

INTERCONNECTEDNESS:
Large And Small

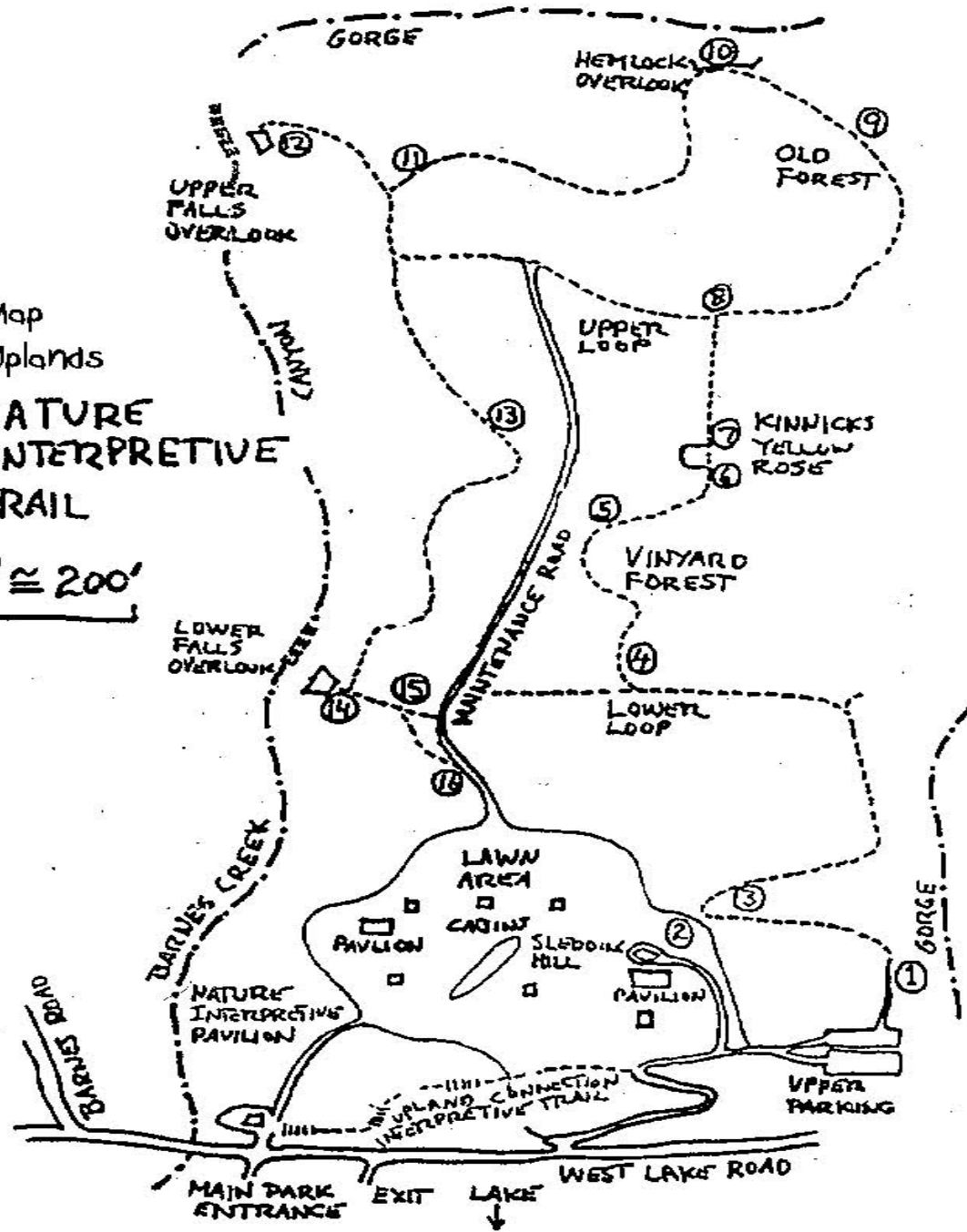
**ONANDA PARK
TRAIL GUIDE**



**A PUBLICATION DESIGNED
TO HIGHLIGHT SUBTLE CONNECTIONS WITHIN
THIS ENVIRONMENT**

Map
Uplands
**NATURE
INTERPRETIVE
TRAIL**

1" \approx 200'



Welcome

This guide is provided to enhance your visit to Onanda Park. This is an exceptional place. People come here for many different reasons. We come to relax, to exercise, to socialize. Whatever our plans may be, it is always possible to observe something new - Nature is a great Teacher.

This booklet focuses on Interconnectedness. Long word - what does it mean? The foundation of Ecology is the concept of Interconnectedness - the relationship that each and every thing on the planet has to everything else.

• How can these relationships be seen here? Keep reading - in the following pages you will find examples of interconnections that exist within this park between plants, animals, insects, water, rock, weather, and more.

Sixteen numbered boulders have been placed along the trail, each one corresponds with a page of this booklet. You are invited to walk these trails for the first time, or the 50th time, with the idea of Interconnectedness in mind. Perhaps you'll see something new... Perhaps you'll find that you are more a part of this place than you realized.

Enjoy your day.

A Word About *Mindful Hiking*



The ethical hiker looks around, observes and takes in the beauty of the forest, and does not want to harm it in any way.

Low Impact Hiking is an attitude of respect for the trails and fellow recreationists. Increasing your awareness can help you to make the least possible impact on the woods and trails.

By always staying on the trails you protect the plant species growing alongside them. Even if the trail is very muddy it is best to walk straight through the center of the existing trail. Walking around the mud causes the trail to get wider, which is damaging to plants and also is unattractive.

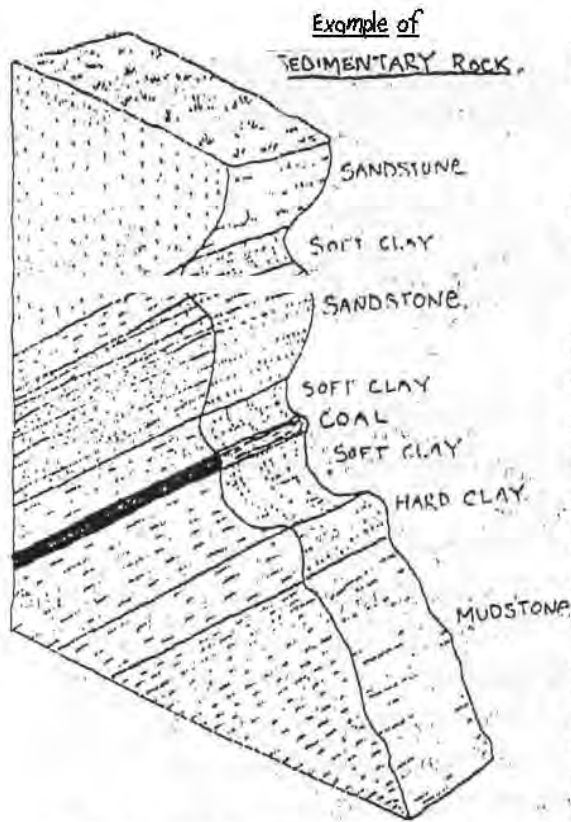
All trash that you bring in should be packed or carried out with you - this is a must. There is nothing uglier than garbage in a place of natural beauty. If you do see some garbage near the trail, take time to pick it up. This will benefit the park as well as the wildlife.

If you see flowers or plants you'd like to take home, please reconsider, for as John Muir said, "Whenever you pick something up, you find everything in the universe attached to it"

By practicing respectful awareness while you are here, many other people will be able to enjoy the Onanda Trail for many years to come.

Take Only Pictures, Leave Only Footprints...

1



How Old Is A Gorge?

Look to your right and you will see a small gorge cut into the hillside. Don't let it's seemingly small size fool you, it is probably older than you would imagine. Gorges are formed in an extremely slow manner compared to the life span of a person. They are formed over hundreds,

thousands, and even millions of years.

Gorges begin as runoff from hilltops and then turn into small streams as they meander down the hillside, heading toward larger water bodies. After years and years of travel, the streams begin to leave their mark on the land. Over time the flowing water carves deep impressions in the ground in a "V" shape. The progress is slow, but the water wears on, here through shale bedrock that was formed on an ocean bottom more than 100 million years ago.

Gorges, particularly large ones, are eye-catching. This little gorge is still developing and changing, and may look drastically different in the future.

2

A Lake With Many Stories



Canandaigua is the fourth largest Finger Lake. The word *Canandaigua* comes from the Haudenosaunee (Iroquois) and means "chosen place."

The Pickering treaty was signed at the north end of the lake, granting white colonists permission to settle the Great Lakes Basin. The "Lady of the Lake" was the first steamboat on Canandaigua Lake. It was christened with a bottle of wine in 1823 by a reserved young lady named Sally Morris who wore a blue bonnet with a gray ribbon.

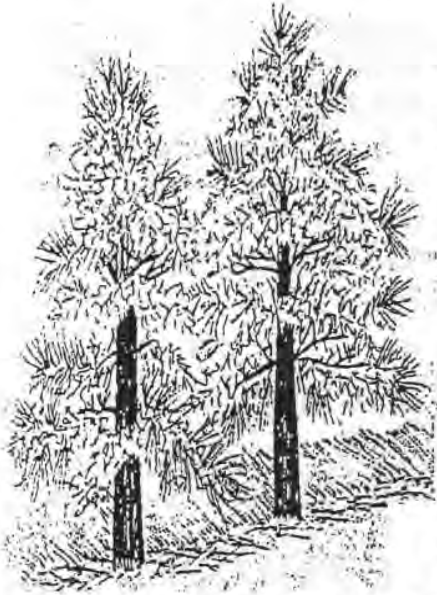
The muddy bottom of the fish rich water you see before you can be 75+feet deep, with the maximum depth being 274 feet. Along the shoreline of the 16.5 square mile lake you will find rubble and gravel. Canandaigua Lake is 15.8 miles in length with a maximum width of 1.5 miles at it's broadest points.

No matter what your fishing pleasure may be, you likely will find it here. Canandaigua Lake is home to nearly 40 species of fish including brown trout, rainbow trout, lake trout, largemouth and smallmouth bass, panfish, pickerel and perch.

The clean, pure water of Canandaigua has been actively monitored and protected by concerned groups such as the Canandaigua Lake Watershed Task force. The health of the lake depends upon the health of all the land that funnels water into it.

3

What Does A Pine Tree Do?



The line of trees that you see here to your left and right are part of a stand of Scots Pine. These trees are an example of a plantation, meaning they were intentionally planted by humans. They were most likely planted here to prevent erosion on this hillside.

Scots Pine needles are blue-green in color and sharply pointed. They average about 2.5" long and are attached to the twig

in pairs/bundles of 2. The twigs are bright orange, and if you look up toward the tops of the trees you will notice that the newer bark is too. The Scots Pine tree, like other, conifers, has a unique *mutualistic* (mutually beneficial) relationship between its feeding roots and fungi. The fungi are *mycorrhizal*, living on roots, and assist the tree in the absorption of nutrients from the soil. In return, the tree provides the fungi with sugars as a source of energy.

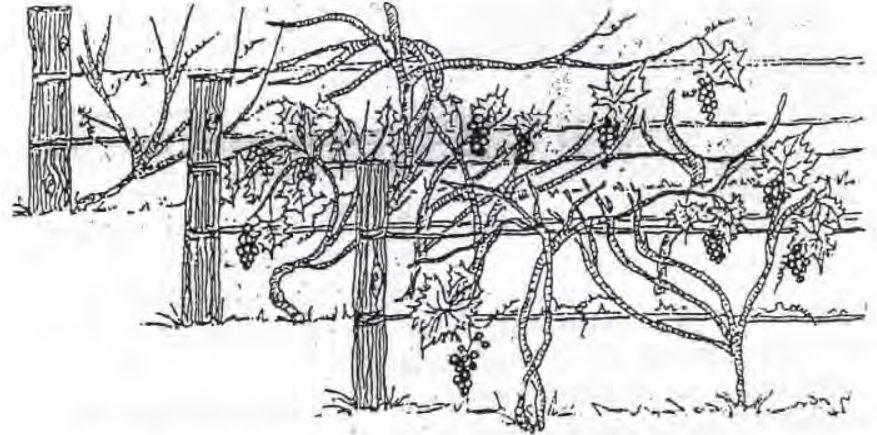
Conifer stands such as this one have important value wildlife. Songbirds and rodents feed on the pine nuts, and birds use the trees for nesting sites. Whitetail deer have been known to *browse* (*feed* upon) the foliage in winter. Other wildlife may utilize this stand as shelter during harsh weather.

4

Telling Time

As you walk along this segment of the trail you will notice evenly spaced mounded rows of earth. How did they get here and what in the world are they?

The mysterious origin of these rows goes back to a time when these woods were not woods, but a vineyard. It has been at least 50 years since this area was a grape plantation. The vines are no longer here but the clues of their presence tell a story of the past.



The process of succession has occurred in this area over time. The term *succession* is used to describe the period of gradual change an area experiences as it goes from being clear, open land to being forested. A full cover of tree crowns can develop in as little as 30 years but change continues as different species invade or the climate changes.

You are seeing a piece of Finger Lakes history when you look at the remnants of this old vineyard. The rows tell a story of fertile soils, hard, work of people and of wines that are long gone from here now.

5

Hang Out Here Awhile

Look in all directions and see if you can see the four types of vines growing in this area.

One of the most easily recognized vines is wild grape. There are many species which are hard to distinguish from each other because they *hybridize*, or cross-breed, frequently. The bark peels easily and is used in nests of catbirds, mockingbirds, brown thrashers, cardinals, purple finches, and goldfinches.

Virginia creeper has a similar appearance to grape, but it uses tendrils with adhesive disks for support. It has 5-part leaves and blue fruits which are an important food for the mockingbird, robin, brown thrasher, wood thrush, and pileated woodpecker. It is one of the first plants to change color in fall, turning deep burgundy red.

Poison ivy is related to poison sumac and poison oak. Contact with it any time of year causes a rash. It has 3 leaves and can grow as a sprawling vine, an upright shrub, or a tree-climbing vine. It climbs using aerial roots that look like hairs and has fruit that is white to greenish in color.

Bittersweet is a rare plant. It is a tough woody vine that has orange fruits in fall and winter. It grows using its long green stems rather than tendrils to encircle other plants. The 2 types are hard to tell apart. The fruit of American Bittersweet grows only at the end of the vine, while the fruit of Oriental Bittersweet grows along the sides in small clusters.



6

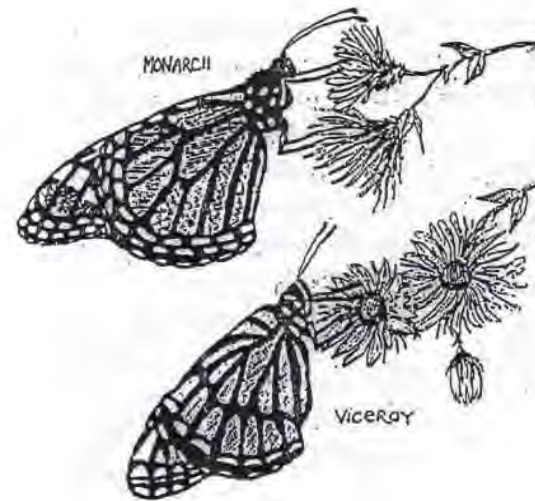
Small Size = Big Value

In this open area you may have the opportunity to see some of the most amazing life forms that exist - insects! Insects represent the largest number of life forms on the planet. The number of insect species on earth outnumbers all other species combined. We know quite a lot about insects, yet there is still so much more that we don't know about them.

Insects are a critical part of the Food Web. Fish, amphibians, and birds feed on insects, and in turn are consumed by larger animals. They may be small, but the absence of only a few insect species can dramatically impact the balance of life for other species.

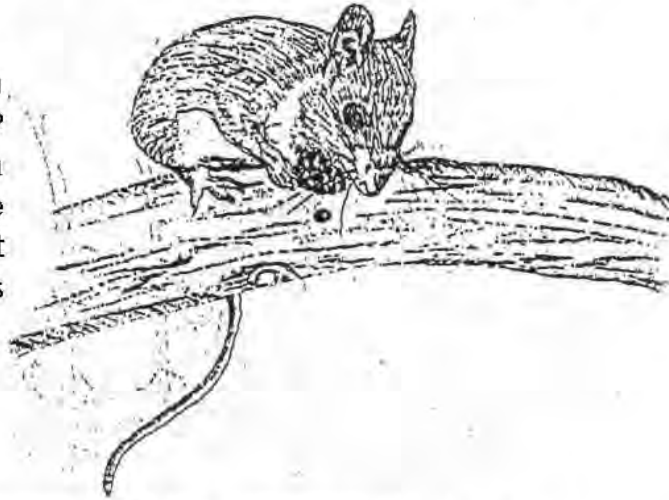
• Insects serve a vital role in pollination. Flowers have developed adaptations to attract the bees, flies, moths, and butterflies who they depend on to pollinate them. Various insect adaptations can increase chances of survival. Monarch butterflies are poisonous and have a bad taste - Viceroy's have developed a very similar appearance, although they are not poisonous.

While you are here today, take time to appreciate any insects you may come across. For their small size they really are quite impressive.



The Importance of Rodents

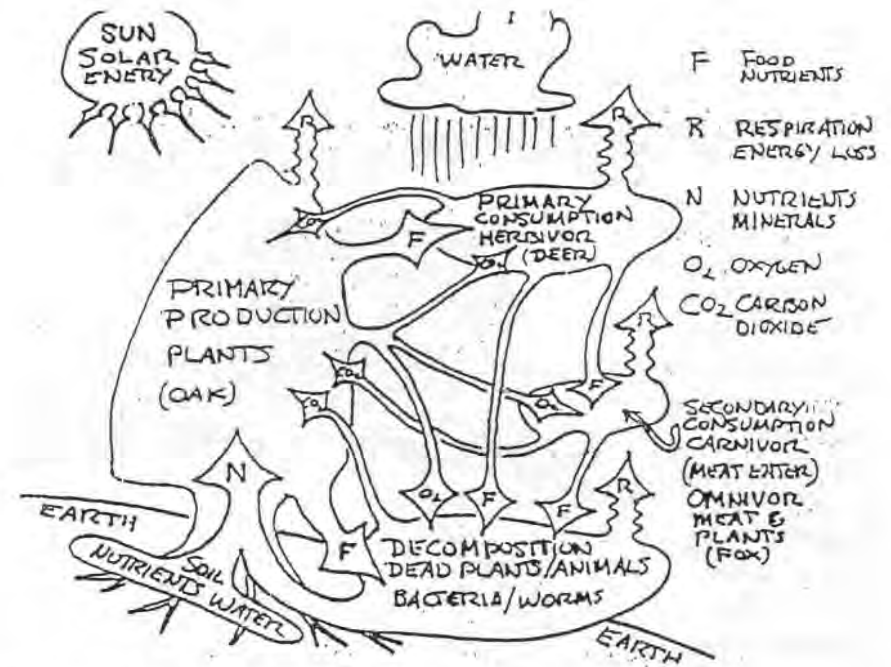
What is that rustling in the dry leaves? It could be a member of one of the smallest mammal species of the forest- a mouse or vole. Like insects, these tiny mammals are



critical life forms upon which the balance of nature rests. They feed on plants, converting the plant material into their body mass. They then serve as food for larger creatures. Here at Onanda Park they are eaten by such predators as weasels, red fox, owls and red tailed hawks.

Mice and voles also perform another important service in the forest: they aid in the dispersal of spores and seeds. Rodents feed on the seeds of such plants as grasses, berry bushes, hardwoods, and pines, and then disperse the seeds throughout the forest enabling the plants to spread. They also feast on the underground fruits of mycorrhizae and through their droppings serve as the only means for spreading the spores of these essential fungi.

Common members of the rodent family in this area include the white-footed mouse, deer mouse, meadow vole and the chipmunk.



We're All in it Together!

Sunshine, soil, water and air combine to give us green plants. Plants capture light energy, through the miracle of *photosynthesis* and store it as chemical energy in the stuff we call food. Humans and all other non-plant beings must continue to consume some form of plant product or other animals that themselves consume plants to stay alive. Plants and animals both use much of the needs in a process we call *respiration*. If life is good and *production exceeds respiration*, the leftover might be stored for future use or eaten by something else. Even if life is not good, the dead plant or animal still becomes food. Bacteria, fungi, insects, worms and a host of other life forms chew, digest, re-chew, dissolve or in others ways decompose plant and animal tissues into smaller atoms and molecules that are reabsorbed by plants for yet another round trip.

Towards a More Sustainable World

Ours is a fascinating, complex and beautiful world. We have identified and described less than 10% of the life forms that call the earth home today. We know even less about how all of these forms depend upon one another for their survival. Indeed there might be much more than we ever can know. Perhaps the greatest disaster of our time lies in our growing sense of detachment from the natural world. We view nature as a source of comforts, conveniences and personal wealth rather than as a delicate life support system of which we are but a small part. In spite of global distress signals that arise from exploding populations, species extinctions, declining soil fertility, declining fresh water resources, declining marine fisheries, air water and soil pollution, we continue to consume as if there were no tomorrow.

Onanda Park sustains itself. Energy flows in, *production*, consumption; decomposition and recycling proceed in a closed loop. As much as living things take, the same amount returns. All natural systems must operate in this way or ultimately fail. We as humans are part of this natural world and dependent upon it to sustain our lives. If we continue to take more than our poor stressed Earth can give, we can expect our earth to fail. Perhaps you might reflect upon this truth and consider how in some small way, you might step closer to nature's cycle. Aldo Leopold's words serve as perhaps the finest statement about this very much needed sense of stewardship: "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise."

8

A Quiet Resident

Although you will probably not see one today, red fox live in this area. The red fox can be found in both suburban and rural land that has a combination of open field and mixed woodland. Their home range varies from 1 to 5 square miles

Red fox generally have reddish colored fur with white underneath and black legs and feet. They are the only species of fox that has a white-tipped tail. They feed on small mammals - moles and voles, and also on game birds. Rabbits are a staple of their winter diet, but during the summer they tend to feed more on insects and plants, such, as black raspberries.

Mating occurs between December and March. There

are 5 to 10 pups in a litter. If you yourself are quiet and still in the Spring, you might be fortunate enough to see a litter of fox pup's playing in the warm sunshine.

Fox dens might be located in fields, woods, and elevated banks that have good drainage. Onanda Park provides opportune habitat for red fox, and hopefully always will.



Adult red fox



Are All Trees Created Equal?

There are many kinds of hardwood trees in this forest. Can you identify any of them?

The most prominent trees here are oaks and hickories, but there are also many others such as maple, cherry, ash, walnut, locust, aspen, hawthorn, hornbeam, sassafras, flowering dogwood and more.

All of the trees have a give and take relationship with the forest and they all have their place here. All trees take nutrients and water from the soil in order to grow and mature. What they give back to the forest cycle is wildlife habitat, and foods including: nuts from hickories, walnuts, and oaks; legumes (pea-like seeds) from locusts; and the fleshy fruits of hawthorns.

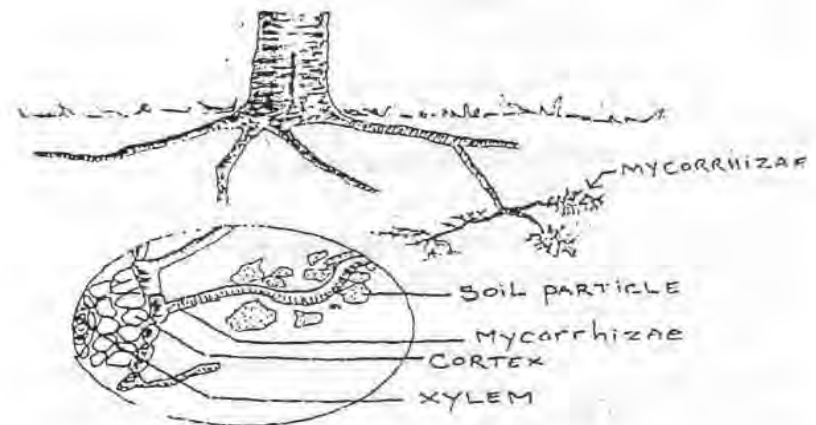
There are so many varieties of trees that you might find it overwhelming to try to tell them apart. Don't get discouraged; obtain one of the many field guides to trees and try learning a new tree every time you go out for a hike. The more you look at trees, the more familiar they will become to you and the more you will come to appreciate them.

What Exactly is Mycorrhizae?

Mycorrhizae, pronounced mi' ko ri' ze', are every bit as complicated as their name sounds. They are important in the functioning of forest ecosystems worldwide. Individual species of trees and plants often harbor their own species of mycorrhizae.

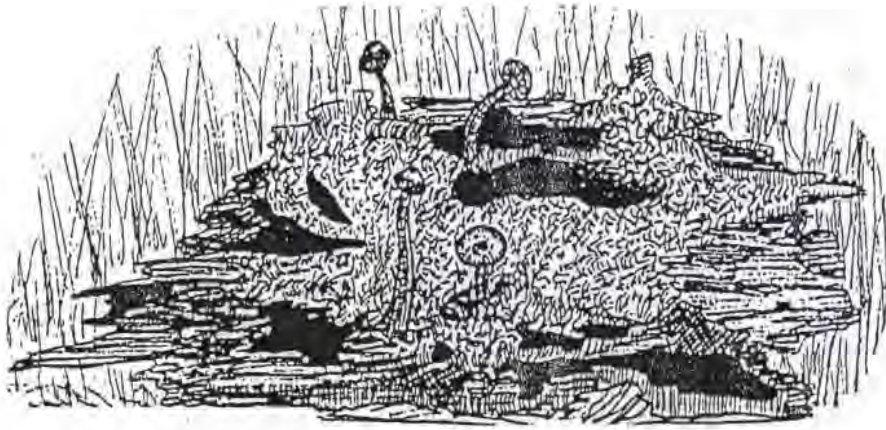
Mycorrhizae are microscopic fungi which attaches to the root systems of trees. They absorb nutrients and minerals from vegetation on the forest floor and then transfers these nutrients and minerals to the trees' roots in a form which the trees can use. Without mycorrhizae to intercept nutrients, many would be carried away by water as it soaks through the soil and out of the root zone.

Mycorrhizae are key in a healthy woodland. They play a critical role in water uptake and nutrient acquisition, but also benefit trees with increased growth, improved soil conditions, improved resistance to drought, and protection from *pathogens*, such as feeder root disease.



11

Who Needs Dead Trees?



While you have been hiking today have you noticed any fallen trees? There are many around, in various stages of decay. Take some time to look more closely.

The significance of decomposing wood is often overlooked - fallen trees and rotten logs are much more than just dead wood! Many birds and animals use cavities in fallen trees for nesting sites and for shelter. The insects that live in decaying wood can be a valuable food source, especially for birds. Decomposing wood adds rich organic material to the soil making it more fertile.

Notice limbs and logs on the forest floor - examine them while thinking of all they do for their environment.

12

Perseverance

What a perfect overlook! Canandaigua Lake is visible on the left and straight ahead lies a spectacular historical sight. What is this historic site? It is the waterfall, of course. This cascade was not formed overnight - like everything else in this park it has a story.

Just relax for a while and unless it happens to be

particularly dry, listen to the water flowing down off of the rocky ledge. Can you feel or sense the power behind every droplet as it merges with others and plunges to the bottom of the falls? Notice the depth of the pool in comparison to the rest of the stream.

The gorge walls are made up of layers of hard rock material and of veins of weaker shale. It was through the perseverance of water colliding and flowing over stubborn, hard rock, and cutting and wearing against the weaker rock that this deep gorge and its beautiful waterfall were created.



13

Do Woodpeckers Kill Trees?

Have you had the chance to hear the loud rhythmical drumming of the Pileated Woodpecker? The holes in the nearby trees tell of their presence here.

Do these woodpeckers damage healthy trees? No, actually, they don't.

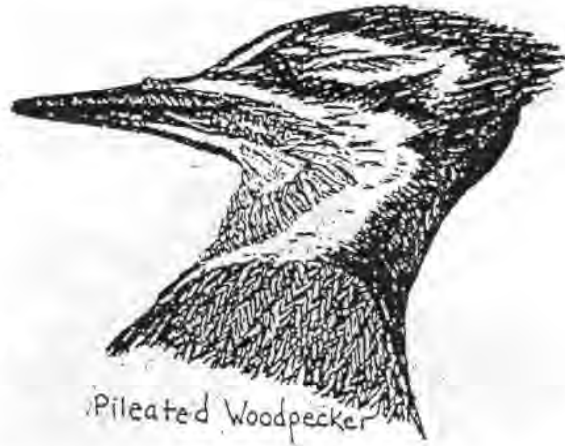
The reason a woodpecker pecks at tree is to feed on the insects that are living inside it. Healthy trees are not filled with insects, so the birds really are not doing any harm.

The noise that woodpeckers make is produced as the bird strikes its bill against hollow trees or dried branches. This creates the large oval or oblong holes which are found in coniferous and hardwood trees.

The Pileated is the largest of the woodpeckers, averaging 18" in length. It is mostly black in color with a flaming red crest. It can be recognized in flight by its white underside and swooping flight pattern.

The favorite food of the Pileated Woodpecker is insects, but it also eats some fruit, acorns and other nuts, and sap.

The Pileated Woodpecker mates for life. Both the male and female incubate the eggs. Approximately 4 eggs are laid and they take 15-18 days to hatch. The young leave the nest 26-28 days after hatching from their eggs.



14

The Tattletale - The Crow

Caw, Caw, Caw - By now you must know you haven't entered my woods unnoticed. I'm known as the tattletale, and I've already made your presence known to all my friends....

With a height of 19", a very loud call, and a beautiful ebony color I'm sure you've noticed me. Let me apologize if I startled you.



Rumor has it that I represent danger or bad luck. As a matter of fact, I am a very smart and helpful bird.

I am illegal to have as a pet, but I've been known to learn the English language and to imitate some of my bird friends.

I eat a wide variety of things including: grasshoppers, snails, gypsy moths, spiders, cutworms, angleworms, rabbits, mice, tent caterpillars, locusts, may beetles, grubs and crickets. Did you know that many of these are a farmer's worst enemies?

Please don't confuse me with my cousins the Fish Crow, or the Northern Raven. I am much prettier, as my black, glossy feathers appear purplish in strong sunlight. My bill and feet are also black and very strong. I am found throughout the US and parts of southern Canada - I'm sure we'll run into each other again. Please tell all of your friends about our conversation, they can visit me any time, to find out how much I have to say.

15

A Good Place For Dinner

Trees are one of the most noticeable features of the forest, but the under story shrubbery can be equally important to the forest and its inhabitants.

Silky Dogwood is a shrub which grows well on stream banks, fertile soils, and poorly drained soils too. It may reach 6 to 8 feet and

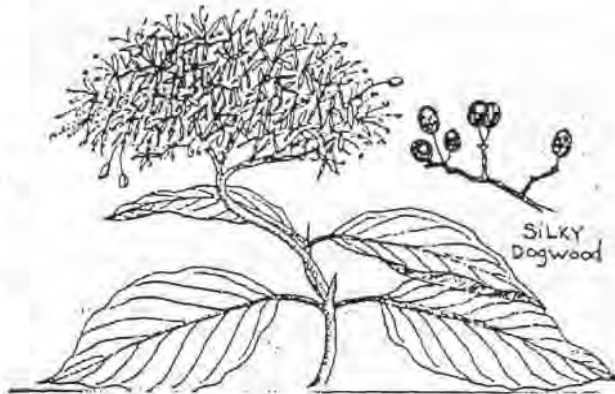
bears white clusters of flowers in June, which ripen into blue fruit by late August or early September.

The fruit is eaten by turkeys, raccoons,

squirrels, and many songbirds. When birds fly into our windows in the spring, it may be because they have become intoxicated from eating fermented dogwood berries.

Cottontail rabbits also use dogwood as a food source, eating the fruits and browsing the stems.

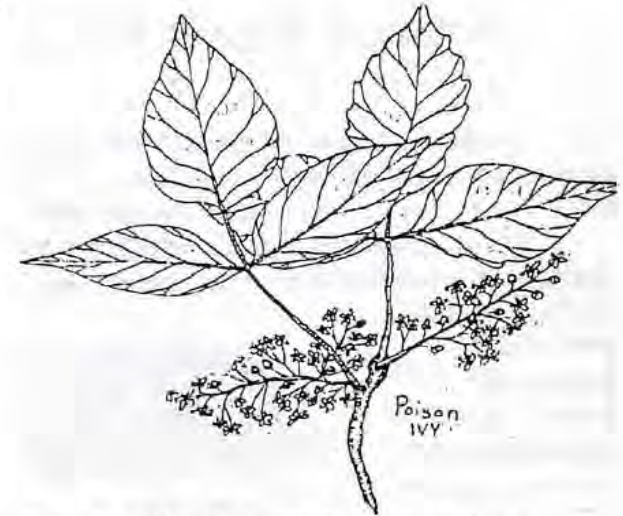
Blackberries will thrive and form thickets in places that are relatively open and have good moisture. The succulent berries are a preferred food for birds in the summer and are also eaten by most mammals. The stems and leaves are eaten extensively by rabbits and deer. The thorny thickets are an effective deterrent to predators and offer havens for birds and rabbits.



16

Self Defense For Plant

Plants cannot take karate classes, so how else could they defend themselves from danger?



Over time, plants have evolved and adapted to their surroundings. They have developed defenses to protect themselves. In this area of the trail you can see many examples of different methods of defense that plants use.

Spines or thorns are one of the most common means of defense for plants. The spines or thorns are located on the plant's branches or stems. They pierce the skin of an animal that has gotten a little too close. If you have felt the sting of hawthorn spines, or of black raspberry or multi-flora rose thorns, you know it's best to keep your distance from them.

Plants can also produce toxins to protect themselves. The toxins may be present in the fruit or foliage or both. These toxins may give off an odor that is unpleasant. The smallest quantities of toxins can be very harmful. Some plants in the park that have these defenses are Virginia Creeper, Garlic Mustard and the infamous Poison Ivy.

Credits

Parks and Recreation Advisory Committee, Town of Canandaigua

COMMITTEE MEMBERS

Reid Hankin

Barb Rose

Jeff Graff

John Maltese

Director of Parks and Recreation: Dennis Brewer

Parks Maintenance Supervisor: Jeffery Winner

Onanda Park served as the primary outdoor classroom for the Nature Interpretation class at Finger Lakes Community College in the Spring of 1999. At the request of the Town of Canandaigua Parks and Recreation Advisory Committee the instructor and students in this class adopted the task of developing this booklet as a class project.

Instructor: Marty Dodge

Class Melita Sreenleaf: editor

members: Andy Harrer Travis Ives

Nathan Ludke Michelle Marino

Mark McGrath Eric McOmber

Danielle Rosenburg Amy Nappi

Michael Todd

Illustrator: Kari Dodge

Gibney Monument of Perry, New York sand blasted the numbers in the granite boulders.

More About Onanda Park...

Scenic views, roaming wildlife, pillars of trees, clean air, and the sounds of nature set the stage for this exceptional park. Onanda Park consists of 80 acres, seven of which are lakeside and include cabins, pavilions, and lodges available for rent. The 73 acres of hillside running along Barnes Road contain the two mile trail, pavilions, overflow parking, and a hill which is perfect for sledding in winter.

Originally started as a Young Women's Christian Association Camp just before the turn of the century, the park was purchased in 1989 from the YWCA by a cooperative effort by New York State and the Town of Canandaigua. It was opened in 1990 for the public to discover its beauty and tranquility. Fishing, swimming, hiking, family picnics and gatherings have made Onanda Park an enjoyable and educational recreation area all year round.

A Moment in Time

This is a good one! The elusive capacity to live in the present seems best appreciated when one senses the flow of process in the natural world. The players come and go; the interconnected workings of life remain a constant reminder of all that was and all that will be. The beauty and freshness of it all keeps us anchored in the present. Just as the shape of a whirlpool or flame depends on constant motion, so too does the form of our external world maintain itself. So complex are the forces and interdependencies, we have little choice but to appreciate and to accept our obligation to respect the life support system that is! Our very existence depends on it. We cannot afford the arrogance to think we can control of even change flow of life without dire consequences to our very being. In the scope of deep time, we humans have been here for a scant moment. What a joy and what a privilege it is to be alive!