



Bacteria in Local Creeks

Why are these signs posted in the Prince Memorial Greenway on Santa Rosa Creek?

Bacteria testing results by the North Coast Regional Water Quality Control Board in the Prince Memorial Greenway have documented levels higher than those recommended for full body contact water recreation areas. Test results are posted on the Regional Board's website.

What are bacteria?

Bacteria are microscopic single-celled organisms that may cause disease, however not all bacteria are harmful. In fact, bacteria play key roles in the food chain as decomposers to recycle nutrients for uptake by other plants and animals. Testing is conducted for total coliforms and *E. coli* as indicators of water quality. These bacteria are not considered disease causing agents themselves; elevated levels suggest the presence of other disease causing pathogens associated with fecal matter. Total coliforms include bacteria found in feces of warm-blooded animals, soil, and other sources. Fecal coliforms are a subgroup of the total coliform group that are better indicators of fecal contamination, however some bacteria identified in this test are of questionable sanitary significance (*Klebsiella*). *Enterococcus* is similar to coliform bacteria and is used in saltwater areas since it does not die off in saline conditions. *E. coli* is a type of fecal coliform that is only present in the feces of warm-blooded animals and is the best indicator of fecal contamination.

How do bacteria end up in creeks?

High levels of bacteria can be present in creeks due to birds and wildlife, leaking sewer lines, improperly functioning septic systems, direct discharge of human feces, pet waste, and animal waste from concentrated animal facilities. Urban creeks typically have elevated levels of bacteria and the public should use caution while recreating in untested areas.

What are the health risks?

Gastroenteritis is the illness most commonly associated with swimming in water with fecal contamination. Symptoms associated with gastroenteritis include nausea, vomiting, stomachache, diarrhea, headache, and fever. Viruses are also believed to be a major cause of swimming-associated illnesses, which include gastroenteritis, hepatitis, respiratory illness, and ear, nose, and throat problems. Bacterial pathogens can cause vomiting, diarrhea, stomachache, nausea, headache, and fever. Protozoan parasites can cause giardiasis, amoebic dysentery, skin rashes, and pink eye.

In highly polluted water, more serious illnesses can be contracted such as hepatitis, cholera, and typhoid fever. Drinking water contaminated with E. coli or Salmonella has led to fatalities in some cases.

Precautions to Take

- Obey contaminated water warning signs.
- After contacting potentially contaminated water wash your hands.
- Don't let children put toys or objects in their mouths after contact with the water.
- Clean up after your pet by disposing waste in a trash can.
- Volunteer to clean up creeks with the Creek Stewardship Program.

Additional Information

- http://www.waterboards.ca.gov/northcoast/water_issues/programs/water_quality_monitoring/
- <http://www.sonoma-county.org/health/services/freshwater.asp>
- <https://www.cdc.gov/nceh/hsb/cwh/default.htm>