

What are iron-oxidizing bacteria?

Iron-oxidizing bacteria are non-harmful bacteria that produce their energy by oxidizing the iron ($\text{Fe}^{2+} \rightarrow \text{Fe}^{3+}$) that is naturally present in some soils. The oxidized iron gives the bacteria their rusty color. The bacteria grow in mats, or large clumps, and will remain in a certain location until a large pulse of water washes them away or until other environmental parameters change.



Iron-oxidizing bacteria growing on concrete just downstream of a storm drain outfall. Photographer Bené da Silva.

Never dump anything down storm drains—it will go straight into the nearest waterway.

Sweep your driveway, sidewalks and gutters, and dispose of debris in a trash or yard waste bin.

Direct downspouts to landscaped areas, allowing rainwater to soak into the soil.

Avoid pesticides—use the least toxic alternative available.

Take your car to the car wash instead of washing it in the driveway.

Help pick up trash along creek banks.

Check your car for leaks and recycle used motor oil and filters.

Pick up after your pet.

Contact MCSTOPPP and your local sanitary district before draining your pool or spa.



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Why is my creek orange?

The Story of Iron-Oxidizing Bacteria



How to determine if iron-oxidizing bacteria are present

Distinguishing features include:

- ◆ Orange-brown slime that may appear “fuzzy,” growing in the creek bed or on pipes that feed into the creek.
- ◆ An oily sheen on the water which, unlike actual oil, will disperse into small particles if disturbed, such as by throwing a pebble into the water.
- ◆ Most often occur in slow-moving reaches of streams, and in lakes, particularly after a rainstorm that could cause iron-rich sediments to leach into the creek or waterway.
- ◆ May produce a foul odor.



Example of the oily sheen created by iron-oxidizing bacteria. Photo courtesy of Gwinnett County Department of Water Resources.

What should I do if I find iron-oxidizing bacteria in my creek?

Although perhaps unsightly, these bacteria have been present in waterways for millions of years.

There is no evidence that the bacteria pose a threat to aquatic species, such as fish. In some parts of the country, these bacteria have been found growing in drinking wells and are considered ‘nuisance,’ but are not listed as a drinking water contaminant by the U.S.

Environmental Protection Agency.

It may be possible to reduce the presence of the bacteria by removing iron-rich soils from the affected area, but this method is likely to be very expensive.

Therefore, if the bacteria do not appear to be causing any major disturbance, the best thing to do is let nature take care of it.



Iron-oxidizing bacteria in a downstream pool. Photographer Bené da Silva.

References:

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