



algal blooms

fact sheet

What are algae?

Algae are organisms ranging in size from single-celled forms to large and complex marine forms that are commonly called seaweeds. They are essential components of marine and freshwater habitats in and around Australia. In certain conditions massive colonies of algae can develop leading to highly visible 'blooms' in water bodies such as ponds and lakes.

Algae play a critical role in nutrient cycling, as food and shelter for invertebrates and fish, and some have considerable potential as biological indicators of the health of aquatic habitats. Once considered to be plants, algae are now classified separately because they lack true roots, stems, leaves, and embryos.

Ephemeral algal blooms have occurred in the Parklands' ponds from time to time and these have mostly been of the blue-green algae, or *Cyanobacter*, type.

What are algal blooms?

Algae are a natural part of aquatic ecosystems and most are harmless. However, some algae can produce toxins that can be harmful to humans, domestic animals and livestock that drink or come in contact with the water, as well as to organisms living in water. These toxins can cause illness if ingested and others can cause skin irritations.

Blooms can discolour water, form surface scum, produce unpleasant tastes and odours, and create problems for aquatic life. They may vary in colour from green to blue, red, brown, dark green or black. Some will be easily seen as a scum while others may be evenly spread throughout the water or concentrated at depth.

What causes algal blooms in Centennial Parklands?

In Centennial Parklands the conjunction of favourable environmental conditions can lead to algal blooms. These may include increases in nutrients (that can come from run off from households using fertilisers, washing liquids or chemicals that enter the suburban stormwater drains), increased water temperatures in the ponds, lower or intermittent light intensity from increased turbidity (ie. muddiness of water) and stable water conditions.



What dangers can be caused by algal blooms?

The presence of algal blooms in freshwater bodies may lead to temporary water quality problems such as:

- reduction of sunlight available to the aquatic plants, leading to their death;
- lowering of dissolved oxygen levels due to decomposition of dying aquatic plants and algae, which may affect aquatic animals such as fish
- increases in the release of nutrients and toxic chemicals from the sediments
- health risks to humans and animals as a result of the toxins they produce.

Managing algal blooms

Algal blooms are a whole-of-catchment issue for public authorities and private landholders bordering on or using waterways. In NSW the overall management of algae is conducted through Algal Management Strategies, coordinated by the NSW Department of Water and Energy.

Centennial Parklands' ponds are part of the Botany Wetlands System and are just a small component of a water catchment that stretches from the Eastern Suburbs to Botany Bay.

When algal blooms are detected in Centennial Parklands they are immediately reported to the Department of Water and Energy. Water quality testing will then advise of the severity and possible causes of the bloom.

Based on this information, the Algal Management Strategies dictate some practical measures that can be taken to minimise risk to public and animal health while the bloom is managed or removed.

Further reading

- Australian National Botanic Gardens: www.anbg.gov.au/PLNTKING/plant000.htm
- Department of Environment, Water Heritage and the Arts: www.environment.gov.au/water/index.html
- Department of Water and Energy: www.dwe.nsw.gov.au/water/algae.shtml
- CSIRO – Managing Water: www.csiro.au/science/Water.html