

Orange and Oily Substances in Creeks



Leptothrix discophora in the Vermilion River, August 25, 2006 (photo by Linda Grashoff)

What is the orange substance or oily film in the creek?

Generally the thick orange substance or oily film that appears on the surface of water is produced by the naturally occurring bacteria *Leptothrix ochracea*.

There are many mineral consuming bacteria worldwide, and this one uses iron as an energy source. The iron gives the surface of the water an 'oily' mirror-look, which looks similar to oil or petrol. It can also look like orange custard or foam.

Leptothrix is an important part of the ecosystem and is not harmful to the environment unless it starts to smother plants. Metal-utilising bacteria like *Leptothrix* make minerals available to the food web. Without these bacteria, the minerals would otherwise be too scarce for other organisms to consume and use.

Why is it in the creek?

Leptothrix likes to grow where water is still or slow flowing, warm and has low oxygen. It commonly thrives in areas where water seeps through iron-rich soils, groundwater and wetlands into waterways,

creeks and gutters. You can also see it where water flows across rock faces.

Is it pollution or bacteria?

Due to its appearance it's not surprising that *Leptothrix* is often mistaken for pollution. If you disturb the surface of the water with a stick, *Leptothrix* will break up into small irregular shapes and will not come back together. If it is oil or petrol, the slick will come back together into a thin oily film.

If you see pollution in our waterways, please call us on 1300 434 434 so it can be investigated.

Where can I find more information?

The following websites have more information that may be helpful:

FAQs page at www.lindagrashoff.com/Text_Pages/Frequently_Asked_Questions.html

Read about the science of *Leptothrix ochracea* at www.journals.plos.org/plosone/article?id=10.1371/journal.pone.0017769



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