

Oxford Natural Heritage Study



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**Grand River
Conservation
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Long Point Region

Preamble

Oxford County possesses many valuable assets including natural assets – forests, wetlands, streams and rivers. These natural resources provide innumerable values to society including purification of the air and groundwater, habitat for wild plants and animals, erosion protection, and recreational opportunities.

However, like any asset, wise management is the key to sustainability. Our forefathers thought the forests were inexhaustible and by the early 1900's, 90% of our forests were gone and the sandy soils were blowing away. An awakening to the impacts of this deforestation inspired many individuals, groups, agencies and government to take steps to ensure the long-term survival of these natural features.

In 2006, many groups and agencies are still working towards conserving and enhancing the County's natural features. Good information on the state of the Oxford's natural resources is critical to effective results. This study has inventoried Oxford's natural features both terrestrial (land) and aquatic (water) using the most up to date scientific methodologies and mapping tools.

The study findings show the County has many good quality streams, rivers and forests. Fish, lumber, animals can continue to be harvested sustainably. However, we also have many challenges in the form of poor quality watercourses and tiny forest fragments that cannot sustain the diversity of wildlife we know today. Natural areas, once removed, take generations and countless dollars to bring back.

We must credit those who have stewarded the land and water to date. We must also take steps to ensure more of the County's resources are maintained and enhanced. Council is a major player in the conservation and enhancements of these natural resources as outlined in the recommendations in this report

Our intent can be best described as a desire to protect and conserve the natural assets, our *green infrastructure*, for all time, for the use, health and enjoyment of future generations. To achieve this outcome will require the recognition of the important role of private landowners and that the County of Oxford is the enabling body with specific responsibilities.

My thanks to the many people who have contribute their time and efforts to the making of this study. It has been my privilege.



Michael Harding
Chair, Steering Committee
Oxford Natural Heritage Study

Executive Summary

The Oxford Natural Heritage Study examined the state of the terrestrial (land) and aquatic (water) resources of the County using scientific methods. The study also came up a set of recommendations to conserve and enhance these features.

The woodlands and natural areas were measured and assessed on a landscape level using ortho-imagery (air photos) and a Geographical Information System. Nine scientifically based criteria were developed to determine which patches were significant on the County scale. Maps were produced depicting which patches met at least one criteria. In total, 2676 of 3368 patches met one or more criteria. Forest cover is 12.5% with an additional 1.8% meadow, totalling 14.3% cover. This amount is below the ideal of 20-30% cover to maintain species and watershed health, but within reach. Many woodland patches are small. With low forest cover, it is important to conserve and enhance what remains. Most of southwestern Ontario has low forest cover because the land is well suited to agriculture and urbanization. It must be recognized that the natural features have been preserved because landowners value the natural areas on their land.

Information on Oxford's watercourses (fish, habitat, benthic organisms) was compiled from earlier studies. Additional sampling was carried out at 140 sites to fill gaps. The watercourses were categorized into three system types and mapped. Fifty percent of the watercourses are System Type 1, meaning they have permanent flow, warm or cool/cold water and have sensitive or significant species. Thirty-one percent of watercourses are System Type 2, meaning they have permanent flow, warm water and support baitfish. Nineteen percent of watercourses are System Type 3, meaning they have intermittent flow, warm water, and are seasonally accessed by baitfish and other larger fish. Each system type can be enhanced to improve conditions for aquatic life, and even may move from type 3 to 2 or type 2 to 1.

Over 40 years of water quality/chemistry data from 12 sites was compiled from the Provincial Water Quality Monitoring Network. The trends in the concentrations of six key parameters were plotted and discussed. The six parameters include: total phosphorus, nitrate, suspended solids (clarity), chloride, copper and bacteria. Nutrients such as nitrate and total phosphorus are routinely above guidelines at most sites. Nitrate and chloride are showing a steady rise in levels, a trend mirrored in other southern Ontario streams. Bacteria levels are also routinely high, but improvements have been shown in recent years. Copper is still within acceptable levels. Aquatic life are affected directly or indirectly by pollutants, and it is important to monitor the water chemistry to assist with the understanding of aquatic health. Pollutants in water reflect land use practices on the land, in both rural and urban settings.

A multi-stakeholder Implementation Advisory Committee (IAC) composed of 23 groups was assembled to bring various expertises and viewpoints and discuss ways of implementing the recommendations made from the terrestrial and aquatic teams. As natural heritage features are often situated on private land, it was important to get the input of groups representing private landowners (e.g. agricultural and urban). The IAC discussed and recommended several practical measures to achieve the conservation and enhancement of Oxford's natural resources. The IAC recognized that many tools or approaches were needed to achieve this large goal while still allowing landowners to make a living. Recommendations centred on incentives, regulation, education and outreach, securement and protection, and taxation measures. The IAC validated the work of the technical and steering committees and provided a unique grassroots perspective and buy-in to this technical study.

The Steering Committee, made of seven project partners, oversaw every aspect of the Oxford Natural Heritage Study and endorsed this report. The Steering Committee considered the recommendations of the technical teams and the Implementation Advisory Committee and made several final recommendations. Some of the key recommendations include:

- formation of an ongoing Natural Heritage Advisory Committee to enable the recommendations to be delivered
- designation of patches that meet one or more criteria in the Official Plan
- expansion of the County's Clean Water Project to provide more incentives to landowners to improve environmental conditions on their land
- development of a communications strategy
- recognition of landowners with significant patches
- completion of urban natural heritage inventories
- exploration of tourism opportunities around natural resources and
- continued monitoring of aquatic and terrestrial resources in the County.

In summary, Oxford County has many good quality terrestrial and aquatic habitats, with large wetlands and several trout streams, but is also challenged by many poorer quality sites and low forest cover. Understanding the dynamics of all of the pieces of the system helps to plan for future conservation and augmentation. It will take generations to restore the natural heritage system to a level that is sustainable, and many actions have already been made. The findings of this study provide the impetus to start more concertedly on this path.

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- County of Oxford,
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