Eutrophication (Nutrient Pollution)

Did you know?
Spring Lake is known as a 'seepage lake' and lakes such as ours are typical in this area. These bodies of water have no surface water inflows or outflows. Most water comes from groundwater flow; springs in our case.

Spring Lake, like many lakes in Alberta, is what is called a 'eutrophic lake'. Lakes become eutrophic in a natural process as the lake ages and become more productive. This normally takes thousands of years to occur. We as humans, through our various cultural activities have greatly accelerated the eutrophication process in thousands of lakes around the world.

Cultural or 'man-made' eutrophication is a result of water pollution caused by excessive plant nutrients. As humans we have, hopefully inadvertently, added excessive amounts of plant nutrients to our water bodies in many ways. These nutrients include basic elements such as phosphorus, nitrogen, and carbon. Runoff or seepage from fertilized crop lands, cow pastures, feed lots, urban lawns, and even golf courses are just some of the sources of these nutrients. Partially treated or untreated domestic sewage is another source.

Of all of the raw chemicals that compose the various substances that lead to direct or indirect pollution, Phosphorus or phosphates act as powerful stimulants for algal growth. Algae bloom can lead to oxygen depletion and subsequent fish kills. The biomass of algae and aquatic plants is directly related to the amount of phosphorus available. Hence, the more phosphorus in the water, the more algae and plants there will be. As we know Spring Lake is relatively shallow overall and lake warming in the summer can occur very quickly. Warmth, sunlight and nutrients all add up to the potential for algae proliferation and shallow water weed growth. Because of low bottom dissolved oxygen some eutrophic lakes struggle to maintain their fish populations through an extended winter.

<u>What can we do to slow or limit cultural lake eutrophication?</u>

- Do not fertilize lawns anywhere near the lakeshore. Our meadows, tall grasses, shoreline trees and other shoreline vegetation can significantly reduce the flow of nutrients into surface water. If you must fertilize avoid fertilizers that contain phosphates. E.g. a 20-0-15 fertilizer has '0' phosphorus . . . the middle number designates phosphorus content.

- Do not incur any shoreline vegetation damage or losses. Cutting grass in wide swaths down to the shoreline should be avoided.

- If you have a septic field or a 'Minnesota Mound' make sure that it is functioning properly and avoids any nutrient seepage to the lakeside.

Inspect and maintain any septic system regularly. As an example septic tanks should be pumped out every 3 to 5 years or whenever the sludge level exceeds one-third of the tank capacity.

- Capture and cleanse any pollutant carrying runoff before it reaches the waterway. Consider shore land buffers, rain barrels or rain gardens.

- Properly dispose of household hazardous wastes – you may have heard of the saying, “if you wouldn’t drink it, don’t dump it “.

- Plant trees and shrubs or protect your wooded areas. Removal of trees and shrubs causes more rain to hit the ground and run off rather than landing on leaves and branches.

- Do not bathe, shampoo, or wash your recreational toys in the lake with any type of phosphate detergent. More and more laundry and dish detergents are now phosphate-free.

- Keep land clearing to a minimum. Re-vegetate any bare areas to minimize erosion to the lake.

- Do not burn brush or leaves near the shore. Similarly, ash dumping from stoves, fireplaces or fire pits any where near the shoreline negatively impacts the lake’s biomass. These various ash sources all leach nutrients into the water. In fact serious toxins can be released into the water table from ashes depending on what is actually burned.

- Try not to use powerful outboard motors in shallow areas – much of Spring Lake’s shoreline! The nutrient-laden bottom sediments can be churned into the overlying water which may cause increased algal growth.

Our common sense in managing phosphorus pollution is essential. Minimizing erosion is also crucial. Irresponsible tree cutting, removing stumps, bushes and grass – even increasing impervious surface areas (driveways and parking lots) all enhance the probability of pollutants including nutrient pollutants entering Spring Lake.

Our local and migrating bird populations can not help but do their bit to literally dump their wastes into the lake. Let’s not speed up Spring Lake eutrophication by our cultural practices and we will have many more generations enjoying the beauty and presence of one of Alberta’s cleanest lakes.

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Spring Lake