Focus on **Fecal Coliform Bacteria**

from Ecology's Water Quality Program

Issue

Many streams, lakes, and marine waters in Washington are contaminated with fecal coliform bacteria. Fecal coliform is an indicator of bacterial contamination from humans and other warm-blooded animals. High levels of fecal coliform in the water can affect the public health, economy, and environmental quality of a community.

What's so important about fecal coliform bacteria?

Fecal coliform are a group of bacteria found in the feces of warm-blooded animals such as people, livestock, pets, and wildlife. The amount of fecal coliform in a stream or lake increases with the amount of sewage waste and/or manure.

A long history of illness outbreaks and epidemics has demonstrated a relationship between the presence of fecal coliform bacteria and the presence of illness-causing viruses and bacteria, called pathogens. These pathogens can be accidentally swallowed with water or eaten in contaminated shellfish. People swimming or playing in water can be exposed to pathogens when they enter the body through small cuts, abrasions or mucus membranes.

Some of the symptoms of illness associated with fecal coliform pathogens are minor, such as upset stomach, diarrhea, ear infections, and rashes. However, some pathogens, such as E coli, hepatitis, and Salmonella, can have very severe health effects. Washington's water quality standard for fecal coliform bacteria is set to protect public health.

Shellfish concentrate fecal coliform and associated pathogens from the water around them. The Washington Department of Health closes or restricts harvest of commercial shellfish beds when water quality tests indicate too high levels of fecal coliform bacteria.

High levels of fecal coliform can cause other problems as well. Sewage and manure contain nitrogen and phosphorus, which act as fertilizer for algae and other aquatic plants. An over-growth of plants can:

- Deplete oxygen in the water that is needed by fish and other aquatic animals.
- Affect the natural acidic/alkaline (pH) balance of water.
- Interfere with recreational activities such as boating, fishing, skiing, and swimming.
- Create odor problems and unpleasant views.
- Affect property values.

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Where do fecal coliform bacteria come from?

Fecal coliform contamination can come from sewage treatment plants or some industries. Often, it comes from many small sources, each contributing a little to the overall problem. Each of us who live in a watershed contribute to these small sources through the way we manage our on-site septic systems, livestock waste and pet waste, as well as our sanitary practices when we're camping and hiking. Wildlife and birds also contribute. Whatever the source, as the amount of fecal coliform bacteria in water increases, the risk to public health also rises.

In order to protect the beneficial uses (like recreation) of our waterways, Washington state law provides for the management of human-caused sources. The goal is to keep the bacteria levels within a range considered safe for human health.

What can you do?

"Fixing" fecal coliform contamination will depend on each of us looking at what we do or don't do on our property that allows sewage or manure to reach a waterway.

Here are seven simple things you can do to reduce fecal coliform contamination:

- Make sure your on-site septic system is in good working order. Have it tested and pumped regularly.
- Don't let livestock water directly from a stream or lake. Need help figuring out an alternative? Call your local conservation district, they can help.
- Protect the natural vegetation alongside streams and lakes, and you may need to plant more. Vegetation filters pollutants from run-off. Your conservation district can help.
- Safeguard manure piles from rain and from surface run-off.
- Bag pet waste and put it in the garbage.
- When camping or hiking, bury waste away from water and at least six inches deep.
- When RV camping or boating, empty holding tanks at an approved disposal ('dump') station.

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