

# Bungala River meeting

## Biodiversity.

*Presented by Wayne Gibbs 23/06/2022*

Since Europeans first settled the Yankalilla area, there has been a significant impact on the Bungala River.

There are records of First Nation people living off the land on the Bungala River estuary area. They survived on the water birds, fish, crustaceans and Kangaroos that were abundant in the area. The Bullrush reed provided a valuable source of food from the tubers and the strong leaves were used to make baskets and string.

The mouth of the river was kept open by the incoming and outgoing tides with small ships sailing up to what is now known as Cheeseman Street but was originally called Jetty Street. This map from 1857 show the original name and Barges ferrying goods from Bungala House down to the jetties are also part of the local folklore.

**None of these activities could be considered with the Bungala River in its current state.**

While there is little recorded evidence of how the river actually looked before European settlement, it is probable that upper section of the river was a swampy meadow with chains of ponds, further downstream, a series of wetlands and a tidal estuary.

When significant rain events occurred, the water would first soak into the swampy meadows which acted like a sponge and the overflow would fill the existing ponds and flow out over the floodplains, re-hydrating the soils and allowing water to soak into the aquifers.

It is likely that the First Nations People maintained these swampy meadows with regular burn offs of excessive grasses.

Older locals talk about playing and swimming in these ponds as well as fishing and yabbing as young kids.

This changed with the clearing of the land and introduction of hard hooved livestock. The swampy marshes became compacted and no longer worked as they should, erosion of the top soils washed down the river **and silt filled** the deep water holes and completely blocked the estuary system below Willis Drive. The mouth of the river is no longer open to the sea except after heavy rain events.

Eventually, the river became little more than a drain system, where runoff is directed unimpeded into the river and any rainfall just washes straight out to sea, taking with it more topsoil and pollutants including fertilizers and street debris. Oils, tyre rubber and plastics washing directly out to sea. One report estimated that 300 tonnes of soil and debris washed out to sea each year, severely damaging the sea grasses and marine habitat in Yankalilla Bay.

Disturb the mud at the bottom of the river and you will find a rotting biomass creating hydrogen sulphide gas, releasing a putrid smell similar to rotten egg gas.

**Human intervention has created an anaerobic lifeless waterway.**



The following photos show the Bungala River from Hay Flat Rd Bridge looking West. This photo was taken in November 2010.

Take note of the trees on the right and of the native bullrush reeds and sedges in the middle of the River.



The next photo was taken in recently

The **Phragmites Reed**, an Australian Native, has taken over the wetland system. This reed suffocates all other plants in the River.

This is nature trying to repair itself and Landscape SA consider this a protected plant and that it is doing a good job of slowing the River flow and catching sediment. This natural restoration process could take hundreds or even thousands of years to **restore the river to original swampy meadows and wetlands**

I am pretty sure we don't want to wait that long.

**My observations differ from this.** The reeds lay down in a flood and stand up once the water slows. Yes it does capture some silt and debris but it is creating an anerobic, swamp like condition in which it thrives and nothing else survives. There is little oxygen in the river system and the waterholes are no longer big enough to support much aquatic life.

**It is choking our river.**

The riparian area is filled with Olive trees, box thorn and other invasive plant **species**.

**Kikuyu Grass** grows uncontrolled and out competes our native species.

## **BUT There is still life in the river and riparian areas.**

PIRSA recently put drum nets in the pond under the Williss Dr bridge and caught Congoli (freshwater Flathead) up to 200mm, common galaxias (small salmon trout) up to 80mm and a variety of yabbies. There are small water snails and in some of the remaining ponds there are dragon flies and their larvae plus a lot of invertebrates that are invisible to the naked eye but form an important role in cleaning the river and a food source for other creatures.



There are native bees, blue banded and homalictus bees. These photos were taken of a nest I found by accident near the Bungala River. The bees are only about 3 to 4mm long so very hard to find. They require mounds or embankments to nest in. They now have a home in one of my raised garden beds and they are very welcome.

**Once an area is cleared of invasive species and the water holes opened**, small fish migrate into the area. Water birds including splendid egret and herons and kookaburras have now returned.

Many other birds including parrots and galahs come to the water holes to drink. We even have reed warblers singing their tunes all day and now nesting in the surrounding remaining reeds. Native plants suddenly appear self-seeded and thriving once they don't have to compete with the invasive species.

**It is my belief that we need to mimic nature by recreate more of these waterholes.** This can be achieved in part by excavating areas to create deeper holes but mostly by creating natural weirs and barriers that add oxygen to the water by creating riffles, utilising the wider flood plain area to slow the flow and retain water to soak into the subsoil. This water eventually reaches the aquifers and then is slowly released again via natural springs to create a permanent water flow.

**As part of the Horizons Estate**, there is a catchment or settlement pond that collects the stormwater. Almost immediately following any rain, this area comes alive with frogs. The sound is quite amazing.



Listen carefully to this video.

This happens because this area is not subject to high speed flows but is a still water area where the frogs can breed safely. The frogs will attract other water birds and reptiles which in turn attract other predators such as kookaburras.

We need many more of these type of ponds to not only slow and retain runoff water but to encourage life back into the rivers surrounding areas.

It is in the **Council Stormwater plans** and we need to ensure it is of the highest priority.

**Biodiversity is far more that the eye can see.**



These photos show the soil where one area has been mown. The other side, only a few metres away, is covered with leaf litter and the grass shades the ground.

The debris provides habitat for insects that help break down the leaf litter and lizards that seek the insects for food. It is also an effective carbon capture system.

Beneath the bare soil there would be minimal microbial life and fungi's would be rare and struggling to survive. **Where there is ground cover the temperature is reduced, moisture is retained and the microbes thrive on the rotting matter and help break down nutrients for the plants.**

**We need to reconsider how we manage our park areas.** How much and where should there be lawns compared to more natural habitat areas?

Reducing the lawned areas will not only save money on Council watering and mowing these areas, it will increase soil biodiversity greatly and help provide plants, insects and animals food and protected areas in which they can thrive.

Instead of traditional playgrounds, we need to consider natural play areas with large rocks and timbers that provide shelter for animals while also providing entertaining areas for Children.

There has been a significant amount of plantings already undertaken, but we need to provide far more for the birds and insects to thrive. Trees lower the ground and water temperatures which again will improve conditions for native plants and creatures.

A redgum tree provides significant habitat for birds, spiders, grubs and lizards from a relatively early age, but it does not provide hollows suitable for **parrots breeding until they are over 100 years old.**

Replanting of areas take time to establish and become a haven for wildlife.



This picture shows the Junction of Salt Creek & Bungala River when it was choked with olives in about 2010 and how bare it was once the olives were removed.

This is the same area today after FLEC and the Council undertook plantings in 2012



This is a video looking from salt Creek back to Bungala Park.

there is significant improvement but most of these trees are still spindly and have a long way to go to provide a habitat that will attract the variety of wildlife needed to provide a self-managed ecosystem.

We need to follow up these plantings with support to continually remove feral trees and weeds on a regular basis, allowing the native species to **not only survive but to thrive.**

We can provide nesting boxes for birds and bats to help overcome the lack of natural hollows in the short term.

If given a chance, the birds, reptiles, insects, frogs, echidnas, kangaroos etc. will return and give a balance to the environment

By supporting these plantings, we will get better results faster, providing a cooler and far more appealing area for all of us to live and eventually enjoy our natural river environment.

**This project will not be a quick fix but will take many years of dedication and require lots of support from the Community along with co-ordination with Government Organisations and experts in various fields to achieve the best outcome possible.**

**This is our first step in a long journey.**

**Finally,**

**3 people putting in 100 hours a year will not be successful.**

**100 people putting in 3 hours a year will create a Community Project and environment that we can be proud of.**