Created By: Ottawa Biosphere Eco-City and Ottawa Eco-Talent Network

SOUTH MARCH HIGHLANDS ECOLOGICAL TOUR GUIDEBOOK

-2022-

In Collaboration With

Kanata Beaverbrook Community Association, UOttawa Student Volunteers

We would like to thank all of our funders and partners of the Kanata Eco-Tours Project

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WHAT IS AN ECO-TOUR GUIDE BOOK

This document is intended to be used as a self guided tour of the South March Highlands Forest. Throughout the guidebook you will find a range of information on the forest, like specific highlighted species, ecosystem assets, maps and trail information. This guidebook aims to raise public awareness amongst Kanata residents about the ecological importance of their local landscapes, to promote stewardship and conservation of those sites, and to protect local biodiversity found within them.

HOW TO USE THE GUIDEBOOK?

While on your walk/hike/ stroll throughout the South March Highlands Forest you can use this guidebook to help you get a better understanding of where you are, what you are looking at, and the bigger role the different aspects of the forest play in nature. Flip through the different pages to see some of the trails, species and ecological assets you may experience!

ABOUT THE SOUTH MARCH HIGHLANDS

The South March Highlands forest and natural environmental area is located in Kanata North, North-West in Ottawa. It is part of Mississippi Valley Watershed and Conservation Authority. This land is not just ecologically significant but it holds both spiritual and historical importance to the many First Nations peoples in and around Ottawa.

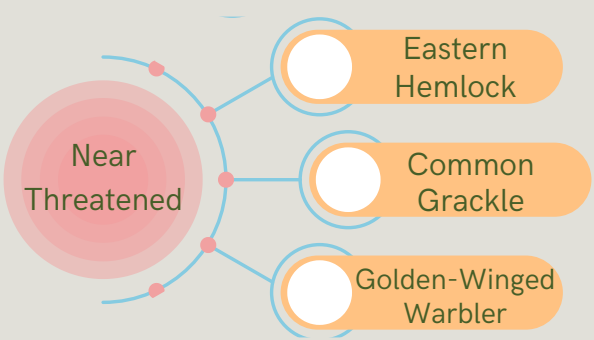
ONE OF THE MOST DIVERSE ECOSYSTEMS IN THE OTTAWA REGION

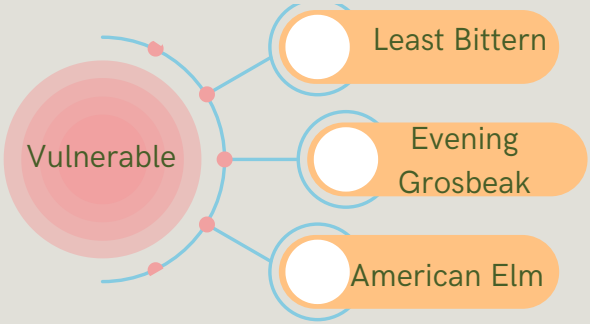
The South March Highlands Conservation Forest lies within the Canadian Boreal Shield and comprises of 457 hectares of land within the larger South March Highlands forest. It is considered to be one of the most ecologically significant and diverse areas in the City of Ottawa. Within the South March Highlands Forest is a protected conservation area. This entire forest has extremely high biodiversity, and is home for many endangered species. It is an popular community place known for its recreational hiking and mountain biking trails for over 20 years.

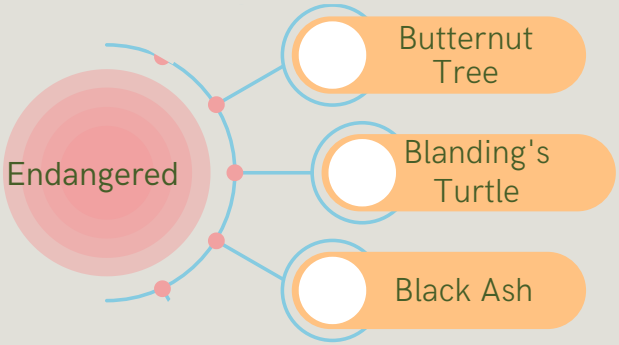
SPECIES IN THE SOUTH MARCH HIGHLANDS

The South March Highlands are located within the Mixedwood Plain Ecozone. It is home to more than 800 species, with at least 20 that are considered at risk. It has more then 400 native species and one of the highest plant diversities of any natural area in Ottawa!

SOME AT RISK NATIVE SPECIES







MAINTANENCE OF THE SOUTH MARCH HIGHLANDS

The Ottawa Mountain Bike Association is a not-for-profit organization that was founded in 2005 with the goal of preserving mountain biking access in the Ottawa/Outaouais region. The South March Highlands is one of the areas that is maintained and enjoyed by OMBA all year round. Today, the trails in the forest are mostly maintained by OMBA volunteers, however, the City of Ottawa does provide some support at times. The OMBA is a member of, and maintains the trails in accordance with, the standards set out by the International Mountain Bike Association.

They are always looking for volunteers to help with maintaining the trails! They have two drop in dates on Friday and Sunday you can learn more on their website!

Trail Maps from OMBA

POPULAR TRAILS

The PWT Loop

Highlights: Two different lakes and some awesome, rolling rocky terrain.

Distance: 7.7 km

Difficulty: Moderate

The Dogsled Loop

Highlights: Some stunning trail work, stone footbridges, and varied terrain along the way.

Distance: 4.5km

Difficulty: Easy

The Rockhopper Loop

Highlights: Great views over beaver ponds and wetland, fun little foot bridges, and rocky mountain biking features.

Distance: 3.6km

Difficulty: Easy

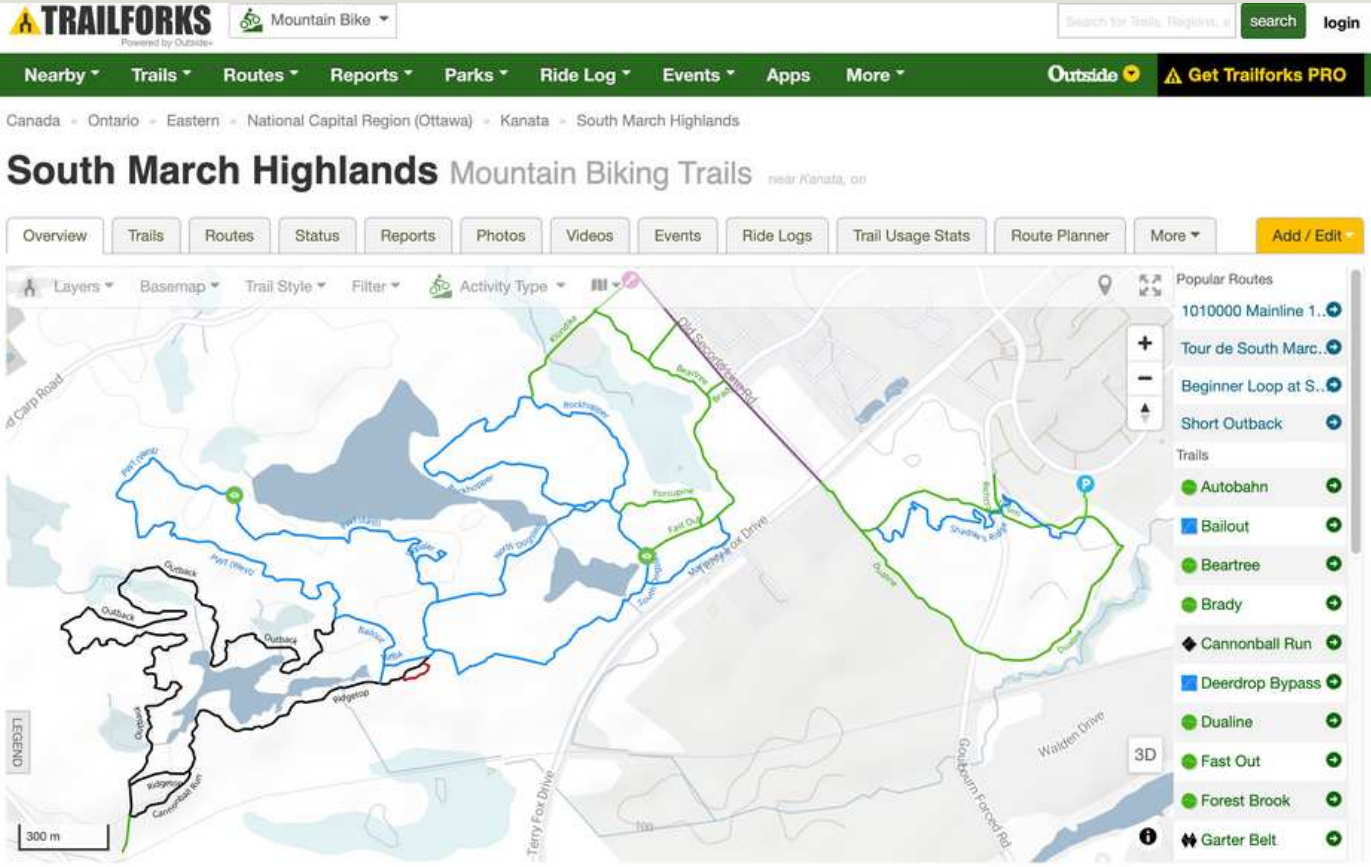
The Outback/Ridgetop Loop

Highlights: Scores of open rock faces, with a "getting lost in the forest" feel since this loop is further out than the others and not travelled as often.

Distance: 10 km

Difficulty: Moderate

South March Highlands Trails on Trailfork!



Check out Trail Forks website to see updated trail maps and information on South March Highlands!

Rules of the Trail!

1. Trail activities should not be undertaken alone. Children in particular should be accompanied and monitored by a responsible person 18 years of age or older
2. The South March Highlands Conservation Forest is a sensitive natural area. Help us to keep it that way by staying on official trails, not creating new trails, nor modifying existing ones.
3. Leave no trace. Pack up everything that you bring in and be sensitive to the trail beneath you. Trails that are wet and muddy are more susceptible to damage.
4. Be courteous to other trail users; yield where appropriate.
5. Pets are welcome; however they must be kept under control at all times. Poop and Scoop is required
6. Use of an approved bicycling helmet is strongly recommended for mountain biking.
7. Plan ahead; know your equipment, your ability and where you are going. A cell phone, map, food and drink are all good ideas. A spare tube, pump and tools are all essential if you are mountain biking

Ottawa

THREATENED SPECIES IDENTIFICATION SCAVENGER HUNT!

The next few pages of the guidebook are a species identification scavenger hunt that you can participate in! While you are on your walk through the South March Highlands there are many different species of plants and animals that you can see. The next few pages of the guide book it will highlight a few different species you could find throughout the forest, it will give a few notes on how to identify the species, the ecological significance and a picture of what it looks like! See how many you can find on your walk!

Throughout the *species spotlight* pages the ecological threat for each threatened species is outlined. However, it should be understood one of the biggest threats to all species in Climate Change! The Changing Climate can create adverse effects for species and unless a species has the ability to adapt it will suffer. We all need to work together to mitigate the effects of Climate Change!

SPECIES SPOTLIGHT: BLACK ASH TREE

How to Identify:

Black Ash is a medium-sized, shade-intolerant hardwood tree species that occurs on moist to wet sites such as swamps, bogs and wetland areas. It is a hardwood tree in the Olive family, growing 15 to 20 m in height, but can grow as high as 27m, and 30 to 50 cm in diameter. The leaves are roughly 15-30 cm in size.

Black Ash leaves Photo © botany08, CC BY 4.0

Ecological significance:

The Ash trees return excess water to the atmosphere far more efficiently than other tree species. Doing so draws down the water table and allows trees to coexist with shrubs. This is the reason for the high biodiversity of forested wetlands. The trees serve a foundational role in areas with poor water drainage and exhibit a high degree of influence on their surrounding ecosystem. Many Indigenous Communities in Ontario use the Black Ash tree for important construction of things like baskets, snow shoes, fish traps etc. It is a staple species in many Indigenous communities.

Species Status: Endangered

Ecological Threats:

One major threat to the Black Ash is the Emerald Ash Borer (*Agrilus planipennis Fairmaire*), a phloem-feeding beetle that is native to Asia and kills all species of ash. It was first identified in Ontario in 2002 when it was documented in Windsor. By 2012, it had spread throughout southern Ontario and western Quebec.

Source: Ontario Government
Retrieved: September 2022

SPECIES SPOTLIGHT:BUTTERNUT TREE

How to Identify:

Butternut is a medium-sized tree that can reach up to 30 m in height. It belongs to the walnut family and produces edible nuts in the fall. The bark of younger trees is grey and smooth, becoming ridged as it ages. It can be recognized by compound leaves, which are made up of 11 to 17 leaflets (9- 15 cm) arranged in a feather-like pattern. The fruit is a large nut that contains a single seed surrounded by a light green, sticky, fuzzy husk.

Ecological significance:

The Butternut tree produces an edible and nutritious nut which is an important food source for birds, squirrels, and other small mammals. First Nation people used the nut oil for cooking, hair dressing, leather- making and polishing tools. Carvers and wood workers value the wood for its softness, colour, and varied texture.

Species Status: Endangered

Ecological Threats:

One major threat to the Butternut Tree is the **Butternut Canker**, a fungal disease that spreads quickly and can kill a tree within a few years. This fungus has already had a devastating impact on North American Butternut populations. Research shows in Eastern Ontario that most trees are infected, and potentially one-third have already been killed.

Source: Ontario Government
Retrieved: September 2022

SPECIES SPOTLIGHT: EASTERN HEMLOCK

How to Identify:

The eastern hemlock is a forest giant. It is a cone shaped with a wide trunk that tapers into a thin top. Skinny flexible branches grow straight out from the trunk and then droop at the ends. The eastern hemlock's bark is scaly when the tree is young and cracks deeply as the tree gets older. Its needles are 1 to 2 centimetres long and are shiny green on top and paler underneath. The cones of the eastern hemlock are oval shaped, and are 12 to 20 millimetres long. In the late fall and winter, the seeds fall out of the cones and onto the ground.

Ecological significance:

The eastern hemlock is used for pulp, paper, lumber, and mulch. As an evergreen that loses water to the atmosphere year-round, hemlocks profoundly affect water dynamics across eastern mountain ecosystems, regulating stream flow and moderating water temperature. Hemlocks also minimize nitrate and other nutrient runoff, thereby improving downstream water quality for human consumption and wildlife. They are also very important to wildlife habitat providing shade for many species.

Species Status: Near Threatened

Ecological Threats:

One major threat to the Eastern Hemlock is expansion of the hemlock woolly adelgid (HWA). The HWA is a sap-sucking insect accidentally introduced from Japan into the Southeast in the early 1950s and has infested more than half of the eastern portion of the hemlock's range. Lacking natural enemies, the HWA can kill a hemlock tree in as few as four years. Cold hard winters lower the survival rate of HWAs, but, rising temperatures due to climate change will likely allow the HWA to expand northward throughout the hemlock's range.

Source: Ontario Government
Retrieved: September 2022

SPECIES SPOTLIGHT: AMERICAN ELM

How to Identify:

The American Elm is very easily identified with its vase-like shape, one straight trunk and then many branches that arch out of it. The leaves are oval shaped, dark green and rough to touch.

Ecological significance:

The American Elm was wildly used as a street canopy tree and in parks, before the Dutch Elm Disease it was a leading dominant tree species in cities and forests alike. It created very nice canopy coverage and shade along streets and parks. However due to the Dutch Elm Disease we do not see many full grown or old American Elm Trees anymore.

Species Status: Vulnerable

Ecological Threats:

Dutch Elm Disease is a fungus that infects and causes mortality in native American elm trees through the Ottawa region and North American in general. The American Elm is very common while it is a young tree, but it rarely grows old or large with very few survivors of Dutch Elm Disease.

Source: Ontario Government
Retrieved: September 2022

SPECIES SPOTLIGHT: BLANDING'S TURTLE

How to Identify:

The Blanding's Turtle is a medium-sized turtle easily identified by its bright yellow throat and chin. Unlike most Ontario turtles that have wide, flatter shells, the Blanding's Turtle has a domed shell that resembles an army helmet. Its shell is black to brown with yellow flecks and streaks and can reach 27 centimetres long. Its head and limbs are black-grey and the bottom shell is rich yellow.

Species Status: Threatened

Ecological Threats:

Despite its ecological significance, the City of Ottawa has allowed parts of the forest to be sold to developers and clear-cut for new homes and the infamous Terry Fox Drive extension, and many of Blanding's turtles have been hit by vehicles as they cross roads. This habitat fragmentation created by the forest being split up is one of the biggest threats to the turtle. As well, Illegal collection for the pet trade is also a serious threat. Blanding's Turtles are slow breeders - they don't start to lay eggs until they are in their teens or twenties - so adult deaths of breeding age adults can have major impacts on the species.

Source: Ontario Government
Retrieved: September 2022

SPECIES SPOTLIGHT: EVENING GROSBEAK

How to Identify:

The Evening Grosbeak is a member of the Fringillidae family of songbirds (Fringilidae is the scientific name for Finches). It is a large, stocky finch with a thick greenish-yellow bill. Adult males are yellow and black in colour with a prominent white patch on the wings and a brown head. Females and juveniles are mostly greyish-brown, with white and black wings and some yellow on the necks.

Species Status: Vulnerable

Ecological Threats:

Potential threats to the Evening Grosbeak include habitat loss and degradation from forestry practices, like habitat fragmentation. It lives in forested areas so one major threat is the chemical measures to control Spruce Budworm populations. As well, because of habitat fragmentation, Grosbeaks have experience other threats, such as collisions with vehicles, ingestion of salt along with other roadsides or hitting windows near bird feeders.

Source: Ontario Government
Retrieved: September 2022

SPECIES SPOTLIGHT: COMMON GRACKLE

How to Identify:

The Common Grackle feathers appear black with purple, green or blue iridescence on their head, and normally a bronze sheen on their body plumage. They have long dark beaks and yellowish eyes with long tail feathers. The female Common Grackle is smaller and thus has smaller tail feathers. They live in marches, woodlands, agricultural fields and backyards throughout Ontario and will fly south for the winter!

Ecological significance:

The Common Grackle plays an important role in their ecosystem! One significant thing: they help populate their areas with plants due to their seed diets and droppings! Without the Common Grackle we would not have the abundant and dense forests we do!

Species Status: Vulnerable

Ecological Threats:

Even though these birds have the word *Common* in their name this might not be entirely the case. Studies show that over the last 50+ years their population has seen a decline, caused by human interference in their habitat (North American Bird Conservation Initiative 2014). The Common Grackle is considered a vulnerable species because of this decline in population, though there is hope through conservation efforts their population will stabilize.

Source: Ontario Government
Retrieved: September 2022

SPECIES SPOTLIGHT: GOLDEN-WINGED WARBLER

How to Identify:

The Golden-Winged Warbler is a small grey songbird. It has a white underside and yellow wings and forehead. The males have black markings behind their eyes, where the females have grey markings. They like to make nests in areas with shrubs surrounded by forests. They migrate to Central America for winter.

Species Status: Vulnerable

Ecological Threats:

The loss of habitat is the biggest threat to the Golden-Winged Warbler. Habitat fragmentation in Ontario has become a huge threat to this species. Another threat is actually the mating habits of the Golden-Winged Warbler: they will sometimes mate with Blue-Winged Warblers producing hybrids which will eventually replace the Golden-Winged Warbler over generations.

Source: Ontario Government
Retrieved: September 2022

HABITAT DESTRUCTION AND FRAGMENTATION

You may have noticed throughout the Species Scavenger Hunt that one of the main threats to these species is habitat fragmentation. Habitat Fragmentation is the process of human development breaking up natural habitat, with things like roads, golf courses, residential developments etc. This has a major negative impact on many species because it interrupts their natural mobility paths, causes fragmentation in biodiversity and puts many animals at high risk.

HOW THE SOUTH MARCH HIGHLANDS ARE EFFECTED

Over the past decade, the South March Highlands have come under increasing pressure as adjacent development continues and more people discover its unique natural area as a place to industrialize. However, many community, recreational, and cultural groups have been on the forefront for protecting this fragile ecosystem. Community groups, and residents keen on protecting the area, rallied against the industrialization of the area. The environmentalism of the South March's special ecology has been recognized by national groups, such as the Circle of All Nations, led by William Commanda, The David Suzuki Foundation, and the Sierra Club of Canada.

ECOSYSTEM ASSETS OF THE SOUTH MARCH HIGHLANDS

Forests like the South March Highlands have so much more ecological value and significance than just being a place where we can all go to connect with nature! It is important for everyone to remember the value and importance of forests, and why we need to ensure the protection of them!

Wetland Water Storage and Retention	Water storage and retention are essential for many natural processes, such as providing critical habitat for terrestrial, aquatic and semi-aquatic species. Wetland water storage and retention are also crucial for regulating flooding events and droughts by acting as a buffer between the two extremes. These areas also provide refuge for runoff water during less extreme events such as rainfall and heavy storms. A study by the Intact Centre on Climate Adaptation, University of Waterloo, determined that wetlands left in their natural state can reduce the cost of flood damage by 29% in rural areas and 38% in urban areas.
Filtering and Cleaning Air & Water	The forests and aquatic vegetation within the South March Highlands provide a natural and free air and water filtration system that improves the air and water quality of the entire region through air circulation and hydrological cycles. The trees and plants in forests absorb the CO2 emissions and produce the fresh oxygen that we breathe. Better protecting and preserving these forests and water bodies will benefit the entire city and surrounding regions by cleaning up the air and water we use every day.

ECOSYSTEM ASSETS OF THE SOUTH MARCH HIGHLANDS

Climate & Temperature Regulation	Natural environments can act as buffers for regulating temperature and mellowing drastic changes. Water bodies retain heat much more than air masses and the land masses surrounding them experience more moderate temperature changes. In addition, forests and greenspace provide shade that lowers the surface temperature and cools the air through evapotranspiration, offsetting the heat islands that form in urban developments. With the growing onset of global climate change, these areas near urban developments are becoming increasingly necessary while also being put under increasing stress as the overall climate warms in Ontario.
Soil Formation & Erosion Control	The South March Highlands is one of the few areas in Ottawa where the Canadian Shield is visible and uncovered. The rock formations that make up the regional bedrock provide structural support and strengthen the lands that the forests, marshes and wetlands rest upon. They control for erosion and strengthen the ground against landslides, mudslides and other land movement events.

GO OUT AND ENJOY!

The South March Highlands forest is an incredible ecological area with so much biodiversity and different trails to explore! We should all feel so lucky we have such an amazing landscape right here in Ottawa! Let us all do our part in protecting the forest and all the species that call it home by working together to help keep it litter free!

Thank You and Have Fun Enjoying the South March Highlands!

Get in Contact with Us!

Ottawa Biosphere Eco-City Website
obec-evbo.ca

Kanata Beaverbrook Community Association Website
kanatabeaverbrook.ca