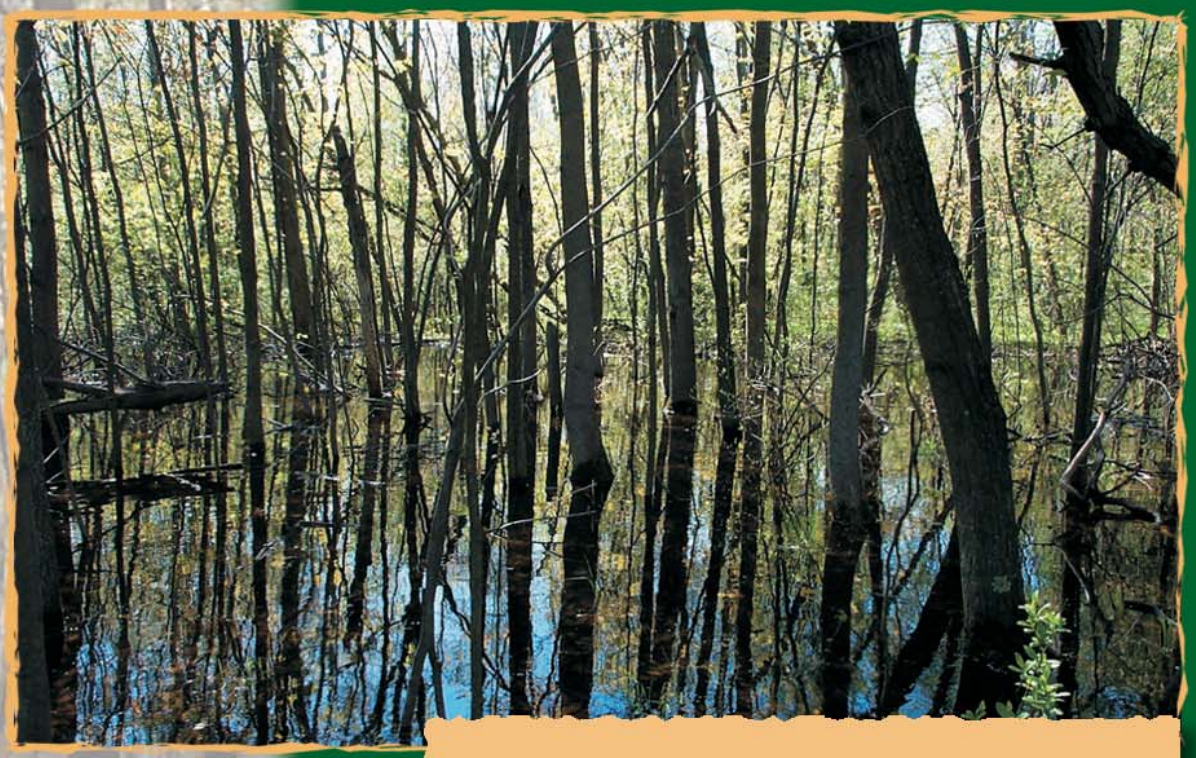
AN INNOVATION IN WATERSHED STEWARDSHIP

Ontario
Ministry of Natural Resources

Wetland Drain Restoration Project

Enhancing Water Storage and Water Quality within a Watershed through Wetland Restoration



Clean and plentiful water supplies are among the most important natural resources. As the population grows and development intensifies, the challenge to maintain high quantities of water has grown in scope and complexity. The Ontario government is working with many partners including conservation authorities, stewardship councils, farmers, environmental groups, other stakeholders and interested citizens to address these challenges.

From this collaboration, a series of watershed-based demonstration projects were carried out using new and innovative approaches to environmental stewardship. The project reports are intended to assist both practitioners and non-practitioners in applying the results in other local watersheds.

The full reports and fact sheets are available on the Conservation Ontario website at:
www.conservation-ontario.on.ca

fact sheet

PHASE I PILOT PROJECTS

www.ontariostewardship.org/norfolk/

OVERVIEW

During the summers of 1998 through to 2002, significant water issues arose in agricultural areas due to the lack of precipitation across southern Ontario. Low water levels, the lack of wetlands and their associated ability to restore and release water later in the growing season were contributing factors to lowered crop yields. To safeguard against future low water levels and to improve the quality and quantity of water supplies, the use of the *Drainage Act* as a tool to restore surrounding wetlands without harming agricultural businesses was promoted as one of the most efficient and cost effective solutions.

Since the success of the pilot project in 1996, the Wetland Drain Restoration Project has been an ongoing effort by the Ministry of Natural Resources, Norfolk County and other significant partners. The overall goal of the project is to balance the advantages provided by municipal drainage projects with the water purification, storage and discharge functions provided by wetlands. The project also aims to create sustainable partnerships with community groups, landowners and natural resource agencies. This in turn provides education and advancement in natural resource, watershed and particularly wetland management. In Norfolk County, numerous wetlands have been successfully restored through this place-based watershed management approach.

A Wetland Drain Restoration "How to Guide" is available outlining the key steps required to successfully utilize the *Drainage Act* as a tool to restore wetlands.

WHY ARE WETLANDS IMPORTANT?

Wetlands provide many benefits to society and perform the following important functions:

Water Quality Improvement

Wetlands purify water by assimilating and filtering suspended sediments, nutrients and other pollutants.

Groundwater recharge

Wetlands regulate the release of water to recharge groundwater supplies.

Flood Attenuation

Wetlands form part of the catchment basin within a watershed and help to reduce the incidence and intensity of flooding downstream.

Fish and Wildlife Habitat

Wetlands provide essential habitat for many different species of plants, mammals, birds, reptiles, amphibians, fish, and invertebrates.

Support of Cold Water Fisheries

Wetlands in headwater areas provide the necessary aquatic environments and support for cold-water fisheries.

Social/Economic Benefit

Wetlands improve agricultural crop production; provide recreational activities such as hunting, fishing, birding and biking; and, produce marketable products such as trees, sport fish, furbearers and food.

Special Features

Wetlands are often critical habitats for provincially, regionally or locally significant plant and animal species.

WHAT ARE THE BENEFITS OF THE PROJECT ?

The Wetland Drain Restoration Project uses the *Drainage Act* to modify existing drains to restore wetlands and their associated functions and benefits.

There are many benefits associated with the Wetland Drain Restoration Project, and they include:

- Increased wetland habitats within southern Ontario ecosystems;
- Trend reversal of continuing wetland loss in Ontario;
- Improved water quality within affected landscapes;
- Improved surface and groundwater storage, discharge and recharge functions during dry periods;
- Enhanced ability of the landscape to buffer against drought conditions;
- Soil conservation;
- Provision and support of fish and wildlife habitats;
- Improved agro-ecosystem health with the coexistence of wetlands and municipal drains and established buffer zones between natural areas and agriculture;
- Betterment of the environment through use of the *Drainage Act*.
- The water control structures restoring the wetlands have a legal existence of water control structures restoring the wetlands under the *Drainage Act*. These structures are operated and maintained by the local municipality;
- Increased public awareness of the importance of wetlands;
- The fostering of a spirit of cooperation between farmers and other community groups; and
- Improved understanding among partners will lead to other joint projects benefiting the environment.

HOW ARE WETLANDS SELECTED FOR RESTORATION ?

A successful wetland drain restoration project involves four critical steps:

1. preparation of a landscape map
2. in-field feasibility studies
3. implementation of study recommendations
4. monitoring and adaptive management

A desktop methodology using digital mapping techniques has been developed to identify potential wetland restoration sites that are affected by municipal drains. Suitable sites for restoration are wetlands where:

a) drainage networks exist and where water may be stored, while maintaining and enhancing agriculturally based operations;

b) restoration will result in the re-establishment of wetland functions, specifically, water purification, storage, recharge and discharge, as well as to provide for fish and wildlife habitat;

c) landowner cooperation and consent has been obtained.

Of those considered suitable, a priority ranking system is then applied to identify sites for further field investigation, where the type of information collected includes the following:

- Landowner support, interests and perceptions;
- Land use, soil types, topography and hydrology;
- Municipal and other Drainage Systems, Drainage History and Drainage Superintendent Support;
- Fish habitat, wildlife and vegetative communities on and adjacent to the site, as well as linkages to wildlife corridors, forest cover, headwater areas, etc. within the landscape.

WHO IS INVOLVED ?

The Wetland Drain Restoration Project involves a diverse partnership of agencies, landowners, farm organizations and municipalities working together towards the common cause of wetland restoration. Landowner and drainage superintendent involvement is key. A Wetland Drain Project Advisory Committee has been established to advise the project as it expands across southern Ontario. This provides a forum to increase awareness among stakeholders as they share data, information and project implementation responsibilities.

WHAT IS THE DRAINAGE ACT ?

The *Drainage Act* is a legislative tool for landowners to petition their local municipality to resolve their drainage problems. The project is administered by the local municipality but the costs are assessed to the landowners in the watershed of the drain. The process defined in the *Drainage Act* ensures public involvement through various meetings and appeal opportunities. Damming or diversion of surface water over 50 cubic metres a day requires A Permit To Take Water issued by MOE office. Once a drain is constructed, the local municipality is legally responsible for any future maintenance, repair or improvements to the drainage system, again, at the cost of the local landowner.

The *Drainage Act* defines a "drainage system" as a drain constructed by any means, including works necessary to regulate the water table or water level. This broad definition allows for features to be included in drainage systems to create or restore wetlands while still protecting the agricultural interests of the private landowners.

DRAINAGE ACT PROCESS FOR WETLAND RESTORATION

- Identification of Need
- Landowner Consent
- Appointment of Engineer by Municipal Council
- On-Site Meeting
- Preparation of Engineer's Report
- Submission of Engineer's Report to Municipal Council
- Appeals
- Construction/Implementation

NORFOLK LAND STEWARDSHIP COUNCIL

Norfolk COUNTY

Ontario

This guide was made possible by the Government of Ontario and the Norfolk Land Stewardship Council in partnership with the Norfolk County Public Works , Ducks Unlimited Canada, Eastern Habitat Joint Venture and the Wetland Habitat Fund.

For more information, or to request a copy of the "HOW TO GUIDE" for the Project, please contact:

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