

BE ON THE TEAM TO THINK DOWNSTREAM: FECAL COLIFORM/ENTEROCOCCUS

WHAT IS THE PARAMETER?

Fecal coliform and *Enterococci* are types of bacteria commonly found in the intestines of warm-blooded animals, such as humans and cows. In water, their presence is an indicator of fecal contamination, which can include harmful, disease-causing bacteria. These indicators can have impacts on public recreational (swimming and kayaking) and residential areas where there is a risk of exposure to people.



Ducks and geese around park ponds can dramatically increase the concentration of fecal matter in waterways. Photo by M.P. Hayes

WHAT AFFECTS THE PARAMETER?

There are many ways the bacteria enter the waterways including septic tanks malfunctioning, or from nearby livestock and recreational wildlife. No matter the source, *Fecal coliform* and *Enterococcus* create

an issue once they are flushed into tributaries and waterways. In the water, natural factors including high temperatures and rainfall can increase the number of bacteria and the rate at which they reproduce.

WHERE DOES IT COME FROM BROADLY AND SPECIFICALLY TO LOUISIANA?

In Louisiana, 42% of waterways are impaired because of *Fecal coliform* and *Enterococcus*. Some of the leading sources of these bacteria in the state are individual septic systems, community treatment systems and sewage discharge in unsewered areas, most likely due to improper use, installment or maintenance. Though sewerage issues are a persistent cause, there are references and resources that promote best practices for sewerage maintenance. Using the Louisiana Department of Environmental Quality's Water Quality Integrated Report, the following sources have been identified as causing bacteria impairment around the state:

- On-site septic treatment systems
- Sewerage discharge from unsewered areas
- Industrial packaging plants
- Marina/boating sanitary systems
- Waterfowl
- Wildlife other than waterfowl
- Grazing livestock
- Animal feeding operations
- Residential runoff
- Municipal point source discharge

HOW DOES IT AFFECT THE SURROUNDING ENVIRONMENT?

An immediate concern with *Fecal coliform* and *Enterococcus* in water is potential health risks for humans, including gastrointestinal illnesses, skin infections and other diseases. While *Fecal coliform* and *Enterococcus* may not harm aquatic life directly,

the presence of pathogens and nutrients from fecal contamination can degrade water quality and affect ecosystems. High numbers of bacteria may contribute to cloudy water, unpleasant odors and increased oxygen demand.

WHAT ARE TRADITIONAL MANAGEMENT PRACTICES?

There are many best management practices to reduce bacteria in the waterway depending on the source. For municipal and residential sewerage, make sure there are no leaky or broken pipes and that treatment processes are functioning properly. Individual septic systems in residential areas should be inspected every six years after installation and pumped every eight years, or as necessary, to prevent solid overflow to the soil absorption system and subsequent clogging and failure. Adding vegetation buffers to agricultural

lands where animals feed and preventing animals from drinking out of natural water sources like rivers or streams can decrease *Fecal coliform* and *Enterococcus* contamination near agricultural sites. By first identifying the sources of bacteria impairment, simple best management practices can be found to reduce the source input. If interested in sample analysis, the LSU AgCenter Food Safety Laboratory provides a service lab platform for bacteria analysis.

RESOURCES

<https://www.epa.gov/national-aquatic-resource-surveys/indicators-enterococci>

<https://www.ncbi.nlm.nih.gov/books/NBK190421/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3510518/>

<http://www.deq.louisiana.gov/page/louisiana-water-quality-integrated-report>

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