



Haliburton
Highlands
Land Trust

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protecting the land we love for future generations

Best Management Practices: Guidelines for Protecting Wetlands



The Haliburton Highlands Land Trust

Who Are We?

We are one of over thirty land trusts in Ontario. Founded in 2005, we are a not-for-profit organization that works to protect, conserve and maintain the biodiversity of Haliburton County for future generations. As a charity, we are primarily run by volunteers and funded through donations, memberships and project sponsorships. We have had successful partnerships with community members, businesses and all levels of government. Two of our five properties provide opportunities for residents and visitors of the Haliburton Highlands to experience and enjoy passive outdoor recreational pursuits. All our properties provide opportunities for HHLT to achieve our goals of conservation, research and environmental education.



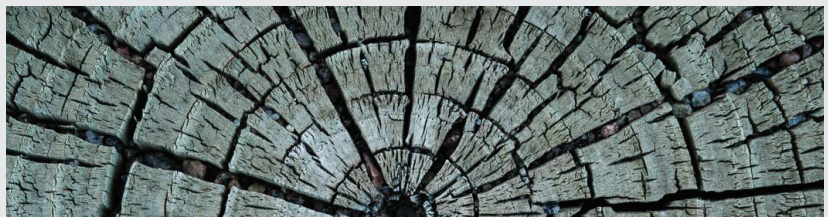
Our Commitment to Natural Spaces

Our mission is to protect the natural heritage of Haliburton County for future generations. Education is a key approach to ensuring future generations know the importance of protecting our natural environment, including wetlands. We run various research projects with universities and colleges that help educate the students involved and provide ongoing educational resources. Land Trust presentations, publications and stewardship guidance provide environmental support to the community. Working with many scientists and environmentalists, we have identified important habitats and species, particularly Species at Risk, in Haliburton County.

Our Lands and Waters

The Haliburton Highlands Land Trust owns, manages and protects 1300 acres of forests, wetlands, and open areas. Our stewardship is concentrated on our five properties.

- Barnum Creek Nature Reserve
- Dahl Forest
- Fred & Pearl Barry Wetland Reserve
- Norah's Island
- Smith Forest



All our properties contain wetlands and include all the types described in this booklet. Wetlands on our properties and throughout Haliburton County provide habitat for wildlife, protect us from flooding and protect and improve water quality. It is imperative that we protect wetlands in Haliburton County.



What is a Wetland?

Wetlands are lands that are seasonally or permanently saturated by water with the water table at or near the surface. This means you do not need to be standing in water to be in a wetland. The vegetation is an important indicator of wetlands as wetlands are comprised of water-loving plants including various species of mosses, sedges, grasses, herbs, shrubs, and trees.

There are different types of wetlands. The four main types of wetlands are: marshes, swamps, bogs and fens.

The goal of this booklet is to educate landowners and the public on the types and values of wetlands and how best to protect them.

Before starting any management project, contact either your local municipality, Ontario Ministry of Natural Resources and Forestry, Parks Canada or Fisheries and Oceans Canada to obtain the necessary permits and approvals. You should also consider contacting Haliburton Highlands Land Trust for advice as not all methods listed may be suitable for your specific wetland.



How to Identify Wetlands

Sometimes it can be difficult to identify what kind of wetland you have, but every wetland type has a unique set of qualities that helps to identify them. This section of the booklet will provide identification tips for each wetland type found in Haliburton.

Bog

Bogs are very stagnant, nutrient poor wetlands that can be readily identified by a blanket of thick sphagnum mosses that forms hummocks, over a deep accumulation of partially decayed plant material called “peat”. Because of the lack of nutrients, there are unique plants such as carnivorous Pitcher Plant and Roundleaf Sundew. Low shrubs are also common and stunted Black Spruce trees may be scattered throughout.



Cotton grass blooming in bog at Fred & Pearl Barry Wetland.
Photo Credit: Paul Heaven



Fen

Fens are another type of peatland that can be identified by the presence of Sphagnum mosses or brown mosses. The sphagnum moss is less hummocky than in bogs, and rather than Black Spruce, stunted Tamarack may be scattered throughout. The biodiversity is higher in fens than bogs with more types of vascular plants. Tawny Cottongrass and Bog Rosemary are two fen indicators commonly found in Haliburton.

Photo Credit: Paul Heaven

Marsh

A marsh is a wetland dominated by herbaceous plants that tend to be emergent, floating, free floating or submerged. The soils are waterlogged and rich, but not peat. Meadow marshes may be seasonally flooded and dominated by grasses and sedges, whereas open water marshes are permanently flooded and dominated by submerged, floating and/or emergent vegetation such as lily-pads and cattails.



Black ash swamp at Fred & Pearl Barry Wetland.
Photo Credit: Paul Heaven



Shallow aquatic marsh at Fred & Pearl Barry Wetland.
Photo Credit: Paul Heaven

Swamp

Swamps are wetlands that are dominated by trees or shrubs in waterlogged rich soil, but not in peat. Swamps are highly variable depending on the dominant tree or shrub type. For example, a coniferous swamp may be dominated by Black Spruce with a dense overstorey and a thick carpet of Sphagnum moss; whereas a thicket swamp is often dominated by a tangle of Speckled Alder in standing water.

Ecosystem Services

Wetlands provide ecosystem services or “ecoservices” that are critical to a healthy global environment and the well-being of Haliburton landowners.

Flood Mitigation

Wetlands have an extraordinary capacity for significant water storage. Acting somewhat like a natural sponge, the soils and vegetation, particularly Sphagnum moss, soak up and store heavy rainfall and snowmelt. As the landscape dries the wetlands continue to slowly release water into the streams, lakes and rivers. Without wetlands, these same waters would rush into the main rivers and flooding would become far more severe and frequent.

Groundwater Recharge

Acting as water basins, wetlands divert water from surface runoff into the water table. As many landowners in Haliburton rely on local wells for freshwater this helps ensure we have a continuous supply of drinking water.

Water Quality

In addition to capturing and retaining water, wetlands filter out heavy metals, toxins, and excessive nutrients. For example, cattail (Typha), a common marsh plant, is an effective filter for nickel, copper and arsenic. In addition to contaminants, wetlands also filter out silt and sediment from runoff thereby protecting fish habitat.

Carbon Sequestration

Wetlands are carbon sinks through active carbon sequestration and retention of large volumes of peat found in bogs and fens. If these wetlands are degraded, carbon dioxide is released into the atmosphere thereby contributing to an increase in greenhouse gases. Bogs and fens can take thousands of years to form, therefore maintaining and protecting these wetlands is an important strategy in reducing the negative effects of climate change.

Shoreline/Storm Protection

Wetlands adjacent to lakes and rivers can aid in shoreline protection. Thicket swamps, and emergent and floating aquatic vegetation have underwater roots and branches that help to mitigate wave damage and shoreline erosion.

Productive Habitat

Many wetlands serve as spawning grounds for freshwater fish and as migratory grounds for waterfowl and other birds (e.g. loons). They also provide year-round homes for water-loving plants and animals such as beavers, turtles, frogs, and more than 20% of Ontario's Species at Risk.



Cultural and Recreational Value

Wetlands are not only important to plants and animals. They provide opportunities for education and recreation for everyone, including anglers, trappers, boaters, and bird watchers. For thousands of years, wetlands have been used in spiritual ceremonies, and for the harvesting of food such as wild rice and cranberries.

Managing Wetlands

Vegetative Buffers

Maintain a natural vegetative buffer around all wetlands. Vegetative buffers are utilized by wetland wildlife for basking, nesting and foraging. Vegetative buffers also protect the wetland from contaminants and invasive species. A minimum 30m buffer is required to maintain these values but more is always better.



Infilling

Wetlands often become dump sites for lawn clippings, leaves, garbage and fill. Over time the wetlands become smaller and can be completely lost; or contaminated by chemicals and/or invasive species. Remember, the wetland may be recharging the water table and supplying you with drinking water or protecting your house from flooding. By avoiding any type of infilling landowners can ensure the wetland will continue to provide the valuable ecoservices that are critical to a healthy and safe environment.

Water Levels

Beavers play an important role in wetland development. Through the construction of dams, they create marshes that provide the wetland wildlife community with valuable habitat as well as all of the other ecoservices associated with wetlands. In some cases, beavers may cause local flooding that threatens property values. In these situations, consider mitigating the flooding through the installation of beaver “bafflers” that maintain a set water level, rather than short-term solutions such as draining the wetland or trapping the beaver.

Trails

Trails are important to landowners to access and enjoy their property. Wetlands are sensitive to traffic as the soils are saturated, and the vegetation can be easily damaged. Although capable of traversing a wetland, off-road vehicles (ORVs) will destroy wetland vegetation, habitats and wildlife and can permanently alter the waterflow through the wetland. Proper planning of a trail system is essential. The trail layout should avoid wetlands or provide wetland lookouts without entering the wetland or the adjacent vegetative buffer. Where a crossing is required, an elevated boardwalk or bridge is optimal. Infilling should be avoided as this represents wetland loss and can damage the remaining wetland by altering water flow.

Harvesting

Treed swamps can be a valuable source of timber; however, they are wetlands and sensitive to disturbances. Landowners should seek expert advice before removing any trees, as it can have negative long-term effects on the ecosystem. Harvesting should be limited to a light selective harvest and only be conducted in the winter when the soils are frozen.

Pesticides/Herbicides/Fertilizers

Pesticides, herbicides and fertilizers can harm wetland vegetation and wildlife communities, and contaminate the water quality. As wetlands recharge the groundwater such chemicals can also contaminate your drinking water. To effectively protect water quality in the wetland, a natural vegetative buffer of at least 150m is required.

Livestock

Livestock are often attracted to wetlands as a source of drinking water or to cool down during the hot summer months. However, livestock can also damage or contaminate wetlands through trampling of vegetation or defecation in the water. The installation of fencing and alternative water sources can be effective in protecting wetlands from livestock damage.

Invasive Species

The threat of invasive species is growing in Haliburton County, with some species targeting wetlands. Common Reed (*Phragmites australis*) can now be found in many wetlands and outcompetes native species. This results in severe losses in biodiversity and habitat and can alter the hydrology of wetlands. Dispersal of the seeds can be natural through water, air, or animal movement, as well as through human actions and equipment such as boats or ATVs. Maintaining a good natural vegetative buffer and limiting traffic in the wetland can protect the wetland from invasive species. Cleaning equipment such as boats, before placing them in a wetland can also limit the dispersal of seeds. If invasive species are noted in a wetland, immediate action to eliminate the species is recommended, as once established, eradication becomes more difficult.



How to Manage Your Wetland Wisely

| Do | Don't |
|---|---|
| <ul style="list-style-type: none"> ✓ Maintain a natural vegetative buffer of at least 30 m (100 ft) around your wetland. ✓ Plant native trees, shrubs, grasses and flowers to restore or enhance your wetland buffer. ✓ Keep livestock away from your wetland. ✓ Monitor your wetland for invasive species and take action to remove as soon as possible. ✓ Consider using beaver “bafflers” to mitigate flooding instead of trapping beavers. ✓ Avoid placing a trail for off-road vehicles through a wetland or its adjacent vegetative buffer. ✓ If a crossing through a wetland is required, build an elevated boardwalk or bridge. ✓ Seek expert advice on how and when to harvest lumber in a treed swamp ✓ Consider wearing a bug jacket or applying liquid insect repellent to keep toxic chemicals from being sprayed into your wetland. ✓ Consider applying for a grant to restore a natural vegetative buffer or remove invasive species ✓ Consider benefitting from a tax incentive program in recognition of your good stewardship ✓ Enjoy your wetland | <ul style="list-style-type: none"> • Fill in your wetland. • Drain your wetland. • Alter the flow of water in your wetland. • Drive or cycle over a wetland, even if it appears to be dry. • Dump contaminants near or in your wetland. • Use fertilizers, pesticides or herbicides near your wetland. • Use insect repellent that is toxic to aquatic species. • Create a trail for off-road vehicles through a wetland or its adjacent vegetative buffer. • Dump leaves or other garden waste in your wetland. • Remove standing dead trees from your wetland as they provide good habitat for wildlife. • Use mosquito magnets because they emit carbon dioxide to attract and kill mosquitoes. Though a nuisance to people, many birds and bats rely on a steady diet of mosquitoes. |

Wetland Grants and Conservation Incentives

The Ontario government and some provincial environmental organizations work with partners to conserve wetlands. Programs include:

Conservation Land Tax Incentive Program

If you're a property owner, you may qualify for a 100% property tax exemption for land with important natural heritage features (such as provincially significant wetlands).

<https://www.ontario.ca/page/conservation-land-tax-incentive-program>

Managed Forest Tax Incentive Program

If you're a property owner, you may qualify for tax relief if you agree to prepare and follow a Managed Forest Plan for your property.

<https://www.ontario.ca/page/managed-forest-tax-incentive-program>

Environmental Farm Program

If you're a farmer, you can apply to cost share programs to use practices that help conserve wetlands on your property.

http://www.omafra.gov.on.ca/english/environment/efp_index.htm

Species at Risk Stewardship Fund

Grants may be available for wetland conservation work that benefits species at risk.

<https://www.ontario.ca/page/grants-protecting-species-risk>

Ducks Unlimited

Funding may be available for wetland conservation work with approved management plan.

Email du_barrie@ducks.ca



For More Information About Wetlands Check Out the Following:

The Haliburton Highlands Land Trust:

- Haliburton Highlands Land Trust. (2018). Home. Retrieved from Haliburton Highlands Land Trust: <https://www.haliburtonlandtrust.ca/>

Wetland Conservation Ontario:

- Government of Ontario. (n.d.). Wetland Conservation. Retrieved from: <https://www.ontario.ca/page/wetland-conservation>

Provincially Significant Wetlands:

- Niagara-on-the-Lake. (n.d.). Provincially Significant Wetlands Niagara: Ontario Ministry of Natural Resources; Niagara Peninsula Conservation Authority; Niagara Region. Retrieved from <https://notl.civicweb.net/document/3911>

What are wetlands and what is the difference in types:

- Minister of the Environment. (2002). Wetlands. Retrieved from Hinterland, Who's Who: <http://www.hww.ca/en/wild-spaces/wetlands.html>

Revitalizing or helping your wetland:

- Environment and Climate Change Canada and Canadian Wildlife Federation. (2019). Revitalize a Wetland. Retrieved from Hinterland, Who's Who: <http://www.hww.ca/en/things-you-can-do/action-and-awareness/wetlands/revitalize-a-wetland.html>

Ontario's Wetland Conservation Strategy:

- Ontario Ministry of Natural Resources and Forestry. (2017). A Wetland Conservation Strategy for Ontario 2017-2030. Toronto: Queen's Printer for Ontario. Retrieved from https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf

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The Haliburton Highlands Land Trust -

Get Informed, Become Involved, and Be Invested!



Membership:

By becoming a member, you take a direct role in protecting the natural and cultural heritage of our community by providing the Haliburton Highlands Land Trust (HHLT) with a dependable source of funding. This allows us to engage in new projects and develop innovative approaches to land and water conservation, environmental education, healthy outdoor activity, and nature appreciation. In addition, it provides opportunities for the HHLT to promote the significant economic value of the environment in the Haliburton Highlands.

Donations:

The HHLT gladly accepts monetary donations as well as gifts-in-kind from individuals, families, businesses, charities, not-for-profit and corporate organizations. Donations and gifts-in-kind will receive a charitable tax receipt. Monetary donations can be general or directed, as well as donated in memoriam or celebration.

Special Occasion Gifts:

Consider adopting an acre of the Dahl Forest or Barnum Creek Nature Reserve in recognition of that nature lover on your gift giving list. Personalized certificates are issued with these donations and you can visit our office and choose your acre on our grid maps. An excellent way to recognize a person's commitment to environmental conservation.

Contact Us:

If you love the Haliburton Highlands and want to support the HHLT, we'd love to hear from you!

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Our website is a good place to get more information about the HHLT's exciting events! Stay up-to-date by signing up for our newsletter. You can also make a donation or sign up as a member at www.haliburtonlandtrust.ca