Australian Marine Conservation Society

Reducing Reef Water Pollution

A Review of Government Investments to reduce Water Pollution in the Great Barrier Reef

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Cover image: Corals bleached from freshwater, carrying pollutants, after heavy rainfall in March 2020. Arthur Bay, a popular tourism spot on Magnetic Island, off Townsville. (c) Maximilian Hirschfeld

Paying Respect

The Australian Marine Conservation Society acknowledges the Traditional Custodians of the land and sea country across Australia and the Torres Strait, who have enduring connections to country, sea and community.

We pay our respects to Elders, past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples today. AMCS celebrates the continuous living cultures of First Australians and acknowledges the important role they play in the life of this country.

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Summary

Water pollution remains a major threat to the Great Barrier Reef, despite considerable investments to improve water quality in Reef catchments over the past two decades. Elevated levels of fine sediments, nutrients, and pesticides continue to have detrimental impacts on the Reef, particularly coastal, inshore, and mid-shelf marine ecosystems. The current outlook for the Reef is 'very poor', and management efforts to improve water quality have only been 'partially effective' (GBRMPA, 2024). Reducing water pollution is critical to increase the resilience of the Reef and support the recovery of Reef ecosystems from the impacts of climate change. To sustain the Outstanding Universal Value of the Reef, it is imperative for Australia to fulfil its commitment to meet water quality targets by 2030 (Commonwealth of Australia, 2024; Waterhouse et al., 2024).

This review provides an overview of publicly available data on government investments since 2003 and examines their effectiveness in reducing water pollution in Reef catchments and generating progress towards the Reef 2050 water quality targets, concluding with a set of five key policy recommendations.

After more than two decades, a large gap in funding needed to reach water quality targets remains. As a result, the current progress to reduce water pollution is too slow to strengthen the Reef's resilience in the near future. A comprehensive evaluation of the cost-effectiveness of government-funded efforts to reduce water pollution is currently limited by the scarcity of publicly available data linking investments to reductions in water pollution. Improving transparency in monitoring and reporting will be essential to assessing the cost-effectiveness of government investments. Protecting the Reef for future generations will require a substantial increase in government investment, a strategic and coordinated investment approach, and increased transparency linking public funds to water quality improvements (Waterhouse et al., 2024).

Turbid river plume emerging from the Russell-Mulgrave River mouth following several days of heavy rainfall in Feb 2015.

Reef Water Quality Targets

Evolution of water quality targets

Since 2003, the Australian and Queensland Governments have developed water quality management plans, currently termed Reef 2050 Water Quality Improvement Plan (Reef 2050 WQIP),[1] which are reviewed approximately every five years. These joint government plans guide the management of land-based activities in Reef catchments with the aim of ensuring the quality of land-based run-off has no detrimental impact on the health and resilience of the Reef. The plans set targets to improve the quality of water flowing from the catchments to the Reef and are underpinned by the best available scientific knowledge and understanding of water quality issues in the Reef, which is periodically captured in successive Scientific Consensus Statements (Waterhouse et al., 2024). The water quality targets are calculated as reductions in end-of-catchment anthropogenic loads of sediments and nutrients, the two main water pollutants.[2] The target for pesticides is to protect at least 99% of aquatic species at end-of-catchments by 2025 (State of Queensland, 2018).

The first pollutant load reduction targets were established in 2001 as a percentage reduction of the total pollution loads measured at the end-of-catchment (GBRMPA, 2001). Revised targets were established in 2009, calculated as reductions in end-of-catchment anthropogenic pollution loads, stemming from land-based human activities. The targets for the two main pollutants were a 20% reduction in anthropogenic fine sediment load and a 50% reduction in anthropogenic dissolved inorganic nitrogen (DIN) load by 2013 (The State of Queensland, 2009). Since then, load reduction targets have been refined according to the best available knowledge, including evidence reported in successive Scientific Consensus Statements. In 2017 the first ecologically relevant water quality targets were defined, identifying the reductions required to maintain Reef ecosystem health. These targets are currently being reviewed and will inform the five-yearly review of the Reef 2050 WQIP. In 2025, the timing for meeting the targets will be extended for the third time since 2009 (Table 1).

Table 1. History of Reef 2050 water quality (load reduction) targets since 2009.

Year targets were set	Load reduction target	Target year
2009	20 % Fine sediment, 50 % DIN	By 2013
2013	20 % Fine sediment, 50 % DIN	By 2018
2017	25 % Fine sediment, 60 % DIN	By 2025
2023-2025	To be revised by mid-2025	By 2030[3]

1 Prior to 2013 the WQIPs were titled Reef Water Quality Protection Plans. These plans are the joint Queensland and Australian Governments' water quality management frameworks under the Reef 2050 Long-term Sustainability Plan (https://www.reefplan.qld.gov.au/)

2 Anthropogenic loads represent the contribution of pollution stemming from land-based human activities, since European settlement.

3 In May 2023, the Australian and Queensland Governments committed to UNESCO World Heritage Centre to set revised water quality targets under the Reef 2050 WQIP review to 2030 (Commonwealth of Australia, 2024).

Progress towards water quality targets

Since 2003, progress towards reducing anthropogenic pollution loads from Reef catchments has been slow (Figure 1). A 16% reduction in fine sediment pollution was reached in 2022, falling well short of the Reef-wide 25% sediment load reduction target, which was to be met by 2025. At the current rate of fine sediment pollution load reduction (0.4% per year)[4] the fine sediment target would only be met in the year 2047. Progress towards reducing nitrogen (DIN) pollution, primarily stemming from the application of fertilisers in agriculture, reached a 28.4% reduction in 2022. This is only halfway to the 60% by 2025 target, which won't be met until the year 2114, at the current rate of progress (0.35% per year).[4]

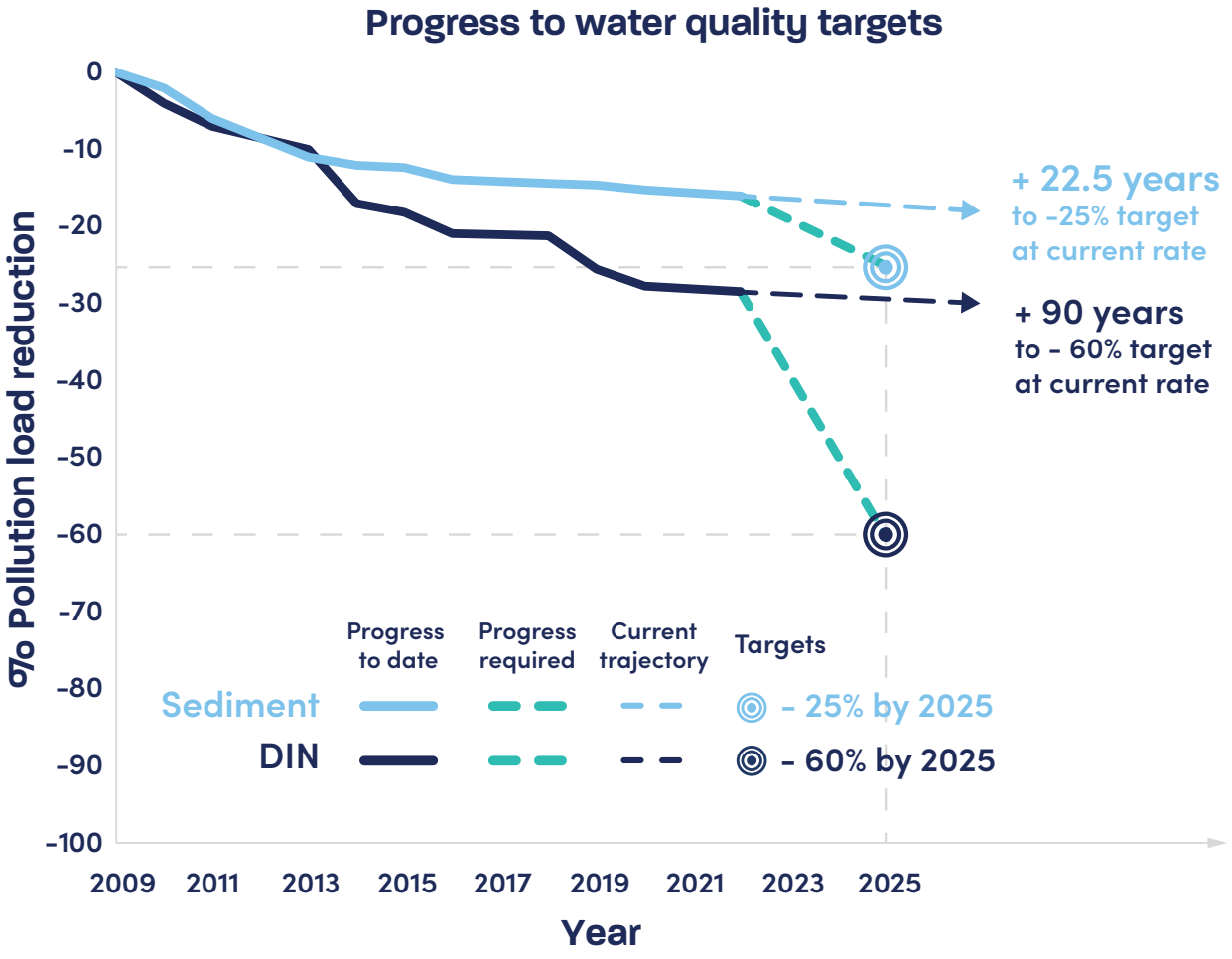

Figure 1. Progress towards water quality targets of two main water pollutants, fine sediment (light blue) and DIN (dissolved inorganic nitrogen; dark blue), measured in percent pollution load reduction against a baseline established in 2009. Targets are due in 2025 (coloured circles), but at the current rate of progress (per year based on the Reef Water Quality Report Card 2021 and 2022), the targets will not be met, with a trajectory showing likely achievement by 2047 (fine sediment) and 2114 (DIN) based on the levels of investment committed preceding the reporting period.

4 Average rate of progress per year based on the Reef Water Quality Report Card 2021 and 2022.

Reef Water Quality Investments

Cost estimates for meeting water quality targets

In 2015, the Queensland Government established the Great Barrier Reef Water Science Taskforce to provide advice on how to invest the government's $100 million commitment to improve Reef water quality (State of Queensland, 2016). The Taskforce's 2016 Final Report was complemented by a multi-disciplinary analysis of the cost of meeting the water quality targets. The analysis estimated the cost of a range of management solution sets designed to make significant progress towards the water quality targets for five of the GBR natural resource management (NRM) regions, namely the Wet Tropics, Burdekin, Mackay-Whitsundays, Fitzroy, and Burnett-Mary regions (Alluvium, 2016). The report concluded it would cost $8.2 billion to meet the fine sediment and DIN targets in four out of the five NRM regions. More specifically, the cost of achieving the fine sediment targets in four of the five regions investigated was $7.8 billion. For DIN, the total cost to achieve the targets, also in four of the five regions, was estimated at $0.4 billion. For the Wet Tropics, the analysed management solution sets were estimated to only achieve 80% of the fine sediment target and 75% of the DIN target, requiring additional management solutions (Alluvium, 2016).

In 2022, the Australian Government commissioned an independent review of water quality investments since 2013-14 (Alluvium, 2022; Alluvium, 2023). The Alluvium 2022 Part B report provides a situational analysis of the cost-effectiveness of water quality investments by both the Australian and Queensland Governments from 2014 to 2022 and includes projected pollution load reductions from investment under the Reef Trust Partnership between 2019 and 2024.[5] The report highlights the range of costs per hectare (ha) of different management actions to reduce fine sediment and DIN pollution:

- Fine sediment from $ 21.1 (broadacre cropping) - $12,196 / ha (combined gully treatment)
- DIN from $298 - $1070 / ha (sugarcane and banana nutrient management practices)

The government investments considered in the analysis were estimated to deliver approximately 1,444 tonnes of DIN load reduction (40% of the Reef-wide target) from approximately $165 million investment in practice change and approximately 521 kilotonnes of fine sediment load reduction (27% of the Reef-wide load reduction target) from approximately $197 million investment in practice change, stream bank and gully remediation (Figure 2).

Based on the results of the situational analysis, the report estimated that the proposed investment of $471M by the Australian Government to 2029-30 could achieve a further reduction of 1,562 tonnes of DIN, bringing the total reduction to approximately 3,005 tonnes (83% of the Reef-wide DIN target) and a further reduction of 205 kilotonnes of fine sediment, totalling approximately 726 kilotonnes (37% of the Reef-wide fine sediment target; Figure 2). It is important to note that the analysis first considers the management actions with the lowest costs for achieving load reductions and that costs increase for achieving the remaining load reductions closer to the target (Alluvium, 2022). Further, the analysis only considers agricultural practice change actions to reduce DIN pollution. However, practice change alone will be insufficient to achieve DIN targets and needs to be complemented by often more costly catchment ecosystem restoration (State of Queensland, 2016; Waterhouse et al., 2017; State of Queensland, 2018; Department of Environment, Science and Innovation, 2023).

5 Considers investments from Australian Government Reef Trust water quality investments Phase I to VII, the Queensland Reef Water Quality Program, and the Reef Trust Partnership (RTP) with the Great Barrier Reef Foundation (GBRF).

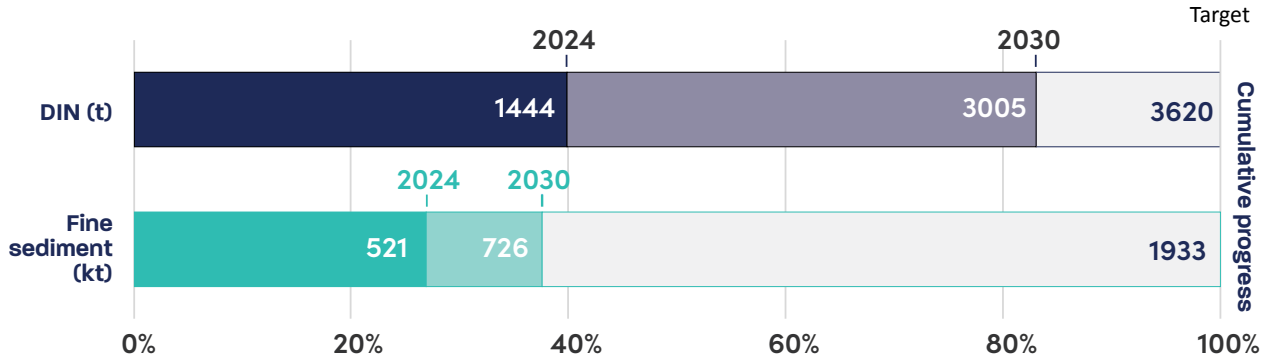

Figure 2. Cumulative progress in pollution load reduction towards Reef-wide targets predicted from government investments committed from 2014 until 2024 and 2030 (Alluvium, 2022). Dissolved inorganic nitrogen (DIN) in tonnes, and fine sediment in kilotonnes.

It is important to recognise the underlying uncertainties in these cost estimates. Available estimates of the costs for achieving progress towards load reduction targets are conservative. The lack of consistent reporting of the cost-effectiveness of government-funded management actions in Reef catchments leads to large ranges in the estimated costs for achieving pollutant load reductions and impedes a comprehensive evaluation (Coggan et al., 2024; Eberhard et al., 2021). Further, no analysis to date has considered levels of disadoption of improved farming practices resulting from investments or included failures of improved farming practices due to poor construction, lack of maintenance, and impacts from extreme weather events (Murray-Prior et al., 2024). Various reports have indicated variable rates of adoption of improved farming practices and sometimes lengthy periods (from 6 to 22 years) for peak adoption levels to be reached (Alluvium, 2019; Table 10). Therefore, actual load reductions achieved to date are likely to be less than those predicted as a result of committed government investments. It is essential to refine previous cost assessments. Proposed interactive web-based tools for prioritising investment, such as Reefonomics, are still under development.[6]

Government water quality investments to date

For this review the following publicly available sources (as of May 2025) were used to summarise the total investment in programs to improve water quality made by the Australian and Queensland Governments since 2003-04: 1) GBR Water Science Taskforce report (State of Queensland, 2016), 2) Appendix B in the 2019 State Party report to UNESCO (Commonwealth of Australia, 2019), 3) Queensland Reef Water Quality Program website and annual investment plans and reports,[7] 4) Reef Trust Partnership Annual Work Plans,[8] and 5) DCCEEW Reef Trust investments online information.[9] For full details, see Appendix 1.

6 Reefonomics: https://reefonomics.net.au/, accessed 19 December 2024.
7 QRWQP investment plans, reports and resources: https://www.qld.gov.au/environment/coasts-waterways/reef/reef-program/investment-plans-reports-resources
8 Reef Trust Partnership Publications and Strategies: https://www.barrierreef.org/what-we-do/reef-trust-partnership/reef-trust-partnership-publications-and-strategies
9 Reef Trust Programs: https://www.dcceew.gov.au/parks-heritage/great-barrier-reef/protecting/our-investments/reef-trust/programs

Since 2003-04, investments intended to improve water quality total some $2,248.5M to 2029-30, with the Queensland Government investing up to $964.8M and the Australian Government $1,283.8M (Table 2 and Appendix Table A1). The current Queensland Reef Water Quality Program investment phase is up to 2025-26, while the Australian Government's current investment continues until 2029-30. Thus, government investments to date dedicated to achieving the recommended reductions in anthropogenic pollution loads and other management targets amount to less than one-quarter of the previously estimated costs to reach the targets. This approximate amount considers increases in delivery costs due to inflation since 2016[10], the fact that the previous $8.2 billion cost estimate only includes costs to meet targets for two pollutants, fine sediments and nitrogen (DIN), in four of five NRMs, and the increased costs of catchment ecosystem restoration essential to meet the DIN target. Further, the 2016 cost estimate doesn't consider the costs of reducing other pollutants, such as pesticides, or restoring catchment landscapes. Since 2017, some investments have been dedicated to these initiatives, highlighting the need for updated cost estimates.

Table 2. Summary of government Reef water quality investments between 2003 and 2030.

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	Total
AUS	250.40											576.37									456.98							1283.75
QLD	315.00											385.67								264.10								964.77

Government investments to date have leveraged some co-investment by landholders and contributions by business and philanthropic organisations. Recognising the funding gap to achieve water quality targets, governments are increasingly looking at these co-investments, including via market-based schemes such as Reef Credits.[11] However, market-based schemes have heavily relied on government investments, including through Reef water quality programs,[7] but have been slow to attract private investments representing some 10s of millions of dollars so far (Natural Capital Economics, 2024). Public information on the amount of private funding that has been invested and the pollution load reductions it has achieved is lacking. An effective regulatory framework and science-based standards need to be in place before it is likely for such schemes to significantly contribute towards achieving pollution load reductions and they are unlikely to deliver the additional level of investment needed to address the existing shortfall (Natural Capital Economics, 2024).

10 Reserve Bank of Australia inflation calculator from 2016 to 2024: https://www.rba.gov.au/calculator/

11 Reef Credits: https://eco-markets.org.au/reef-credits/

Government investment in the GBR World Heritage Property

Both the Australian and Queensland Governments have management responsibilities for the GBR World Heritage property in addition to improving water quality. These include management of the GBR Marine Park and a variety of human activities in the Marine Park including shipping, fisheries, tourism, recreational boating, and management of ports, as well as ongoing research, monitoring, and modelling. The publicly available data reviewed for this report was insufficient and incongruent to provide a detailed picture of government investments in water quality and all other management responsibilities for the GBR World Heritage property since 2003. However, we present available data for a single investment year (2020/21) to provide a representative example (Figure 3 and Appendix Table A2). In 2021-22, the Queensland and Australian Governments co-invested a total of $378.3M in managing the GBR World Heritage property, with $121.6M (32%) allocated to management actions that improve water quality.

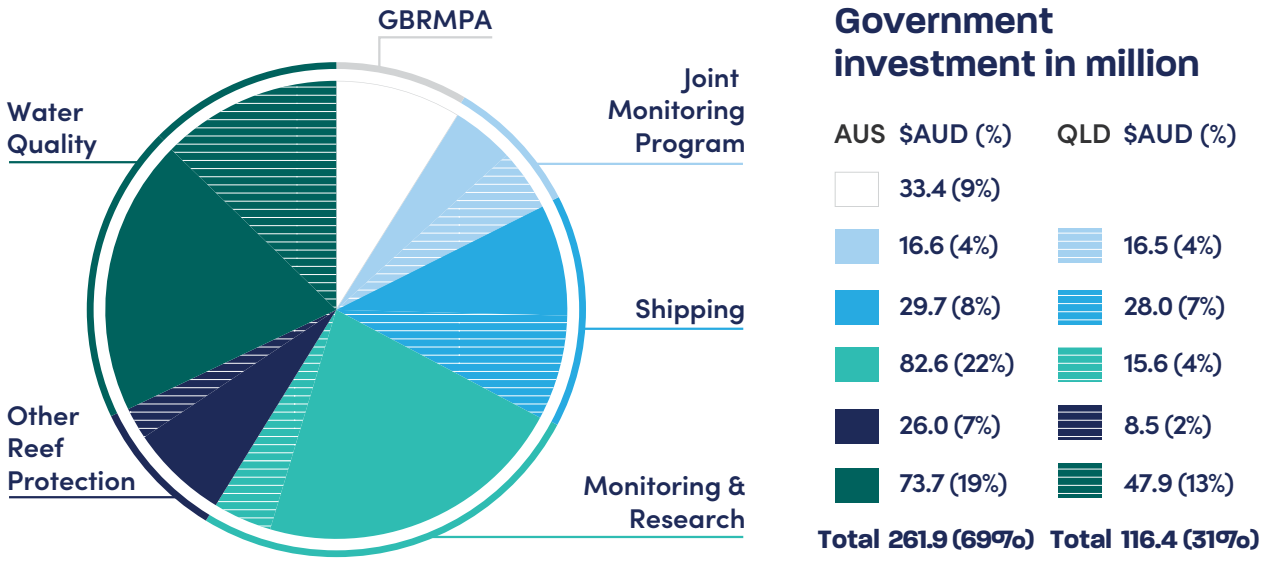

Figure 3: Overview of the total Australian and Queensland Government investments for the Reef in the 2020/21 financial year (see Appendix 2 for details on categories and data sources). Abbreviations: GBRMPA: Great Barrier Reef Marine Park Authority, AUS: Australian Government, QLD: Queensland Government.

Investment transparency and accountability

Evaluating the effectiveness of public investments to reduce water pollution has been limited by the scarcity of publicly available data on Australian and Queensland Government investments since the first joint water quality management plan in 2003 (Coggan et al., 2024; Alluvium, 2023).

In 2015, the Queensland Audit Office *Managing water quality in Great Barrier Reef catchments* report found that the State's Reef water quality program lacked coordination and accountability, characterised by disparate projects with no central authority and no clear accountability for their delivery (Queensland Audit Office, 2015). Following the report's recommendations, the Queensland Government established the Office of the Great Barrier Reef (OGBR), which commenced reporting the State's Reef water quality program investments on a project-by-project basis through annual investment reports.[12] However, a follow-up evaluation by the audit

12 Queensland Reef Water Quality Program annual report and investment plans: https://www.qld.gov.au/environment/coasts-waterways/reef/reef-program/investment-plans-reports-resources

office in 2018 highlighted that, despite more transparent reporting, the OGBR was still unable to evaluate the effectiveness of investments due to the lack of access to key data on the progress made by the programs it funds. The follow-up report recommended obtaining timely information on the outcomes achieved from funded programs (Queensland Audit Office, 2018). To date, this has not been implemented, impeding public assessment of value for money to achieve water quality outcomes from public investment.

Since 2014, the Reef Trust has been the Australian Government's flagship investment program for protecting and managing the Great Barrier Reef. Between 2014 and 2018, the program published annual investment strategies reporting investments at a program level.[13] The Australian National Audit Office released a Performance Audit Report on the Reef Trust program in 2016, recommending that the Australian Government improve the monitoring and reporting of progress achieved from investments (ANAO, 2016). Between 2018 and 2024/25, Australian Government investments were delivered through the Reef Trust Partnership with the Great Barrier Reef Foundation, responsible for delivering the program. Initially, the Partnership's annual work plans also reported on investment allocation at a program level,[14] but since 2022 included information on pollution load reductions achieved from investments,[15] which were also published in a regularly updated online water quality dashboard.[16] The dashboard and reports summarize achieved pollution load reductions by catchment and agricultural industry. Project-level data is not made publicly available. With most of the Reef Trust Partnership funding concluding in 2025, the only publicly available resource tracking pollution load reductions achieved from government investments will be decommissioned.

Protecting the Reef from water pollution is a joint responsibility. However, monitoring and reporting of investments and their effectiveness have largely been managed separately by the Australian and Queensland Governments. While water quality targets are being revised under the WQIP review, the Australian and Queensland Governments continue to allocate public funds to reduce water pollution without sufficient knowledge of the cost-effectiveness of funded management actions and no coordinated plan on how these investments will contribute to meeting revised targets by 2030.

13 Reef Trust Investment Strategies Phase I-VI: https://www.dcceew.gov.au/parks-heritage/great-barrier-reef/protecting/our-investments/reef-trust

14 The Reef Trust Partnership annual work plans: https://www.barrierreef.org/what-we-do/reef-trust-partnership/reef-trust-partnership-publications-and-strategies

15 The Reef Trust Partnership annual work plan 2021/22: https://www.barrierreef.org/uploads/RTP-Annual-Work-Plan-2021-22-FINAL-1.pdf

16 Reef Trust Partnership - Great Barrier Reef Foundation water quality progress dashboard (accessed 20 January 2025): https://www.barrierreef.org/what-we-do/reef-trust-partnership/water-quality-improvement

Conclusions and recommendations

Public investment in water quality initiatives for the Great Barrier Reef over the past two decades has been insufficient to achieve the Reef 2050 WQIP pollution load reduction targets. Investments since 2003 and current funding commitments through to 2029/30 represent only about one-quarter of the financial resources previously estimated to be needed to meet the targets.[17] To sustain the Outstanding Universal Value of the Reef and meet revised targets, a substantial increase in investment is required. Poor water quality reduces the ability of Reef ecosystems to recover from the impacts of climate change. The intensifying detrimental impacts of climate change on Great Barrier Reef ecosystems underscore the urgency of improving water quality. To maintain the Reef's resilience and mitigate the impacts of climate change, the targets need to be met by 2030.

Achieving the revised targets with currently committed and potential future investments will require a more strategic and coordinated investment approach. Investments need to focus on the most cost-effective management interventions, targeting areas that contribute the highest pollution loads, and tailored to catchment-specific circumstances (Waterhouse et al., 2024a). Emerging tools, such as the *Reefonomics* tool,[18] should be applied to update cost estimates for meeting water quality targets and to guide future investments. By linking investments to measurable pollution load reductions, these tools can aid in prioritizing project delivery and tracking progress towards targets.

Improving transparency and accountability in reporting water quality outcomes against government investments is paramount. The limited transparency of government investments to date impedes a comprehensive analysis of the effectiveness of public spending to reduce water pollution and creates distrust among Reef stakeholders, undermining the adoption of management practices that improve water quality (Murray-Prior et al., 2024). Tracking and reporting of pollution load reductions from public investment should be strengthened by requiring all projects funded by the Australian and Queensland Governments to report their results through a single publicly accessible database. This is consistent with recommendations from various reports, many of which have not been fully implemented (The State of Queensland, 2009; State of Queensland, 2016; Alluvium, 2023). Existing platforms like the *Reef Investor*[19], currently used by the Australian and Queensland Governments, could provide timely and transparent public reporting on how investments translate into water quality improvements.

Previous cost estimates for achieving water quality targets are conservative, focusing on two primary pollutants (fine sediment and DIN) and farming practice change as the primary management intervention. They have not considered potential costs arising from further deterioration of areas not managed or targeted by funding, disadoption of improved practices over time, and the long time-frames needed to achieve peak adoption levels for some farming practices. Further, several reports since 2003 have argued that management practice change alone will be insufficient to achieve water quality targets and propose catchment ecosystem restoration as a cost-effective complementary management solution (State of Queensland, 2016; Waterhouse et al., 2017; State of Queensland, 2018; Department of Environment, Science and Innovation, 2023). Ecosystem restoration can accelerate progress towards targets (Waterhouse

17 Considering 1) increases in costs due to inflation since 2016, 2) the previous 8.2 billion cost estimate only considers two main pollutants and meeting targets in 4 of 5 NRMs, 3) higher costs of management interventions to meet DIN reduction targets than considered in the previous estimate.

18 Reefonomics (accessed 20 January 2025): https://truii.com/reefonomics/

19 Reef Investor (accessed 20 January 2025): https://truii.com/reef-investor/

et al., 2024a). For example, restoring, rehabilitating, or constructing wetlands can significantly reduce nitrogen pollution while providing broader ecological benefits, such as enhanced biodiversity and carbon sequestration. While these strategies will likely increase the costs of achieving the targets, particularly for DIN, their co-benefits must be considered in future planning and investment decisions (Waltham et al., 2017; Adame et al., 2021).

In conclusion, meeting the Reef 2050 water quality targets will require increased funding, a targeted approach to investments, and better tracking of outcomes. Incorporating ecosystem restoration and improving investment transparency will be crucial to preserving the Great Barrier Reef for future generations.

Recommendations

1. Commission an updated costing of investments needed to meet the revised pollution load reduction targets by 2030.
2. Develop a long-term investment roadmap and framework for monitoring and public reporting of water quality outcomes and co-benefits against government investment.
3. Increase the amount of government funding for on-the-ground projects to address land-based sources of water pollution and accelerate progress toward meeting revised targets.
4. Improve coordination between local, state, and federal governments to increase transparency and accountability.
5. Improve monitoring and reporting within and across local, state, and federal government programs with consistent metrics for evaluating cost-effectiveness.

Coral bleaching Great Barrier Reef, March 2024, Supplied by CoralWatch © Caitlin Lawson.

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Appendix

Table A1: Australian and Queensland Government Reef water quality investments since 2003, based on publicly available information as of May 2025. Amounts are in million AUD."

Funding program		03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	Total
AUS	Reef Rescue						29.800	39.600	34.100	45.100	53.900												202.500
AUS	Reef Trust Phase I-VI												7.702	15.865	35.554	43.122	34.161	42.175	34.650	25.853	21.670		260.752
AUS	Reef Trust Partnership															199.000							199.000
AUS	Reef Trust Programs[1]																					64.980	64.980
AUS	Reef Trust Programs[2]																					200.000	200.000
AUS	Reef Trust Programs[3]																					192.000	192.000
AUS	Reef Program											47.900	29.650	32.850	10.100	10.105							130.605
AUS	Other Funding[4]												15.507	10.426	5.986	1.996							33.915
QLD	QLD Reef WQ Program[5]	25.000	25.000	25.000	25.000	25.000	25.000	35.000	35.000	25.000	35.000	35.000	35.000	33.425	47.145	270.100					264.100		964.770

Australia	**1,283.752**
Queensland	**964.770**
Grand total	**2,248.522**

Great Barrier Reef Water Science Taskforce Report 2016
Appendix B State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2019
Reef Trust Partnership Annual Work Plan 24-25 (Water Quality Program)
QLD Reef WQ Program Annual Investment Plan 2021-22
DCCEEW Reef Trust Programs website
QLD Reef Water Quality Program 2021-22 to 2025-26 (website)

1 Includes Reef Guardian Councils Program, Reef Coastal Restoarion Grants, Stream Bank Remediation Program ($6.4 million co-investment from Australian Government), Community Stewardship Program
2 Landscape Repair Program
3 Clearer Water for a Healthy Reef Program
4 Reported as "Other funding" in the Appendix B of the 2019 State Party Report; Includes a range of Reef projects between 2014-15 and 2017-18: Natural Heritage Trust Reef projects, Systems Repair and Urban Water Quality Grants, and e-Reefs coastal information system.
5 The Queensland Reef Water Quality Program includes funding for research, monitoring, and program governance (see yearly investment example figure 3). These investments could not be distinguished due to the lack of reporting on itemised investments prior to 2015.

Table A2: Australian and Queensland Government investments for the Great Barrier Reef in the 2021/22 financial year, based on publicly available information. Amounts are in million AUD.

	Investment	AUD million	% of total
AUS	Great Barrier Reef Marine Park Authority	33.369	9%
AUS	Joint Field Management Program	16.576	4%
QLD	Joint Field Management Program	16.468	4%
AUS	Shipping (Australian Maritime Safety Authority)	29.703	8%
QLD	Shipping (Maritime Safety Queensland)	28.000	7%
AUS	Monitoring & Research[1]	82.549	22%
QLD	Monitoring & Research[2]	15.569	4%
AUS	Other Reef Protection[3]	26.008	7%
QLD	Other Reef Protection (QLD Sustainable Fisheries Program)	8.500	2%
AUS	Water Quality	73.690	19%
QLD	Water Quality[4]	47.887	13%

Australia	**261.895**	**69%**
Queensland	**116.424**	**31%**
Grand total	**378.319**	

Appendix B State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2019
Appendix B State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia) 2019 and Reef Trust Partnership Annual Work Plan 2021-22
Reef Trust Partnership Annual Work Plan 2021-22
QLD Reef Water Quality Program Annual Investment Plan 2021-22

1 Includes: National Environmental Science Program, Australian Institute of Marine Science , Australian Research Council, Reef 2050 Plan funding, Reef Trust Partnership Reef Restoration and Adaptation Science and Integrated Monitoring and Reporting
2 Investments under Enabling Delivery section of the Annual investment Plan 2021-22, includes Science and Knowledge, Governance, and Evaluating Performance
3 Includes the Reef Trust Partnership Community Reef Protection, Traditional Owner Reef Protection, Crown of Thorns Starfish programs
4 The sum is calculated total investment from QLD Reef Water Quality Program Annual Investment Plan 2021-22 minus 15.569 million considered Monitoring & Research

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