



# Conservation Ontario E-News

Representing Ontario's 36 Conservation Authorities



November 2011

This newsletter provides information and updates on issues about Ontario's Conservation Authorities.

## What's in a Name?

Ecosystem Goods & Services, Natural Capital, Ecological Goods & Services, and Environmental Goods & Services- all of these terms refer to the same thing- the value of nature.

## Your Watershed is an Ecosystem

A **watershed** is an area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake, or groundwater.

A watershed is also an ecosystem with wide ranging interacting natural components such as habitats, species, and people.



Human activities have a direct influence on the quality and quantity of surface water, groundwater, and other natural resources in the watershed.

## Currency of Ecology

### Ecosystem Services are the Benefits Derived from Ecosystems

Our natural ecosystems encompass forests, wetlands, water sources, plants and animals, and provide multiple *goods* and *services* that contribute to a healthy economy, environment and people. Every day, we rely on ecosystem goods and services - they connect us to our environment.

Fact Sheet: **What are Ecosystem Goods and Services?**



## Conservation Authorities Protect and Restore Ecosystems

Conservation Authorities deliver practical, cost effective programs that ensure healthy ecosystems which enable them to generate and maintain valuable goods and services, often preventing the need for costly technological solutions to environmental problems.

Conservation Authorities have a long history in working with landowners and others in the planning and delivery of watershed stewardship initiatives.

## Important Relationships Between Environment, Economy and People

Nature plays a direct and important role in rural and urban

Upstream activities influence river flows and water quality downstream. Surface and groundwater systems have a limited tolerance for stress, and long-term problems can develop that are costly and difficult to remediate.

Keeping our ecosystems healthy is the key to maintaining a good balance between environment-economy and people. Watershed planning enables us to ensure we have enough sustainable resources to support our daily lives today and into the future.

## Why Do We Put a Value on Nature?

Unfortunately, current accounting systems rarely, if ever, account for nature. In fact, we often assume nature provides unlimited resources, such as fisheries, forests and clean drinking water. We act as if the 'bank of nature' has unlimited assets.

Economic valuation is a technique that helps policymakers and citizens take proper care of a watershed's *natural capital*, ensuring benefits flow for generations to come. By accounting for *natural capital* (giving it value) we can start to align our economic ambitions with our ethical environmental responsibility.

Identifying the value of nature (where we can) helps policy makers to better account for the true benefits and costs of our land use decisions.

**READ MORE** about how to determine economic value of ecological services.

A number of projects have been undertaken by government and non-government organizations to put a price tag on the goods and services that nature provides.

**Assessing the Economic Value of Protecting the Great Lakes- Rouge River Case Study (2010)** - recognizes the strong link between watershed management and nearshore health of Lake Ontario.

**Lake Simcoe Basin's Natural**

economies, our environment, and even our well-being as individuals.

Forests, wetlands, plants, and animals provide important services such as:

- controlling flooding and erosion
- cleaning water sources
- managing drought
- pollinating crops
- recharging our water sources
- providing valuable green space
- storing carbon emissions

Economically, our environment helps to produce energy, supplies water to industry and individual households, contributes to tourism, timber, fisheries and recreation sectors, provides food and much, much more.

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## Natural Credit in the Credit River Watershed

Pembina Institute & Credit Valley Conservation Study Reveals Economic Benefits

Recognizing the importance of protecting and restoring valuable benefits provided by healthy ecosystems, Credit Valley Conservation (CVC) has initiated a program to better understand the value of natural benefits provided by the Credit River Watershed. **READ MORE**

## Credit River Watershed's Natural Capital

The Credit River watershed provides at least \$371 million/yr in valuable ecosystem services from forests, wetlands, water resources, meadows, and agriculture. **READ MORE**

## An ounce of Prevention: \$100 million Saved in Water Supply Costs

Credit Valley Conservation estimates that the Credit River watershed ecosystem saves watershed taxpayers \$100 million in water supply costs every year. If the groundwater supply is compromised, it would cost more than \$100 million per year to pump water from Lake Ontario in order to maintain just the current use. It pays to protect groundwater resources from threats like overuse, urban development and pollution. **READ MORE**

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## Conservation Authority Watershed Management Programs Contribute to Ecosystem Goods & Services

**Conservation Authority watershed management programs** keep ecosystems healthy and able to generate a wide range of ecosystem goods and services. These programs include:

- Watershed strategies and management
- Flooding and erosion protection
- Water quality and quantity
- Reforestation and sustainable woodlot management
- Ecosystem regeneration
- Environmental education and information programming

**Capital: The Value of the Watershed's Ecosystem Services (2008)** - wetlands currently remove harmful phosphorous from Lake Simcoe and save local municipalities about \$300,000 a year in treatment costs

**Natural Credit: Estimating the Value of Natural Capital in the Credit River Watershed (2009)** - The ecosystems in the Credit River Watershed provide at least \$371 million/yr in ecological services to its residents. **Fact Sheet**

**Estimating Ecosystem Services in Southern Ontario (2009)** - the Ontario Ministry of Natural Resources estimates that biodiversity provides about \$84 billion each year in ecosystem services.

**Nature Count\$ (2006)** - produced by the Canadian Urban Institute for Ontario's Natural Spaces program, this report provides a review of the socio-economic contributions of natural areas in southern Ontario. **Presentation**

**Ontario's Wealth, Canada's Future (2008)** - quantifies the value of the ecosystem services provided by the Greenbelt's natural capital.

## Integrated Watershed Management Provides the Framework for Managing Impacts on Ecosystems

Rather than focusing piecemeal on individual issues, an **integrated watershed management approach** takes a holistic view.

It explores the cause-effect relationships of human activities on natural functions and processes, extending across traditional jurisdictional boundaries, finding solutions that minimize negative environmental impacts.

This approach helps us to understand our connection to nature and to share decision-

- Land securement
- Outdoor recreation
- Soil conservation
- Environmental land use planning
- Habitat protection such as sensitive wetlands, flood plains, valley lands
- Agricultural and rural landowner assistance

Conservation Authority flood management programs prevent \$100 million/yr in damages to property.

In 2010, Conservation Authorities:

- Planted 2.9 million trees with 2,000 lanowners
- Provided landowners with \$6.6 million in grants for 2,210 water quality improvements (erosion control, clean water diversion, agricultural best management practices)
- Provided landowners with \$1.4 million in grants for 478 habitat rehabilitation projects
- Worked with partners to develop 22 Low Water Strategies to manage low water conditions
- Operated 437 monitoring sites within the provincial groundwater quality monitoring network; and 837 sites in the provincial surface water quality monitoring network
- Provided technical advice and support to provincial source protection committees in 19 regions as they develop source protection plans

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## Healthy Ecosystems Provide a Cost Effective Way to help Ontario to Adapt to Climate Change

Nature provides ecosystem services that help us to mitigate and adapt to climate change. For example, forests, wetlands, green spaces and plants along shorelines help to keep water flowing in our watersheds as well as store and reduce carbon emissions, improve water quality, reduce heat, and prevent flooding and erosion.

In Ontario, we are already experiencing impacts of climate change such as increased flooding and drought, frequent heat waves, extreme rain events, decreased water flow in streams, fluctuating lake levels, decreased fisheries and degraded water quality.

### How do Forests Capture Carbon?

Carbon dioxide may be captured from the atmosphere through biological, chemical or physical processes. Forests and wetlands provide an important ecological service, holding significant stores of carbon. Carbon is stored in soils, in dead woody debris, and in living trees.

Reforestation and wetland restoration are considered to be valuable measures to aid in climate change mitigation. Conservation of these ecosystems retains the carbon stored in them, and planting trees sequesters carbon from the atmosphere, helping to reduce greenhouse gases which are affecting our climate. **READ MORE**

Private landowners, businesses, and agencies who plant trees, protect wetlands, manage forests, maintain healthy

making on how best to protect ecosystems and the goods and services they generate.

Ontario's 36 **Conservation Authorities** deliver watershed management programs and services totaling more than \$290 million annually. Conservation Authorities' programs and services are science-based and often delivered across Ontario in partnership with local landowners, other environmental agencies, and all levels of government.

Conservation Authorities promote an integrated watershed approach balancing human, environmental, and economic needs.



## Ecosystem Services Provided by the Urban Forest

The urban forest is an essential ingredient for healthy and livable communities. A resilient and expansive urban forest offers preventative health care benefits by filtering harmful air pollutants. Trees in Mississauga remove approximately 430 tonnes of air pollution annually; this service is valued at \$4.8 million annually.

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## Living City Report Card- Ecosystems Goods & Services Deep Dive

In a region where land values are rising and highest value uses are the order of the day, sometimes the preservation of greenspace cannot compete with taxes and jobs- or can it? In this analysis we explore the relatively new concept of ecosystem services and the benefits to the Greater Toronto Area. **READ MORE**

streams, protect habitat, conserve water and implement stewardship projects all support sustainable goods and services.

## Benefits of Ecosystems- Quick Facts

### **Benefits of Wetlands:**

improve water quality, regulate water flow for drought and flood management, provide wildlife habitat, provide carbon storage, contribute to climate change adaptation, provide opportunities for recreational fishing and hunting.

### **Benefits of Forests:**

improve air quality, absorb carbon emissions, filter air pollution, improve water quality and soil, provide important wildlife and bird habitat, provide sources of materials for building and manufacturing, provide shade and block winds.

### **Benefits of the Great Lakes:**

provide transportation, recreation and manufacturing goods and services contributing billions of dollars to Ontario's economy, source of drinking water for eight million people, provide raw power and cooling water for the province's energy supply.

### **Benefits of Green Spaces:**

create attractive, 'liveable' communities by providing relaxing, walkable and aesthetically pleasing neighbourhoods.



Photo by Jackie O'Neill

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