



Australian Government



MURRAY-DARLING  
BASIN AUTHORITY

# Blue-green algae

Blue-green algae are naturally occurring organisms that live in rivers, lakes and waterways.

Blue-green algae are actually a type of bacteria known as *Cyanobacteria*. Despite being called algae, they only have some things in common—they photosynthesise using light to produce oxygen and they need sunlight to grow. Blue-green algae are a natural part of the freshwater environment.

If conditions are favourable, they can reproduce at very high rates to form 'blooms' which sometimes produce toxic scums and impact river users and environments.

## Blue-green algal blooms

Low levels of blue-green algae are present in freshwater all the time. However, a series of favourable environmental factors including warm water temperatures, sunny days and nutrients can lead to a blue-green algal bloom.

Different types of blue-green algae favour different flow conditions. Some prefer flowing water, while others prefer still water.

Many types do well when water settles into layers, with warmer water on top and cooler water below, resulting in stratification or layering of the water column.

Stratification can also result from differing densities through the water column, where saltier, denser water at the bottom remains unmixed with the fresher surface water above.

When the combination of these factors persist for several days, blue-green algae cells can multiply in abundance, resulting in a bloom.

Although blooms within a river may move downstream, the actual rate of movement is hard to predict and will generally be considerably slower than the river's actual flow rate.

During favourable conditions, blooms can appear downstream at any time independent of upstream blooms, and can persist for as long as the favourable conditions remain.

## Key facts

**Low levels of blue-green algae are present in freshwater all the time and if certain environmental factors occur, this can lead to a blue-green algal bloom.**



Blue-green algae are **naturally occurring organisms** found in all types of water.



Algal blooms can appear all year-round, but a series of **favourable environmental factors** including warm water temperatures, sunny days and nutrients can lead to a blue-green algal bloom.



Different types of blue-green algae favour **different flow conditions**. Some prefer flowing water, while others prefer still water.



Algal blooms affect water quality **by changing tastes, odours and appearances**, and sometimes produce toxins. Water supplies can also be affected.



Although the **algal scum** can sometimes be visibly detected, water samples must be collected and sent to a laboratory for analysis.



Under the microscope, algae species are identified and counted to determine the **alert level status** and if any management responses are needed.

## Problems caused by algae

When blooms of blue-green algae occur they interfere with other uses of the water, can affect people's health and have consequences for the environment and the economy.

While blooms can be harmful, water is often safe for:

- irrigation purposes, except for vegetable crops consumed raw
- recreational activities, including fishing, boating and sightseeing, as long as skin contact or swallowing water is avoided
- drinking water where suppliers treat affected water by using activated carbon and other techniques.

For anyone planning to be out on the water, they should make a habit of checking for any local warnings about blooms.

## Responding to blue-green algal blooms

The management of individual algal blooms is best undertaken at a local level, as the most effective approaches differ according to each bloom and location.

In the southern Basin, well-established cooperative arrangements exist to monitor and manage blue-green algae outbreaks. This is done by Regional Algal Coordinating Committees in NSW, SA Water in South Australia and Goulburn-Murray Water in Victoria.

These organisations put out public alerts to make sure all water users are aware of problems and know to avoid direct contact with the water. These alerts come out as media statements, signage at selected sites and direct advice to groups of river users.

Once a blue-green algal bloom occurs, very little can be done to stop it.

Frequent testing of algae levels can help with decision-making and to find alternative water supplies for stock and domestic uses if needed. Drinking water supplies may need additional treatment. Flushing the affected area by adjusting river flows may disperse blooms and break up stratification. However, this option may not be possible or helpful depending on water availability or the characteristics of a bloom.

## Reporting algal blooms

Blooms can start as small green floating dots and develop into thick, paint-like scums on the water surface. They are often green or blue-green in colour, but may also appear white, brown, blue, yellow-brown or red.

As identification can be difficult, if blue-green algae is suspected, it is important to avoid direct contact with the water and contact the appropriate local council or water supplier.

To find out about algal blooms in the Basin, contact the following agency in your state or territory:

- **Australian Capital Territory**  
ACT Health - [www.health.act.gov.au](http://www.health.act.gov.au)  
02 6205 1700
- **New South Wales**  
Water NSW - [www.waternsw.com.au](http://www.waternsw.com.au)  
1800 999 457
- **Victoria**  
Goulburn-Murray Water - [www.g-mwater.com.au](http://www.g-mwater.com.au)  
03 5826 3785
- **South Australia**  
SA Water - [www.sawater.com.au](http://www.sawater.com.au)  
08 7424 2947  
  
SA Health - [www.sahealth.sa.gov.au](http://www.sahealth.sa.gov.au)  
08 8226 7100
- **Queensland**  
Department of Natural Resources, Mines and Energy - [www.dnrme.qld.gov.au](http://www.dnrme.qld.gov.au)  
13 74 68



### Connect with us.

The MDBA has offices in Adelaide, Albury-Wodonga, Canberra, Goondiwindi, Griffith, Mildura, Murray-Bridge, Toowoomba, and regional engagement officers around the Basin.

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