

# Reef 2050 Water Quality Improvement Plan investments

This table includes key Australian and Queensland government investments in Reef 2050 Water Quality Improvement Plan actions. Investment sources include the Queensland Reef Water Quality Program and the Australian Government's Reef Trust (including Reef Trust Partnership with the Great Barrier Reef Foundation (funding allocated to 2023-2024), National Landcare Program Reef 2050 (Reef 2050), Reef Program, National Environmental Science Program Tropical Water Quality Hub (NESP TWQ) programs, and Great Barrier Reef Marine Park Authority.

The allocated program investment covers approved and announced investment for the period 2017-2018 to 2021-2022.

DAF = Queensland Department of Agriculture and Fisheries

DES = Queensland Government Department of Environment and Science

Resources = Queensland Government Department of Resources

DAWE = Australian Government Department of Agriculture, Water and the Environment (formerly Department of the Environment and Energy)

GBRMPA = Great Barrier Reef Marine Park Authority

Overarching action	Activity within Australian Government Reef programs and Queensland Reef Water Quality Program	Lead agency	Investment source	Program allocation over five years # (2017-2018 to 2021-2022)		
				*Australian Government	Queensland Government	Total
<b>Responding to the challenge: Actions to progress towards targets</b>						
<b>Minimum practice standards</b>						
Action 1.1—Implement minimum practice standards for all relevant agricultural industries, which can be met either voluntarily, e.g. through industry-led best management practice (BMP) programs or as a result of regulation.	Support to voluntary industry-led BMP programs in cane, grazing, grains, and banana industries, including continual improvement of BMP modules, benchmarking of producer's operations and accreditation to industry standard.  Future support for BMP in horticultural industries is proposed.	DES	Queensland Reef Water Quality Program		\$32,479,253	\$32,479,253
	Proposed changes to the reef regulations of the <i>Environmental Protection Act 1994</i> .	DES	Queensland Reef Water Quality Program		\$5,548,022	\$5,548,022
	Targeted compliance program under the <i>Environmental Protection Act 1994</i> .	DES	Queensland Reef Water Quality Program		\$7,679,169	\$7,679,169
	Enhance integration of data and use the Water Tracking and Electronic Reporting System (WaTERS) to capture point source release monitoring and tracking data online.	DES	Queensland Reef Water Quality Program		\$399,311	\$399,311
	Support the transition of graziers, and cane and banana growers to improved practices through access to professional advice.	DES	Queensland Reef Water Quality Program		\$10,100,000	\$10,100,000

# Final allocation may vary depending on program priorities.

\* Investment as of February 2021, does not include departmental costs associated with administering the Australian Government programs.

Culture of innovation and stewardship						
Action 2.1—Support land managers to increase capacity to adopt improved management practices, e.g. through coordinated extension, education and awareness programs.	Boost extension resources, providing greater access for farmers to extension services to enable greater practice change in Great Barrier Reef farming communities and building long term capacity in the advisory services.	DAF	Queensland Reef Water Quality Program		\$8,698,018	\$8,698,018
	Five on-ground regional programs for DIN and pesticide reduction: Mackay-Whitsundays* (\$22.7 million), Lower Burdekin* (\$20.4 million), Lower Herbert (\$16.2 million), Mulgrave-Russell (\$6.2 million) and Johnstone and Tully catchments (\$11.6 million). These programs aim to reduce pollution runoff via practice change while improving farm productivity and profitability. *Pesticides reduction only on indicated programs.	DAWE	Reef Trust Partnership	\$77,100,000		\$77,100,000
	Four early investment projects supporting cane farmers in the Reef catchments to improve farming practices and reduce nutrient (and in some cases pesticides) run-off to the Reef. Projects: Cane to Creek 2 (\$2.2 million), Project Catalyst 2 (\$2.4 million), Project Bluewater (\$1.2 million) and BRIA Irrigators' project \$0.9 million).	DAWE	Reef Trust Partnership	\$6,778,577		\$6,778,577
	Extension and education activities targeted at adoption of voluntary industry-led BMP programs.	DAF	Queensland Reef Water Quality Program		\$11,043,000	\$11,043,000
	Enhanced education and extension coordination through: <ul style="list-style-type: none"> <li>stakeholder engagement to achieve practice change</li> <li>a review of current extension and education approaches</li> <li>development of a three-year program plan and implementation strategy</li> <li>development of a framework for education and extension.</li> </ul> Pilot an agriculture capacity building program focusing on extension training networks and interns.	DAF	Queensland Reef Water Quality Program		\$5,658,185	\$5,658,185
	Increased use and improved function of nominated grazing extension tools for extension service providers to support the capacity of graziers to make climate responsive management decisions using decision support tools such as Forage and Vegmachine.	DES	Queensland Reef Water Quality Program		\$2,994,000	\$2,994,000
	Project Cane Changer—a large-scale social change program in the Wet Tropics to better understand motivations and associated benefits of behaviour change to encourage cane farmers to adopt actions that will improve water quality outcomes.	DES	Queensland Reef Water Quality Program		\$1,837,024	\$1,837,024
	Project Cane Changer 2 - This phase of the behaviour change project builds on the existing program in the Wet Tropics and initiate new programs in Mackay, Burdekin and Southern regions.	DAWE	Reef Trust Partnership	\$1,413,500		\$1,413,500
	Wetlands demonstration on-ground case studies, wetlands extension with clients, management of local wetlands committees, development and delivery of wetlands information and tools for landholders.	DAF	Queensland Reef Water Quality Program		\$462,000	\$462,000
	Targeted extension approach to accelerate adoption of improved grazing management practices in priority areas in the Burnett Mary region.	DES	Queensland Reef Water Quality Program		\$1,441,000	\$1,441,000

	Implementation of two Major Integrated Projects (MIPs) in the Wet Tropics and Burdekin regions to pilot a range of activities with producers and the community to reduce nutrient, pesticide and sediment loads into local waterways and ultimately the Great Barrier Reef.	DES	Queensland Reef Water Quality Program		\$35,305,890	\$35,305,890
	DES's scientific information, technical expertise and advice supports research agendas underpinning Reef 2050 Plan and the Queensland Government.	DES	Queensland Reef Water Quality Program		\$687,001	\$687,001
Action 2.3—Support extension and education providers to deliver effective extension and education programs that reach a broad audience of land managers.	Project to enhance delivery capacity related to agronomic extension by training eight early career extension officers (agricultural experts) in practices relevant to addressing sediment, nitrogen and pesticide run-off.	DAWE	Reef Trust Partnership	\$1,258,768		\$1,258,768
Action 2.5—Provide incentives to support land managers, including Traditional Owners, with practice change.	Project Pioneer: Innovation in Grazing Land Management—to support graziers in sediment hotspots to identify and implement practices that help improve their profitability and land condition. (Total project investment = \$2.908 million across 2015-2016 to 2018-2019.)	DAWE	Reef Trust	\$1,657,560		\$1,657,560
	Two early investment projects that promote the adoption of regenerative grazing operations to increase ground cover in grazing lands and reduce sediment in runoff to the Great Barrier Reef. Projects: Project Pioneer 2 (\$2.9 million) and Reefwise Grazing of Burdekin Rangelands (\$0.7 million).	DAWE	Reef Trust Partnership	\$3,559,484		\$3,559,484
	Mackay Whitsunday Isaac Sustainable Agriculture—Cane—to support cane farmers to transition from D and C class practice to at least B class. (Total project investment = \$4.425 million across 2015-2016 to 2018-2019.)	DAWE	Reef Trust	\$2,522,250		\$2,522,250
	Reef Trust Tenders (Cane)—to support cane farmers to reduce end-of-catchment DIN loads generated in the Burdekin and Wet Tropics regions. (Total project investment = \$20.162 million across 2013-2014 to 2021-2022.)	DAWE	Reef Trust	\$14,187,311		\$14,187,311
	Project Catalyst Revamp—game changing farm management practices—for enhanced management practices for sugar cane farmers. (Total project investment = \$3 million across 2015-2016 to 2018-2019.)	DAWE	Reef Trust	\$1,710,000		\$1,710,000
	Reef Alliance—Growing a Great Barrier Reef—to support landholders to change practices in cane, grazing, horticulture, bananas, grains and cropping. (Total project investment = \$45.667 million across 2015-2016 to 2018-2019.)	DAWE	Reef Trust	\$26,030,184		\$26,030,184
	Reef Alliance Project (Phase 2) - Supports cane farmers and graziers by using one-to-one agricultural experts (extension officers) to move land holders towards best practice to reduce sediment, nitrogen and pesticides.	DAWE	Reef Trust Partnership	\$3,500,000		\$3,500,000
	Support of cane farmer trials of enhanced efficiency fertiliser in the catchments of the Great Barrier Reef—to target fertiliser nitrogen losses to the Reef from cane farms by increasing Nitrogen Use Efficiency. (Total project investment = \$7.1 million across 2016-2017 to 2020-2021. Queensland Reef Water Quality Program funding was provided in 2016-2017.)	DAWE	Reef Trust	\$4,700,000		\$4,700,000

	Project Uplift Farming Systems Initiative—a co-investment with MSF sugar to assist sugar cane growers to transition to more efficient farming systems to improve on-farm nutrient management. (Total project investment = \$4.521 million across 2016-2017 to 2021-2022.)	DAWE	Reef Trust	\$4,285,780		\$4,285,780
	Complete Nutrient Management Planning—to encourage cane growers to adopt reduced nutrient application rates.	DAWE	Reef Trust	\$3,384,285		\$3,384,285
	Systems Repair and Water Quality Partnerships. (Total project investment = \$26.5 million across 2013-2014 to 2017-2018.)	DAWE	Reef Program	\$2,596,134		\$2,596,134
	Regional Land Partnerships for water quality - up to \$30 million from 2020-2021 to 2022-2023	DAWE	Reef Trust	\$16,574,209		\$16,574,209
	\$4.8 million for water quality actions as additional investment through the <a href="#">Queensland Reef Water Quality Program</a> .	DES	Queensland Reef Water Quality Program		\$4,825,397	\$4,825,397
Action 2.6—Trial and implement innovative monitoring, land management and treatment system options that aim to deliver water quality benefits.	Great Barrier Reef Innovation Fund—addressing agricultural management practices, water treatment systems and water quality monitoring.	DES	Queensland Reef Water Quality Program		\$4,551,195	\$4,551,195
	Innovative projects trialling a range of new technologies, methods and approaches for reducing DIN, fine sediments and pesticides, including new land management and land restoration techniques.	DAWE	Reef Trust Partnership	\$5,301,082		\$5,301,082
	Implement projects to build on successful trials of on-ground management practices.  DAF's agricultural research and development projects in relation to grazing, sugarcane, grains, bananas and horticulture with partner organisations, including industry and universities that provide significant reef water quality benefits through exploring new technology and practices, improved pesticide and fertiliser management, economic evaluation and incorporating improved management into farming systems.	DAF	Queensland Reef Water Quality Program		\$8,442,417	\$8,442,417
	Economic validation of practices—validating the economics of management practices that improve water quality and providing this information to landholders in decision support tools and as part of the extension program.	DAF	Queensland Reef Water Quality Program		\$5,588,000	\$5,588,000
	Science in the Paddock – targeted projects of direct action to address water quality pollutants across all agricultural industries based on priorities through Science in the Paddock program.	DES	Queensland Reef Water Quality Program		\$18,006,004	\$18,006,004
	Demonstration projects to encourage improved practice uptake at a local scale.	DES	Queensland Reef Water Quality Program		\$2,368,675	\$2,368,675
	Burdekin cane farmer engagement: complete nutrient management planning for cane farming (RP 161).	DES	Queensland Reef Water Quality Program		\$2,280,935	\$2,280,935

Catchment restoration						
Action 3.1—Use whole-of-system catchment management, planning and information to support prioritisation.	Conservation and protection activities aimed at maintaining water quality in less-disturbed catchments following a holistic 'whole-of-catchment' approach.	DAWE	Reef Trust Partnership	\$10,000,000		\$10,000,000
Action 3.2—Use guidelines, Traditional knowledge and decision support tools to design and inform interventions.	Queensland Wetlands Program: <ul style="list-style-type: none"> <li>provision of wetlands tools and WetlandInfo web site</li> <li>delivery of walking the landscape whole of catchment management understanding.</li> </ul>	DES	Queensland Reef Water Quality Program		\$1,502,453	\$1,502,453
Action 3.3—Trial and implement innovation in catchment repair projects to reduce sediment and nutrient delivery to the Reef.	Targeted projects of direct action through sustainable landscape management and system repair including riparian revegetation, gully repair, streambank stabilisation and coastal wetlands rehabilitation.	RESOURCES	Queensland Reef Water Quality Program		\$18,698,512	\$18,698,512
	Five on-ground regional programs to reduce fine sediment runoff in the Fitzroy (\$19.6 million), Mary (\$9.4 million), Bowen Broken Bogie (\$27.3 million), Upper and East Burdekin (\$4.1 million) and Upper Herbert (\$3.5 million) catchments. Projects under these programs are aimed to remediate landscapes through restoring gullies and streambanks and improving management of grazing lands.	DAWE	Reef Trust Partnership	\$63,800,000		\$63,800,000
	Streambank and gully remediation projects including innovative gully remediation in partnership with Greening Australia and erosion management plan and operational works on Springvale Station.	DES	Queensland Reef Water Quality Program		\$4,531,267	\$4,531,267
	Two early investment projects aimed at addressing fine sediment discharge to the Great Barrier Reef through gully restoration and adoption of best land management practices. Projects delivered by Greening Australia (\$2.1 million) and the Mary River Catchment Coordinating Committee (\$0.6 million).	DAWE	Reef Trust Partnership	\$2,738,540		\$2,738,540
	Reef water quality projects in the Central Queensland region seeking to reduce nutrient, pesticide and sediment losses to waterways.	DES	Queensland Reef Water Quality Program		\$4,469,614	\$4,469,614
	Implement cost effective restoration works and improve land management practices to address gully and streambank erosion. (Total project investment = \$38.55 million across 2015-2016 to 2021-2022.)	DAWE	Reef Trust	\$30,401,766		\$30,401,766
	In partnership with Greening Australia, support works for wetland and coastal ecosystem rehabilitation. (Total project investment = \$7 million across 2015-2016 to 2020-2021.)	DAWE	Reef Trust	\$5,100,000		\$5,100,000
	Action 3.5—Partner with voluntary stewardship groups, Traditional Owner groups, Indigenous Land and Sea Rangers and other organisations to deliver catchment repair projects	Six projects to restore coastal habitat and protect species, each delivered by one of the Reef regional NRM organisations. Activities include weed and pest animal control, removal of barriers to natural water flow, regeneration of native vegetation, fencing to protect sensitive areas, improving fire and grazing regimes and protecting threatened and migratory species, including marine turtles and migratory shorebirds through protection of their nesting sites and habitat.	DAWE	Reef Trust	\$25,707,790	
Traditional Owner-led water quality improvement projects (on-ground actions for healthy water) through the adoption of co-design approaches that increase awareness and consideration of Indigenous Knowledge and cultural values.		DAWE	Reef Trust Partnership	\$20,000,000		\$20,000,000

## Enabling delivery

### Science and knowledge

Action 4.1—Identify, prioritise and fill knowledge gaps through the Reef 2050 Water Quality Improvement Plan Research, Development and Innovation Strategy.	Research, Development and Innovation Strategy development.	DES	Queensland Reef Water Quality Program		\$751,140	\$751,140
Action 4.2—Integrate forms of knowledge including science, policy, management, Traditional Owner and community through regular synthesis workshops and theme-specific working groups to support consistent communication messages and guidance for managers.	Annual synthesis workshop across science, policy and management and projects arising.	DES	Queensland Reef Water Quality Program		\$703,782	\$703,782
Action 4.3—Deliver decision support tools, communication and education products tailored to specific audiences.	Communication projects.	DES	Queensland Reef Water Quality Program		\$344,774	\$344,774
	Activities to improve communication and information to support large scale change in practice, including communication tools, workshops, communication strategies and implementation plans.	DES	Queensland Reef Water Quality Program		\$1,538,763	\$1,838,763
		DAWE	Reef 2050	\$300,000		
	National Environmental Science Program Tropical Water Quality Hub. (Total project investment = \$31.98 million across 2014-2015 to 2020-2021.)	DAWE	NESP TWQ	\$18,750,000		\$18,750,000
	Whitsunday scoping study—to obtain a greater understanding of the causes of the water quality decline in the Whitsunday Region. (Total project investment = \$315,000 across 2016-2017 to 2018-2019.)	DAWE	Reef 2050	\$236,250		\$236,250
3D LiDAR Terrain Mapping Services project—for high resolution 3D mapping data of erosion processes in the Reef's catchments.	DAWE	Reef 2050	\$1,800,000		\$1,800,000	

### Coordinating and prioritising investment

Action 5.1—Identify opportunities for innovative financing mechanisms to amplify funding for water quality outcomes.	Five innovative finance and funding initiatives aimed at trialling new approaches to using financial mechanisms to drive water quality improvement.	DAWE	Reef Trust Partnership	\$1,493,918		\$1,493,918
Action 5.3—Prioritise investment across Reef catchments according to catchment priorities and targets.	Projects focused on Reef-wide, regional, and local planning and mapping to support prioritisation associated with future strategic investments, to assess the suitability of different interventions, and to guide the identification and implementation of specific on-ground activities.	DAWE	Reef Trust Partnership	\$1,705,000		\$1,705,000
	Development of a tool to support the development, assessment and prioritisation of investment scenarios based on the combination of water quality interventions, and two key decision making reports: (1) Effective and Efficient Pathways for Investment in Improved Water Quality in the Great Barrier Reef and (2) Support for decision-making related to investment in improved water quality in the Great Barrier Reef.	DAWE	Reef Trust Partnership	\$472,685		\$472,685

Governance						
Action 6.1—Collaborate and coordinate between the Queensland and Australian governments, in line with the Reef 2050 Long-Term Sustainability Plan governance structures.	Secretariat support to governance groups.	DES	Queensland Reef Water Quality Program		\$3,727,028	\$4,093,633
		DAWE	Reef 2050	\$366,605		
Action 6.2—Ensure program design aligns with water quality priorities.	Annual Queensland Reef Water Quality Program Investment Report/Plan.	DES	Queensland Reef Water Quality Program		Included in Governance	Included in Governance
Action 6.3—Ensure accountability of investment to outcomes in this plan.	Program management.	DES	Queensland Reef Water Quality Program		\$2,143,724	\$2,143,724
Evaluating performance						
Action 7.1—Monitor and model management practice and water quality improvements through the Paddock to Reef program.	Monitoring programs: Great Barrier Reef ground cover mapping, loads monitoring, riparian vegetation, wetland condition, wetlands mapping and extent.	DES	Queensland Reef Water Quality Program		\$10,311,001	\$10,311,001
	Catchment loads modelling, gully mapping, Paddock to Reef support to regional Natural Resource Management body components.	RESOURCES	Queensland Reef Water Quality Program		\$8,136,542	\$8,136,542
	Management practice adoption reporting.	DAF	Queensland Reef Water Quality Program		\$2,927,290	\$2,927,290
	Monitoring, modelling, evaluation and reporting.	DES	Queensland Reef Water Quality Program		\$5,514,163	\$14,214,163
		DAWE	Reef 2050	\$8,700,000		
	Wetland condition monitoring and water quality monitoring and modelling.	DES	Queensland Reef Water Quality Program		\$7,273,000	\$7,273,000
	Ambient water quality monitoring, high resolution satellite imagery.	RESOURCES	Queensland Reef Water Quality Program		\$7,323,582	\$7,323,582
	Research and development improvement of water models in the Great Barrier Reef catchments through the Queensland Water Modelling Network (QWMN).	DES	Queensland Reef Water Quality Program		\$2,018,699	\$2,018,699
Collection, storage, access and enhancement of information that support catchment restoration and land management as well as monitoring, modelling and reporting of outcomes in Reef catchments.	DES	Queensland Reef Water Quality Program		\$3,609,080	\$3,609,080	

	Data management and delivery through Science and Spatial Information Management for Reef (SSIMR).	RESOURCES	Queensland Reef Water Quality Program		\$756,100	\$756,100
	Delivery of the Marine Monitoring Program to monitor inshore marine water quality and the health and resilience of inshore seagrass meadows and coral reefs, and report their condition and trend in the Reef Water Quality Report Card.	GBRMPA DAWE	GBRMPA Reef Program	\$13,150,000		\$13,150,000
Action 7.4—Evaluate the effectiveness of programs, governance mechanisms, and adaptations.	Develop an Evaluation Framework and annually evaluate and report on performance of overall Reef investment program and review governance.	DES	Queensland Reef Water Quality Program		\$500,550	\$500,550
Action 7.5—Report progress towards targets, objectives and outcomes.	Develop and release a Reef Water Quality Report Card.	DES	Queensland Reef Water Quality Program		\$2,469,157	\$2,469,157
Action 7.6—Communicate regionally relevant information for management decisions and local communities.	Regional report card partnerships membership and support.	DES	Queensland Reef Water Quality Program		\$9,982,963	\$12,994,963
		DAWE	Reef 2050	\$3,012,000		
	Projects aimed at sharing and managing industry and landholder-owned data. Activities will focus on technological challenges and opportunities associated with the breadth and resolution of the data needing to be collected, stored, curated, synthesised and utilised in a way that both protects and increases value across various sectors of industry and government.	DAWE	Reef Trust Partnership	\$1,500,000		\$1,500,000
Action 7.7—Make data and information publicly available through a range of communication products.	Operationalising eReefs. (Total project investment = \$2.3 million across 2016-2017 to 2019-2020.)	DES	Queensland Reef Water Quality Program		\$500,000	\$11,570,000
		DAWE	Reef 2050	\$1,400,000		
	Sustainable delivery of eReefs services including real-time marine hydrodynamic and water quality models, real-time catchment river flow models and visualisation products.	DAWE	Reef Trust Partnership	\$9,670,000		
<b>TOTAL</b>				<b>\$396,863,678</b>	<b>\$270,127,680</b>	<b>\$666,991,358</b>

This table will be updated periodically to reflect new investments.