

Wetlands 101

It the time of year again where you are driving along and suddenly you hear a chorus of calls outside your car. As you continue driving the sounds slowly fade away, only to rise again in a few minutes.

It's the call of the wetlands. It's the call of the Spring peepers, the Wood frogs, and the returning songbirds. It's the call of Spring.

It is also a signal of the buggy months ahead. And that signal is not looked forward to, especially with all the concern over West Nile Virus.

Should we be advocating for the elimination of wetlands because they are known mosquito breeding habitats? Should we be spraying them, filling them in, or draining them to reduce the mosquito population?

That depends. Do you like clean water, plentiful groundwater resources, and lots of wildlife? Then you may want to think twice before messing with that little wetland at the back of your property.

Wetlands– the kidneys of our watersheds

While wetlands were once thought of as wastelands and were treated as obstacles impeding residential development, they are now becoming regarded as an important part of a healthy watershed.

Wetlands are often referred to as the kidneys of the watershed because they filter out sediment and pollution from the surrounding environment. Outgoing water is cleaner than when it entered.

Wetlands help reduce flooding and allow groundwater resources to be replenished.

There are four main types of wetlands, all of which share the common characteristic of being saturated with water all or at least part of the time. They form as shallow depressions or lakes gradually fill in with silt and decaying material, or form as a result of frequent flooding along lakeshores, riverbanks, or other surface water.

Wetlands...

- provide habitat for many species of plants and animals in all seasons; in dry periods, the slow release of water from wetlands ensures continued habitat for aquatic and semi-aquatic species;
- play an important role in the hydrologic cycle - flood control, groundwater recharge areas and discharge, evaporation areas;
- improve water quality - capture nutrients, pollutants and some heavy metals; maintain oxygen levels in water;
- stabilize and protect lakeshores and banks from erosion;
- contribute to the cycling of gases, including oxygen, methane and carbon;
- provide food and other products for humans; and
- are a source of spiritual renewal, recreation, and education.

The water source largely determines which type of wetland will form. Sources include groundwater, surface water flow, precipitation and runoff. The water source also helps determine how many nutrients are available in the wetland for plant growth and decomposition.

So what type of wetland do you have on your property? Is it a marsh, swamp, bog or fen?

Marsh

Marshes generally have shallow water ranging in depth from about ten centimetres to two metres and are characterized by emergent soft-stemmed vegetation adapted to saturated soil conditions. Marshes are generally found along the edges of lakes, rivers and other surface water.

Common emergent plants you will find in a marsh include cattails, pickerelweeds, and arrowheads in shallow areas, with floating leaved plants, such as water lilies, in deeper areas.

Marshes get most of their water from surface water, with some coming from groundwater sources, as well. Nutrients are plentiful in a marsh and the pH is usually neutral, leading to an abundance of plant and animal life.

Marshes form a highly productive organic muck bottom layer, composed of decaying material mixed with the mineral soil substrate. They are some of the most ecologically productive regions in the world, with plant growth being fast and abundant.

Marshes are the most common type of wetland in Muskoka and help maintain the health of your watershed by recharging groundwater supplies and moderating stream flow by providing water to streams. This function is especially important during periods of drought.

Having marshes in your watershed helps to reduce damage caused from floods by slowing and storing flood water. As water slowly moves through a marsh, sediments and other pollutants settle to the floor of the marsh, where marsh vegetation and microorganisms use excess nutrients, such as nitrogen and phosphorus, for growth, preventing them from polluting surface waters.

Swamp

A swamp is any wetland dominated by woody plants and has open surface waters. They are characterized by saturated soils during the growing season and standing water during certain times of the year.

The highly organic soils in swamps form a thick, black, nutrient-rich environment for the growth of water-tolerant trees and shrubs, including silver maples, willows, cottonwoods, white cedars, and tamaracks.

Many plants, birds, fish and invertebrates require the habitats provided by swamps for their survival. Like marshes, swamps are highly productive areas and support a large variety of life.

Swamps play a vital role in flood protection and nutrient removal, helping to preserve the quality of surface waters.

Floodplain forests are especially high in productivity and species diversity because of the rich deposits of alluvial soil from floods.

Many upland animals depend on the abundance of food found in lowland swamps, and valuable timber can be sustainably harvested to provide building materials for people.

Bog

Bogs occur in poorly drained freshwater regions, especially in the boreal forest and tundra regions of the north. They are waterlogged areas with stagnant, brown, acidic water that contains little or no dissolved oxygen.

Bogs contain spongy peat deposits and a floor covered by a thick carpet of sphagnum moss. They receive all or most of their water from precipitation and have no inflow or outflow. As a result, they are low in the nutrients needed for plant growth. Decomposition occurs very slowly, further reducing the amount of nutrients available for new plant growth.

The unique and demanding physical and chemical characteristics of bogs result in the presence of plant and animal communities that demonstrate many special adaptations, such as carnivorous plants like sundews and pitcher plants.

Black spruce and tamarack can tolerate these harsh conditions, and will often grow as floating mats of vegetation along the water's edge, or sometimes as "islands" in the middle of large bogs.

Bogs are unique communities that can require hundreds to thousands of years to form naturally, but can be destroyed in a matter of days.

Bogs are not found in Muskoka, but in the areas they are found, they serve an important ecological function in preventing downstream flooding by absorbing precipitation.

Bogs are home to some of the most interesting plants in Canada, such as carnivorous plants, and they provide habitat to animals threatened by human encroachment.

Fen

Fens are similar to bogs, but are found in more alkaline, well-drained areas, often occurring on limestone. They are peat-forming wetlands that receive nutrients from sources other than precipitation, including drainage from surrounding mineral soils and groundwater movement.

Fens are generally associated with low temperatures and short growing seasons, with nutrients being a little more abundant than in bogs. However, oxygen levels are low and bacteria are scarce, so decomposition occurs slowly.

Fen vegetation often consists of willows, birches, and cedar trees, low-lying shrubs and a variety of grasses. Unlike in bogs, where vegetation floats on the surface, the vegetation and organic matter in fens usually extend from the surface all the way down to the bedrock.

Up to ten thousand years are required for a fen to form naturally.

Fens, like bogs, provide important benefits for a watershed, including preventing or reducing the risk of floods, improving water quality, and providing habitat for unique plant and animal communities.

In Need of Protection

Great strides have been made in recent years to protect and restore significant wetlands. However, in spite of their valuable role within our watersheds, small wetlands that are home to more common species remain largely unappreciated and vulnerable to development pressures.