



## INFORMATION REPORT

<b>TO:</b>	Chair and Members Planning Committee
<b>COMMITTEE DATE:</b>	July 7, 2015
<b>SUBJECT/REPORT NO:</b>	Nature Counts 2 Natural Areas Inventory (PED15084)(City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
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<b>SIGNATURE:</b>	

### Council Direction:

Since 2005, annual funds of \$30 K have been allocated in the Operating Budget to support ongoing data collection in natural areas within Hamilton. These funds were provided to the Nature Counts 2 Project for the years 2011 to 2013.

### Information:

What is Nature Counts 2?

Nature Counts 2 is a comprehensive biological inventory of 53 significant natural areas in Hamilton, which took place from 2011 to 2013. Two reports (Site Summaries and Species Checklist) were published in the summer of 2014 which provided updated study area boundaries, species occurrence records, and recommendations for the 53 significant natural areas.

Nature Counts 2 is the third inventory of its kind in the past 23 years in Hamilton. In 1991 to 1993, the first comprehensive inventory of natural areas in Hamilton was conducted (Natural Areas Inventory). This study was updated in 2001 to 2003 (Nature Counts) and again in 2011 to 2013 (Nature Counts 2).

All three projects were led by the Hamilton Naturalists' Club (HNC), the City of Hamilton, and the Hamilton Conservation Authority (HCA). The HNC raised the funds for the project and contributed project expertise and historic species records. The HCA contributed project expertise, supervised the field workers, and housed project staff at their office. The City provided funding from the operating budget and project expertise. The project involved funding and in-kind contributions from Conservation Halton, Grand River Conservation Authority, Royal Botanical Gardens (RBG), Ontario Ministry of Natural Resources and Forests (MNRF), Environment Canada, and Natural Resources Canada.

### History of Nature Counts

In 1991, the HNC organized and conducted a biological inventory of 92 natural areas in the Regional Municipality of Hamilton-Wentworth. A team of professional biologists identified the plants, mammals, birds, butterflies, fish, amphibians and reptiles living in these areas. The purpose was to identify Environmentally Significant Areas (ESAs) for the Region of Hamilton-Wentworth Official Plan. The study was published in two volumes as the Hamilton Natural Areas Inventory (Site Summaries in 1993 and Species Checklist in 1995).

The project originated from the HNC's examination of the 1985 Region of Hamilton-Wentworth Official Plan (RHWOP) which contained a policy calling for a comprehensive natural areas inventory. Previously, the 37 ESAs in the RHWOP were identified largely through literature research. As a result of the Natural Areas Inventory (NAI), the number of ESAs identified in the RHWOP rose to 67 in 1996. In 2005, this increased to 81 ESAs based on the 2001-2003 Nature Counts Inventory.

### How is the Data Used?

The data gathered has been used by the City and its partners to:

- Identify core area mapping and policies for protection in the Official Plans;
- Provide data used in the review of development applications proposed adjacent to natural areas;
- Develop public education and awareness materials (i.e. What's Alive in Hamilton?);
- Monitor the health and condition of natural areas;
- Promote landowner stewardship; and,
- Research and data sharing with partners (Conservation Authorities, Ontario Ministry of Natural Resources and Forests, Royal Botanical Gardens, Hamilton Naturalists' Club).

The purpose of the Nature Counts 2 Project was to:

- Gather Information -To gather data on plant and wildlife species, vegetation communities, and natural area boundaries;
- Make Recommendations - On natural areas management, habitat enhancement, and future studies;
- Monitor - To help understand the effects of climate change, invasive species, and human pressures on the natural areas; and,
- Increase Awareness – Promote the natural areas and rich biodiversity of Hamilton.

### Summary of Results

The Nature Counts 2 Project inventoried 53 natural areas over three years, including large areas like Dundas Valley and Beverly Swamp. There is now a total of 2,020 species of plants and wildlife recorded in Hamilton. During Nature Counts 2, there were 71 new species found, including birds (Bald Eagle, Sandhill Crane), plants (Pawpaw), and butterflies (American Snout). All of this data is housed in the Hamilton Natural Heritage Database which is maintained annually by the Hamilton Conservation Authority.

Since this is the third inventory, and with information dating back to 1991, the data may be used to identify trends. When examining preliminary trends in the data, there is good news and bad news. The trends discussed below reflect species occurrence trends experienced in other municipalities in southern Ontario.

### Positive Trends

Hamilton has recorded the highest number of native plants (962 species) compared with Toronto, Halton, Peel, York, and Durham. This may be a result of the intensive work that Hamilton has done in studying its natural areas, but it also likely reflects the high biodiversity of Hamilton. The inventory work has shown that Hamilton has an incredible diversity of habitats, including Dundas Valley, Cootes Paradise, Beverly Swamp, the Niagara Escarpment, Eramosa Karst, Copetown Bog, and Ancaster Prairie.

Nature Counts 2 was the first comprehensive inventory of dragonflies and damselflies in Hamilton, which are also known as odonates. Ninety-eight species were found in Hamilton.

Some species are rebounding due to habitat improvements and active restoration in some areas of Hamilton. For example, there is now a pair of breeding Bald Eagles in Hamilton, likely due to the ongoing Cootes Paradise restoration work carried out by Royal Botanical Gardens.

## Negative Trends

Reptiles and amphibians have shown a consistent decline across all species since the last inventory in 2001-2003. Turtles and frogs in particular are impacted.

Species which use meadows and grasslands are declining, including birds, butterflies, and other pollinators.

Invasive plants continue to be a problem. Although 71 new plant species were recorded in Nature Counts 2, 38 percent of them were invasive, non-native plants. Invasive, non-natives are a concern because they outcompete native plants, do not provide habitat suitable for native wildlife, and thus, reduce biodiversity.

## Education and Awareness

All three inventories have included education and awareness programs as a component of the study. Nature Counts 2 had a particular focus on education, and a variety of materials were produced through the leadership of the HNC, including:

- A video about the Nature Counts 2 Project;
- Five Species Checklists for residents to use in the field to check off the species they have seen. Checklists are available for Reptiles and Amphibians, Birds, Mammals, Butterflies, Dragonflies and Damselflies;
- A children's activity book, "Explore What's Alive in Hamilton"; and,
- A revision of a booklet produced in 1991, "What's Alive in Hamilton: A Guide to the Green Spaces of the City of Hamilton and Area".

All of these materials are available at Hamilton City Hall, and at the offices and websites of project partners.

## How Will the Latest Data be Used?

The Site Summaries Report contains recommendations for each of the 53 natural areas. Staff will review the recommendations and assess which of them the City can implement. In some cases, boundary changes to natural areas are proposed. Although no new ESAs were identified, there are 25 extensions to existing ESAs recommended. ESAs are identified on Schedules B (Natural Heritage System) and B-6 (Local Natural Areas) in the Rural and Urban Official Plans as Core Areas. Any proposed major changes to ESA boundaries will undergo a public consultation process and an Official Plan Amendment will be required.

Staff also intend to review the data more closely, to examine any trends in species occurrences in Hamilton. Generally, it appears that the trends and stresses that are occurring elsewhere in southern Ontario are mirrored in the results of Nature Counts 2.

Finally, the City of Hamilton will continue to work closely with its partners in conservation (HNC, the four Conservation Authorities, RBG, MNRF, and others) to collect data, and manage and monitor the Natural Heritage System.

Future special projects may be carried out using the data, including habitat restoration, invasive species management, landowner stewardship, and buffer research. In the future, data collection may focus on specific areas or data gaps (smaller natural areas that have not been inventoried, bat inventory, migratory bird stop-over areas, and invasive plant “hot spots” in need of management).

**Conclusion:**

The Nature Counts 2 Project included the following partners and funders, and the City of Hamilton would like to thank them for their generous support:

- Hamilton Naturalists' Club
- Hamilton Conservation Authority
- Conservation Halton
- Environment Canada Habitat Stewardship Program for Species at Risk Fund
- Great Lakes Sustainability Fund
- Grand River Conservation Authority
- Hamilton Conservation Foundation
- Hamilton-Wentworth Stewardship Council
- McBride/McCallum Foundation
- McLean Foundation
- Natural Resources Canada
- Ontario Ministry of Training, Colleges, and Universities
- Ontario Species at Risk Stewardship Fund
- Ontario Trillium Foundation
- Royal Botanical Gardens
- Salamander Foundation
- Shell Canada
- TD Friends of the Environment Fund

The City would especially like to thank the landowners who generously allowed biologists to inventory the plants and animals on their property. The project would not have been possible without their support.

In 1996, the Region of Hamilton-Wentworth and the HNC won the Lee Symmes Municipal Award, in recognition of the achievement that the NAI contributed to the field of environmental planning. Because the partnership to update the original NAI has continued, the Hamilton Nature Counts Project is considered a leader in natural areas data collection and management.

The Nature Counts Project provides a wonderful example of how partnerships between non-government organizations and government agencies can achieve natural areas protection over more than 23 years. By working together, agencies and non-government organizations are able to efficiently pool resources to accomplish a large-scale conservation project that benefits all partners and the residents of Hamilton.

**APPENDICES AND SCHEDULES ATTACHED:**

N/A

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