

Marine blue-green algae in our coastal waterways



The NSW North Coast is affected most summers by marine blue-green algal blooms along the beaches and in the estuaries.

Blooms that produce an unpleasant smell and slimy slicks are most often associated with the marine form of blue-green algae, known as *Trichodesmium*.

What is blue-green algae?

Also referred to as cyanobacteria, blue-green algae are simple, single-celled organisms that appear naturally in marine and fresh water.

Trichodesmium is a tropical planktonic cyanobacterium – a marine blue-green algae.

How does blue-green algae form?

Trichodesmium is transported south by the warm eastern Australian current.

While initially green, the algae breaks down to form various colours including red-brown, blue, pink, purple and cream.

Algal cells can join up to each other in strings and clumps. As the cells age, they become buoyant and rise to the surface.

If conditions are calm, the cells aggregate into large slicks that are sometimes so vast they are visible from space.

The algae is a natural phenomenon and was recorded in Captain Cook's journals more than 250 years ago as he sailed up the east coast of Australia.



Water sample taken from Twin Towns area.



Close-up of same water sample.

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Oil, sewage or algae?

Trichodesmium blooms are often mistaken for paint, oil or slimy effluent slicks on beaches and in rivers when winds and tidal movements have blown the algae onshore.

The algae decays rapidly, often releasing a purple dye. It also smells offensive, like rotting plant matter or sulfur gas.

These blooms may be important food sources for a variety of tolerant fish and invertebrates, however large blooms have been implicated in numerous fish, bird and turtle kills.

Health risks of *Trichodesmium* blooms

The direct risk of *Trichodesmium* to humans is thought to be very low.

While the concentration of *Trichodesmium* toxin in the ocean, rivers or creeks is generally not high enough to directly harm human health, it does have the potential to cause skin irritation.

Health advice

- Please do not swim, surf or wade in water where a bloom is visible.
- Avoid direct contact with algae washed up onto a beach. If you come into contact, wash with soap and clean water as soon as possible.
- Avoid eating shell fish or other marine food from areas exposed to *Trichodesmium* slicks, as there is the potential for accumulation through the natural food web of any toxin that might be present.



Trichodesmium filaments.



Trichodesmium bundle.