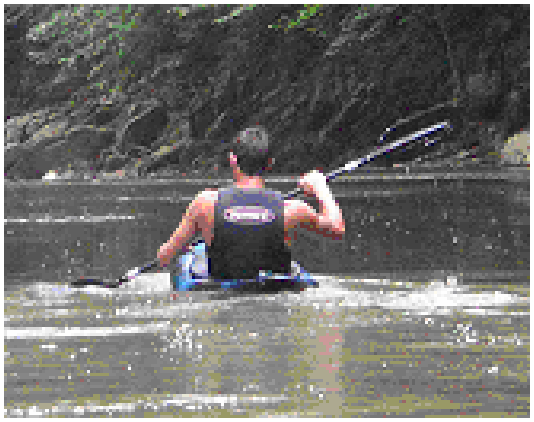
Catoctin Watershed Project

Stewardship for Catoctin Creek Watershed

Fecal Bacteria in Stream Water: Public Health Considerations

Are streams in Loudoun County safe for recreational use? The Virginia Department of Environmental Quality (DEQ), Department of Conservation and Recreation (DCR), Department of Health (VDH), and Federal EPA provide information on their websites regarding the health risks associated with fecal bacteria in drinking and recreational waters.



The Catoctin Watershed Project is sponsored by:
Loudoun Wildlife Conservancy
Loudoun Watershed Watch
Friends of Catoctin Creek

What are Fecal Coliform? – When DEQ monitors stream water, they test for the presence of fecal coliform bacteria. These bacteria live in the intestinal tracts of humans and other warm-blooded animals. The presence of fecal coliform bacteria in stream waters is an indicator of pollution from fecal wastes, and the potential for human pathogens, or disease causing organisms, being present.

Do People Get Sick From Bacteria in Fecal Wastes? -- The answer is YES. One particular kind of fecal coliform bacteria, *Escherichia coli (E. coli)* O157:H7, is an emerging cause of foodborne and waterborne illness. This bacteria produce a powerful toxin and can cause severe illness. This is of special concern because it is reported that **cattle are a reservoir for this type of *E. coli,* and five to forty percent of cattle shed the bacteria at any given time.**

The disease causing affects of bacteria in fecal wastes have been documented time and again in food, water supplies, and recreation waters used for swimming. An example of an outbreak associated with drinking water occurred in May 2000, in Walkerton, Ontario, a town of approximately 5000 people. There were seven confirmed deaths with four other deaths under investigation, and over 2000 poisonings all attributed to drinking water polluted by *E. coli* Type 0157:H7. The source of the pollution was probably runoff from a feedlot located more than 5 miles from the wells used for the town's water supply.

An example of an outbreaks associated with swimming water occurred on August 8, 1994 in Virginia. VDH was notified of campers and counselors at a Shenandoah Valley summer camp developing bloody diarrhea. *E. coli* 0157:H7 was confirmed as the causative agent. Another outbreak occurred in Franklin County Virginia, in 1997. Illnesses involving 3 children were attributed to E. *coli* 0157:H7 in Smith Mountain Lake. The children were exposed to the bacteria while swimming in the lake and a two year old hospitalized almost died as a result of the exposure.

Are These Isolated cases? – The answer is NO. The Center for Disease Control estimates at least 73,000 cases of illnesses and 61 deaths per year throughout the U.S. caused by *E. coli* 0157:H7 bacteria. In addition, other bacterial and viral pathogens are indicated by the presence of fecal coliform. Further, the threat of these pathogens appears more prevalent in more populated areas and areas with more cattle.

Are Water Quality Standards Important? --EPA is responsible for assessing the risk the public is willing to accept and then establishing water quality standards that reflect these acceptable risks. DEQ and DCR are responsible for implementing measures to safeguard the public from these risks. Water quality standards are society's method of protecting citizens from unacceptable risks.

What Does the Virginia Department of Health Say? – VDH urges citizens who use river, stream and lake water for recreational purposes to be cautious and to use common sense about contact with recreational water. Although the cleanliness and quality of Virginia's surface waters continually improves, ***it is impossible to guarantee that any natural body of water is free of risk from disease causing-organisms or injury.***

Can't We Test Stream Waters for Pathogens? -- Testing water for viruses, parasites, and bacteria that cause illnesses are difficult, time consuming, and costly. For these reasons, tests for fecal coliform bacteria and *E. coli* are the national standards used as an indicator of possible contamination from human waste. The higher the fecal coliform level, the more likely it is that sewage is present, and the greater the risk of disease causing organisms being present. On the other hand, water that tests negative for fecal coliform bacteria is not necessarily risk free.

What Precautions Should Citizens Take When Using Streams for Recreation? -- Most of the organisms in Virginia's rivers and lakes probably do not cause human illness or are in such low levels they will not make anyone sick, but there is no way to be sure. Most of the waterborne organisms that cause disease affect the digestive tract and therefore are acquired by ingesting contaminated water. Less commonly, skin, ear and eye infections can result from contact with surface water. Although recreational water users may inadvertently swallow water, deliberately drinking from rivers, streams or lakes is never recommended. Persons whose immune systems are compromised should be very careful to avoid swallowing water from any river, stream or lake.

Where Do I Get Further Information? – More information from VDH regarding Risks of Recreational Water Use is available on their website at: www.vdh.state.va.us.