

Letter to the Editor – Sylvan Lake News – February 1, 2008

Will Municipalities Take Steps to Mitigate Damage?

Every one of us who lives by Sylvan Lake enjoy advantages that other people can only dream about. Each one of us needs care about the continued sustainability and health of our lake if we want our families to be able to enjoy these benefits in the years ahead. Each one of us has an impact on the lake with the daily choices we make. This letter brings attention to serious environmental damage recently done to an important local biofilter.

I suspect that you fertilize your lawn, wash your vehicle in the driveway and you probably forgot to pick up rover's latest deposit in the back yard. So when it comes time to watch the snow melt and the spring rains wash the landscape which includes your driveway, yard, street and probably the new construction in the neighborhood, where does this runoff end up?

Certainly the ground absorbs a large amount of moisture but when the ground is saturated or a heavy rainfall occurs, where does the runoff end up? Gravity takes over and consequentially the runoff ends up in the Lake.

If this runoff is left unchecked it delivers pollutants to creeks and streams flowing into the Lake and directly from our streets to our Lake from storm sewers. Pesticides, herbicides, and fertilizers come from residential lawns, commercial landscaping, and recreational facilities like the golf courses. There can be residuals that leach from land that was once farmland. Heavy metals come from vehicles, buildings, roofs, and industrial sites. Oil and grease drip regularly from cars onto streets, parking lots, and are occasionally dumped into storm drains by residents performing maintenance on vehicles and equipment. Consider the large volume of silt that finds its way to the lake due the vast amount of new development and construction our community is experiencing. Pathogens and bacteria in runoff can come from pet waste, broken or leaking sanitary sewers, wildlife, or sanitary sewer overflows not to mention the tons of road salt used on our streets during the winter months.

So where is this leading you might ask?

I have learned the Summer Village of Norglenwold hired a contractor to remove an important bio filter along the north side of Highway 11A just west of the entrance to the Marina Bay subdivision prior to January 16, 2008. They thought there was a possibility of ice breaching the berm and so they removed about 235 meters of cattails and vegetation.

The runoff that flows through this bio filter originates from Willow Springs, Points West, Norglenwold, the north ditch along Highway 11A and anything between those communities west to the high point of land. The flows through the bioswale from west of Willow Springs under Highway 11A to Golf Course Creek, the marina and deposits into

the Lake. You can view photographs of the bio filter destruction at this website address http://www.brassedgephotography.com/bio_filter_images/index.html.

You have probably noticed a number of bioswales throughout our community thinking these were just ditches filled with vegetation and cattails.

Thinking these are just cattails and vegetation some of you may not be aware of the extreme benefit a bio filter provides to our Lake.

Nature uses vegetated depressions, wetlands, marshes, etc. to clean water runoff by removing sediments, turbidity, heavy metals, and other pollutants. How this is accomplished is complex. Some pollutants are removed by vegetation uptake, some by natural flocculation (cause to form lumps or masses) from decomposing vegetation, some by just slowing the flow down enough for sedimentation to occur, and some by biota consumption and ionic attraction around the root structure. Biofilter pollutant removal is largely regulated by microorganisms. The biota acts as a major stabilization, removal, and conversion mechanism for organic carbon and many nutrients.

The establishment and maintenance of a healthy biological colony may be the most important aspect of the construction and continuing viability of the biofilter. The right biota for the biofilter is important because it is the microorganisms to a great extent, which capture and convert pollutants and nutrients into a form, which can be easily consumed by the vegetation. Slower runoff velocities within a biofilter allow higher retention times of pollutants and settling of the larger particle sized pollutants.

Many pollutants are in an insoluble form, which vegetation can not use. The biological food chain converts these nutrients and pollutants from their stable insoluble form into ones, which are easily consumed by the vegetation established in the biofilter. The microorganisms work in a symbiosis with the plants to capture and uptake the pollutants and nutrients in the runoff (storm water).

Microbial action:

- converts or transforms many substances into insoluble or harmless substances,
- positively changes the reduction/oxidation increasing the processing capacity of the wetland soil to remove pollutants, and
- is a major contributor to the recycling of nutrients.

Many pollutants attach to soil particles and in themselves are considered a pollutant. When storm water runoff leaves a site, unless there is effective erosion protection such as vegetation, soil also leaves the site, in the forms of sediment, suspended solids, and microscopic soil particles called colloidal suspension, dissolved solids, or turbidity. The soil particulate can be clay, minerals, organic material, heavy metals, etc. Sediment usually will readily settle out. Suspended solids will settle out providing the velocity of the runoff stream is not too large. Turbidity usually will not be removed from the water column with out something else acting upon it to remove it.

Sediment and suspended solids are detrimental to fish spawning beds. Turbidity reduces light penetration, increases water temperature, smothers stream bottom habitats, smothers larvae, clogs or damages gill structures, and reduces oxygen in water. Golf Course Creek and the marina are major fish spawning habitats in the spring.

So now we have 235 meter less of biofilter protecting our Lake from any number of pollutants. Sure the vegetation will grow back in time but think of those pollutants being dumped into the Lake in the meantime. Cumulative effects are devastating.

This environmental damage has been brought to the attention of both the Town of Sylvan Lake and the SV of Norglenwold. Will either of them take the steps necessary to implement mitigation techniques due to the destruction of the bio filter that affects all of us and our lake? What about future incursions into this particular bio filter and other bio filters in our community?

Maybe it's time we all start doing our part to ensure the continued sustainability and health of our Lake. Because if we don't take care of our Lake, who will?

References:

Bioswales, Vegetative Buffers, & Constructed Wetlands for Storm Water Discharge Pollution Removal by Dennis Jurries, PE NWR Storm Water Engineer for the State of Oregon Department of Environmental Quality

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