# Tuggerah Lakes Estuary Management Plan

## The Tuggerah Lakes Estuary Management Plan

Wyong Shire Council has commenced implementing the Tuggerah Lakes Estuary Management Plan (2006) based on the findings of extensive scientific research and community consultation undertaken between 1998 and 2006.

## What will the Plan deliver?

The Plan articulates the way ahead for responsible management of this dynamic environmental resource by identifying costs, timeframes and priority actions.

It aims to make a direct and tangible result by improving water quality and odour, restoring healthy foreshores, creating excellent public facilities, ensuring healthy connecting river and creek habitats, maintaining an ocean exchange, and providing a sustainable fish and prawn populations for recreational and commercial fishing.

Some specific priorities are:

- Streambank rehabilitation in Wyong River, Ourimbah Creek and Tumbi Creek.
- Stormwater improvements at Saltwater Creek.
- Building wetlands and other catchment improvements like litter traps.
- Rehabilitating significant Saltmarsh communities
- Improving bike tracks, picnice areas and other foreshore public amenities.
- Building the capacity of the community and Wyong Council staff to be informed and active participants in managing the Lakes.

tuggerah lakes estuary
Get into the habitats

The Estuary Management Plan is available from Council's website, including a summary document Snapshot of the Tuggerah Lakes Estuary Management Plan.

## How will it achieve this?

There are four main actions plans focused on water quality, ecology, socio-economic wellbeing and knowledge and management. Each action plan has been developed by teams of stakeholders with a direct responsibility or interest in the outcome.

*Hippocampus whitei*

## Who is managing the implementation of the Plan?

The Tuggerah Lakes Estuary and Coastal Management Committee will oversee the implementation of the plan. This Committee includes local conservation, fishing and marine experts, four Wyong Shire councillors, and representatives from seven NSW Government agencies.

Wyong Shire Council has appointed Sian Fawcett as the Manager Estuary Management.

## How much will it cost?

Implementation of the Tuggerah Lakes Estuary Management Plan is supported through funding from the Australian Government's Caring for our Country.. Wyong ratepayers and visitors are contributing $2.5 million per year via a new Stormwater Levy ($1.5M per year) and income from our tourist parks ($1M per year).

While the Plan is very likely to require a long-term financial commitment, the current arrangements will be reviewed after five years, in 2011/12.

## What has happened so far?

Sian Fawcett appointed as Manager, Estuary Management

Plans completed and underway:

- Streambank Rehabilitation Plans for Wyong River, Ourimbah Creek, Tumbi Creek and Saltwater Creek completed
- Saltmarsh Rehabilitation Plan for Tuggerah Lakes completed
- Tuggerah Lakes estuary Communication and Education Strategy completed
- Tuggerah Lakes Foreshore Recreation Facilities Strategy drafted

Works underway:

- Saltmarsh passive rehabilitation trial at Lake Munmorah Saltmarsh Rehabilitation – investigations and the designs are complete for sites, at Long Jetty and Berkeley Vale Preliminary investigations due to start for a further nine saltmarsh sites in Lake Munmorah and Tuggerah Lakes
- Tumbi Creek streambank and wetland rehabilitation
- Saltwater Creek streambank rehabilitation and stormwater improvements
- Stormwater Improvements program Recreational facilities upgrades and improvements
- Terilbah Reserve Rehabilitation
- Cycleway extensions

## Tuggerah Lakes Processes Study 1998 – 2000

This Study involved looking at all scientific studies and completion of further studies in order to outline the current environmental condition of the Tuggerah Lakes. Studies looked at water quality, saltmarsh and seagrass habitats, sediments and their movement, stormwater and much more. Written by Council staff and NSW Government agencies, the Study was hailed by reviewing scientists as "the best in the State".

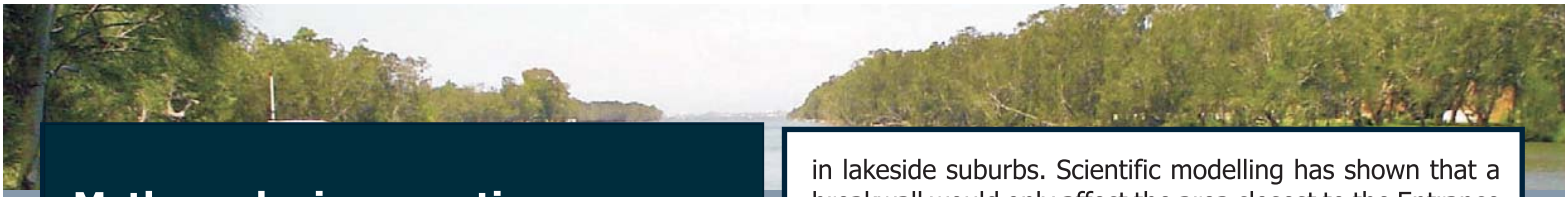
## Estuary Management Study 2001-2004

Based on the scientific understanding of the lakes gained through the Estuary Process Study, The Estuary Management Study was prepared by ecology consultants, details key issues and management options for improving the health of the Lakes and their catchment. It contains input from a Community Reference Panel as well as technical experts and local business organisations. This study was also seen as 'best in the state'.

## What can I do now to help Tuggerah Lakes?

The Estuary Management Plan isn't enough on its own – we all need to 'do our bit' to improve the health of our Lakes and you can start today by trying some of these tips:

- Wash your car on the grass instead of a hard surface so the dirty water will seep into the ground and not run into the stormwater and flow in to Tuggerah Lakes;
- Never wash rubbish down the drain or it will end up in the Lakes
- Don't mow the lake foreshore as saltmarsh grows here – not only is it a threatened species but it is also a habitat for local wildlife, helps reduce odours, and reduces foreshore erosion
- Never dump grass clippings in creeks, rivers or Lakes as they add harmful nutrients to the water
- Reduce your use of fertilisers in the garden. When it rains these harmful nutrients runoff into the stormwater system and end up in the Lakes;
- Get a rebate from Wyong Shire Council to install a rainwater tank to help reduce excess stormwater from entering bushland, creeks and the Lakes;
- Join or form a local Landcare group to help protect or restore a patch of your local bushland;
- Always be careful not to damage river banks, foreshores and seagrass beds when launching boats in local waterways;
- Don't create wash when boating in and around sensitive areas of the Lakes to help reduce erosion along foreshore areas.



## Myths and misconceptions

### The Lakes are dirty and need flushing

Community surveys have shown that many people think that the Lake is 'dirty' or 'smelly' and that 'flushing' them will improve aesthetics and odour.

However the brown colour of the Lakes is not indicative of poor water quality but reflects the nature of an estuary i.e. sandy mud sediments on the lake bed. This is typical of a shallow coastal lagoon system. The lakes should not be considered lakes but coastal lagoons. Tuggerah Lakes are more similar to places like Wamberal Lagoon and Narrabeen Lagoon and are very different to ecosystems to Sydney Harbour or Port Stephens.

Unpleasant odours are a result of seagrass and algal rot (see fact sheet on the Estuary).

Flushing the Lakes, via an influx of tidal water would not improve either of these factors, nor be desirable for the type of estuary it is. At present, the Lakes experience a tiny amount of natural flushing via The Entrance channel, affecting around one per cent of the total volume. As a barrier estuary or coastal lagoon, the health of the Lakes is more influenced by the water that flows into it through rivers, creek, stormwater drains and directly from the surrounding land rather than the seawater entering through The Entrance channel. In fact, if more seawater was to enter the Lakes, the estuary would change to a different kind of ecosystem. Currently, the salt content of the lake water is usually about two-thirds that of sea water - and that's just the way the plants and animals like it.

### Why don't we build a second entrance?

Some people strongly believe that a second entrance once existed in the north east of Budgewoi Lake connecting it to the ocean. These people advocate recreating a second entrance in order to flush the Lakes.

Evidence does suggest that a second entrance did exist over 10,000 years ago, this is unlikely to have been the case in the past 200 years. However, there are many recollections of ocean waves washing over the Budgewoi sand dunes during large storms.

While we now know that flushing is not a desirable action for the Lakes, scientific modelling also shows that a second entrance would not increase flushing enough to have a major impact on the Lakes.

### Should we build a breakwall?

Many people have loudly promoted the idea of building a breakwall to create a permanent channel opening in order to flush the Lakes.

Not only is increased flushing undesirable, independent coastal engineers suggest that the construction of a breakwall would reduce the water levels in the Lakes, exposing mud flats. This would result in more odour problems and vegetation changes. It would also increase the amount of ocean swell and increase the risk of flooding in lakeside suburbs. Scientific modelling has shown that a breakwall would only affect the area closest to the Entrance channel, increases salt water flushing by 0.01%.

Council currently dredges the Entrance to keep the channel open. If it were allowed to close naturally, the water quality could change, affecting recreational uses and the plant and animals that live there.

Any change from an estuarine to a tidal marine environment has the potential to change fish habitats and species, introduce mangrove vegetation, prawning opportunities and bird foraging areas. Breakwalls would also impact on the ocean beaches. Sand that normally moves up and down the beaches would be stopped due to the breakwalls and the beaches would change shape or adjust to suit the new sand movement. This would then result in more sand around The Entrance channel and less along the beaches, resulting in major erosion and loss of houses along Curtis Pde, North Entrance.

A breakwalls would not reduce the need for dredging of The Entrance channel as the channel would still need to be maintained.

## What is the smell?

Seagrasses and macroalgae have a crucial role to play in the health of the Lakes by using the nutrients and sediments washed into the Lakes as food, and providing a home for animals. Dead seagrass leaves and macroalgae together are found washed up on the foreshore and are known as wrack. Wrack floats to the shore where it decomposes and nourishes native plants like saltmarsh.

However, where human impacts have changed the foreshore, wrack is unable to leave the water to break down naturally and stays in the water and rots, creating bad smells and contributing to the black mud around the shore.
Wyong Council will continue to remove excess wrack where it is not breaking down naturally and trial new ways of restoring the natural breakdown.

## Why is there so much algae?

Algae is a natural part of the lake system and an important source of food and shelter. But when too many nutrients are washed into the Lakes via stormwater drains, usually after a lot of rain, it can cause too much algae to grow and it chokes the ecosystem.
When the plants start to decay, they use up oxygen in the water which can cause bad smells and kill fish.
The removal of old septic systems in recent years has greatly improved this problem but more can be done by treating stormwater and trapping litter and sediments before they reach the Lakes.

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*This project is coordinated by Wyong Shire Council, through funding from the Australian Government's Caring for our Country.*