



# 2011 WATERWAY & CATCHMENT REPORT CARD

for Wallis, Smiths & Myall Lakes



CARING  
FOR  
OUR  
COUNTRY



Water quality improvement projects are made possible by the Great Lakes Environmental Special Rate

# Wallis Lake

## Water quality report card

Pipers Creek

**B**  
2011

**B**  
2007



The ecological health in Pipers Creek was relatively good, but has not improved since 2007. For most of the time, Pipers Creek is very clear and clarity has improved but due to high nutrient loads from the urban catchment of Forster, algal levels are higher than desired.

Wallis Lake

**A**  
2011

**A**  
2007



Wallis Lake is of a high conservation value, with abundant seagrass and high biodiversity. Ecological health has remained in excellent condition, water clarity is high and excess growth of algae is not evident.

Charlotte Bay

**A**  
2011

**A**  
2007



Charlotte Bay is considered to have a high conservation value, with abundant seagrass and possibly the greatest diversity of rare sponges in NSW. Ecological health has remained in excellent condition with high water clarity and low algal levels.

Mid Wallamba estuary

**D**  
2011

**D**  
2007



The waters of the mid Wallamba Estuary are often murky and have high algal levels. Results have not demonstrated improvement since 2007.

### Key Stats

- Erosion control on 36ha of land
- 792ha of wetlands protected and enhanced
- 31.8km of stream bank protected
- 341ha of native vegetation protected and enhanced
- 10ha of infested water treated for aquatic weeds
- 240m roadside stabilised to reduce erosion

## Management actions 2007-11

Wallis Lake Catchment

Protection and rehabilitation of key habitats



Acquiring and conserving 570ha of wetlands at Darawakh, Minimbah and Lower Wallamba / North Tuncurry to protect water quality and biodiversity.

Bush rehabilitation



56 volunteers active in bush regeneration at 9 sites

Bank stabilisation



Stabilising 4.2km of the Wallamba River with rock protection, planting 8,000 native plants and conserving 8.6km of streambank.

Sustainable farming practices



74 landholders participating in 6 Sustainable Farming Groups

Rubbish removal



100 volunteers remove 7 tonnes of rubbish from Wallis Lake foreshore.

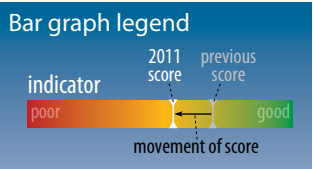
Urban Catchments

Water sensitive urban design



Four water quality gardens and one wetland built to treat 35 hectares of land in the Pipers and Muddy Creek Catchments

# Catchments of the Wallis, Smiths and Myall Lakes



# Smiths Lake

## Water quality report card

**A**  
2011



Smiths Lake is of a high conservation value, with abundant seagrass and high biodiversity. Approximately half the lake is within a Marine Park Sanctuary Zone. Ecological health is in excellent condition with high water clarity and no excess algal growth.

## Management actions 2007-11

Bush rehabilitation



4 volunteers active in bush regeneration at 1 site

Bank stabilisation



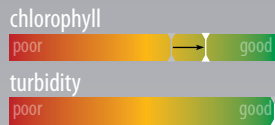
289 meters of roadside stabilised reducing the amount of sediment reaching the lake

# Myall Lakes and Lower Myall Estuary

## Water quality report card

Bombah Broadwater

**B** 2011  
**B** 2009



Myall Lakes has high conservation values, it is an internationally listed protected wetland and is part of Myall Lakes National Park. Water clarity in the Bombah Broadwater is excellent and there has been a slight reduction in excessive growth of algae between 2009 and 2011.

## Management actions 2007-11

Protection and rehabilitation of key habitats



Acquiring 376ha of wetlands in the Bulahdelah area to protect water quality and biodiversity.

Protection and rehabilitation of key habitats



Creating a major wildlife corridor at Durness protecting 90-ha of land and revegetating 70-ha with 50,000 native plants

Erosion control



74km roads and trails closed or rehabilitated to reduce erosion and sedimentation in the Myall Lakes National Park

Removal of aquatic weeds



Aquatic weeds treated along 46km of streambank.

Sustainable farming practices



26 landholders participating in 2 Sustainable Farming Groups

Lower Myall Estuary, Tea Gardens\*

**B** 2011



Overall, the ecological health of the Myall River at Tea Gardens is very good with high water clarity and extensive seagrass and mangrove areas. Algal abundance is sometimes greater than desired, which may be a direct result of algae being washed down from the Bombah Broadwater.

\* Data for this site was only collected in 2010. It will not be monitored on an ongoing basis.

## Key Stats

- Erosion control on 18ha of land
- 396ha of wetlands protected and enhanced
- 10km of stream bank protected
- 203ha of native vegetation protected and enhanced
- 138ha of infested water treated for aquatic weeds

# Report Card Overview

## Introduction

Great Lakes Council is pleased to present the very first Report Card for the waterways and catchments of Wallis, Smiths and Myall Lakes. Water quality data was collected during the summer of 2010/11 and the results are analysed, summarised and presented here.

Each waterway has received a grade based on the data which tells us the condition of the waterways this year. As more and more data is collected, we should be able to establish whether the waterways are improving or declining. We will also be able to evaluate the impacts of extreme events (such as floods) and identify trouble spots and areas in need of protection and rehabilitation.

## Methods

This Report Card is intended to read like a report card a student might receive at school. It assesses the condition or health of the waterways. A healthy waterway can be characterised by clear water and low levels of algae. It would provide habitat for a wide range of plants and animals. This report card is *rated for ecological health rather than other human related environmental health issues* such as drinking water quality, safety for swimming, bacteria, viruses or our ability to harvest shellfish or fish.

To calculate the Report Card grade, scientists have assessed the condition of particular components of the waterways using indicators. Just as your body temperature is used as an indicator that something may be wrong with your own health, ecological indicators are used to show if something is out of balance or unhealthy in the system.

Two indicators have been used to assess the condition of the waterways, *Chlorophyll a* is the amount of microscopic algae in the water. High levels indicate high inputs of nutrients. *Turbidity*, or water clarity, is a measure of the amount of sediment or dirt suspended in the water. Sensors are used by scientists to collect the information.

Measurements were taken six times over the 2010-2011 summer at eight sites across the region. The condition of each site is established by comparing the indicator levels to a benchmark level measured from an undisturbed, healthy site of a similar type.

The information collected is converted into a grading system. Grades have been set after looking at scores from over 130 sites across the state. The grade indicates where a site ranks in comparison to the other sites.

Grade	Result	Description
A	Excellent	The highest 20% of scores in the state
B	Good	Next 20% of high scores in the state
C	Fair	Middle 40% of scores in the state
D	Poor	Lower 15% of scores in the state
F	Fail	Lowest 5% of scores in the state

This report card presents the ecological health for 2011 and (where available) also shows data from 2007 or 2009 for comparison. The sliding scale bar, from poor to good, shows how indicator levels have changed from one reporting period to the next.

Further details on the information contained in this report card are available in the 2011 State of the Environment Report

## Catchment wide actions

- Great Lakes and Greater Taree City Council improving their erosion and sediment control practices on road construction
- 30 small businesses signed up to Great Lakes Councils Small Business Program to reduce their impact on the environment

## Planning and research achievements

- Hydrodynamic and Ecological Health Assessment for the Myall River.
- Adoption of the updated Smiths Lake Estuary Management Plan (2011)
- Hydrodynamic study of Wallis Lake

## The Lower Myall - Showing signs of good health

In 2010, Scientists were called on to complete a comprehensive health check for the lower Myall Estuary at Tea Gardens. Community concerns about periods of poor water clarity prompted the detailed assessment.

All the indicators of ecological health were good. Important habitats were present, there were some losses of seagrass as sand banks changed, but mangrove and saltmarsh extent had increased. Biodiversity and abundance of fish and invertebrates were as high as could be expected. In the Myall River, indicators of biological stress were low. Overall, the ecological condition in Myall River at Tea Gardens was just as good as other similar locations in the region.

Thankfully it has been shown that the occasional periods of poor water clarity are not having a detrimental effect on the river's ecology.

# How do we impact on our lakes?

This conceptual diagram provides an overview of processes and activities happening on the land and in the waterways in our region. Nutrients and sediments runoff from the land and certain activities can cause increased levels entering the waterways. Increased nutrients and sediments in the water can lead to algal blooms and block light in the water leading to the loss of seagrass beds and fauna that relies on them. Stars indicate key management actions which are working to improve the health of the waterways and are explained in the inside pages.

