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**ARE YOU INTERESTED IN
SITTING ON THE BOARD?
LET US KNOW!**

The next NRC Board Meeting is at 6:30 p.m. June 14th, at the Niagara Peninsula Conservation Authority office. Feel free to attend, learn more about us, and get involved.

NIAGARA RESTORATION COUNCIL

Contact Us:

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WEBSITE:

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Our Mandate:

**“To protect, maintain and
actively restore the
ecosystems of Niagara”**

The NRC gratefully acknowledges the financial support of:

Ontario Trillium Foundation
Great Lakes Sustainability Fund
Niagara Peninsula Conservation Authority
Niagara Community Foundation
Ontario Great Lakes Renewal Foundation
Ontario Ministry of Natural Resources
Department of Fisheries and Oceans
Ontario Power Generation
EcoAction
Shell Environmental Fund
Wetland Habitat Fund
Toronto Dominion Friends of the Environment
& everyone else that has supported the NRC



RESTORATION NEWS



Spring 2005

NIAGARA RESTORATION COUNCIL

YEAR 6, ISSUE 1

Biggest Planting Season Yet!!!

Come on out and Help us Plant!

**We're Planting Stream Buffers with 1000s of Native Wildflowers,
Trees & Shrubs to Enhance Water Quality and Wildlife Habitat**

Maple Park –Pelham St. Welland

June 10-11th, 9:00 a.m.-2:00 p.m. (with a rain day of June 17th)

Pelham Hills Golf Course

June 18-19th, 9:00 a.m.-2:00 p.m. (with a rain day of June 24th)

Welland Soccer Club

June 26th, 9:00 a.m.-2:00 p.m. (with a rain day of July 2nd)

VOLUNTEERS NEEDED

Come out for an hour, or for all day

Events are weather permitting

Call 905-788-0248 for more information

Rubber boots and work clothes are advised

We'll be meeting in the parking lots in the morning
& will be within sight of the parking lot for the rest of the day

You do not have to call ahead to take part in the above listed dates. iust show up!!!

The Pelham Hills Golf Course Wildlife Enhancement Project

The Niagara Restoration Council (NRC) and the Niagara Peninsula Conservation Authority (NPCA) have been working with the owner of the Pelham Hills Golf Course to design and implement a series of habitat enhancement projects. These projects will make the Pelham Hills Golf Course an environmentally enhanced, wildlife friendly course for all to enjoy. This new enhanced golf course will have extensive positive impacts on the regional wildlife and for the Coyle Creek subwatershed as a whole.



Riparian zone and floodplain naturalization have already been completed on the property. A meander and floodplain was constructed to slow down velocity, reduce erosion and enhance wildlife habitat. This site was planted with hundreds of native wildflowers and shrubs, and seeded with a wildflower and grass mixture.

The NRC have begun construction of a wildlife friendly irrigation pond that will provide up to 2 ha of wetland habitat and 6,000 m² of riparian habitat. We have also begun the removal of a 2 m high dam that will now allow fish access to an upstream watershed area of 43 km² or 58 km of creek habitat length. This spring, many migratory fish species such as the northern pike will have access to 65,500 m of fish habitat that they have not had access to since 1978!!



Following the removal of the dam, further remediation will occur to enhance this section of creek and repair stream degradation that has occurred. This may be in the form of a series of riffle pool sequences.

Upon completion of this project, the Pelham Hills Golf Course will become a model property that will be showcased as how to incorporate wildlife habitat effectively into a golf course, while keeping nuisance wildlife (i.e. Canada Goose) under control.

NORTHERN PIKE IN NIAGARA

By: Ian Barrett, M. Sc.

Niagara Peninsula Conservation Authority – Aquatic Habitat Biologist

Northern pike (*Esox lucius*) are large keystone piscivores (fish eaters), important as both “top-down” regulators of fish communities and as indicators of general ecosystem health. As a result of this species’ ecological importance, the biology of northern pike have been studied extensively throughout their range. Studies have indicated that northern pike habitat utilization varies with life stage and season, however this brief overview will focus primarily on the spawning and nursery habitat requirements of northern pike.

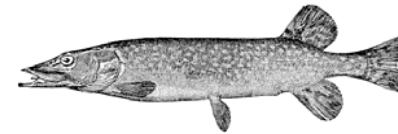


Photo courtesy of www.fws.gov/pictures/

The Niagara Restoration Council’s Fish Barrier Project has many beneficial impacts to many of Niagara’s species of fish, but certainly one of the most important factors is the increase of the migratory ability of the northern pike. This project addresses many forms of environmental degradation that can eliminate the northern pike’s ability to spawn, or for its ability to survive at all.

Beginning in February, and continuing until April, increases in photoperiod and/or temperature, trigger adult northern pike migrations to spawning locations. Studies have found that spawning migrations of northern pike typically range from 2 to 76km. Migrating pike may travel through a variety of suitable spawning habitats, demonstrating spawning site fidelity, possibly as a result of using visual or olfactory clues to return to natal birth waters.

Northern pike spawn during daylight hours, at water temperatures between 6 and 14°C. Spawning takes place over a variety of substrates, although pike prefer to spawn in vegetated floodplain areas over the submerged portions of emergent vegetation or over dense mats of submerged vegetation, located in as little as 12cm of water. Northern pike eggs are sensitive to low levels of dissolved oxygen and siltation, therefore the primary role of vegetation is as an adhesion surface preventing eggs from settling in sediments or anoxic bottom waters. Depending upon water temperatures, the eggs of northern pike hatch in approximately 10-14 days, with larval pike remaining attached to vegetation for an additional 5-10 days before being capable of swimming freely.

Historically in the Niagara Region, practices such as the damming of watercourses and the improper installation of culverts have substantially affected northern pike populations in the region. Unlike many species of salmon and trout, which can jump large distances to negotiate major instream barriers, northern pike are less likely to migrate upstream past even minor instream barriers. Many of the barriers installed in watercourses have restricted northern pike access to productive spawning habitat and substantially impacted northern pike populations in Niagara.

Βυφφερ Προφειχτ Υπδατε

This has been a very productive year for the 'Building Stream Buffers for Niagara's Rivers' Project. The two buffer plantings that occurred in the spring of 2004 (Pelham Hills Golf Course and Maple Park) were very successful. They have proved **themselves ecologically, aesthetically, and socially**. Maple Park especially generated significant media attention and a *great deal* of neighbourhood support. In fact, the planting day at Maple Park brought volunteers from 4 different adjacent households, 5 different interested organizations, and over 40 volunteers in all!! The City of Welland was so satisfied, that they have asked us to expand the current riparian project at Maple Park, and also to do another buffer project on another property; the Welland Soccer Club.

Three buffer projects are planned for the spring of 2005. They include a continuation of the Maple Park Project, the Welland Soccer Club (another very high traffic area) and another section of the Pelham Hills Golf Course. This project has allowed us to create a better relationship with the owner of the Pelham Hills Golf Course, and in doing so, has allowed us to generate a plan to remove the dam on the property (one of the most detrimental of three barriers to fish migration in the Niagara AOC). The dam has already been partially opened, and the creek upstream will be the target of our next riparian restoration. The much needed vegetation will stabilize the banks, that have not experienced severe current since 1978.

Fish Barrier Report

This has been a wonderful year for the Niagara River Area of Concern (AOC) Fish Barrier Project. This year, the NRC was able to remove 6 barriers, have engineered drawings completed for an additional 2, and a third is at the engineered drawing phase. Therefore, we are confident that these last three (which are all significant barriers to fish migration) will be removed next year.

One of the 6 barriers removed this year was the Pelham Hills Golf Course Dam. This was one of the worst 3 barriers within the Niagara AOC watershed. Not only were we able to open the dam (full removal will occur in 2005-06), but we also have the support of the landowner to implement a habitat enhancement project on the creek affected by the dam, and we have acquired funding (Ontario Trillium Foundation etc.) to build an (up to) 2 hectare model golf course wetland, that promotes the needs of golf course irrigation while incorporating the enhancement and creation of wildlife habitat into the pond. We hope that other golf courses will follow suit and consider creating 'wildlife friendly' golf course ponds on their courses.

As well, an analysis of the total habitat that has been opened up has been completed. The Target Goal Achievement Report details all of the remaining barriers that need to be remediated, what kind of barriers they are, and an estimated timeline until their completion. We hope to post this report on our website in the coming months.

So far to date, 134 barriers have been removed and 208 have been inventoried (some of which would never be feasibly remediated). In total, there was approximately 864 km of locked up fish habitat when this project began. **This project has removed enough barriers to unlock 404 km of the 864 km.** Adding this number to the amount of habitat that never had barriers totals **558 km of fish habitat that is now open and devoid of fish barriers.**

White Wood Aster

By Anita Imrie

The white wood aster is a threatened herbaceous species that flowers in the fall. It has heart shaped basal leaves and a distinctive zigzag pattern in the growth of the stem. In all of Canada this flower is only found in 25 sites in the Niagara Peninsula and southern Quebec. This species was listed by the Committee on the Status of Wildlife in Canada (COSEWIC) as threatened in 1995. A recovery plan is being drafted by the Ministry of Natural Resources to aid in ensuring the survival of this species. Some of the potential threats currently facing the aster include deer grazing, consumption by weevils, trampling, loss of habitat, and possibly competition with garlic mustard. Garlic mustard is an invasive, exotic species that aggressively out-competes many native species in forest understories of North America.

Very little information is currently known on the ecology of the white wood aster at this northern extent of its range. In order to change this, four Niagara College students in the Ecosystem Restoration program conducted a study this fall and winter to determine the environmental gradients that the white wood aster grows along. This study also tried to uncover some of the possible threats to its populations in Short Hills Provincial Park. This information will aid in the further protection and recovery of this unique flower.



Photo courtesy of www.speciestriska.gc.ca

Trees, understory vegetation, and soils were sampled to try to find biological or climatic differences between sites that contained the white wood aster and neighbouring areas where the aster does not currently grow. It was found that in areas where the white wood aster was most common, garlic mustard occurred in lower abundance. Likewise, areas with a lot of garlic mustard did not have any of the asters growing amongst them. White wood aster also tended to occur in areas of greatest biological diversity while garlic mustard was found in low diversity areas. These relationships may be caused by the ability of garlic mustard to decrease the diversity in the areas it occurs through competition. This competition could be excluding white wood aster from establishing in areas with high quantities of garlic mustard. Conversely, the highly diverse areas that contain white wood aster may be able to prevent garlic mustard from becoming dominant in these systems.

The Ministry of Natural Resources is continuing these studies over the summer to gather data on the vegetation and light conditions in these areas throughout the entire growing season. Further monitoring and mapping of the known populations is necessary in order to adequately protect this species.