



CUTTING WATER POLLUTION TO SAVE THE GREAT BARRIER REEF

Key agricultural practice changes to improve water quality

Sugar

- Fertilise sugar crops to 'Block Yield' rather than 'District Yield' to maximise crop productivity and minimise fertiliser costs and polluted run-off: current industry and government guidelines encourage farmers to apply fertiliser at a rate based on recent 'best district yield', which is much higher than most cane blocks can achieve in a normal year. The result is excess fertiliser running off into the Great Barrier Reef.
- Adopt minimum or zero-till tailored to the farm's soil type.
- Apply fertiliser directly into soil beds to avoid it being washed into waterways.
- Collect polluted run-off for re-use on-farm.
- Protect on-farm riparian areas, natural wetlands and areas of bush (and avoid tree-clearing).

Beef

- Maintain 'Category A land condition' (good grass cover) in all areas of the farm and at all times, particularly at end of the dry season, to reduce sediment/top soil being washed off the farm and into waterways (and then onto the Great Barrier Reef).
- Properties with D or C land condition to establish a plan to move to B and A land condition and meet implementation milestones.
- Fence off, stabilise and revegetate, erosion hotspots such as gullies and streambanks.
- Protect on-farm riparian areas, natural wetlands and areas of bush (and avoid tree-clearing).

The Great Barrier Reef is an international Australian icon and an economic powerhouse. The Reef's tourism industry employs over 70,000 people and generates A\$6 billion annually. However, the Reef is under serious threat from global warming, as well as nitrogen, sediment (top soil) and pesticide run-off from agricultural land.

Both the Australian Labor Party and Liberal National Party – at state and federal levels – committed to the *Reef 2050 Long-Term Sustainability Plan*ⁱ in March 2015. The Reef 2050 Plan sets out targets for reducing pollution. The targets to be achieved areⁱⁱ:

- At least a 50% reduction in anthropogenic end-of-catchment dissolved inorganic nitrogen loads in priority areas [by 2018], on the way to achieving up to an 80% reduction in nitrogen by 2025;
- At least a 20% reduction in anthropogenic end-of-catchment loads of sediment [top soil] in priority areas [by 2018], on the way to achieving up to a 50% reduction by 2025.

In May 2016, the *Great Barrier Reef Water Science Taskforce Final Report*ⁱⁱⁱ found that insufficient progress had been made in reducing water pollution and recommended that the governments should:

- Invest in more effective, targeted and coordinated extension [i.e. landholder education and expert assistance] to support large-scale land management practice change (Recommendation 3);
- Establish greater use of incentives and market approaches to support water quality improvements (Recommendation 4); and
- Implement staged regulations to reduce water pollution throughout the Reef regions [including adding catchment pollution load limits in law] (Recommendation 5).

The Queensland Auditor General also found that regulation is required to meet the pollution reduction targets.^{iv} Other important steps to protect the Reef include reducing Australian greenhouse gas emissions and policies to ensure that development in northern Australia has ‘no net impact’ on the Reef.

Achieving the nitrogen pollution reduction target in the *Reef 2050 Long-Term Sustainability Plan*

Excess nitrogen from fertiliser runs off farms into Great Barrier Reef lagoon, polluting the water and fuelling plagues of coral eating crown of thorns starfish. Between 1985 and 2012 the Great Barrier Reef lost over half its coral cover. Starfish plagues were responsible for 40% of this loss^v.

The *Reef 2050 Long-Term Sustainability Plan* commits to a reduction in nitrogen pollution of up to 80% by 2025. Much of this can be achieved through actions that also improve farm profitability, by reducing excessive fertiliser application to the amount that the crop can absorb, capturing and reusing run-off, and irrigating more efficiently. Other practice changes that are necessary include protecting streamside vegetation buffers and restoring farm areas with low productivity and high pollution export to waterways. These solutions can be achieved through regulated minimum standards and adoption of best practice (the actions outlined above) by farmers, and financial incentives to assist farmers to further reduce pollution.

Both the Queensland Labor Party^{vi} and the Liberal National Party^{vii} have committed to implement in full the Great Barrier Reef Water Science Taskforce recommendations to achieve the pollution targets. A Queensland Government^{viii} report estimated that the cost of achieving the 2025 nitrogen pollution reduction target is approximately A\$400 million over the period to 2025, or about A\$50 million per year including 2025.

Recommended policies:

Implement the Reef Water Science Taskforce recommendations, including:

- Regulations:
 - That require all new agricultural, industrial, infrastructure and urban developments to have 'no net impact' on Reef water quality;
 - That set minimum nitrogen pollution reduction standards/practice changes across all agricultural industries;
 - That set nitrogen pollution limits in each river catchment, which are lowered until 2025 targets are met.
- Invest:
 - Large-scale extension activities [i.e. landholder education and expert assistance] so that landholders can implement practice changes that reduce nitrogen pollution;
 - The conversion of low-productivity/high-polluting sections of cane farms to wetlands and riparian areas, or other low polluting land uses;
 - Low interest loans and other incentives to assist willing cane farmers to exit the industry, allow farm consolidation and/or implement low polluting practices.

Costs:

- Provide A\$50 million per year, up to and including 2025, to implement nitrogen pollution reduction policies and on-ground actions, necessary to achieve government water quality targets.

Achieving the sediment pollution reduction targets in the *Reef 2050 Long-Term Sustainability Plan*

A legacy of tree-clearing and unsustainable grazing practice (such as grazing to bare earth), has left behind vast areas of degraded and eroding land. This has resulted in both decreased farm productivity and very large volumes of silt flowing out to the Reef, smothering seagrass and corals, and blocking sunlight. Sediment loads are three to five times natural levels – with grazing land contributing most of this load.

In the Reef 2050 Plan, the Federal and Queensland governments committed to:

- Strengthen the Queensland Government's vegetation management legislation to protect remnant and high value regrowth native vegetation, including in riparian zones; and

At least 20% reduction in anthropogenic end-of-catchment loads of sediment in priority areas [by 2018], on the way to achieving up to a 50% reduction (below 2009 levels) by 2025.

Changes to vegetation laws in 2013 led to increased clearing. In 2014-15, 108,000 hectares of bush, and almost 15,000 hectares of riverside vegetation, was bulldozed or otherwise destroyed in Reef catchments. In 2016, the Queensland Government sought to legislate to protect remnant and high quality regrowth, but the legislation did not pass the Queensland Parliament. In the absence of legislation, clearing is likely to continue.

Outdated and polluting practices are still prevalent in the grazing industry. The 2015 Reef Report Card showed only 36% of land was managed using best practice systems – well short of the target to have 90% of grazing land managed at best practice by 2018.

Large gullies, found mainly on grazing properties, contribute a disproportionate amount of the sediment pollution. Rehabilitation of these large gullies must occur if sediment pollution reduction targets are to be met. In many cases these gullies were formed as a result of grazing practices of previous landholders, and the cost of rehabilitation will largely be borne by the taxpayer. However, low cost measures to manage gullies and prevent future erosion should be incorporated into the grazing system, including fencing off erosion prone areas to reduce grazing pressure on them.

Recommended policies:

Implement all the Reef Water Science Taskforce recommendations immediately, including:

- Invest in more effective extension to help ensure all graziers undertake best management practice and achieve Category A land condition.
- Extend regulations to protect riparian areas and all natural wetlands, as well as improved controls on excessive tree-clearing.
- Extend minimum regulatory standards for sediment across all Reef catchments and industries and improve them as better management practices are identified.
- Undertake a major gully and streambank repair initiative at a scale necessary to achieve pollution reduction targets by 2025 including: fencing, de-stocking, stabilisation, and rehabilitation as well as innovation to find cost-effective solutions.

Costs:

- Secure public and private funds of A\$900 million per year up to and including 2025 to implement the policies and on-ground actions necessary to achieve government water quality targets.

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ⁱ <https://www.environment.gov.au/marine/gbr/long-term-sustainability-plan>

ⁱⁱ Targets are based on a 2009 baseline.

ⁱⁱⁱ <http://www.gbr.qld.gov.au/documents/gbrwst-finalreport-2016.pdf>

^{iv} See Queensland Auditor-General report, 'Managing water quality in Great Barrier Reef catchments' (2015).^v

^v <http://www.pnas.org/content/109/44/17995.full?sid=7cbf950e-cd11-406a-94dc-1c865a0abbf3>

^{vi} <http://statements.qld.gov.au/Statement/2016/8/11/government-agrees-to-all-Reef-taskforce-recommendations>

^{vii} <http://www.timnicholls.com.au/grandstanding-miles-attempt-scoring-cheap-political-points/>

^{viii} <http://www.gbr.qld.gov.au/documents/costings-report.pdf>



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