Stewardship Series
HEALTHY FORESTS

Quinte CONSERVATION
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A History of Deforestation

Photo: National Archives of Canada

Dense mixed forests once covered our region. In the 1800s, much of these forests were cleared for lumber, wood products, and fuel, as well as for agriculture and to make way for development. By 1850, only 40% of forest cover remained. Forests in our region were further reduced to 14% by 1940 due to uncontrolled grazing, large scale fires, and frequent flooding. Over several decades, the fragile topsoil was depleted, which slowed natural regeneration of the forest. Many areas were left in a state of a barren wasteland.

Flooding and Erosion

The clearing of forests increased rainwater runoff volumes, as well as the force and speed of freshets (spring rain and snow melt events). This led to large scale erosion and flooding. In addition, the loss of wetlands meant less containment and storage of the runoff. Conservation Authorities were established across southern Ontario with a broad mandate to implement conservation measures.

Recreating Forests of the Past

In the mid 1900s, large-scale planting efforts began and underutilized lands were planted, often with hardy conifer trees.

As the plantation matures, selection harvests would provide lumber for the wood industry and an income for landowners. Each harvest would open the canopy allowing light to the forest floor, allowing for regeneration of woodland species.

At Vanderwater CA, conifer trees were planted as they were well suited to the sandy soils and tough growing conditions. This new forest would slow and capture rainfall and snowmelt, stabilize eroding topsoil, create wildlife habitat, and be used to demonstrate better forestry practices.

What You Can Do:

- **Plant native trees and shrubs.** Help to bring native trees back onto our landscape by planting on your property.
- **Reforest an area.** Consider converting underutilized areas of your lot or farm back to forest.
- **Consider a Forest Management Plan for large forested areas of your property.** Consult with a Forester for guidance.
- **Enjoy what your space has to offer.** Forests and trees are calming and soothing and can improve our emotional and mental well-being.

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Sustainable Forest Management

Sustainable forest management means balancing environmental considerations with the economic value of the forests.

Quinte Conservation performs forest thinning and harvest operations according to site-specific Forest Management Plans. All forest management activities at Vanderwater CA are practiced in a manner that is environmentally sustainable, encourages natural succession of native species, improves wildlife habitat, and addresses forest health concerns such as pests and disease. The goal is to bring this land back to the healthy and diverse forest it once was.

DID YOU KNOW?

Quinte Conservation's 30,000 acres of forested land became *Forest Stewardship Council* (FSC) certified in 2019. Certification means maintaining the highest level for sustainable forest management practices.

Second-Growth Forest

Following a thinning harvest, light can reach the forest floor where a wealth of seeds from a variety of native species can now flourish. Forestry practices within plantations help with regeneration. Visitors can find Eastern White Pine, Red Oak, White Ash, and Sugar Maple growing in the understory.

What You Can Do:

- **Look before you buy!** Three forest certification systems are used in Canada: the Forest Stewardship Council, the Sustainable Forestry Initiative, and the Canadian Standards Association. Buy canadian wood products with sustainable forest certification.

FSC
SUSTAINABLE FORESTRY INITIATIVE
100% FROM A CERTIFIED FOREST 00000000

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- **Enjoy what your space has to offer.** Forests and trees are calming and soothing and can improve our emotional and mental wellbeing.

Red Oak
Quercus rubra

White Ash
Fraxinus americana

Sugar Maple
Acer saccharum

Eastern White Pine
Pinus strobus

White Spruce
Picea glauca

Bitternut Hickory
Carya cordiformis

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Plantation Management

Thinning is an improvement cutting procedure followed here at Vanderwater Conservation Area. A Forester selects trees to be cut or left based on their growth potential or benefit to natural regeneration or wildlife.

Lower quality and unhealthy trees are marked for removal to increase the amount of light, water and nutrients available to the remaining trees. High quality timber trees remain on site and may later be selected for harvest and sold to the local lumber industry.

As the selected trees are removed more light, water and nutrients reach the forest floor bringing on a wealth of new life. Seeds brought in by wildlife germinate and flourish, recreating our mixed forests of the past.

Downed Woody Material

What You Can Do:

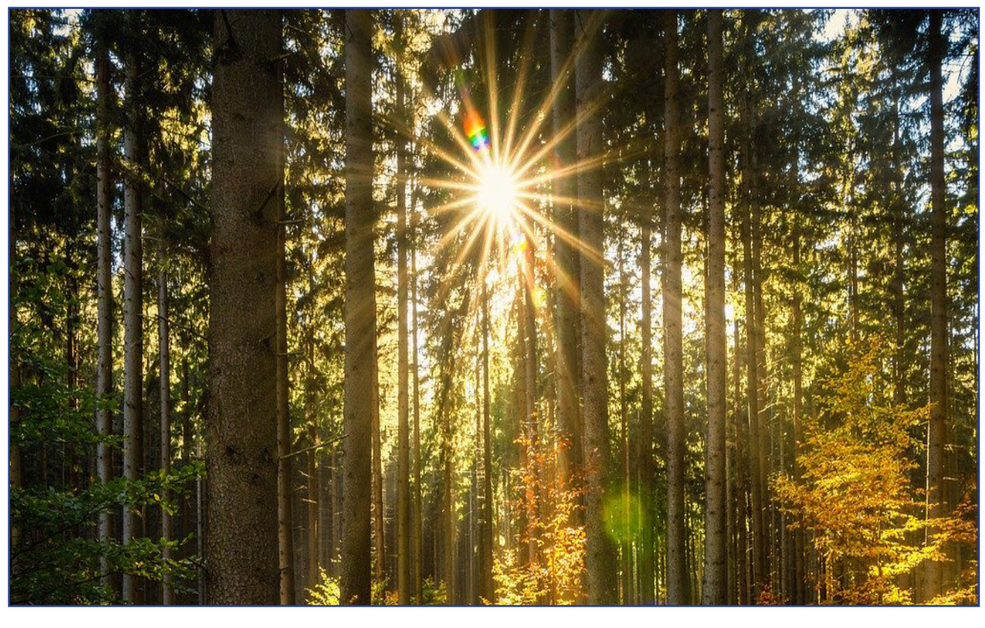
Before beginning harvesting operations in your woodlot:

- **Prepare** a Forest Management Plan.
- **Check** to see if your municipality has a tree-cutting or forest conservation bylaw.
- **Discuss** harvest activities with a qualified forest consultant.
- **Have your woodlot marked.** Hire a certified tree marker.

Downed wooded material left on site create habitat for a wealth of wildlife including decomposers, frogs, salamanders, and small mammals. This woody material will break down over time and contribute back to the health of the forest floor. Downed woody material and fungi is an essential part of a healthy and productive woodland.

Timing of Harvests

Harvesting operaters ensure minimal damage to residual trees and minimal soil compaction with timed harvests along with specialized equipment and procedures.



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Managing your Woodlot for Wildlife

A diverse woodlot from the forest floor to the tree top canopy will provide for the greatest range of wildlife.

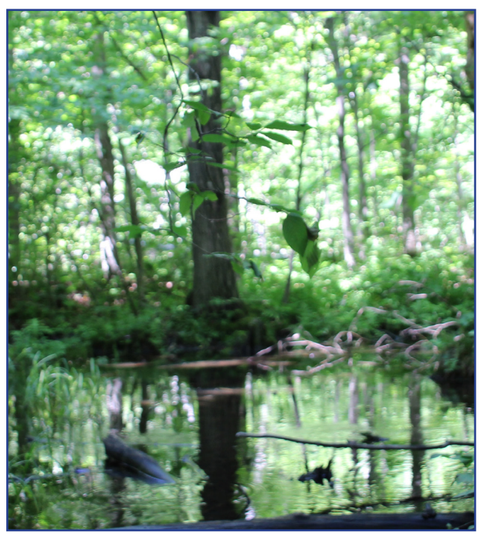
What You Can Do:

- **When safe to do so, leave dead standing trees or snags.** A snag refers to a dead standing tree with no top and most of the lower branches missing.
- **Install wildlife nesting boxes.** Nesting boxes replace absent tree cavities. Consider installing boxes for flying squirrels and cavity nesting birds.
- **Only plant native vegetation; stop the spread of invasive species.** Introducing species from other regions of the world can be damaging to our local ecosystem by displacing our native plants and wildlife.
- **Get to know your woodlot.** Spend time getting to know your space and the wildlife it supports. Our forests are key to ecosystem health, our human health, and ensuring clean water, air and soil.

Habitat Trees

Standing trees with cavities provide nesting sites and shelter for a variety of wildlife including owls, raccoons, flying squirrels, and birds. Cavity trees are essential to the survival of many species of woodland wildlife.

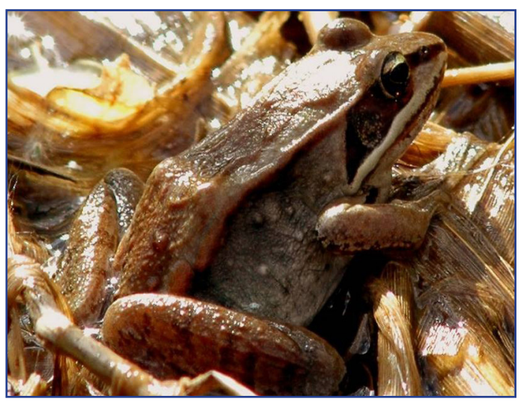
Vernal Pools



These woodland ponds are shallow depressions that contain water for only part of the year, drying out in the summer. They are essential breeding habitat for salamanders and frogs. The loss of vernal pools leads to local loss of amphibian species, a decrease in biodiversity, and a decline in food available for other animals that live in these areas.

Red-spotted Newt/Red Eft

Blue-spotted Salamander



Wood Frog

Wildlife

Pileated Woodpecker

White-tailed Deer

Barred Owl

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Forest Succession in South Eastern Ontario

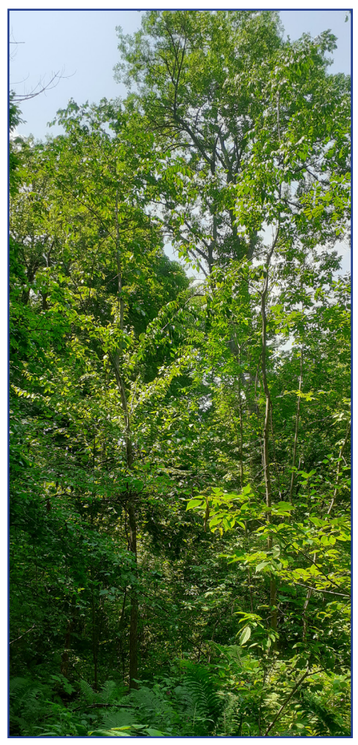
Presettlement	*1800-1940*	*Grassland*	*Shrubland*	*Young Forest*	*Mature Forest*	*Old Growth*
• Mature old growth forests • Younger stands • Meadows • Prairies • Savannas • Wetlands	Logging, development, overgrazing, and fires leave barren lands devoid of fertile topsoil.	Grasses, lichens, moss and ferns grow back first, slowly rebuilding a new top soil.	Small shrubs and coniferous trees that tolerate full sun and poor soil establish on the site.	Coniferous trees mature while shade-tolerant deciduous trees grow in the understory.	Coniferous trees die and fall to the forest floor while deciduous trees overtop them.	The land returns to a similar forest that once existed on the site.

What You Can Do:

- **Encourage the growth of native plants species.** Limit disturbance to the forest floor to encourage the establishment of native plant species that were an important component of the presettlement forest. When these plants mature, they will provide seeds for regenerating their species.
- **Avoid cutting trees that produce fruit and nuts.** They provide food for wildlife and seeds for regeneration.
- **Create canopy gaps.** Support the forest's natural cycle of regeneration by creating large and small canopy gaps. This will speed succession and create areas where young trees can grow in sunlight.
- **Leave wood on site.** The decaying process will contribute back to a healthy and nutrient-rich forest floor, provide important habitat for wildlife, and create microclimates for optimal forest regeneration.

Layers of a Healthy Forest

Healthy and diverse forests are made up of layers with different types of plants forming each layer. These layers allow a wide range of species to thrive in one area.



EMERGENT LAYER

CANOPY LAYER

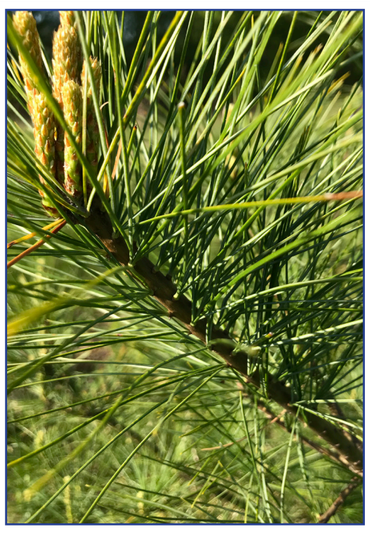
UNDERSTOREY LAYER

SHRUBS LAYER

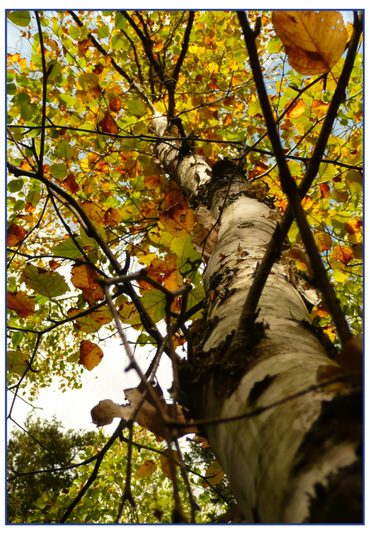
HERBACEOUS LAYER

FOREST FLOOR LAYER

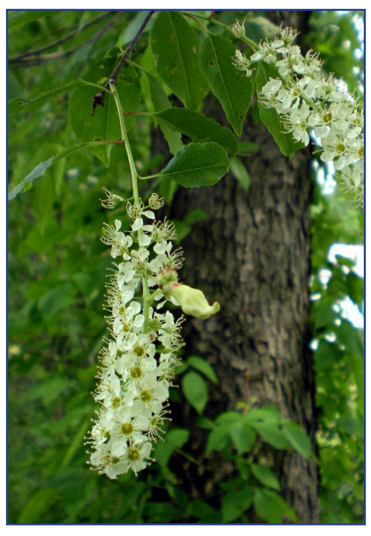
Silver Maple
Acer saccharinum



Red Pine
Pinus resinosa



White Birch
Betula papyrifera



Black Cherry
Prunus serotina

Tamarack
Larix laricina

American Beech
Fagus americana