

**PHOSPHOROUS AND YOUR LAKE**  
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Phosphorous is a natural element that is essential to all living organisms. However, phosphorous is only required in very small amounts and excess phosphorous in your lake can quickly cause accelerated algae and plant growth. Several studies have shown that when a lake becomes eutrophic (over fertilized) the negative affects range from loss of recreational value to loss of property value. But the process goes far beyond what we can see from shore. As the green or brown algae mats cover the surface of a lake; sunlight is unable to penetrate the lower depths. This lack of light results in the death of rooted aquatic plants and algae growing lower in the water column. The decomposition process uses oxygen, which often exceeds the existing supply. Most of the desirable fish species, such as Bass and Walleye, require higher levels of dissolved oxygen to survive. As dissolved oxygen levels fall, the fish may die. Even if these fish are restocked, many of the macroinvertebrates that are an important part of the food chain for these fish will also have been killed off. Unfortunately, the fish that can survive on the lowest amounts of dissolved oxygen are bottom feeding rough fish such as carp.

Of course, algae are not the only species that exhibits excess growth with excess levels of phosphorous. All aquatic plants will increase growth rates. While many of these plants are an important source of food and shelter for fish and macroinvertebrates, extensive growth of aquatic plants can interfere with fish foraging, navigation, aeration and channel capacity. Which, of course, results in increased costs to lake residents when mechanical harvesting and chemical aquatic plant control methods are employed.

Once a waterbody has been overfertilized with phosphorous it is a long, difficult and expensive process to restore the lake. In order to protect our lakes and streams it is important to understand that phosphorous and other contaminates do not come just from the land immediately adjacent to the water. A watershed is all the land that drains into a lake, stream or river. Everyone lives in a watershed, which means a home that is several miles away will still have an affect on the water quality of the waterbody within its watershed. Therefore, for environmental and financial reasons everyone should develop "water-wise" attitudes and habits.

To protect the lake or stream in your watershed, please:

1. Use non-phosphorous fertilizers.
  - a. Before applying any fertilizer get a soil test.
2. Phosphorous clings to soil particles. Protect against soil erosion by maintaining dense vegetation.
  - a. When land disturbance is unavoidable always use sediment and erosion control measures
3. At the lake edge, avoid mowing to the waters edge or consider planting a native shoreline buffer.
4. Ensure proper maintenance of your septic system.
5. Clean up after your pets.

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