

A Continually Changing and Aging Lake

A healthy lake is a living thing made up of many thousands of different organisms with complex processes, which are constantly changing.

By causing excess sediments and nutrients to enter Lake Macquarie with stormwater, urbanisation has both accelerated these changes and often placed the health of the Lake under considerable stress.

However, while human impacts do have the ability to rapidly increase the rate and direction of change, sometimes these changes are a natural part of aging within the ecosystem.

Prior to European development, the estimated runoff of sediments from the catchment was 6,600 tonnes per annum compared to the current estimated rate of 57,000 tonnes per annum. Even without urban development, Lake Macquarie has a limited natural life span before it will completely fill in.

In 1983 the then State Pollution Control Commission estimated that the lake would be completely filled within approximately 15,000 years at the then current estimated rate of 75,000 tonnes per annum.

The most obvious signs of this in-filling occur around the mouths of the larger creek systems. For example, the area known as Five Islands at the delta mouth of Cockle Creek, has filled in so much it is barely possible to distinguish some of the former islands.

Formed only 6,000 years ago, Lake Macquarie is still quite young in geological terms. However, many parts of low lying suburbs such as Dora Creek, Blackalls Park, Speers Point and Teralba, were actually part of the Lake only a few thousand years ago.

Although many people believe the lake should remain constant, just like human beings all living things naturally age. For example, an area of the Lake that had a sandy bottom 50 years ago, may have matured into a fringing wetland area now providing a productive and protective habitat for young fish. These changes are not always bad, although sometimes accelerated, the natural aging process is continuous.



The five delta island of Cockle Creek in this old photograph were infilling then and is certainly very different to the area today. (c. 1960)

Although we cannot return the Lake and its catchment to the way it was in years past, we do have the ability to create a healthy ecosystem. This means clear water, good seagrass beds and a rich and biodiverse stock of sea life.

At present many nearshore areas are still stressed because of excessive quantities of sediments and nutrients entering the lake. The challenge is to reduce these quantities entering the lake via stormwater.

Supporting natural filtration systems like wetlands and vegetated areas (especially around creek banks and in drainage lines) is important as they remove contaminants from stormwater to reduce the stress on the lake.

Research has proven that the best approach is to restore and mimic, where possible, the natural processes that have been interrupted by urbanisation.

The Lake ecosystem is quite resilient and working with – rather than trying to conquer - nature will allow us and our children to witness continued improvement to the Lake's health.

