2012 waterway & catchment REPORT CARD

for Wallis & Myall Lakes & Karuah Estuary

Great Lakes COUNCIL

NSW GOVERNMENT Office of Environment & Heritage

Hunter - Central Rivers CMA CATCHMENT MANAGEMENT AUTHORITY

Greater Taree City Council

CARING FOR OUR COUNTRY

KARUAH - GREAT LAKES LANDCARE

wetlandcare australia

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

Wallis Lake

Water quality report card

Pipers Creek

B 2012 | B 2011 | B 2007

chlorophyll: poor — good

turbidity: poor — good

The ecological health in Pipers Creek was good, and results were similar to 2011. While Pipers Creek was very clear, the high nutrient loads from the urban catchment of Forster resulted in algal levels that were higher than desired, and greater than last year. The very wet summer of 2012 would have influenced these results.

Wallis Lake

B 2012 | A 2011 | A 2007

chlorophyll: poor — good

turbidity: poor — good

Wallis Lake is of a high conservation value, with abundant seagrass and high biodiversity. Ecological health was good, but has declined slightly from last year due to nutrient loads from the catchment in this year's wet conditions. Water clarity was excellent but there was mild growth of algae.

Charlotte Bay

A 2012 | A 2011 | A 2007

chlorophyll: poor — good

turbidity: poor — good

Charlotte Bay is of high conservation value, with abundant seagrass and high biodiversity. Ecological health remained excellent, but there was a small increase in algal levels due to nutrient from the catchment in this year's wet conditions. Water clarity was excellent.

Mid Wallamba estuary

C 2012 | D 2011 | D 2007

chlorophyll: poor — good

turbidity: poor — good

The waters of the Wallamba River Estuary are often murky and have high algal levels. There has been a slight improvement in algae and water clarity from last year.

Management actions 2007-2012

Removal of aquatic weeds

16 hectares of Cabomba infested waterways treated

Sustainable farming practices

79 landholders participating in six Sustainable Farming Groups

Protection and rehabilitation of key habitats

Acquiring and conserving 640ha of wetlands at Darawakh, Minimbah and Lower Wallambah/ North Tuncurry to protect water quality and biodiversity

Sustainable gardening practices

46 urban residents active in Sustainable Gardening

Water sensitive urban design

Seven water quality gardens and two wetlands built to treat 36 hectares of land in the Pipers and Muddy Creek Catchments

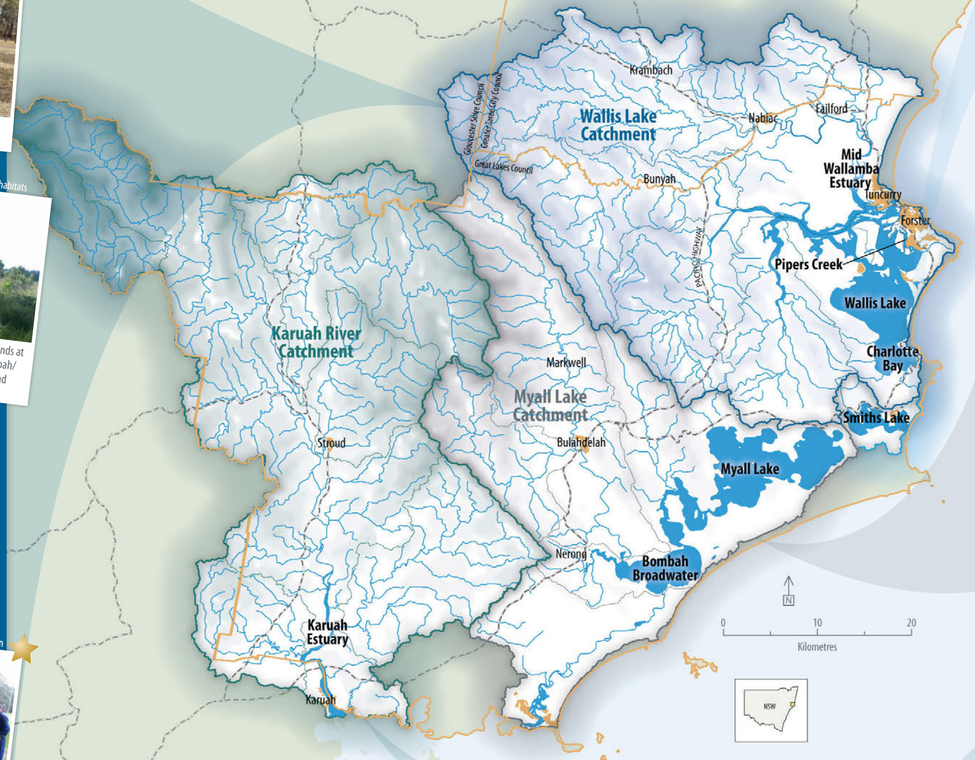
Bank stabilisation

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

Bush rehabilitation

40 volunteers active in bush regeneration at nine sites

Catchments of the Wallis and Myall Lakes and Karuah Estuary



Bar graph legend

indicator — 2012 score — 2011 score

poor — good

movement of score

Smiths Lake

Smiths Lake was not sampled this year due to it's excellent rating last year and the fact that it was opened to the ocean during the sampling period (early summer) making it difficult to compare this years results to last year.

Smiths Lake opened following high rainfall, December 2011

Myall Lakes

Water quality report card

Myall Lake

B 2012

chlorophyll: poor — good

turbidity: poor — good

Myall Lake has high conservation values, it is an internationally listed protected wetland and is part of Myall Lakes National Park. Overall, the health was good. Water clarity in the Myall Lake was excellent but there was some undesirable growth of algae.

Bombah Broadwater

D 2012 | B 2011 | B 2009

chlorophyll: poor — good

turbidity: poor — good

Overall, there was a decrease in ecological health. Water clarity in the Bombah Broadwater was only fair and due to blue-green algal booms over the summer algal abundance was very high. High summer rainfall and nutrient loads from the catchment created conditions suitable for algae to bloom.

Management actions 2007-2012

Removal of aquatic weeds

Aquatic weeds treated along 46 kms of streambank

Sustainable farming practices

28 landholders participating in two Sustainable Farming Groups

Protection and rehabilitation of key habitats

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

Erosion control

74 km roads and tails closed, rehabilitated and maintained to reduce erosion and sedimentation in Myall Lakes National Park

Protection and rehabilitation of key habitats

Acquiring 371ha of wetlands in the Bulahdelah area to protect water quality and biodiversity

Karuah Estuary

Water quality report card

Karuah Estuary

C 2012

chlorophyll: poor — good

turbidity: poor — good

Water clarity in the Karuah River was very poor, but there were only low to moderate algal levels. These algal levels are an improvement on earlier years, but the high turbidity continues to be an issue in the Karuah River estuary.

Management actions 2007-2012

Removal of aquatic weeds

Over eight kilometres of Lewis Creek treated for Alligator Weed using an integrated pest management program

Report Card Overview

Introduction

This is the second Report Card for the waterways and catchments of Wallis, and Myall Lakes and this year new information has been presented for the Karuah River and Myall Lake. The water quality data presented here was collected throughout the waterways during the summer of 2011/12.

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 compared with what we would like it to be. 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, indicators are used to show if something is out of balance or unhealthy in the system.

Further details on the information contained in this report card are available in the 2012 State of the Environment Report

Two indicators have been used to assess the condition of the waterways, Chlorophyll a is the amount of microscopic algae in the water and 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 2011-2012 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.

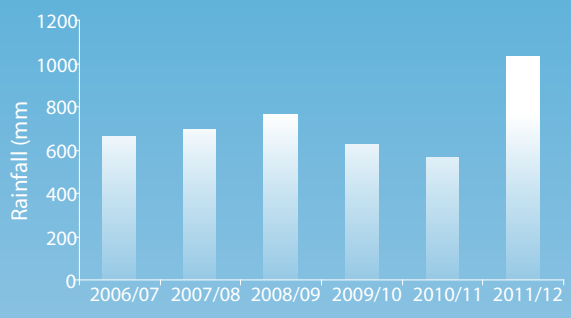
The information collected is converted into a grading system. Grades have been set after looking at scores from over 130 sites across the state. The grade indicates where a site ranks in comparison to the other sites.

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 2012 and (where available) also shows data from previous years for comparison. The sliding scale bar from poor to good shows how indicator levels have changed from one reporting period to the next.

Rainfall results

The amount of rainfall that occurs when sampling for the report card influences the report card results. If there is more rain, there is more runoff in the catchment resulting in greater quantities of sediment and nutrients entering our waterways. In 2011/12 rainfall was very high, 1.5 times higher than the average for the previous years.

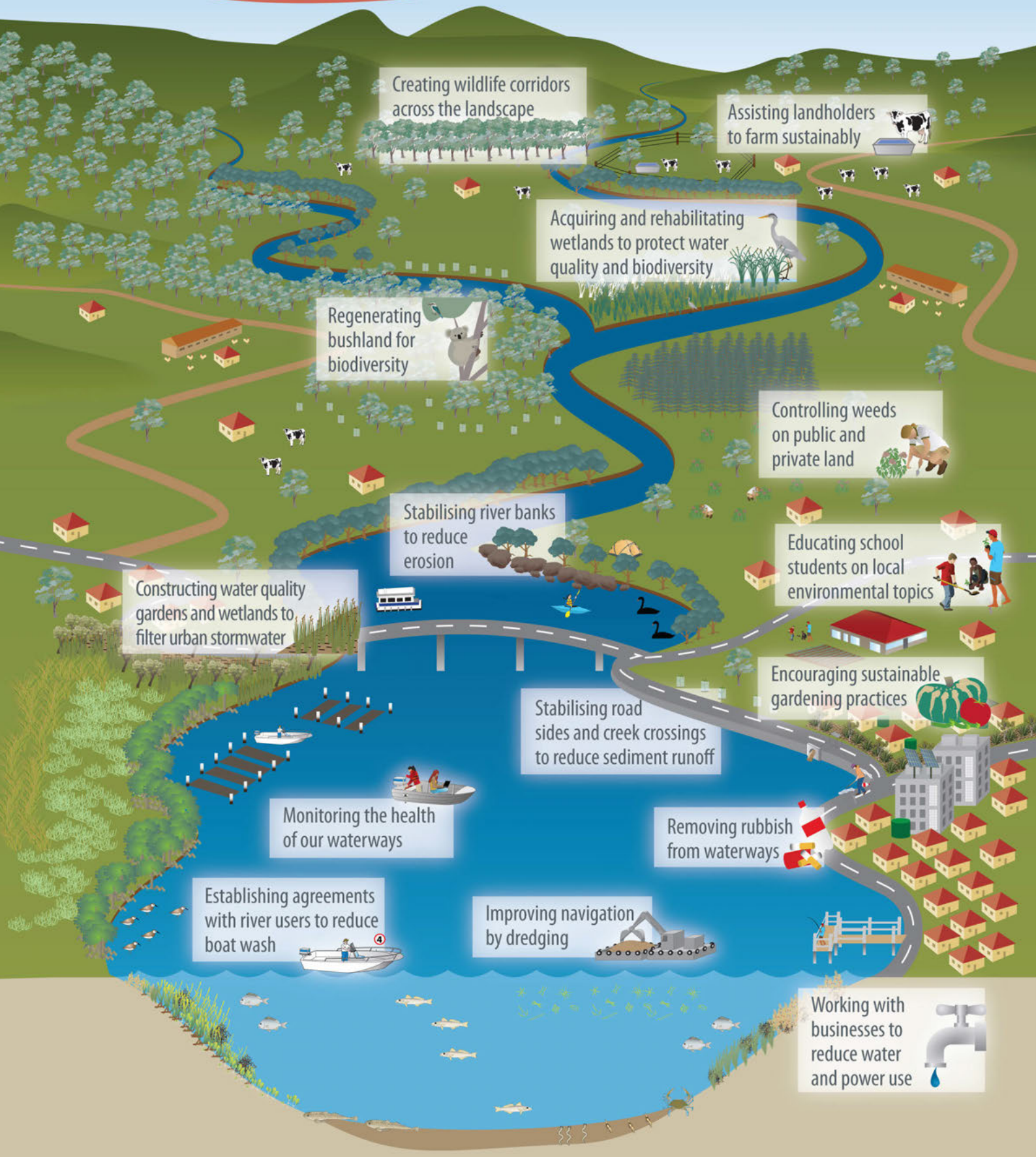


The Karuah River estuary - moderate health

In 2011, Scientists were called on to complete a comprehensive health check for the Karuah River estuary, prompted by the need to develop an catchment management plan. There was a mix of good and bad results for indicators of ecological health. Biodiversity and abundance of fish and invertebrates were as high as could be expected and indicators of biological stress were low. Seagrass habitats were declining and almost non-existent. Saltmarsh habitats were declining and being encroached upon by mangrove habitats. The Karuah River had very low water clarity, but also low algal abundance. Overall, the ecological condition in the Karuah River was moderate, but pressures on the estuary must be managed to prevent degradation.

Adam McSorley, OEH

Your Environmental Special Rate in action...



- Management actions in this report card are part funded by the Environmental Special Rate
- Council has used the Environmental Special Rate to attract grant funding, tripling its value
- The Environmental Special Rate has been in place since 2001
- Continuation of the Environmental Special Rate is essential to maintain and improve waterway and catchment health