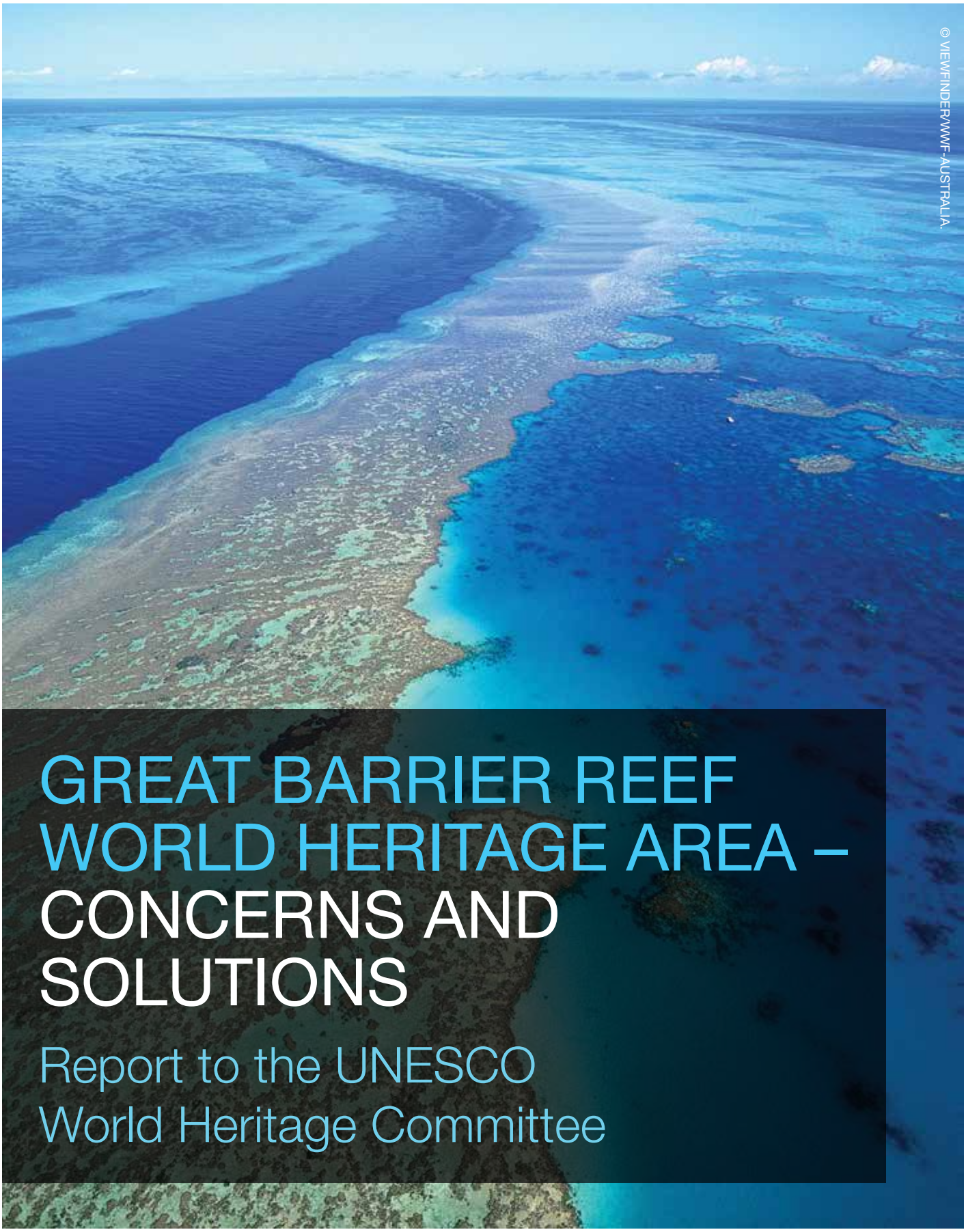

GREAT BARRIER REEF WORLD HERITAGE AREA – CONCERNS AND SOLUTIONS

Report to the UNESCO World Heritage Committee

Prepared by WWF-Australia and the Australian Marine Conservation Society

February 2015


© JÜRGEN FREUND / WWF-CANON

TABLE OF CONTENTS

Pictured left: Green sea turtle (Chelonia mydas). Indo-Pacific Ocean

1 EXECUTIVE SUMMARY AND KEY RECOMMENDATIONS

The clearest statement of the current condition of the Great Barrier Reef (GBR), and what is required to halt and reverse its decline is contained in the Great Barrier Reef Marine Park Authority's Outlook Report, 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.

WWF and AMCS have long been concerned that Australia's response to this stark reality has been highly inadequate.

The World Heritage Committee has played a very valuable role over recent years, in drawing attention to shortcomings in management of the GBR and urging Australia to secure the future of this international icon. The expert technical advice from the UNESCO World Heritage Centre, that forms the basis of the Committee's decisions, has been invaluable.

The Reef 2050 Long Term Sustainability Plan is the keystone of Australia's response to the World Heritage Committee's concerns, yet this vital document has not been finalised, and the most recent drafts do not contain the actions needed to properly address the key threats to the Reef.

During the recent State election, the new Queensland government made a number of significant policy commitments that need to be incorporated into the Reef 2050 Plan. The Australian government also needs to significantly step-up its commitments, particularly its long term investment and governance reform.

In summary, the following priority actions must be taken by the Australian and Queensland governments before the World Heritage Committee meeting in June 2015, to avoid the need for an 'in-danger' listing for the Great Barrier Reef:

1. The Australian government commits to a major investment package to expand efforts to reduce catchment pollution, so the goal of no detrimental impact on the health and resilience of the Reef will be achieved.
2. Australian government to enable the Great Barrier Reef Marine Park Authority to become a true 'champion of the Reef' by increasing resourcing, improving governance and strengthening its role in protecting key coastal ecosystems.
3. Finalise the Reef 2050 Plan, incorporating all new Australian and Queensland government commitments.
4. Begin reform of state environment and planning laws promised by the incoming Queensland government to boost Reef protection and reduce further development threats.
5. Implement ban on dumping of capital dredge spoil in the entire WHA.

There is a vital ongoing role for the UNESCO World Heritage Committee, beyond June 2015, to ensure that any commitments made by the Queensland and Australian governments are fulfilled over coming years.

2 INTRODUCTION

This report prepared by WWF-Australia (WWF) and the Australian Marine Conservation Society (AMCS) provides an assessment of the progress made by the Australian and Queensland governments in addressing the recommendations requested by the World Heritage Committee (WHC) over the last three years. Its purpose is to provide a third party analysis of progress, or otherwise, in addressing the concerns of the WHC. Similar reports were prepared and submitted to the Committee in 2013 and 2014.

This year's report has been written at a time of great change and uncertainty in the political, legal and policy framework governing management of the Great Barrier Reef (GBR).

The 2014 Outlook Report, an independent assessment prepared by the Great Barrier Reef Marine Park Authority (GBRMPA) has rated the long term outlook for the Reef's ecosystems as poor and deteriorating.[1]

Elections were held in the State of Queensland on 31 January 2015, resulting in a change of government. Many, but not all, of the laws and policies affecting the Reef are within Queensland's jurisdiction. The Labor Party was elected on a platform that included a significant set of new policies to improve protection for the Great Barrier Reef. The new government's policies include a ban on the dumping of dredge spoil in the Great Barrier Reef World Heritage Area (GBR WHA), $100 million towards improving water quality and the introduction of stronger environmental and planning laws. However, none of these new policies have been implemented and many important details remain unclear.

The Reef 2050 Long Term Sustainability Plan (Reef 2050 or LTSP) is the keystone of Australia's response to the World Heritage Committee's concerns. Reef 2050 is a joint policy framework agreed between the Australian and Queensland governments, so the change of State government has delayed its completion. Major changes can be expected before the draft Reef 2050 Plan is finalised, to reflect the new Queensland government's Reef policy package. WWF and AMCS believe the Australian government must also strengthen its commitments in the final Reef 2050 Plan, and provide increased investment to implement the agreed measures.

Finally, the Australian government has directed the Great Barrier Reef Marine Park Authority (GBRMPA) to prepare a new regulation under the *Great Barrier Reef Marine Park Act 1975* to prohibit the disposal of capital dredge spoil within the Marine Park boundaries (not the entire World Heritage Area). To date, the new regulation has not been made available to the public.

In summary, the Reef faces major threats to its ongoing survival, and its future remains uncertain. In recent months, there have been a number of promising signs of change in government policy, but these commitments are yet to be implemented. Thus a great deal of risk and uncertainty remains for the Great Barrier Reef.

The assessment in this report is based on the latest available information, as at mid February 2015. WWF and AMCS will endeavour to provide updated advice to the World Heritage Committee closer to its 39th meeting in Germany in June 2015.

1 P.274, section 10.5.1, Great Barrier Reef Marine Park Authority (2014b)

3 | CONDITION OF THE GREAT BARRIER REEF WORLD HERITAGE AREA

The Great Barrier Reef was inscribed on the World Heritage List in 1981 as it meets four natural criteria for Outstanding Universal Value - superlative natural beauty, significant geomorphological features, significant ecological processes and significant natural habitat for the conservation of significant species.

Every five years the Great Barrier Reef Marine Park Authority (GBRMPA) produces a major scientific assessment of the condition of the Great Barrier Reef region. The Great Barrier Reef Outlook Report 2014 (Outlook 2014) includes detailed Reef-wide assessments for biodiversity and ecosystem health. Its key findings are summarised below.

A. Biodiversity

The report shows there has been a decline in the condition of the Reef's biodiversity since the 2009 Outlook Report. Ten habitats and seventeen populations of species and groups of species were assessed.

The poor and declining condition of coral reefs and seagrass meadows is of major concern since these habitats both play key roles in the Reef's integrity, and underpin the Reef's Outstanding Universal Value (OUV) as a World Heritage Site.

There has been a 50% decline in coral cover since 1985[2] and Outlook 2014 notes, *Hard coral abundance has substantially decreased in the southern two-thirds of the Region. Soft coral cover in inshore areas is generally stable with some declines after severe cyclones and flooding. The community composition of inshore coral reefs has changed over the past century.*[3]

For seagrasses, the report notes, *Seagrass abundance has declined and community composition has changed in central and southern inshore areas, mainly due to cyclones, flood events and extended periods of cloud cover, in addition to the longer term impacts of poor water quality. There is limited information on deep-water seagrasses.*[4]

The condition and trend for populations and groups of **species** is of equal concern. The report notes, *Of those [species] for which there is information, there have been significant declines in many, especially in the inshore southern two-thirds of the Region, and some iconic and cultural keystone species. For example, significant declines have been recorded in most hard corals and seagrasses, some fishes and sharks, dugongs, plus some seabird populations.*[5]

Habitats

Condition and trend of the ten habitats assessed in Outlook 2014.[6]

Current	Poor condition	Good condition	Very good
Trend	↓ Coral reefs ↓ Seagrass meadows	↓ Islands ↓ Continental slope ↓ Open waters ↔ Mainland beaches and coastlines ↔ Mangrove forests ↔ Lagoon floor, ↔ Shoals	↔ Halimeda banks

Key: Trend since 2009. ↑ Improved ↔ Stable ↓ Deteriorated – No consistent trend

Species

Condition and trend of the ten habitats assessed in Outlook 2014.[7]

Current	Poor condition	Good condition	Very good
Trend	↓ Seagrasses ↓ Corals ↓ Sharks and rays ↓ Dugongs ↔ Sea snakes – Marine turtles – Seabirds Shorebirds*	↓ Other invertebrates ↓ Bony fishes ↓ Dolphins ↔ Macroalgae ↑ Estuarine crocodiles ↑ Whales	↓ Benthic microalgae ↓ Plankton & microbes ↔ Mangroves

Key: Trend since 2009. ↑ Improved ↔ Stable ↓ Deteriorated – No consistent trend * Status not assessed in 2009.

B. Ecosystem Health

Outlook 2014's assessment of ecosystem health is also alarming. The report notes, *The past decade of extreme weather events, combined with the continuing poor condition of key processes such as sedimentation and nutrient cycling, have caused the overall health of the Great Barrier Reef ecosystem to deteriorate since 2009. ……*

The decline in ecosystem health is most pronounced in inshore areas of the southern two-thirds of the Region. In contrast, the continuing good and very good condition of almost all processes in the northern third of the Region and in offshore areas means that the ecosystem in these areas continues to be healthy. Ecosystem processes are integral to the attributes recognised in the world heritage listing of the Great Barrier Reef. The deteriorating condition of many is likely to be affecting its outstanding universal value.[8]

This assessment is based on four marine-focussed criteria with 24 components, and one terrestrial criterion with seven components. The figures below show the condition and trend of the components assessed relating to ecosystem health.[9]

Physical processes

Current	Poor condition	Good condition	Very good
Trend	↓ Sedimentation ↓ Sea temperature	↓ Cyclones and wind ↓ Freshwater inflow ↓ Sea level ↓ Light	↓ Currents

Key: Trend since 2009. ↑ Improved ↔ Stable ↓ Deteriorated – No consistent trend

Chemical processes

Current	Poor condition	Good condition
Trend	↓ Nutrient cycling	↓ Ocean pH ↓ Ocean salinity

Key: Trend since 2009. ↑ Improved ↔ Stable ↓ Deteriorated – No consistent trend

Ecological processes

Current	Poor condition	Good condition	Very good
Trend	– Predation Recruitment*	↓ Particle feeding ↓ Herbivory ↓ Symbiosis ↓ Reef building ↓ Connectivity ↔ Microbial processes ↔ Competition	– Primary production

Key: Trend since 2009. ↑ Improved ↔ Stable ↓ Deteriorated – No consistent trend * Status not assessed in 2009.

Outbreaks of disease, introduced pests and pest species

Current	Poor condition	Good condition
Trend	↓ Outbreaks of crown-of-thorns starfish	– Outbreaks of disease – Introduced species – Other outbreaks

Key: Trend since 2009. ↑ Improved ↔ Stable ↓ Deteriorated – No consistent trend

Terrestrial habitats that support the Great Barrier Reef

Current	Poor condition	Good condition	Very good
Trend	Freshwater wetlands Forested floodplains Grass and sedgelands Woodlands and forests	Saltmarshes Rainforests	Heath and shrublands

* Note: Terrestrial habitats were not assessed in the 2009 Outlook Report, so no trend is provided.

C. Condition of the Reef's Outstanding Universal Value

The Australian government's Strategic Assessment for the Reef, released in 2014, shows that 24 out of the 41 metrics or attributes that collectively encapsulate the OUV of the World Heritage Area have deteriorated since its inscription in 1981.[10] This equates to 58% or more than half the attributes assessed. Of the 24 diminished attributes, ten are currently 'poor' rather than 'good' or 'very good' and these ten include significant attributes such as coral assemblages, breeding colonies of seabirds, seagrass, dugong, Indigenous connection to country and a component of the Integrity of the Reef.

Three key examples of significant attributes of OUV are geomorphological features, ecological processes, and the number of dugongs (see case study). Recent research on the GBR indicates that reef calcification and growth of massive corals are already being compromised by climate change. Similarly, there is clear evidence for widespread regional-scale declines in ecological processes such as recruitment, herbivory and predation.

The report notes, *Of those for which there is information, there have been significant declines in many, especially in the inshore southern two-thirds of the Region, and some iconic and cultural keystone species.*[11]

Throughout the 2014 Outlook Report reference is made to the poor condition of the southern two-thirds of the Reef with many habitats and species showing a declining trend particularly in the inshore region. An unfortunate consequence of aggregating data to provide Reef-wide assessments is the loss of detail and the tendency to mask serious trends in sections of large sites.

" While the dugong populations in the northern areas of the Reef Region and adjacent Torres Strait are considered in good condition and stable, the situation for dugongs in the southern two-thirds of the region is dire."

Case study: Decline of the Dugong

While the dugong populations in the northern areas of the Reef Region and adjacent Torres Strait are considered in good condition and stable, the situation for dugongs in the southern two-thirds of the region is dire. The first surveys of dugong in this area indicated a population of over 3,000 in 1987; by 2005 this had reduced to 2000. The survey in 2011 indicated a population of only 600. This long term decline is due to the cumulative impacts of hunting, drowning in fishing nets, collisions with vessels, physiological stress, and reduction of seagrass habitats (the primary food source for dugong) caused by floods, coastal development and dredging. Intense coastal flooding in 2011 had a dramatic impact, causing the animals to relocate, strand or die (section 2.4.17, GBRMPA 2014b).

D. Long term outlook

According to Outlook 2014, the long term prognosis for the World Heritage Area is extremely concerning. The overall assessment is poor, with a declining trend. The report notes, *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. The emerging success of some initiatives (such as improving land-based run-off) means some threats may be reduced in the future. However, there are significant lags from when actions are taken to improvements being evident in the ecosystem. More than ever, a focus on building resilience by reducing all threats is important in protecting the Region's ecosystem and its outstanding universal value into the future.*[12]

" 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.[13]

2 De'ath et al (2012)
3 p.35, GBRMPA (2014b)
4 p.35, GBRMPA (2014b)
5 Section 2.5.2, GBRMPA (2014b)
6 Section 2.5.1, GBRMPA (2014b)
7 Section 2.5.2, GBRMPA (2014b)
8 p.69, GBRMPA (2014b)
9 p.65-68, GBRMPA (2014b)
10 GBRMPA (2014a)
11 Section 2.5.2, GBRMPA (2014a)
12 p.vi, GBRMPA (2014b)
13 p.vi, GBRMPA (2014b)

4 | THE REEF 2050 LONG TERM SUSTAINABILITY PLAN

The Reef 2050 Long Term Sustainability Plan (Reef 2050) is the keystone of Australia's response to the World Heritage Committee's concerns, and it is yet to be finalised. Unfortunately, the latest draft of Reef 2050 Plan fundamentally fails to address the key threats to the Great Barrier Reef as identified by the Outlook Report 2014: climate change, coastal development, land-based run-off, and direct use.

Whilst some new initiatives are contained in the latest document it is largely a repackaging of programs that have already proved inadequate. Last year, the Australian Academy of Science described it as "a plan that won't restore the reef, it won't even maintain it in its already diminished state".[14]

Before it is finalised, the Reef 2050 Plan needs to incorporate all the Reef policy commitments of the new Queensland government. The Australian government also has an opportunity to strengthen Reef 2050 by making additional policy and funding commitments.

The key improvements to Reef 2050 that are needed to ensure the long term conservation of the property and its OUV are summarised below. Five key issues for Reef 2050 are then described in more detail: cutting agricultural pollution, managing ports, laws to protect the Reef, investment, and governance.

A. Reducing catchment pollution

New Queensland government commitments yet to be incorporated:

- Reduce nitrogen run-off by up to 80% and total suspended sediment by up to 50% in key catchments by 2025.
- A cap on pollution which reduces over time to achieve pollution targets
- An extra $100 million over five years to boost water quality programs.
- Pollution regulations to stop high polluting practices – with a requirement to operate under an Environment Risk Management Plan unless accredited to best management practices.
- Establish a taskforce to report within a year on the best mix of measures to achieve targets, including: regulations, market based trading mechanisms, and a net-benefit requirement for new development.

Further actions needed from the Australian government:

- Commit to an increase in Federal funding for pollution programs of at least $500 million over the next five years and recognise that far greater resources will be needed in the longer term to cut pollution so it has no detrimental impact on the health of the Reef.
- Endorse the pollution reduction targets the Queensland government has set.
- Undertake a cost-benefit study which specifies how much it will cost to achieve these targets and the broad benefits that will result, within six months.
- Identify where private sector funds will be sourced and the likely amount.
- Support Queensland's proposed taskforce to identify the best mix of measures to achieve pollution reduction targets.
- In partnership with the Queensland government, establish a cap on Reef pollution and a water quality trading system, and ensure that any Commonwealth approvals or actions support the cap and trade system, including a net benefit for water quality for all approvals under the *Environment Protection and Biodiversity Conservation Act*.
- Phase-out Diuron and other unmanageable pesticides.

B. Managing ports on the Reef coast

New Queensland government commitments yet to be incorporated:

- Legislate to ban the sea dumping of capital dredge spoil within the Great Barrier Reef World Heritage Area and mandate the beneficial reuse of dredge spoil, or disposal on land where it is environmentally safe to do so.
- Optimise the use of existing port infrastructure in the four priority ports and prohibit capital dredging outside these ports.
- Require all proponents of new dredging works to demonstrate their project is commercially viable prior to the commencement of work.
- Prohibit trans-shipping operations within the Great Barrier Reef Marine Park.
- Develop a comprehensive, state-wide framework to better manage maintenance dredging.
- Prohibit any development in the Greater Fitzroy River delta.
- Stop dredge spoil disposal on the Caley Valley Wetlands at Abbot Point.

Further actions needed from the Australian government:

- Federal legislation to ban the dumping of capital dredge spoil in the whole WHA, not just the Marine Park.
- Maintain approval powers under the EPBC Act, with improved assessment standards to protect the OUV of the World Heritage Area, and ensure that development achieves a net benefit for Reef health.
- Not grant further approvals for port developments until the proposed Queensland ports legislation is in place and Port Master Plans are completed.

C. Strong laws to protect the Reef

New Queensland government commitments yet to be incorporated:

- Reinstate many of the legislative provisions which controlled development and its impact on the Reef including: vegetation clearing controls, sustainable water use, riverine protections, as well as coastal planning and development and community rights to appeal.
- Not accept deferral of approval powers for applications under the EPBC Act.
- Prohibit new development in high hazard areas.

Further actions needed from the Australian government:

- Maintain approval powers under the EPBC Act, with improved assessment standards to protect the OUV of the World Heritage Area, and ensure that development achieves a net benefit for Reef health.

D. Investing in a healthy future for the Reef

New Queensland government commitments yet to be incorporated:

- An extra $100 million over five years to boost water quality programs
- $10 million over 5 years to boost the buy-back of net fishing licences in key areas.
- Recognition that much greater investment will be needed, and a commitment to seek this from a combination of public and private sources.

Further actions needed from the Australian government:

- Commit to an increase in Federal funding for pollution programs of at least $500 million over the next five years and recognise that far greater resources will be needed in the longer term to meet ecologically relevant targets.
- Prior to the 2015 World Heritage Committee meeting, undertake an expert based process to cost and prioritize the full set oftargets, actions, research and monitoring in the final Reef 2050 Plan.

E. Governance and the role of GBRMPA

Further actions needed from the Australian and Queensland governments:

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

- Resolve the conflicts between the administration of the EPBC Act and GBR MP 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.
- 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.

F. Other issues

Climate change

A framework to avoid dangerous climate change should be a core part of any Reef 2050 Plan. WWF-Australia and AMCS believe that a specific section on climate change mitigation and adaptation should be included in the Reef 2050 Plan, complete with outcomes, targets and actions. A simple first step would be to identify climate mitigation and adaptation policies and actions that are already underway or committed to. Including these initiatives would help align and coordinate climate change action across governments and stakeholders in the Reef region.

Dams and agricultural expansion

While the Queensland government is to introduce improved controls on coastal development, the Australian government is planning to facilitate major new dams and a massive expansion in agriculture, which completely contradicts its undertakings in Reef 2050. To improve protections from development, the Australian government should:

- Demonstrate how its plans for dam building and massive agricultural expansion will not lead to increased pollution and damage to coastal ecosystems important for the Reef or revise its plans accordingly.

Fisheries

The incoming Queensland government has committed a further $10 million over 5 years to boost the buy-back of net fishing licences in key areas.

Further actions needed from the Australian government:

- Protect the five shark species occurring in the GBR WHA recently listed as protected migratory species under the Convention on the Conservation of Migratory Species of Wild Animals.
- Support the modernisation of the Qld fishing fleet through investing $50 million for: removal of nets from critical turtle, dugong and dolphin areas; trawl, net and line buy outs to promote the adoption of Maximum Economic Yield management targets ; installation of VMS across the entire fleet; and better data and compliance.

Cape York

Due to the relatively undeveloped nature of the catchments of Cape York, the far northern Reefs are in much better condition than southern areas. The most sensible and cost-effective action under Reef 2050 to secure the biodiversity and ecosystem health of the World Heritage Area, would be to put in place robust protection mechanisms for eastern Cape York and other high value areas.

Further actions needed from the Australian and Queensland governments:

- Rule out major development in the Reef Cape catchments, including the Wongai trans-shipping project and intensive agricultural expansion.
- Support Indigenous economic development through improved management of existing grazing properties, and facilitating ecotourism operations based on the pristine nature of the Cape catchments and reefs.

14 Australian Academy of Science (2014)

4A. CUTTING AGRICULTURAL POLLUTION

The draft Reef 2050 Plan claims that government programs have led to improved water quality leaving the catchments. Even if the modelled pollution reductions are accurate, they fall well short of the government's own targets, and do not come close to the pollution cuts that are needed to boost the Reef's health. Despite these major failings there is no plan to expand efforts and funding to cut pollution in the latest draft of Reef 2050 as requested by the World Heritage Committee.

Agricultural pollution: a major threat to the Reef

Pollution running off catchments is one of the biggest threats to the health of the Great Barrier Reef. The Outlook Report 2014 rated land-based run-off as one of the top four very high or high risk factors to the Reef's ecosystems and heritage values.

Water pollution is a threat that can be addressed immediately through local actions. Cutting catchment pollution will arrest crown-of-thorns starfish outbreaks. In the last three decades over half the Reef's coral cover has been lost, with crown-of-thorns starfish outbreaks being responsible for 40% of this loss.[15] Without crown-of-thorns outbreaks coral cover would have increased by more than 24% over the same period. Cutting pollution can also boost the Reef's resilience to climate change. Reduction in nitrogen run-off between 50-80% can effectively raise the bleaching threshold of near shore corals by as much as 2-2.5°C.[16]

How effective are current pollution control programs?

Australian governments have recognised the importance of cutting agricultural pollution and have invested hundreds of millions of dollars into actions under the Reef Water Quality Protection Plan which aims to "ensure that by 2020 the quality of water entering the Reef from broadscale land use has no detrimental impact on the health and resilience of the Great Barrier Reef".

In the draft Reef 2050 Plan it is claimed pollution reductions have already been made. Whilst much good work has occurred the figures provided are modelled reductions about what may occur over the longer term, with little evidence that existing water quality has been improved.

Even if these are taken at face value they fall well short of the government's own targets for pollution reductions and underline the inadequacy of current programs and funding.

Nitrogen	2013 target – 50% reduction	2013 outcome – 10% reduction
Pesticides	2013 target – 50% reduction	2013 outcome – 28 % reduction
Sediment	2020 target – 20% reduction	2013 outcome – 11% reduction

Recent scientific reports[17] indicate that to achieve the 2020 goal it is likely that nitrogen will need to be cut by 80% and sediment by 50% in key Reef catchments.

The World Heritage Committee's recommendations on water pollution

In its 2014 Decisions the World Heritage Committee requested that:

- "the Long-Term Plan for Sustainable Development (LTPSD) results in concrete and consistent management measures that are sufficiently robust, effectively governed and *adequately financed* to ensure the overall long-term conservation of the property and its Outstanding Universal Value".
- (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".

Water pollution actions in the draft Reef 2050 Plan

Despite the failure to meet the existing targets, and the much greater pollution cuts that will be needed to achieve the 2020 'no detrimental impact' goal, there are no plans in Reef 2050 to expand efforts and funding.

The Reef 2050 Plan does refer to the establishment of the Reef Trust and an associated $40 million investment. Whilst Reef Trust is a welcome initiative with its aim to build investments to be spent in the most cost-effective manner, the $40 million is a very small investment and is taken from the existing water quality budget.

Reef 2050 fails to set the pollution reduction targets needed to achieve the Reef Plan 2020 goal of no detrimental impact on the health and resilience of the Reef (and it appears to shift this goal out to 2035 which would have significant adverse effects on Reef health and recovery). Nor does it set and commit to the necessary level of investment, without which necessary pollution cuts simply won't occur.

The most credible report[18] to address the level of investment required, undertaken by the Natural Resource Management groups who deliver programs to cut Reef pollution, has estimated that an increase of $785 million over the next five years, and over $2 billion over the next 15 years is needed.

For catchment pollution there is a clear case that management measures are not "adequately financed to ensure the overall long-term conservation of the property and its Outstanding Universal Value". This is discussed further in the section on investment.

Public investment is important but only one part of the solution to cut pollution to Reef safe levels. There needs to be clear pollution standards for all land uses – public funds should not go to address basic duty of care actions. There needs to be strong legislative controls on future development to ensure there are not further increases in Reef pollution. Agricultural operations and future development need to be a key focus of these laws and standards. The Jacobs Review of Institutional Arrangements found that *"It is widely acknowledged that agricultural land use in catchments that drain into the Great Barrier Reef is largely ungoverned by the suite of legislative and regulatory arrangements in place."*

The new Queensland government has committed to re-introduce regulations to control pollution, a water quality trading scheme, and an increase of $100 million over five years for pollution programs. To get the cuts to pollution that the Reef needs, there needs to be complementary commitments by the Australian government including a significant further investment. In the next five years new investment of at least $500 million on top of existing funds, will be needed to deliver the actions that Reef NRM groups have identified. Over the medium term there will need to be a multi-billion increase in investment to ensure there is no detrimental impact to the Great Barrier Reef from catchment pollution.

15 De'ath et al (2012)
16 Wooldridge, (2009)
17 Brodie et al (2014)
18 Reef Regions (2015)

4B. MANAGING PORTS ON THE REEF COAST

The World Heritage Committee and 2012 Mission made a series of decisions and recommendations relating to the management of ports in or adjacent to the Great Barrier Reef World Heritage Area and in particular limiting the impacts of proposed expansions. The table below lists the WHC decisions and key actions requested.

Relevant WHC decisions	Key actions requested
Port Development 2012 Monitoring Report Recc #2,4,7,8 2012 (36 COM 7B.8) Recc #5 2013 (37 COM 7B.10) Recc #6 2014 (38 COM7B.63) Recc #5,7 **Shipping** 2012 Monitoring Report Recc 13	Ensure rigorously that development is not permitted if it would impact individually or cumulatively on the OUV of the property. Integrated approach to planning, regulation and management of ports and shipping activity. Ensure that no port developments or associated port infrastructure are permitted outside the existing and long-established major port areas within or adjoining the property, – Exclude the Fitzroy Delta, Keppel Bay, and north Curtis Island from the Gladstone PPDA – Protect greenfield areas from the impacts of port development

The Queensland government has primary responsibility for the management of ports and released the Queensland Ports Strategy in May 2014. A draft Ports Bill and draft Guidelines for Port Planning were released for public comment in late 2014.

Offshore disposal of dredge spoil

The Australian government has committed to ban the disposal of capital dredge material within the boundaries of the GBR Marine Park. This is a welcome and positive step. However, the area of the Marine Park is 3600km^2 smaller than the World Heritage Area, and since 2006 the majority of sea-dumping of dredge spoil takes place in coastal waters just outside the Marine Park, but still inside the border of the World Heritage Area. This loophole will undermine the effectiveness of the new regulation, since it will not stop most offshore dredge spoil disposal, and sediment plumes can easily drift into the Marine Park itself. The new regulations will not apply to spoil from maintenance dredging operations, which can add up to millions of tonnes per year.

The proposed new regulations have not yet been released for public scrutiny, so important details are unknown, such as whether the new restrictions will apply retrospectively to existing projects, or how 'capital' dredge material will be defined.

Australia's 2015 State Party Report claims that, *In September 2013 there were five major capital dredging projects either planned or under active assessment that proposed to dispose of dredge material in the GBR Marine Park. The Australian government has reduced that number to zero.*[19]

WWF and AMCS welcome the government's desire to limit the impact of port developments, but we believe this claim is premature and exaggerated. Under permits that have already been issued, and projects that are currently being assessed, capital dredge spoil could still be disposed of within the World Heritage Area at Cairns, Townsville, Gladstone and possibly Abbot Point.

Capital dredging can still have major impacts on the GBRWHA, even if dredge spoil is disposed of onshore. The proposed prohibition on dredging for new or improved port facilities outside Priority Port Development Areas (PPDAs) extends only until December 2024 and does not cover pre-existing applications.

Restricting port development

Australia's 2015 State Party Report claims that, *Under proposed legislation which will deliver Queensland's Ports Strategy, there will be no new port development within the GBRWHA outside existing long-established port priority areas"* and *"Greenfield areas will be protected by a prohibition in the proposed legislation that will restrict significant port development …to within existing port limits."*[20]

However, under the proposed legislation the definition of what is 'significant' port development is left to Ministerial discretion; namely, *The Minister must decide whether the port development is significant port development (Draft Qld Ports Bill 2014).* The term is not defined in the draft laws.

It is important to note that the proposed limits will only apply for seven years, to 2022. Plus, the new laws will not apply to pre-existing port development proposals outside major ports, such the Wongai trans-shipping project on Cape York or the Cairns cruise ship terminal.

The Queensland and Australian governments have indicated that port development will not be allowed in the Greater Fitzroy Delta, saying *The Port of Rockhampton, which includes Fitzroy Delta, Keppel Bay and North Curtis Island, is not a proposed priority port.*[21] However, this commitment is not currently reflected in the proposed ports legislation and concrete action has still not been taken to provide permanent protection for the high conservation value region, which is one of the largest estuaries flowing into the Reef lagoon.

In summary, to date, Australia has not satisfied the World Heritage Committee's request to ensure that no port developments or associated port infrastructure are permitted outside the existing port areas and it is unclear how it will satisfy obligations of how to avoid impacts on OUV from further port development.

" Australia has not satisfied the World Heritage Committee's request to ensure that no port developments or associated port infrastructure are permitted outside the existing port areas..."

Case study: Abbot Point port expansion

The isolated Port of Abbot Point sits on the edge of the GBRWHA in north Queensland. Plans are underway to expand the coal export facility from its current capacity of 50 mega tonnes per annum (Mtpa) to 180 Mtpa and eventually up to 300 Mtpa. The construction of two new coal terminals has already been approved to enable the export of thermal coal from proposed new mega mines in the Galilee Basin.

The Abbot Point area has many attributes which contribute to the Reef's Outstanding Universal Value. Onshore, the Caley Valley wetland provides important habitat for migratory shorebirds, while flatback and green turtles nest on the beaches around the Point. Offshore, seagrass beds provide food for dugongs and marine turtles, and snubfin dolphins and humpback whales also inhabit the Port's waters. Although other locations within the GBRWHA may exhibit these values in greater density, Abbot Point is no less important than the rest of the WHA.

The major environmental impacts of the port expansion will result from the construction of jetties, hundreds more coal ship visits a year, increased spread of coal dust, dredging and loss of seagrass beds. The greenhouse gas emissions from combustion of the coal are not considered under Australian environmental laws.

In December 2013 approval was granted to dredge 3 million cubic metres of seabed and dispose of the dredge spoil at sea inside the Great Barrier Reef Marine Park, sparking public anger and scientific concern. Subsequently the previous Queensland government moved away from sea-dumping and devised a plan to build spoil disposal ponds on top of a section of the coastal wetlands; but this option is not supported by the new Qld government. A new strategy for dredge spoil disposal is yet to be developed, and will have to be submitted for approval by the Australian government under the EPBC Act.

In 2011 the WHC requested Australia to 'ensure rigorously that development is not permitted if it would impact individually or cumulatively on the OUV of the property'. WWF and AMCS remain concerned that the port expansion at Abbot Point will have significant cumulative impacts on the GBR WHA. The approval process for the two terminals, the dredging and the sea-dumping of dredge spoil highlights many of the weaknesses in Australia's environmental laws and raises questions about the ability of the current management framework to prevent high-impact developments in the face of strong political support and economic demands.

Now is not the time to repeat mistakes of the past and quickly jump to a third option for spoil disposal that could also impact on the OUV of the Reef. Further decisions on Abbot Point should be made in the context of developing a new Port Master Plan once the proposed Ports legislation is in place.

Improving management of port areas

The Queensland government released draft Guidelines for Port Planning in late 2014. According to the 2015 State Party Report *a new and more rigorous approach to port planning, including development of master plans at existing ports, will protect both land and marine environmental values.*[22]

The boundaries of a PPDA will be identified in the port's master plan, which could take up to three years to complete. The final boundaries could be significantly different to existing port limits and may include new areas potentially at some distance from existing port infrastructure.

The draft Guideline for port planning refers to "core port areas" within the PPDA (i.e. land and marine areas required for port development in the next ten years) and notes that *each of the areas may comprise land that is not contiguous.*[23] The Guideline also provides for identification of "future investigation areas" outside the PPDA.

The proposed environmental management framework (EMF) need only apply to the core port areas, and not to the entire PPDA. As the EMF is the primary mechanism for determining environmental management arrangements including monitoring and reporting it should apply to the entire PPDA.

The draft Guideline states that in preparing the PPDA Development Scheme an analysis of cumulative impacts *arising from current and future developments within the core port area … over ten years*[24] will be undertaken. This is an inadequate scope and time-frame for cumulative impact assessment, and fails to consider all drivers and pressures on environmental, social and economic systems.

New Queensland government: expected policy changes

The newly elected Queensland government committed to stronger regulation of port development and a ban on dredge spoil disposal in the whole WHA. It's expected that changes will be made to the draft Reef 2050 Plan, the proposed ports legislation, and draft Guideline for port planning to incorporate these new policy commitments. However, ongoing scrutiny from the World Heritage Committee will help ensure proper implementation.

Recommendations

The actions that need to be included in the final Reef 2050 Plan to meet the World Heritage Committee's recommendations on port management are listed in section 4 of this report.

19 p.29, Commonwealth of Australia (2015a)
20 p.29, Commonwealth of Australia (2015a)
21 p.29, Commonwealth of Australia (2015a)
22 p.29, Commonwealth of Australia (2015a)
23 p.12, State of Queensland (2014b)
24 p.15, State of Queensland (2014b)

4C. STRONG LAWS TO PROTECT THE REEF

Both the draft Reef 2050 Plan and the 2015 State Party Report summarise the range of Australian and Queensland government legislation in place that contribute to the management of the GBR World Heritage Area. However these documents overstate the level of protection afforded by this legal framework.

In recent years, many legal protections for the Great Barrier Reef and its catchments have been weakened or dismantled. Thus, current laws and policies relating to the GBR do not effectively protect the OUV and a number of regulatory reforms are needed to provide adequate protection.

The 2015 State Party Report claims that Australia has strengthened legal protection for the GBRWHA and points to an increase in penalties under the Queensland *Environmental Protection Act 1994* for wilful damage to the Great Barrier Reef. Although this measure is positive, the penalties only apply to unlawful activities, and many environmentally harmful activities have recently been made lawful through changes to other legislation.

The table below summarises the key issues of concern and further details are available in the attached advice at Appendix 1. The advice was prepared by the Environmental Defenders Office Queensland (a specialist community legal centre) and provides a more detailed analysis and recommendations for essential improvements.

Issue	Commentary
Draft Reef 2050 Plan does not include any improvements to legislation[25]	• The Draft Reef Plan does not identify and commit to redressing the impacts of many recent legislative changes that will impact on overall GBR protection.
	• The Draft Reef Plan is not enforceable and makes only non-binding policy commitments.
Port development is not adequately regulated, even with the proposed Ports legislation[26]	• The previous Queensland government introduced proposed new Ports legislation, which include many limitations and flaws, as described in section 4b of this report.
	• The new Queensland government has committed to stronger regulation of port development and a ban on the dumping of capital dredge spoil in the greater GBR WHA but the legal mechanism for implementing this promise has not been decided, and few details are available.
	• The Australian government is preparing a new regulation under the *Great Barrier Reef Marine Park Act* to ban the dumping of capital dredge spoil from the Marine Park, but the details have not been publicly released.
Laws protecting northern Reef catchments have been repealed[27]	• Legislation protecting northern GBR catchments (the *Wild Rivers Act*) has been repealed, which means that clear prohibitions on damaging development were removed. The new 'strategic environmental areas' replacing Wild Rivers require a lower standard of development assessment.
	• The new Queensland government has committed to protecting pristine rivers but few details are available.

Issue	Commentary
Regulations to limit farm pollution are not being enforced[28]	• Existing laws for agricultural pollution run-off are not being enforced in favour of voluntary best practice management programs, but these programs are unable to meet the pollution reduction targets required.
	• To be most effective, the new Queensland government's program to reduce farm pollution needs to include enforcement of existing water quality regulations.
Water laws have been weakened[29]	• Recent changes to water laws mean less regulation on the use of groundwater and surface water, which could adversely affect hydrology and river health in GBR catchments.
	• The new Queensland government has stopped the proclamation of new laws.
Vegetation management laws have been significantly weakened[30]	• Recent changes to vegetation laws prioritise clearing for agricultural purposes, removing protection for up to 2 million hectares of bushland in Queensland.[31]
	• Changes to riverine protection laws mean that not all GBR catchments have protected riparian vegetation.[32]
	• The new Queensland government has made a broad promise to reinstate vegetation management laws repealed by the previous government, but few details are available.
Principles of Ecologically Sustainable Development are missing from key Qld laws	• The Draft Reef 2050 Plan is misleading where it states that, *decisions are underpinned by Ecologically Sustainable Development (ESD) principles and in line with the precautionary principle.*[33]
	• ESD is not a relevant consideration under key laws regulating development in Queensland; e.g. major projects, water use regulation, environmental offsets and regional planning.[34]
	• The new Queensland government has promised to reinstate the principles of ESD in the Water Act only, however all Qld legislation regulating impacts on the GBR must explicitly require the application of ESD.[35]
Cumulative impacts are not effectively regulated[36], with no action on climate change adaptation	• Cumulative impacts are not currently considered in the assessment of proposals.[37] Interim referral guidelines for cumulative impacts are not a criterion for approvals. The Draft Reef 2050 Plan offers no clear commitment to give legislative force to cumulative impact assessment.
	• The Draft Reef 2050 Plan is misleading where it states that, *Decisions are based on the best available science, with consideration to current and emerging risks associated with climate change.*[38] This is because all Queensland legislation and policies relating to climate change mitigation and adaptation have been recently removed.[39]

Issue	Commentary
Jacobs Review[40] of legal arrangements is not comprehensive	• The Jacobs Review does not provide a comprehensive analysis of the regulatory framework as requested by the World Heritage Committee.
	• Major omissions of the Review of legal arrangements are highlighted throughout the EDO advice in Appendix 1, including its failure to address issues of the GBR Marine Park Authority's independence, cumulative impact assessment, reduced public participation, climate change mitigation, the removal of ESD from Qld laws and recent changes to vegetation and water protections. However, it correctly identified gaps in Queensland laws for agricultural pollution, regional planning and climate change adaptation.
Coastal development laws and regional planning fail to protect the Reef's OUV[41]	• Land use planning and development laws have been weakened in many respects. For example, the Queensland State Planning Policy requires local plans to 'consider' but not protect the Reef's OUV.
	• New regional plans for GBR catchments encourage increased development, mining and agriculture, and do not include measures to protect the Reef's OUV.
	• Changes to coastal development laws allow more development with less assessment of impacts
Delegation of powers: from Australian to Qld government to approve impacts on the GBR World Heritage Area and Marine Park[42]	• In 2014, the Qld government passed legislation and the Federal government introduced legislation (not yet passed) which proposes to handover approval powers to Qld. The delegation would result in weaker Qld laws, not Federal laws, being used to approve damaging and significant impacts on the GBR WHA. • The new Queensland government has indicated it does not support this move but it is not clear how change will be implemented.

Issue	Commentary
A stronger and more independent GBRMPA	• 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: all actions within the WHA, inside and outside the GBR Marine Park; and actions on land which are likely to impact sensitive ecosystems that are highly connected to the Great Barrier Reef WHA.
	• Resolve the conflicts between the administration of the EPBC Act and GBR MP 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.

Note: This analysis refers to the public consultation draft of the Reef 2050 Long Term Sustainability Plan, released in September 2014.

25 See Appendix 1, Issue #2
26 See Appendix 1, Issue #3
27 See Appendix 1, Issue #7
28 See Appendix 1, Issue #4
29 See Appendix 1, Issue #6
30 See Appendix 1, Issue #5
31 Taylor, M.F.J. 2013. *Bushland at risk of renewed clearing in Queensland.* WWF-Australia, Sydney. Available at: http://awsassets.wwf.org.au/downloads/fl012_bushland_at_risk_of_renewed_clearing_in_queensland_9may13.pdf
32 See Appendix 1, Issue #6
33 *Draft Reef 2050 Long-Term Sustainability Plan*, p. 20, Figure 5.
34 *State Development and Public Works Organisation Act 1971 (Qld), Water Act 2000 (Qld), Environmental Offsets Act 2014 (Qld), Regional Planning Interests Act 2014 (Qld).*
35 See Appendix 1, Issue #11
36 See Appendix 1, Issue #15
37 Contrary to page 44 of the *State Party Report 2014*.
38 *Draft Reef 2050 Long-Term Sustainability Plan,* p. 20, Figure 5.
39 See Appendix 1, Issue #12 & #13
40 Jacobs (2014).
41 See Appendix 1, Issue #8, #9, #10
42 See Appendix 1, Issue #14.

4D. INVESTING IN A HEALTHY FUTURE FOR THE GREAT BARRIER REEF

Despite 40 years of investment in researching and managing the Great Barrier Reef, and 10 years of focussed work in reducing catchment pollution *'the overall outlook for the Great Barrier Reef is poor, has worsened since 2009 and is expected to further deteriorate in the future'.*[43]

The Australian government's 2015 State Party Report estimates that in 2014-15 government financial support totalled $205.1 million.[44] This covers the activities of Australian and Queensland management agencies, research, and on-ground investment through the Reef Water Quality Protection Plan (Reef Plan). The latter investment continues only until 2016.

However, it is clear that without significant new financial investment, commitments made by the Australian and Queensland governments will not be fulfilled, and the health of the Reef will continue to decline.

Reef 2050 Plan Investment Strategy

The draft Reef 2050 Plan identifies the need to establish an investment strategy for implementation of the Plan, but few specific commitments have been made to fund actions listed in the draft plan.

The scale of funding required to meet scientifically based catchment water quality targets is discussed in section 4a) of this report. In addition to the new funding for water quality actions there will need to be an expert based process to cost and prioritize the wider set of targets, actions, research and monitoring that the two governments commit to in the final Reef 2050 Plan.

The Reef 2050 investment strategy needs to draw on public, private and institutional sector funding and include a financial arrangement that allows pooling of resources to direct to priority projects. Importantly key management responsibilities of infrastructure agencies, major industries and local government must be delivered so that impacts to the Reef's OUV are avoided.

Reversing the decline in water quality

On-ground water quality improvement investments are guided by a series of targets to reduce nitrogen, sediment and pesticide loads entering Reef waters. The recent scientific report from TropWATER[45] indicates that to achieve the 2020 Reef Plan goal of no detrimental impact on the health and resilience of the reef , it is likely that nitrogen will need to be cut by 80% and sediment by 50% in key Reef catchments.

At current rates of investment it is highly unlikely the current pollution reduction targets will be met, let alone the 2020 Reef Plan goal of "no detrimental impact on the health and resilience of the GBR". In fact neither the specific pollution cuts needed to achieve the 2020 goal nor the quantum of investment required have yet been determined.

The recent report by the six GBR regional natural resource management organisations recommends an additional investment of at least $785 million over the next 5 years. The report states, *The estimated investment required to achieve further improvements in GBR pollutant load reductions is $785 million for the first 5 years, not including co-investment opportunities. This involves management practice changes in rural and urban landscapes and associated costs of extension programs, monitoring and R&D, and the commencement of a larger scale system repair program targeting degraded landscapes and landscape functions contributing to the current poor condition of GBR ecosystem health. Ongoing investment on that scale is likely required for subsequent years, with a bigger focus on system repair and coastal development.*[46]

In the recent Queensland government elections the Australian Labor Party committed an additional $100 million over the next five years.

In Australia, it is traditionally the responsibility of the Federal government to provide the majority of funding for major natural resource programs. For example the Australian government has committed over $10 billion to improve the condition of the Murray-Darling Basin.

Coral reef destroyed by Crown of thorn starfish or by coral bleaching, Great Barrier Reef and Coral Sea.

Prior to the June 2015 World Heritage Committee meeting the Australian government must come forward with a commitment to provide at least $500 million over five years, to show its genuine intent to protect the Outstanding Universal Value of the Great Barrier Reef.

A total investment in excess of one billion dollars is needed over five years comprised of: $375 million of existing base-level funding from the Queensland and Australian governments; $100 million in new funding from the Queensland government (already committed) and at least $500 million from the Australian government (no commitment yet delivered). The remainder will need to be sourced through private contributions and other sources.

Resourcing the Great Barrier Reef Marine Park Authority

The role of the Great Barrier Reef Marine Park Authority is crucial in protecting the World Heritage Area. Section 4e outlines problems with the Authority's independence, legal powers and resourcing. WWF and AMCS Are calling on the Australian government to 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.

43 P.vi, Great Barrier Reef Marine Park Authority (2014b)
44 Figure 2, pp 32-33, Commonwealth of Australia (2015a)
45 Brodie et al (2014)
46 p.3, Reef Regions (2015)

4E. GOVERNANCE AND THE ROLE OF GBRMPA

A complex framework of law and policy underpins management of the GBR WHA with the *Great Barrier Reef Marine Park Act 1975* (GBR MP Act) and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) playing central roles at the Commonwealth level. A variety of Queensland laws are used to manage land, coastal and some marine-based activities. Section 4c of this report identifies key issues of concern with the current and proposed legal framework. This section provides more detail on two issues: the Jacobs Review and reform of the Great Barrier Reef Marine Park Authority (GBRMPA).

Limitations of the Jacobs Review of institutional arrangements

The Jacobs Review of Institutional Arrangements[47], commissioned by the Australian government, provided a review of the institutional and legal mechanisms that provide coordinated planning, protection and management of the GBR WHA. The short time-frame within which the review was undertaken (some 6 weeks) meant that it primarily was a desk top assessment. Appendix 1 in this report identifies a range of omissions in the Review including its failure to address issues of the GBR Marine Park Authority's independence, cumulative impact assessment, reduced public participation, climate change mitigation, the removal of ESD from Queensland laws, and recent changes to vegetation and water protections.

Strengthening the Great Barrier Reef Marine Park Authority

(i) Greater independence

One issue not addressed in the Jacobs Review is the relationship of the GBR MP Act to the EPBC Act. When enacted in 1975 the GBR MP Act had primacy over other Commonwealth legislation; this situation changed with the establishment of the EPBC Act in 1999. Since then there has been an apparent diminishing of the independence of the GBR Marine Park Authority (GBRMPA). Now GBRMPA only has a joint assessment role for activities occurring within the Marine Park assessed under the EPBC Act, but not for activities occurring in the greater WHA region.

Stronger ties between GBRMPA and the Commonwealth Department of Environment resulted from the review of the GBR MP Act in 2007 and changing administrative arrangements of the Authority in 2007/08.[48] Whilst the two agencies need to cooperate closely, the independence of GBRMPA needs to be unequivocal.

(ii) Legal powers over developments that impact the WHA

Under the current legal framework, GBRMPA lacks clear jurisdictional independence outside the Marine Park, especially over planning and development decisions that impact coastal and GBR ecosystems.[49] It only has an advisory role for actions outside the Marine Park that are likely to have a significant impact on the GBR WHA.

In addition, the planning and approval should give greater recognition to the high degree of connection between certain terrestrial ecosystems and the GBR WHA. New research has mapped the location of terrestrial areas in the catchments and coast that have high connectivity to the Reef and high levels of ecological integrity (the 'Blue Maps'). In order to fulfil its role in protecting the Great Barrier Reef, the Authority needs to have legal powers to influence decisions about development in these locations.

(iii) Budget and capacity

Between 2004 and 2014 GBRMPA's budget and staffing levels have been steadily increasing due in part to injections of special initiative funding for specific projects such as implementing the new Zoning Plan, development and implementation of the first Climate Change Action Plan, Crown of Thorns Starfish research and control, and Outlook Reports. In 2013/14 recurrent funding accounted for approximately 52% of the budget, field management some 15%, and the remainder was special appropriations.[50]

In 2014/15 the budget for GBRMPA is $48.6M, $5.92M less than the annual budget expended in 2013/14, a 10.8% reduction.

	Budget Aus$M	Staff
2004	31.9	179
2009	45.8	215
2014	54.5	218
2015	48.6	na

GBRMPA has a major role to play in implementing the Reef 2050 Plan, including delivery of an integrated marine monitoring, reporting and research program to inform ongoing management and evaluate the Plan's effectiveness in meeting its targets. So far, no additional resources have been identified to enable GBRMPA to fulfil this expanded role and deliver the actions it has been tasked with to make Reef 2050 a success.

It should also be noted that, as part of a major organisational restructure due in part to the reduced budget, GBRMPA has recently negotiated 17 voluntary redundancies including five directors and other senior staff with a collective history of nearly 200 person years at GBRMPA.[51]

(iv) Field management and compliance

During the past decade the day-to-day field management program has maintained a relatively stable budget: $9.6M in 2004, $12.3M in 2014. However at best this equates to covering Central Price Index (CPI) increases, and would not reflect increased costs for staff and operations in that period. On water compliance and enforcement is an essential aspect of day-to-day management; hence a reduced presence on water has serious implications for ensuring that the MP is well managed. Outlook 2014 notes, *Due to funding issues, the joint Field Management Program must prioritise compliance activities, based on a detailed risk analysis, and is not able to comprehensively enforce legislation.*[52]

The Jacob's Review also noted the importance of compliance and enforcement.[53] The review notes, *Compliance activities under the EPBC Act are carried out by the Environmental Assessment and Compliance Division of the Department of the Environment. A performance audit of the Department's compliance measures under the EPBC Act was recently completed by the Australian National Audit Office (ANAO 2014b). It found that there was a passive rather than a proactive approach to compliance, with several improvements recommended to effectively target compliance activities to the areas of greatest risk and to improve administrative arrangements.*

(v) Management structure

WWF and AMCS believe that the independence and capacity of GBRMPA need to be reinstated. Modern institutions require an expertise based board with an independent chairperson and clearly defined policy and financial responsibilities. Reporting responsibilities need to be confirmed so that the Authority provides direct policy advice to the Minister while meeting its financial responsibilities as an Australian government institution. Mechanisms need to be established that ensure GBRMPA's independence and maintain its public credibility as the Guardian of the Reef.

Recommendations:

(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 EPBC Act and GBR MP 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.

47 Jacobs (2014)

48 In 2007-08 GBRMPA was brought under the *Financial Management and Accountability Act 1997*, which in 2013 was replaced by the *Public Governance, Performance and Accountability Act 2013*. This means that the previous financial responsibilities of the Board have transferred solely to the CEO who is also the Chairman of the Board. As the CEO is a senior Australian government public servant this apparently has resulted in closer ties to the Department and less responsibility of the Board.

49 As identified in the Strategic Assessment Report (2014), Great Barrier Reef Marine Park Authority at 8-17

50 Great Barrier Reef Marine Park Authority) (2014c)

51 MPA News (2014).

52 Great Barrier Reef Marine Park Authority (2014b), Section 7.4.1, p. 214

53 Jacobs (2014), section 3.8

5 | COMMENTS ON AUSTRALIA'S 2015 STATE PARTY REPORT

The 2015 State Party Report on the State of Conservation of the Great Barrier Reef World Heritage Area (the Report or SPR) provides the Australian government's overview of work undertaken to address the World Heritage Committee's recommendations and summarises the findings of the 2014 Outlook Report for the property. It seeks to allay concerns over the adequacy of management responses and the declines in the condition and trend of the Outstanding Universal Value (OUV) of the Great Barrier Reef.

WWF and AMCS regard the Report as inadequate and in some aspects misleading. In particular it does not acknowledge the impacts on OUV of the well documented serious declines in the Reef's health nor does it provide a convincing explanation of how the values of the Great Barrier Reef will be restored. The deficiencies in the 2015 State Party Report are discussed throughout this report and below we discuss three issues of greatest concern.

Status of Outstanding Universal Value

The SPR draws heavily on the 2014 Outlook Report's assessment that the condition of the Reef's Outstanding Universal Value is GOOD. However, the 2014 Outlook Report also assessed the long term prognosis for the property's ecosystems as POOR. Appendix 4[54] of the SPR provides the justification for giving the OUV a GOOD rating despite the findings of the 2014 Outlook Report that, *the overall condition of some key attributes is poor and many have deteriorated since the property's listing in 1981.*[55] The SPR also states that, *The Great Barrier Reef is expected to remain a place of Outstanding Universal Value, despite the Report prediction of a 'poor' outlook for the Reef ecosystem.*[56]

The justifications for a continuing GOOD condition of the property's OUV include:

(i). additional management intervention has occurred since the Report was prepared

(ii). the joint Australian and Queensland government Reef 2050 Long-Term Sustainability Plan has been prepared and will be implemented, and

(iii). the Great Barrier Reef is of sufficient scale and complexity that declines in the condition of the ecosystem in central and southern inshore areas will not result in the overall loss of Outstanding Universal Value.[57]

None of these justifications are sufficient to deliver a rating of GOOD. Additional management interventions in the last six months, and the draft Reef 2050 Plan, have yet to deliver any significant reduction in the current impacts on the property. The third justification is more concerning, since it implies that two-thirds of the southern inshore region of the property (some 100,000 sq km) can be severely damaged without affecting the OUV. This is the area of the property that sustains the $5 billion GBR tourism industry and 69,000 jobs. The question arises, how much of a site's OUV can be lost before there is sufficient concern to downgrade the rating of its OUV?

We note that IUCN has provided a somewhat different assessment in the World Heritage Outlook for the Great Barrier Reef, namely:

Current state and trend of values: High Concern
Overall threats: Very High Threat
Overall protection and management: Effective

Adequacy of current and proposed management arrangements

WWF Australia acknowledges that management of the Great Barrier Reef World Heritage Area (GBR WHA) has been of a high standard compared to some other World Heritage properties, and that over the past decade there have been welcome efforts to address water quality declines, reduce the risk of shipping impacts, and improve the conservation status of key parts of the property. Unfortunately, while the investment to date may appear significant in dollar terms[58] the management actions in the draft Reef 2050 Plan are not costed and no additional investment from the Australian government is foreshadowed. To achieve the proposed water quality targets alone a total investment of at least $1 billion over the next 5 years is required (see section 4a in this report). The Australian government's present water quality investment of $55m/year only extends to 2016.

Worryingly, the Report consistently asserts that the legal and policy frameworks in place to underpin management are sufficient. WWF and AMCS consider that this is not an accurate assessment and note the following inconsistencies:

- Proposed ban on capital dredging is for the Marine Park not the entire WHA. While the ban is an important first step, since 2010 some 80% (5.4 million cubic metres) of capital dredging spoil has occurred in parts of the WHA that are excluded from the Marine Park.
- The proposed legal and policy framework under Queensland legislation to manage port development is deeply flawed. To give just one example, it only limits "significant" port development to the existing major ports until 2022. More details are provided in section 4b of this report.
- The report overlooks the serious weakening of Queensland State environmental protection laws in the past three years relating to vegetation management, water resources management and regional and coastal management planning. More details are provided in the section v of this report and Attachment 1.

Other deficiencies in the 2015 State Party Report are discussed throughout this document.

54 PP. 47-59, Commonwealth of Australia (2015a)
55 P 101, Great Barrier Reef Marine Park Authority (2014b)
56 P. 49, Commonwealth of Australia (2015a).
57 p.49, Commonwealth of Australia (2015a)
58 Figure 2, pp 32-33 Commonwealth of Australia (2015a)

6 | OVERVIEW OF AUSTRALIA'S PROGRESS AGAINST WORLD HERITAGE COMMITTEE RECOMMENDATIONS

The Australian government's 2015 State Party Report includes an assessment (Appendix 2) of Australia's progress in addressing recent decisions of the World Heritage Committee and the 2012 Mission recommendations. The following table provides an analysis undertaken by WWF and AMCS. Elsewhere in this report including Appendix 1 recommendations are made to redress the shortfall in meeting the WHC's and Mission's recommendations.

Subject (synthesis of World Heritage Committee decisions and Mission recommendations)	WWF & AMCS assessment of status
1. MAINTAINING AND ENHANCING OUTSTANDING UNIVERSAL VALUE	
1.1 Ensure all components of the Outstanding Universal Value of the Great Barrier Reef World Heritage Area (GBRWHA) are clearly defined and form a central element within the protection and management system	The 2014 Great Barrier Reef Region Strategic Assessment lists 41 attributes that collectively encapsulate the OUV of the World Heritage Area.[59] Worryingly, 25 of those 41 elements (61% of the total) are showing a deteriorating trend compared with their condition when the Reef was placed on the World Heritage List in 1981. The current condition of ten of the attributes of the Reef's OUV – including corals, seagrass, dugongs, seabirds, and marine turtles – has been assessed as "poor". The 2014 GBR Outlook Report reflects in part this detailed analysis, however it only provides an analysis of condition against the four natural heritage criteria of the Convention plus Integrity criteria[60] rather than utilising the more complete analysis incorporated in the Strategic Assessment.
	OUV is only partially incorporated into the protection and management system. The Jacobs Review of Legislative Arrangements noted that, OUV is given relatively little direct attention in the legislative tools used for management of the Reef.[61] It identifies that management of *OUV is likely to be more effective when these values have been adequately defined*,[62] and encourages greater clarity of how OUV is managed in the GBR WHA.[63]
	Developers are meant to consider Federal guidelines for the GBR WHA's OUV[64] for individual projects, but the Guidelines are unenforceable and only provide guidance for a Reef-wide scale, not for a local or regional scale.
1.2 No development to impact individually or cumulatively on the Outstanding Universal Value of the property	To date, the Australian and Queensland governments' systems for assessment, approval, monitoring and enforcement of coastal development are not effective in preventing individual or cumulative impacts on OUV. Generally there is insufficient long term monitoring to benchmark trends and limited modelling to undertake scenario planning at the appropriate scale.

Subject (synthesis of World Heritage Committee decisions and Mission recommendations)	WWF & AMCS assessment of status
	A number of port development projects have been approved despite likely impacts on OUV, or without sufficient information to properly assess these impacts. This results in approvals having extensive conditions applied, requiring a range of information which should have been determined prior to, or during the impact assessment processes. There are only limited compliance checks of conditions and few instances of enforcement as evidenced in the findings of the Gladstone Harbour Bund Wall Review.
	Environmental impact assessments do not effectively take into account cumulative impacts and there is no evidence-based framework for assessing cumulative impacts on OUV at a regional scale.
	The draft Reef 2050 Long-Term Sustainability Plan (LTSP)[65] and the Strategic Assessment for the GBR Coastal Zone (August 2014)[66] propose cumulative impact guidelines, without any indication of their enforceability or how they will be implemented. If the guidelines are not publically enforceable, there is an increased risk that cumulative impacts will not be adequately assessed.
1.3 Ensure legislation remains strong and adequate to maintain and enhance Outstanding Universal Value	Important GBR catchment planning and development statutory tools fail to mention or require the protection of the GBR WHA's OUV.[67]
	There has been a recent and significant weakening of all Queensland's environment and planning laws (discussed in detail in Appendix 1). This weakening will make it harder to manage the GBR's catchments and coast as there is overall less regulation.
	It is likely that the new Queensland government will undertake a program to reverse this weakening; in a number of instances the planning laws will require specific amendments and strengthening (see Appendix 1).

Subject (synthesis of World Heritage Committee decisions and Mission recommendations)	WWF & AMCS assessment of status
2. IMPROVED ASSESSMENT AND PLANNING	
2.1 Strategic environmental assessment and Reef 2050 Long-Term Sustainability Plan—to be completed against defined criteria for success, fully address direct, indirect and cumulative impacts and lead to concrete measures for conservation of Outstanding Universal Value	The Strategic Assessments have been completed, but rely heavily on the Reef 2050 Long-Term Sustainability Plan for implementation. The LTSP has been prepared, but is yet to be finalised and agreed between the Australian and Queensland governments.
	The Reef 2050 Long Term Sustainability Plan (Reef 2050) is the keystone of Australia's response to the World Heritage Committee's concerns, and it is yet to be finalised. Unfortunately, the draft Reef 2050 Plan fundamentally fails to address the key threats to the Great Barrier Reef as identified by the Outlook Report 2014: climate change, coastal development, land-based run-off, and direct use.
	Whilst some new initiatives are contained in the document it is largely a repackaging of programs that have already proved inadequate. Last year, the Australian Academy of Science described it as "a plan that won't restore the reef, it won't even maintain it in its already diminished state".[68]
	Before it is finalised, the Reef 2050 Plan needs to incorporate all the Reef policy commitments of the new Queensland government. The Australian government also has an opportunity to strengthen Reef 2050 by making additional policy and funding commitments.
	The improvements to Reef 2050 that are needed to ensure the long term conservation of the property and its OUV are listed in section four of this report.
3. RIGOROUS MANAGEMENT OF PORTS AND SHIPPING	
3.1 Integrated approach to planning, regulation and management of ports and shipping activity	The Queensland government has primary responsibility for the management of ports and developed a Queensland Ports Strategy finalised in May 2014. Since then a draft Ports Bill and draft Guidelines for Port Planning have been released for public comment. However the recent Queensland government election means that these policy instruments are subject to change.

Subject (synthesis of World Heritage Committee decisions and Mission recommendations)	WWF & AMCS assessment of status
	Queensland's draft Guidelines for Port Planning only require an analysis of cumulative impacts from current and planned developments in the core port area over ten years. This is an inadequate scope and time-frame for cumulative impact assessment, and fails to consider all drivers and pressures on environmental, social and economic systems.
	The North East Shipping Management Plan was released in October 2014. It provides a good framework for improving management of shipping and minimising risks. Key areas that need additional attention include: improved marine biosecurity measures; ongoing improvement in the vessel tracking systems, port state control inspections and pilotage as shipping numbers increase; and limiting or banning shipping from transiting narrow and dangerous passages through the GBR. Given the narrowness of some passages and the location of most coastal ports, there may need to be a limit on ship sizes in the future to minimise both risk and the need for dredging to maintain shipping access channels and swing basins.
3.2 Manage development in Gladstone Harbour and on Curtis Island	The Independent Review into the leaking bund wall in Gladstone Harbour was released in May 2014. The review identified serious deficiencies in the approval processes, management of the project and the ability of regulators to ensure compliance including a potential major breach of environmental conditions. On 9 May 2014 Minister Hunt accepted the Review's 37 findings and 19 recommendations. Action EBA4 in the LTSP proposes to adopt the best practice principles of all review reports and integrate into port planning and development, however to date there has been no obvious instances of this occurring.
	On 5 April 2014 the Federal Department of Environment issued final guidelines for the environmental impact statement for a second shipping channel in Gladstone Harbour which will involve 12 million cubic metres of dredging. The guidelines require the proponent to consider the impacts of offshore disposal of dredge spoil, as well as alternative disposal options. Appendix 5 in the State Party Report notes, *Port has indicated it will not seek approval to dispose of dredge material in the Marine Park.*[69] Section 4(b) of this report provides further information on recent commitments to prohibit the dumping of capital dredge spoil in the MP and WHA.

Subject (synthesis of World Heritage Committee decisions and Mission recommendations)	WWF & AMCS assessment of status
3.3 No port development outside existing and long-established port areas	The Queensland Ports Strategy and draft Ports Bill propose to prohibit 'significant' port development outside Priority Port Development Areas (PPDAs). The decision on whether a development is significant relies entirely on Ministerial discretion and the prohibition extends only until December 2022. The proposed prohibition on dredging for new or improved port facilities outside PPDAs has several exemptions and extends only until December 2024. All existing development applications are exempted from the new restrictions. The boundaries of the PPDAs have not been defined and may be significantly different to existing port limits. See section 4b in this report for more details.
3.4 Port plans to exclude development in areas within port limits that are zoned as being 'of conservation significance'	No action has been taken to secure the protection of key sensitive coastal ecosystems within port limits, such as the Fitzroy Delta and northern Curtis Island. Port Master Plans may take up to three years to complete, and there is no clear requirement to exclude development from areas of conservation significance. The previous Queensland government's proposal to dispose of dredge spoil on the high conservation value Caley Valley wetlands at Abbot Point demonstrate that there is a lack of adequate protection for areas of conservation significance within port limits.
4. WATER QUALITY IMPROVEMENTS—ENHANCED MONITORING, REPORTING AND ACTION	
4.1 Programs to cut catchment pollution "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"	The draft Reef 2050 Plan claims that government programs have led to improved water quality leaving the catchments. Even if the modelled pollution reductions are accurate, they fall well short of the government's own targets, and do not come close to the pollution cuts that are needed to ensure no detrimental impact on the Reef's health. Despite these major failings there is no plan to expand efforts and funding to cut pollution in the latest draft of Reef 2050 as requested by the World Heritage Committee. The most credible report[70] to address the required investment quantum, undertaken by the Natural Resource Management groups who deliver programs to cut Reef pollution, has estimated that an increase of $785 million over the next five years, and over $2 billion over the next 15 years is needed.

Subject (synthesis of World Heritage Committee decisions and Mission recommendations)	WWF & AMCS assessment of status
	To achieve the scale of pollution reductions needed to boost Reef health in the necessary time frame will require an effective regulated cap on nitrogen and phosphorus pollution and a significant increase in action and funding to ensure a substantial increase in the nitrogen and phosphorus efficiency of cane production, and the recovery of critical cattle grazing land to A condition to adequately reduce sediment pollution.
	Implementing these measures will require a total investment of at least $1 billion over 5 years, including at least $500 million in new funding from the Australian government.
5. STRENGTHENED GOVERNANCE AND RESOURCING	
5.1 Independent review of the overall institutional and management arrangements for the GBRWHA	The Jacobs Review of Institutional Arrangements[71] provided an independent review of the institutional and legal mechanisms that provide coordinated planning, protection and management of the GBR WHA. The short time-frame within which the review was undertaken (some 6 weeks) meant that it primarily was a desk top assessment. Appendix 1 in this report identifies a range of omissions in the Review including its failure to address issues of the GBR Marine Park Authority's independence, cumulative impact assessment, reduced public participation, climate change mitigation, the removal of ESD from Queensland laws, and recent changes to vegetation and water protections.
	WWF and AMCS also consider that the independence of GBRMPA has been progressively eroded since the introduction of the *Environment Protection and Biodiversity Conservation Act 1999* and new administrative arrangements with the Commonwealth Department of Environment since 2007.

Subject (synthesis of World Heritage Committee decisions and Mission recommendations)	WWF & AMCS assessment of status
5.2 Overall protection and management of the property, including ensuring adequate resources	The draft LTSP identifies the need to establish an investment strategy for implementation of the Plan, but few specific commitments have been made to fund actions listed in the draft plan. It is clear that without significant new financial investment, commitments made by the Australian and Queensland governments will not be fulfilled, and the health of the Reef will continue to decline. The LTSP investment strategy needs to draw on public, private and institutional sector funding and include a financial arrangement that allows pooling of resources to direct to priority projects. While the Australian government has established the *Reef Trust* its expansion to attract private sector and public institutional funding is essential to build the required investment portfolio for Reef recovery.
5.3 Full implementation of Committee requests and Mission recommendations	This report identifies a range of issues that are still to be addressed. Critical areas still requiring improvements include adequate implementation and investment plans for the LTSP, strengthened legislation and policies to deliver critical planning and natural resource management deficiencies relating to pollution controls, protection of critical coastal ecosystems, vegetation management and sustainable port and shipping operations.
6. ADDRESSING CLIMATE CHANGE	
6.1 Address climate change and other forms of environmental degradation	The draft LTSP includes two actions relating to climate change, CBA5 and CBA9, under the Community Benefits theme. These are extremely modest responses to the most serious long term driver of environmental degradation of the GBR. Elsewhere in the draft LTSP the Australian government refers to its international and national commitments as measures to address climate change impacts.

Subject (synthesis of World Heritage Committee decisions and Mission recommendations)	WWF & AMCS assessment of status
	The draft LTSP refers to the *Great Barrier Reef Climate Change Adaptation Strategy and Action Plan (2012-2017)*[72] as guiding the work of GBRMPA 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 one.[73]

59 Great Barrier Reef Marine Park Authority. (2014a) Tables 7.11 and 7.12, pp. 7-34 to 7-40.
60 Great Barrier Reef Marine Park Authority. (2014b) Table 4.8.4.
61 Jacobs (2014), p.40.
62 Jacobs (2014), p.41.
63 Jacobs (2014), p.41.
64 EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area, Commonwealth Department of the Environment (2014). http://www.environment.gov.au/epbc/publications/epbc-act-referral-guidelines-outstanding-universal-value-great-barrier-reef-world-heritage
65 Draft Reef 2050 Long-Term Sustainability Plan, Action EHA 20.
66 Qld Department of State Development, Infrastructure and Planning, Great Barrier Reef Strategic Assessment, Coastal Zone (2014), p. 85.
67 For example, the Cape York Regional Plan and the Central Queensland Regional Plan which have important Reef catchments, do not mention or require the protection of the Reef's OUV.
68 Australian Academy of Sciences (2014)
69 Commonwealth of Australia (2015a), Appendix 5.
70 Reef Regions (2015).
71 Jacobs (2014).
72 Great Barrier Reef Marine Park Authority (2012).
73 MPA News (2014).

7 REFERENCES

ANAO (2014b). *Managing Compliance with Environment Protection and Biodiversity Conservation Act 1999 Conditions of Approval.* Audit Report No.43, 2013-2014. Australian National Audit Office, 132 pp.

Australian Academy of Science (2014). *Response to the draft Reef 2050 Long-term Sustainability Plan. October 2014*. https://www.science.org.au/sites/default/files/user-content/response-to-the-draft-reef-2050-long-term-sustainability-plan.pdf

Brodie, J., Lewis, S., Wooldridge, S., Bainbridge, Z., Kroon, F. (2014). *Ecologically relevant targets for pollutant discharge from the drainage basins of the Wet Tropics Region, Great Barrier Reef .* Centre for Tropical Water & Aquatic Ecosystem Research (TropWATER) Report 14/33. James Cook University, Townsville, Australia. June 2014 Draft for review.

Commonwealth of Australia (2015a). *State Party Report on the state of conservation of the Great Barrier Reef World Heritage Area (Australia)*. http://www.environment.gov.au/heritage/publications/state-party-report-gbr-2015

Commonwealth of Australia (2015b). *Reef 2050 Long-Term Sustainability Plan.* Draft 22.1.15.

De'ath, G., Fabricius, K.E., Sweatman, H. and Puotinen, M. (2012). T*he 27-year decline of coral cover on the Great Barrier Reef and its causes.* Proceedings of the National Academy of Sciences of the USA (PNAS), 109 (44): 17995–17999. www.pnas.org/content/109/44/17995.full?sid=7cbf950e-cd11-406a-94dc-1c865a0abbf3

Great Barrier Reef Marine Park Authority (2012). *Great Barrier Reef Climate Change Adaptation Strategy and Action Plan 2012 to 2017*, GBRMPA, Townsville. http://elibrary.gbrmpa.gov.au/jspui/handle/11017/1140

Great Barrier Reef Marine Park Authority. (2014a) *Great Barrier Reef Region Strategic Assessment. Strategic Assessment Report*. GBRMPA, Townsville. http://elibrary.gbrmpa.gov.au/jspui/handle/11017/2861

Great Barrier Reef Marine Park Authority (2014b). *Great Barrier Reef Outlook Report 2014*, GBRMPA, Townsville. http://www.gbrmpa.gov.au/managing-the-reef/great-barrier-reef-outlook-report

Great Barrier Reef Marine Park Authority) (2014c). *Great Barrier Reef Marine Park Authority Annual Report 2013-14*. GBRMPA, Townsville, Queensland. http://www.gbrmpa.gov.au/about-us/corporate-information/annual-report

Jacobs (2014). *Institutional and legal mechanisms that provide coordinated planning, protection and management of the Great Barrier Reef World Heritage Area*. Independent Review. September 2014. http://www.environment.gov.au/marine/gbr/publications/independent-review

MPA News (2014). Upheaval at Great Barrier Reef Marine Park Authority: Era of Global Leadership may be over. Vol. 16, No. 1 September-October 2014 . http://depts.washington.edu/mpanews/MPA139.htm

Reef Regions (2015). *Great Barrier Reef Long Term Sustainability Plan 2050. Investment proposal Water quality, catchment and coastal repair - first edition 190115.* http://www.rgc.org.au/wp-content/uploads/2015/01/Investment-Plan-NRM-proposal-190115.pdf

State of Queensland (2014a). Great Barrier Reef Report Card 2012 and 2013 Reef Water Quality Protection Plan. Published by the Reef Water Quality Protection Plan Secretariat, June 2014. www.reefplan.qld.gov.au

State of Queensland (2014b). *Priority Port Development Area Planning Guideline. Draft for Consultation.* Published by the Department of State Development, Infrastructure and Planning, Brisbane Qld November 2014. http://www.dsdip.qld.gov.au/resources/guideline/planning/draft-ppda-planning-guideline.pdf

Wooldridge, S.A., 2009. *Water quality and coral bleaching thresholds: formalising the linkage for the inshore reefs of the Great Barrier Reef, Australia.* Marine Pollution Bulletin 58, 745–751.

WWF Australia
GPO Box 528
Sydney NSW 2001
Freecall: 1800 032 551
Email: enquiries@wwf.org.au

Australian Marine Conservation Society
PO Box 5815,
West End QLD 4101
Tel: +61 7 3846 6777
Email: amcs@amcs.org.au