

Our Lake

In this article I want to continue with a discussion of the nutrient and sediment loading of our lake. This information is explained in much more detail if you want to do some research. It can be found on the Normanoch.org website. Click on water quality and then click on references. Last week's article listed the quantities in kilograms/year. I will translate them into tons/year – a more tangible value.

The lake receives, according to the report, 150 tons of solids per year. This material is suspended and contained in the surface water and storm water runoff reaching the lake during storm events and snow melt. Because this material is suspended by the erosive effect of the water flow, sediment particles range from coarse sand to fine soil and clay. They deposit along the shoreline and at the outfalls of any storm water ditches, swales or pipes. Why is this not good for the lake? First, it brings with it phosphorus (P) that is attached to the particles. Phosphorus stimulates growth of weeds and algae. Sediment gradually fills the lake creating a muddy bottom. In earlier times, the lake bed was rocky and clean. Storm runoff was more dispersed and filtered by wooded buffers along the shoreline. But with development, paved driveways, streets with collection points and lawns, the runoff into the lake has less chance to slow up and the velocity of the water carries all these particles into concentrated areas. Once in the lake, it forms a sediment layer that are high in nutrients and that stimulate weed growth.

Phosphorus and nitrogen (N) are the other two factors that cause our lakes production of algae and weed growth. Of the two, phosphorus is the limiting factor. That means that the algae production, in particular, is limited and controlled by the level of phosphorus. Only minute quantities of phosphorus are needed to cause a problem. Phosphorus is typically measured in parts per billion (ppb). A level over 20 ppb stimulates blue green algae production. Nitrogen is measured in parts per million (ppm). Although contributory to weed growth (as it stimulates your lawns growth), nitrogen also has a positive benefit in the water column. The relationship of nitrogen to phosphorus is very important. Higher N to P is better than lower N to P. In terms of loading, our lake receives about 6 tons/ year of N and nearly ½ ton/year of P. Reducing all these quantities: sediment, N, and P; become the objectives of improving our water's quality.

We will continue with the recommendations in the report and discuss some activities we can all take to reduce these nutrient loading problems in forthcoming issues. The Water Quality Committee is meeting on Saturday, at 9 AM.

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