

2014

Waterway & Catchment reportcard

for Wallis and Myall Lakes and the Karuah Estuary

Great Lakes COUNCIL

NSW GOVERNMENT Office of Environment & Heritage

NSW GOVERNMENT Local Land Services Hunter

Greater Taree City Council

Karuah Great Lakes Landcare

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

Wallis Lake

Water quality report card

Pipers Creek

2014 — B (2013) B (2012) B (2011) B (2007)

algae (chlorophyll) — clarity (turbidity)

The ecological health in Pipers Creek continues to be good, with results similar to 2011, 2012 and 2013. Waters in Pipers Creek remained clear. The nutrient loads from the urban catchment of Forster resulted in algal levels that were still higher than desired, but slightly less than last year.

Wallis Lake

2014 — B (2013) B (2012) A (2011) A (2007)

algae (chlorophyll) — clarity (turbidity)

Wallis Lake is of a high conservation value, with abundant seagrass and high biodiversity. Ecological health was excellent this year with the amount of algal growth less than the last two years.

Charlotte Bay

2014 — A (2013) A (2012) A (2011) A (2007)

algae (chlorophyll) — clarity (turbidity)

Charlotte Bay is of high conservation value, with abundant seagrass and high biodiversity. Ecological health remained excellent, algal growth is at very low levels, reversing the small increase in algal levels seen in 2012. Water clarity was excellent.

Mid Wallamba estuary

2014 — B (2013) C (2012) D (2011) D (2007)

algae (chlorophyll) — clarity (turbidity)

Waters of the Wallamba River estuary have improved since 2012 and are very clear but algal growth is still higher than desired. The clear waters provide lots of light, which combined with nutrients from the catchment resulted in overall high concentrations of algae.

Wallamba cove

2014

algae (chlorophyll) — clarity (turbidity)

This is the first time Wallamba Cove has been sampled. Waters were between fair and good, with algal growth increasing at sites furthest from the main estuary.

Management actions 2007-2014

LAND FOR WILDLIFE
29 properties across the LGA, and 23 in the Wallis Lake catchment have registered with LFW



EROSION AND SEDIMENT CONTROL
Protecting creek crossings in the upper reaches of the Wallamba River catchment



PROTECTION AND REHABILITATION OF KEY HABITATS
Acquiring and conserving 887 ha of wetlands at Darawakh, Minimbah and Lower Wallamba/North Tuncurry to protect water quality and biodiversity.



WATER SENSITIVE URBAN DESIGN
9 water quality gardens and two wetlands built to treat 39.6 ha of land in the Pipers and Muddy Creek catchments



BUSH REHABILITATION
43 volunteers active in bush regeneration at 10 sites



WORKING WITH STUDENTS
Incorporated water quality and catchment management issues into the Great Lakes College Geography curriculum for years 7–10

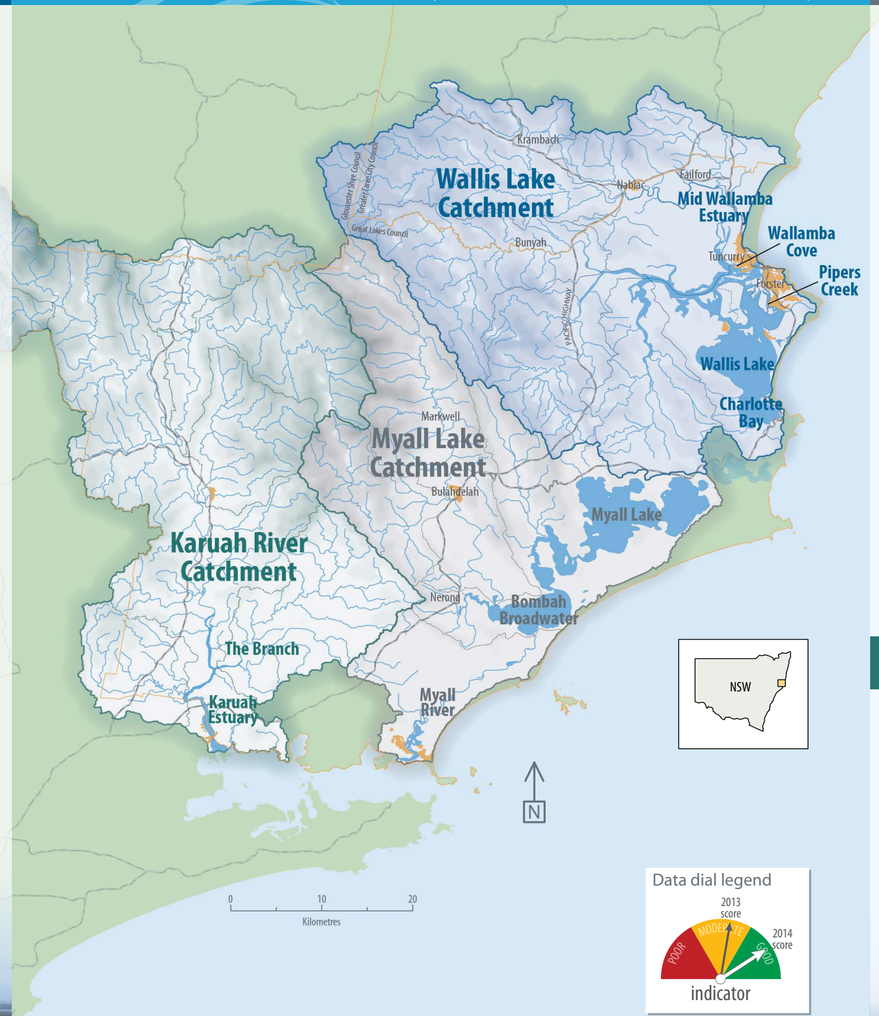


BANK STABILISATION
Stabilising 5.1 km of the Wallamba River with rock protection, planting 9170 native plants and conserving 9.5km of stream bank





Catchments of the Wallis and Myall Lakes and the Karuah Estuary



Data dial legend

Myall Lakes

Water quality report card

Myall Lake

2014 — B (2013) B (2012)

algae (chlorophyll) — clarity (turbidity)

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

Myall River

2014 — B (2011)

algae (chlorophyll) — clarity (turbidity)

The Myall River connects the Bombah Broadwater with Port Stephens and thence the sea. Overall ecological health was good but the river is affected by algae moving downstream from Bombah Broadwater.

Bombah Broadwater

2014 — B (2013) D (2012) B (2011) B (2007)

algae (chlorophyll) — clarity (turbidity)

The Bombah Broadwater is part of Myall Lakes National Park. Overall ecological health has remained the same as last year. However, there were still large amounts of algae over summer.

Management actions 2007-2014

REMOVAL OF AQUATIC WEEDS
Aquatic weeds monitored along 46km of streambank and 3 ha of waterways treated



EROSION CONTROL
120km roads and trails closed, rehabilitated and maintained to reduce erosion and sedimentation in Myall Lakes National Park



SUSTAINABILITY AND LANDCARE GROUPS
2 sustainability groups are active in the catchment



PROTECTION AND REHABILITATION OF KEY HABITATS
Acquiring 371 ha of wetlands in the Bulahdelah area, creating a major wildlife corridor at Durness protecting 90 ha of land and revegetating 70 ha to protect water quality and biodiversity



Karuah Estuary

Water quality report card

Karuah Estuary

2014 — C (2012)

algae (chlorophyll) — clarity (turbidity)

Waters of the upper Karuah estuary are much clearer than in past reports but excessive algal growth remains a problem.

The Branch

2014

algae (chlorophyll) — clarity (turbidity)

Clarity of the waters of the Branch River estuary is good but there are signs of excessive algal growth. In common with all river estuaries, the Karuah and The Branch are strongly affected by the quality of runoff from their catchment.

Management actions 2007-2014

COMMUNITY EDUCATION
Informal one-on-one farm and industry visits, field days, workshops, and presentations to development the Karuah River Catchment Plan



CATCHMENT FORUM
135 community stakeholders over two days participated in the first Karuah Catchment Forum in June





Report Card Overview

Further details on the information contained in this report card are available in the 2014 Water Quality Report www.greatlakes.nsw.gov.au/Environment/Plans_and_Strategies

Introduction

This is the fourth Report Card for the waterways and catchments within the Great Lakes Local Government Area. The water quality data presented here was collected during the summer of 2013-2014.

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 changing. We will also be able to evaluate the impacts of extreme events (such as floods) and identify 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 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 parts 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.

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 2013-2014 summer at seven 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 grade. 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.

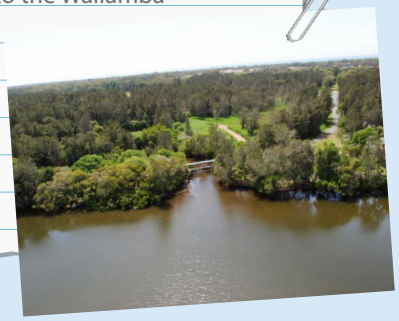
Grade	Result	Description
A	Excellent	The highest 20% of scores in the state
B	Good	Next 20% of high scores in the state
C	Fair	Middle 40% of scores in the state
D	Poor	Lower 15% of scores in the state
F	Fail	Lowest 5% of scores in the state

This Report Card presents the ecological health for 2014 and (where available) also shows data from 2011 to 2013 for comparison. The dial from poor to good shows how chlorophyll and turbidity levels have changed since the last Report Card.

Spotlight on the Wallamba River estuary

DARAWAKH CREEK AND FROGALLA SWAMP

This 1000ha wetland was identified as a key source of acid flowing into the Wallamba River from historical agricultural drainage works. Restoration works commenced in 2003 including removal of drains and a tidal headwall, weed control and revegetation as well as incorporation of key wetlands into the existing Darawank Nature Reserve. Significant improvements in downstream water quality have since been achieved as well as the restoration and conservation of biodiversity.



RIVERBANK PROTECTION AND RESTORATION WORKS

To protect and reinforce riverbanks from erosion rock revetment walls have been installed along high-risk sites. Rock fillets have also been installed to assist mangroves regenerate along eroding riverbanks and riparian areas have been replanted with native vegetation.



GEREEBA AND WALLAMBA ISLAND RESTORATION PROJECT

Works are currently occurring on Gereeba and Wallamba Island wetlands to restore the islands' biodiversity as well as the important services their wetlands provide. Activities on the island include fox and wild dog control, weed removal and native replanting. This project has involved multiple partners including the Environmental Trust, Biodiversity Fund, OEH and an innovative project with Greenfleet to sequester carbon through replanting of native vegetation.



Tuncurry

Wallamba River

Forster

Wallis Island

WALLAMBA RIVER MOU

High speed use of waterways can wash away riverbanks, increasing water turbidity and damaging important fish habitats. To manage this, a Memorandum of Understanding has been established between government agencies, oyster farmers, caravan park owners, water skiers and fishermen to ensure that boating activities are safe and sustainably managed. Activities causing excessive wakes now have a designated area on the western side of Wallis Lake and water skiers can use a 9km area north of the Wallamba broadwater.