

Our Lake

Last week's article explained how our lake responds to both changes in chemistry and ecology. Both aspects are interdependent of each other. Phosphorus is the element that we measure in parts per billion. When P becomes plentiful enough, 20-30 ppb -our lake responds in the warm months by creating algae blooms in proportion to the available phosphorus. One pound of phosphorus in soluble form can result in over 4400 lbs. of plant and algae growth. Phosphorus can come from a variety of sources. One pound of dissolved nitrogen can produce about 400 pounds of plant material.

This past week, the WQ volunteers along with Lake Owassa volunteers met with Princeton Hydro's Dr. Sousa in a joint meeting to discuss the problem of storm water caused nutrient loading. This is a huge challenge for both lakes because every rain event flushes nutrients into the lake and stimulates growth of aquatic plants and algae.

The watershed run-off contains organic and inorganic material that is scoured by the storm water from wherever the rain falls. Nearly 75% of Culver Lake's watershed is uninhabited forest or wetlands. Residential areas account for 15% of the watershed area. Yet substantial runoff that does not infiltrate the soil can generate large amounts of nutrients even though the land is natural. Where residential area land has been developed and paved over, there is less chance the rain water can infiltrate the soil. The best practice to prevent the rain water from picking up nutrients on its way to the lake is by interrupting the flow by slowing it down through vegetative areas to buffer the grassy area and the lake shoreline.

Is the rain water pure? Not after it has been in contact with the soil or pavement. Precipitation from the sky is very pure. It is like a sponge ready to soak up salts, phosphorus, carbon, and nitrogen - all sorts of nutrients that enrich the lake. A House on a sloping lot presents a special challenge to manage the storm water. Terraced landscaping with vibrant plant growth on the flat areas might slow down the flow of rain water and give the soil a chance to absorb the nutrients.

Terry McQuillan, one of our WQ volunteers is researching the subject of water front plantings. Recently, the local newspaper contained articles that described the floating islands at Lake Hopatcong. These manmade islands are designed absorb nutrients. Culver Lake has a similar natural area with a planted island running along the west shore. In the growing season, the plants flourish while absorbing nutrients. The downside is they also give up nutrients when they die off - as it is with all the aquatic growing mass in the lake. The nutrients are recycled for next year's growing season.

Speaking of plants, a team of volunteers headed by Bob Cuppuccio and included Brian and Tom Campbell, Dave and Amy Supko, Tony Disantis, Ric Ferruggia, Bill Haggerty, Zack Kattermann, Terry McQuillan, surveyed the entire lake and wetlands area Water Chestnuts and did not find any sign of this invasive species.

Another lakeside plant that is prevalent around the lake is all the trees that are located within 50 feet of the shoreline. You can understand how decaying leaves with earthworms can produce rich top soil. The same process of decay occurs in the water. The leaves fall to the bottom where microbes and water worms eat the leaves and recycle the phosphorus and nitrogen back into the water. If you have lake side property, you must try to minimize leaves falling into the lake. Notify your landscaper NOT to blow

leaves into the lake! Rake up leaves lying on the ground before they can blow into the water. Be kind to our lake!

There is a WQ meeting at 9 AM on Saturday.

Paul Sutphen

John Colyer

