

**Herkimer County  
Community College**

# **Trail Guide**



## **Introduction**

A forest is many things to many people. To the plants and animals living here, it is a home and a community – “nature’s city.” A forest is also a type of ecosystem, represented by the interaction between its abiotic (non-living) and biotic (living) components.

An ecosystem’s biotic components can be divided into three basic parts: the producers (green plants), the consumers (animals) and the decomposers (bacteria and fungi). The producers transform the sun’s energy by photosynthesis into a form that can be used by themselves and the consumers; thus green plants are the first members of the food chain. The consumers eat both green plants and each other, and the decay organisms transform dead plants and animals into nutrients that can be used by plants – it is in this way that nature recycles materials. Nature wastes nothing!

The dominant organisms that you will see in the forest are, of course, the trees. The majority of the trees in the Nature Center are deciduous; that is they have broad flat leaves that drop off in the autumn. A few trees here are coniferous, or “cone bearing” with needles for leaves that don’t drop off annually. Many deciduous trees grow where the temperatures are moderate and rainfall is between 26-60 inches annually. In North America these conditions exist from central Florida into southern Canada and from the Mississippi River to the East Coast. This area is known as the deciduous forest biome, a large region with characteristic climatic conditions resulting in a similar vegetative pattern.

You are about to walk through several community types representative of the deciduous forest biome; communities which occur because of slight variations in the abiotic factors which are required by the resident plant species. Take note of the trees that occur in each community and try to determine the subtle differences in the ecosystem which affects their presence ... or absence. Also, take note of the less dominant plants and any evidence of animals that are characteristic in each community type.

You will need to spend a little time, looking and listening, to discover for yourself that a forest community is more than an area covered by trees – it is a community populated with an enormous variety of plants and animals, all interacting, interrelated and interdependent. The time of year is important too. A forest in winter is quite different than a forest in spring or during the other seasons. Consequently, you will come to a better appreciation of the ecosystem through many visits over the entire year ... or even several years.

## **Interpretive Trail**

### Marking Posts

1. You are about to embark on a walk through one of the finest representations of an active natural ecosystem. Before you begin though, let's take some time to learn about some of its basic components, Producers, Consumers and Decomposers. Green plants convert light or radiant energy from the sun into chemical energy in the form of sugar (carbohydrates), by the process of photosynthesis. Although photosynthetic plants are called "Producers," they are actually "Converters" because they convert energy and materials from one form into another. At the same time energy is converted from light to chemical, materials such as water and carbon dioxide are converted to food in the form of sugar. This food is not only utilized by the plants themselves, but also by the animals which eat the plants ... the consumers. Animals that eat producers are called Primary Consumers, whereas animals that eat other animals are called Secondary Consumers and so on. During each stage of consumption, energy and materials are converted from one form into another to meet the requirements of that organism. This sequence of eating and being eaten is referred to as a food chain. Each link or level in the food chain is called a feeding level or a trophic level. Death is always a part of an active community, without it life could not exist. Without death and decomposition the materials needed for life would forever be tied up in the tissues of the producers and consumers. Like the other components of the ecosystem, the decomposing organisms including the fungi and bacteria, are material and energy converters, releasing energy in the form of heat, and returning materials back to the producers for their use.

2. The producers of the forest provide food for many animals. But in order to live in an area, the animals must also have a place to hide, build nests, raise young and so on. In other words, animals need shelter. Different animals require different forms of shelter. For example, some live in burrows in the ground. Others take shelter under rocks or brush piles. Still others build nests under bark or in the branches of trees. Take a look around you ... do you see any sources of shelter?

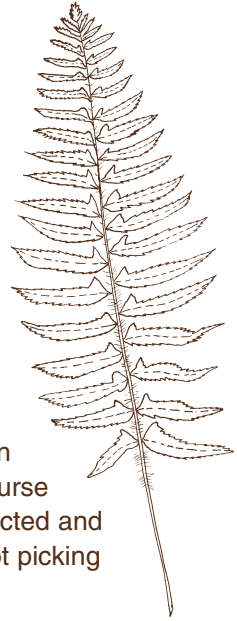
You probably will not see many animals on your walk around the trail because in general, they are very secretive. Many, such as the flying squirrel, are nocturnal, active only during the night. If you are very quiet and in a small group, you may see several animals such as a white-tailed deer, red or gray fox, turkeys, red and gray squirrels, or possibly a weasel or raccoon. More common species which are observed frequently include chipmunks, blue jays and crows.

The maple stump at this station is from a tree that was struck by lightning, tearing away a large limb exposing it to infection by fungi and insects. As time passed, populations of insects multiplied and attracted many birds which fed on them, especially woodpeckers. As the tree decayed, it eventually became so weak that it was in danger of falling, thus it was necessary to cut it down for safety reasons. Some people consider insect and fungal diseases as “enemies” of the forest community ... they’re not! They are a necessary component of an active ecosystem. In fact ecologists are developing new theories on how much disease is necessary in order to keep the ecosystem healthy.

3. The trail now descends into a small hemlock grove. The **Eastern Hemlock**, also called **Canada Hemlock** (*Tsuga Canadensis*), is used in the manufacture of pulp for paper, railroad ties and as a source of tannic acid, which was used in the curing of leather. The hemlock is the only native conifer growing along the trail; other conifers you may see have been transplanted. You will often see hemlock growing as both an understory and as a canopy species. It is very shade tolerant and can survive the low light conditions produced by the taller trees. The needle-like leaves are flat in cross-section, borne on tiny stalks, and arranged in flat sprays on the twig giving them a feathery appearance. You will find two white lines on the underside of each needle. Small cones, which are favored by red squirrels, are produced on the tips of the branches.
  
4. **Fern Bridge** – Valleys and ravines are produced by the down-cutting power of streams. Most of this type of erosion occurs when the stream has plenty of water and it moves fast. Other times, the stream side-cuts, widening the valley through which it runs. The result is a meandering stream, which you see here wandering from side to side, changing its course as the years pass. It erodes on the outside of a curve where the flow is fastest and deposits the soil it carries where the flow is slowest – on the inside of the curve. Trees growing next to the stream are in danger of falling over as the water undercuts their root system.

This stream is intermittent being dry during the summertime. Consequently, we don't usually see fish here but there is a rich variety of aquatic insects, both larval and adult forms, worms and amphibians such as wood frogs and salamanders that live in this habitat. On occasion you will find raccoon tracks left in the mud as they forage for aquatic insects, crayfish and invertebrates.

5. **Fern Forest** - Please do not leave the woodchip trail. This is a wonderful example of a fern thicket consisting of Woodfern (*Dryopteris*), Lady Fern (*Athyrium Filix-femina*) and Maidenhair Fern (*Adiantum pedatum*). With the exception of a few characteristic species, the ferns may be difficult to identify. This is sometimes a problem because a few fern species are very rare and need to be protected. Since most people cannot tell what fern species they are looking at, all ferns are protected in New York State with the exception of Hayscented, Bracken, and Sensitive. Of course on the HCCC Nature Trail, all plants are protected and we hope you will help us preserve them by not picking or destroying them. Thank You.



6. As you came up from the stream onto higher ground, you may have noticed a change in the character of the forest. This area is dominated by **Bitternut Hickory** (*Carya cordiformis*) and a splattering of Hemlock. Bitternut hickory grows scattered throughout the forest on rich bottomlands. It produces a thin shelled nut which are eaten by squirrels but not favored by people ... as the name implies. The wood can be used for fuel but it isn't quite as good as the other hickories. Compound leaves with mostly 7-9 leaflets and bright yellow buds are the best distinguishing characteristics of this species.



The forest is more mature here and has a more open feeling to it ... like you get in a cathedral. The trees are tall and straight and the canopy is quite high. You can see for some distance through the forest. The forest layers are evident – the canopy, the understory, the shrub layer and the herb or ground layer. In the deciduous forest, there are usually four layers present, although sometimes the understory or the shrub layer may be poorly developed. The layering or stratification also pertains to animal life as well. As an example, different bird species utilize certain layers for their habitat. Ovenbirds and white-throated sparrows spend most of their time in the herb layer, Black-throated Blue and Mourning Warblers in the shrub layer, Black-capped Chickadees and Wood Thrushes in the understory, and Red-eyed Vireos and Red-tailed Hawks utilize the canopy of the forest. You can understand that the more developed the vegetative layers of the forest are, the richer and more diverse the animal life can be.

7. A tree which thrives very well in the moist, deep soils of our woodlot is the **American Basswood** (*Tilia Americana*). Its large heart-shaped leaves are shiny on the underside, rather than the upper surface. A very narrow leaf (bract) on the flower stalk and the little nut-like fruits that develop also help one to identify the tree. Both the wood and bark of the tree have practical uses. The light wood is used for crates, boxes and musical instruments, as well as paper pulp. The inner bark was long used by the Indians in making rope, fishnets and mats. Basswood flowers are very fragrant in late spring and attract thousands of bees. In fact, a very light colored honey is produced by the bees from this nectar and is called “basswood honey.” The dried flowers of basswood can be used to make a tea. This tree is a very prolific stump sprouter and quickly regenerates by this means; a circle of sprouts often develops around a stump producing multiple stems which are easily identified from a distance.





**White Baneberry** (*Actaea pachypoda*) can be found here. It produces a white, berrylike fruit that has a purple end looking like a dot. Also called Dolls Eyes, this plant is highly poisonous and the consumption of only a few berries has been known to be fatal to children.

8. Here we have a **Yellow Birch** (*Betula alleghaniensis*) which is easily identified by its bark. Bark characteristics tend to be more reliable than leaf characteristics in the identification of trees.

With a little practice and careful observation you can get quite good at it. One must be careful though because as a tree ages, its bark characteristics may change. This is the case with yellow birch. As a young tree its bark is smooth. As a medium aged tree, as this one is, its bark becomes a golden yellow that peels in curled strips. As an older, mature tree, its bark forms thick plates. Sometimes you will see yellow birch growing on the tops of rocks, or stumps, where it sends its roots over their sides and into the ground. As the stump rots from underneath, it leaves a tree that appears to be standing on stilts.



9. “Monkey Vines” ... No you won’t see any monkeys on the Nature Trail ... unless you brought them with you. These are actually the vines of **Wild Grape** (*Vitis sp.*). As you can see, some are very large and are growing way up in the tops of the trees. How did they get there?, you may ask. Grape vines cannot support themselves and must cling to other structures ... like trees and shrubs. These vines began growing long ago when the trees were young and short. As the tree grew, so did the grape. As you progress along the trail, see if you can find some other examples of vines. They include the Virginia Creeper, also called Five-leaved Ivy, Bittersweet, and Poison Ivy. Be very careful!!! “leaves of three – leave it be.”

10. Now that you have walked into the forest away from the forest edge, notice that there is a different tree mix. Also notice that you have been climbing a slight up-hill grade which represents a slight change in habitat. The tree in front of you is the **American Beech** (*Fagus grandifolia*) characterized by its smooth, steel-gray bark. Unlike the yellow birch, the bark of beech changes little as it ages. Any beech bark that is not smooth has probably been affected by disease or insects, of which beech is susceptible to many.



Along with the maple, American beech is the most predominant species throughout New York State. Maples and beeches have the ability to “take over” an area from other trees since their germinating seeds can penetrate the layer of leaves on the forest floor better than other species. Young beech are also very shade tolerant, growing very slowly in the understory waiting for an opening to occur in the canopy that it will quickly fill.

The beechnuts that this tree produces are an important source of food for many forest animals including the whitetail deer, ruffed grouse, chipmunks, deer mice, red and gray fox, wild turkeys, red and gray squirrels, raccoons and cottontail rabbits. Each beech fruit contains two or three triangular nuts. Heavy nut production does not occur every year, rather they occur on a two-to-three-year cycle. This phenomenon is called masting and is thought to be a survival adaptation – to produce more seeds than the populations of animals could hope to eat.

The beech tree also regenerates by “root suckers,” offshoots of the root system which may form “beech thickets” when an old, diseased beech tree falls allowing light to reach the forest floor.

11. As you gain a little more height in the woodlot, notice a slight change in the species composition of the community. In the surrounding area you will see several large **Northern Red Oaks** (*Quercus rubra*). Both the red oak and the white oak are also important mast producers, generating large numbers of acorns which serve as food for a multitude of wildlife. The acorns of red oak have a higher level of tannins which make them bitter to eat. It is claimed that squirrels and chipmunks tend to neglect them, burying them instead to be eaten later in the season when more preferred food sources have been depleted.



The many species of oaks that occur in the deciduous forest are broadly divided into groups, two of which are the red oak group and the white oak group. Generally, the red oaks have sharp pointed lobed leaves with a bristle at the tip of each point, whereas the white oaks have round-lobe leaves with no bristle tips.

12. This tree, **Eastern Hophornbeam** (*Ostrya virginiana*) is probably one of the most overlooked species we have on the woodlot. As you continue your walk you will see they are very common, but you rarely take note of them. The bark is gray-brown with scales of bark peeling from the trunk. It was used in making tool handles, axles and oxen yokes. The fruit is a bladder-enclosed nut which resembles hops ... hence the name hophornbeam. This tree is a perfect example of how common names of trees can be confusing. The wood of this species is very hard, hence the name "Ironwood" has been applied. However, another tree species which you will see later on the trail, is also commonly called ironwood. Keep watch for it ... it's also called blue beech, American hornbeam, or musclewood. (hint: it's around post #28)

13. At this station you see an excellent example of a decomposer actively at work. Specifically the old log at your feet is being broken down by a fungus. Wood consists of two major components ... cellulose fibers (which is the most abundant organic compound on the earth), and lignin (the second most abundant) which is kind of like a glue that holds the cellulose fibers together. Decomposing fungi have the ability to digest either one or both of these compounds. The wood decay fungi that digest just cellulose are called brown rotters; those that have the additional capability of digesting lignin, are called white rotters. What type of fungus do you suppose is decomposing this log? Right ... a brown rotter. In fact this particular pattern of decomposition, where the wood is divided into small cubes, is called a brown cubical rot. Other forms of brown rot include stringy and pocket. As you continue your walk see if you can find some of these forms including stringy and pocket white rot.

As you look around on the ground in this oak stand, you may also find clusters of small plants (sometimes whitish, sometimes brown depending on the time of year) which are composed of overlapping scales and resembling a pine cone. This is **Squawroot** (*Conopholis Americana*). Its association with oak is not a chance occurrence, in fact squawroot is here specifically because the oak is here. Many people think that all plants have chlorophyll (the pigment that makes them green) which gives them the ability to carry out photosynthesis. However, here is a plant that produces no chlorophyll, which means it is not green, and does not produce its own food by photosynthesis. If this is true, then how does it survive? Right, it's a parasite! The roots of squawroot are tapped into the roots of oak, drawing off the life giving nutrients. Plant parasites are relatively host specific, that is they parasitize very specific host plants. Later on in the walk you may find another common plant parasite called Beechdrops .... What type of tree do you suppose it lives off of?

14. **Oak Bridge** – Take a break and have a seat. Enjoy the forest. If you sit quietly for a while, you will begin to see and hear many of the indigenous bird species.

15. After crossing Oak Bridge, you begin to climb a little more, passing through a nice stand of **Witchhazel** (*Hamamelis virginiana*). Notice the wavy edges on the leaves. During the autumn you will probably see clusters of small flowers with long, narrow, yellow petals. Witchhazel is an excellent example of an understory species because it doesn't grow much taller than 10 - 20 feet. The leaves and twigs are a source of a medicinal agent that has the property of shrinking or contracting, such as the shrinking of a blood vessel to stop the flow of blood. An alcoholic extract is also used as a well-known rubbing lotion. "Water diviners" are said to prefer the twigs from this small tree to aid them in finding water.

16. One look at the **Shagbark Hickory** (*Carya ovata*) will explain how it got its name. Its gray shaggy bark gives it away. The tree produces edible, white, thick shelled nuts which animals enjoy. It is also an important source of fuel in the form of firewood. A cord of hickory provides as much heat as a ton of anthracite coal.



17. Careful! Please stay on the trail as you look around this station for **Maidenhair Fern** (*Adiantum pedatum*). It is characterized by a stalk that is divided into two recurving parts with leaflets on the outer rim, forming a horseshoe-like frond. Its typical habit is rich moist soils that are of a limestone origin.



18. Off in the distance you will see evidence of a “wet swale,” with a plentiful supply of **Jewelweed** also called **Touch-Me-Not** (*Impatiens capensis*). Juice squeezed from the stems and leaves of this plant relieves the itch of insect bites and poison ivy. The seed pods explode upon touching them, violently dispersing their seeds ... hence the common name.
19. To the left of the trail you will see **White Ash** (*Fraxinus Americana*), and to the right of the trail you will see **Black Cherry** (*Prunus serotina*). The soft, corky bark of white ash



form small diamond-shaped ridges and furrows which are easily picked off exposing a tan coloration underneath.

White ash is one of the most valuable and rapid growing trees in the state.

Its tough wood is very shock resistant and has traditionally been used in tennis rackets and snowshoes. It's still commonly used for tool handles such as shovels and hoes, and is the exclusive material from which major league baseball bats are made.



The bark of black cherry is also very distinctive, forming dark gray to black exfoliating “chips” of bark. This is a fast growing species often coming into a disturbed site early, surviving to become a canopy species. The fruit is edible although very tart or bitter. However, it is relished by many birds and mammals, especially raccoons. Sometimes you will find animal droppings that have large numbers of cherry pits in them, evidence of the massive quantities of fruit they eat.

20. You have arrived close to the highest point on the Nature Trail. Reflect back on the different community types you have passed through. As you look around at this station, you will notice the forest is composed mainly of American beech, and **Sugar Maple** (*Acer saccharum*). The official tree of New York State, sugar maple is important both ecologically and economically. Its seeds provide food for wildlife, its structure provides shelter and homes, and its fall coloration is spectacular. Of course who could talk of sugar maple without mentioning maple syrup and sugar obtained from its sap. If you look around on the forest floor you may notice that much of the new growth consists of sugar maple seedlings and saplings. Once sugar maple has climaxed in a forest community, its self-propagation continues for many decades, if not centuries.



**Bench** You may want to take this opportunity to have a seat and learn about some of the species of the herb layer possibly encountered during your walk. Many ground plants are seasonal ... that is you will only see them during certain seasons. During the Spring, before the leaves emerge closing up the canopy, is the best time to observe most of the forest wild flowers.

One of the early flowering plants is **Yellow Adder's Tongue** or **Trout Lily** (*Erythronium americanum*). A single long, narrow leaf with dark blotches on it pushes up from the forest floor for six years. During the seventh year the plant produces two leaves and a distinctive yellow flower, ending its life cycle.



Three species of Trillium are found in the Nature Center, **Large-flowered Trillium** (*Trillium grandiflorum*) has a pure white flower, **Ill-scented Trillium** or **Wake Robin** (*Trillium erectum*) which has a scarlet red flower, and **Painted Trillium** (*Trillium undulatum*) which has smaller white flowers with crimson vein at the base of each petal. As the name indicates, the trilliums have plant and flower parts that occur in threes.

The **May Apple** (*Podophyllum peltatum*) produces a delectable wild fruit but the rest of the plant is poisonous. It may be found in open woods, along roadsides or around fences. The fruit is said to taste like strawberry but they can also be poisonous if you eat too many of them.

21. Forest openings, such as the one witnessed here, are caused by a multitude of reasons. Disease causing fungi and insects, wind-throw, heavy accumulations of ice or snow, or even lightning may bring some of the large mature trees down to the ground. This is actually a “liberating” experience because these openings allow light to reach the forest floor resulting in a flurry of new growth close to the ground. Many plants and animals benefit from the growth ... deer now have young tender shoots on which they can browse, new homes are created in the old, rotting logs, and the development of shrub and understory forest layers result in greater diversity and stability of the overall ecosystem.
22. Take a look at the diversity of life on the top of this rotting log. You can think of this small area as sort of a “micro-ecosystem” consisting of mosses, lichens and fungi. You may see evidence of animal droppings or the remains of the nuts consumed by squirrels. Upon more careful examination you may see tiny insects and worms, all actively filling their niche in the community.
23. On the side of this yellow birch tree you will see a relatively large, black, cinder-like growth. This is the sterile fruiting structure (conk) of a white rot fungus called *Inonotus obliquus* ... sorry, but there is no common name. The presence of this structure developing at a branch stub is an indication that the heart of the tree has been rotted. After the tree dies, a fertile form of the fruit structure will appear that will produce spores for dissemination. In Siberia the sterile conk is used in making a tea which is administered to patients suffering from stomach cancer.



24. As already mentioned, disease is necessary in order to keep a forest ecosystem healthy. Over millions of years, disease causing organisms and their hosts have developed a “mutual tolerance” of each other resulting in a balance where neither species is threatened with extinction. Problems arise however, when a potential disease causing organism is introduced into an area where it has never occurred before and the native species have not evolved a tolerance to them. An example of this is seen on the side of this American beech tree which is suffering from Beech Bark Disease Complex. The small, white, cottony spots on the beech bark are the waxy secretions of the **beech scale insect** (*Cryptococcus fagi*). Introduced into North America from Europe, this insect feeds on the tree sap by inserting a long needle-like stylet through the bark. As they feed they no longer move and produce the protective waxy coating. Somehow, the feeding activity by the insect sets the stage for infection by a fungus, *Nectria coccinea* var. *faginata* which will ultimately kill the tree. At one time the presence of this disease complex was not considered serious because the death of beeches favored their replacement by yellow birch and sugar maple which have a higher commercial value. However, with changing market trends and better utilization of beech wood, there may be a re-evaluation of how this disease is accepted and managed.
25. Ferns revisited. The relatively large fern in front of you is **Cinnamon Fern** (*Osmunda cinnamomea*), identified by thick cinnamon colored tufts of dense “wool” on the base of its stem. Whereas some ferns produce their spores in “fruit dots” on the underside of the fronds, this fern produces a separate fertile stalk exclusively for the dissemination of its reproductive propagules.

Another fern you undoubtedly encountered along the trail, was **Christmas Fern** (*Polystichum acrostichoides*). Easily identified by the leathery, shiny, dark green fronds, this fern is “evergreen,” the intact fronds being compressed under the snow during the winter time to appear again during the melt-off.

26. Remember our discussion about plant parasites? If you are walking the trail during late summer to fall, you may see overwhelming evidence of another non-green plant called **Beechdrops** (*Epifagus virginiana*). As the scientific name indicates, this plant is a parasite “upon beech” roots. In this sense, would beechdrops be considered a producer or a consumer in the ecosystem? Actually, a consumer because it does not produce its own food. The whitish to purple-brown structures you see growing above the ground (depending on the time of year) are the flowering stalks which produce two-lipped flowers.
27. **Skunk Bridge** – Obviously, the reason for this bridge’s name is because of the profusion of **Skunk Cabbage** (*Symplocarpus foetidus*). This is its typical habitat – swampy areas and wooded stream banks. It is the first plant to flower in the spring, perhaps we should say winter since the flower buds push up through the snow. The plant is known for its ability to generate heat, which not only melts the snow but also allows growth to occur very early in the growing season. The flower has a foetid odor that attracts carrion flies and beetles which crawl around in it looking for something dead to feed on. In the process the insects manage to cause pollination.
28. As you leave Skunk Bridge you enter into another distinctive community characterized by lots of young trees and a thick collection of shrubs. This transitional zone is known as an edge community. The plant species here, such as **Musclewood** (*Carpinus caroliniana*) cannot tolerate full shade as found under a forest canopy, but requires more direct sunlight. As the edge continues to grow upward, musclewood will eventually be out-competed by species that are able to grow taller. This is an example of ecological succession where a community will eventually create environmental conditions unfavorable for its own continued existence while more favorable for a different one. Do you think this could be interpreted as a natural form of “environmental pollution?”

29. Another shrubby species found along the edges of forests and sometimes out in the open sunlight is **Buckthorn** (*Rhamnus cathartica*). The dark green leaves are finely toothed with veins that curve towards their tips. This species was cultivated for hedges but has escaped into the wild.
30. As you emerge from the edge into more direct sunlight, you will see a greater concentration of another common shrub, **Honeysuckle** (*Lonicera sp.*). The many species of honeysuckle can be identified by flower and fruit (berry) characteristics including color. Most honeysuckles produce two-lipped or tubular flowers, and the leaves occur on the twigs in pairs.
31. We hope you enjoyed your rest on the bench between the two magnificent Norway spruce. You have now entered into an area that used to be a cornfield back in the late 70's but was subsequently planted with a variety of conifers. To the right of the trail you will see **Red Pine** (*Pinus resinosa*) identified by the four to six inch needles borne in clusters (fascicles) of two. Its flaky bark is reddish to purplish. To the left of the trail is **White Pine** (*Pinus strobus*) with its relatively smooth bark, and its needles grouped into fascicles of five. White pine was the symbol of unity of the five tribes of the Iroquois Confederacy before the Europeans arrived. You may notice a splitting in the main stem of some of the white pines into two or more smaller stems. This was caused when the terminal shoot was damaged and the side branches were liberated to take over the vertical growth. One of the more common causes of damage to the terminal shoot is the white pine weevil, an insect. The adult lays its eggs on the terminal bud in the early spring. The larva then eats it way down the terminal shoot, causing its destruction.

Look on the branches of the pine trees at this station. You should be able to find another vine that was mentioned earlier, **Bittersweet** (*Celastrus*). This species is most conspicuous in the fall when the orange fruit splits open to reveal the showy scarlet seeds.

32. The piles of woody branches along this section of trail were placed there with the intention of providing shelter for small mammals and other wildlife. Please do not disturb them.

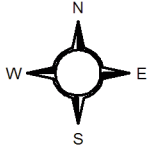


33. How old are these red pine trees? One way to determine their age is to cut the tree down and count the annual rings in the cross-section of the stem. But this will kill the tree and we don't want to do that. There is an easier and less destructive way which we can use, specifically on pine trees in the northeast. Each growing season, red and white pine trees produce a single whorl of branches. A whorl consists of several branches that all grow from the same spot on the main stem. The location on the stem where the whorl exists is called the node. The part of the stem that occurs between the nodes are called internodes. So, basically, each year that the pine is growing, it produces one node and one internode. How can you determine the age of these red pine trees? Counting the number of nodes or internodes should be a fairly accurate measure.

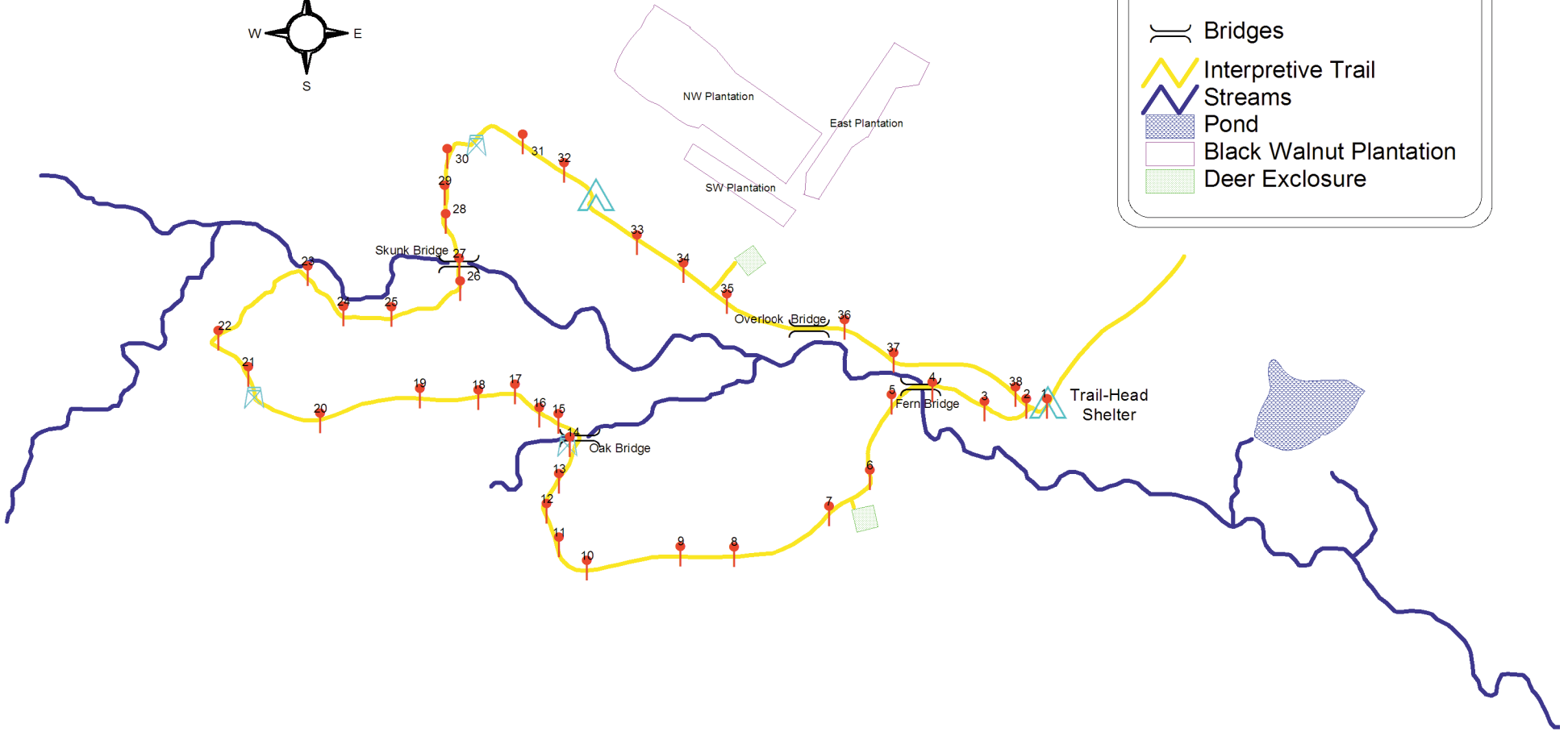
34. The plant by this post is commonly found along roadsides and scattered in open fields. It is **Multiflora Rose** (*Rosa multiflora*) and can be identified by its white flowers and brutal thorns ... which are not actually thorns but prickles. This plant was cultivated and planted as natural fences and hedges but has escaped cultivation and taken over many fields, forming impenetrable thickets ...unless you're a rabbit.



Herkimer County Community College  
**Nature Center**  
Interpretive Trail



- Numbered Posts
- Bench
- Shelters
- Bridges
- Interpretive Trail
- Streams
- Pond
- Black Walnut Plantation
- Deer Exclusion



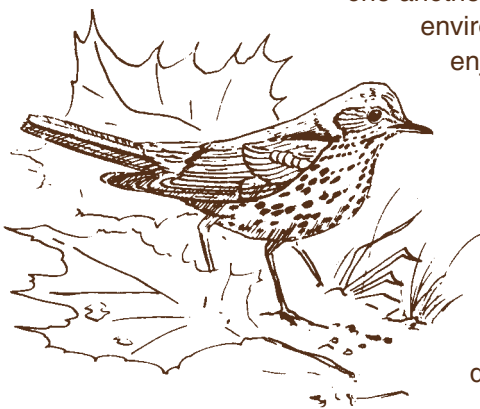
35. You will have to look around for the **American Elm** (*Ulmus Americana*) at this station. Look more toward the edge of the woods. You'll know when you've found it by gently rubbing the leaves with your fingers because they have a rough scabrous or fine sandpaper feel. Once very common in New York State, the American elm has been decimated by an introduced fungus which is spread from tree to tree by a bark beetle. American elm was favored as a "street tree" (what American city doesn't have an Elm Street) because it naturally occurs in wet bottomlands having compressed soils ... soils with low oxygen content which is characteristic of the urban environment. It is rare to find a mature elm tree anymore, with its gracefully sweeping and arching branches, looking almost like an inverted Eiffel tower. It's a tragedy that we have lost such a distinctive American tree to an introduced pest.



36. Although you probably haven't seen a lot of animals during your walk, seeing their signs is still a good indicator of their presence. At this post we see evidence of the **Yellow-bellied Sapsucker** (*Sphyrapicus varius*) ... that's right ... there is such a bird. The sapsucker is a woodpecker which drills horizontal series of holes in living trees. The holes are angled downward allowing them to fill with sap. Not only does the sapsucker benefit by consuming the sap, but it also gets treated to many insects that are also attracted to the holes for the same reason. Sometimes sapsucker damage can be so severe, it may weaken the tree making it susceptible to other insect and fungal diseases.

37. At this post we see evidence of a different kind of woodpecker, the **Pileated Woodpecker** (*Dryocopus pileatus*). The huge cavities along the length of this tree have been drilled by the largest woodpecker found in New York State. About the size of a crow, the Pileated Woodpecker is a shy bird not often seen, however, sometimes you will see them showing up at your bird feeders during the winter. All woodpeckers have four toes, two that point forward and two that point backward (referred to as a zygodactyl foot). This allows the bird the maximum amount of gripping power while pounding into the side of a tree looking for grubs and insects. At the same time they will press their stiff tail feathers against the tree for some additional leverage. A spongy pad is present at the base of their bill in order to protect their brain from being jarred too much. In general, the woodpeckers don't have attractive songs with which to attract mates and to mark their territories. Instead they announce their presence by the loud pounding of characteristic rhythms which can be heard over great distances. Sometimes they will choose metal "Posted" signs on the sides of trees for their territorial signals ... they have even been known to destroy the paint job of the sides of automobiles, just for the sake of attracting a mate.

38. This brings us to the end of the journey through the HCCC Nature Trail. Hopefully you now have a better idea of what a forest community is and how different species of organisms interact with one another and with their abiotic



environment. We hope you have enjoyed your visit and plan to come again soon ... bring a friend along next time. Also, please don't limit yourself to just one season ... the forest community is a dynamic ecosystem, constantly changing, always offering something new to discover.

## **Trail Guide**

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