

Queensland
**REEF WATER
QUALITY**
Program



Investment Report
2022–2023

Acknowledgement

We acknowledge the continuing management and custodianship of Country across the Great Barrier Reef Region by its Traditional Owners whose rich cultures, heritage values, enduring connections and shared efforts continue to protect land, sea and sky Country for future generations. We pay our respect to their Elders, past, present, and emerging.

We recognise the continuous living culture of Aboriginal and Torres Strait Islander peoples – their diverse languages, customs and traditions, knowledges, and systems – and the deep relationship and responsibility to Country as integral to their identity and culture.

We thank Traditional Owners for their enduring stewardship and protection of the Great Barrier Reef for thousands of generations – and for their ongoing guidance and partnership in the shared efforts to protect the Great Barrier Reef.

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Introduction

The Queensland Reef Water Quality Program (QRWQP) is the Queensland Government's key response to addressing water quality impacts affecting the Great Barrier Reef (Reef). It delivers key activities as part of implementing actions in the Reef 2050 Water Quality Improvement Plan 2017–2022 (Reef 2050 WQIP), which supports the water quality theme of the Reef 2050 Long-Term Sustainability Plan (Reef 2050 Plan). In 2021–2022, a further five years of investment was approved.

This report covers activities and investments for the 2022–2023 financial year. The Office of the Great Barrier Reef and World Heritage (OGBR&WH) within the Department of Environment and Science (DES) is responsible for overseeing the QRWQP, working with the other DES Divisions and the Department of Agriculture and Fisheries (DAF) and the Department of Resources (DoR). A range of projects can be viewed via the Collection of Reef and Land (CORAL) database which can be found [here](#).

A Monitoring, Evaluation, Reporting and Improvement (MERI) framework has been developed. The new MERI framework will feature in future QRWQP annual reports.

Phase 1 Program Expenditure in 2022-2023

Some projects from Phase 1 of the QRWQP (2017–2018 to 2021–2022) were unable to be completed within the timeframe and required an extension into 2022–2023. For this reason, the report will detail achievements and expenditure for both Phase 1 and Phase 2 projects undertaken during the year.

Funding composition for Phase 2 of the Program (2021-2022 to 2025-2026)

The total investment for the five-year period of the Queensland Reef Water Quality Program 2021–2022 to 2025–2026 is \$289.6 million, comprised of:

- \$270.1 million allocated to the Program from the Queensland 2021–2022 budget
- \$10 million allocated to the Reef Credits Scheme
- \$9.5 million balance remaining from the discontinued Farming in Reef Catchments Rebate Scheme reallocated to continue supporting farmers.

QRWQP funding will be used to leverage additional funds from other organisations, including the Australian Government and private investors.

It also acknowledges that partners across industry, not-for-profit organisations, research organisations, Australian and local governments, landholders, Traditional Owners, and private organisations also co-invest and provide in-kind contributions.

Program Objectives: 2021-2022 to 2025-2026

During the period 2021–2022 to 2025–2026, the QRWQP is designed to accelerate progress towards the Reef 2050 WQIP targets by:

- Improving land management through voluntary and regulatory approaches
- Restoring resilient and functional landscapes, with a particular focus on gullies and streambanks to drive progress towards the sediment targets
- Building regional capacity to support regional economies.
- Delivering, supporting and translating best available science and knowledge.

The Program’s goal and objectives are shown below.



Figure 1: Program goal and objectives – 2021–2022 to 2025–2026.

Program Structure: 2021-2022 to 2025-2026

To ensure a continued cohesive and coordinated delivery effort with structured governance arrangements, all sub-programs and individual projects will be delivered under one of six Work Areas or the Improving threatened species in the Great Barrier Reef World Heritage Area Program:

1. Supporting the agricultural industry
2. Restoring functional landscapes including soil health
3. Urban and point source innovation program
4. Foundational science and translation
5. Robust governance
6. Paddock to Reef program and report cards

Each of the six QRWQP Work Areas align with the Reef 2050 Water Quality Improvement Plan Implementation Work Areas, ensuring that the Program continues to accelerate progress towards the Reef 2050 WQIP targets.

QRWQP Work Areas	Reef 2050 WQIP Implementation Areas						
	A - Responding to the challenge: Actions to progress towards targets			B - Enabling delivery			
	A1: Minimum practice standards apply	A2: Culture of innovation & stewardship	A3: Catchment restoration	B1: Applying the best available science & knowledge	B2: Coordinating & prioritising investment	B3: Governance - decision making & accountability	B4: Evaluating performance
Supporting the agricultural industry	✓	✓		✓			
Restoring functional landscapes (inc. soil health)		✓	✓	✓	✓		
Urban point source and innovation program		✓		✓			
Foundational science and translation				✓			
Robust governance					✓	✓	✓
Paddock to Reef Program and report cards		✓		✓		✓	✓

Figure 2: Alignment of the QRWQP Work Areas with the Reef 2050 Water Quality Improvement Plan Implementation Work Areas.

Progress Summary

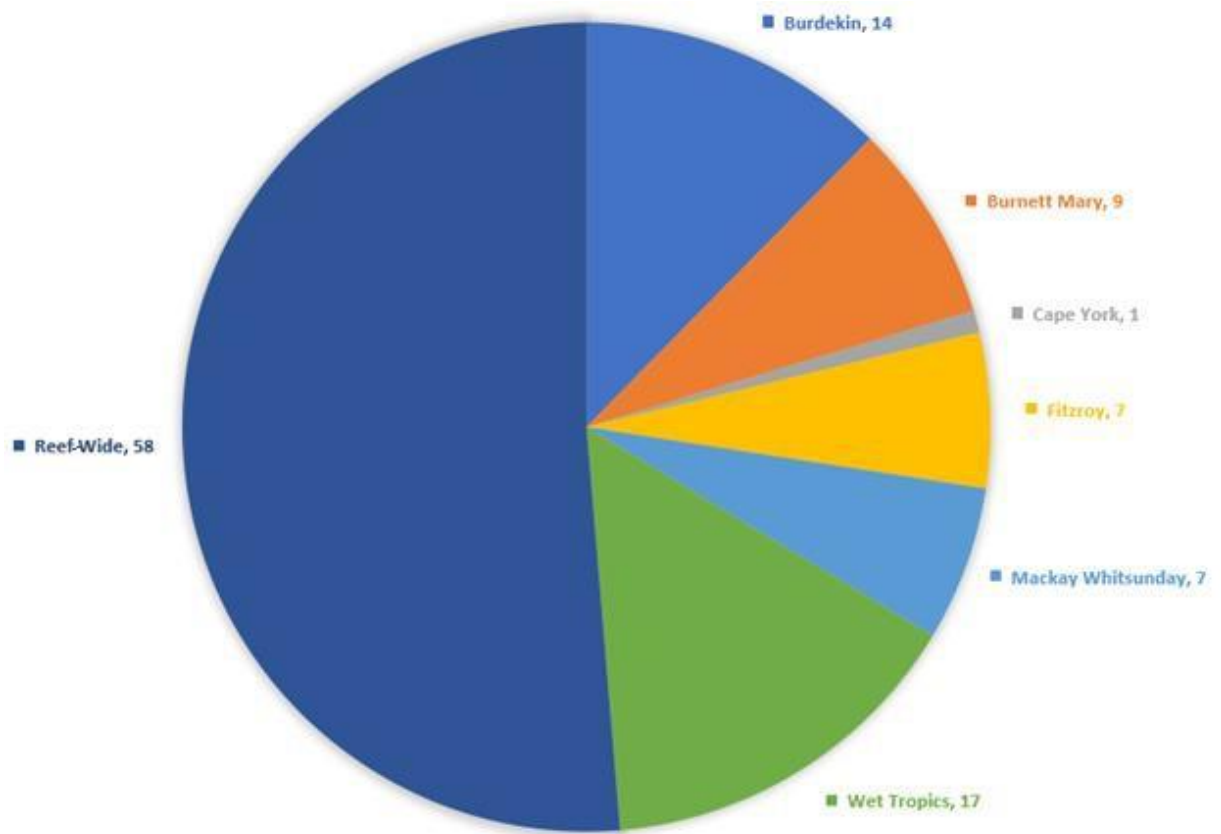
Number of projects delivered by Reef 2050 WQIP Action and/or Work Area

There were 100 projects delivered during the 2022–2023 financial year. This includes 13 projects delivered under Phase 1 funding and 87 projects delivered under Phase 2 funding.

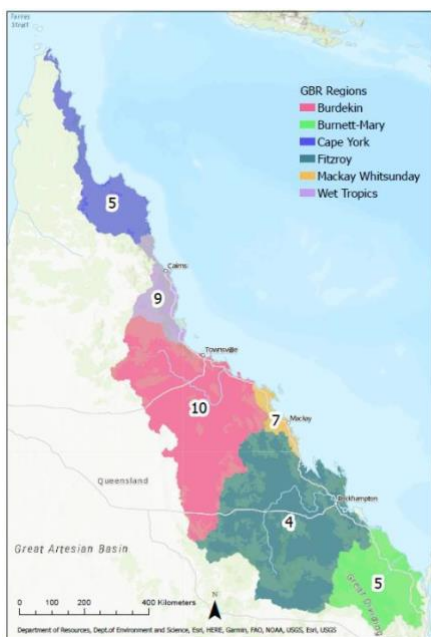
The number of current projects refers to the number of projects underway during the reporting period. They may have been new, continuing or about to be completed.

Program Phase	Reef 2050 WQIP Action/QRWQP Work Area	No. of Projects
Phase 1	2.6 Trial and implement innovative monitoring, land management and treatment system	2
	3.3 Trial and implement innovation in catchment repair and restoration projects	2
	4.2 Integrate forms of knowledge including science, policy, management, Traditional Owner and community	1
	2.1 Support land managers and industries to adopt improved management practices	2
	6.2 Ensure program design aligns with water quality priorities	5
	6.4 Include all stakeholders including local organisations, communities and Traditional Owners in decision-making and priority setting	1
	Phase 2	Supporting the agricultural industry
	Urban and point source innovation program	3
	Restoring functional landscapes including soil health	25
	Foundational science and translation	3
	Robust governance	5
	Paddock to Reef program and report cards	19
Total Current Projects		100

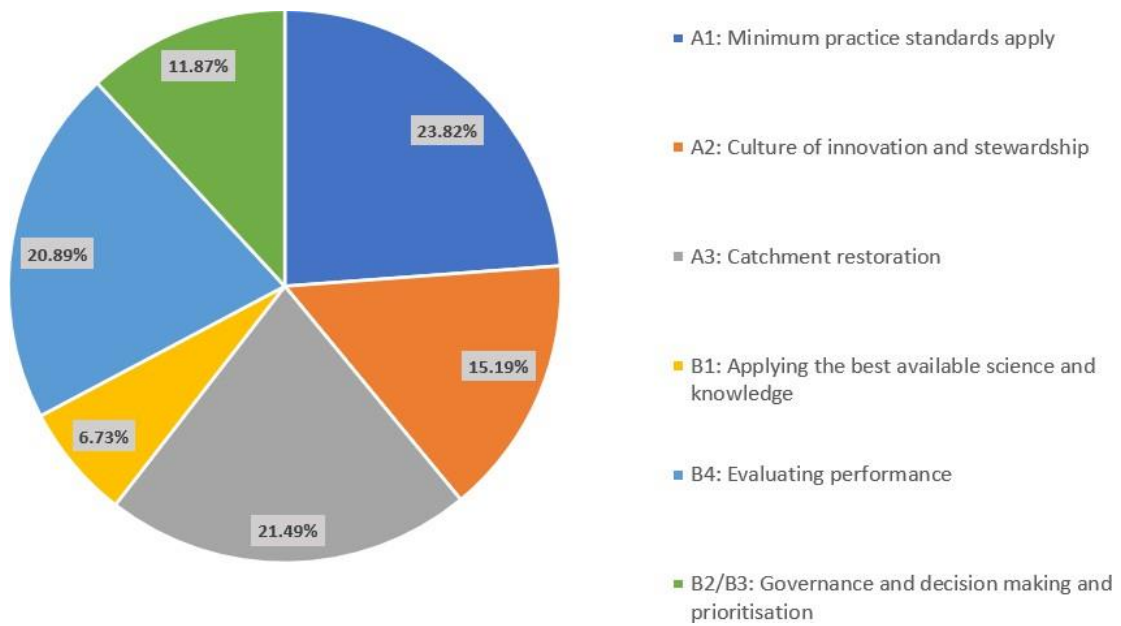
Projects by Great Barrier Reef Region



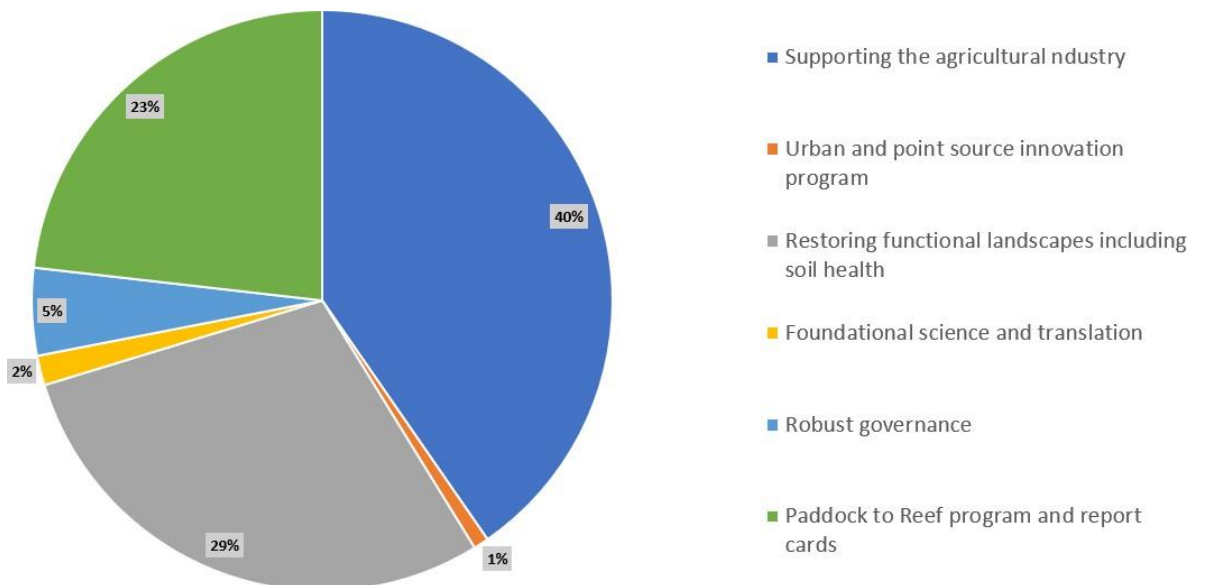
'Reef-wide' projects are delivered across all regions and are only counted once.



Phase 1 and Phase 2 Expenditure by Reef 2050 WQIP Action (%)



Phase 2 Expenditure QRWQP Work Area (%)



Progress Highlights

Supporting agricultural industries

MyForage

MyForage is delivered by the Department of Environment and Science, in partnership with the Department of Agriculture and Fisheries. This project MyFORAGE capitalises on previous co-investments to develop and deliver new and improved products and information to assist stakeholders, particularly graziers, to manage the risks associated with Queensland's variable and drought-prone climate.

The new online MyForage interactive mapping tool is now available on the Long Paddock website. This system allows users to customise aspects of their property relating to land type, water points, pasture type and land condition enabling FORAGE reports to be generated at the paddock scale.

Highlights include:

- Between July 2022 - June 2023 the total number of FORAGE reports requested from across Reef catchments was 29,969.
- On average 60% of FORAGE reports delivered across Queensland are used by landholders, consultants and agribusiness.
- Spatial mapping of FORAGE report usage shows more than 80% of Queensland, including the Great Barrier Reef catchment has received one or more forage reports since 2011.

Grazing Resilience and Sustainable Solutions (GRASS) Program

The GRASS program supports graziers in the Burdekin, Fitzroy and Burnett Mary regions to improve poor (C) or degraded (D) land. Tailor-made action plans for land management (APLM) assist graziers to improve and maintain land condition with a focus on improving ground cover and reducing soil loss into the Great Barrier Reef basin. Graziers with areas of poor or degraded land can apply to participate and may be eligible for incentive funding for works identified in their action plan.

GRASS is delivered in partnership with the Department of Agriculture and Fisheries, NQ Dry Tropics Ltd, Fitzroy Basin Association Ltd and Burnett Mary Regional Group for Natural Resource Management Ltd. GRASS 2023–2026 commenced with 20 incentive on-ground works projects designed with landholders in the first six months.

Highlights include:

- During 2022-2023 GRASS worked with 208 landholders to put in place 140 APLMs (GRASS Phase 1:68 plus GRASS Phase 2: 72)
- Covering 878,956 hectares of grazing land (GRASS Phase 1: 517,751 plus GRASS Phase 2: 361,205)
- With strategies in place to manage 166,173 hectares of poor and degraded lands (GRASS Phase 1: 113,615 plus GRASS Phase 2:52,558).

Agricultural industry Best Management Practice (BMP) projects

Through support and investment from the QRWQP, the BMP projects for sugarcane (Smartcane BMP), horticulture (Hort360GBR BMP) and bananas (Banana BMP) continue to work to:

- Improve the uptake of minimum practice standards/regulatory compliance
- Verify, through certification, increased hectares of agricultural land meeting regulatory standards
- Deliver extension services to support uptake and reporting of improved practice on-farm.

Industry standards at least meet, and in some cases go beyond, the legislative requirements under the Queensland Government’s Reef protection regulations known as the sugarcane, grazing and banana minimum practice standards.

To date, Queensland Fruit and Vegetable Growers has supported horticulture growers in meeting and exceeding minimum standards and in preparing for third party accreditation, with 48 certified growers, and 19,450 hectares of certified land.

CANEGROWERS has continued to support growers in benchmarking their cane land in Queensland growing it to 83 per cent; and over 39 per cent of the cane growing area in Reef catchments has been accredited, across 700 enterprises.

Australian Banana Growers’ Council continues to support banana growers in Reef catchments with 146 individual growers, representing 90per cent of the industry benchmarked by hectares in the Wet Tropics; and 94 farms accredited to the Reef Assured farming standard. This represents approximately 65per cent of the industry by hectares. Eight rounds of water quality improvement projects have been delivered by banana growers in the Great Barrier Reef catchment with a total of 68 sediment and nutrient management on-ground projects delivered over two years and attracting over \$1.6 million in co-contributions from participating banana growers.

Restoring functional landscapes (including soil health)

Reef Assist program

The \$33.5 million Reef Assist program delivers priority environmental projects and creates regional jobs for Queenslanders in the Great Barrier Reef catchment. Now in its second phase, the program creates environmental management training and employment opportunities in delivering a range of environmental projects and outcomes, including gully remediation, streambank stabilisation, and revegetation to improve wetlands and wildlife corridors.

Many of the projects focus on employing First Nations people and building their environmental management skills through formal and informal training. During 2022–2023, the program supported over 200 full-time, part-time, and casual positions, with around 50 per cent of employees identifying as First Nations and over a third being youth. Over 80 per cent of previous participants received training through the Reef Assist projects, with over 110 unique training courses delivered (including 50+ formal qualification courses), increasing participants’ skills in natural resource and land management, project management, communication, leadership and mentoring.

These higher levels of education and training have resulted in participants’ improved health and wellbeing, literacy, income, better working conditions and other social benefits, including connection to their communities and Country. The training and practical work experience increased the participants’ abilities to find meaningful, ongoing employment beyond the program – particularly for those projects located in areas with high unemployment and poverty rates. Outcomes from a project

in the Yarrabah Indigenous Community included participants earning an income for the first time in their lives and obtaining a driver's licence so they could travel beyond this remote area for work.

Highlights include:

- 17 projects delivered.
- supported over 200 full-time, part-time, and casual positions, with around 50% of employees identifying as First Nations and over a third being youth.
- 110 unique training courses delivered.

Paddock to Reef program and report cards

During the reporting period the Paddock to Reef Integrated Monitoring, Modelling and Reporting Program (Paddock to Reef program) delivered a new tool to assess pesticide risk. Partners such as the regional report card partnerships can now calculate their own reporting.

A multi-year gully mapping program was completed and provided coverage of the entire Great Barrier Reef catchment at the 100 metre scale. Other mapping and assessment undertaken in the Great Barrier Reef catchment included:

- Ground cover levels across grazing lands, identifying areas below the target level required to minimise soil erosion
- Wetlands, in order to examine current rates of wetland loss against the Reef 2050 WQIP target of *no loss of natural wetlands*
- Riparian vegetation extent, to assess changes against the Reef 2050 WQIP target of *extent of riparian vegetation is increased*.

Other achievements for the period include:

- Condition assessment of freshwater wetlands in the Great Barrier Reef catchment
- Update of catchment water quality models
- Regional science forums held in each Reef region
- Update of investment decision support tools including P2R Projector.

Highlights include:

- Measured water quality at 61 sites across 23 catchments from Cape York to Burnett Mary, including sediment, nutrients and pesticides.
- In 2022-23, the DES Chemistry Centre analysed over 3450 samples for water quality analysis and conducted over 19,800 tests to inform the Paddock to Reef Program
- Gully mapping for the GBR Catchment area of approximately 425,000 square kilometres completed and approximately 30,000 sites used to improve the understanding of gully size and activity rates.
- 330 on-ground delivery partners across 60 organisations contributed to development of investment decision support tools.

Investment Table 1 – 2022–2023 Expenditure of Funding Allocated to Phase 1 of the Program (2017–2018 to 2021–2022)

Responding to the challenge (actions to progress towards targets)

Culture of innovation and stewardship

2.1 Support land managers and industries to adopt improved management practices, e.g. through coordinated extension, education and awareness programs.

Activity within the Queensland Reef Water Quality Program	2022–2023 expenditure	Lead agency
Reef Credits Scheme	1,028,768	DES – OGBR&WH

2.6 Trial and implement innovation in technologies for on-ground management, water treatment and monitoring.

Activity within the Queensland Reef Water Quality Program	2022–2023 expenditure	Lead agency
Catchment Loads Modelling	200,000	DES – OGBR&WH
Reef 2050 WQIP Monitor and Evaluation Support Tool	600,000	DES – OGBR&WH

Catchment restoration

3.3 Trial and implement innovation in catchment repair and restoration projects to reduce sediment and nutrient delivery to the Reef.

Activity within the Queensland Reef Water Quality Program	2022–2023 expenditure	Lead agency
Science in the Paddock - Burdekin	23,000	DES – OGBR&WH
Science in the Paddock – Mackay Whitsunday	23,500	DES – OGBR&WH

Enabling delivery

Applying the best available science and knowledge

4.2 Integrate forms of knowledge including science, policy, management, Traditional Owner and community through regular synthesis workshops.

Activity within the Queensland Reef Water Quality Program	2022-2023 expenditure	Lead agency
Great Barrier Reef Water Quality Synthesis Workshop 2022	73,947	DES – OGBR&WH

Governance

6.2 Ensure the Program design aligns with water quality priorities.

Activity within the Queensland Reef Water Quality Program	2022-2023 expenditure	Lead agency
QRWQP Program Design Review and Development	2,911,711	DES – OGBR&WH

6.4 Include all stakeholders including local organisations, communities and Traditional Owners in decision-making and priority setting.

Activity within the Queensland Reef Water Quality Program	2022-2023 expenditure	Lead agency
k'Gari World Heritage Project	59,074	DES – OGBRWH

Investment Table 2 – 2022-2023 Expenditure of Funding Allocated to Phase 2 of the Program (2021-2022 to 2025–2026)

QRWQP Work Area Sub-Program	Project Name	Project Lead Agency	Expenditure
Advancing Coastal Farming Systems	Advancing Coastal Farming Systems	DAF	988,000
Agriculture Water Treatment Innovation & Extension	Agriculture Water Treatment Innovation & Extension	DAF	176,000
Banana Incentive Program	Banana Incentive Program	DES OGBR&WH	445,311
Banana Nutrient Trials	Banana Nutrient Trials	DAF	270,319
BMP	Banana BMP	DES OGBR&WH	847,816
	Hort360 BMP	DES OGBR&WH	801,800
	Smartcane BMP	DES OGBR&WH	1,200,000
Economic Evaluation and Prioritisation Program	Economic Evaluation and Prioritisation	DAF	1,073,000
Embedding Grains Practice in Reef Catchments	Embedding Grains Practice in Reef Catchments	DAF	631,000
Enhanced Managing Pesticide Risks in GBR Catchments	Enhanced Managing Pesticide Risks in GBR Catchments	DAF	534,607
Farmers For The Future	Farmers For The Future	DES OGBR&WH	4,000
Fine Scale Water Quality Monitoring Program	Fine Scale Water Quality Monitoring Program	DES Sciences	366,760
GRASS	GRASS - DAF	DAF	509,136

QRWQP Work Area Sub-Program	Project Name	Project Lead Agency	Expenditure
	GRASS - BMRG	DES OGBR&WH	384,079
	GRASS - FBA	DES OGBR&WH	598,668
	GRASS - NQDT	DES OGBR&WH	398,205
Grazing Extension Support	Grazing Extension Support Project	DAF	1,179,000
Grazing Land Management Support	Science to support Climate Smart Grazing Land Management	DAF	260,000
		DES Sciences	352,701
	Land Condition Program	DAF	230,000
Horticulture R&D	Horticulture R&D: Addressing the Knowledge Gaps	DAF	870,200
Improving Knowledge and Research for Horticulture and Cropping Activities	Improving Knowledge and Research for Horticulture and Cropping Activities	DES Sciences	134,755
Integrated Communications, Engagement and Capacity Building	Communication and Engagement	DAF	557,000
Reef Compliance and Regulation Program	Human Dimensions	DES OGBR&WH	54,308
	Reef Compliance and Regulation Program	DES ESR	3,383,916
Reef Regulatory Statutory Review	Reef Regulatory Statutory Review	DES OGBR&WH	50,200
Soil Mapping and Modelling for Reef Land Use Decision Support	Soil mapping and modelling for reef land use decision support tools	DES Sciences	102,971

QRWQP Work Area Sub-Program	Project Name	Project Lead Agency	Expenditure
Sugar Cane Nutrient Training	Sugar Cane Nutrient Training - SRA	DES OGBR&WH	235,319
Forage Budgeting Service	Forage Budgeting Service	DES OGBR&WH	218,046
Alluvial Gully Remediation Techniques	Demonstrating Alluvial Gully Remediation Techniques in the Upper Burdekin Spyglass Research Station	DAF	182,304
Major Integrated Projects (MIPs)	Major Integrated Projects	DES OGBR&WH	1,754,176
Queensland River Management Framework	Queensland River Management Framework	DES Sciences	242,241
Reef Assist	Reef Assist - Burdekin 1.75	DES OGBR&WH	490,965
	Reef Assist - Burdekin 2.4	DES OGBR&WH	1,122,483
	Reef Assist - Burdekin 2.7	DES OGBR&WH	777,633
	Reef Assist - Burnett Mary 2.12	DES OGBR&WH	447,483
	Reef Assist - Cape York 2.1	DES OGBR&WH	758,383
	Reef Assist - Mackay Whitsunday 1.75	DES OGBR&WH	142,483
	Reef Assist - Wet Tropics 1.75	DES OGBR&WH	427,448
	Reef Assist - Wet Tropics 2.11	DES OGBR&WH	544,433
	Reef Assist - Wet Tropics 2.2	DES OGBR&WH	496,583
	Reef Assist - Wet Tropics 2.3	DES OGBR&WH	613,983
Reef Assist - Wet Tropics 2.8	DES OGBR&WH	518,523	

QRWQP Work Area Sub-Program	Project Name	Project Lead Agency	Expenditure
	Reef Assist - Wet Tropics 2.9	DES OGBR&WH	616,483
	Reef Assist- Mackay Whitsunday 2.5	DES OGBR&WH	1,122,483
	Reef Assist - Fitzroy 2.6	DES OGBR&WH	925,983
Streambank Remediation Program	Streambank Remediation - Burdekin	DES OGBR&WH	133,649
	Streambank Remediation - Wet Tropics	DES OGBR&WH	114,914
	Streambank Remediation – Fitzroy	DES OGBR&WH	138,722
Wetlands in the Great Barrier Reef Catchments Management Strategy Implementation	Wetlands in the Great Barrier Reef Catchments Management Strategy Implementation	DES Wetlands	82,795
	Wetlands in the Great Barrier Reef Catchments Management Strategy Implementation - Mapping	DES Sciences	496,557
Aquaculture Development Area Water Quality Monitoring	Aquaculture development area water quality monitoring project	DES Sciences	52,955
Erosion and Sediment Control and Urban Stormwater Management Capacity Building	Erosion and Sediment Control and Urban Stormwater Management Capacity Building	DES OGBR&WH	150,000
Point Source Evaluation and Stewardship Delivery	Point Source Evaluation and Stewardship Delivery Project	DES Sciences	150,000
Digital Transformation in Water Quality Monitoring	Digital Transformation in Water Quality Monitoring	DES Sciences	260,583
Improved Nutrient Offsetting	Improved nutrient offsetting by comparing nutrient characteristics	DES Sciences	103,983

QRWQP Work Area Sub-Program	Project Name	Project Lead Agency	Expenditure
Improved Reef Communication and Science	Improved Reef Communication and Science	DES OGBR&WH	324,415
Governance Initiative	Reef Program Implementation - DAF	DAF	486,000
	Reef Program Implementation - DoR	DoR	170,290
	Reef Program Implementation - DES Sciences	DES Sciences	372,760
Program Systems Support	Data System	DES OGBR&WH	604,973
Reef 2050	Reef 2050 Secretariat	DES OGBR&WH	252,296
	Reef 2050 Traditional Owner Implementation Plan	DES OGBR&WH	145,563
Paddock to Reef Program	Data Management and Delivery SSIMR	DoR	344,333
	Enhanced Pesticide Monitoring Program	DES Sciences	489,340
	Great Barrier Reef Catchment Loads Monitoring Program	DES Sciences	3,392,912
	Great Barrier Reef Catchment Modelling	DoR	1,290,333
	Great Barrier Reef Ground Cover Monitoring	DES Sciences	314,337
	Reef Water Quality Report Card	DES OGBR&WH	139,208
	Great Barrier Reef Wetland Condition Monitoring	DES Sciences	788,742
	Great Barrier Reef Wetland Mapping and Extent	DES Sciences	33,985
	Gully and Streambank Mapping	DoR	320,333
	Management Practice Adoption Reporting	DAF	678,000

QRWQP Work Area Sub-Program	Project Name	Project Lead Agency	Expenditure
	Operational Application of eReefs Model	DES Sciences	180,765
	Regional NRM Coordination and Support	DES OGBR&WH	581,191
	Riparian vegetation monitoring	DES Sciences	54,670
	Land Management Target Review support	DAF	229,051
Regional Report Cards	Regional Report Cards - Monitoring	DES Sciences	507,935
	Regional Report Cards - Partnerships	DES OGBR&WH	163,096
Traditional Owner Water Quality Monitoring	Traditional Owner Water Quality Monitoring 1.1	DES OGBR&WH	126,000
	Traditional Owner Water Quality Monitoring 1.2	DES OGBR&WH	51,000
Total			41,766,873