



Algae and Wetlands

Algae are simple plant-like organisms, ranging from single to multi-celled forms. As a natural part of wetland systems, algae absorb nutrients from the water (particularly nitrogen and phosphorus) much quicker than reeds or sedges do. Algae are also an important food source for macroinvertebrates.



Top Green Guts help filter nitrogen and phosphorus from stormwater.
Photo: Luke Simon

Above Blue-green algal blooms can pose a health threat.
Photo: Arthur Mostead

Algae that can be readily seen in wetlands include the tangled masses of Green Guts and Hair Algae that sometimes float on the surface in shallow parts of a wetland. Wind movement can blow them as scums that accumulate on the banks of a wetland. These accumulations are natural and are not usually an indication that a wetland is unhealthy.

Normally, microalgae are not noticeable except when they form a scum or bloom. When this happens the water may become highly coloured, even opaque, or the algae may float on the surface, like a layer of green paint.

There are four groups of microalgae that cause scums and blooms in freshwater systems in Australia. They are:

- Blue-green algae - These occur in a wide range of environments and are particularly hardy due to their unique ability to take, or 'fix', nitrogen from air
- Green algae - These are the large group of algae from which the embryophytes (higher plants) evolved



- Diatoms - One of the most common types of phytoplankton, these are encased within a cell wall made of silica. Fossil evidence suggests they originated during or before the early Jurassic Period.
- Euglenoids - These are one of the bestknown groups of flagellates: cells with one or more whip-like parts.

Algal blooms can occur when water quality is low, with high nutrient content and low levels of dissolved oxygen. The most common trigger is warm, still water, but pH, salinity, turbidity (cloudiness) and excess nutrients can all play a part. Blooms are more likely to occur in summer, when the water flow is slow and the temperatures are warmer. They reduce the amount of light and oxygen in the water, killing off other aquatic flora and fauna and producing foul odours. However the formation of algae is a completely normal, natural process and is ultimately beneficial in improving water quality.

Blue-green algae are the group most commonly responsible for scums and blooms in constructed wetlands. The toxins they produce can be poisonous to humans and their pets. Visitors to wetlands should heed any warning signs.

Learn more

For more information on related topics, see the other fact sheets in the Wetlands series. You may also like to visit the following websites for more information:

Freshwater algae, including macroalgae
www.rbg Syd.nsw.gov.au/science

Water quality and treatment, blue-green algae
www.wqra.com.au

Green algae
www.ucmp.berkeley.edu/greenalgae/greenalgae.html



Top Green algae in the Greenfields Wetlands. These accumulations are natural and are not necessarily an indication that a wetland is unhealthy.
Photo: City of Salisbury

Above Algae play a vital role in removing nutrients from stormwater in the City's wetlands.
Photo: Luke Simon

Contact the Watershed
Salisbury Highway, Mawson Lakes SA 5095
Telephone 08 8258 0862 Email watershed@salisbury.sa.gov.au

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