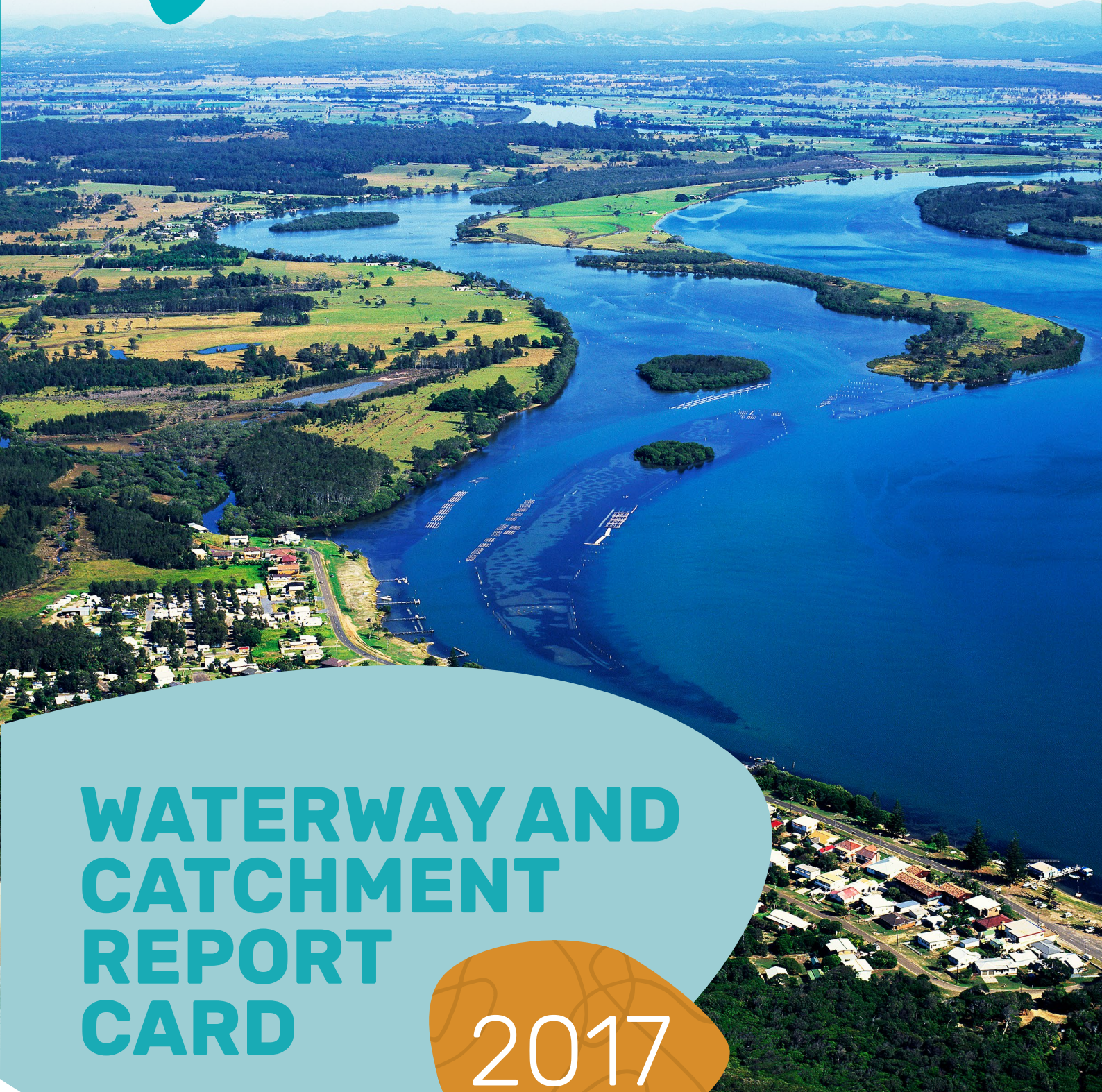




MIDCOAST
council



WATERWAY AND CATCHMENT REPORT CARD

2017



Office of
Environment
& Heritage



Local Land
Services
Hunter

RESULTS

KHAPPINGHAT

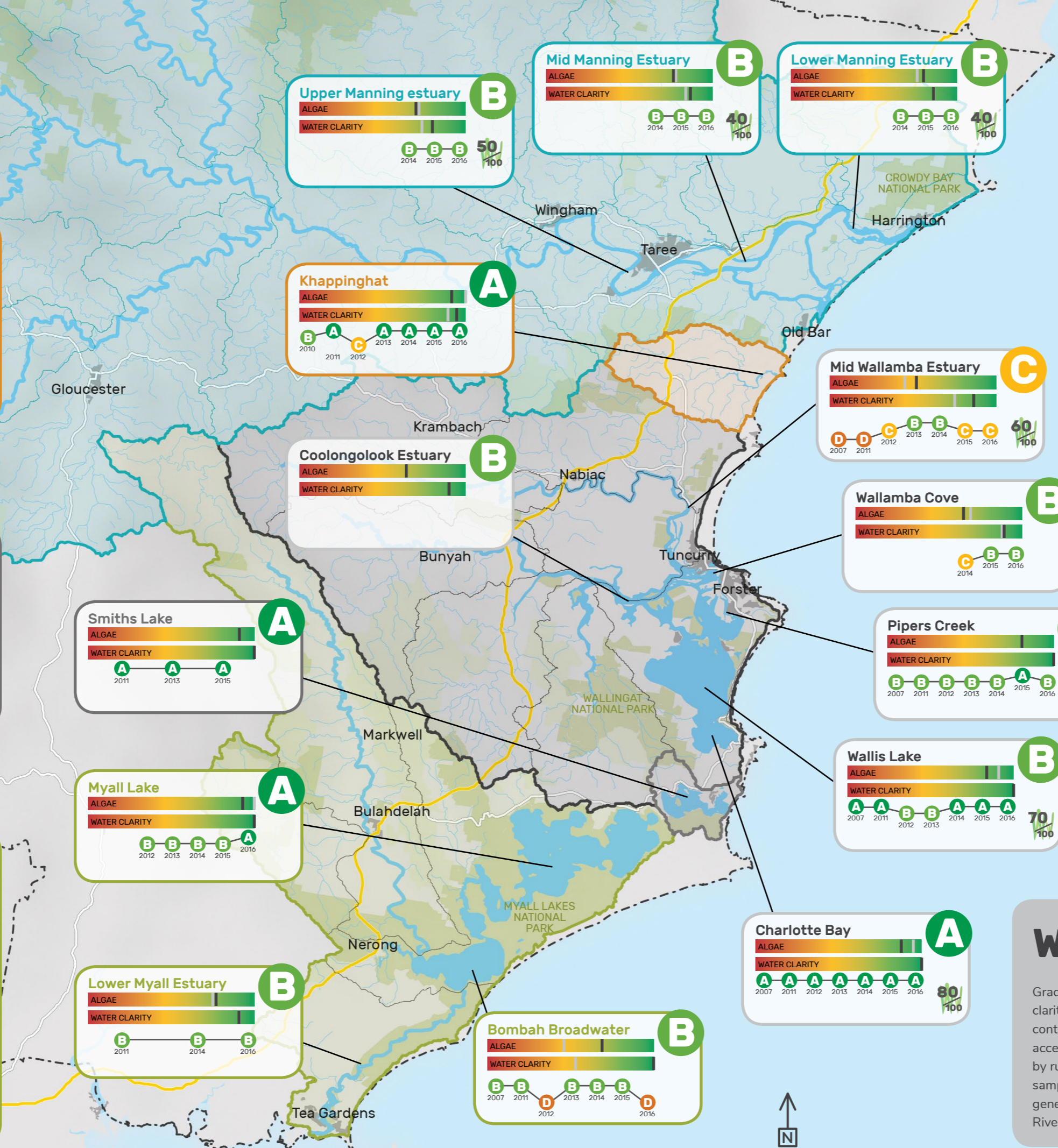
The Khappinghat estuary, located in Salwater National Park is surrounded by Khappinghat Nature Reserve and is in excellent ecological condition. Algal growth is low and water clarity high, continuing the excellent scores from the last 10 years.

SMITHS LAKE

The overall condition of Smiths Lake remains excellent. The hot dry summer influenced the results, ensuring that water clarity was excellent at all times, but this also meant that algal growth was occasionally greater than desired. The weather also resulted in markedly high water temperatures.

MYALL LAKES

The condition of Bombah Broadwater, and to some extent Myall Lake, is strongly influenced by runoff from the Myall River catchment. The dry conditions meant that there was little runoff during the first 5 sampling times, resulting in clear waters and small amounts of algae. An algal bloom after the heavy March rains pulled the Broadwater score down. Conditions in the Myall River at Tea Gardens are influenced by algae in the water from the Broadwater and water clarity is influenced by sediments lifted from the sea floor by strong currents resulting from entrance dredging.



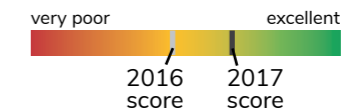
MANNING ESTUARY

The Manning River Estuary is in good ecological condition with all sites maintaining their grade over the past four years. The extended period of dry weather this year resulted in good water clarity, likely due to minimal catchment runoff. In the upper and middle estuary, algal levels were greater than desirable - abundant light during the dry period provided suitable growing conditions. Seagrass continued to grow over a wide depth range.

In the lower estuary, there was little difference in the water quality results from previous years indicating that these sites are not as strongly influenced by catchment inputs, due to the oceanic influence. At this site, there was a large (unexplained) decrease in range of depths where seagrass grew. If this continues next year further investigation will be required.

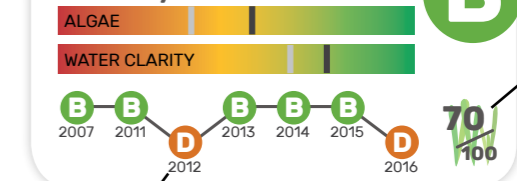
ESTUARY SCORE KEY

Indicator scores:



Overall grade: Ecological condition, a combination of algae and water clarity scores.

Estuary



Seagrass score: Measure of how water quality affects depth of seagrass growth and therefore cover

Historical grades

For more details see Waterway and Catchment Technical Report 2017 found at www.midcoast.nsw.gov.au/reportcard

WALLIS LAKE

Grades for Wallis Lake continue to range from good to excellent, with very good water clarity and only occasional undesirable growth of algae. The Mid Wallamba Estuary continues to show a pattern of constant moderate growth of algae but generally acceptable water clarity. Upstream parts of Wallamba Cove continue to be affected by runoff from Tuncurry stimulating algal growth. The Mid Coolongolook Estuary was sampled for the first time this year and results show some degree of algal growth but generally acceptable water clarity. Seagrass depth ranges vary from poor in Wallamba River, to good at Pipers and Wallis and excellent in Charlotte Bay.

PARTNERSHIPS

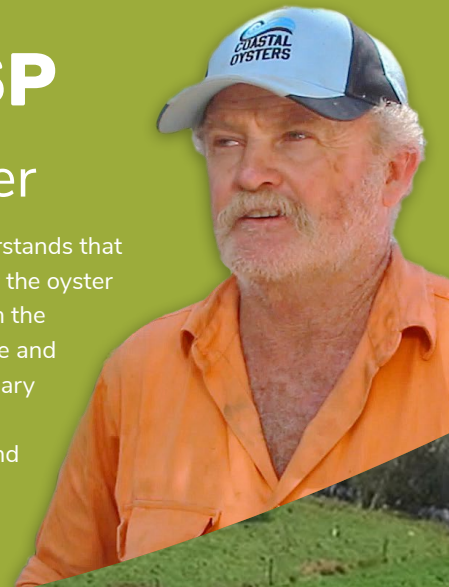
Healthy landscapes equal healthy waterways. The best way to create healthy landscapes is to involve the people that live and work in them.



IAN CRISP

Oyster Farmer

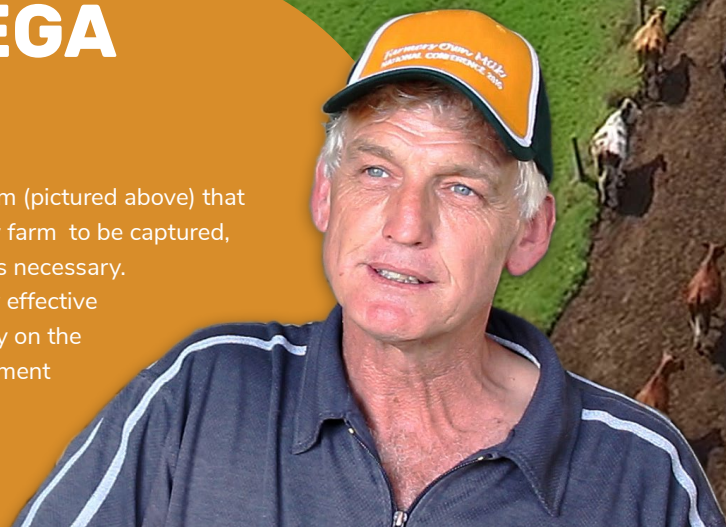
Oyster grower Ian Crisp understands that good water quality is good for the oyster industry. Ian is a true leader in the Manning, he has a strong voice and recognises that improved estuary health is only achievable if upstream and downstream land managers work together.



JULIAN BIEGA

Dairy Farmer

Julian has installed an innovative system (pictured above) that allows the effluent created on his dairy farm to be captured, stored and irrigated on his paddocks as necessary. The new system has proven to be very effective with immediate changes in productivity on the irrigated paddocks and the reestablishment of a salt marsh in a nearby wetland.

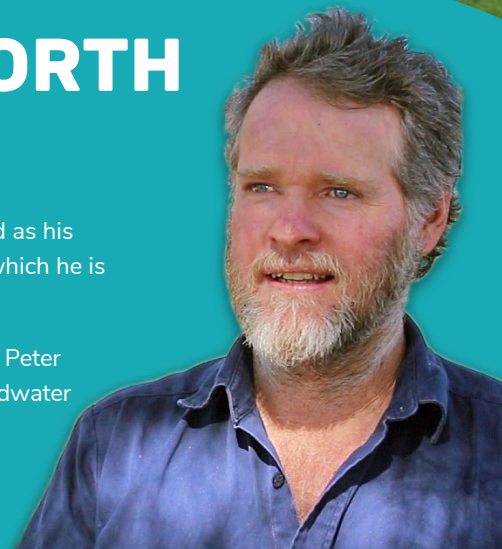


PETER LONGWORTH

Grazier

Peter Longworth lives on the same farm and works the same land as his grandfather, and this connection has left a legacy with Peter, one which he is now passing on to his children.

A mixture of advice from experts and hands on experience has helped Peter find a balance between reducing surface water and maximizing groundwater levels enabling him to reduce acid sulfate run off from his farm.



Healthy waterways support our local towns and communities, they keep them thriving. With healthy waterways our communities have a healthy vibrant future.

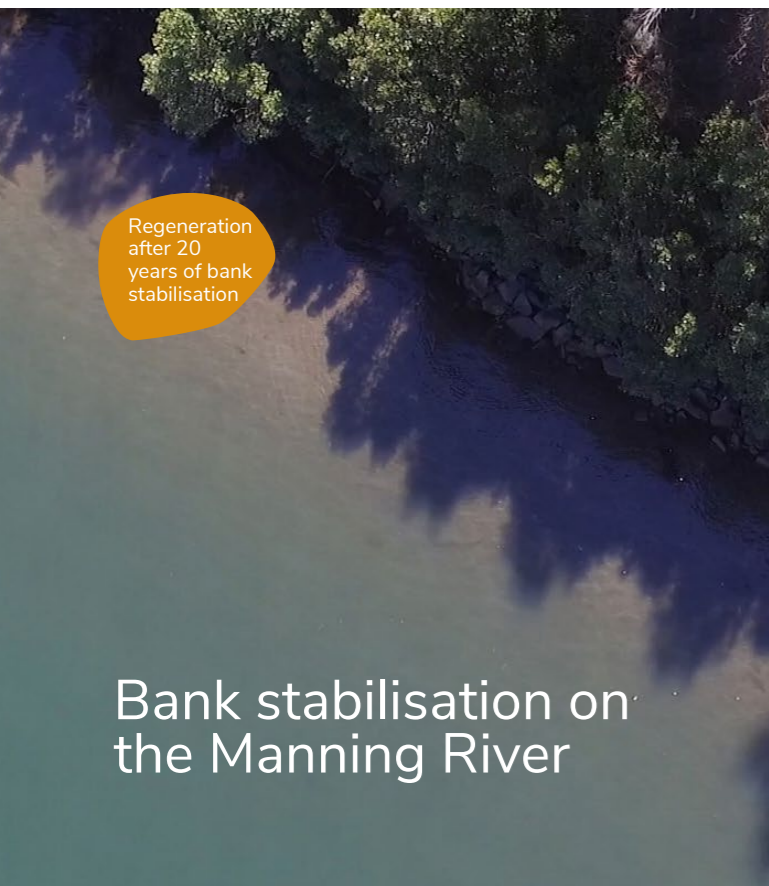
Rehabilitating Cattai Wetlands to reduce acid runoff and enhance biodiversity



KEY FEATURES OF A HEALTHY WATERWAY

- 1 Dairy effluent is kept out of waterways and wetlands and used for productive pastures
- 2 River and estuary banks are stable and stock is excluded
- 3 Land is managed to avoid the disturbance of acid sulfate soils
- 4 Stormwater runoff from urban areas is filtered
- 5 Natural wetlands are healthy and filter sediments and nutrients
- 6 Oysters and fishing stocks are healthy
- 7 Seagrass is abundant and algae levels are low

Regeneration after 20 years of bank stabilisation



Bank stabilised in 2017

Bank stabilisation on the Manning River

WHERE WOULD YOU RATHER BE?



PATHWAYS OF IMPACT

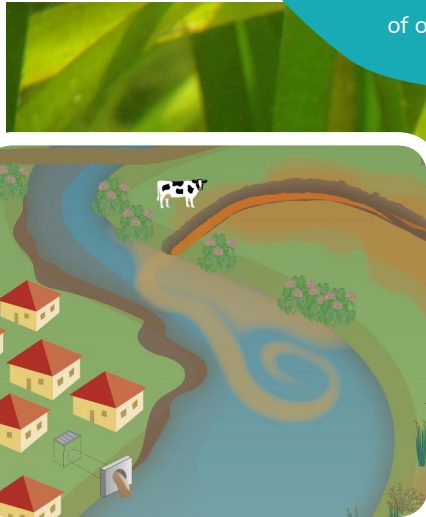
Activitives

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).

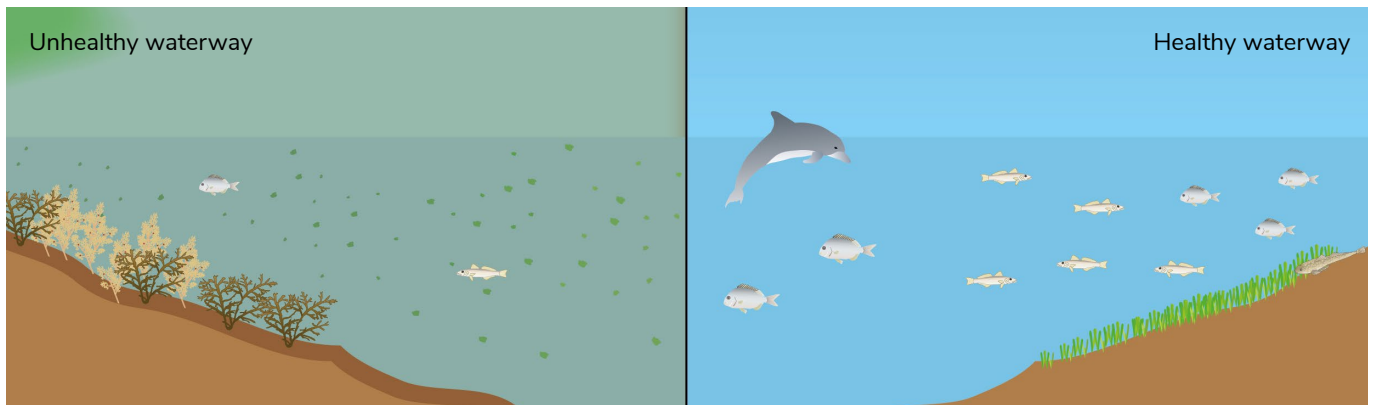


Ecological impacts

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 can be 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, fertilizer and sediment runoff from farms and 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 waterbody is an indicator of ecological health. Chlorophyll is measure used to determine the amount of algae in a water body.



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.

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