

# IRON-OXIDIZING BACTERIA

# FACTS

## WHAT IS IRON-OXIDIZING BACTERIA?

Iron-oxidizing bacteria are bacteria that produce their energy by oxidizing the iron ( $\text{Fe}^{2+}$   $\text{Fe}^{3+}$ ) 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 surge of water washes them away or until other environmental parameters change.

## IS IRON-OXIDIZING BACTERIA HARMFUL?

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, including fish. In some parts of the country, these bacteria have been found growing in drinking wells and are considered a 'nuisance' but are not listed as a drinking water contaminant by the U.S. Environmental Protection Agency (EPA). 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. Thus, if the bacteria do not seem to be causing any major disturbance, the best thing to do is let nature take care of them.

## HOW TO DETERMINE IF IRON-OXIDIZING BACTERIA ARE PRESENT:

Look for these distinguishing features:

- 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.
- May produce a foul odor.



*Iron-oxidizing bacteria actively growing.*

- Most often occur in slow-moving reaches of streams and creeks and in lakes, particularly after a rainstorm that could cause iron-rich sediments to leach into the waterway.

## TO LEARN MORE:

To learn about stormwater pollution prevention in area waterways, please visit the County's stormwater web-page at <https://www.roanokecountyva.gov/1648/Stormwater-Public-Education-Documents> or view the various public education videos, including Illicit Discharge, Detection and Elimination - A Grate Concern at <https://www.roanokecountyva.gov/1598/Stormwater-Public-Education-Videos>.

## FOR QUESTIONS, CONTACT:

County of Roanoke - Stormwater Program Manager  
540. 772.2036

## REFERENCES:

Marin County, CA: *Why is My Creek Orange? The Story of Iron-Oxidizing Bacteria*. [Brochure]

U.S. Environmental Protection Agency. [2022]. *Drinking Water Regulations and Contaminants*. Visit: <https://www.epa.gov/sdwa/drinking-water-regulations-and-contaminants#List>