

OSHAWA CREEK WATERSHED AQUATIC RESOURCE MANAGEMENT PLAN

Executive Summary

Oshawa Creek is approximately 50 km in length travelling from the headwaters in the Oak Ridges Moraine to the outlet at the Oshawa Harbour and Lake Ontario. Its watershed encompasses an area of 120 km² including portions of the City of Oshawa, the Town of Whitby, the Township of Scugog and the Municipality of Clarington.

Urban growth is concentrated in the City of Oshawa in the lower reaches of the watershed. The present urban form has developed northward along the creek valley from Lake Ontario to Taunton Road. Currently 17% of the land within the watershed has been urbanized, with development occurring in the area north of Taunton Road. The majority of the land north of this urban area is in agricultural uses. Hamlets within the watershed include Columbus, Myrtle, Raglan, Mount Carmel and Enfield.

The objectives of the Oshawa Creek Watershed Aquatic Resource Management Plan (ARMP) project were to research the current state of the aquatic resources and factors affecting them using the most current survey protocols and procedures. This information has then been used to develop recommendations that would assist with aquatic (fisheries) management directives, watershed rehabilitation efforts, land use planning, and land management practices as they relate to a healthy aquatic ecosystem.

The intent of this report is to summarize information collected from a variety of sources regarding past and present conditions of this system, to present the results of the field program, to assess present condition/health of the watershed's aquatic resources, and to provide recommendations for future actions.

In an effort to create an up-to-date, and complete foundation of information, data were collected for the following components:

Watershed Characteristics

- Hydrology
- Climate
- Physiography and Surficial Geology
- Groundwater
- Land Use Patterns

Fish Habitat

- Stream Order
- Stream Gradient
- Thermal Classification
- Fluvial Geomorphology
- Riparian Vegetation
- Water Quality (Biological and Chemical)

Fish Community

- Historical Fish Community
- Present Fish Community
- Obstructions to Fish Movement

After gathering and analyzing the relevant data, an understanding of the present health and sensitivity of the aquatic resources has been gained. Overall, Oshawa Creek is in fair health with functioning aquatic communities present. Water quality issues and warming temperatures are a concern for large sections of the creek system.

The priorities for management are to maintain the health of this system and to encourage restoration to assist in achieving its potential. This can be accomplished through cooperative approaches between public and private interests directed at protection through the use of policy, planning and land acquisition. Issues have been identified which are preventing the system from achieving its optimal potential. These issues include effects from such things as loss of riparian cover, impacts from past development, and present land care practices. These effects can be reduced through a combination of restorative projects, and ongoing stewardship initiatives within the watershed.

While the results of this study will be of immediate benefit, the recommendations call for action to be taken over a period of time.

Key recommendations of this report include:

POLICY AND PLANNING

The overall health of the aquatic resource, including the protection of fish habitat is an essential consideration in the land use planning process. It is recommended that as land use planning policies are applied in the Oshawa Creek watershed, particular attention should be focussed on the following:

- Level 1 stormwater quality and thermal protection as per the Stormwater Management Practices Planning and Design Manual (Ministry of the Environment 1994) should be provided for all new development draining to Oshawa Creek or Goodman Creek to protect Type 1 habitats and downstream areas.
- Level 2 stormwater quality measures as per the Stormwater Management Practices Planning and Design Manual (Ministry of the Environment 1994) should be provided for all new development draining to Montgomery Creek.
- Ensuring that the natural hydrological characteristics and particularly groundwater functions are maintained to protect baseflow that serves to maintain coolwater temperatures (Oak Ridges Moraine, the Outwash Plain, the Iroquois Beach and the Till Plain).
- Preserving vegetated riparian corridors to regulate water temperatures and protect water quality (minimum 30 m width on both sides of the watercourse).
- Identifying and addressing predicted stresses of climate change, specifically to coldwater inputs and baseflow, on the aquatic system

Further, it is recommended that:

- ✓ The Authority participates in any review of proposals regarding the environmental assessment and design of proposed future extensions of Highway #407 within the watershed.
- ✓ The regulation and monitoring of water takings be undertaken at a watershed level to ensure that impacts to the system can be minimized.

STEWARDSHIP

The following stewardship issues have been identified within the watershed:

- ✓ Restoration of riparian corridors
- ✓ Restriction of livestock access to streams
- ✓ Installation or retrofitting of bottom draw outlet structures for existing ponds
- ✓ Retrofitting of existing development areas to improve stormwater management
- ✓ Promotion of best management practices for water quality
- ✓ Use of bioengineering as an alternative to hard armouring for bank stabilization and erosion control
- ✓ Stream cleanup
- ✓ Reduce pollution in Montgomery Creek
- ✓ Reduce contaminants entering the creek and harbour
- ✓ Continued development and implementation of educational programs
- ✓ Promotion of various stewardship opportunities
- ✓ Communications with stewardship groups and local groups to share results of this study

MONITORING AND RESEARCH

The data collection and analysis undertaken for this project has led to the identification of research projects that would further the understanding of the aquatic resources of Oshawa Creek. Monitoring of fish communities and habitat, especially in those areas where development is proposed, is critical to detect changes in health.

The research recommendations are:

- ✓ Support, encouragement and direction will be given to those public and private parties who wish to perform studies within the watershed.
- ✓ Proponents should be encouraged to use similar data collection protocols (i.e. BioMAP, Ontario Stream Assessment Protocol) to ensure compatibility of results.
- ✓ Biological water quality should be monitored on a regular basis.
- ✓ Fisheries sites should be resurveyed and a complete assessment should be conducted within a 10-year period.
- ✓ The Authority will examine the opportunity to participate in broader monitoring programs such as the Ecological Monitoring and Assessment Network co-ordinated through Environment Canada.

FISHERIES MANAGEMENT

Through the ARMP field study and in consultation with various public agencies and private user groups, issues were noted that could have implications to the fishery of Oshawa Creek. It is recommended that the Authority, federal and provincial government agencies and local interest groups and associations consider the following issues relating to the fishery of Oshawa Creek:

- ✔ Fish stocking targets should take into consideration the newly gained information that Chinook Salmon are reproducing naturally within the watershed.
- ✔ Opportunities to protect remaining indigenous species and their habitat should be encouraged and supported.
- ✔ Dams that are a barrier to fish should be designed or operated to allow for fish passage especially during spawning seasons.
- ✔ Dams that protect Brook Trout populations from competition should be maintained and information should be provided to the public, explaining the importance of not lifting fish over structures.
- ✔ Promotion of Ontario Sport Fishing Regulations.
- ✔ Educational programs to deter the release of invasive species into the creek should be supported.
- ✔ Atlantic Salmon reintroduction should be considered.
- ✔ Fish habitat improvement projects within Oshawa Harbour are suggested.