

# Interested in Sitting on the Board? Let us Know!

The NRC's next Board Meeting is at 6:30 p.m. June 13<sup>th</sup>, 2006, at 250 Thorold Rd., Welland. Come and learn more about us and get involved!

## Board of Directors for the NRC

Andrea Sinclair	-Chair
Alison Thomson	-Secretary
Jason Biddulph	-Treasurer
John Bacher	-Director
Deanna Lindblad	-Director
Bob Wheaton	-Director
Janet Damude	-Director

## NIAGARA RESTORATION COUNCIL

### Contact Us:

#### General Inquires:

David Beamer  
Environmental Manager  
P.O.Box 28002  
St. Catharines, ON  
L2N 7P8  
(905)788-0248  
info@niagararestoration.org

#### Chair:

Andrea Sinclair  
chair@niagararestoration.org

#### Newsletter Editor:

Patti Green  
info@niagararestoration.org

#### Website:

www.niagararestoration.org

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  
And all of our supporters



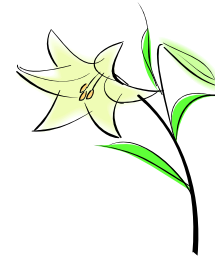
## RESTORATION NEWS



Spring 2006

NIAGARA RESTORATION COUNCIL

YEAR 7, ISSUE 1



## You are invited to the Niagara's Restoration Council's Spring Planting Events

Sat. June 3<sup>rd</sup> Maple Park 9-2

Sun. June 4<sup>th</sup> Welland Soccer Club 9-2

Sat. June 10<sup>th</sup> Harold Bradshaw Park 9-2 (Rain date of June 11<sup>th</sup>)

Sat. June 10<sup>th</sup> Charles Daley Park 11-4

Sat. June 17<sup>th</sup> Drapers Creek at Colbeck Drive 9-2 (Rain date of June 18<sup>th</sup>)

Stop by for an hour or stay for the day!

Please call the office if you are interested in additional dates

Rain date for additional days not noted above is June 24<sup>th</sup>

Events will be rescheduled in the case of heavy rain. Please call the office to verify.

Rubber boots are advised!



## The Monarchs are Coming - Gardening for Monarch Butterflies

By Win Laar. Photo by Margaret Pickles



The monarchs are coming! Let us welcome them into our gardens. The first monarch butterflies of summer are the children and grandchildren of those who left Niagara last fall. Those late summer butterflies developed from eggs laid on milkweed. As caterpillars they ingested poisons from the milkweed that protect them from predators. The caterpillars metamorphosed through their jade green chrysalis stage to the beautiful orange, black and white adult butterfly.

The shorter days of autumn propel the monarchs into migrating 4,000 km south to escape our harsh winter. Along the way they feed upon the nectar of flowering plants, especially goldenrod and asters. Monarch butterflies from all of their North American breeding grounds east of the Rockies funnel into overwintering sites in the Sierra Madre Mountains of Mexico. They congregate in the tens of millions, clustering together to conserve warmth and energy. For four months they survive on their fat reserves from fall.

As March sun warms their bodies, monarchs stream down the mountainsides, and disperse northward. After laying eggs on emerging milkweed they die, and about six weeks later their offspring emerge and continue the journey north. The University of Kansas monitors and studies monarchs through a program called Monarch Watch (<http://www.MonarchWatch.org>). They promote Monarch Waystations, resource-rich feeding areas along the monarchs' migratory route. The monarch migration is an endangered phenomenon. Overwintering sites in Mexico are shrinking through illegal logging, and vital milkweeds and nectar plants are becoming scarce in their breeding areas because of pesticide use and habitat loss.

Here is where our gardens make an important contribution to the survival of this species. Choose a sunny area and select plants that flower at different times throughout the season. Include butterfly milkweed, swamp milkweed, or the sweetly perfumed common milkweed for the egg-laying adults, and a variety of nectar plants, such as, purple coneflower, black-eyed susan, beebalm, goldenrod and asters.

## Fish Barrier Project Updates

### Pelham Hills Golf and Country Club

This spring, the Niagara Restoration Council with its project partners completed the remediation of one of the largest barriers to fish migration identified in the region. A large 2m high dam located on Coyle Creek at the Pelham Hills Golf and Country Club installed in 1978 for irrigation purposes was removed.



Riffles were installed in two locations on Coyle Creek to hold back water during low flow, to create low velocity pool area for fish habitat diversity, and to introduce dissolved oxygen into the creek. Low flow channels further confine water to maintain fish passage during dry periods. Erosion occurring at the location of the dam has also been remediated with the positioning of a riffle, and bank stabilization measures at this location. The removal of the dam has resulted in the opening of 65,500 m of fish habitat in Coyle Creek!

Towards the further naturalization of the property, about 1.5 hectares of wildlife ponds were excavated on site. The

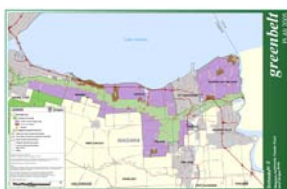


wetlands provide irrigation water for the golf course, and simultaneously create valuable habitat for wetland species. The banks of the ponds were created with varying steps of elevation, in order to create a natural diversity of shoreline habitat for plants and animals.



## ***The Ontario Greenbelt Plan and Legislation***

The Greenbelt Plan initiated by the Provincial Government was implemented under the Greenbelt Act in 2005. The plan has aimed to address expected population growth in the Golden Horseshoe by providing permanent protection to the agricultural landbase and key environmental features within the Greenbelt Plan Area. This includes areas under the Oak Ridges Moraine Conservation Plan, and the Niagara Escarpment Plan. The Plan area includes 1 million new acres of 'Protected Countryside', within an Agricultural System, a Natural System, and Settlement Areas. In total, the Greenbelt Plan area encompasses an area of over 1.8 million acres, and stretches 325 km long from Rice Lake to the Niagara on the Lake.



Within the Agricultural System, three separate designations have been made, which include Specialty Crop Areas (the Niagara Tender Fruit and Grape Area, and the Holland Marsh), Prime Agricultural Areas, and Rural Areas. Within these first two areas, land may not be re-designated for non-agricultural use, unless under specific circumstances. Multiple units or lots for residential dwelling are prohibited in Rural Areas.

The Natural Systems area includes a Natural Heritage System, and a Water Resource System, which may contain Key Natural Heritage and Key Hydrologic features (eg: significant wetlands, woodlands, or Areas of Natural and Scientific Interest). Development for residential subdivisions, commercial or industrial use is not permitted within the Natural Heritage System. Recreational activities, infrastructural enhancements, and conditional resource extraction may occur with the Natural Heritage System, and Key Feature areas, providing certain guidelines are met.

Urban expansion is planned primarily within current Settlement Areas, with existing infrastructure for sewer, water and utilities. Development must conform with preexisting municipal planning objectives. For more information, check out the MAH website. [www.mah.gov.on.ca](http://www.mah.gov.on.ca).

# Niagara Restoration Council Project Updates

## **Building Buffers for Niagara's Rivers**

This season, the Niagara Restoration Council is continuing to plant riparian shrubs, trees and wildflowers along watercourses on public land and golf courses in the Niagara Region, for the betterment of water quality, wildlife habitat diversity, and visual appeal. We are currently working with the Links of Niagara at Willodell Golf Course towards riparian planting, and the Town of Pelham for planting along Coyle Creek in Harold Bradshaw Park.

Additional planting will occur at our Buffer Project locations from previous years, including Maple Park, Welland Soccer Club, and the Pelham Hills Golf Course. Planting dates and activities are advertised on the front page.

## **Wildlife Corridor Project**

After the initial commencement of the project in the fall of 2005, the Niagara Restoration Council has partnered with several landowners in the planning and scheduling of tree planting activities for 2006 and 2007. Many landowners have approached us and have expressed interest in the project, having heard about the project through newspaper articles or advertisements. The project properties total approximately 20, and range in size from smaller woodland enhancement projects, to machine planting over 15 acres. One of our project sites for planting in 2006 is located at Charles Daley Park in Lincoln, where the Niagara Restoration Council, the Friends of Charles Daley Park and the Town have partnered towards planting of approximately 300 trees, in several locations.

We are still looking for additional project locations within the Fifteen, Sixteen and Eighteen Mile Creeks, where existing forest habitat can be expanded with additional tree planting. The goal for the project is to plant up to 100,000 trees over several years in North Central Niagara.

## The Environmental Fate of Nitrates

Excess nutrients such as nitrates commonly end up washing into lakes and rivers where they can result in degradation of water quality. Nitrogen, as components of either inorganic and organic fertilizers or animal products are mineralized in the soil to forms available for plant use, such as ammonia, nitrate and nitrite ions. Nitrates are the most soil bio-available and stable form present abundantly in the soil. Soil nitrogen is returned to the atmosphere mostly through the work of denitrifying bacteria in the soil. This balance of processes roughly occurs at the same rates.

There are several human-related activities that accelerate the natural processes or manipulate the balance of the forms of nitrogen that exist naturally. The application of organic or synthetic fertilizers and the release of animal waste (livestock waste or septic material) greatly increase the natural levels of ammonia and nitrates in the soil and in water bodies.

Leaching of nitrates from agricultural and other crops also decreases the fertility of soil by removing bound nutrients such as calcium, potassium and magnesium, which are common ions of nitrate salts. The negative charge on nitrate ions means they are not often bound to soil and thus leach readily. Concentrations of nitrate in the water also play a role in the chemistry and solubility of other compounds, including heavy metals such as lead, cadmium and arsenic, as well as phosphate and iron.

High nitrate concentrations in drinking water also have deleterious effects on animals as nitrogen poisoning occurs. Concentration ranging from 13-40 ppm can induce mortality to 50% of amphibian tadpoles exposed, although chronic negative effects can occur at concentrations as low as 2-5 ppm. Infants are particularly susceptible to a condition of life-threatening anemia. Federal drinking water standards as of 1989 don't exceed 10 ppm. Previous studies undertaken by Environment Canada have indicated that occasional nitrate concentrations in the Great Lakes exceed these levels. There are many practices that can be undertaken to minimize the amount of nitrates leaching into watercourses. Through fertilizer reductions and careful application, soil nutrient losses can be lessened. The planting of riparian buffers around watercourses can effectively trap nutrients before they enter the waterway.

## Fish Barrier Project Updates

### Draper's Creek

This project included stream rehabilitation and remediation of a fish barrier on Drapers Creek just upstream of the Welland River beside Colbeck Dr. The project was undertaken in conjunction with several project partners, including the Niagara Peninsula Conservation Authority with funds from Ontario Power Generation, Great Lakes Sustainability Fund and the Ontario Great Lakes Renewal Foundation. The culvert at this site was perched and was a barrier to fish migration at periods of low flow.



Engineering plans were developed and resulted in detailed restoration plans to remediate the culvert that was perched during low flow and restore the riparian area. Construction included the installation of a riffle approximately 30 m downstream of the culvert. The riffle was installed primarily to hold back water and maintain pool habitat. The pool area also provides high quality refuge area for fish and other wildlife. A floodplain area was established adjacent to the riffle, with river stone material that was placed in the channel to function as an over flow channel. This further ensures that water levels are maintained in the central channel during lower-flow conditions.



Further restoration of the riparian and floodplain area occurred along the downstream area for ~40 m from the culvert. Restoration work here included the removal of hard bank material and concrete walls. The banks along the Creek were stabilized with rip-rap and will be planted in the spring.

