



Bacteria Monitoring

2019 Summary

What is *E. coli*?

Escheria coli, typically shortened to *E. coli*, is a type of fecal coliform bacteria. *E. coli* is found in the digestive tracts of all warm-blooded animals, including humans. Most *E. coli* are harmless and are part of a healthy digestive system. However, sometimes *E. coli* can cause illness.

The presence of *E. coli* in rivers indicates that human or animal waste is or has been present in water. This can be from human, pet, or wildlife feces, diapers, malfunctioning septic systems, storm water runoff, or sewage treatment overflows. *E. coli* acts as an indicator organism. It is relatively easy to test for and its presence in high numbers means that it is more likely for other sources of waterborne illness to be found alongside it.

Because runoff from rainstorms often carries with it bacteria and can trigger combined sewer overflows, it is recommended to wait 24-48 hours after rainfall to resume swimming.



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E. coli under a microscope

2019 Testing Locations



Methods

Volunteers collected samples at 13 sites in Massachusetts and 5 sites in Connecticut (left) from May through October. Each sample is collected in a sterile, 100 mL bottle. Volunteers also record air and water temperatures, as well as visual, olfactory, and weather observations. Massachusetts samples are processed at the CRC lab in Greenfield, and Connecticut samples are processed at the United States Geological Survey (USGS) lab in Hartford.

Results

Results are posted online 24 hours after sample collection at [Is It Clean? / ¿Está Limpio?](https://www.ctriver.org/isitclean/) This year's averages for each site are depicted in the graph to the right and are compared to the recommended bacteria levels for swimming and boating. Since significant rainfall 24-48 hours before sampling often results in elevated bacteria levels, the averages are split between wet and dry weather sampling days.

Nearly all sites (except the Mill River site) have dry weather averages below the recommended level for swimming. A few other average above that level during wet weather with only one site (Pioneer Valley Riverfront) averaging above the recommended level for boating during wet weather.

Quality Control

In order to ensure that the results presented here and on [Is It Clean? / ¿Está Limpio?](https://www.ctriver.org/isitclean/) are accurate, volunteers collect additional Quality Control samples. These are either duplicate samples, a second sample collected at the same site, or blank samples, sterile water is transferred to a new sample bottle outside at a site. Duplicate values are expected to come out within 30% of each other and blanks to come out at 0. All blanks and duplicates collected in 2019 met the quality control goals.

2019 Average Results

