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Great Barrier Reef Protection Amendment Bill 2009 (Qld): Regulating Sugar Cane Growing and Cattle Grazing in the Great Barrier Reef Catchment Area

The objectives of the Great Barrier Reef Protection Amendment Bill 2009 (Qld) (the Bill) are to reduce the impact of agricultural activities on the quality of water entering the Great Barrier Reef and to contribute to achieving water quality improvement targets set for the Great Barrier Reef by the Queensland and Commonwealth Governments.

The Bill regulates certain sugar cane growing and cattle grazing operations in the Wet Tropics catchment, the Mackay-Whitsunday catchment and the Burdekin dry tropics catchment.

This Research Brief discusses the Bill's provisions, describes the expected impact of the Bill and sets out some views on it. By way of background, the paper describes the Great Barrier Reef and its catchments and looks at the impact on the Great Barrier Reef of agricultural activities in the catchment areas.

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CONTENTS

EXECUTIVE SUMMARY
1 INTRODUCTION.....	1
2 THE GREAT BARRIER REEF	2
3 THE GREAT BARRIER REEF CATCHMENT.....	3
4 THE IMPACT OF AGRICULTURE ON THE GREAT BARRIER REEF.....	5
4.1 WATER QUALITY IN THE GREAT BARRIER REEF.....	6
4.2 SEDIMENT.....	7
4.3 NUTRIENTS	7
4.4 OTHER POLLUTANTS	8
4.5 EFFECT OF CATTLE GRAZING ON WATER QUALITY.....	8
4.6 EFFECT OF SUGAR CANE FARMING ON WATER QUALITY	9
5 BACKGROUND TO THE BILL.....	11
5.1 REEF WATER QUALITY PROTECTION PLAN	11
5.1.1 Productivity Commission Inquiry.....	11
5.1.2 Science Panel	12
5.1.3 Reef Water Quality Protection Plan.....	13
5.1.4 Scientific Consensus Statement.....	14
5.2 2009 ELECTION PROMISE	15
5.3 GREAT BARRIER REEF PROTECTION AMENDMENT BILL 2009 (QLD)	16
6 GREAT BARRIER REEF PROTECTION AMENDMENT BILL	16
6.1 AGRICULTURAL ERA	17
6.2 PREVENTING OVER-FERTILISATION.....	18
6.3 DOCUMENT REQUIREMENTS	19

6.3.1	Documents that must be kept.....	19
6.3.2	Production of documents	20
6.4	ENVIRONMENTAL RISK MANAGEMENT PLAN (ERMP)	21
6.4.1	General matters.....	21
6.4.2	Content of an ERMP.....	24
6.4.3	Accreditation of an ERMP	25
6.4.4	Amendment of an Accredited ERMP	26
6.4.5	Annual Reporting	26
6.5	ASSORTED AMENDMENTS	27
6.6	TRANSITIONAL PROVISIONS	27
6.7	AMENDMENT OF INTEGRATED PLANNING ACT 1997 (QLD)	27
7	IMPACT OF THE BILL.....	28
8	VIEWS ON REGULATING TO PROTECT THE GREAT BARRIER REEF	29
8.1	LIBERAL NATIONAL PARTY.....	29
8.2	CANE GROWERS AND CATTLE GRAZIERS.....	31
8.3	TOURISM BODY.....	32
8.4	ENVIRONMENTAL GROUP.....	33
9	CONCLUSION	33
	RECENT QPL RESEARCH PUBLICATIONS 2009	35

EXECUTIVE SUMMARY

The Queensland Minister for Climate Change and Sustainability, the Hon Kate Jones MP, introduced the Great Barrier Reef Protection Amendment Bill 2009 (Qld) (the Bill) into the Queensland Legislative Assembly on 4 June 2009.

The Bill introduces a regulatory structure to reduce the impact of agricultural activities in Great Barrier Reef catchment areas on the quality of water reaching the Great Barrier Reef and to contribute to attaining targets relating to improvements in water quality set by the Queensland and Commonwealth Governments. The Bill focuses on two agricultural sectors – commercial sugar cane growing and cattle grazing – in the Wet Tropics catchment, the Mackay-Whitsunday catchment and the Burdekin dry tropics catchment.

The Bill primarily amends the *Environmental Protection Act 1994 (Qld)*. It proposes to define certain cattle grazing and commercial sugar cane growing operations in specified areas of the Great Barrier Reef catchment as agricultural ERAs (environmentally relevant activities). It specifies requirements for carrying out such activities, such as determining the optimum amount of fertiliser on the basis of soil testing prior to the application of fertiliser to prevent over-fertilisation. Under the Bill, some cattle grazing and sugar cane farming operators will need to have an accredited environmental risk management plan (ERMP). An ERMP must, amongst other things, identify any hazards on the property that may cause the release of contaminants into water entering the Reef, and include measurable targets and performance indicators for improving the quality of water being discharged from the property.

Sections 2 and 3 of this Research Brief provide background information about the Great Barrier Reef and its water catchments. Scientific views on the impact of agriculture, in particular cattle grazing and sugar cane production, on water quality in the Great Barrier Reef are set out in **Section 4**. **Section 5** discusses the background to the Bill, and **Section 6** examines the Bill's provisions. The expected impact of the Bill is discussed in **Section 7** and a variety of views on the Bill are provided in **Section 8**.

1 INTRODUCTION

The Queensland Minister for Climate Change and Sustainability, the Hon Kate Jones MP, introduced the Great Barrier Reef Protection Amendment Bill 2009 (Qld) (the Bill) into the Queensland Legislative Assembly on 4 June 2009. The Bill's objectives are to reduce the impact of agricultural activities in Great Barrier Reef catchment areas to improve the quality of water reaching the Great Barrier Reef and to contribute to achieving water quality improvement targets set by the Queensland and Commonwealth Governments.¹

The Bill focuses on two agricultural sectors – commercial sugar cane growing and cattle grazing – in three catchments that have been categorised as “*highest priority catchments*”.² These agricultural sectors were selected, according to the Explanatory Notes, because they “*contribute the highest levels of chemicals and sediment found in Reef waters*”.³

It is estimated that the Bill will impact upon about 4,500 operators.⁴ Of these, approximately 1000 operators will initially be required to prepare environmental risk management plans (ERMPs).⁵ Some affected farmers and others have expressed dissatisfaction with the Bill for a variety of reasons, while some other people are pleased that the Bill has been introduced.

This Research Brief discusses the background to the Bill, summarises the Bill's provisions, outlines its expected impact, and provides some views on it. The paper also provides background information about the Great Barrier Reef and its catchment area. It summarises scientific views on the impact of agricultural activities on the Great Barrier Reef and it looks, in particular, at the impact of sugar cane farming and cattle grazing on water quality.

¹ **Proposed s 74** of the [Great Barrier Reef Protection Amendment Bill 2009 \(Qld\) \(the Bill\)](#).

² Great Barrier Reef Protection Amendment Bill 2009 (Qld), [Explanatory Notes](#), p 2. The catchments are: the Wet Tropics catchment, the Mackay-Whitsunday catchment and the Burdekin dry tropics catchment: **proposed s 75(1)(b)** of the Bill. The catchments are identified on the map entitled ‘Map of Great Barrier Reef Catchment covered by the Queensland Government Reef Protection Package’, Map No g090514-01: **proposed s 75(3)**

³ [Explanatory Notes](#), p 2.

⁴ [Explanatory Notes](#), p 2.

⁵ [Explanatory Notes](#), p 2.

2 THE GREAT BARRIER REEF

The Great Barrier Reef is the largest coral reef system in the world. It comprises about 2,900 separate reefs, 600 continental islands and 300 coral cays.⁶ It extends about 2,300 km south from the northern tip of Queensland to just north of Bundaberg, covering an area of approximately 350,000 km².⁷ It ranges from about 60km to 250km in width.⁸ The Great Barrier Reef provides a habitat for numerous species, including vulnerable species, such as the dugong, and endangered species, such as the loggerhead turtle.⁹

The Great Barrier Reef was proclaimed a Marine Park in 1975 under the *Great Barrier Reef Marine Park Act 1975* (Qld). In 1981, the Great Barrier Reef was listed on the World Heritage Register,¹⁰ it satisfying all of the four natural World Heritage Criteria.¹¹

The Queensland Government's *Reef Water Quality Protection Plan - 2007 Water Quality Report: Great Barrier Reef catchments and inshore ecosystems (2007 Water Quality Report)* provides some statistics about reef-based industries and activities:¹²

- reef-based industries and activities contribute about \$5.2 billion per year¹³ to the regional and national economy;

⁶ Australian Government, Great Barrier Reef Marine Park Authority, '[Reef Facts for Tour Guides: A 'big picture' view of the Great Barrier Reef](#)', Reef Facts 1, 2006.

⁷ Australian Government, Great Barrier Reef Marine Park Authority, '[Great Barrier Reef Water Quality: Current Issues](#)', September 2001, p 3 and Australian Government, Great Barrier Reef Marine Park Authority, '[Interesting Facts](#)', *Fact Sheet* No 1, December 2005.

⁸ Australian Government, Great Barrier Reef Marine Park Authority, '[Interesting Facts](#)'.

⁹ United Nations Educational, Scientific and Cultural Organisation, 'World Heritage: Great Barrier Reef' (website), downloaded 24 June 2009 from <http://whc.unesco.org/en/list/154> and Australian Government, Department of the Environment, Water, Heritage and the Arts, 'The Great Barrier Reef more information' (website), downloaded 25 August 2009 from <http://www.environment.gov.au/heritage/places/world/great-barrier-reef/information.html>.

¹⁰ Australian Government, Productivity Commission, '[Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#)', Research Report, Melbourne, February 2003, p 3.

¹¹ Great Barrier Reef Marine Park Authority, '[The State of the Great Barrier Reef On-line](#)' (website).

¹² Queensland Government, *Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems*, June 2008, p 19.

¹³ Gross value of product.

- in 2005, over 6.4 million people visited the Reef and its catchments;
- in 2004/05, the total economic contribution of tourism, commercial fishing and cultural and recreational activity in the Reef catchment was over \$4.1 billion per year and was the basis for about 51,000 full time jobs;
- tourism accounts for about 86% of the value added and gross product and 85% of employment.

The 2007 *Water Quality Report* continued:¹⁴

The flow-on effect of [reef-based] industries underpins a significant and growing proportion of Queensland's regional economy. This economic worth relies on the environmental value of its aquatic ecosystems. Declining water quality in the Reef lagoon puts the maintenance of the natural capital of the Reef at risk and therefore the ongoing prosperity of the industries and the communities that rely upon them. It also reduces the resilience of ecosystems to pressures including climate change.

3 THE GREAT BARRIER REEF CATCHMENT

The Great Barrier Reef catchment area covers around 22% of Queensland's land area (approximately 424,000km²)¹⁵ and contains about 20% of its population.¹⁶ It comprises 35 major creek or river catchments. The catchments range in size from 470km² (Mossman River) to 143,000km² (Fitzroy River).¹⁷

The February 2003 Productivity Commission report titled *Industries, Land Use and Water Quality in the Great Barrier Reef Catchment (Productivity Commission Report)* identified the major industries in the Great Barrier Reef catchment (based on 1999-2000 figures for gross value of production and total number of employees). These included:¹⁸

- sugar cane (\$803 million; 8,736 employees);

¹⁴ Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems, p 19.

¹⁵ Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems, p 19.

¹⁶ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 3.

¹⁷ Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems, p 19.

¹⁸ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 73.

- cattle grazing (\$1,017 million; 8,728 employees);
- horticulture (\$708 million; 9,006 employees);
- mining (\$7,052 million; 10,380 employees);
- sugar processing (\$1,929 million; 5,110 employees);
- meat processing (\$765 million; 2,350 employees);
- mineral processing (\$1,392 million; 3,918 employees); and
- tourism (\$4,269 million; 47,660 employees).

With respect to agricultural industries within the Great Barrier Reef catchment, the 2007 *Water Quality Report* stated:¹⁹

The total economic contribution of grazing, sugarcane and horticulture to the Reef catchments in 2006/07 was estimated to be over \$1.3 billion not including ancillary services. In the Reef catchments:

- *There are over 4.6 million cattle with an estimated gross production value of over \$1.1 billion*
- *Around 845 000ha of land are under sugarcane production with a forecast gross value of production (not including processing) of \$1.1 billion for the 2006/07 period. ...*
- *In 2001 the value of horticultural production was \$860.5 million; since 2001 there has been significant growth in horticulture.*

The *Productivity Commission Report* identified the main horticultural crops grown in the Great Barrier Reef catchment as including “bananas, pineapples, mangos, lychees, and tomatoes...”²⁰

It has been predicted that land use will:²¹

... intensify in the region through the increase of existing grazing production and some growth in horticulture production in particular. The gross value of production of the major agricultural industries in total (sugar, beef and horticulture) is projected to remain substantial, with each industry to grow by one or two per cent per annum over the forecasted period ...

¹⁹ *Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems*, p 19.

²⁰ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 111.

²¹ *Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems*, p 19.

4 THE IMPACT OF AGRICULTURE ON THE GREAT BARRIER REEF

The *2007 Water Quality Report* on the Great Barrier Reef catchments and inshore ecosystems states that the Great Barrier Reef is under stress from three main influences:²²

- overharvesting of resources;
- climate change; and
- terrestrial run-off of pollutants.

As noted above, the Bill, and hence this Research Brief, focuses solely on the last of these.

Studies have shown that water quality has declined at the Great Barrier Reef and they suggest that agriculture, amongst other things, has played a part. However, the evidence is not conclusive regarding the effect that declining water quality has on the Great Barrier Reef.²³ The Queensland Government's Science Panel²⁴ considered, however, that the Reef may have suffered irreversible damage by the time evidence of the damage becomes apparent.²⁵ Damage to the Reef from poor water quality could impact on the industries which are dependent upon the Reef, such as tourism and fishing, and their communities. In addition, Australia would be in breach of its international obligations to preserve the World Heritage site.²⁶

²² *Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems*, p 21.

²³ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), pp xxviii-xxix. See also, pp 9 and 36-37.

²⁴ i.e. Great Barrier Reef Protection Interdepartmental Committee Science Panel (Science Panel). The Science Panel prepared [A Report on the Study of Land-Sourced Pollutants and Their Impacts on Water Quality in and Adjacent to the Great Barrier Reef](#) which was published in 2003 and is discussed later in this Research Brief.

²⁵ Science Panel, [A Report on the Study of Land-Sourced Pollutants and Their Impacts on Water Quality in and Adjacent to the Great Barrier Reef](#), p 9.

²⁶ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), pp 9-10.

4.1 WATER QUALITY IN THE GREAT BARRIER REEF

The *Productivity Commission Report* explained that water quality “refers to the chemical, physical and biological condition of water”.²⁷ Water quality in the Great Barrier Reef is affected by the levels of sediments, nutrients and other materials which are transported to it from the catchments. The transport of such materials in rivers occurs naturally; the Productivity Commission used the term ‘pollution’ in its report to refer to “above-natural levels of sediment, nutrients and other materials in watercourses draining into the [Great Barrier Reef] lagoon²⁸ that are potentially harmful to organisms.”²⁹

Studies indicate that there has been “at least a six-fold increase in delivery of sediments, nutrients and pesticides from the catchments to the Reef lagoon since European settlement”.³⁰ The potential effects of increased pollution in the waters of the Great Barrier Reef are identified in the *Productivity Commission Report* as ranging from “reduced growth, reproduction and recruitment in organisms to major shifts in the community structure and health of coral reef and seagrass ecosystems”.³¹ This may affect the Reef’s capacity to recover from natural disturbances such as cyclones.³²

The Productivity Commission determined that, on the basis of estimates provided to it, “diffuse sources, particularly cattle grazing and crop production, are the most significant contributors to pollutant discharges into the [Great Barrier Reef] lagoon”.³³

²⁷ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 9.

²⁸ The Great Barrier Reef lagoon is defined on p xix of the *Productivity Commission Report* as “[t]he body of water located between the reefal region of the [Great Barrier Reef] World Heritage Area and the mainland coast of Queensland.”

²⁹ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 10.

³⁰ *Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems*, p 21.

³¹ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p xxviii.

³² Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p xxviii.

³³ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p xxix.

The greatest potential threat is to the inner reefs.³⁴ The areas from Port Douglas to Hinchinbrook, and from the Whitsundays to Mackay, were identified in the *Productivity Commission Report* as being of particular concern because “*they are influenced more regularly by flood plumes and adjoin catchments used for agricultural purposes ...*”.³⁵

4.2 SEDIMENT

The *Productivity Commission Report* stated estimates suggest that “*between 13.6 million ... and 14.4 million ... tonnes of sediment are transported to the [Great Barrier Reef] lagoon from mainland catchments each year*”,³⁶ of which most comes from the dry tropics.³⁷ It is not known how much of an increase this is since European settlement in Australia: estimates of the increase range from about 1.6 times to nine times the level of sediment.³⁸

4.3 NUTRIENTS

Phosphorus and nitrogen are the nutrients causing the major concern in the Great Barrier Reef’s water because, in high concentrations, these nutrients can have harmful effects on ecosystems leading to reduced light conditions and to phytoplankton and algal blooms.³⁹

³⁴ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 42.

³⁵ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 18; see also, p 42.

³⁶ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 20.

³⁷ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 20.

³⁸ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 20.

³⁹ *Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems*, p 25.

The main source of nutrients in the Great Barrier Reef is terrestrial runoff from agriculture.⁴⁰ The *Productivity Commission Report* cited estimates that “*suggest that between 42 000 and 54 000 tonnes of nitrogen, and between 7000 and 11 000 tonnes of phosphorus, are exported to the [Great Barrier Reef] from its catchments, on average, each year.*”⁴¹ It is estimated that nitrogen levels have increased “*between two and four times*” and phosphorus levels have increased “*between three and 15 times*” since Europeans settled in Australia.⁴²

4.4 OTHER POLLUTANTS

Substances, such as herbicides (e.g. diuron⁴³ and atrazine⁴⁴), pesticides (e.g. organochlorins, such as DDT⁴⁵ and modern organophosphates), and heavy metals (e.g. cadmium, arsenic and copper) are also carried to the Great Barrier Reef from its catchments.⁴⁶

4.5 EFFECT OF CATTLE GRAZING ON WATER QUALITY

The main threat to the Great Barrier Reef lagoon is due to soil erosion from cattle grazing. The Productivity Commission noted, however, that runoff is not consistent across all grazing lands because it is dependent on “*landform, soil type, vegetation community and ... grazing management practices, with the level of*

⁴⁰ *Reef Water Quality Protection Plan: 2007 Water Quality Report – Great Barrier Reef catchments and inshore ecosystems*, p 21.

⁴¹ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 22.

⁴² Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 23.

⁴³ Information about diuron is available on, for example, the Australian Pesticides and Veterinary Medicines Authority website: <http://www.apvma.gov.au/chemrev/diuron.shtml>. The Memorandum of Understanding between the Commonwealth and Queensland Governments (discussed in Section 5 of this Research Brief) required that the National Registration Authority conduct a Chemical Review of diuron.

⁴⁴ Information about atrazine is available on, for example, the Australian Pesticides and Veterinary Medicines Authority website: <http://www.apvma.gov.au/chemrev/atrazine.shtml>.

⁴⁵ Dichlorodiphenyltrichloroethane.

⁴⁶ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 12.

surface cover being the most important controlling factor ...⁴⁷ Estimates of soil loss above natural levels “range from 0.9 to 27-30 tonnes per hectare”.⁴⁸ The sediment lost through erosion may carry nitrogen and phosphorus.⁴⁹

4.6 EFFECT OF SUGAR CANE FARMING ON WATER QUALITY

While sugar cane farming makes a lesser contribution to sediment and nutrient levels than cattle grazing, “its relative contribution (that is, on a per hectare basis) tends to be more significant”.⁵⁰

The *Productivity Commission Report* stated that 509,485 hectares of land in the Great Barrier Reef catchment is being used for cane farming.⁵¹ Such farming can negatively impact on water quality in the Great Barrier Reef through:⁵²

- soil erosion (from tillage and planting);
- the application of chemicals and fertilisers (these may reach waterways);
- the release of cane juices and sugars during harvesting (which can deplete oxygen in adjacent waters); and
- land clearing (the loss of wetlands has likely increased the amount of sediment and nutrients reaching the Great Barrier Reef because wetlands function as a filter).

In recent years, the negative impact of sugar cane farming on the water quality in the Great Barrier Reef has been reduced because of changes in practice. Soil erosion is less of a problem now because of the introduction of a number of techniques such as minimum tillage, the use of contour and diversion banks,

⁴⁷ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 29.

⁴⁸ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 28.

⁴⁹ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 29.

⁵⁰ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 29.

⁵¹ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 118.

⁵² Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), pp xxxiii, 29 and 118-119.

growing of fallow crops, improved drainage design, green cane harvesting and trash blanketing.⁵³ It is estimated that soil erosion has been reduced from up to 500 tonnes per hectare per year to an average of 10 tonnes per hectare per year.⁵⁴

New management practices have also reduced the amount of fertilisers, particularly nitrogen, used in sugar cane production. However, sugar cane farming still contributes “*a high proportion of nutrient loads in the [Great Barrier Reef] catchment*”.⁵⁵ The Great Barrier Reef Marine Park Authority (GRMPA) calculated that sugar cane cultivation potentially contributes about 25 percent of the above-natural load of nitrogen to the Great Barrier Reef.⁵⁶

Some studies have linked high levels of the herbicides atrazine and diuron in coastal sediments and intertidal seagrasses adjacent to the coast between Townsville and Cairns to sugar cane cultivation. However, diuron may also be present due to other sources; it is, for example, used for antifouling.⁵⁷

Pollutants associated with sugar cane cultivation have been suggested to be the “*likely cause of some of the increase in heavy metal concentrations in Hinchinbrook Channel and Missionary Bay*”.⁵⁸

⁵³ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), pp 30,122-123 and 128. See, e.g., Queensland Government, Department of Employment, Economic Development and Innovation, Queensland Primary Industries and Fisheries, Green Cane Harvesting and Trash Blanketing (website) at http://www.dpi.qld.gov.au/cps/rde/dpi/hs.xsl/26_11464_ENA_HTML.htm, last updated 8 August 2008, for further information on green cane harvesting and trash blanketing.

⁵⁴ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 30.

⁵⁵ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p xxxiii.

⁵⁶ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 30.

⁵⁷ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), pp 31 and 35.

⁵⁸ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 31.

5 BACKGROUND TO THE BILL

5.1 REEF WATER QUALITY PROTECTION PLAN

In August 2002, the Commonwealth and Queensland Governments signed the *Memorandum of Understanding between the Commonwealth Government and the Government of the State of Queensland on cooperation to protect the Great Barrier Reef from land-sourced pollutants* (Memorandum of Understanding).⁵⁹ The Governments agreed that a major goal is “*stabilising and reversing the decline in water quality entering the Reef lagoon as soon as practicable*”.⁶⁰ They undertook to develop a *Reef Water Quality Protection Plan*. The Memorandum of Understanding set out what was required in the Plan. This included determining what action must be taken in the Great Barrier Reef catchment to improve the quality of water reaching the Great Barrier Reef.

5.1.1 Productivity Commission Inquiry

To assist with the development of the *Reef Water Quality Protection Plan*,⁶¹ the Commonwealth Government asked the Productivity Commission to undertake an inquiry into “*the importance of industries in the [Great Barrier Reef] catchment and policy options to address declining water quality entering the [Great Barrier Reef] lagoon*”.⁶² The Productivity Commission sought submissions on the matter.⁶³ It published its final Research Report – *Industries, Land Use and Water Quality in the Great Barrier Reef Catchment (Productivity Commission Report)* – in February 2003.⁶⁴

⁵⁹ A copy of the Memorandum of Understanding between the Commonwealth Government and the Government of the State of Queensland on cooperation to protect the Great Barrier Reef from land-sourced pollutants (Memorandum of Understanding) may be found at <http://www.environment.gov.au/coasts/pollution/reef/mou/index.html>.

⁶⁰ Memorandum of Understanding, Article 4.

⁶¹ ‘Reef Water Quality Protection Plan: For catchments adjacent to the Great Barrier Reef World Heritage Area’ is available from <http://www.reefplan.qld.gov.au/library/pdf/reefplan.pdf>.

⁶² Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p iii.

⁶³ Copies of the submissions to the inquiry are available from <http://www.pc.gov.au/projects/study/gbr/docs/submissions>.

⁶⁴ The report is available from http://www.pc.gov.au/data/assets/pdf_file/0017/17153/gbr.pdf.

The *Productivity Commission Report* concluded that water quality in the rivers entering the Great Barrier Reef had declined because of diffuse pollutants, “especially sediments, nutrients and chemicals from cropping and grazing lands in relatively small areas of the adjacent catchments”.⁶⁵ It noted that the decline in water quality poses a particular risk for inshore reefs and their associated ecosystems. The Productivity Commission considered that action had to be taken, despite scientific uncertainty about the impact on the reefs, because of the risk posed to World Heritage values. It was of the view, however, that prescription was not an appropriate tool to respond to the problem; it stated:⁶⁶

Because of the complexity, heterogeneity and dispersion of the diffuse sources, and the inability to monitor them, governments cannot prescribe land management practices that are both viable and cost-effective.

- Solutions will have to be built up from local knowledge and insights, within a general framework set by the Commonwealth and Queensland Governments.

The *Productivity Commission Report* recommended:⁶⁷

... abatement options should be selected on the basis of their effectiveness in reducing threats to reefs and associated ecosystems, and their cost per unit reduction of those threats.

5.1.2 Science Panel

The *Productivity Commission Report* took note of, amongst other reports, articles and submissions, the report by the Great Barrier Reef Protection Interdepartmental Committee Science Panel (Science Panel): *A Report on the Study of Land-Sourced Pollutants and Their Impacts on Water Quality in and Adjacent to the Great Barrier Reef*.⁶⁸ The Science Panel, which comprised nine scientists, was commissioned by the Queensland Government in 2002 to examine the evidence

⁶⁵ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p xxii.

⁶⁶ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p xxii. See also, Productivity Commission, [Runoff Threat to Reef: Local solutions needed](#), Media Release, 26 February 2003.

⁶⁷ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), pp 96 and 319.

⁶⁸ The report is available from <http://www.environment.gov.au/coasts/pollution/reef/science/pubs/full-science.pdf>.

regarding the impact of any decline in water quality entering the Reef from water catchments.⁶⁹ The Science Panel's 2003 report found, amongst other things:⁷⁰

... there are clear indications that major land use practices in the river catchments, delivering waters to the Reef, have led to accelerated erosion and greatly increased the delivery of nutrients over pre-1850 levels. The reasons for this decline are varied but relate to activities within the river catchments, such as the extensive grazing practices in the drier catchments and overgrazing in general, urban development, agricultural (including horticultural) production, water use practices, extensive vegetation clearing and wetland drainage on coastal plains and development on acid sulphate soils ... and on potentially acid sulphate soils ...

... there is clear evidence of the effect of these practices on some rivers, estuaries and inshore areas. Reefs at a number of inshore locations along the coast have been disturbed and have remained in a disturbed state. These reefs exhibit characteristics consistent with altered ecological function due to enhanced nutrient availability or sedimentation. Evidence of impacts on offshore areas of the Reef is not well understood, however information from overseas shows that by the time such effects are obvious the system would be almost irreparably damaged. In light of the above factors the Panel confirmed that there is a serious risk to the long-term future of at least the inshore reef area and that action is necessary to avoid such damage.

5.1.3 Reef Water Quality Protection Plan

The *Reef Water Quality Protection Plan*, which was developed in consultation with industry and the public,⁷¹ was published in 2003. It aims to address “diffuse pollution from broadscale land use”.⁷² Diffuse sources of pollution are those that do not emanate from a single source, such as a pipe or waste outlet. Diffuse pollution includes “nutrients, chemicals and sediment which wash into waterways and ultimately flow into the [Great Barrier Reef].”⁷³

⁶⁹ Great Barrier Reef Protection Interdepartmental Committee Science Panel (Science Panel), [A Report on the Study of Land-Sourced Pollutants and Their Impacts on Water Quality in and Adjacent to the Great Barrier Reef](#), Terms of Reference, p 7.

⁷⁰ Science Panel, [A Report on the Study of Land-Sourced Pollutants and Their Impacts on Water Quality in and Adjacent to the Great Barrier Reef](#), p 9.

⁷¹ Commonwealth Government and Queensland Government, *Reef Water Quality Protection Plan: for catchments adjacent to the Great Barrier Reef World Heritage Area*, October 2003, p 6. It is available from <http://www.reefplan.qld.gov.au/library/pdf/reefplan.pdf>.

⁷² [Reef Water Quality Protection Plan: for catchments adjacent to the Great Barrier Reef World Heritage Area](#), p 2.

⁷³ [Reef Water Quality Protection Plan: for catchments adjacent to the Great Barrier Reef World Heritage Area](#), p 2.

The goal of the *Reef Water Quality Protection Plan* is:⁷⁴

Halting and reversing the decline in water quality entering the Reef within 10 years.

There are nine strategies in the *Reef Water Quality Protection Plan* which contribute to the Plan's goal and its objectives.⁷⁵ The strategies cover matters such as education, regulatory frameworks and economic incentives.⁷⁶

The *Reef Water Quality Protection Plan* states:⁷⁷

This Plan is one part of the government planning aimed at protecting and preserving the Reef. It incorporates and supports the actions of all levels of government, industry and community groups which benefit Reef health and has links with a number of other planning initiatives.

5.1.4 Scientific Consensus Statement

As a result of “significant advances in knowledge”⁷⁸ and the approaching halfway mark of the 10 year *Reef Water Quality Protection Plan*, the work of the Science

⁷⁴ [Reef Water Quality Protection Plan: for catchments adjacent to the Great Barrier Reef World Heritage Area](#), p 6.

⁷⁵ The objectives are:

- reduce the load of pollutants from diffuse sources in the water entering the Reef; and
- rehabilitate and conserve areas of the Reef catchment that have a role in removing water borne pollutants.

[Reef Water Quality Protection Plan: for catchments adjacent to the Great Barrier Reef World Heritage Area](#), p 6.

⁷⁶ The strategies are listed on p 7 of the [Reef Water Quality Protection Plan: for catchments adjacent to the Great Barrier Reef World Heritage Area](#) .

⁷⁷ [Reef Water Quality Protection Plan: for catchments adjacent to the Great Barrier Reef World Heritage Area](#), p 4.

⁷⁸ Jon Brodie et al, ‘*Scientific Consensus Statement on Water Quality in the Great Barrier Reef*’, 2008, p 2. It is available from <http://www.reefplan.qld.gov.au/library/pdf/publications/Scientific%20Consensus%20Statement%20on%20Water%20Quality%20in%20the%20GBR.pdf>

Panel was reviewed.⁷⁹ In 2008, the *Scientific Consensus Statement on Water Quality in the Great Barrier Reef* was published.⁸⁰

In summary, the scientists concluded:⁸¹

1. *Water discharged from rivers to the [Great Barrier Reef] continues to be of poor quality in many locations.*
2. *Land derived contaminants, including suspended sediments, nutrients and pesticides are present in the [Great Barrier Reef] at concentrations likely to cause environmental harm.*
3. *There is strengthened evidence of the causal relationship between water quality and coastal and marine ecosystem health.*
4. *The health of freshwater ecosystems is impaired by agricultural land use, hydrological change, riparian degradation and weed infestation.*
5. *Current management interventions are not effectively solving the problem.*
6. *Climate change and major land use change will have confounding influences on [Great Barrier Reef] health.*
7. *Effective science coordination to collate, synthesise and integrate disparate knowledge across disciplines is urgently needed.*

5.2 2009 ELECTION PROMISE

In the lead-up to the 2009 election, the Queensland Premier, the Hon Anna Bligh MP, promised to reduce “*pesticide and fertiliser run-off to the World Heritage-listed marine park by 50 per cent within four years*”.⁸² She stated that the proposed legislation would be “*squarely aimed at improving water quality [at] the reef and thereby guaranteeing those tens of thousands of jobs it supports*”.⁸³

⁷⁹ [‘Scientific Consensus Statement on Water Quality in the Great Barrier Reef’](#), p 2.

⁸⁰ The supporting document, *Synthesis of Evidence to Support the Scientific Consensus on Water Quality in the Great Barrier Reef*, was also published in 2008. It is available from <http://www.reefplan.qld.gov.au/library/pdf/publications/Synthesis%20of%20evidence%20to%20support%20the%20Scientific%20Consensus%20Statement%20on%20Water%20Quality%20in%20the%20GBR.pdf>.

⁸¹ [‘Scientific Consensus Statement on Water Quality in the Great Barrier Reef’](#), p 2.

⁸² Ursula Heger, ‘Election 09: Long list to deliver – What was promised before poll’, *Courier Mail*, 23 March 2009, p 8. See also, ‘Great Barrier Reef Protection Amendment Bill 2009’, [Fact Sheet](#).

⁸³ ‘But time for a firm hand, says Premier’, *Innisfail Advocate*, 5 February 2009, p 5.

5.3 GREAT BARRIER REEF PROTECTION AMENDMENT BILL 2009 (QLD)

The Hon Kate Jones MP said in her Second Reading Speech on the Great Barrier Reef Protection Amendment Bill 2009 (Qld) that the Bill was drafted so that the 2013 goal of the *Reef Water Quality Protection Plan* – to halt and reverse the decline of the quality of water entering the Great Barrier Reef Lagoon – can be reached. She stated:⁸⁴

Credible and undeniable science is telling us that the voluntary approach is not working and will not deliver the 2013 goal of reef plan ...

6 GREAT BARRIER REEF PROTECTION AMENDMENT BILL

Clause 6 of the Great Barrier Reef Protection Amendment Bill 2009 (Qld) proposes to insert **Chapter 4A (Great Barrier Reef Protection Measures)** into the *Environmental Protection Act 1994* (Qld). The objective of **proposed Chapter 4A** is set out in **proposed s 74**:

- To reduce the impact of agricultural activities on the quality of water entering the reef; and
- To contribute to achieving the targets about water quality improvement for the reef under agreements between the State and the Commonwealth from time to time.

The current State and Commonwealth agreement is the *Reef Water Quality Protection Plan: For catchments adjacent to the Great Barrier Reef World Heritage Area October 2003*.⁸⁵

It is intended that the *Great Barrier Reef Protection Amendment Act 2009* (Qld) (except s 19(2)) will commence on 1 January 2010⁸⁶ while section 19(2) will commence on assent and have retrospective effect (it will be taken to have had effect from 23 February 2009).⁸⁷

⁸⁴ Hon Kate Jones MP, Minister for Climate Change and Sustainability, Great Barrier Reef Protection Amendment Bill 2009 (Qld), [Second Reading Speech](#), 4 June 2009, pp 788-790, p 788.

⁸⁵ Note to **proposed s 74**.

⁸⁶ **Clause 2** and [Explanatory Notes](#), p 7.

⁸⁷ **Clause 18** and [Explanatory Notes](#), p 28.

6.1 AGRICULTURAL ERA

The Bill's provisions regarding Great Barrier Reef protection measures apply to agricultural ERAs.⁸⁸ **Proposed s 75** defines an activity as an agricultural ERA if it is:

- commercial sugar cane growing; or
- cattle grazing carried out on an agricultural property carrying more than 100 standard cattle units;⁸⁹

that is being carried out on an agricultural property in one or more of the following catchments (each a **priority catchment**):⁹⁰

- the Wet Tropics catchment;
- the Mackay-Whitsunday catchment;
- the Burdekin dry topics catchment.

An agricultural property which is only partly in one or more of the above catchments will be subject to the proposed Act if:⁹¹

- more than 75% of the lot⁹² on which it is carried out is in one or more of the above catchments; or
- the part of the lot within 1 or more of the priority catchments is more than 20,000 hectares.

Proposed s 78 makes it an offence for a person carrying out an agricultural ERA to apply nitrogen or fertiliser to soil on an agricultural property unless:

- all of the conditions specified in **proposed Subdivision 2 of Division 1 of Part 2 of Chapter 4A (Conditions to prevent over-fertilisation)** have been complied with; or

⁸⁸ Other environmentally relevant activities are listed in s 18 of the [Environmental Protection Act 1994 \(Qld\)](#).

⁸⁹ Standard cattle units are units of measurement based on the live weight of cattle as set out in **proposed s 75(5)**.

⁹⁰ **Proposed s 75(1)(b)**. The priority catchments are identified on the map held by the Department called 'Map of Great Barrier Reef Catchments covered by the Queensland Government Reef Protection Package', Map No g090514-01; but will also include any other land prescribed under a regulation: **proposed s 75(3)**. See also **proposed s 75(4)** which stipulates when such a regulation may be made.

⁹¹ **Proposed s 75(2)**.

⁹² 'Lot' is defined in **proposed s 75(5)** as a lot under the [Land Title Act 1994 \(Qld\)](#) or a separate, distinct parcel of land for which an interest is recorded in a register under the *Land Act 1994*.

- the person has an accredited ERMP for the agricultural ERA, and the ERMP:
 - provides for an alternative procedure to prevent over-fertilisation of the property; and
 - states that the procedure is an alternative to compliance with the conditions.

An ‘ERMP’ is defined in **proposed s 77** as an environmental risk management plan.

The maximum penalty for failing to comply with **proposed s 78** is 100 penalty units (\$10,000).⁹³

The Explanatory Notes state that commercial sugar cane growing and cattle grazing were targeted because “*they are the predominant agricultural land use in the catchments and cumulatively cause the greatest impact*”.⁹⁴ The Explanatory Notes continue:⁹⁵

Other agricultural activities, particularly horticulture, also contribute to run off of agricultural chemicals, nutrients and sediment but given the relatively small area occupied by these activities, the contribution to Reef pollution is comparatively small.

6.2 PREVENTING OVER-FERTILISATION

Proposed Subdivision 2 of Division 1 of Part 2 (Conditions to prevent over-fertilisation) applies to a person carrying out an agricultural ERA. The person must carry out soil testing in accordance with **proposed s 81**. Using those results, the person must work out the optimum amount of nitrogen and phosphorus that can be applied to the soil on the relevant property: **proposed s 80**. **Proposed s 82** prohibits the application of fertiliser containing nitrogen or phosphorus at more than the optimum rate. ‘Optimum amount’ is defined in **proposed s 77** as the highest amount of nitrogen and phosphorus that can be applied without over-fertilising the property. Over-fertilisation is defined in the same section to mean that fertiliser has been applied to soil on the property at above the needs of the plants being or to be fertilised.

⁹³ Section 5(1)(c) of the [Penalties and Sentences Act 1992 \(Qld\)](#) provides that the value of a penalty unit is \$100.

⁹⁴ [Explanatory Notes](#), p 10.

⁹⁵ [Explanatory Notes](#), p 10.

The Explanatory Notes discuss the expected impact of these provisions:⁹⁶

Performing these tests and calculations will help prevent over-fertilisation by ensuring that only the necessary amount of fertiliser is applied. This will improve the quality of water leaving a property by reducing run-off of excess fertilisers into the water and seepage into ground water, which can have negative impacts on the Great Barrier Reef.

6.3 DOCUMENT REQUIREMENTS

6.3.1 Documents that must be kept

Proposed Subdivision 1 of Division 2 of Part 2 of Chapter 4A (Documents that must be kept) sets out the documents that must be made and retained by a person carrying out an agricultural ERA.

A person carrying out an agricultural ERA must, unless the person has a reasonable excuse, make, or cause to be made, a record (an **agricultural ERA record**) in the approved form concerning:⁹⁷

- any agricultural chemicals, fertilisers and soil conditioners that are applied on the relevant agricultural property;
- soil test reports prepared under **proposed s 81**;
- optimum amounts worked out under **proposed s 80**;
- if the agricultural ERA is cattle grazing, the stocking rate at the start of each financial year and any change to that rate;
- any other matter prescribed under a regulation.

The record must be made within 10 business days of the happening of any of the events mentioned above, except for the stocking rate, which record must be made at the start of that year.⁹⁸ Records must be kept for at least 5 years.⁹⁹

The maximum penalty for failing to comply with **proposed s 83(1)** is 100 penalty units (\$10,000).

⁹⁶ [Explanatory Notes](#), p 12.

⁹⁷ **Proposed s 83(1) and (2)**.

⁹⁸ **Proposed s 83(3)**.

⁹⁹ **Proposed s 83(1)**.

Under **proposed s 84**, a person who makes an agricultural ERA record must keep all relevant primary documents (i.e. documents used to prepare the agricultural record, such as invoices for the purchase of fertiliser,¹⁰⁰ and soil test reports mentioned in the record) for at least 5 years after making it unless the person has a reasonable excuse. The maximum penalty for failing to do so is 100 penalty units (\$10,000).

The Explanatory Notes state that a ‘reasonable excuse’ for **proposed ss 83 and 84** could be that the documents were destroyed by a natural disaster, such as flood or fire. However, a failure to remember to keep them would not be a reasonable excuse.¹⁰¹

6.3.2 Production of documents

Proposed Subdivision 2 of Division 2 of Part 2 (Production of documents) deals with the production of documents.

An authorised person¹⁰² may require a person carrying out an agricultural ERA (the **operator**) to produce, within 10 business days, the operator’s current agricultural ERA records or the relevant primary documents for the records (a **production requirement**).¹⁰³ Failure to comply with a production requirement without a reasonable excuse may result in a maximum penalty of 100 penalty units (\$10,000).¹⁰⁴ With respect to this provision (**proposed s 86**), the Explanatory Notes state:¹⁰⁵

A reasonable excuse ... may include that the documents have been destroyed by fire or flood. It would not be a reasonable excuse to claim that another person should have made the record as it is the responsibility of every person who carries out an

¹⁰⁰ The example provided in **proposed s 84(2)**.

¹⁰¹ [Explanatory Notes](#), p 14.

¹⁰² ‘Authorised person’ is defined in Schedule 4 (Dictionary) of the [Environmental Protection Act 1994 \(Qld\)](#) as a person holding office as an authorised person under an appointment under the *Environmental Protection Act 1994 (Qld)* by the chief executive or the chief executive officer of a local government.

¹⁰³ **Proposed s 85**. An authorised person may use s 466 of the [Environmental Protection Act 1994 \(Qld\)](#) to require immediate production of documents.

¹⁰⁴ **Proposed s 86**.

¹⁰⁵ [Explanatory Notes](#), p 15.

agricultural ERA to ensure that the relevant records are made. Note that self-incrimination is not a reasonable excuse due to the operation of section 87.

Proposed s 87 provides that it is not a defence to a proceeding for an offence against **proposed s 86** that the relevant document contains information that might tend to incriminate the defendant. However, if the defendant is an individual, incriminating evidence is not admissible in evidence against the defendant in a civil or criminal proceeding unless the falsity or misleading nature of the document is relevant. In relation to **proposed s 87**, the Explanatory Notes state:¹⁰⁶

This section is required to avoid the situation where an employee of a company can decline to provide information or produce a document thereby making it extremely difficult to obtain sufficient evidence against the corporate entity regarding an alleged offence. In effect, a corporation can currently choose to accept a smaller penalty (failure to provide information or failure to produce a document) rather than risk prosecution for the original offence.

...

A safeguard is provided in that the information or document may not then be used to prosecute the individual required to make it. Consequently, the individual is protected against the consequences of self-incrimination.

... It should be noted that the High Court has determined that a corporate entity is not entitled to protect itself against self-incrimination, so the defence of self-incrimination cannot be claimed by a company or a body corporate.

6.4 ENVIRONMENTAL RISK MANAGEMENT PLAN (ERMP)

In relation to **proposed Part 3 (Environmental Risk Management Plans)**, the Explanatory Notes state that a management plan approach will be implemented “[i]n order to entrench the adoption of best management practices and continuous improvement on higher risk properties”.¹⁰⁷

6.4.1 General matters

Proposed s 88 provides that a person who carries out an agricultural ERA must have an accredited environmental risk management plan (ERMP) for the agricultural ERA if:

- the agricultural ERA consists of:

¹⁰⁶ [Explanatory Notes](#), pp 15-16.

¹⁰⁷ [Explanatory Notes](#), p 16.

- sugar cane growing on more than 70ha in the Wet Tropics catchment under **proposed s 75**; or
- cattle grazing on more than 2,000ha in the Burdekin dry tropics catchment under **proposed s 75**; or
- the person is the recipient of a direction given under Division 1 of Part 3 of the Bill (an **ERMP direction**).

The Explanatory Notes point out that **proposed s 88** “*is designed to only capture the larger producers in [the Wet Tropics catchment and the Burdekin dry tropics catchment]*.”¹⁰⁸ The Explanatory Notes go on:¹⁰⁹

There is considerable evidence that it is essential to reduce the pollution load generated across the majority of cane and grazing lands to achieve long term Reef health targets. Because of the variability across individual properties, doing this using a universal approach would be difficult, expensive and inefficient. It is far more efficient to target the larger properties covering large areas of the catchment with fewer actual operators with risk management planning and rely on a prescriptive approach to deal with the smaller properties.

Wet Tropics sugar cane growing

... In the Wet Tropics area, sugar cane contributes 78% of the dissolved inorganic nitrogen ... anthropogenic load (2800 tonnes). This contribution is spread across some 1,300 operators ...

The average size of cane farms in the Wet Tropics is 60 to 70 hectares. The aim is for operators of the larger properties to prepare ERMPs, so a threshold of 70ha was chosen for his purpose. The 70ha threshold will capture a large proportion of the catchment with proportionately fewer producers.

Burdekin Dry Tropics cattle grazing

The Burdekin Water Quality Improvement Plan identifies the need to reduce mean annual sediment load at end-of-Burdekin catchment from ~3,700 kt/yr in 2008 to 2,200 kt/yr and that at least 30% to 50% of landholders would need to adopt improved practices for erosion management to achieve catchment water quality targets. The roll-out of an ERMP approach will support the meeting of these targets.

The threshold for ERMP targeting for cattle grazing in the Burdekin Dry Tropics is designed to capture most large-scale cattle grazing properties that are the major contributors to nutrient and sediment release in the priority catchments. Dairies and smaller coastal graziers cumulatively contribute much less pollution and will not be captured by the ERMP threshold.

¹⁰⁸ [Explanatory Notes](#), p 17.

¹⁰⁹ [Explanatory Notes](#), pp 17-18.

Proposed s 89 provides for when an **ERMP direction** may be given. Under the provision, the Minister may give a person carrying out an agricultural ERA an ERMP direction only if:

- the Minister considers an ERMP is necessary or desirable:
 - to improve the quality of water being released from the relevant agricultural property; or
 - because the agricultural ERA is causing or may cause unlawful environmental harm; and
- the direction complies with **proposed s 90**; and
- if it has more than 1 recipient – **proposed s 91** is complied with.

The Explanatory Notes state:¹¹⁰

The decision to extend the ERMP requirement will be made based on best available evidence, for example, identifying by remote sensing data properties with high risk of sediment loss due to areas of low ground cover or catchments with high nutrient impacts based on water quality monitoring. The Minister will be able to direct that those operators prepare an ERMP to target the particular issue identified. While the power to issue an ERMP direction may be delegated to departmental officers, it is anticipated that directions for multiple properties will remain with the Minister and will not be delegated.

... The usual review and appeal provisions of the Environmental Protection Act 1994 will apply to the ERMP direction.

Proposed s 90 sets out the form of an ERMP direction and its requirements. **Proposed s 90(2)** enables an entire ERMP to be prepared or only a component of an ERMP. This, according to the Explanatory Notes, will depend on “*the issue that needs to be addressed in a particular area or by a particular property*”.¹¹¹

If an **ERMP direction** has more than one recipient, **proposed s 91** requires the Minister to not only give the ERMP direction to each of the recipients individually, but also publish a modified form in a newspaper circulating in the relevant catchment and in another with statewide circulation.

If a person is required under **proposed s 88** to have an accredited ERMP, **proposed s 92** provides that the person must, unless the person has a reasonable excuse:

- prepare, for the person’s agricultural ERA, an ERMP that complies the requirements under Division 2 (ERMP content requirements); and
- within 3 months submit it to the administering authority for accreditation.

¹¹⁰ [Explanatory Notes](#), pp 18-19.

¹¹¹ [Explanatory Notes](#), p 19.

Failure to do so may result in a maximum penalty of 300 penalty units (\$30,000).

Proposed s 93 states that apart from the purpose of submission to seek accreditation, an ERMP has no effect unless it has been accredited.

6.4.2 Content of an ERMP

In addition to identifying and timing information, **proposed s 94** specifies that an ERMP must:

- identify any hazards of the property that may cause the release of contaminants into water entering the reef;¹¹² and
- include measurable targets and performance indicators for improving the quality of water being discharged from the property; and
- subject to **proposed ss 90(2) and 95**, include a management plan for the agricultural ERA that provides for the management of:
 - the application of agricultural chemicals on the property;¹¹³ and
 - nutrients applied to soil on the property;¹¹⁴ and
 - sediment loss from the property, including the management of ground cover and erosion zones to prevent sediment loss; and
- if an ERMP direction has been given, provide for any matter that, under **proposed s 90(3)**, must be included in the ERMP; and
- provide for any matter that is reasonably necessary to reduce the impact of the agricultural ERA on the quality of water entering the reef; and
- any other matter prescribed under an environmental protection policy or a regulation.

The Explanatory Notes state that the Department of Environment and Resource Management:¹¹⁵

¹¹² The Bill provides examples of things that may be a hazard: the application of fertiliser or agricultural chemicals; erosion zones; low levels of ground cover.

¹¹³ This does not apply if the person carrying out the agricultural ERA has been certified as an organic operator by the Australian Quarantine Inspection Service: **proposed s 95(1)**. This is because such operators do not use agricultural chemicals: [Explanatory Notes](#), p 20.

¹¹⁴ If the agricultural ERA the subject of the ERMP is cattle grazing, this only applies for pastures on the relevant agricultural property that are to be fertilised: **proposed s 95(2)**. According to the [Explanatory Notes](#) (p 21), this is because “the majority of fertilisers used on cattle grazing properties are used on improved pastures”.

¹¹⁵ [Explanatory Notes](#), p 20.

... intends to prepare a handbook to inform the preparation of ERMPs, which will be called up through the Environmental Protection Regulation 2008. Preparation of the ERMP must be in accordance with this handbook ... It is intended that the complexity of an ERMP will be commensurate with the risks of an operation i.e. low risk operations need only a basic ERMP while higher risk operations need a more complex ERMP.

Proposed s 96 provides that an ERMP may comprise a number of documents. The documents may have been prepared for another purpose and may not be called an environmental risk management plan. The Bill provides an example for **proposed s 96**:

A person carrying out an agricultural ERA will comply with the ERMP content requirements if:

- *for good business practice, the person prepares a document called a 'farm management system' that includes an environmental management component; and*
- *the component consists of a land management agreement under the Land Act 1994 and other documents; and*
- *the agreement and the other documents, when read together, comply with the ERMP content requirements, but they are not identified as an ERMP; and*
- *the person submits the component for accreditation as an ERMP.*

Other examples are provided in the Explanatory Notes:¹¹⁶

... a cattle grazing operation with a Land Management Agreement under the Delbessie arrangements for leasehold land is likely to be able to satisfy the ERMP requirements for sediment management on grazing lands without significant additional work. Similarly, requirements for land and water use management plans under the Water Act 2000 may be able to satisfy some of the ERMP requirements.

6.4.3 Accreditation of an ERMP

Proposed Division 3 of Part 2 of Chapter 4A concerns accreditation of ERMPs.

Proposed s 99 specifies the time within which the administering authority¹¹⁷ must decide to accredit or refuse to accredit the ERMP. **Proposed s 100** specifies the

¹¹⁶ [Explanatory Notes](#), p 21.

¹¹⁷ 'Administering authority' is defined in Schedule 4 of the [Environmental Protection Act 1994 \(Qld\)](#). It means:

- for a matter, the administration and enforcement of which has been devolved to a local government under section 514 – the local government; or
- for another matter – the chief executive.

time within which the administering authority must advise the person of the decision.

Proposed s 98 enables the administering authority to request further information.

If the administering authority refuses to accredit, **proposed s 101** requires that the person:

- amend the ERMP to address the reasons for the decision; and
- within 20 business days after receiving notice of the decision or of any extended period granted, give the administering authority the amended ERMP.

The maximum penalty for failing to do so is 100 penalty units (\$10,000).

6.4.4 Amendment of an Accredited ERMP

Proposed s 103 in Division 4 of Part 2 of Chapter 4A (Amendment of accredited ERMPs) enables a person to voluntarily amend the ERMP at any time and submit it to the administering authority for accreditation.

Proposed s 104 provides that if the administering authority considers it necessary or desirable to amend the ERMP:

- because it no longer complies with ERMP content requirements; or
- to improve the quality of water being discharged from the relevant agricultural property; or
- because the agricultural ERA the subject of the ERMP is causing or may cause unlawful environmental harm;

the administering authority may give the person carrying out the agricultural ERA a written direction to:

- amend the ERMP in a stated way so as to comply with ERMP content requirements; and
- within 3 months submit it to the administering authority for accreditation.

6.4.5 Annual Reporting

Proposed s 105 in Division 5 of Part 2 of Chapter 4A (Annual Reporting) requires that a person carrying out an agricultural ERA for which there is an accredited ERMP must, within 2 months after the end of each financial year, give the administering authority an annual report in the approved form about the implementation of the ERMP, unless the person has a reasonable excuse.

The Explanatory Notes state:¹¹⁸

A reasonable excuse could be that the person has been unable to comply with the requirement due to prolonged hospitalisation, or because their property has been stricken by fire or flood which has destroyed records of implementation.

The maximum penalty for failing to comply with **proposed s 105** is 100 penalty units (\$10,000).

6.5 ASSORTED AMENDMENTS

Clauses 4, 5 and 7–17 amend various provisions in the *Environmental Protection Act 1994* (Qld) to take account of the introduction of the agricultural ERA. For instance, **clause 7** proposes to amend s 320 so that a person acting under an ERMP does not have to notify the administering authority of serious or material environmental harm if the harm is authorised under the ERMP.

6.6 TRANSITIONAL PROVISIONS

Clause 18 inserts **proposed Chapter 13, Part 13 (Transitional provisions for Great Barrier Reef Protection Amendment Act 2009)**. **Proposed s 657** provides that **new s 88(a)** does not apply to an agricultural ERA carried out before the commencement of **proposed s 657** until 6 months after the commencement. This is to give such operators time to obtain an accredited ERMP.¹¹⁹

Clauses 18-20 make consequential amendments to Schedules 2 and 4 of the *Environmental Protection Act 1994* (Qld) to amend a flaw concerning appealable decisions. The flaw is to be repaired firstly by **proposed s 19(2)** inserting descriptions of decisions for sections 73E, 73F, 73FA, 73L and 73O(3) into Schedule 2 Division 1A (Decisions under chapter 4). Further, **proposed s 658** will provide that **s 19(2)** of the *Great Barrier Reef Protection Amendment Bill 2009* (Qld) will have retrospective effect (it will be taken to have had effect from 23 February 2009).

6.7 AMENDMENT OF INTEGRATED PLANNING ACT 1997 (QLD)

Clauses 21–24 make consequential changes to the *Integrated Planning Act 1997* (Qld).

¹¹⁸ [Explanatory Notes](#), p 24.

¹¹⁹ [Explanatory Notes](#), p 27.

7 IMPACT OF THE BILL

The Great Barrier Reef protection measures in the Bill will affect around 4,500 property owners in Mackay-Whitsunday, the Burdekin dry tropics and the Wet Tropics.¹²⁰ Of these, about 1,000 farmers “*considered high risk to the Reef in the Wet Tropics and Burdekin Dry Tropics*” will have to prepare an ERMP “*to entrench the adoption of best practices and continuous improvement, leading to better Reef health*”.¹²¹

The Queensland Government’s ‘[Fact Sheet](#)’ on the Bill states that the State Government “*will be providing the tools and advice needed for farmers to adjust and adapt to the new requirements*”.¹²² According to the Fact Sheet, the \$50 million allocated by the Queensland Government to enforce the legislation will be used to “*inspect farming practices and [provide] assistance to farmers to improve their farming practices*”.¹²³ With respect to this, former Minister for Sustainability, Climate Change and Innovation, the Hon Andrew McNamara MP, was quoted in the *North Queensland Register*: “*We will be spending \$50 million over five years on regulation and there won’t be any enforcement police, as I consider a dollar spent there would be a dollar wasted.*”¹²⁴

According to the ‘[Fact Sheet](#)’, the new regulatory structure introduced by the Bill “*is a mix of strict controls on dangerous farm chemicals and measures that will improve farming practices at the least cost to taxpayers*”.¹²⁵ Under the regime (which will take effect from 1 January 2010):¹²⁶

- *Sugar cane farmers and graziers in Mackay-Whitsunday, the Burdekin Dry Tropics and the Far North’s Wet Tropics must apply no more than the optimum amount of fertiliser to their soil. They must also keep annual records on soil testing results and their use of chemicals and fertilisers;*

¹²⁰ Queensland Government, ‘Great Barrier Reef Protection Amendment Bill 2009’, [Fact Sheet](#).

¹²¹ ‘Great Barrier Reef Protection Amendment Bill 2009’, [Fact Sheet](#).

¹²² ‘Great Barrier Reef Protection Amendment Bill 2009’, Fact Sheet. The Fact Sheet is available from http://www.derm.qld.gov.au/reefprotection/pdf/protection_factsheet.pdf.

¹²³ ‘Great Barrier Reef Protection Amendment Bill 2009’, [Fact Sheet](#).

¹²⁴ Ian Morgan, ‘Growers out in force at reef meet’, *North Queensland Register*, 19 February 2009, p 5.

¹²⁵ ‘Great Barrier Reef Protection Amendment Bill 2009’, [Fact Sheet](#).

¹²⁶ ‘Great Barrier Reef Protection Amendment Bill 2009’, [Fact Sheet](#).

- *These farmers must follow a range of new controls and restrictions for the pesticides Atrazine, Diuron, Ametryn, Hexazinone or Tebuthiuron¹²⁷, such as banning their use along drainage lines, certification and training before use, and secure storage; and*
- *Farms considered high risk to the Reef will be required to keep tailored Environmental Risk Management Plans showing how they are improving their practices to achieve a standard compatible with good Reef health. The plans will include the size of their land, which and how much pesticides and fertilisers used, soil testing undertaken on the land, and stocking rates.*

8 VIEWS ON REGULATING TO PROTECT THE GREAT BARRIER REEF

Some affected farmers and graziers have expressed dissatisfaction with the Bill for a variety of reasons, while some other people are pleased by its introduction. The Liberal National Party considers that regulation is not the best approach for protecting the Great Barrier Reef.¹²⁸

8.1 LIBERAL NATIONAL PARTY

In the Queensland Legislative Assembly in November 2008 (some seven months prior to the introduction of the Bill), Mr David Gibson MP, then Shadow Minister for Sustainable Environment and Climate Change and Shadow Minister for Clean Energy Strategy moved:

That this House instructs the Queensland government to support the federal government's approach of stakeholder partnership in the Reef Rescue program.

He said that the Queensland Government should not proceed with regulating farm practices to protect the Great Barrier Reef from run-off; instead it should support the Commonwealth's cooperative Reef Rescue program.¹²⁹

In his speech, Mr Gibson MP outlined the components of Reef Rescue:

¹²⁷ Atrazine, Diuron, Ametryn, Hexazinone and Tebuthiuron are herbicides: see, for eg, Jon Brodie, '[Pesticide residues in waters of the Great Barrier Reef region](#)', Department of the Environment, Water, Heritage and the Arts: Marine and Tropical Sciences Research Facility.

¹²⁸ See, e.g., Ted Malone MP and Ray Hopper MP, '[Bligh takes big stick to reef plan](#)', Media Release, 30 January 2009.

¹²⁹ Mr Gibson MP, then Shadow Minister for Sustainable Environment and Climate Change and Shadow Minister for Clean Energy Strategy, Motion: Reef Rescue Program, [Queensland Parliamentary Debates](#), 26 November 2008, pp 3811-3812.

... water quality grants; reef partnerships; land and sea country Indigenous partnerships; reef water quality research and development; and water quality monitoring and reporting, including the publication of an annual Great Barrier Reef water quality report card. During the first year of Reef Rescue, water quality grants and reef partnerships will be rolled out through the coastal regional natural resource management bodies ... and peak agricultural industry bodies. It is recognised that those groups are well positioned, through their existing natural resource management planning activities, to address water quality and deliver on transitional Reef Rescue investments.

He considered that Reef Rescue should be extended beyond agricultural activities to tourism, shipping, sewerage and other human activities that impact on the Great Barrier Reef.¹³⁰ According to Mr Gibson MP, the attributes of the Reef Rescue program are: “[i]t is proactive; it is incentive based; it is about engaging with all the stakeholders to achieve real outcomes”.¹³¹

He pointed out that the Reef Rescue program does not have a regulatory component.¹³² With respect to regulation, Mr Gibson MP said:¹³³

No-one is opposed to regulation. Indeed, we currently have regulations that can be used, but they must be seen as a backstop rather than the main tool. Regulation is for the recalcitrants, the cowboys and those who have no respect for the reef and should and indeed must be brought to fact justice.

He considered that “[a] regulatory approach is a step backwards”.¹³⁴

Mr Cripps MP, then Shadow Minister for Natural Resources and Water, in seconding Mr Gibson’s motion, stated:¹³⁵

Regulation should always be a last resort. Overregulation does not encourage innovative solutions or improved production technologies. It reduces efforts to improve farm practices to a lowest common denominator level.

¹³⁰ Mr Gibson MP, [Motion](#), 26 November 2008, p 3811.

¹³¹ Mr Gibson MP, [Motion](#), 26 November 2008, p 3811.

¹³² Mr Gibson MP, [Motion](#), 26 November 2008, p 3811.

¹³³ Mr Gibson MP, [Motion](#), 26 November 2008, p 3812.

¹³⁴ Mr Gibson MP, [Motion](#), 26 November 2008, p 3812.

¹³⁵ Mr Cripps MP, then Shadow Minister for Natural Resources and Water, Motion: Reef Rescue Program, [Queensland Parliamentary Debates](#), 26 November 2008, pp 3812-3813, p 3813.

8.2 CANE GROWERS AND CATTLE GRAZIERS

It has been reported that farm groups would have liked greater consultation about the Bill.¹³⁶

On its website, CANEGROWERS expresses its dissatisfaction with the Bill. It states:¹³⁷

We are concerned, along with industry that the introduction of systems that are at variance with current best management practice or which introduce a non-productive administrative burden are not helpful to CANEGROWERS members or the Great Barrier Reef.

It was reported in the *Cairns Post* on 5 June 2009 that sugar cane growers and cattle farmers are sceptical about whether the Bill will improve water quality at the Great Barrier Reef. CANEGROWERS chairman, Alf Cristaudo, is reported to have said that farmers were being “*unfairly persecuted*”.¹³⁸ He has also reportedly said:¹³⁹

... [Growers] are not environmental vandals and we don't want to use more fertilisers or chemicals than we need to ...

We've been adopting best management practices for some time now.

An article in the 12 June 2009 edition of *Rural Weekly* described the Bill as adding “*a prescriptive burden to rangelands beef cattle enterprises*”. It said that Agforce’s view on the Bill was that the Queensland Government “*seeks to use a blunt instrument rather than a co-operative approach*”.¹⁴⁰ Agforce spokesman and far north Queensland beef producer, Alex Stubbs, was quoted saying:¹⁴¹

Agforce does not support bad farming practices and progress is continually being made in undertaking real, on-ground environmental and conservation work. ...

This legislation threatens the future of professional food producers in the wet tropics, Mackay-Whitsunday and Burdekin dry tropics area, failing to recognize the good and sustainable producers and identify the bad.

¹³⁶ Jane Paterson, ‘Reef regulations introduced’, *Country Hour (ABC Radio)*, online, 4 June 2009.

¹³⁷ CANEGROWERS, Legislation: Update on activities by CANEGROWERS Brisbane in response to the Great Barrier Reef Protection Amendment Bill 2009, downloaded 5 August 2009 from <http://www.canegrowers.com.au/what-we-do/legislation.aspx>.

¹³⁸ ‘Farmers face \$30k fines for Reef run off’, *Cairns Post*, online, 5 June 2009.

¹³⁹ ‘Farmers face fines under plan to keep reef healthy’, *Rural Weekly*, 12 June 2009, p 3.

¹⁴⁰ ‘Reef legislation burdens beef cattle enterprises’ *Rural Weekly*, 12 June 2009, p 7.

¹⁴¹ ‘Reef legislation burdens beef cattle enterprises’.

Instead it aims to put limits and restrictions on all producers, especially on those with more than 2000 hectares, who are often the most professional land managers.

Furthermore it uses legislative mechanisms which tars all producers with the same brush.

The article further stated:¹⁴²

The element of most concern in the new Bill is the redefinition of rangelands cattle production as an Environmentally Relevant Activity (ERA) alongside intensive activities such as factories and mines or sewerage treatment plants.

In relation to this, Mr Stubbs was quoted as follows:¹⁴³

It is just impractical that beef, as an open range food-producing industry, gets the same treatment as mines.

It puts in place an arbitrary process which not only won't deliver the outcomes society wants, but which our industry-proposed [Best Management Practices] would deliver in a far less costly way to Queensland taxpayers and industry ...

...

The ability for government to police this legislation – to carry out compliance work – is not there.

8.3 TOURISM BODY

Col McKenzie from the Association of Marine Park Tourism Operators was reported to have said in relation to the introduction of the Bill:¹⁴⁴

... now we need to make sure we encourage the farmers to invest in the right practices ...

Failing that, if we can't get them to... do the right thing and be compensated for it then certainly we need a big stick to follow up.

He also reportedly said that the legislation “*should have been introduced years ago*”.¹⁴⁵

¹⁴² ‘Reef legislation burdens beef cattle enterprises’.

¹⁴³ ‘Reef legislation burdens beef cattle enterprises’.

¹⁴⁴ Penny Timms and Cathy van Extel, ‘Green group backs Great Barrier Reef Protection Bill’, *ABC News*, 5 June 2009, downloaded 25 August 2009 from <http://www.abc.net.au/news/stories/2009/06/05/2589969.htm>.

¹⁴⁵ Penny Timms and Cathy van Extel, [Green group backs Great Barrier Reef Protection Bill](#).

8.4 ENVIRONMENTAL GROUP

ABC News reported that World Wildlife Fund spokesman, Nick Heath, said the legislation will help the environment and farmers.¹⁴⁶ In addition, he was reported to have said:¹⁴⁷

It's disappointing the leaders of the sugar cane industry are resisting – we hoped they'd represent the progressive farmer rather than those who want to keep farming the way they always have ...

9 CONCLUSION

Scientific information about the causes of declining water quality and its effect on the Great Barrier Reef remains inconclusive.¹⁴⁸ However, scientific evidence suggests that there is a causal relationship between water quality and coastal and marine ecosystem health.¹⁴⁹ The Productivity Commission determined that, on the basis of estimates provided to it, “diffuse sources, particularly cattle grazing and crop production, are the most significant contributors to pollutant discharges into the [Great Barrier Reef] ...”.¹⁵⁰

In her Second Reading Speech, the Hon Kate Jones MP said that the Bill:¹⁵¹

... introduces provisions to reduce the impact of agricultural activities on the quality of water flowing into the Great Barrier Reef. It contains both prescriptive requirements and a risk management approach that will expedite change in farm management practices that cause pollution at least cost.

The Explanatory Notes state that while voluntary measures have improved the quality of water entering the Reef, regulation was required to ensure “a more rapid

¹⁴⁶ Penny Timms and Cathy van Extel, [Green group backs Great Barrier Reef Protection Bill](#).

¹⁴⁷ ‘Farmers face fines under plan to keep reef healthy’.

¹⁴⁸ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p 9.

¹⁴⁹ Mr Jon Brodie et al, [Scientific Consensus Statement on Water Quality in the Great Barrier Reef](#), Queensland Department of Premier and Cabinet, 2008, pp 2 and 4.

¹⁵⁰ Productivity Commission, [Industries, Land Use and Water Quality in the Great Barrier Reef Catchment](#), p xxix.

¹⁵¹ Hon Kate Jones MP, [Second Reading Speech](#), p 788.

change in farm management practices to improve the quality of water entering the Reef".¹⁵²

In its amendments to the *Environmental Protection Act 1994* (Qld), the Bill proposes to define certain cattle grazing and commercial sugar cane growing operations in the Wet Tropics catchment, the Mackay-Whitsunday catchment and the Burdekin dry tropics catchment as agricultural ERAs (environmentally relevant activities). It specifies requirements for carrying out such activities, such as determining the optimum amount of fertiliser on the basis of soil testing prior to the application of fertiliser to prevent over-fertilisation. Under the Bill, some cattle grazing and sugar cane farming operators will need to have an accredited environmental risk management plan (ERMP). An ERMP must, amongst other things, identify any hazards on the property that may cause the release of contaminants into water entering the Reef, and include measurable targets and performance indicators for improving the quality of water being discharged from the property.

While it appears that some sugar cane farmers and graziers are concerned about the impact of the Bill on their operations, representatives from tourism and environmental groups seem to consider that the Bill will be beneficial.

¹⁵² [Explanatory Notes](#), p 5.

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