

# Waterfront Septic Systems Must Overcome "Severe" Challenges

No place has meant more to many of us for relaxation, beauty, fresh air, exercise, and fun than "the lake". What a joy it is unwinding and recharging with friends and family in such a beautiful and natural place.

The water is what makes the magic; the view from the cottage, refreshing swims, boating, fishing and the sparkling reflections of a glorious sunny afternoon. It is all about the WATER.

Now, the WATER, the key ingredient of "the lake," is in trouble. Too many nutrients, phosphorous and nitrates, are being fed into the lakes and the primary source is septic systems. We have increasing weed growth problems and hazardous algae blooms being fed by runoff rich in nutrients.

It is said "the solution to pollution is dilution," and there is some truth in that. Unfortunately, it seems we have reached the point where the capacity of our WATERS to dilute is being overwhelmed by the volume of the nutrients that pollute.

The slope, depth to bedrock and fast draining characteristics of the two "buildable" soil types (MuE-Millsite-Rock outcrop and QeB-Quetico) that are dominant around the shores of all the Indian River Lakes make them unsuitable for properly functioning "normal" septic systems.

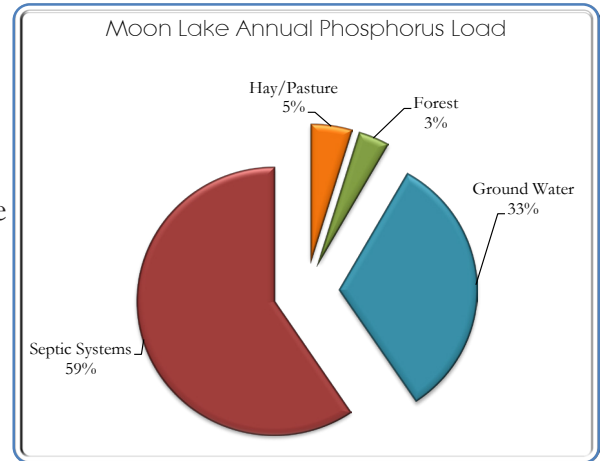
The "Soil Survey of Jefferson County, New York" includes a detailed description of both of our primary soil types (MuE on page 92 and QeB on page 104). The unsuitability of our soils for sanitary facilities is shown in Table 12 on page 288. Both of our soil types are classified as having "severe limitations that affect septic system absorption (leach) fields".

"Severe Limitations" as defined in the survey means "soil properties or site features are so unfavorable, or so difficult to overcome that special design, significant increases in construction costs and possibly increased maintenance are required".

The loss of natural vegetative lakeshore buffers, use of lawn and plant fertilizers and other factors do contribute, but the largest sources of the over-nutrient are inadequate or malfunctioning septic systems.

The NYS/DEC conducted a study of Moon Lake water quality entitled, "Total Maximum Daily Load of Phosphorous in Moon Lake- September 2007." This study determined that septic systems in the portion of the drainage area that is developed (4%), mainly with cottages, contributed 59% of the total annual phosphorous load.

Forested land, which comprised 83% of the drainage basin, contributed only 3% of the annual total phosphorous load.



Because we have soils with severe limiting factors that affect the performance of septic systems, it is going to take a special effort on the part of every resident to apply new technologies and to design and install new systems or upgrades to existing systems that will be effective around the Indian River Lakes. Regular system inspection and maintenance, such as pumping, will also be crucial for us to overcome our existing problems.

We all have a problem underground, lurking just outside our cottage or house somewhere. And, we all have the individual and combined responsibility to be vigilant and act aggressively to ensure that the "Magic of the Water" will continue for generations to come.

## References

Jefferson County Soil Survey:

[www.nrcs.usda.gov/Internet/FSE\\_MANUSCRIPTS/new\\_york/NY045/0/jefferson.pdf](http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/new_york/NY045/0/jefferson.pdf)

Moon Lake Phosphorous load study:

[http://www.dec.ny.gov/docs/water\\_pdf/tmdlphosmoon.pdf](http://www.dec.ny.gov/docs/water_pdf/tmdlphosmoon.pdf)

# Septic System Dos and Don'ts

## Do

- ...educate your family on proper use of the system.
- ...repair leaky faucets and toilets. One leaky faucet can waste as much as 700 gallons of water a year.
- ...use low-flow fixtures.
- ...spread out your laundry over several days to give the septic system more time to digest the water.
- ...run dishwashers and clothes washers only when full and use the cycle with the lowest number of rinses.
- ...use baking soda and white vinegar to clean toilets and other household items rather than harsh chemical cleaners.
- ...use boiling water or a mechanical drain snake to clear blocked drains. Drain cleaners contain dangerous chemicals that can destroy the septic system's beneficial bacteria.
- ...direct all wastewater from your home into the septic tank. This includes all sink, bath, shower, toilet, washing machine and dishwasher wastewaters. Any of these waters can contain disease-causing microorganisms or pollutants.
- ...install a manhole to simplify inspection and cleaning, if the tank is 3-4 ft. below ground level.
- ...allow only grass to grow on top of the tank and leaching field.
- ...ensure that there is a vegetated buffer (grass, trees and shrubs) between your leaching field and a lake or stream. Plants will suck up excess nutrients, help retain water, and prevent erosion.
- ...keep roof drains, surface water from driveways, basement sump pump drains, and other drainage systems away from the leaching field.
- ...check with the local regulatory agency before installing a water softener that discharges to the septic system.
- ...find your flow diversion valve and turn it once a year. This can add years to the life of your system.

## Don't

- ...put a lot of water into the system all at once. A lot of water down the drain like when draining a bathtub can force harmful amounts of nutrients to flow from the tank and overwhelm the leach field.
- ...flush even small amounts of paint, solvent, thinners, disinfectants, pesticides, or oils down the drain or toilet. These chemicals can destroy the bacteria that break down solids in the septic tank and pollute groundwater.
- ...use large amounts of laundry soap, detergents, bleaches, toilet bowl cleaners and caustic drain cleaners. Choose environmentally friendly products (such as Method or Seventh Generation) or vinegar and baking soda whenever possible. If you must use chemical cleaners, read labels carefully to ensure only recommended amounts are applied.
- ...allow excess amounts of fat or grease to enter the system. It can congeal and cause obstructions.
- ...use garbage disposals. Compost instead.
- ...flush paper towels, tampons or sanitary napkins, condoms, plastic, or cat litter.
- ...use chemical compounds, enzymes or septic tank "cleaners." These can break down sludge, which can then flow into your leaching field, decreasing the life of the field.
- ...discharge salt brine solution from water softeners. Salt brine can build up in the groundwater and pollute wells and springs supplying drinking water.
- ...use matches or an open flame to inspect a septic tank. Gases produced by decomposing sewage can explode and cause serious injury.
- ...allow trucks or heavy equipment to drive or park over the tank or leaching field. Heavy equipment can crush the pipes and compact the soil so it can no longer filter and absorb sewage nutrients.
- ...plant trees or shrubs on or near the leaching field. Trees such as willows, poplar and sumac can clog up your tile bed and cause backup and surface seepage.