

# Fitzroy region

Second Report Card 2010

Reef Water Quality Protection Plan

## Regional profile

The Fitzroy region covers 156,000 square kilometres and is the largest region draining into the Great Barrier Reef lagoon. The region experiences highly variable rainfall, high evaporation rates and prolonged dry periods which are often followed by floods. Grazing (77 per cent) is the predominant land use but there are also significant areas of cultivation including large expanses of irrigated and dryland cropping.

Rainfall in 2009-2010 was more than three times higher than the long-term median across the Fitzroy region. 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.

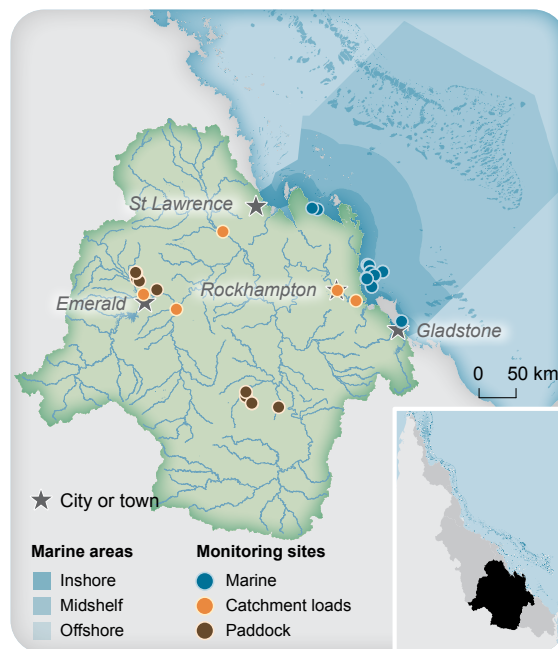
The regional Natural Resource Management body, the Fitzroy Basin Association, has been working with landholders in priority areas to reduce sediment and nutrients delivered to the reef.

## Key findings

- The overall marine condition in 2009-2010 was moderate. Inshore water quality and the condition of seagrass were moderate and corals were poor.
- 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, 14 per cent of grain growers and nine per cent of horticulture producers have adopted improved land management practices.
- The loss of riparian areas and wetlands has slowed in recent years (2005 to 2009) indicating progress towards the Reef Plan targets.
- The greatest proportional catchment load reduction was the phosphorus and sediment load with an estimated 11 tonnes (one per cent) and 17,000 tonnes (one per cent) less, respectively.
- 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.



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

## Progress and status

Targets		Region	Catchments					
			Boyne (Gladstone)	Calliope	Fitzroy	Shoalwater	Styx	Water Park
% adoption improved practices	Grazing		10					
	Horticulture		9					
	Grains		14					
% loss	Wetlands	0.03	0.04	0.02	0.04	0	0.03	0.06
	Riparian	0.48	0.25	0.52	0.44	0.47	1.23	1.79
% groundcover		94	98	97	93	92	93	92
% load reduction	Nitrogen		0.4					
	Phosphorus		1					
	Sediment		1					
	Pesticides		0					
Overall marine condition								
Water quality								
Seagrass								
Corals								

■ Very good    ■ Poor  
■ Good    ■ Very poor  
■ Moderate

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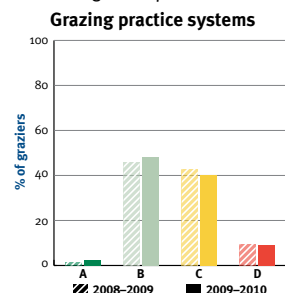
[www.reefplan.qld.gov.au](http://www.reefplan.qld.gov.au)

## Management practice results

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

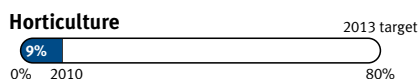


By June 2010, 10 per cent of graziers had adopted improved land management practices.

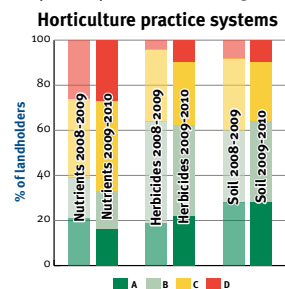


By June 2010, 51 per cent of graziers were using (A or B) practices systems that are likely to maintain land in good to very good condition or improve land in lesser condition. Improved management practice systems for grazing are presented using the ABCD framework:

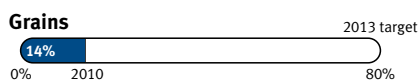
- A** – Practices likely to maintain land in very good condition or improve land in lesser condition
- B** – Practices likely to maintain land in good condition or improve land in lesser condition
- C** – Practices that may maintain land in fair condition or gradually improve land in poor condition
-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



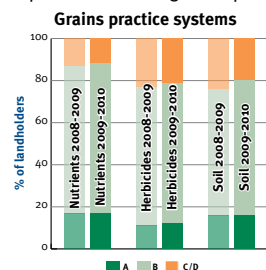
By June 2010, nine per cent of horticulture producers had adopted improved land management practices.



By June 2010, cutting-edge (A) or best management (B) practice systems were used by 33 per cent of horticulture producers for nutrients, 62 per cent for herbicides and 64 per cent for soil.



By June 2010, 14 per cent of grain growers had adopted improved land management practices.



By June 2010, cutting-edge (A) or best management (B) practice systems were used by 88 per cent of grains growers for nutrients, 79 per cent for herbicides and 80 per cent for soil.

Improved management practice systems for horticulture and grains are presented using the ABCD framework:

- A** – Cutting-edge practices
- B** – Best practices
- C/D** – Common or unacceptable practices.

## Catchment results

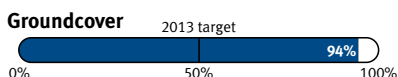
Historically, 22 per cent of wetlands and 26 per cent of riparian forest have been lost from pre-European extent.



Loss of wetlands between 2005 and 2009 was 0.03 per cent (68 hectares). This was 203 hectares less than 2001 to 2005.



Loss of riparian forest decreased considerably from 1.12 per cent (21,153 hectares) between 2001 and 2005 to 0.48 per cent (9069 hectares) between 2005 and 2009.

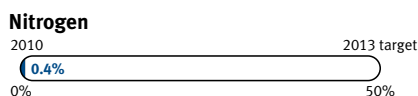


Late dry season groundcover for grazing lands was 94 per cent. This is mostly due to high rainfall during recent years.

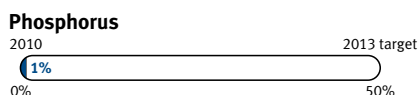
## Catchment loads

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.

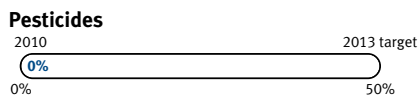
Land management changes in the horticulture and grains industries have not been modelled. Changes in riparian management also could not be modelled due to the lack of data.



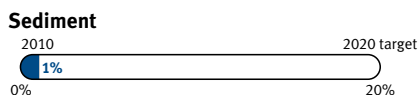
The estimated annual average total nitrogen load leaving catchments reduced by 0.4 per cent (nine tonnes). This does not include nitrogen reductions from improved cropping practices.



The estimated annual average total phosphorus load leaving catchments reduced by one per cent (11 tonnes).



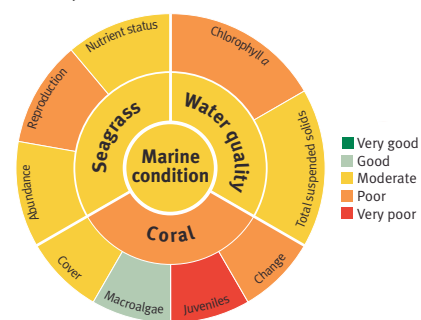
There were no load reductions for pesticides in the Fitzroy region. This does not include pesticide reductions from improved grazing practices.



The estimated annual average suspended sediment load leaving catchments reduced by one per cent (17,000 tonnes).

## Marine results

The inshore area of the region was influenced by the high flow event from the Fitzroy River in 2009-2010 and there were localised areas of coral bleaching where reefs were exposed to low salinity flood waters.



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.
- Coral cover** is a measure of the percentage of coral on a reef and indicates the capacity of coral to persist under the current environmental conditions and its potential to recover.
- Coral change** measures change in coral cover which indicates coral resilience to disturbances.
- Macroalgal cover** - high abundance indicates poor water quality and negatively affects the resilience of coral communities.
- Coral juvenile** density measures the abundance of corals less than 10 centimetres in diameter which indicates the recovery potential from disturbances.

## Water quality

Inshore water quality for the region remained moderate as it was for the 2009 baseline year. Concentrations of chlorophyll *a* and suspended solids were poor and moderate, respectively, and both were, at times, above *Water Quality Guidelines for the Great Barrier Reef Marine Park* for inshore waters.

Water quality was poorer in inshore areas. A range of pesticides was detected including diuron, atrazine, tebuthiuron and hexazinone.

## Seagrass

Inshore seagrass meadows improved from poor to moderate condition from the 2009 baseline year, which reflected stable and increasing cover at estuarine and coastal sites, respectively. The improvement in condition reflects a reversal in the trend of decreasing condition since 2005-2006. Reproductive effort and tissue nutrient content differed according to habitat type, but were poor and moderate overall, respectively.

## Coral

Inshore coral reefs have remained in poor condition since 2005-2006. The rate of increase in coral cover from 2008 to 2010 was poor and the density of juvenile hard coral colonies was very poor. There was an increase in prevalence of coral disease in the region that may be a consequence of chronic environmental stress following flooding of the Fitzroy River in 2008 and 2010. The low scores for many of the community attributes may have implications for the resilience of coral communities.