



# Focus on **Bacteria in the Issaquah Creek Basin**

from Ecology's Water Quality Program, Northwest Regional Office

## Six Simple Things You Can Do To Be a Good Steward of Your Watershed

1. Make sure your on-site septic system is in good working order: test and pump it regularly.
2. Manage livestock so they water away from a stream or lake. Need help figuring out an alternative? Please call the King Conservation District at: 425-277-5581
3. 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.
4. Bag pet waste and put it in the garbage—not in the on-site sewage system.
5. Safeguard manure piles from rain and surface run-off. King County, the City of Issaquah, and the King Conservation District can all help.
6. Call the Spill Hotline if you see a spill or illegal dumping: **1-800-258-5990**.

## **Fecal Coliform Bacteria Cleanup**

Water samples collected in Issaquah and Tibbetts Creeks in recent years show that several stream segments have exceeded state water quality bacteria standards. These bacteria problems have been addressed in the EPA-approved *Issaquah Creek Basin Water Cleanup Plan for Fecal Coliform Bacteria*.

### **Water Cleanup Plans**

A water cleanup plan, also known as a total maximum daily load (or TMDL), includes the following:

- A process of evaluating water quality problems
- An analysis of the pollutant sources that caused the problems
- A plan to correct the problems

The plan is a tool for implementing measures to bring waters into compliance with state water quality standards.

### **The Water Cleanup Plan for Issaquah Creek Basin**

The City of Issaquah and King County have already done much to restore and clean up Issaquah and Tibbetts Creeks. The Department of Ecology (Ecology) would like to continue to assist in identifying and correcting the remaining pollution sources in the watersheds. Ecology continues to compile information on activities currently underway, and additional actions needed for Issaquah and Tibbetts Creeks to meet water quality standards.

### **Potential Sources of Fecal Coliform Bacteria**

*Human* sources for these bacteria vary depending on whether the watershed has sewers or not. In a sewered watershed, the following sources may contribute to pollution:

- Sewer overflows
- Illegal sanitary connections to storm drains
- Illegal disposal to storm drains
- Landfills

In a non-sewered watershed, failing septic systems are often significant human sources of fecal coliform bacteria and other pollutants.

## Potential Sources of Fecal Coliform Bacteria (continued)

Non-human sources for these bacteria include the following:

- Livestock (cattle, horses, poultry)
- Other domestic animals (especially dogs and cats)
- Pigeons, gulls, ducks, geese, and other waterfowl
- Rats, raccoons, squirrels, beaver, muskrats, deer, and other wild mammals

## Fecal Coliform Facts

Fecal coliform bacteria are used as indicators for disease-causing bacteria (pathogens) in water. Because of the small size of pathogens, they are easily carried by stormwater runoff or other discharges into natural water bodies. Once in a stream, lake, or estuary, they can infect humans through contaminated fish and shellfish, skin contact, or ingestion of water.

- Bacteria often settle out of water into bottom sediments, where they can persist and even multiply for weeks or months in the warm, dark, moist, and organically rich conditions. When the sediments are stirred up, the bacteria become re-suspended in the water.<sup>1</sup>
- Livestock are major sources of fecal coliform in rural and unsewered urban watersheds, particularly areas of the urban fringe that have horse pastures, small farms, and ranches.<sup>2</sup>
- Cats and dogs are primary sources of fecal coliform in urban Puget Sound watersheds, and residential lawns, driveways, and streets are major source areas for bacteria.<sup>3</sup>
- Domestic sewage typically is two to three orders of magnitude “stronger” than stormwater runoff in terms of bacteria, and four to five orders stronger than forest runoff influenced only by wildlife sources.<sup>4</sup> This means that the concentration of pollutants in domestic sewage can be up to 100,000 times stronger than stormwater or natural runoff.

## Contact Information

The Issaquah Creek Basin Water Cleanup Plan is on the internet:

<http://www.ecy.wa.gov/biblio/0410055.html>

To request copies or for questions, contact **Ann Dettelbach**, Washington Dept. of Ecology, 3190 160<sup>th</sup> Ave. SE, Bellevue, WA 98008-5452; phone: (425) 649-7093; email: [adet461@ecy.wa.gov](mailto:adet461@ecy.wa.gov).

1. Burton, A., D. Gunnison and G. Lanza, 1987. *Survival of pathogenic bacteria in various freshwater sediments. Applied and Environmental Microbiology*, 53(4) 633-638.

2. Samadpour, M. and N. Checkowitz, 1998. *Little Soos Creek microbial source tracking. Washington Water RESOURCE, Spring, 1998. University of Washington Urban Water Resources Center.*

3. Trial, W., et al., 1993. *Bacterial source tracking: studies in an urban Seattle watershed. Puget Sound Notes. 30:1-3*

4. Pitt, R., 1998. *Epidemiology and stormwater management. In Stormwater Quality Management, CRC/Lewis Publishers, New York, NY.*

*If you need this information in an alternate format, please contact Douglas Palenshus at 425-649-7041. If you are a person with a speech or hearing impairment, call 711 or 800-833-6388 for TTY.*