



Niagara County
Soil And Water
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Special Issue:
Pond Stocking Program

Information and Order Form
Enclosed

Species:
Largemouth Bass
Perch
Rosey Reds/Black Minnows
Fathead Minnows
Tadpoles
Daphnia
Koi
Grass Carp

In This Issue:

Orphaned & Injured Wildlife
Gypsy Moths in WNY
Wild Horse & Burro Adoption
District Hires Engineer
Tuscarora Soil Survey
Bird Watching
Bird Profile
Golf Course Water Monitoring
Things To Do In Niagara County
Bird Species
Nesting Box Plans

An Environmental Publication by
Niagara County Soil and Water Conservation District

Eighteen Mile Creek Remediation A Comprehensive Approach

Eighteenmile Creek has been identified by local, state, and federal agency personnel to be in a state of decline due to years of point and non-point sources of pollution, hydrologic modification, erosion and neglect. These same agencies have assumed the responsibility of restoring the environmental health of Eighteenmile Creek. Most appropriately, the initiative towards remediation of the creek should be locally lead. There is no shortage to the number of obstacles to be overcome in the restoration effort. It is important that a comprehensive approach to remediation be employed rather than a temporary "band-aid" fix to "hide" the problems. Identified impairments to Eighteenmile Creek include: contaminated sediments, erosion, loss of spawning, nesting and wildlife habitat, loss of riparian buffer, and the most daunting challenge; the impediment of the Burt Dam to spawning activity.

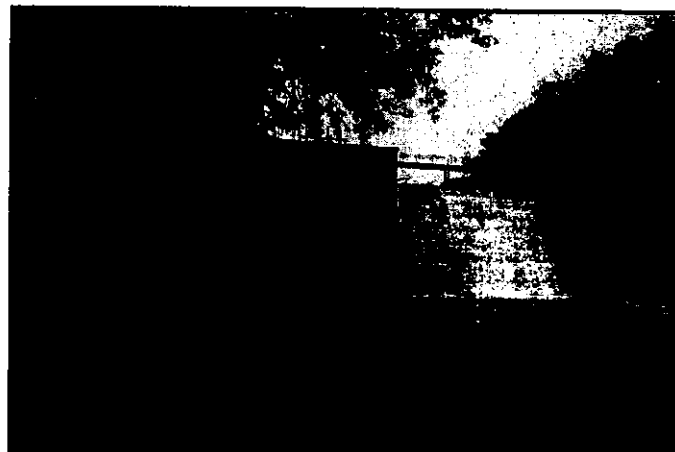
General Description of Eighteenmile Creek

The Eighteenmile Creek Watershed has a total drainage area of about 93 square miles. The entire drainage basin is located within Niagara County. Most of the land in the basin is relatively flat agricultural and rural residential, with most of the industry concentrated in the City of Lockport at the headwaters of the creek.

The two major tributaries are The Gulf and the East Branch. However, much of the flow in the main stem comes from water diverted from

the New York Erie Barge Canal where the creek flows under the canal. From the canal the creek flows mainly in a northerly direction.

The main stem of Eighteenmile Creek receives treated discharges from industry and the City of Lockport. The Gulf receives treated process wastewater from the Delphi Harrison Thermal



Looking South Toward Burt Dam

Systems. The East Branch receives treated wastewater from the Gasport Sewer District in the Town of Royalton. There are fifteen known inactive waste disposal sites within the Eighteenmile Creek basin of which eleven have been remediated or where remediation was not required.

There are two operating dams on Eighteenmile Creek. One is about two miles south of the mouth of the creek in the Hamlet of Burt. Another is in the Hamlet of Newfane near Ewings Road. A third dam is located in the City of Lockport one-tenth of a mile downstream from Clinton Street, however, this structure no longer retains water as its sluice

continued on page 2

Bird Profile



Pipilo erythrophthalmus

Appearance

The Piping Plover is one of nine species of plovers found in North America. This plover is a small sized shorebird with a short, stub-bill with an orange base, and yellow legs. Length of the Piping Plover is 6-7", approximately the size of a sparrow. The bird is most difficult to see in the sand on the beach. This pale plover has a sandy upperpart, with a black collar and black line between the eyes. Its forehead, throat, and underparts are white. Younger birds are marked with a black bill, and a broken gray band.

Habitat

Piping Plovers nest and live in sandy areas, both inland and on the shore, and may be found along the Lake Ontario shoreline in Niagara County.

Nesting

The Plover usually nests in a depression in the sand, lining it with pebbles and shells. The female lays 4 buff-white eggs marked with small dark spots. The egg and downy chicks blend in with the sand.

Piping Plovers feed on worms, small insects, and larvae, which they dig from the soil, using sand.

The call is a clear, whistled "peep-lo"

Notes

Piping Plover is rarely seen along the Erie shoreline, but may be seen along the Niagara shoreline.

Piping Plovers nest along the shoreline from the mouth of the Niagara River to the mouth of the Ontario River.

Eighteen Mile Creek Continued

gates have been removed. Historically, there were a number of dams on the main stem and East Branch. The submerged remains of these dams and the Burt, Newfane and the dam downstream of Clinton Street, act as sediment traps in the creek.

Area of Concern

The International Joint Commission (IJC) has designated Eighteenmile Creek as an Area of Concern (AOC). This designation indicates that the area has been reported to exhibit environmental degradation, and that some beneficial uses of the water or biota are likely to be impaired. The IJC identified 43 Areas of Concern in the Great Lakes Basin. *Eighteenmile Creek is one of the six Areas of Concern in New York State.*

A 1987 Amendment to the U.S.-Canada Great Lakes Water Quality Agreement required that RAP's (Remedial Action Plans) be developed by the States and Province of Ontario for the Areas of Concern under their jurisdiction. In 1997, a RAP for Eighteenmile Creek was developed by the New York State Department of Environmental Conservation (DEC), in cooperation with local citizens and agency personnel concerned about the creek's revitalization. The RAP defined the environmental problems in the Area of Concern, identified what needed to be done to restore beneficial uses, established the time schedule, designated the responsible agencies, and described a monitoring process needed to track remediation.

The Eighteenmile Creek Area of Concern is located in the Town of Newfane. The creek flows from the south and discharges into Lake Ontario approximately 18 miles east of the mouth of the Niagara River through Olcott Harbor. The Area of Concern extends from the mouth of the creek to the farthest point upstream at which backwater conditions exist during Lake Ontario's highest monthly average lake level. This point is just downstream from the mouth in Burt. The dam does not restrict the flow from the upper portion of the watershed. The hydroelectric generating sta-



Adam and Jim's Catch of the Day

tion at Burt Dam is operated in a "run-of-the-river" mode, which means that the entire flow of the creek is allowed to pass over the dam or through the turbines.

The Goal of the RAP

The overall goal of the Eighteenmile Creek Remedial Action Plan is to remove conditions that impair beneficial use of the creek in the Area of Concern.

The plan seeks to restore and maintain water quality to provide for contact recreation (swimming, canoeing etc.) and the propagation of fish, shellfish, and wildlife as required by state law. At the same time, it will identify additional actions that may be necessary to restore creek conditions as identified by the IJC.

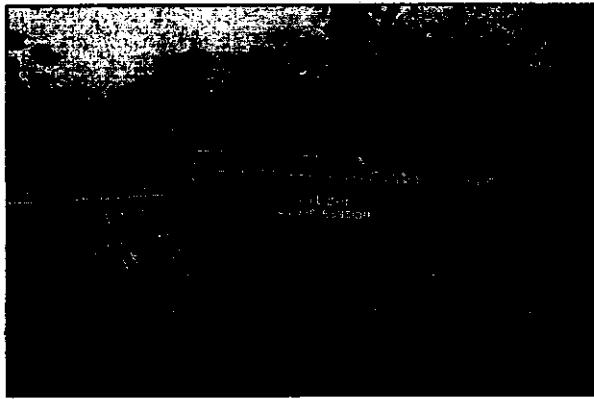
Water Quality Monitoring to Date

The NYS DEC and the Army Corps of Engineers have engaged in various water quality analysis studies to date. Although the many studies are too numerous to identify here, data has been evaluated and compiled for the presence of: various metals, organic chemicals, dioxin, furan, PCB's, mercury, Phenols, Chlorinated Benzenes, DDT, metabolites, polycyclic aromatic hydrocarbons (PAHs), and dibenzofurans.

Eighteen Mile Creek Continued

Stream Inventory

Building on the lessons learned during our stream inventory of Tonawanda Creek last summer, Brian Richards and Caron Gala of the District, along with Dan Olmstead of Cornell Cooperative Extension, are undertaking a comprehensive inventory of Eighteenmile Creek. As with the Tonawanda Creek study, the purpose of this inventory is to gather data and pictorial evidence to substantiate the need for remediation projects in this area of concern. Utilizing a global positioning system (GPS) for tracking critical problem areas, the following properties of the stream channel are being documented: bank height, bank slope, substrate, depth of water, ground cover, an estimation of the severity of erosion, riparian zone width, land use, wildlife, and potential pollution sources.



Facing west at Burt Dam

Applying the Rosgen Stream Classification System to Eighteenmile Creek

Another tool to be utilized by the District while evaluating Eighteenmile Creek is the Rosgen Stream Classification System. Beginning this Fall, a graduate student from the Geography Department of the State University of New York at Buffalo, experienced with the Rosgen Stream Classification System, will be working to incorporate the Rosgen Stream Classification System into our water quality program.

David Rosgen, of Wildland Hydrology, Colorado, developed the Rosgen Stream Classification System. After years of working on flood damage projects and stream channel restoration projects, Rosgen found that upon visiting project sites years later, restoration efforts along the creeks/streams had made conditions worse. Engineering designs that

incorporated river/creek straightening and deepening (channelization), construction of dams, and concrete channels, failed to consider the practical, physical, aesthetic and financial advantages of approaching river management in terms of natural river behavior.

In 1968, Rosgen began collecting quantitative data by inventorying stream systems in unimpacted rivers, to include: water surface, slope, valley morphology, valley types, depositional history, stream widths, depths, channel stability, sediment supply, stream-flow, stream order, sinuosity, channel materials, the degree of incision within landforms and calculated hydraulic geometry relationships for the rivers studied. The initial development of the classification system emerged based on data surrounding morphological features.

After thorough examination of the data, a consistent pattern of natural river geometry emerged for all climatic regions of North America. These patterns were developed and compiled by Rosgen and presented in two publications: "Applied River Morphology" and "Field Guide for Stream Classification". Both resources provide detailed graphics and text on river morphology description and applications.

In the final analysis...Rosgen has determined that creeks, streams and rivers operate most efficiently in their natural state. Through the application of the Rosgen System, it is now possible, long after a creek or stream has been altered, to return the watercourse to its original configuration.

If you would like to serve on a committee being formed to explore options to remediate the creek, please contact Brian Richards at the District.

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