

Bacteria

Why do we measure this?

Bacteria are microscopic, single-celled organisms that are the most numerous organisms on earth. Most bacteria are not harmful and do not cause human health problems but those that are disease producing are referred to as pathogenic. Coliform bacteria can be naturally found in soil. The type of coliform bacteria that lives in the intestinal tract of warm-blooded animals and originate from animal and human waste is called fecal coliform bacteria. We test for E. coli bacteria because they are good indicator organisms of fecal contamination. E.coli generally live longer than pathogens, are found in greater numbers, and are less risky to collect or culture in a laboratory than pathogens. However, their presence does not necessarily mean that pathogens are present but rather indicates a potential health hazard. Fecal contamination can have a variety of sources. Domesticated animals such as cattle, horses, and pets can be a source of bacteria when heavy rains wash feces from the land into receiving waters. Failing septic systems as well as sewage overflows are also a source of fecal contamination. Fecal matter as well as other pollutants can be transported to waterways through runoff. Developed lands such as streets, rooftops, sidewalks, parking lots, driveways, and other hard surfaces tend can increase this runoff while areas with buffers of riparian vegetation can decrease runoff because of the infiltration.

Equipment Needed:

- Chest Waders
- Sterile container
- Insulated carrier
- Test kit (gel & petri dish)
- Incubator

Definition of Terms

Indicator Species: Indicator species are unique environmental indicators as they offer a signal of the biological condition in a watershed or ecosystem, and are a warning system that contamination has entered a system.