

Burnett Mary region

Second Report Card 2010

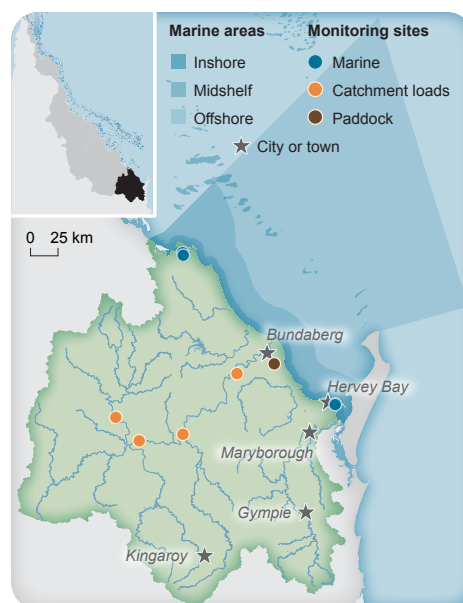
Reef Water Quality Protection Plan

Regional profile

The Burnett Mary region covers approximately 53,000 square kilometres and encompasses the southern extent of the Great Barrier Reef Marine Park and the Great Sandy Straits World Heritage Area. The region also includes Fraser Island; the largest sand island in the world. The region has a moderate subtropical climate. The main agricultural land uses are grazing (65 per cent) and sugarcane (two per cent) with some horticulture (approximately 0.1 per cent).

The Burnett Mary Region experienced above median rainfall in the 2009-2010 year. This report card measures progress from the 2009 baseline towards Reef Water Quality Protection Plan (Reef Plan) goals and targets. It assesses the combined results of all Reef Plan actions up to June 2010. Report cards are produced as part of the Paddock to Reef program.

The regional Natural Resource Management body, the Burnett Mary Regional Group, is working with industry and land holders to improve land management practices for improved water quality outcomes. This improved water quality will reduce the degrading impacts upon coastal habitats, including estuaries, seagrass and coral found in the Great Barrier Reef.



Map of the Burnett Mary region and Great Barrier Reef Marine Park showing the paddock, catchment and marine monitoring sites.

Key findings

- The overall condition of the marine environment in 2009-2010 was poor. Inshore water quality was moderate, while seagrass meadows were in poor condition.
- Overall, progress towards Reef Plan targets has been encouraging; however it will take time for these achievements to translate into improved marine condition.
- Ten per cent of graziers, 18 per cent of horticulture producers and 25 per cent of sugarcane growers have adopted improved land management practices.
- The Burnett Mary region had the greatest proportional loss of wetlands and riparian forest of all Great Barrier Reef regions. This was mainly due to conversion of swamps for agriculture and some urban use.
- The greatest proportional catchment load reduction was the pesticide load with an estimated 219 kilograms (14 per cent) less.
- The significant progress has been driven primarily by the Australian Government's Reef Rescue program along with Queensland Government and industry-led initiatives.

Paddock to Reef program

The Paddock to Reef program, funded jointly by the Australian and Queensland Governments, is a highly innovative approach to integrating monitoring and modelling information on management practices, catchment indicators, catchment loads and the health of the Great Barrier Reef.

Progress and status

Targets		Region	Catchments				
			Baffle	Burnett	Burrum	Kolan	Mary
% adoption improved practices	Grazing		10				
	Horticulture		18				
	Sugarcane		25				
% loss	Wetlands	0.23	0.29	0	0.28	0.39	0.05
	Riparian	0.89	1.3	0.81	1.62	0.61	0.91
% groundcover		95	98	94	93	96	97
% load reduction	Nitrogen	6					
	Phosphorus	3					
	Sediment	1					
	Pesticides	14					
Overall marine condition		N/E					
Water quality		N/E					
Seagrass		N/E					
Corals		N/E					

- Very good
- Good
- Moderate
- Poor
- Very poor
- Hatching indicates low confidence due to limited validation of water quality data.
- N/E Not evaluated

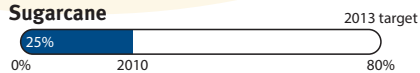
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Management practice results

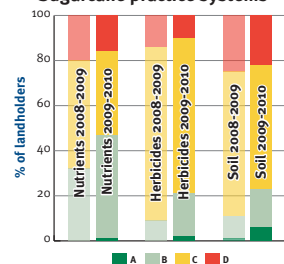
Land management practices have been improving over time. Progress since the 2008-2009 baseline is presented below.

Sugarcane



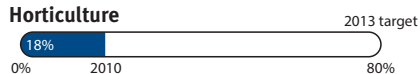
By June 2010, 25 per cent of sugarcane growers had adopted improved land management practices.

Sugarcane practice systems



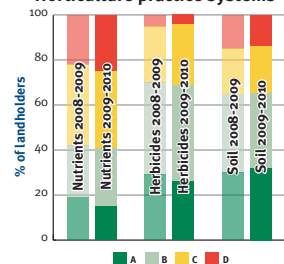
By June 2010, cutting-edge (A) or best management (B) practice systems were used by 47 per cent of sugarcane growers for nutrients, 21 per cent for herbicides and 23 per cent for soil.

Horticulture



By June 2010, 18 per cent of horticulture producers had adopted improved land management practices.

Horticulture practice systems

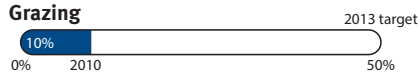


By June 2010, cutting-edge (A) or best management (B) practice systems were used by 41 per cent of horticulture producers for nutrients, 69 per cent for herbicides and 65 per cent for soil.

Improved management practices for sugarcane and horticulture are presented using the ABCD framework:

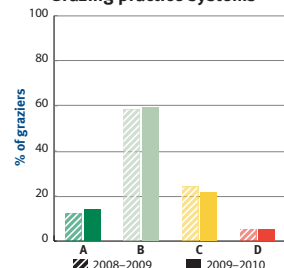
- A – Cutting-edge practices
- B – Best practices
- C – Common or code of practices
- D – Unacceptable practices.

Grazing



By June 2010, 10 per cent of graziers had adopted improved land management practices.

Grazing practice systems



By June 2010, 73 per cent of graziers were using (A or B) practice systems that are likely to maintain land in good to very good condition or improve land in lesser condition. Improved management practice systems for grazing are presented using the ABCD framework:

- A – Practices likely to maintain land in very good condition or improve land in lesser condition
- B – Practices likely to maintain land in good condition or improve land in lesser condition
- C – Practices that may maintain land in fair condition or gradually improve land in poor condition
- D – Practices likely to degrade land to poor condition.

Catchment results

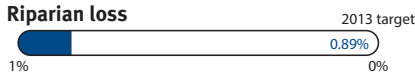
Historically, 30 per cent of wetlands and 25 per cent of riparian forest have been lost from pre-European extent.

Wetland loss



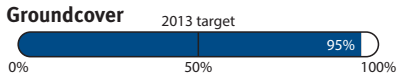
The Burnett Mary region had the greatest loss of wetlands of all the regions between 2005 and 2009, losing 0.23 per cent (118 hectares). This was a decrease from 0.33 per cent (173 hectares) between 2001 and 2005.

Riparian loss



The Burnett Mary region had the greatest loss of riparian forest between 2005 and 2009 of all the regions with 0.89 per cent (7889 hectares). Loss in the Burrum catchment increased from 0.79 per cent (341 hectares) between 2001 and 2005 to 1.62 per cent (700 hectares) between 2005 and 2009.

Groundcover



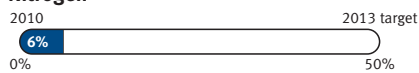
Late dry season groundcover for grazing lands was 95 per cent.

Catchment loads

The pollutant loads at the end of the catchment come from modelling, validated by monitoring, to remove the effect of a variable climate from year to year.

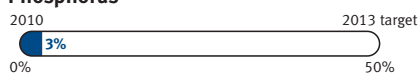
Land management changes in the horticulture industry have not been modelled. Changes in riparian management also could not be modelled due to the lack of data.

Nitrogen



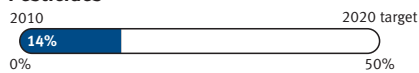
The estimated annual average total nitrogen load leaving catchments reduced by six per cent (91 tonnes).

Phosphorus



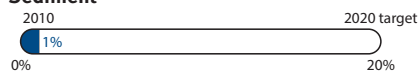
The estimated annual average total phosphorus load leaving catchments reduced by three per cent (nine tonnes).

Pesticides



The estimated annual average pesticide load leaving catchments reduced by 14 per cent (219 kilograms).

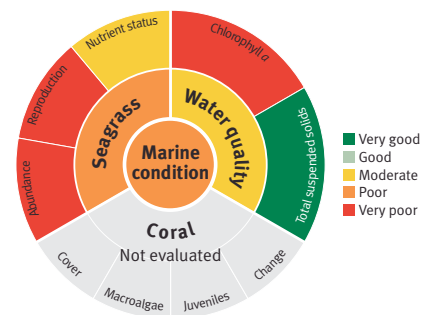
Sediment



The estimated annual average suspended sediment load leaving catchments reduced by one per cent (4000 tonnes).

Marine results

The inshore area of the Burnett Mary region was influenced by flood waters as a result of above median rainfall.



Marine graphic descriptions:

- **Chlorophyll a** indicates nutrient availability and productivity.
- **Total suspended solids** measures particulate matter in water.
- **Seagrass abundance** includes the cover and change in cover.
- **Reproduction** indicates the potential of seagrass meadows to recover from disturbances.
- **Nutrient status** measures the response of seagrass to nutrient conditions in surrounding waters.

Water quality

Inshore water quality declined from good to moderate from the 2009 baseline year. There has been a general decline in water quality since 2005-2006, driven by an overall increase in chlorophyll a. Both chlorophyll a and total suspended solids were, at times, above *Water Quality Guidelines for the Great Barrier Reef Marine Park* for inshore waters.

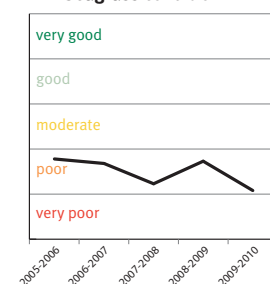
Estimates of chlorophyll a and total suspended solids are derived from remote sensing only, which requires further field validation in this region. Therefore, the estimates have relatively low reliability compared to those for other regions.

Seagrass

Inshore seagrass meadows remained in poor condition for the fifth consecutive year. Seagrass abundance and reproductive effort were very poor throughout the region, indicating meadows may have a low capacity to recover from disturbances. The nutrient status of seagrass is moderate, reflecting consistently high concentrations of nitrogen in the surrounding environment.

The area of seagrass monitored is within the Marine Park, which reflects only a small proportion of the whole region.

Seagrass condition



Coral

Coral monitoring is not conducted in the region under the Paddock to Reef program.