

Working Around Wetlands?

What you should know



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Join the growing number of landowners who include conservation efforts when working in and around wetlands.

Wetlands are essential to the health of our lakes, rivers and streams. The survival of hundreds of plant and animal species depends on the unique and specialized habitats found only in wetlands. Wetlands also play a critical role in the maintenance of our water supply, in cleaning up polluted waters and in flood damage reduction. Exceptionally beautiful, remarkably productive and valuable, wetlands are a precious resource.

Unfortunately, some human activities destroy wetlands and also cause harm to fish and wildlife habitat and our water supply. In Ontario, south of the Canadian Shield, less than 30 per cent of the wetlands that existed before European settlement remain. Of these remaining wetlands, many are not as healthy as they could be.

Therefore, it is vitally important to consider the effect your activities as a landowner may have on wetland areas. It is possible to reduce or eliminate potential negative impacts through careful planning and by using environmentally sound practices. If you have a wetland on your property, there are also actions that you can take to protect or improve it. This brochure provides some of the basic information you will need when working around wetlands, as well as some important considerations to address in order to ensure their conservation and protection.

What Are Wetlands?

Wetlands include areas that are seasonally or permanently covered by shallow water and areas where the water table is close to or at the surface, and there are water-saturated soils and water-tolerant or water-loving plants. They are transition zones between land and open water.

Wetlands comprise an incredible array of landscapes. They can be found near the banks of rivers and streams, along the edges of lakes and ponds, or in open fields and wooded areas where the water table is near the surface. Some wetlands may not even appear wet year-round. Wetlands occur widely throughout both rural and urban areas and can be very small or thousands of hectares in size. In some areas, particularly near cities and towns, wetlands may be the only remaining 'wild' spaces.



The Great Lakes Wetlands Conservation Action Plan (GLWCAP) is a partnership commitment between federal and provincial governments, and non-government organizations to establish a coordinated and comprehensive wetlands conservation program for Great Lakes wetlands.

*Published by Authority of the Minister of the Environment
©Minister of Public Works and Government Services Canada, 1997
Catalogue No. Cw 66-155/1997E
ISBN 0-662-25658-1
Également disponible en français sous le titre :
Intervenir dans les terres humides
Ce qu'il faut savoir*

Throughout the world many different names are used to describe wetland areas. Marshes, swamps, bogs and fens are the types of wetlands found here in Ontario.

Characteristics of Wetlands Found in Ontario

Marshes

- Non-woody plants - rushes, reeds, cattails, sedges, water lilies, coontail
- Pondweed in open water areas
- Shrubs - sweetgale and red osier dogwood may be growing in drier areas
- Periodically or permanently flooded, usually open water areas
- Rare in some areas of northern Ontario.

Swamps

- Woody plants - mostly trees (white cedar, tamarack, black spruce, silver and red maple, black ash) and/or shrubs (willow, dogwood, alder, and winterberry)
- Periodically or permanently flooded
- Often no standing water in mid to late summer.

Bogs

- Predominantly sphagnum moss, sometimes low shrubs, sedges, also sundews, and pitcher plants
- Possibly black spruce trees in drier areas
- Depressions with stable water levels provided by rainwater or snowmelt
- Acidic (Peatlands)
- Rare in southern Ontario

Fens

- Predominately sedges, also mosses, grasses, reeds, low shrubs, sundews, pitcher plants and bladderworts
- Trees, when present, usually cedar or tamarack; usually where groundwater discharges to the surface
- Rare in southern Ontario (Peatlands)



Wetlands provide a variety of benefits.

Ontario Ministry of Natural Resources

Ecological Functions and Other Benefits of Wetlands

- Provide important habitat for a wide variety of wildlife species, including amphibians, reptiles, mammals, migratory birds, and waterfowl, and may also provide habitat, spawning and nursery areas for fish.
- Afford essential habitat for some of our rarest plants and animals, including Small White Lady's-slipper Orchid, Swamp Rose Mallow, Spotted Gar, Fowler's Toad, Wood Turtle, Spotted Turtle, Least Bittern, and Prothonotary Warbler. Protect shorelines from erosion by flowing water and wave action.
- Trap moderate amounts of soils running off nearby uplands before they enter lakes and streams.
- Maintain and improve water quality by filtering contaminants and excessive nutrients.
- Renew groundwater supplies.
- Help to control flooding and reduce flood damage.
- Provide a source of economically valuable products such as fuel wood, timber, animal pelts, wild rice, cranberries, and commercial fish.
- Support recreational activities including fishing, hunting, nature appreciation, bird watching, walking and hiking.
- Provide opportunities to participate in outdoor educational activities and to enjoy the aesthetic qualities of wetlands.



Many wildlife species use wetlands for habitat.

Ontario Ministry of Natural Resources

Planning Work in or Around Wetlands?

When considering a project, it is important to remember that the essential physical, chemical and biological processes of wetlands are varied and complex. Wetlands have different functions throughout a watershed, all of which are needed to maintain healthy lakes, rivers and streams. Since a wetland does not function in isolation from the rest of the landscape, land use

activities outside the wetland, can have an impact. For example, wells and septic systems located outside of a wetland can have detrimental effects on groundwater within a wetland. Also, impervious surfaces, such as roads, asphalt or concrete paths, and retaining walls, can change water drainage and alter the balance of water in a wetland.

Ducks, marsh birds, osprey, frogs, turtles, muskrat and several fish species depend on wetlands for their survival. Many wildlife species, such as deer, mink, pheasant, waterfowl, and songbirds, use wetlands as well as nearby upland habitats. Think of these upland areas as being part of, rather than separate from, a wetland's functions. Encourage the growth of grasses, shrubs, or trees around these areas to provide a buffer from surrounding land uses in order to protect both wetlands and uplands.

Buffers are natural areas of grasses, shrubs and trees that shelter sensitive wetlands and their inhabitants from adjacent land uses. These areas help to encourage ground nesting birds and other wildlife to use the wetland and also help trap soils and nutrients, reduce erosion, and protect wetlands from human disturbances. Many fish and wildlife species are more sensitive to disturbance during certain times of the year, such as when breeding and raising young. Therefore, although narrow buffers are sometimes adequate, in many situations much wider buffers are required. Landowners can establish or enlarge buffer areas by not mowing, and planting native grass, shrub, and tree species. Many nurseries specialize in selling native species appropriate for such areas.

Remember, wetlands that have been damaged by human impacts are difficult to restore. Mistakes can be costly. Before you undertake any work in or around wetlands consider some of the following basic principles:

- Maintain existing natural drainage in the wetland.
- Disturb wetland soils as little as possible.
- Minimize the amount of sediment, nutrients and contaminants that enter the wetland.
- Maintain, protect or establish essential upland habitat and provide a suitably wide buffer to this habitat which will protect it from disturbances from nearby land use.

- Avoid areas used by spawning fish, breeding amphibians, nesting birds, and other wildlife for rearing young.
- Harvest wetland resources or resources on nearby lands in a sustainable manner.

Getting Started

As a landowner with a very special habitat, it is important to think about the effect your activities may have on wetland areas. Careful planning is essential. Also, consider your neighbours and the effect that your project may have on their property.

If you are planning a major undertaking, seek expert advice. Many sources of technical assistance are available from a variety of agencies and programs. Start by contacting your Local Stewardship Council, the Landowner Resource Centre, or one of the many agencies listed at the end of this brochure (see 'Sources').

Landowners may be eligible for tax rebates or other financial incentives for protecting, enhancing and maintaining wetland areas on their property. Some programs require that wetlands be evaluated by trained evaluators to determine if the site can be designated as provincially significant or certified under a new federal program for ecologically sensitive lands. For further information contact your local Municipality, Ontario Ministry of Natural Resources or Environment Canada office. Long-term management agreements with agencies such as Ducks Unlimited Canada, Wildlife Habitat Canada and others can also provide financial benefits to landowners.

Considerations When Working Around Wetlands

Wetlands in Urban Areas

Although wetlands cannot function independently from surrounding land uses, even in heavily populated areas healthy wetlands can be successfully maintained and enjoyed. To minimize disturbances to vulnerable wetland areas on or near your property, it is beneficial to create or enlarge an adjacent upland habitat area with a buffer.

Consider letting as much as possible of the area close to the wetland return to its natural state. Letting it regenerate will provide a variety of native plants that are not only visually appealing, but more importantly, provide a diversity of habitat for many wildlife species. Buildings, cleared areas, lawns, and gardens should be as far away from wetlands as possible to minimize disturbance. Delay mowing upland areas until mid-July so that nesting waterfowl and other birds can rear young.

Since the balance of water in a wetland is critical, ensure that changes to the surrounding area do not cut a wetland off from its sources of water. Also, make sure that water draining off your property into the wetland is of good quality and does not contain pesticides, fertilizers, salt, or other pollutants.

Wetlands in urban areas provide many opportunities to experience nature and to appreciate wildlife. Excessive human use, however, can damage fragile wetland ecosystems. Keep in mind that your family pet may be a potential threat to wildlife species, particularly during sensitive nesting or breeding times.

Suggestions...

- Maintain natural vegetation in wetlands, nearby uplands and buffer areas.
- Leave dead trees standing and avoid mowing to the edge of wetlands.
- Restrict use of fertilizers and pesticides.
- Do not dump lawn cuttings and other garden waste in wetlands. Consider using a backyard composter instead.
- Birdhouses or nesting boxes suitable for wetland dependent cavity nesters may compensate for limited nesting cavities. Ensure that these are properly maintained and equipped with predator guards.
- Keep pets on a leash in wetland areas.
- If nearby wetlands are used for public recreation, limit the impacts of your activities and stay on established paths.

Wetlands in Rural Settings

It is possible to improve wetland areas while still meeting farm business objectives. Many wetland improvements can be done at relatively low cost, are eligible for financial assistance and can ultimately benefit agriculture.

Gary McCullough



A buffer of trees between the farm field and marsh protects the wetland.

Some agricultural practices may negatively impact nearby wetlands. For example, poorly designed water crossings and over cultivation can enhance soil erosion. Eroded soils can increase turbidity in water, damage vegetation, cover fish spawning areas, and damage wildlife and waterfowl habitat.

Loss of soil cover can also decrease agricultural productivity. Further,

improper use of pesticides and excessive fertilization can also affect water quality. It is advisable to establish or maintain buffers around wetlands and nearby uplands. As well as providing valuable wildlife habitat and corridors and protecting wetlands from surrounding land uses, buffers can filter some eroded soils, pesticides and fertilizers before they reach the wetland. Buffers further benefit farmers by sheltering crops, providing windbreaks, reducing soil erosion, and protecting livestock.

If possible, agricultural drains should be maintained when flows are low. Try to avoid times during spring and autumn that are critical for bird nesting or fish spawning. Keeping soil on the land is one of the best ways of reducing the need for drain maintenance. Planting and maintaining vegetation along drain banks will improve bank stability.

Although many wetland areas have been converted to agricultural uses, these may be difficult, unproductive, or unprofitable to farm. In some situations there may be more value in restoring wetlands to their natural state. Further information is available from the Ontario Ministry of Agriculture, Food and Rural Affairs in the Best Management Practices - Fish and Wildlife Habitat Management booklet.

Suggestions...

- Restrict or eliminate livestock access to sensitive wetlands through the use of fencing, or by densely planting selected trees and shrubs to form a barrier. Living fences are attractive and offer cover and habitat for many species of birds and other wildlife.
- Establish or maintain buffers around wetlands and do not cultivate or

mow right to the edge.

- Consider installing alternative watering devices for livestock to limit access to streams and wetlands. The benefits to water quality and livestock health are well worth the relatively low cost investment.
- Install properly designed water crossings, using only recommended materials such as concrete culverts and gravel. Asphalt paving or old metal drums should not be used in or near the water. Permits may be required from the Ontario Ministry of Natural Resources for construction of water crossings.
- Use conservation tillage techniques and grazing management systems.
- Delay haying and install flushing bars on tractors to protect ground nesting birds from injury.

Water Diversion and Control

Presence of water throughout much of the year is the most critical factor in maintaining a wetland. Changes to water depth and length of wet or dry conditions may have profound effects on wetland function. Apart from destroying habitat, draining wetland areas lowers the water table, and can increase downstream erosion and flooding which can affect other landowners.



Water level control may benefit wetlands.

The use of water level control structures may be beneficial to wetlands in certain circumstances. Occasional drawdowns help to recirculate nutrients and provide temporary mudflats for shorebirds. Maintaining constant water levels during winter benefits muskrat, fish and amphibian populations. Increased flooding to a marsh may create open water areas which encourages the

growth of a diversity of aquatic plants and provides habitat for waterfowl and other wildlife. These activities may also provide ideal conditions for invasion by exotic species such as purple loosestrife, so caution is warranted. Since each wetland is unique, changes should not be made without expert guidance.

Additional information on farm water management can be found in the following Best Management Practices (BMP) booklets available from the Ontario Ministry of Agriculture, Food and Rural Affairs: Water Management; Fish and Wildlife Habitat Management; and, Irrigation Management. Please note that permits are required from the Ontario Ministry of Natural Resources for stream diversions, enclosures, dams, weirs, channelization, and pond creation.

Suggestions...

- Maintain the existing balance of water in a wetland.
- Install water level control structures, such as berms, low-flow weirs, dams, and beaver Bafflers in appropriate situations to ensure consistent water levels or periods of drawdown.
- Before making any changes, seek advice from your local Stewardship Council, Conservation Authority, Ontario Ministry of Natural Resources, or one of the many agencies listed under 'Sources'.



Some wetlands do not appear wet.

Harvesting Wood Products

Wooded swamps can, if carefully managed, provide a continuous supply of wood products including fuel wood and cedar posts. Although many tree species normally used for sawlogs do not grow well in wet soils, some hardwood species adapted to wetland areas can furnish timber products.

Many transitional habitats or marginal agricultural lands, including seasonally flooded wetlands, can be reforested. The selection of appropriate tree species will depend on soil and drainage conditions. The continuous presence of surface water, however, usually favours the growth of shrubs and emergent aquatic plants and may be harmful to the survival of tree seedlings. Additional information on farm forestry is available from the Ontario Ministry

of Agriculture, Food and Rural Affairs in the publication, Best Management Practices - Farm Forestry and Habitat Management. There are also many private foresters who can provide site consultation, tree marking services, and information on forestry management in wooded swamps.

Suggestions...

- Changing the amount of tree cover can trigger long-term shifts in the composition of woody species. Seek expert advice before harvesting trees.
- Heavy machinery such as skidders should be avoided during the snow-free season as rutting can result.
- Selectively harvest trees during dry periods or after freeze-up in late autumn or winter to avoid disturbing nesting birds.
- Leave some large diameter trees throughout the forest to provide natural habitat for the territorial requirements of cavity-dwelling species such as squirrels, owls, woodpeckers and wood ducks.
- To attract wildlife, leave some dead trees standing and do not remove older fallen trees. A minimum of 12 small dead trees, greater than 15 centimetres dbh (trunk diameter 1.3 metres above ground), and six large dead trees, greater than 30 centimetres dbh, per hectare is recommended.
- Leave tops and brush from harvested trees to provide cover for wildlife and drumming sites for grouse. Burning brush is not recommended.
- Encourage the growth of conifers, especially cedar or hemlock, which provide habitat for deer and other wildlife.

Aquatic Plant Removal

Aquatic plants are vital to wetland ecosystems and provide food and habitat for many different types of wildlife, as well as spawning and nursery grounds for fish. Aquatic plants stabilize shorelines, prevent erosion and help to improve water quality.

Sometimes it becomes necessary to remove aquatic plants. For example, removal of aquatic plants may be appropriate when nuisance species take hold or when excessive aquatic plant growth occurs because too many nutrients have entered the water. In these circumstances, removal of aquatic plants can actually benefit fish and wildlife and encourage growth of a greater diversity of

species by providing both vegetated and open water areas. Any mechanical method may be used to remove aquatic plants providing you do not dredge; however, it is usually only a temporary solution lasting a single season. Avoid the use of herbicides in the water. Use of these chemicals requires an approval from the Ontario Ministry of Environment and Energy. Keep in mind that any plant removal will affect the wetland and its wildlife. Ask yourself if there is some other way of solving the problem, and preventing future problems.

Suggestions...

- Ensure septic systems are functioning properly, reduce the use of fertilizers, carefully time the application of fertilizers, and reduce agricultural runoff. This decreases the amount of nutrients entering the wetland.
- Physical removal, such as hand pulling or raking is one of the most environmentally sound methods to control aquatic plants.
- Be sure to remove all of the aquatic plants from the water otherwise they may root again. Moreover, dead aquatic plants will decompose and remove oxygen from the water.

Constructing Docks and Boathouses

Many wetland areas bordering lakes and streams are used for fishing and boating. Care should be taken to ensure that structures built for these activities do not harm fish and wildlife habitat. Docks and boathouses should be carefully planned, built and located. Solid foundations should be avoided since they impede the movement of fish, destroy aquatic plants, disturb underwater sediments, and destroy wildlife habitat including critical fish spawning areas. A work permit is required from the Ontario Ministry of Natural Resources for the construction of any solid structures in the water.



Removal of some aquatic plants may benefit wetlands.



Carefully built docks avoid harming habitat.

Suggestions...

- Seek expert guidance on timing of construction and site selection to avoid disturbing wildlife, and to avoid placing structures in spawning or nesting areas.
- If docks and boathouses must be situated at the edge of wetland areas, cantilevered, floating and

post-supported structures are preferred. This type of structure may actually improve fish habitat by providing shelter and shade. Be careful when selecting wood products since many wood preservatives and building materials can impair water quality. Use metal, plastic, or untreated wood such as cedar, for any part of a structure that will be in the water.

- Boathouses with a marine railway setup which raises and stores boats out of the water are preferred. Construct boathouses above the high water mark taking care to ensure that excavated materials do not disturb wetland areas.

Dredging

Removing soil, gravel or rocks to improve boat access or to deepen open water areas in wetlands can destroy important fish and wildlife habitat. Additionally, dredging can release contaminants that have settled in wetland sediments, adversely affecting water quality. Dredging is generally not favoured because this technique provides only a temporary solution and can cause environmental damage. However, carefully dredged channels sometimes do provide important deeper water habitat for waterfowl and other wildlife. Permits are required from the Ontario Ministry of Natural Resources for most dredging activities.

Suggestions...

- Consider other alternatives and keep the amount of dredging to a minimum. A boat channel should be no wider than six metres.
- Try not to disturb wetland plants and avoid areas used by fish and wildlife for reproduction,

rearing young, or cover from predators.

- Avoid dredging activities on windy days or during fish spawning seasons.
- Since dredging may increase sedimentation downstream, the careful use of a silt screen is recommended to contain sediments suspended during dredging operations.
- Additionally, since dredged soils may release contaminants and fine dredged materials may wash back into the water, removed materials should be suitably contained on land above the high water mark.



Dredging is not a favoured option, but does have some applications.

Filling (Not recommended)

Filling a marsh, swamp, bog, or fen is strongly discouraged because it destroys wetland function and may result in the loss of important fish and wildlife habitat. It can also increase downstream flooding by reducing water storage in the floodplain. Filling a wetland could be a violation under the habitat provisions of the Canada Fisheries Act. For further information and to determine if you require a permit, contact your local Ontario Ministry of Natural Resources office.

Sources of Further Assistance

Depending on the type of project, you may wish to contact one or more of the following agencies.

Landowner Resource Centre (LRC)

Information on resource management, referrals to other agencies. In 613 area 1-800-387-5304, elsewhere 613-692-2390.

Local Stewardship Councils

Promote the wise use of soil, water, woodlands and other natural resources through partnerships between landowners, community, and resource organizations. Check your local phone book.

Ducks Unlimited Canada (DUC)

Advice and financial support for restoration of wetlands with significant waterfowl value. 705-721-4444.

Wildlife Habitat Canada (WHC)

Landowner contact representatives, wetlands restoration planning assistance, conservation agreements, wetland securement. 613-722-2090.

Eastern Habitat Joint Venture (EHJV)

Support and funding for wetland protection and restoration in partnership with federal and provincial governments, DUC, WHC, and the Nature Conservancy of Canada. The

Ontario Federation of Anglers and Hunters (OFAH)

Information, educational materials on habitat enhancement and recreational activities in wetlands. 705-748-6324. Invading Species Awareness Program in partnership with OMNR 1-800-563-7711

Federation of Ontario Naturalists (FON)

Educational materials on wetland conservation, nuisance species. 416-444-8419.

Environment Canada (DOE)

Information on habitat restoration techniques and federal tax credits for donations of ecologically sensitive lands. Check the blue pages of your local phone book.

Ontario Ministry of Natural Resources (OMNR)

Work permits, wetland evaluation, information on fish, wildlife, and wetland habitat protection and management. Check the blue pages of your local phone book.

Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)

Farm drainage, best management practices. Check the blue pages of your local phone book.

Ontario Ministry of Environment and Energy (OMOEE)

Permits for water taking and chemical weed removal, information on ground water impacts, environmental assessment (EA) process. Check the blue pages of your local phone book.

Local Municipality

Local municipal planning and bylaws, natural heritage policies including wetlands policy, and environmental protection policies. Check the blue pages of your local phone book.

Ontario Ministry of Municipal Affairs and Housing (OMMAH)

Planning Act, natural heritage policies including wetlands policy. Check the blue pages of your local phone book.

Local Conservation Authority (CA)

Water supply and flood control, dredge and fill rules. Support for some habitat improvement projects. Check the blue pages of your local phone book.

Unravelling the Red Tape

Many activities that are beneficial to wetlands do not require approval or permits. However, there are a number of laws and policies that may potentially apply to work in wetland areas (see below). Unfortunately, the complexity of laws and policies, levels of government, and different types of activities, make it impossible to give specific advice that will apply in all situations. Also, regulations and policies are continually reviewed and revised. Landowners planning work in or around wetlands in Ontario are encouraged to ask first whether their project will require approval or permits. Remember to check on any requirements before beginning any work around wetlands to avoid possible penalties and to ensure conservation of the resource. One or more of the many agencies previously listed under 'Sources' will help you to determine what requirements currently apply.

Some Relevant Legislation

Law/Policy	Contact	Protects or Regulates
Canada Fisheries Act	OMNR / Fisheries & Oceans Canada	Fish and fish habitat. Prohibits work that results in harmful alteration or destruction of fish habitat.
Conservation Authorities Act	Local Conservation Authority / OMNR	Flood plain areas. Work in watersheds and flow of floodwaters.
Drainage Act	OMAFRA / OMNR	Land drainage and drain maintenance. Work on drains must not result in harmful alteration of fish habitat nor destroy fish or fish eggs.
Endangered Species Act	OMNR	Endangered plants, and wildlife.
Environmental Protection Act	OMOEE	Discharge of contaminants and emissions.
Game and Fish Act	OMNR	Fish and wildlife. Regulates access to fish and wildlife resources through licensing.

Lakes and Rivers Improvement Act	OMNR	Alterations to lakes and rivers. Requires approvals for any work that forwards, holds back or diverts water, such as channelization, pond creation/by-pass, dams, weirs, and locks.
Migratory Birds Convention Act	Environment Canada	Migratory birds through prevention of destruction of nests and habitat, and regulating hunting. Allows control of certain nuisance species.
Ontario Water Resources Act	OMOEE	Quality and quantity of surface and ground water resources.
Planning Act	Local Municipality / OMMAH	Prime agricultural lands, natural heritage features (including provincially significant wetlands), surface and groundwater. Provincial policies are to be considered when land use changes are proposed.
Public Lands Act	OMNR	Public (Crown) lands (which includes beds of most navigable lakes, rivers and streams) and shore lands (including areas seasonally inundated with water adjacent to navigable waters).
Trees Act	Local Municipality	Woodlands. Requires permits for tree clearing under certain circumstances. Only applies in municipalities where bylaw enacted.
Natural Heritage Policy, including Wetlands Policy	OMMAH / OMNR	Provincially significant wetlands through provisions of the Planning Act.