EVALUATION OF AUSTRALIA’S REEF 2050 LONG-TERM SUSTAINABILITY PLAN

Advice to the World Heritage Committee

Prepared by WWF-Australia and the Australian Marine Conservation Society
April 2015
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EXECUTIVE SUMMARY

WWF-Australia and the Australian Marine Conservation Society (AMCS) welcome the release of the Reef 2050 Long Term Sustainability Plan (the Plan). It represents a strengthening of the collaboration between the Australian and Queensland governments and key stakeholders and contains a number of good initiatives and improvements on previous drafts. Overall though, the Plan is deficient in some important areas, and without adequate investment, it will not succeed in meeting the outcomes needed to restore and protect, in the long term, the Outstanding Universal Value (OUV) of the Great Barrier Reef World Heritage Area (GBR WHA).

The key weaknesses in the Plan are:

- Insufficient investment to deliver the quantum of pollution cuts that the Plan now recognises as necessary to begin to restore the health of the Great Barrier Reef.
- Proposed measures are inadequate and under-resourced to build resilience to the impacts of climate change and address cumulative impacts.
- It contains no measures to strengthen the Great Barrier Reef Marine Park Authority (GBRMPA).
- No explicit measures are included to ensure that the far northern Great Barrier Reef remains in good to very good condition.
- No measures are proposed to strengthen development assessment laws to ensure port or other developments are not approved if they will damage the Reef’s Outstanding Universal Value.

The Plan contains a number of ambitious initiatives such as the commitment to ban the dumping of capital dredge spoil in the GBR WHA and develop a package of incentives and regulation to achieve significant new water pollution reduction targets by 2025. It also commits to protection of coastal areas including the Fitzroy Delta and recognises the important role of traditional owners in Reef management.

Actions expected before the 39th World Heritage Committee session

The next few months are a crucial test of the willingness and capability of the Australian and newly-elected Queensland governments to begin implementing key commitments from the Reef 2050 Plan.

The two governments have stated their intentions to complete the following actions before the World Heritage Committee meets in Bonn in late June this year:

- Bring into effect new Australian government regulations to ban the dumping of capital dredge spoil in the GBR Marine Park1.
- Introduce new state laws to restrict port development along the Reef coast, limit capital dredging and trans-shipping, protect the Fitzroy Delta and ban the dumping of dredge spoil in state waters within the GBR WHA2.
- Establish a taskforce to advise the Queensland government on the best approach to achieve the 2025 water quality targets and the effectiveness of different mechanisms for meeting these targets3.
- Implement and enforce existing water quality regulations and require farmers to be accredited to best practice guidelines or operate under an Environmental Risk Management Plan4.
- Establish key governance mechanisms to oversee the Plan’s implementation, by convening stakeholder and scientific advisory bodies and enshrining the Plan as a schedule to the GBR Intergovernmental Agreement5.
- Prepare an over-arching implementation strategy for the Plan6 and develop the investment baseline7.

In addition, WWF-Australia and AMCS believe it is reasonable to expect strong progress in the following areas before the WHC meeting:

- Inclusion of a forward commitment in the Australian government budget to invest an additional $400 million over the next five years.
- Action on commitments to reinstate Queensland coastal planning, tree clearing and water laws to strengthen environmental protections in Reef catchments.
- Commit to measures to strengthen the role of GBRMPA by enhancing its independence and providing sufficient resources to deliver its commitments in the Plan.
- Rejection of any port development projects which threaten the Outstanding Universal Value of the GBR WHA.

The World Heritage Committee’s ongoing review of the GBR WHA in recent years has been crucial in achieving progress to date. Thus, it is essential that the World Heritage Committee continues this oversight of the implementation of the Reef 2050 Plan in its first few years of implementation.

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1 Reef 2050 Plan action number WQA18 plus Media Release, Minister Hunt 24th January 2015 ‘Orders given to ban dumping of capital dredge material in Marine Park’
2 The new Queensland Sustainable Port Development Bill will implement a number of Reef 2050 Plan actions, including action numbers EHA21, EHA25, WQA14, WQA18, WQA19, WQA20, WQA21, EBA3, and EBA4.
3 Reef 2050 Plan action number GA6
4 Reef 2050 Plan action number WQA3
5 Reef 2050 Plan page 49-50
6 Reef 2050 Plan p.58
INTRODUCTION

The Reef 2050 Long-Term Sustainability Plan (the Plan) was released on March 21, 2015. WWF-Australia and the Australian Marine Conservation Society (AMCS) welcomed the positive initiatives in the Plan including commitments to reduce the impacts of dredging activities, new targets to reverse the decline in Reef water quality and protection of some key sites. There are however ongoing serious concerns that the actions in the Plan are insufficient to achieve the 5-year targets, yet alone the longer term vision and outcomes.

This evaluation highlights issues that are not adequately addressed in the Plan and jeopardise achieving the necessary improvements in management of the Great Barrier Reef World Heritage Area (GBR WHA) to redress current and future pressures. The Australian Academy of Science has strongly expressed similar concerns on these issues (see Attachment 1).

1 | THE SCALE AND URGENCY OF THREATS TO THE REEF IS DOWNPLAYED

The clearest statement of the current condition of the Great Barrier Reef, and what is required to halt and reverse its decline is contained in the Great Barrier Reef Marine Park Authority’s Outlook Report\(^8\), written by expert scientists, and published in August 2014. It states:

The Great Barrier Reef ecosystem is under pressure. Cumulative effects are diminishing the ecosystem’s ability to recover from disturbances. Some threats are increasing, driven mainly by climate change, economic growth and population growth.

Even with the recent management initiatives to reduce threats and improve resilience, the overall outlook for the Great Barrier Reef is poor, has worsened since 2009 and is expected to further deteriorate in the future. Greater reductions of all threats at all levels, Reef-wide, regional and local, are required to prevent the projected declines in the Great Barrier Reef and to improve its capacity to recover.

However, readers of the Reef 2050 Plan are likely to gain the impression that all is well in hand for the effective long term management of the Reef. Unfortunately the Plan provides an understated summary of the pressures on the Reef, the current condition and trend of the Reef’s Outstanding Universal Value and overstates the effectiveness of management to date (see section 4 in this report).

For example, when discussing pressures on the Reef (section 1.3) the Plan highlights that the system as a whole retains the qualities contributing to its Outstanding Universal Value, but does not point out that key habitats (coral reefs and seagrass meadows) and species (dugongs, sharks and rays) contributing to the OUV are known to be in poor and declining condition (GBR Outlook Report 2014, summarised in the 2015 WWF-Australia and AMCS report\(^9\)).

The 2014 Outlook Report itself provides a more accurate and worrying prognosis for the Reef. Figure 1 below is the summary of the findings from this report.

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Figure 1. Summary of findings from the Great Barrier Reef Outlook Report 2014
LISTED ACTIONS UNLIKELY TO REACH THE PLAN’S TARGETS

The Plan’s framework of vision, outcomes, targets and actions provides a credible approach to improving the Reef’s prospects. A number of the outcomes set by the Plan aim to see key indicators (such as ecosystem health) return to a ‘good to very good condition’ and show a ‘stable or improving trend in condition’. WWF-Australia and AMCS support these outcomes, however no method was available to determine whether or not the combination of actions will meet the targets, and that in turn meeting the targets in the time-frame of the Plan will result in achieving the outcomes and vision. This is a key failing since it goes to the heart of whether the Plan will actually succeed in practice. WWF-Australia and AMCS hold grave concerns that in many cases the current set of actions are insufficient to achieve the stated outcomes. The weaknesses described in this evaluation illustrate this point.

The commitment to regular monitoring, reporting and review of the Reef 2050 Plan must be properly implemented and the establishment of regionally based, ecologically relevant targets is a priority in order to provide an adequate base for the ongoing monitoring and review.

INADEQUATE INVESTMENT TO IMPLEMENT ACTIONS

The Plan states that, Adequate investment is fundamental to effective and successful implementation of the Plan. The Australian and Queensland governments will ensure that sufficient financial and other resources are available to achieve outcomes. (Section 5.2) Table 1 in the Plan provides details of the 2014/15 investment by government of $205.1 million; this covers the expenditure of most Australian and Queensland government agencies with management responsibilities relevant to the GBR WHA. Table 1 reflects current management arrangements with a focus on regulatory and oversight responsibilities of the two governments, including management of the GBR Marine Park. Actual on-ground activities directed at achieving improved water quality outcomes totals a little under $20M per annum\(^\text{10}\) and research some $20M per annum. In other words, $205M per annum is the baseline cost of maintaining existing management resources, which have been shown to be inadequate. It does not provide for any of the new or expanded initiatives listed in the Reef 2050 Plan.

All the targets and actions in the Plan need to be properly funded. Below we focus on the funding required to reduce agricultural pollution, since this issue has been most thoroughly researched and costed to date, and is likely to be the area which needs the largest additional investment.

The most credible report\(^\text{11}\) to address the level of investment required to achieve water quality outcomes has estimated that an increase of $785 million over the next five years, and over $2 billion over the next 15 years is needed. This report was prepared by the Natural Resource Management groups who deliver programs to cut Reef pollution. The table in Attachment 2 contains more detail on the primary actions, estimated costs and outcomes for addressing further pollutant load reductions to the GBR WHA.

The Plan commits to developing an investment baseline by May 2015 and a prioritisation of actions for investment as well as scoping diversification of investment sources. However, this approach does not include development of an overall investment strategy and budget for delivery of the Plan. Without an overall investment plan, it is unlikely that the Plan will be effectively implemented. Presently the only additional financial commitment from both governments is an additional $200 million over 5 years in total from the Australian and Queensland governments. Thus, there is still a significant shortfall in funding commitments relative to the current best estimates to deliver the required improvements in water quality, and this represents only part of the investment required to deliver the Plan.

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4 | REEF POLLUTION FIGURES REVEAL SIGNIFICANT SHORTCOMINGS, NOT GOOD PROGRESS

The Plan claims significant investments in water quality programs has meant that by 2013 the quality of water leaving the catchments has improved, with the annual sediment load reduced by 11 per cent, pesticides by 28 per cent, and nitrogen by 10 per cent compared to a 2009 baseline (p.3).

This statement is used as an example in the Plan's Executive Summary to demonstrate a strong track record of Reef protection. However, rather than showing success, these numbers in fact reveal both significant under-performance of previous programs and major inadequacies in the final Reef 2050 Plan.

The Reef Water Quality Protection Plan 2009 set a target of 50% reduction for both nitrogen and pesticides by 2013. The figures provided in the Plan show that these targets were not achieved. In the case of nitrogen the shortfall was significant – only a 10% decrease as compared to a 50% target.

The Reef 2050 Plan commendably sets even larger targets for pollution reduction, to ensure water quality has no detrimental impact on the Reef. These targets (up to 80% for nitrogen by 2025) show that the reductions achieved so far are extremely modest relative to what is needed.

There have been some important achievements from pollution reduction programs to date. However, this does not overcome the fact that these achievements fall well short of what is required. The World Heritage Committee’s 2014 decision requested in relation to water quality, the State Party to sustain and where necessary expand these efforts, and their funding, to achieve the ultimate goal of no detrimental impact on the health and resilience of the reef (Decision 38 COM 7B.63 (paragraph 4)).

The failure to reach existing pollution reduction targets, and the significant further cuts needed to achieve the new Reef-safe targets is a clear case that substantial further funding and new approaches are needed. Whilst both governments have recognised the need for increased funding with a commitment of $100 million each over 5 years, this falls significantly short of what is needed. As referred to in the previous section on investment, an increase of $785 million over the next five years is likely needed, and over $2 billion to ensure the ‘no detrimental impact’ from water quality objective is achieved.

To address the need for a credible program to deliver the new targets in the Plan the Queensland government is establishing a Taskforce to advise within a year what new programs should be adopted. The government has identified a number of mechanisms including: stronger regulations, a market based water quality trading system, and a cap on pollution. The Taskforce and proposed measures are laudable; however, it is critical that the World Heritage Committee review the final funding and pollution program package to assess whether or not it will be sufficient to achieve the pollution cuts needed to save the Reef.

It is also worth noting that even the pollution cuts claimed may be an overstatement of what has been achieved. These figures are modelled predictions of what may occur over time. Actual data challenges these modelled results including:

- A Technical Report released last year compared modelled nutrient and sediment pollution data with actual load data from rivers. Actual loads were up to 50% higher than modelled pollution loads.
- Industry data shows no consistent sugarcane industry-wide change in nitrogen surplus since 2009; that is, the nitrogen fertiliser unused by the crop after harvest which is strongly correlated to the quantum of cane-farm nitrogen pollution impacting the Reef.

There has also been a recalibration of the pollution models. Thus, the World Heritage Committee should request a briefing from the State Party as to whether this work shows pollution reductions to be different to what has been recently claimed.

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13 Latest data from Incitec Pivot Ltd (to 2012 on web site) and CANEGROWERS Inc (to 2013 on web site), annual regional reports on fertiliser use in Australian sugar cane farming and sugar cane yield data.
5 CLIMATE CHANGE IMPACTS NOT EXPLICITLY ADDRESSED

The Plan (Section 3.3.1) acknowledges that climate change is the highest risk to the Reef in the long term and system-wide, and provides commentary on mitigation and adaptation policies and approaches by the Australian and Queensland governments. The term “climate change” is referenced some 30 times in the Plan, and the need to build the Reef’s resilience to the impacts of climate change is frequently stated.

However the Plan does not include specific targets or outcomes, and has just three actions referencing climate change, namely EHA 10, CBA9 and CBA11. These are extremely modest responses to the most serious long term driver of environmental degradation of the Reef.

Section 3.3.1 refers to the Great Barrier Reef Climate Change Adaptation Strategy and Action Plan (2012-2017)72 as guiding the work of the Great Barrier Reef Marine Park Authority to improve the resilience of the Reef. However, there have been significant reductions in staffing levels for climate change work by the Authority. Previously there was eight full-time staff, now there is less than one15.

WWF-Australia and AMCS consider that a framework to mitigate and adapt to climate change should have been a core part of the Reef 2050 Plan. We recommended that a specific section on climate change mitigation and adaptation be added to the Plan, complete with outcomes, targets and actions. A simple first step would have been to identify climate mitigation and adaptation policies and actions that are already underway or committed to. Including these initiatives would have helped align and coordinate climate change action across governments and stakeholders in the Reef region.

6 PORT EXPANSIONS MAY STILL IMPACT REEF’S OUTSTANDING UNIVERSAL VALUE

The Plan contains a set of welcome commitments to prevent the establishment of new ports, limit capital dredging, and prevent the sea-dumping of dredge spoil from capital dredging operations. However, none of these commitments have yet been put into practice, and it is unlikely that the proposed new laws will be in place until late 2015. There remains a risk that these commitments will not be fully implemented.

We note however, that the proposed ban on sea dumping in the WHA will be implemented through two separate legal instruments - a federal ban in the Marine Park and a state ban in coastal waters. It would be preferable and more robust if the federal ban extended to all World Heritage waters.

Even once the proposed new laws are in place, capital dredging and port developments will be allowed to continue within existing port boundaries. Although this is a significant improvement, WWF-Australia and AMCS remain concerned that the development assessment framework is not strong enough to prevent port expansions or capital dredging projects inside port areas from having a significant impact on the Reef’s Outstanding Universal Value.

The World Heritage Committee first became concerned about port development on the Reef coast after the significant environmental damage caused by the construction of three large gas export facilities within the World Heritage Area at Gladstone and the dredging of over 20 million cubic metres of seabed in Gladstone Harbour with most of the dredge spoil disposed of through land-reclamation. There have been no changes to the legal framework for development assessment that would prevent these projects or other large scale industrial developments from being approved today. As described in our previous reports, more action is needed to strengthen the Environment Protection and Biodiversity Conservation Act to adequately protect the Reef’s OUV.

7 CUMULATIVE IMPACTS INADEQUATELY ADDRESSED

The Great Barrier Reef Outlook Report 2014 noted that the capacity to address cumulative impacts requires additional effort and this is acknowledged in the Plan (Section 1.3). There are two targets Ecosystem Health Target 4 and Economic Benefits Target 3 relating to addressing cumulative impacts. Unfortunately the actions to achieve these targets are very limited. One action is to, Develop guidelines for assessing cumulative impacts (including climate change pressures) on matters of national environmental significance including ecosystem and heritage values in the World Heritage Area (EHA 19). Another five actions reference cumulative impacts however they are issue specific (coastal dolphins, ports and shipping), the inference being that cumulative impacts will again be narrowly addressed rather than taking into account the very wide-ranging impacts that are placing pressure on the Reef, directly, indirectly and cumulatively.

This is unacceptable given the World Heritage Committee’s request for a strategic assessment and preparation of the Reef 2050 Plan was driven by the clear failure of management to adequately address cumulative impacts.

At the very least the proposed cumulative impact guidelines need to be given regulatory standing and provide a level of detail that allows their application regionally and locally in all relevant planning and assessment processes.

One of the major challenges in determining, and then addressing cumulative impacts is utilising consistent methodologies and decision support tools. Thus, the proposed guidelines need to be supported by an agreed methodology that is used by all managers, both government and private sector.

8 MEASURES LACKING TO ENSURE THAT FAR NORTHERN GBR REGION REMAINS IN GOOD TO VERY GOOD CONDITION

The Plan consistently notes that the northern third of the Reef is in good to very good condition whereas the southern two-thirds of the Reef, adjacent to highly modified catchments, is generally in poor condition with declining trends in a number of key habitats.

The good condition of the far northern reefs is mainly due to the relatively undeveloped nature of the eastern-draining catchments of Cape York. The most sensible and cost-effective action under the Plan would have been to establish robust protection mechanisms for eastern Cape York and other high value areas to secure the biodiversity and ecosystem health of the World Heritage Area. Unfortunately, the Plan is silent on any explicit actions to ensure that the far northern Great Barrier Reef region remains in good to very good condition.

16 Key direct human-related activities are managed to reduce cumulative impacts and achieve a net benefit for the Reef. (EHT4, p. 37)

17 Cumulative impacts on the Reef from human activities are understood and measures to ensure a net environmental benefit approach for the Reef are in place. (EBT3, p.47)
9 STRENGTHENING THE GREAT BARRIER REEF MARINE PARK AUTHORITY

The WWF-Australia and AMCS report\(^\text{18}\) to the World Heritage Centre in February 2015 argued for a strengthening of the role of the Great Barrier Reef Marine Park Authority (GBRMPA), in part to enable it to fulfill its vital role in implementing the Reef 2050 Plan. It recommended the following:

(i). Amend planning and development laws to give GBRMPA a stronger role in assessing and approving developments that are likely to have a significant impact on the GBR WHA, including:
   a. All actions within the WHA, inside and outside the GBR Marine Park.
   b. Actions on land which are likely to impact sensitive ecosystems that are highly connected to the Great Barrier Reef WHA.

(ii). Increase GBRMPA’s annual funding by $20m to properly support current functions and provide capacity to meet new functions listed in the Reef 2050 Plan.

(iii). Resolve the conflicts between the administration of the Environment Protection and Biodiversity Conservation Act and Great Barrier Reef Marine Park Act such that the objectives of the GBR MP Act are fully met and the role of GBRMPA as the primary decision making entity for the entire GBR WHA is confirmed.

(iv). Establish the GBRMPA Board as an expertise based entity which is skills based and also reflecting key Reef interest groups including Traditional Owners, conservation, science and tourism. The Chairman of the Board should be independent, and not the CEO of GBRMPA.

The Reef 2050 Plan is silent on any changes to the governance of GBRMPA. While a significant number of actions in the Plan are attributed to GBRMPA as the lead agency, there has been no commensurate increase in resources to the agency to meet these additional commitments.

10 THE STRENGTHS OF THE REEF 2050 PLAN

This report has identified a number of significant weaknesses in the Reef 2050 Long-Term Sustainability Plan, but the document also contains a number of positive initiatives that WWF-Australia and AMCS strongly support. Delivery of the following commitments will be a significant improvement over current management arrangements for the GBR WHA.

- Improved targets to cut farm pollution in key Reef catchments – 80% cut in nitrogen and 50% cut in sediment by 2025 – which better reflects scientific advice on the required targets to achieve adequate water quality conditions to sustain the Reef’s ecosystems.
- Commitments to an Australian government ban on sea-dumping of dredge spoil from new projects, within the Great Barrier Reef Marine Park plus complimentary Queensland laws to ban sea-dumping for new projects in state waters within the WHA.
- Commitment by the Queensland government to strengthen coastal planning, pollution, water and tree-clearing laws and to not support trans-shipping operations that adversely affect the Great Barrier Reef Marine Park.
- Commitment to create new coastal protected areas, including the Fitzroy Delta.
- Recognition of the important role of traditional owners in management of the WHA.
- Additional $200 million funding from the Australian and Queensland governments over five years.
- Credible framework of long-term vision and outcomes supported by shorter-term targets and actions which is underpinned by robust decision-making principles and a commitment to regular monitoring, reporting and review.

The World Heritage Committee’s ongoing review of the GBR WHA in recent years has been crucial in achieving progress to date. Thus, it is essential that the World Heritage Committee continues this oversight of the implementation of the Reef 2050 Plan in its first few years of implementation. The 2019 Great Barrier Reef Outlook Report will also be an important review milestone to assess whether or not further actions are needed.

ATTACHMENT 1: AUSTRALIAN ACADEMY OF SCIENCE
REEF 2050 PLAN POSITION STATEMENT

Reef 2050 Long-Term Sustainability Plan – Position Statement

The Australian Academy of Science is committed to working constructively with governments on the development and implementation of the Reef 2050 Long-Term Sustainability Plan, which is critical to ensuring a healthy and vibrant Great Barrier Reef for future generations.

During 2014, the Australian Government called for comments on the draft Reef 2050 Long-term Sustainability Plan and, in response, The Academy reviewed the Plan and identified a number of areas where further improvements were warranted. The final Plan has since been released, and the Academy sought advice from its Fellows and other experts who reviewed the draft plan on the nature of the changes that have been made and the extent to which they reflect the science.

It is pleasing to note that there have been some positive changes, particularly:

- the move towards banning dumping of capital dredge spoil in the World Heritage Area
- improved targets for improving water quality
- the establishment of an independent expert panel
- recognition of the problems associated with trans-shipping through the reef.

The Academy recommends more actions be added to the Plan to overcome or limit the trajectory of deterioration of the reef’s outstanding universal value which has been well established by numerous reports including the Australian Government’s own 2009 and 2014 Great Barrier Reef Outlook Reports. The Plan should also limit the effects of cumulative impacts on the reef from climate change, fishing pressure, coastal development and dredging.

We believe that a better outcome for the reef would be to further refine and improve the Plan.

A summary of the major issues and the Academy’s broad recommendations is included below, along with a summary of a number of specific points in the Plan that the Academy recommends should be amended or reworded to align with current science.

Climate change

At a high level, the fundamental driver of reef degradation now and increasingly in the future is climate change. The impacts of climate change on the reef are already being felt, and action cannot be postponed. Climate change is clearly a global issue, and the solutions do not lie within Australia’s direct control. However, Australia remains an influential global player, and significant action on climate change has been initiated by major powers including China and the USA. Protecting the Great Barrier Reef is clearly not either the only or the primary driver of Australia’s need to take action on climate change, but the reef does stand to be one of the major beneficiaries of swift action.

The Academy recommends that the Government continues to explore options to effectively mitigate climate change.

Port development

Beyond the broader impacts of climate change, the development of major port terminals that require significant dredging or reclamation is one of the major drivers of increasing current and future impact on the reef.

The Academy recommends that the Plan should be amended to:

1. clarify what activities are appropriate within port exclusions both inside and outside the boundaries of the Great Barrier Reef Marine Park
2. ensure all options for port developments, including trestles for loading further offshore and avoiding dredging, are properly considered when environmental impact assessments occur
3. clarify that certain areas (like Princess Charlotte Bay and the Fitzroy Delta) are not suitable for port developments, and designate these areas in a way that such developments cannot proceed, thus providing certainty for developers and the community
4. ensure all port activities in the Great Barrier Reef World Heritage Area are undertaken (assessed, planned, operated and monitored) at a level which is commensurate with being within a World Heritage Area.


EVALUATION OF AUSTRALIA’S REEF 2050 LONG-TERM SUSTAINABILITY PLAN Prepared by WWF-Australia and Australian Marine Conservation Society
Maintenance dredge dumping

The 2050 Plan places no restriction on the volume or disposal of maintenance dredge spoil. Maintenance dredge spoil can have even greater impacts than capital dredge spoil through re-suspension of much finer sediments.

The Academy recommends that the Plan be amended to:

1. clarify how port authorities or contractors will be monitored so they are not able to conduct and dump capital dredging at sea under the guise of maintenance dredging
2. ensure investigations of alternatives to sea dumping of maintenance dredge spoil are conducted and the results used to inform regulation and future legislation
3. ensure all maintenance dredging activities and any dumping that does occur in the Great Barrier Reef World Heritage Area are undertaken (assessed, planned, operated and monitored) at a level which is commensurate with being within a World Heritage Area.

Sufficient resources to properly achieve targets

The Academy is concerned that funding for achieving targets may well be a limiting factor to effectively implementing the positive attributes of the 2050 Plan. In particular, it will be difficult to achieve the revised water quality targets with the proposed level of funding.

The Academy recommends that the Government:

1. develop a costing of the Reef 2050 Plan and allocate sufficient resources to implement it
2. develop an investment strategy for implementation of the Plan that does not rely on offsets and which addresses all the threats facing the Great Barrier Reef
3. recognise that the requirements for field management in the Great Barrier Reef are increasing (e.g. increasing population using recreational boats) which in turn will require increasing funding levels. Given that the field management program is not currently able to comprehensively enforce the green zone network, the Great Barrier Reef Marine Park Authority will need additional resources to enforce the legislation
4. recognise that while important, offsets should be a last resort for managing the Great Barrier Reef World Heritage Area given they inherently involve further damage to the outstanding universal values of the reef.

Sustainable fishing

Fishing is a legitimate activity within the Great Barrier Reef World Heritage Area, and this is covered in some detail in the 2050 Plan. However, the Great Barrier Reef Outlook Reports of 2009 and 2014 demonstrate that fishing is causing some impacts beyond those covered in the Plan, and that management of fisheries can be improved.

The Academy recommends that the Plan:

1. incorporates world’s best practice management of the Great Barrier Reef fisheries, commensurate with the reef’s World Heritage Area status
2. requires all commercial vessels, regardless of size, to carry vessel monitoring systems
3. exercises zero tolerance for repeated non-compliance.

Strengthening the Great Barrier Reef Marine Park Authority

The Great Barrier Reef Marine Park Authority was originally designated as the independent statutory authority responsible for the planning and management of the Great Barrier Reef. This Plan presents an opportunity to reaffirm this responsibility and to strengthen the expertise and authority of the Great Barrier Reef Marine Park Authority to ensure the reef’s sustainability for the duration of the Plan.

The Academy recommends that:

1. appointments to the Great Barrier Reef Marine Park Authority Board are based on expertise, and that an independent Chair is appointed
2. the Great Barrier Reef Marine Park Authority is the primary advisory body to the Government for the entire Great Barrier Reef World Heritage Area.

1 April 2015
### Table 1

**Primary actions, estimated costs and outcomes for addressing further pollutant load reductions to the Great Barrier Reef.**

<table>
<thead>
<tr>
<th>Actions</th>
<th>Phase 1: 2015-2020</th>
<th>Estimated outcomes</th>
<th>Beyond 2020</th>
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<tr>
<td>1. Continued improvement in agricultural management practices</td>
<td>$175 million</td>
<td>Predicted reductions incorporating existing achievements (2008-2013) in the order of:</td>
<td>It is possible that ecologically relevant load reduction targets could be met with further investment over the next 5 to 10 years.</td>
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<td></td>
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<td>- Total suspended solids 15–20%</td>
<td>The required allocation beyond 2020 is likely to increase.</td>
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<td></td>
<td></td>
<td>- Dissolved inorganic nitrogen: 30–35%</td>
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<td></td>
<td>- Particulate nitrogen: 15–20%</td>
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<td></td>
<td></td>
<td>- Dissolved inorganic phosphorus: TBC</td>
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<td></td>
<td></td>
<td>- Particulate phosphorus: 15–20%</td>
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<tr>
<td></td>
<td></td>
<td>- PSII herbicides: &gt;90%</td>
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<td>2. Water quality outcomes payments</td>
<td>$180 million</td>
<td>Acceleration of achievement of load reductions by supporting actions that achieve water quality outcomes above current standards to be delivered through Reef Trust.</td>
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<td></td>
<td>Intended to achieve pollutant load reductions beyond those identified above.</td>
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<tr>
<td>3. Urban diffuse management – primarily Water Sensitive Urban Design</td>
<td>$25 million²</td>
<td>Greatest gains are likely to be achieved in sediment and nutrient loads by stormwater management, but are yet to be quantified.</td>
<td></td>
</tr>
<tr>
<td>4. System repair works – no regrets actions, and scoping large scale system repair works</td>
<td>$200 million</td>
<td>These aspects have not been modelled and quantified with regard to water quality benefits but are likely to provide measurable improvements in the medium term. Of critical importance, system repair works will provide substantial benefit to ecosystem function and connectivity for overall GBR health outcomes.</td>
<td></td>
</tr>
<tr>
<td>5. Additional supporting activities: Innovation program and additional R&amp;D to understand management options and impacts, and greater gains</td>
<td>$75 million</td>
<td>Activities contribute to the above outcomes and improve cost efficiencies to the above programs.</td>
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<tr>
<td>Regional coordination, partnerships, monitoring, reporting and evaluation</td>
<td>$120 million</td>
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<tr>
<td>Communication and education program</td>
<td>$10 million</td>
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<tr>
<td>Total estimate</td>
<td>$785 million</td>
<td></td>
<td>&gt;$1 billion</td>
</tr>
</tbody>
</table>

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Why we are here

To stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature.