

Synopsis of the Draft Lake Tuggeranong Water Quality Assessment & Management Implications Report

Like other members of the Tuggeranong community, the Southern ACT Catchment Group (SACTCG) has become concerned about the recent outbreaks of blue-green algae in Lake Tuggeranong. The bad smells and unappealing water colour created by the algae make spending time at the Lake less enjoyable for Tuggeranong residents, affecting walkers, picnickers, cyclists and joggers. The toxins produced by this type of algae also present a risk to public health which has led to regular closing of the lake, affecting fishermen and community groups such as the Sea Scouts. Wildlife is also affected by these problems. Lake Tuggeranong overflows into the Murrumbidgee River, so poor water quality in the lake system may have an impact on wildlife in the river, which is also sometimes used in Canberra's drinking water supply. With new planned developments in Tuggeranong likely to place further pressure on the Lake, SACTCG feels that it is time for us to protect our lake and create a safer and more pleasant environment at the centre of our community. A recent report conducted for the catchment group by Ian Lawrence (Senior Research Fellow CRC eWater) has revealed some of the causes behind the recent algal blooms and what action can be taken to address them. SACTCG will be developing a plan to put some of these actions into practice and is looking for support and participation from the Tuggeranong community.

Lake Tuggeranong was originally designed as a 'settling pond' to trap soil and debris and improve the quality of water flowing from the Tuggeranong suburbs into the Murrumbidgee River. However, the extent of development in its catchment (the area which supplies it with water) means that it is now struggling to carry out this function. Lake Tuggeranong is small in comparison to the size of its catchment; even during drought years the volume of water flowing into the lake in a year is twice what it can hold. Because much of this supply comes from urban stormwater drains, the quality of the water flowing into the Lake is often poor, as anything which gets into a stormwater drain will end up in the lake. The main problems for water quality in Lake Tuggeranong are soil and sediment run-off, and organic matter such as leaves and garden waste. Litter and dog faeces also pose a threat to water quality, wildlife and human health and safety.

Tuggeranong has fine soils which are easily washed away during rains, and this means that stormwater is often full of fine sediment which results in water which is very turbid (cloudy). This leads to low light levels in the Lake which make it difficult for many aquatic plants to grow, but favour the growth of blue-green algae. Organic waste such as grass clippings and soft deciduous leaves are also carried through the stormwater system into the Lake where they rot, using up oxygen in the water and releasing nutrients which fuel the growth of algae. After rain, large amounts of water flowing into the Lake churn up the water and increase both turbidity (cloudiness) and nutrient levels. When a rain event is followed by a calm period, blue-green algae can take advantage of these ideal conditions and form the 'blooms' which sometimes lead to the closure of the lake.

In his report, Ian Lawrence offers a number of possible approaches to improving the quality of water in Lake Tuggeranong. These include addressing the problem in the lake itself, such as using mixers like those that are being trialled in Lake Burley Griffin, and actions in the catchment to try and improve the quality of the water flowing into the lake. Measures within

the lake itself will need to be put in place by the ACT Government, but the Tuggeranong community can play a significant part in catchment-based approaches.

The three most important changes needed to improve the quality of water in our storm drains and prevent conditions in the lake which lead to blooms of blue-green algae are:

- A reduction in the amount of organic matter and nutrients in stormwater flowing into the lake.
- A reduction of erosion in the catchment to prevent soil being washed into the stormwater system.
- Regulation of stormwater flowing into the lake so the flow is more constant and there are fewer surges after rain.

There are many ways in which we can work towards making these changes. Some of them involve people taking action in their daily lives; simple actions such as keeping fallen leaves and grass clippings away from stormwater drains, and stabilising the soil around your house by making sure there is a good covering of vegetation will have a big impact if everyone is involved.

SACTCG is also keen to see more major changes made in the Tuggeranong area which will help to improve water quality in the lake. The group would like to develop a plan to remodel parts of the stormwater system to make it more similar to the natural environment that existed in the area before the suburbs were built. If done correctly, this could result in a big improvement in water quality in Lake Tuggeranong as well as providing other benefits for residents, wildlife and the local environment. Works which might form part of this plan include:

- Construction of weirs on some stormwater channels will help to divert run-off water into aquifers (underground stores of water). This will slow down the flow of the water into the lake, which means that nutrients trapped in the sediment at the bottom are less likely to be mixed into the surface waters where algae grow. Good groundwater storages will also mean that water will continue to flow into the lake during times of drought.
- Construction of ponds or wetlands on some stormwater channels. As well as slowing the flow of water and trapping soil and organic matter, wetlands can help to prevent erosion, provide habitat for wildlife, and are also an attractive place for people to visit.
- Planting of native trees and waterside plants around the Lake which will compete with blue-green algae for light and nutrients.
- Planting of native species in eroded or unstable areas around the catchment to stabilise the soil and help regulate water flow.
- Use of storm water for irrigation in the local area to reduce direct flows into the Lake.
- Work around the lake's gross pollution traps to remove build up of organic material and reduce nutrient levels.

SACTCG recognises that developing this plan and putting it into practice will take time, money and resources, and it won't be possible without the support and involvement of the local community. The group invites you to join us to examine some of these ideas further and help us take the first steps in creating our plan for Lake Tuggeranong. Any individual or group with an interest in the quality of water in the Lake is encouraged to attend.

For further information email info@sactcg.org.au