wetland condition was collected for baseline reporting in 2017.</p>	✓
<b>Total</b>		<b>\$12,630,000</b>			
<b>GRAND TOTAL</b>		<b>\$33,425,000</b>	<b>variance from \$35,150,000</b>		

## Key Performance Indicators (KPI) legend



KPI met



good progress



delayed



assessed later





[www.reefplan.qld.gov.au](http://www.reefplan.qld.gov.au)