

Report Card 2014

love our living lakes



Introduction

This is the third Report Card for the Tuggerah Lakes estuary. The estuary's ecological health data presented here was collected in the lake basins of the Tuggerah Lakes estuary during the summer of 2013/2014.

The estuary was divided into five zones (see map), with each zone receiving an estuary health grade based on the data collected there between October and April. As Council continues to collect data we should be able to establish whether long-term trends indicate the health of the estuary is improving, declining or remaining stable. The data will also allow us to be more informed when identifying target areas in need of rehabilitation and conservation.

The Tuggerah Lakes Estuary

Located in Wyong Shire on the New South Wales Central Coast, the Tuggerah Lakes estuary consists of three interconnected shallow coastal lagoons – Lake Munmorah, Budgewoi Lake and Tuggerah Lake which open to the sea at The Entrance.

The lakes spread over 80 square kilometres, and stretch from the suburbs of Killarney Vale in the south to Lake Munmorah in the north. The catchment area is much larger spanning over 710 square kilometres and covers most of Wyong Shire. It includes five major tributaries – Wyong River, Ourimbah, Wallarah/Spring, Tumbi and Saltwater Creeks.

The Tuggerah Lakes estuary and its catchment is a diverse area with a remarkable variety of habitats, landscapes, scenery, wildlife and native plants. The health and beauty of the estuary is vital to the district's strong tourism industry. It is also the playground for many recreational pursuits and supports a significant commercial fishing industry and recreational fishing activities.

Methods

The report card is like a health check for our estuary: it compares the current ecological health of the Tuggerah Lakes estuary with ideal estuary health.

To calculate the report card grades, scientists from the NSW Office of Environment and Heritage (OEH) have assessed three important indicators of estuary health:

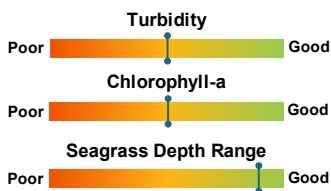
Chlorophyll-a – an indication of levels of microalgae and nutrients in the water. High levels of chlorophyll-a indicate high inputs of nutrients which can lead to algal blooms.

Turbidity – a measure of water clarity or murkiness. It is affected by the amount of coloured particles suspended in the water, such as sand, silt, clay and microalgae.

Seagrass depth range – a biological indicator of water clarity over longer time periods. Seagrass growth depends on how deep light penetrates through the water.

A healthy estuary has low levels of both microalgae and turbidity (noting that the Tuggerah Lakes estuary is shallow, sediment based and wind driven so will always look turbid to some degree).

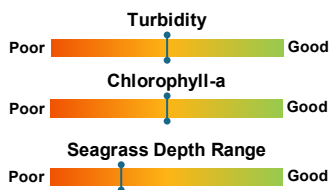
The information collected by OEH scientists is converted into a grading system which compares the health of waterways across the state. The report card also shows data from the three previous years for comparison.



Lake Munmorah

B 2014 **B** 2013 **B** 2012

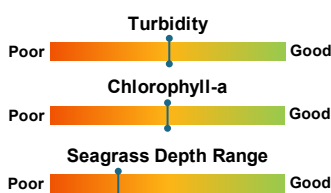
Notable increases in the average level of turbidity negatively affected the water quality grade in Lake Munmorah for 2014. Whilst seagrass depth range remained good and algal levels were stable the overall grade was reduced as a result of the increases in turbidity.



Budgewoi Lake

C 2014 **B** 2013 **C** 2012

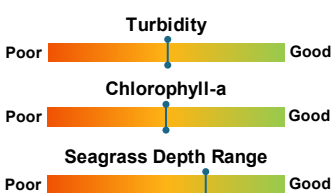
Stable turbidity levels and algal concentrations resulted in Budgewoi retaining a rating of fair water quality in 2014. However, a marked reduction in seagrass depth range from 2013 was recorded.



Tuggerah Lake North

B 2014 **C** 2013 **B** 2012

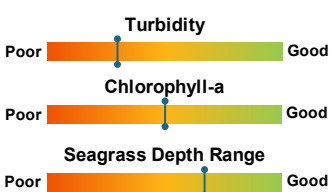
In the northern section of Tuggerah Lake, reductions in average turbidity levels in 2014 were counteracted by increases in average algal concentration. A slight decrease in seagrass depth range was also observed as compared to 2013. The balancing out of these changes resulted in the overall grade for this zone remaining the same as last year.



Tuggerah Lake Central

B 2014 **B** 2013 **B** 2012

The seagrass depth range and turbidity levels in the central part of Tuggerah Lake remained similar to the previous year, however there was a small increase in concentration of chlorophyll-a. The changes were small enough that grading for the central part of Tuggerah Lake remained as fair.



Tuggerah Lake South

B 2014 **B** 2013 **B** 2012

The southern part of Tuggerah Lake had increases in the average levels of both water quality indicators during 2014 as compared to the previous year. The changes were small enough to not affect the overall water quality grade with a good seagrass depth range keeping the overall condition grade the same as last year.

Images above, left to right: Dry sump GPT at Tuggerah Pde Long Jetty, Vegetation and litter collected in a GPT in Gorokan, Wrack collected from Tuggerah Lake, Bin hutches at Long Jetty

Tuggerah Lakes Estuary



The Grades explained

- A Excellent** The indicators meet all benchmarks for more than most of the year. Equal to the best 20% of scores in NSW.
- B Good** The indicators meet all benchmarks for most of the year. Equal to the next 30% of scores in NSW.
- C Fair** The indicators meet some benchmarks for part of the year. Equal to the middle 30% of scores in NSW.
- D Poor** The indicators met few benchmarks for part of the year. Equal to the next 15% of scores in NSW.
- F Very Poor** The indicators never meet benchmarks. Equal to the worst 5% of scores in NSW.



Management actions

The health of the Tuggerah Lakes estuary is dependent on the health of the broader catchment area – whatever runs off the land, flows down the rivers or enters the stormwater system ends up in our lakes. What we all do in the catchment impacts the estuary, however by working together we can improve and protect it.

Actions Council has taken to help

- Continuing to construct and upgrade gross pollutant traps, wetlands and other stormwater infrastructure to reduce sediment, litter and nutrient loads from the catchment.
- Protecting and improving natural wetlands, riparian vegetation and saltmarsh, to help reduce erosion and filter runoff before it enters the estuary.
- Dredging The Entrance channel (when triggers are met) to maintain exchange with the ocean.
- Removing excess seagrass wrack and floating algae to enhance the water quality of the estuary and improve circulation of water into nearshore areas.



Simple things you can do to help keep your patch healthy

- Wash your car on the grass or even better at a car wash – using a car wash means the pollutants from the car and the detergent you use are captured and disposed of into the sewer rather than ending up in the lakes.
- Limit the use of fertiliser on your lawn and garden or grow a native garden which doesn't need as much fertiliser – this helps reduce the nutrients entering the lake which can cause algal blooms.
- Pick up your dog's poo and put it in the bin – this also reduces nutrients and makes the foreshores more pleasant for other people.
- Dispose of your garden waste and lawn clippings in your green bin, not by dumping it in reserves and stormwater channels – this will reduce the spread of weeds and will keep the stormwater flowing.
- Keep to formed walking trails and boat ramps to minimise your impact.
- Always put litter in the bin.
- Protect saltmarsh, wetlands and bushland in your neighbourhood by minimising clearing and keeping weeds out of our natural areas.
- Volunteer! Find out about joining local Landcare group – 4350 5555.

Keeping our estuary healthy is the responsibility of everyone who lives in, works in or visits our Shire. We all impact the lake, let's make our impacts positive.

More Information

For more information or to view our range of videos on the Tuggerah Lakes, including an animation please visit www.loveourlivinglakes.com.au

Contact

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Version 2



Wyong
Shire
Council