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RICHMOND LAKE WATER QUALITY PROJECT

Septic Systems on Shoreline Property

by Joseph Schumacher
Agricultural Engineering Department

Richmond Lake shoreline septic systems require special consideration. That's because soil and water conditions near the shoreline may make the systems less efficient in treating waste. This in turn could cause harmful pollutants to reach the lake.

The septic system's purpose is to effectively accept and treat liquid wastes from your house and to prevent contaminants from getting into your well or into nearby Richmond Lake. Most of this treatment happens in the soil below the absorption field. The physical and chemical properties of the soils combine with microscopic organisms to decompose or prevent movement of contaminants.

When the soil is not saturated with water, biological contaminants (bacteria and viruses) usually are absorbed and rendered inactive within a few feet of the absorption field. However, certain nutrients can travel much greater distances, depending on the type of soil, the amount and concentration of waste, and the age of the system. For example, loam and clay soils have a greater long-term ability to absorb nutrients and prevent them from moving through the soil than do sand and muck soils. When the soil is saturated, nutrients and biological contaminants can move much greater distances (in some cases, up to several hundred feet).

When septic systems close to the lake are saturated during high water periods, they become likely to leak wastes into the lake. When shorelines erode, the distance between the septic system and the shoreline becomes shorter, making it more likely that liquid waste could move through the soil to the bank and then into the water.

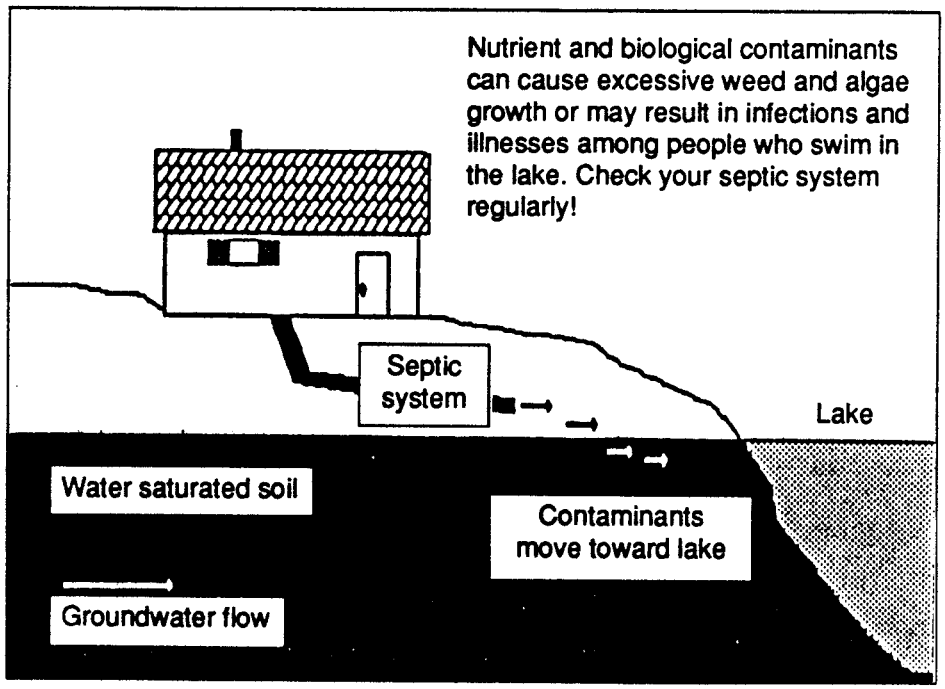
This pollution can happen even though your septic system appears to be working well and complies with local codes.

How septic system wastes can affect your lake

Nutrients (especially phosphorus) from leaky septic systems can cause excessive weed and algae growth in lakes and ponds. Just a small amount of additional phosphorus in a lake can make a huge difference in the amount of aquatic weeds that grow during the spring and summer (one lb. of phosphorus could permit up to 500 lbs. of additional weed matter).

Excessive weed growth affects the ability of fish to grow and could greatly affect the fish population. Too many weeds also can reduce the recreational pleasures on the lake due to weed-tangled boat motors, weedy swimming areas, etc.

Liquid wastes from your septic system that reach the lake increase the possibility that swimmers near your shore could catch a variety of ailments and diseases, some serious, that are associated with these wastes.



Why septic systems fail

Septic systems are designed to have a lifetime of 20 to 30 years, under the best conditions. Eventually, the soil around the absorption field becomes clogged with organic material making the system unusable.

Many other factors can cause a septic system to fail well before the end of its "projected" lifetime. Soils saturated by water, pipes blocked by roots, crushed tile, improper location, poor original design, or poor installation can lead to major problems.

By far the most common reason for septic system failure is improper maintenance by homeowners. When a system is poorly maintained and not pumped out on a regular basis, sludge (solid material) builds up inside the septic tank, then flows into the absorption field and clogs it beyond repair.

Indicators that contaminants may be reaching the lake

• Excessive weed or algae growth in the water near your shore.

• An increase in infections or illnesses associated with area swimming.

• Unpleasant odors, soggy soil, or liquid waste flow over the land surface.

• Test results indicating the presence of biological contamination.

• Indicator dye put into your septic tank reaches the lake.

• Lush green grass over the absorption field, even during dry weather.

• Slow flushing of your toilets.

• Sewage backup in your drains or toilets.

Prevent problems

• Pump and maintain your septic system regularly.

• Conserve water in your house.

• Redirect surface water flow away from your absorption field.

• Plant a greenbelt between your septic system's absorption field and the shoreline.

• Form a community sewage system or alternative methods

• Replace your septic system.

• Place new septic systems as far away from the shoreline as possible.

Sources of information

• Local Cooperative Extension Service Office

• South Dakota Department of Water and Natural Resources

• “Onsite Domestic Sewage Disposal Handbook,” MWPS-24, Midwest Plan Service, Agricultural Engineering Department, SDSU, Brookings

• “Rural Sewage Disposal for Individual Homes,” EC665, CES/USDA/EPA

• “Individual Home Sewage Treatment Systems,” AE892, North Dakota CES, Fargo

• “Designing Sewage 1 reatment Systems for Resorts,” Extension Bulletin 459-1981, Agricultural Extension Service, Minnesota CES. Minneapolis

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