MIDCOAST council

WATERWAY AND CATCHMENT REPORT CARD 2019

Reporting on data
October 2018 to April 2019

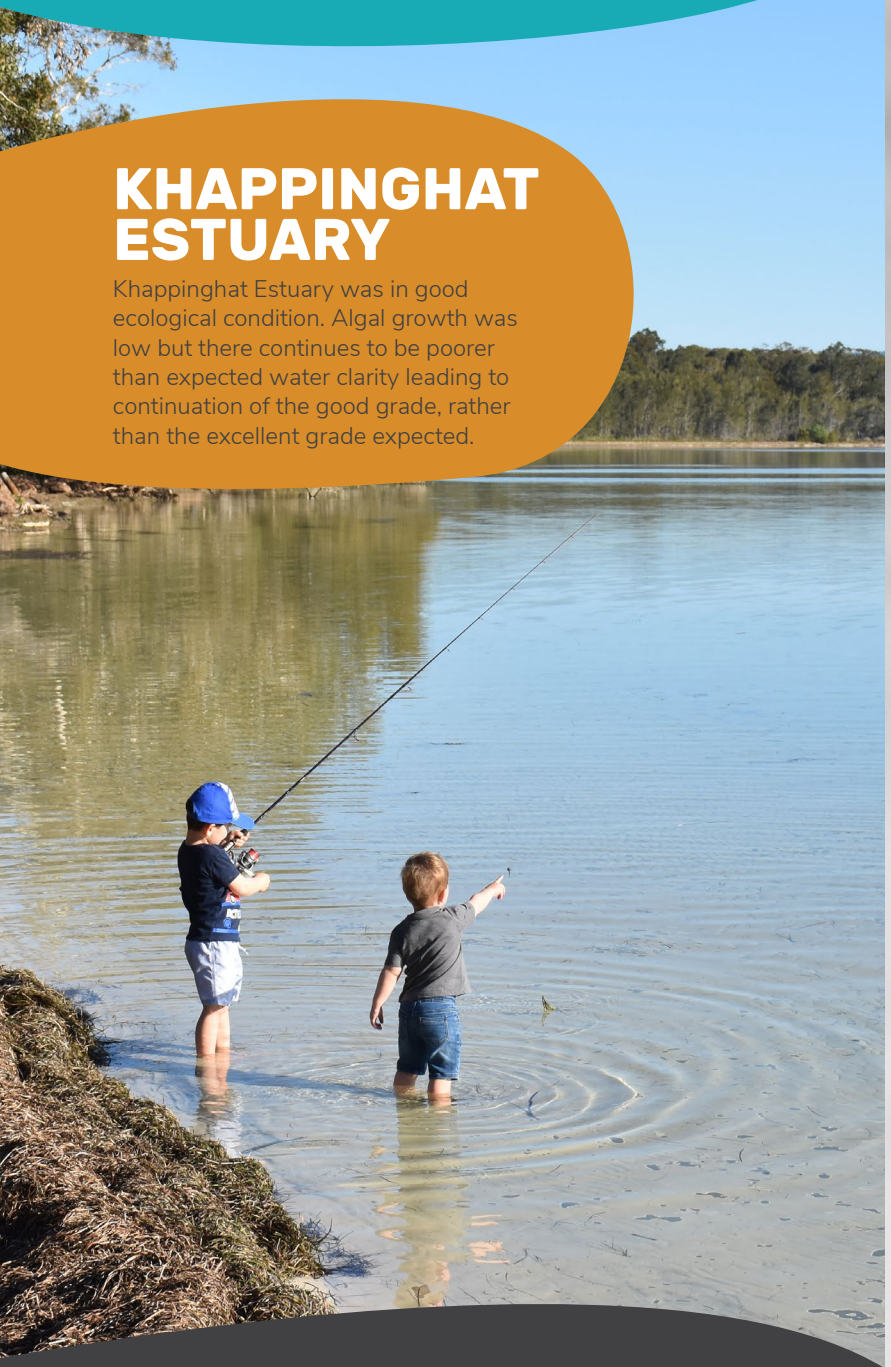
NSW GOVERNMENT

This project is supported by the New South Wales Government through its Coast and Estuary Program, Department of Planning, Industry and Environment and Local Land Services.

MANNING RIVER ESTUARY

The Manning River Estuary maintained good overall ecological condition. Water clarity was excellent throughout the estuary, however algal levels continued to be excessive. The high algal levels reflect optimum growing conditions of clear warm water and abundant sunlight throughout the sampling period, which allowed the algae to utilise nutrient runoff from the catchment following summer storms.

The depth range where seagrass is able to grow increased in the lower reaches to an excellent grade, the best results seen so far. Seagrass depth reduced slightly in the mid reaches and remained poor. Seagrass disappeared from the upper reaches for the first time since sampling began.

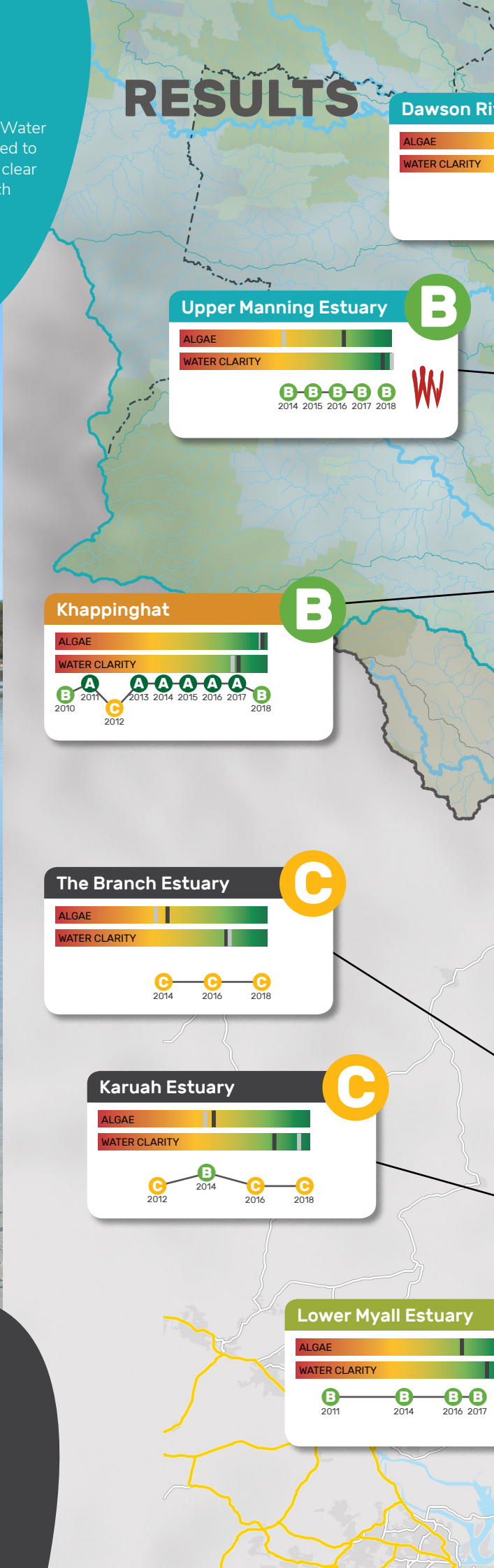


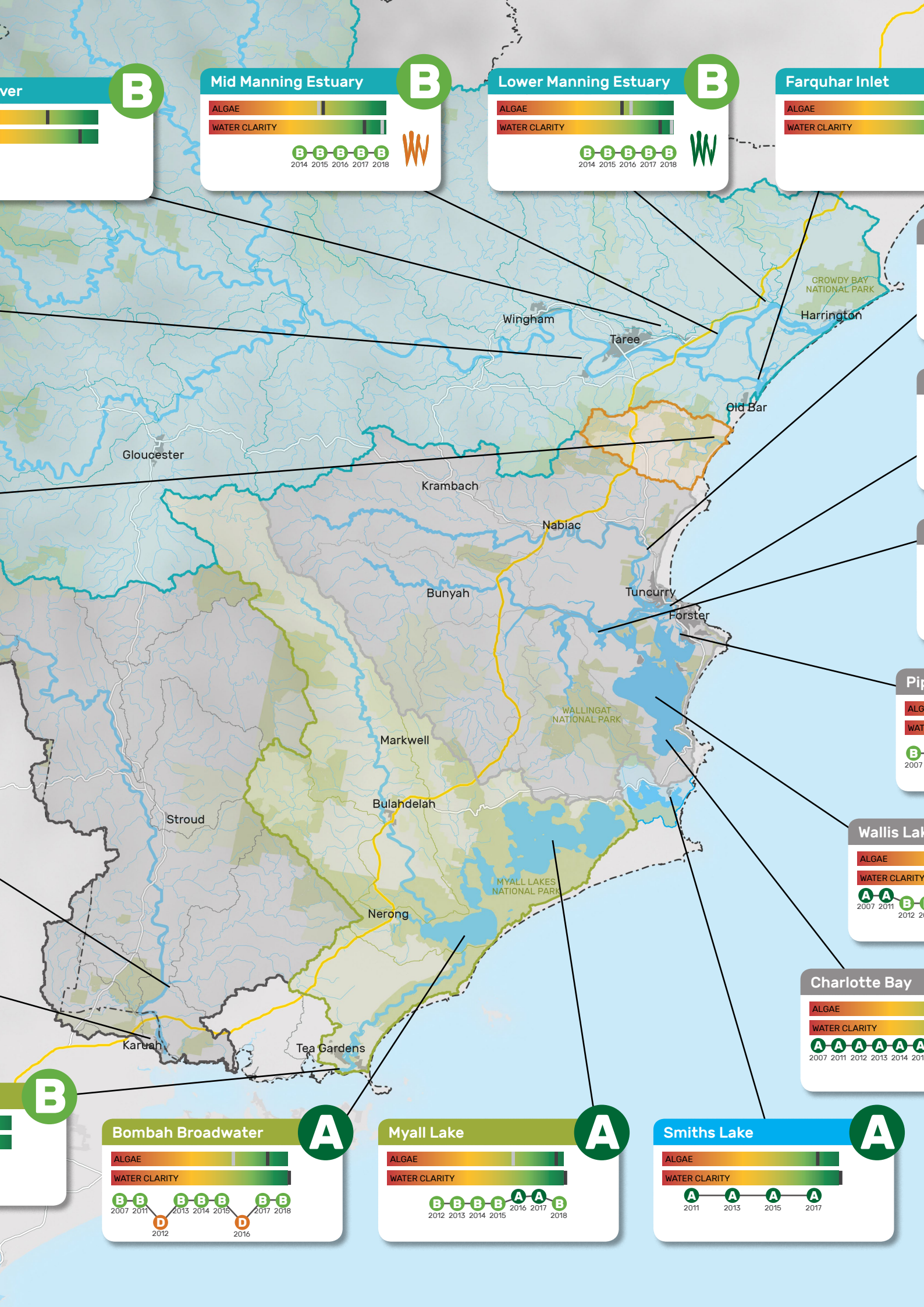
KHAPPINGHAT ESTUARY

Khappinghat Estuary was in good ecological condition. Algal growth was low but there continues to be poorer than expected water clarity leading to continuation of the good grade, rather than the excellent grade expected.

KARUAH RIVER ESTUARY

The Karuah River and The Branch Estuaries continued to show signs of significantly impaired estuary health with much higher than desired algal growth. These grades reflect excess nutrients from catchment runoff, clear water and low flows in the catchment. As with last year, there was no seagrass in the mid to upper reaches of the Karuah River Estuary, likely a consequence of past and present conditions.



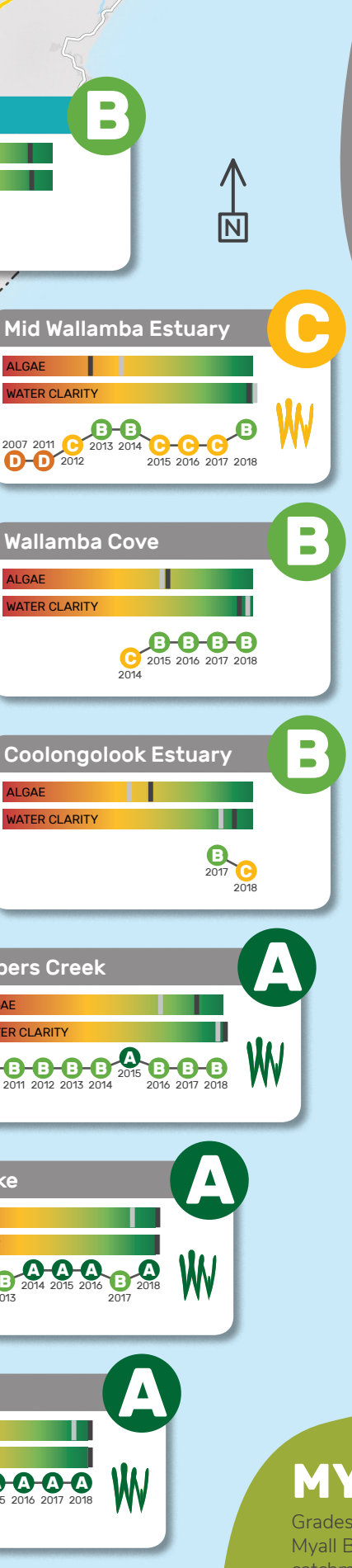

Mid Manning Estuary
B
ALGAE
WATER CLARITY
2014 2015 2016 2017 2018
Lower Manning Estuary
B
ALGAE
WATER CLARITY
2014 2015 2016 2017 2018
Farquhar Inlet
ALGAE
WATER CLARITY
CROWDY BAY NATIONAL PARK
Harrington
Wingham
Taree
Old Bar
Gloucester
Krambach
Nabiac
Bunyah
Tuncurry
Forster
WALLINGAT NATIONAL PARK
Markwell
Bulahdelah
Stroud
MYALL LAKES NATIONAL PARK
Nerong
Karuah
Tea Gardens
Wallis Lak
ALGAE
WATER CLARITY
2007 2011 2012
Charlotte Bay
ALGAE
WATER CLARITY
2007 2011 2012 2013 2014
Bombah Broadwater
A
ALGAE
WATER CLARITY
2007 2011 2012 2013 2014 2015 2016 2017 2018
Myall Lake
A
ALGAE
WATER CLARITY
2012 2013 2014 2015 2016 2017 2018
Smiths Lake
A
ALGAE
WATER CLARITY
2011 2013 2015 2017

WALLIS LAKE

Grades for Wallis Lake and Pipers Creek were excellent this year and this was the case for both water clarity and algae. While water clarity in the Mid Wallamba Estuary was good, higher than desired algal growth from excess nutrients, clear water and low flows resulted in a poorer overall grade this year.

The Coolongolook Estuary continued to show significant algal growth but water clarity was generally acceptable. Higher levels of algal growth in Wallamba Cove shows it continues to be affected by stormwater runoff from Tuncurry.

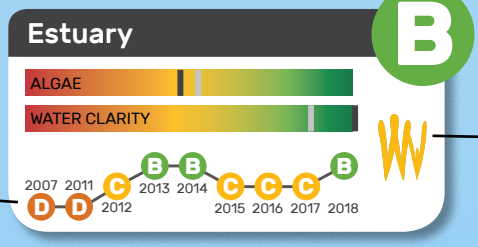
The depth where seagrass is able to grow improved at most sites and was excellent in Wallis Lake, but remained poor in the Mid Wallamba Estuary.



ESTUARY SCORE KEY

very poor — excellent

Indicator scores: 2018 score, 2019 score



Historical grades

Overall grade: This represents ecological condition, it is a combination of algae and water clarity scores. Where there is no grade, no data was collected at these locations.

Seagrass depth range score: The seagrass score indicates how deep the seagrass is growing and if the seagrass area is expanding or contracting. Where there are no seagrass results, no data was collected at these locations.

very poor | poor | moderate | good | excellent

For more details see the Waterway and Catchment Technical Report 2019 found at www.midcoast.nsw.gov.au/reportcard

SMITHS LAKE

Smiths Lake remained in excellent condition despite an extended dry period which resulted in a dramatic drop in lake levels. Low rainfall and little runoff resulted in clear waters and low nutrient inputs.

MYALL LAKES

Grades for Myall Broadwater and Myall Lake improved from good condition to excellent this year. As the Myall Broadwater, and to some extent Myall Lake, is strongly influenced by runoff from the Myall River catchment, continuing dry conditions meant that there was little runoff during the sampling times, resulting in clear waters and small amounts of algae. The marked variability in condition swinging from good to poor and back again emphasises the role of inputs from the upper Myall River and the need to continue to reduce nutrients from land use activities in the catchment.

The Myall River Estuary upstream of Tea Gardens was in good ecological health, algae levels varied from moderate to good and water clarity was good. This area is usually strongly influenced by the condition of the outflow from the Broadwater, but with limited runoff from rainfall, waters moved by tides have a greater influence on water quality.

"For me it's all about water. Living near it, being surrounded by it and working on it for a living."

Peter Mannow
Tourism operator

"I love going snorkelling and seeing all the fish."

Melaleuca - Age 5

"My favourite thing to do is go riding on the river in Pop's boat."

Cameron - Age 7

"Water is a big part of my life and in this area we have the best. The diversity of environments in the MidCoast make it a wonderful place to live!"

John Dorrington, Member of the Wednesday Kayak Group

"If I had one wish for our waterways it is for them to remain healthy for our future generations to enjoy."

Brad Verdich - Oyster Farmer

HOW CAN YOU CARE FOR YOUR LOCAL WATERWAYS?

- Explore your local parks, rivers, creeks and lakes, create new memories – stick to trails and take all your rubbish with you
- Pick up after your pets so their waste doesn't end up in our waterways
- Help improve our natural areas by getting involved in community groups such as landcare and dunecare
- Plant local natives in your garden and remove weeds to help improve water quality and provide habitat for animals
- If you have creek or river frontage fence out livestock and have off-stream watering
- Build a raingarden to slow and filter stormwater from your property before it reaches our waterways
- Pick up litter before it gets washed down the drain
- Wash your car on the grass or at a car wash

Why a Report Card?

Report Cards are an effective way to check on the health of our waterways. They help us compare current conditions with the condition we would like them to be. Scientists use indicators to 'health check' our waterways. 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. The indicators are selected to assess the overall health or ecological condition. The results of the Report Card are used to guide future management actions and ensure long-term ecological health of our catchments.

PATHWAYS OF IMPACT

Activities

What we do on the land impacts on the quality of water that runs off. If the quality of the runoff is poor it puts stress on the environment.

Stressors

Stressors are changes to the environment that result from the activity, these can lead to ecological harm. Stressors can include nutrients, acid leachate and sediment in the water (turbidity).

Ecological impacts

REPORT CARD INDICATORS

Seagrass is the basis of the food web in healthy estuaries. Seagrass provides essential habitat and food for marine life. Where seagrass is abundant so is aquatic life and as such, it is an excellent indicator of ecological health. Seagrass growth is affected by a number of factors including nutrient levels, algal growth, physical removal and water clarity. Water clarity (turbidity) is directly linked to seagrass growth and is used as a surrogate for ecological health. When water clarity is high, seagrass is abundant as there is plenty of light for it to thrive.

Algae are microscopic plants that can grow excessively with high levels of nutrient inputs. Nutrients are delivered to estuaries from urban stormwater, fertiliser, runoff from farms, gardens and seepage from effluent disposal and septic tanks. Algal blooms can reduce the amount of light reaching seagrass beds limiting their growth. When algal blooms die and start to decay, the resulting bacterial activity can reduce oxygen levels in the water body and lead to fish kills. Measuring the amount of algae in a water body is an indicator of ecological health, chlorophyll is a measure used to determine the amount of algae in a water body.

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