

A Trail Guide to Shade Swamp Sanctuary

Farmington, Connecticut

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Cover artwork by Donald Moss

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Original Sanctuary trails were laid out by the Shade Swamp Trail Committee (E. Alexander Bergstrom, G. Winston Carter, Mrs. H. R. Olyphant, Mrs. Una S. Riddle and John L. Emery, Chairman).

Assistance in 1972 was provided by Mary Czlapinski and Kathleen Felice of the Hartford Audubon Society (birds), Gail Coolidge of the Connecticut Botanical Society (plants), and the staff of the Roaring Brook Nature Center, Canton, Connecticut (general natural history). Design and layout provided by Gil Kleiner. The cover was illustrated by Donald Moss.

Revisions made by the Department of Environmental Protection with assistance from the Farmington Garden Club 1994. Current revisions made by Jay Kaplan Director of Roaring Brook Nature Center, Canton, Connecticut. Special appreciation is given to Jeff Thomas of the Connecticut Department of Environmental Protection and the entire Black Rock Crew for providing trail signs.

INTRODUCTION

The Goal of this guide to Shade Swamp Sanctuary is to help increase your appreciation for this natural area, to understand some of the features of the surrounding landscape, and to aid in the identification of some of the flora and fauna that can be observed along the trails. This 800 acre Sanctuary, located entirely within the Town of Farmington, is owned by the State of Connecticut and is managed by the Department of Environmental Protection (DEP). There are two nature trails from which you may explore the Sanctuary: a white-blazed trail in the western part of the preserve, and a smaller blue-blazed trail to the east. Both trails are easily accessible from the north side of U.S. Route 6, east of the

junction of Route 6 and Route 177 in the vicinity of Tunxis Community College.

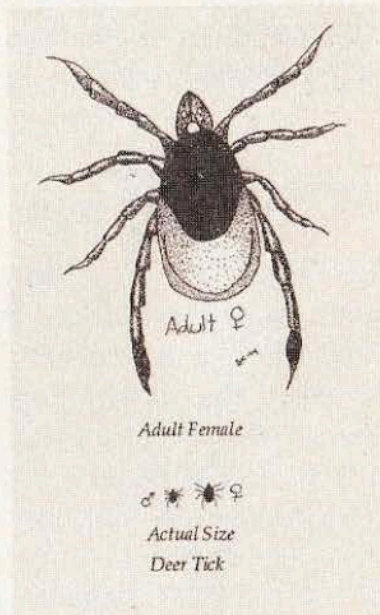
Directly to the east of Shade Swamp is the Rattlesnake Mountain ridge. The radio towers and the houses visible along the ridgetop, along with the pollution of the Pequabuck River and the sounds of nearby Route 6, offer examples of human intrusion into prime wildlife habitat. Yet the maintenance of this swamp and sanctuary also offers an example of a balance between the development necessary for economic growth and protection for our natural resources.

Visitors are asked to stay on the trails in order not to destroy the vegetation. Please leave this Sanctuary as you found it. There are no facilities for litter; take out what you bring with you. Please leave all plants, animals, rock and mineral formations as you find them so that those who follow you may enjoy seeing them. Collecting is not allowed on the Sanctuary grounds. Hiking, nature photography, birding and the study of plants and wildlife are encouraged.

Lists of the wildflowers, trees, mammals and birds that have been observed on the property may be found at the end of this booklet. This guide does not attempt to cover all species of plants and wildlife that inhabit this preserve. Making one's own discoveries provides some of the excitement that can be found during an afternoon walk in the forest. Unusual observations may be reported to the Parks and Recreation Unit of the Department of Environmental Protection.

Cautions

There are no poisonous snakes living within the boundaries of Shade Swamp. There are, however, several cautions for users of this preserve. Poison ivy may be abundant along certain trails, particularly in sunny locations. Learn to recognize this common Connecticut plant. Ticks, including deer ticks, may be common especially during the spring and early summer months. Chemical repellents may provide protection against ticks and biting insects. Carefully read and follow all label directions prior to using these products. Tucking pants legs into socks or wearing high boots may also provide some protection from ticks. Certain trail sections may provide



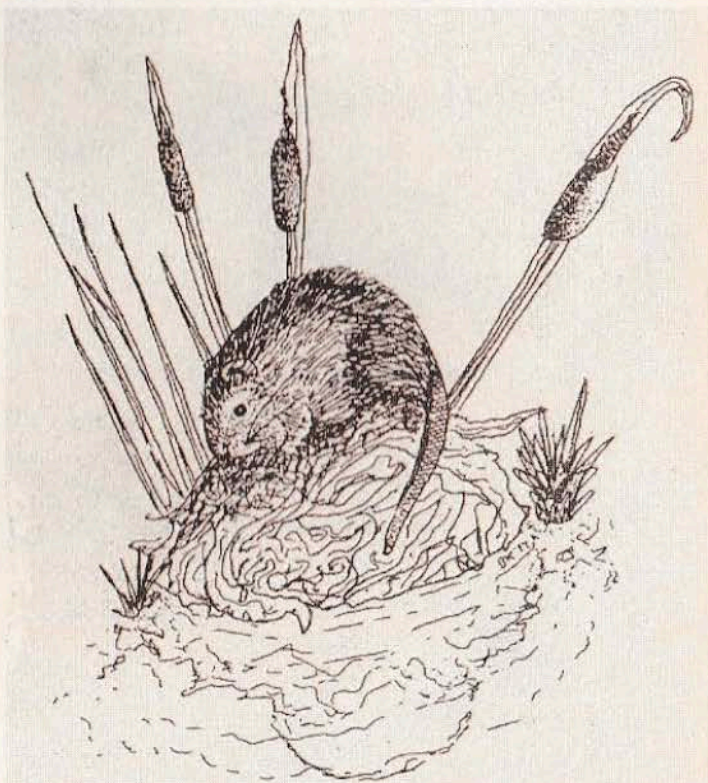
habitats for stinging insects, particularly white-faced hornets and yellow jackets. The former construct large, gray, paper nests that are attached to tree branches. Do not provoke the hornets by approaching the nest. Yellow jackets nest in the ground. Observe holes carefully to insure that they are not an entrance to these underground hives. These insects perish in late fall and are of no concern during the colder months.

How to Use the Trails

The trails in the sanctuary are marked with blazes on selected trees. Follow the blazes carefully so as not to leave the trail. Numbered markers have been placed along the trail to provide information on the natural history of Shade Swamp. Each marker is color coded for either the blue or the white trail, and corresponds to the numbers in this trail guide.

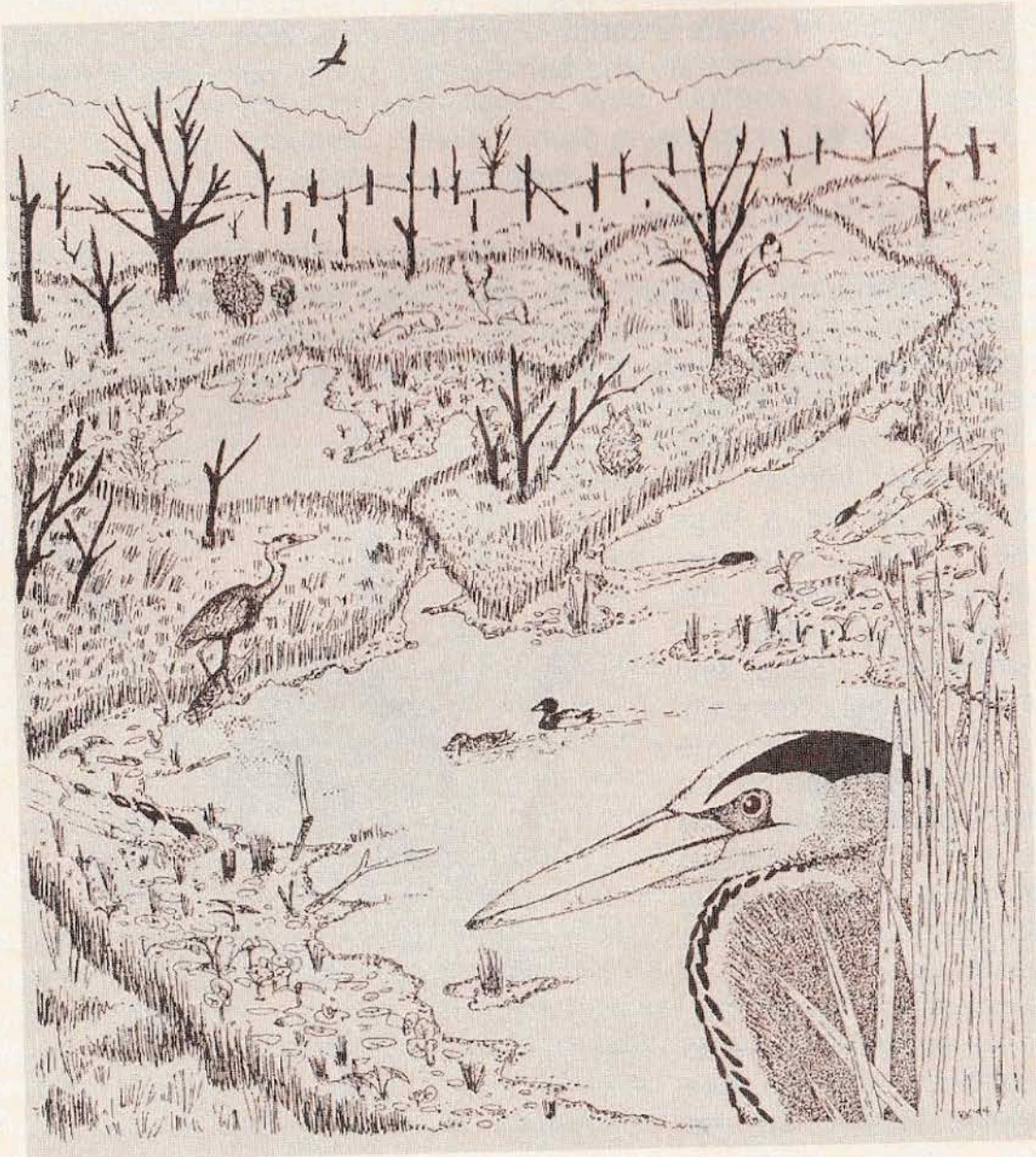
Geology of Shade Swamp

Shade Swamp is a product of the last glacier which disappeared from this area more than 10,000 years ago. As the glacier melted, a large mass of ice was left blocking the flow of the Farmington River through the valley at Shade Swamp. The water impounded behind this ice dam formed a large lake that extended northward beyond the present day village of Farmington. Sand and other glacial deposits washed down from the bare hills to settle on the lake bottom around the ice. This condition continued over a lengthy time period creating a substantial build-up of sediments. Eventually, the ice subsided to create a spillway and the lake drained, leaving the ice mass partially buried in the lake bottom

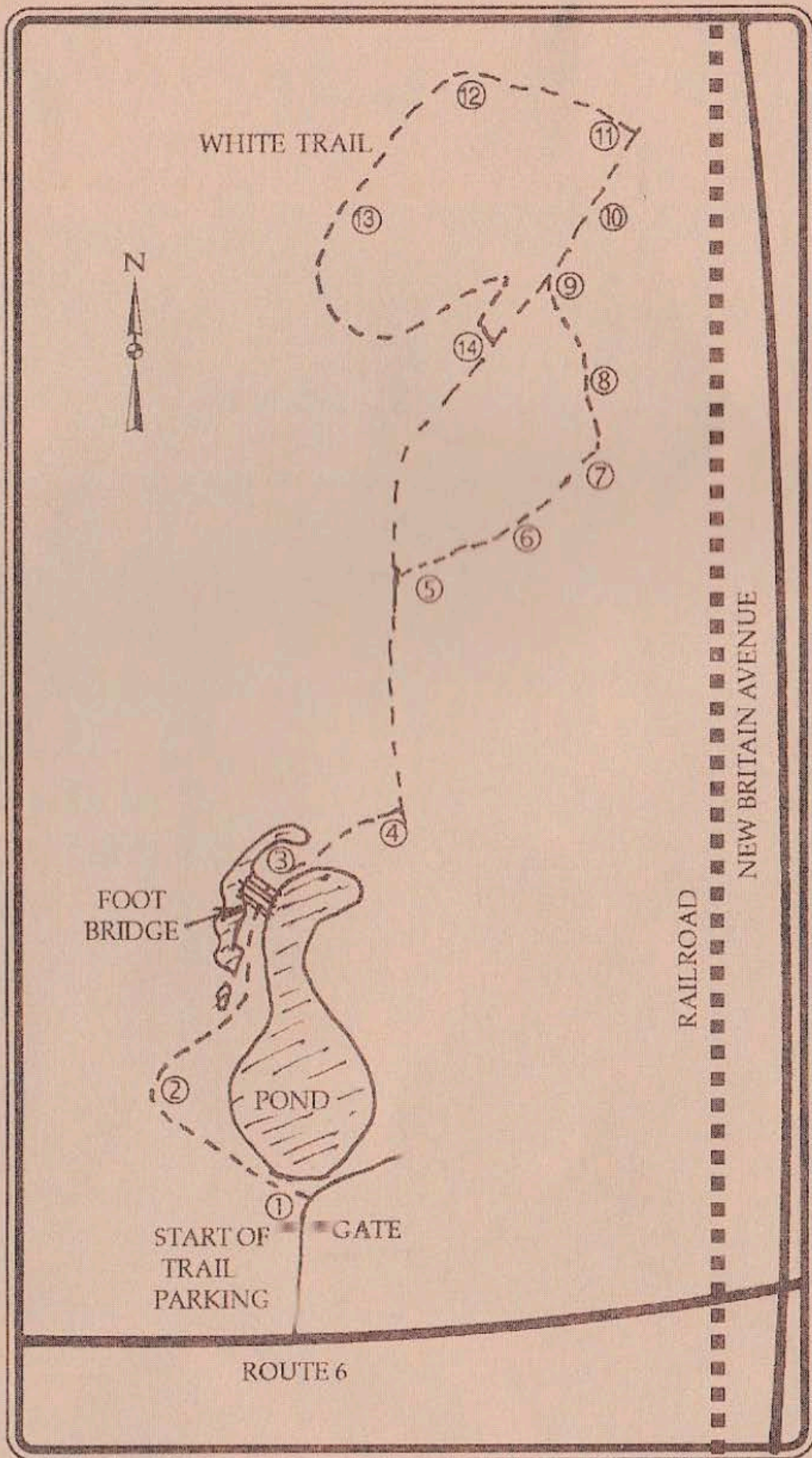


Muskrat

sediments. When the ice finally melted, it left the low lying depression we now know as Shade Swamp. The lake bottom sediments formed flat-topped kame terraces on either side of the swamp, the one along the western edge being more obvious today. Some of the deposits also blocked the pre-glacial course of the Farmington River, causing it to turn abruptly from its original southeast course at the north end of the sanctuary and flow northward some fifteen miles to Tariffville to find an outlet throughout the Talcott Mountain Ridge.



WHITE TRAIL



WHITE TRAIL

Length 2 ½ miles

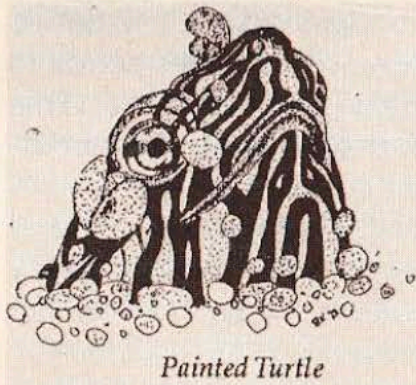
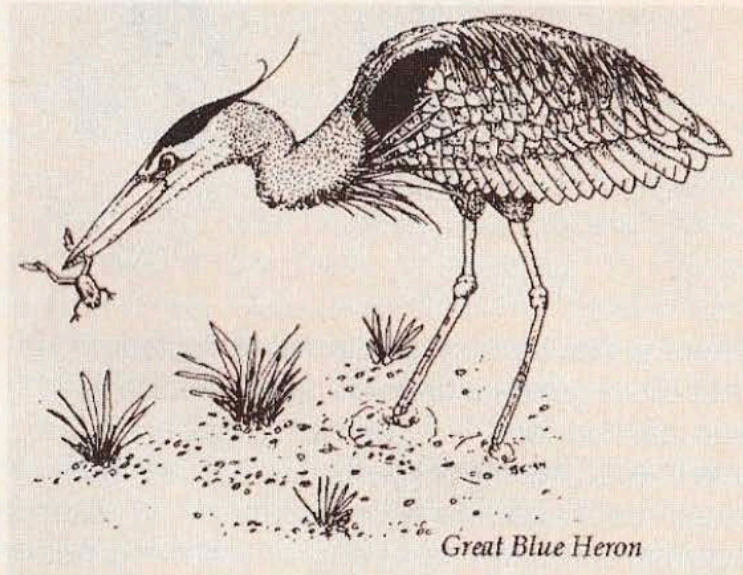
The White Trail offers relatively level walking conditions through a typical Connecticut woodland demonstrating various stages of succession and providing historical insights on past land use.

Parking

This trail may be accessed by turning north from Route 6 into the property at the Department of Environmental Protection's (DEP) sign. Park on the side of the road near the entrance, but safely off of Route 6. Walk in the road a short distance and just before the pond on the left see the beginning of the white trail.

Trail Markers

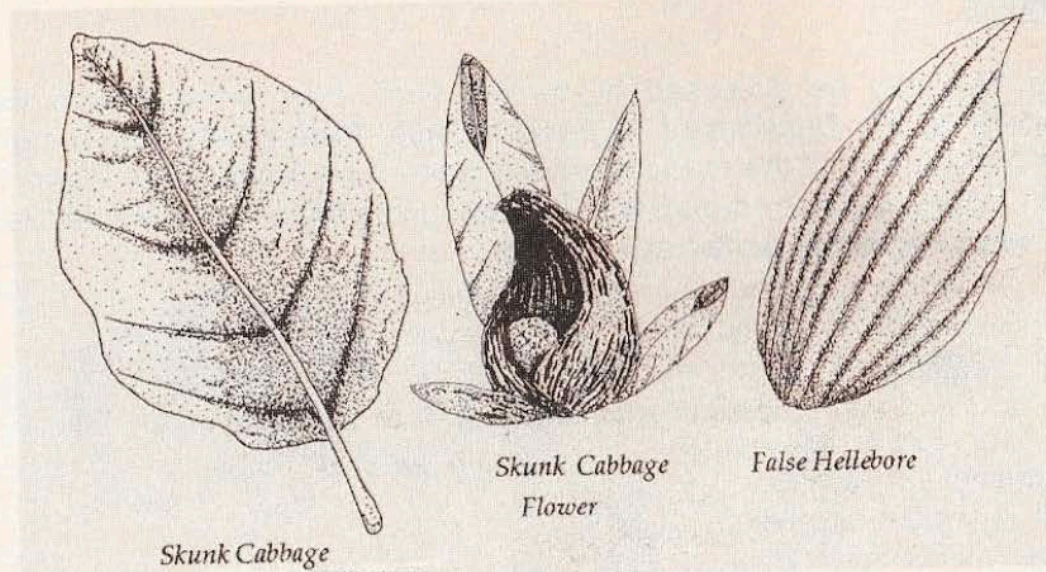
1. The pond at the beginning of the White Trail provides excellent opportunities for wildlife observation. In spring and fall, look for wood ducks and mallards. Flocks of Canada geese are hard to miss. Great blue heron can be seen hunting for frogs in the quite recesses of the pond, while painted turtles sun themselves on exposed logs or along the banks.



The bright green "scum" found on the pond's surface during the summer season is actually small aquatic plants, duckweed and wolffia. The latter is the smallest of the flowering plants. In mid-summer, these plants create a blanket of green on the surface, sometimes so thick as to prevent light from penetrating to the waters below. Numerous small animals, including insects,

snails and worms, can be found in these plant mats, providing a food source for other pond animals.

2. One of the more common plants in low-lying woodlands is skunk cabbage. One of the earliest flowers to bloom, its smell attracts flies, moths, beetles and other early insects that pollinate it. The unusual flower of the skunk cabbage, actually a group of flowers, or inflorescence, is known as a spadix. In the south, skunk cabbage is occasionally eaten as a pot herb. Boiling in several changes of water removes the strong, unpleasant smell. Northerners, however, should



beware the vaguely similar false hellebore, another wetland loving plant that often grows alongside skunk cabbage. False hellebore is poisonous and can be fatal if ingested—a perfect example as to why one must be positive in the identification of wild edibles. The conspicuous leaves of skunk cabbage and false hellebore will disappear towards the end of the summer season. In spring or following heavy rains, this section of the trail may be quite wet. Also, note that poison ivy grows abundantly in this area.

This pond was used to raise bass for the State of Connecticut's fisheries program. You may note the remains of what were once smaller ponds to the left of the trail. These smaller ponds were used for raising trout. This project, started in the late 1940's after World War II, was abandoned in the early 1960's.

3. The back side of the pond used to be a beaver habitat. These animals were once virtually extinct in Connecticut, victims of the fur trade and of habitat destruction. "Beaver-felt" hats, popular in the nineteenth and early twentieth century, caused severe pressure on beaver



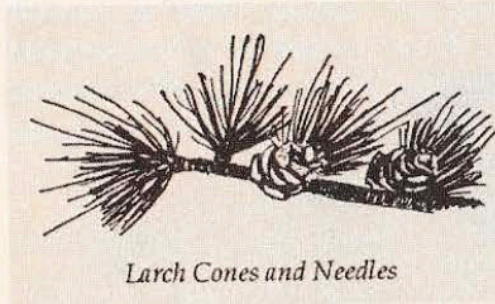
populations. Many of these hats were made in Danbury, Connecticut, still known as the "hat city," although the hat makers have long since gone. Beavers are now plentiful in Connecticut, occasionally creating flooding problems along roads and near homes. In recent years, beavers have raised the water level of the pond, washing out the bridge that crosses the trail behind the pond. This bridge has been rebuilt and ongoing effort will be required to maintain it in high water. Can you find any recent evidence of beaver activity here?

Listen carefully for the songs of wood thrush, song sparrows, and tufted titmouse, which are often found in this area. Also watch for a great variety of insects which serve as "environmental indicators." Often seen are the Aquatic Damselfly and the brilliant Common Green Darner dragonflies.

In this area, human activities have disturbed the land. Disturbance often allows alien plants, such as the oriental bittersweet that grows in profusion here, to gain a foothold. This plant chokes out native vegetation, but provides only minimal food for wildlife. Oriental bittersweet is often inadvertently spread by those who use the berry-bearing twigs as a decoration in the autumn. Do not confuse the Oriental bittersweet with the similar native plant, American bittersweet. American bittersweet has declined through much of Connecticut, in part due to competition from introduced plants. Crossing the bridge, you will note that the trail has become a "roadway," at one time used by the DEP for

maintenance of the fish ponds and for gravel excavation on the Sanctuary.

4. Turning left at the intersection, we see evidence of a forest in transition. At one time the larch was very visible, but is slowly being crowded out and now is harder to find. If there is a leaf cover, look



Larch Cones and Needles

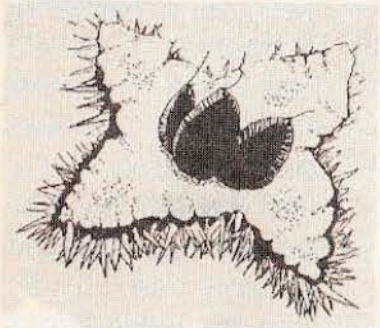
carefully to spot the larch, which is a "deciduous conifer" meaning that the tree bears needles and cones, but the needles fall to the ground in autumn. These trees were planted by the McDonald's Corporation as part of a reforestation project in the mid 1970's. In Mid-October, the

larch needles turn a beautiful golden yellow, a favorite of photographers at this season. In winter, note the unique, ruffled shape of larch cones and compare them with the cones of pine, spruce and hemlock trees found in the Sanctuary. Watch for eastern chipmunks along the road way. These common rodents store seeds, nuts and fruit beneath the ground, using their inflatable cheek pouches to carry large quantities at one time. Chipmunks have been known to store in excess of 30 pounds of food in their underground storage chambers, a hedge against the long, cold Connecticut winter.

Look, also in this area for tree cavities. Insects and fungi may hollow out the wood of a standing tree, providing shelter for a wide range of animals, from insects and other small creatures to birds, squirrels and raccoons. Tree cavities provide a warm, dry shelter during the winter months and can be used as dens in which to bear and raise young during the breeding season. In addition to woodpeckers, the list of woodland birds that nest in tree cavities includes black-capped chickadee, tufted titmouse, white and red-breasted nuthatch, tree swallow, great-crested flycatcher, American kestrel, eastern screech and barred owls. Leaving a few standing dead trees in a woodlot will help to maintain populations of cavity nesting species.

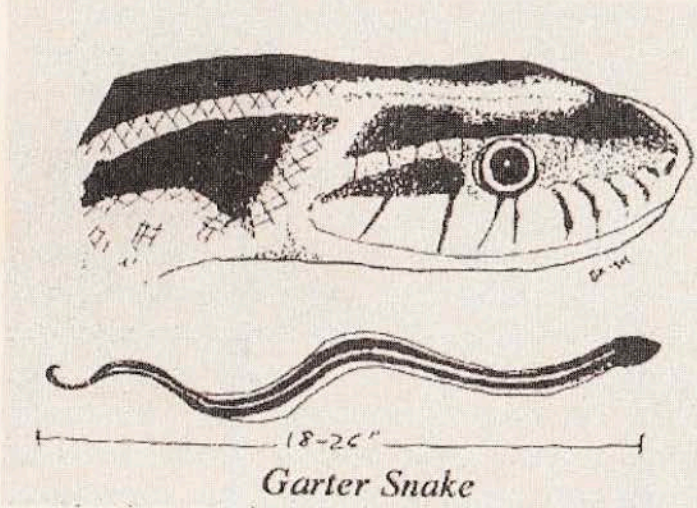
5. Watch for a right turn as the trail leaves the old DEP roadway and ventures into the oak woodlands. As you ascend the slope, look hard for American Chestnut Sprouts, remnants of an earlier time when this was a dominant tree in Connecticut's woodlands. At the turn of the century, Oriental chestnuts were brought to this country. These trees had a fungus associated with them and, although the fungus did not harm the Oriental chestnut, it quickly attacked the magnificent American chestnut, killing the trees and leaving the rootstock to produce the small sprouts we see today. As the sprouts mature, the fungal spores, lying dormant

for years in the soil, attack the tree and kill it. The loss of the American chestnut was a severe blow for wildlife, as chestnuts were an important part of the autumn nut, or mast, crop. It was also a great loss for foresters, as the chestnut was a premier tree for furniture, beams and floors. Chestnut is an incredibly durable wood, slow to rot. Look for old remains of chestnut stumps to this day in Connecticut's woodlands.



American Chestnut

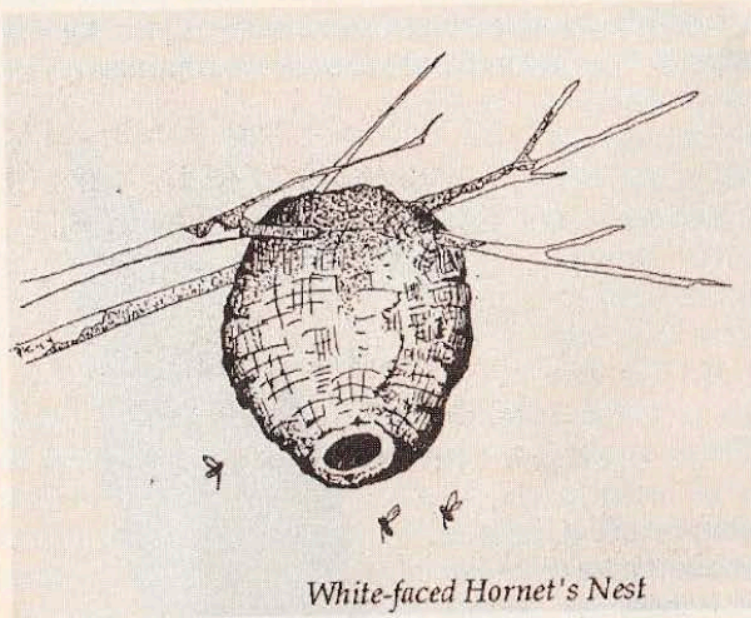
6. Connecticut's woodlands often hide a multitude of creatures whose presence may be detected by the careful observer. In this area, listen for wildlife signs: the song of a warbler in the treetops, a woodpecker tapping on a tree, the sound of a shrew scurrying through the leaf litter. A wood frog may leap from a concealed perch, only to disappear amidst the camouflage provided by the forest floor. A garter snake may slither across your path beneath the watchful eye of a broad-winged hawk ready to drop from the branches above you. If you look carefully you may see where a vole has nibbled tender shoots, or find a shallow depression where a squirrel searched for hidden acorns. Inhale the aroma of the forest. Your sense of smell may detect the faint and somewhat skunk-like musk of a red fox marking territory or the scent of a white-tailed deer as it crossed the trail in early dawn. Animals have far better



Garter Snake

Animals have far better

senses than we possess as they depend upon their senses for survival. With practice, you can improve your senses and use them to uncover secrets in the forest.

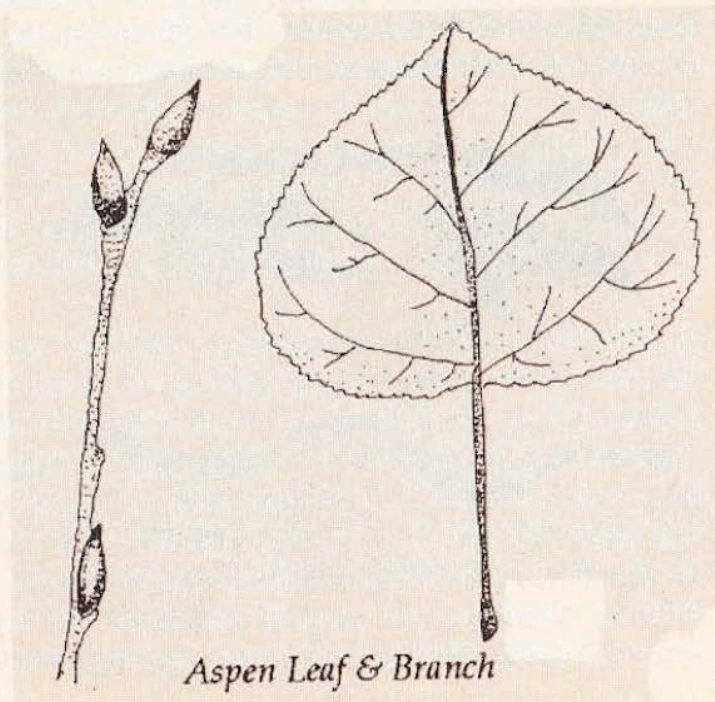


White-faced Hornet's Nest

Nests of the white-faced hornet have been found in this general location. Hornets are generally not aggressive unless the hive is threatened, and hives should not be approached. By late fall, the queen leaves the hive and hibernates in a hollow tree or underground. The

cold weather eventually kills the remaining hornets in the hive. In winter, blue jays and other birds will occasionally tear apart the hive to feast on the dead hornets inside. Although it may persist on the tree branch for much of the winter season, eventually the old hive falls victim to the elements. In spring, the queen lays eggs and, with her new workers, constructs another hive in the same vicinity, sometimes in the same tree.

7. Just a few years ago this area had many aspen trees. Aspens are being shaded out by the larger tree species. Look carefully for the aspen trees located here. They are a "pioneer species" that often invade an area following disturbance such as a fire. The fast growing aspens, an early successional tree, provide shade for other trees and then are eventually shaded out



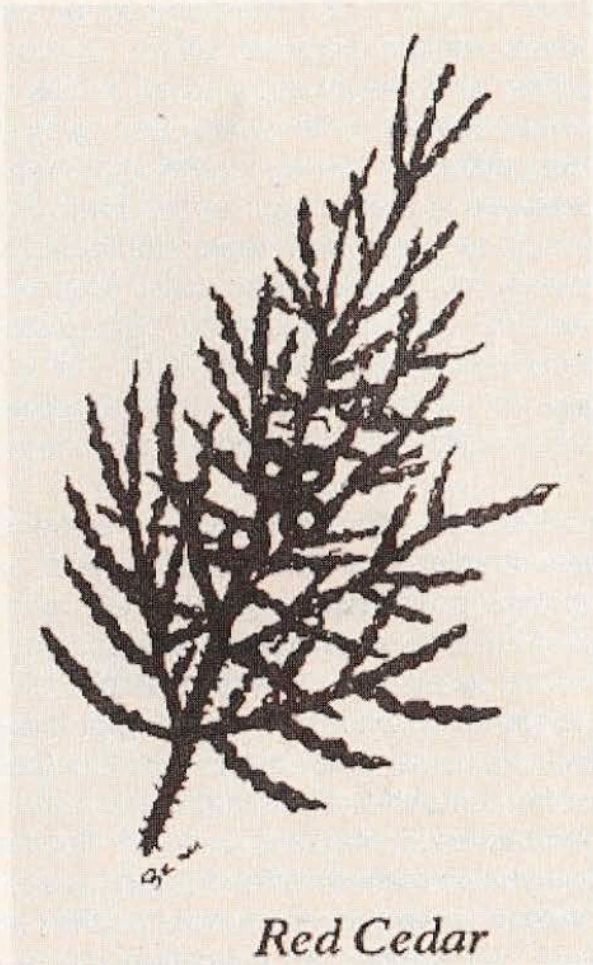
Aspen Leaf & Branch

by the larger tree species. In summer, the aspen leaves will shake in the slightest of breezes, giving them the name "trembling" or "quaking" aspen. Can you determine what makes these leaves tremble while others remain perfectly still? Compare the petiole (leaf stem) of the aspen to those of other trees in this vicinity. Do not confuse the light-barked aspen with white and gray birch trees. Birches are easily recognized by the horizontal markings, or lenticels, on the tree's trunk. Lenticels are openings in the bark that enable the tree to "breathe." It should be noted that trees take in carbon dioxide from the air. Along with energy from the sun and water from the soil, trees and other green plants use the carbon dioxide to help make their own food by means of a process called photosynthesis. As a by-product of this process, trees give off oxygen which is then expelled into the air. This phenomenon helped give rise to the popular notion that trees "clean" the air.

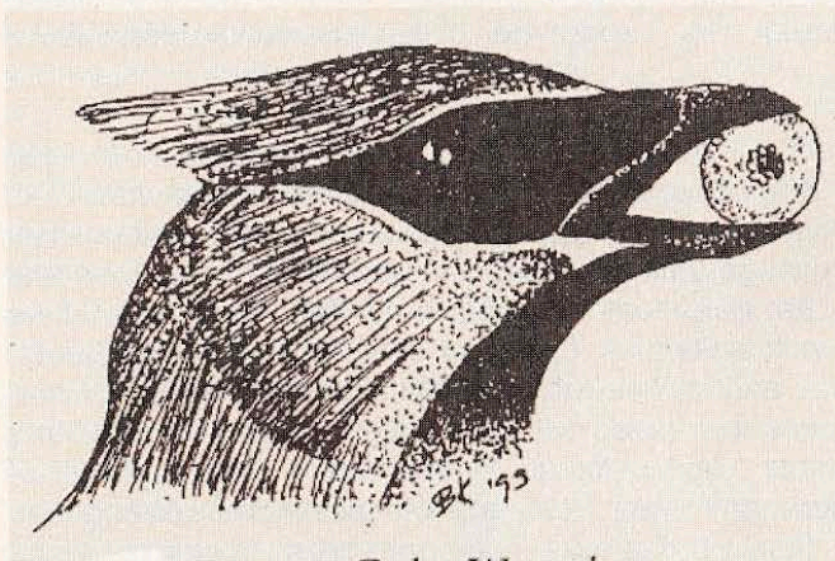
8. Forrest succession again is evidenced in this spot as the white pines are shading out the small fruited Japanese crabapple trees. The remaining crabapple trees were originally planted for the benefit of wildlife. The crabapples were planted along with such berry-producing shrubs as elderberry, highbush cranberry and silky dogwood to provide a high energy food source for migrating songbirds. In late summer and early fall, the small fruits provide food for species such as American robins, thrushes, bluebirds and catbirds. In the winter months, the remnant fruits may attract winter finches such as the rare pine grosbeak. Many mammals also feed upon these fruits, including such predators as fox and even coyote. Look for their droppings, or scat, along the trail. Scat can provide an indication that a wildlife species inhabits an area, even if the animal itself is rarely, if ever, seen. In certain instances, scat can also provide information on an animal's age, sex and overall physical condition, as well as its diet. (Wildlife plantings continue to be available to homeowners through the Department of Environmental Protection's Forestry Unit).

9. At this point, a left will take you back to the start of the trail. Turn right at the split in the trail opposite the trail sign to continue on the white trail. This entire area is rapidly undergoing succession, the process by which plant communities change until they reach a climax community (one that creates conditions that perpetuate themselves). The fields found here are rapidly filling in with white pine, birch and other trees. In a few years; field flowers, grasses and shrubs will be shaded out and will disappear. Eventually, the birches and pines will give way to oaks, hickories and maples until a stable climax forest is reached. The process of succession may take many years. As the plant communities change, so too will the animals found in this area. Compare these overgrown fields with other areas found along the trail.

10. The red cedars found here are an indication that this was once open land, most likely pasture. Red cedar is actually a member of the juniper family. Junipers often grow up in abandoned pasture land. Junipers, with their prickly needles, are less appealing as food and are ignored by cows, giving them a head start over more succulent trees and shrubs when the land is no longer pastured. The cedars are now being shaded out and are dying. Rot-resistant, they can remain standing for many years serving as a reminder that dense woodland was once an open pasture. Take the time to feel the prickly needles of the red cedar and enjoy the aroma of the cedar berries. This is an excellent area for wildlife. The cedars provide cover and the berries provide food for numerous songbirds. The cedar waxwing is particularly fond of cedar berries, from whence it gets its name.

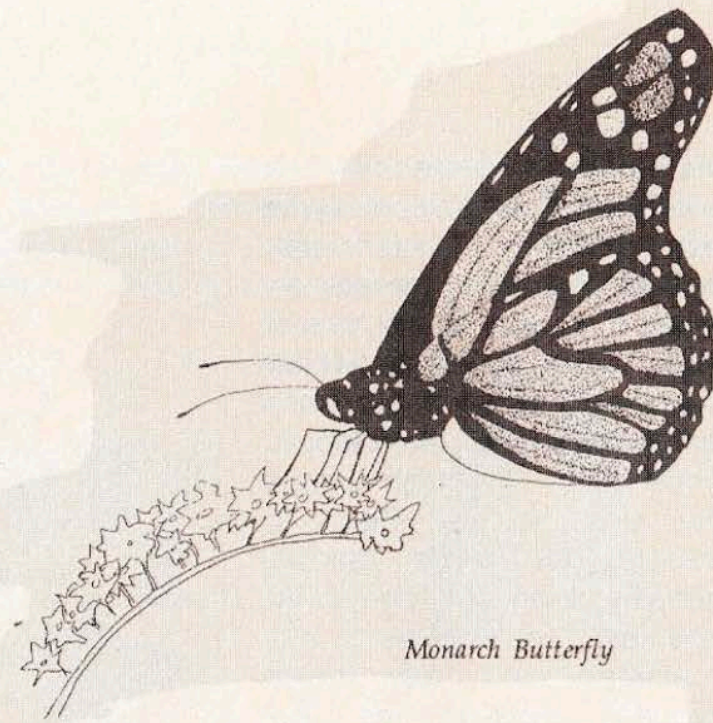


Red Cedar



Cedar Waxwing

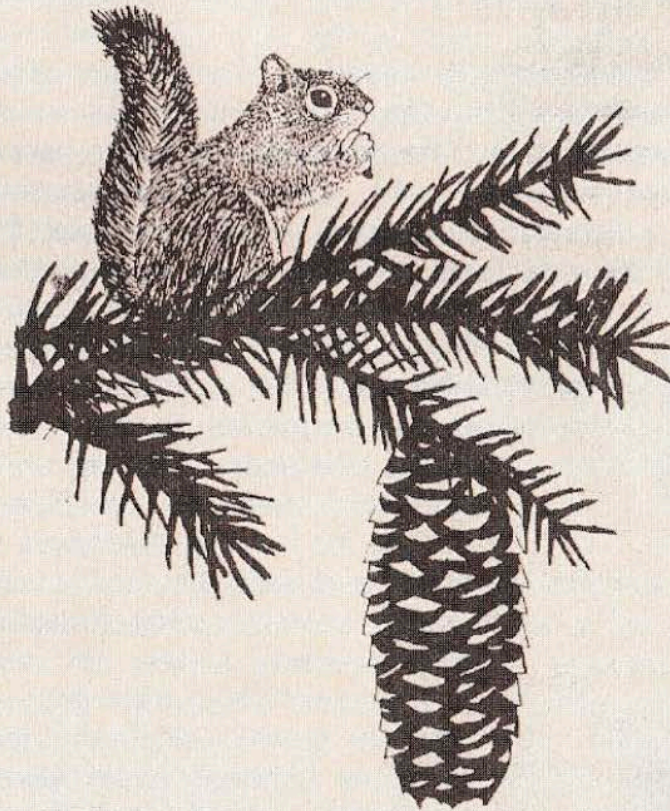
In autumn, watch for monarch butterflies as they journey southward. These fragile insects stop and feed on the remnant fall flowers, such as clover, asters and goldenrod, gathering energy for the perilous trip to Mexico during the annual fall migration.



Monarch Butterfly

11. Turn left at this post to continue on the white trail. The few large pine and spruce trees in this area are remnants of a bygone era.

Most of the trees originally planted in this plantation have been logged.

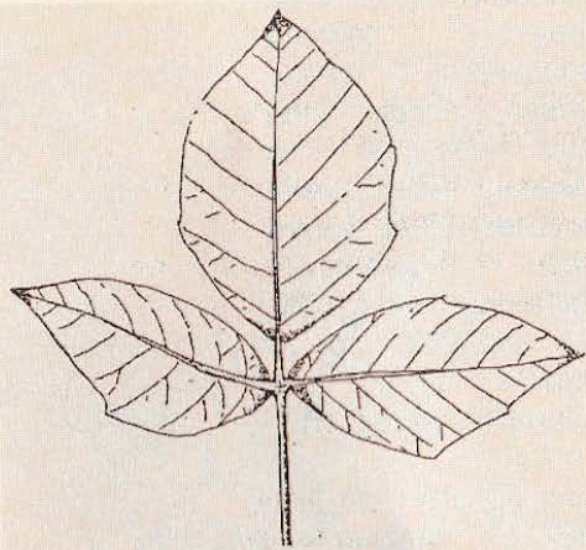


Red Squirrel

The red pine trees planted in this vicinity are common in northern New England. Although plantations of red pine initially flourished in southern New England, they eventually were attacked by insects and disease. The last of the Red Pine trees can be seen on the ground. The Norway spruce trees were also planted here. Red squirrels can be found feeding on the spruce cones, as evidenced by the piles of cone scales scattered on the ground. What will

eventually happen to the red squirrels and other animals that depend upon the pines and spruces for food and cover?

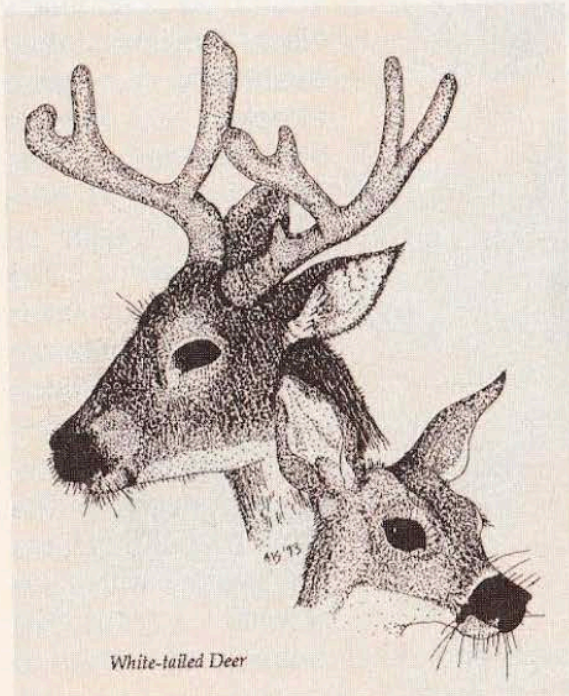
Note that there is a proliferation of poison ivy in this vicinity. Contact with poison ivy can cause an allergic reaction at any time of year. Even during the winter months contact with the vines can result in the characteristic itchy rash. Although poison ivy may be an irritant to people, its white berries provide food for some 60 species of birds and mammals. It also helps prevent erosion, as the extensive root system holds the soil. Learn to recognize this common plant.



Poison Ivy

12. You are now close to the Sanctuary boundary. To the right of the trail there is farmland on private property. This section of the trail is ideal for observing signs of white-tailed deer. There are probably more deer in Connecticut today than there have ever been. When the first pioneers arrived here, they found a forested landscape. Being farmers, the settlers felled the trees and the vast tracts of forests disappeared before

the plow. In the mid 1800's, many of Connecticut's farmers abandoned the rocky soils of this area and moved west to more fertile croplands. The old farms gradually reverted to forest. Today, we have a patchwork of forest and field, the habitat deer prefer. Look for their tracks in soft ground, signs of deer browse where they have gnawed off new growth, signs of "deer beds" or flattened areas where they rested, and the familiar scat they leave behind. If you are truly lucky, perhaps you'll catch a glimpse of a "white flag" as a white-tailed deer flees before you.



White-tailed Deer

Signs of red fox and even coyote may also be found in this area. Red fox is now found throughout the east, but in early colonial times this species was found only in northern latitudes. English colonists introduced red foxes to much of the east, including Connecticut, for sport hunting.



There is some controversy over the appearance of the coyote in Connecticut. Some scientists believe that when the wolf disappeared from New England, it left an open niche for a large predator. This theory suggests that the adaptable coyote gradually moved across southern Canada and the northern plains states, Pennsylvania and New York into northern New England, then spread southward taking the place of the extirpated timber wolf. Others believe that coyotes were present in northern New England all along, albeit in smaller numbers. Bounty hunting and clearing of forest land led to the wolf's demise, creating new opportunities for the coyote. Whatever the underlying reason, it is certain that the coyote population has greatly expanded here in Connecticut over the past several decades. Do not expect to see these animals along our trails, as their keen senses alert them to our presence. Long before we are close enough to see them, they melt away into the surrounding woodlands.

13. This is a good area in which to study the trunks of trees. Notice the different colors, patterns and textures of the bark. Since the leaves fall from the deciduous trees in autumn, tree bark is one of the most reliable tools in winter tree identification. How many different tree species can you identify by looking at the bark? Notice the trees with the very "shaggy" bark. This is shagbark hickory, common in mixed forests with well-drained soils. Shagbark hickories can reach well over 100' in height with a trunk diameter to four feet. It is one of the strongest of woods and makes excellent firewood. The wood has been used to make wheel spokes and axles, tool handles and baseball bats, although it is not a favored lumber tree today. The edible nuts are favored by squirrels as they ripen in fall, making up an important part of the mast crop,

especially in years when acorn numbers are down. As is the case with most trees within the Sanctuary, there are numerous smaller hickories in this area, but few larger trees. Can you offer an explanation for this phenomenon based on past land use on this property? Are there many tree trunks which you cannot encircle with your hands?

14. Turn right here to complete the white trail and return to your car. Note the large open pit on your left, from which sand and gravel were removed to repair the dam and to fill potholes on the road.

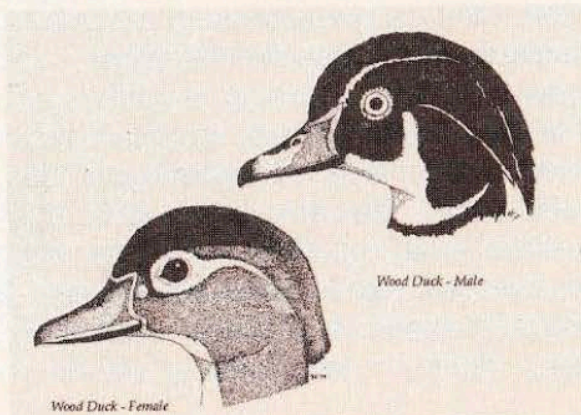


PK 12-4 Sweet Fern

As you continue along the trail, notice the sweet fern, a common shrub that grows in poor or disturbed soils from Canada to North Carolina. Crush a small piece of leaf between your fingers and notice the aromatic smell. In Revolutionary War times, the leaves of this plant were used to make an herbal tea. Sweet fern also is reputed to have some use as an insect repellent. The Forest Tiger Beetle does not seem to be bothered by the fern, and has been seen here hunting caterpillars. The fern is not considered a valuable wildlife food, although it may be used to a limited extent

by rabbits, deer and game birds. Sweet fern, with its woody stem, is not a "true" fern, although the leaves strongly resemble the fronds of certain fern species.

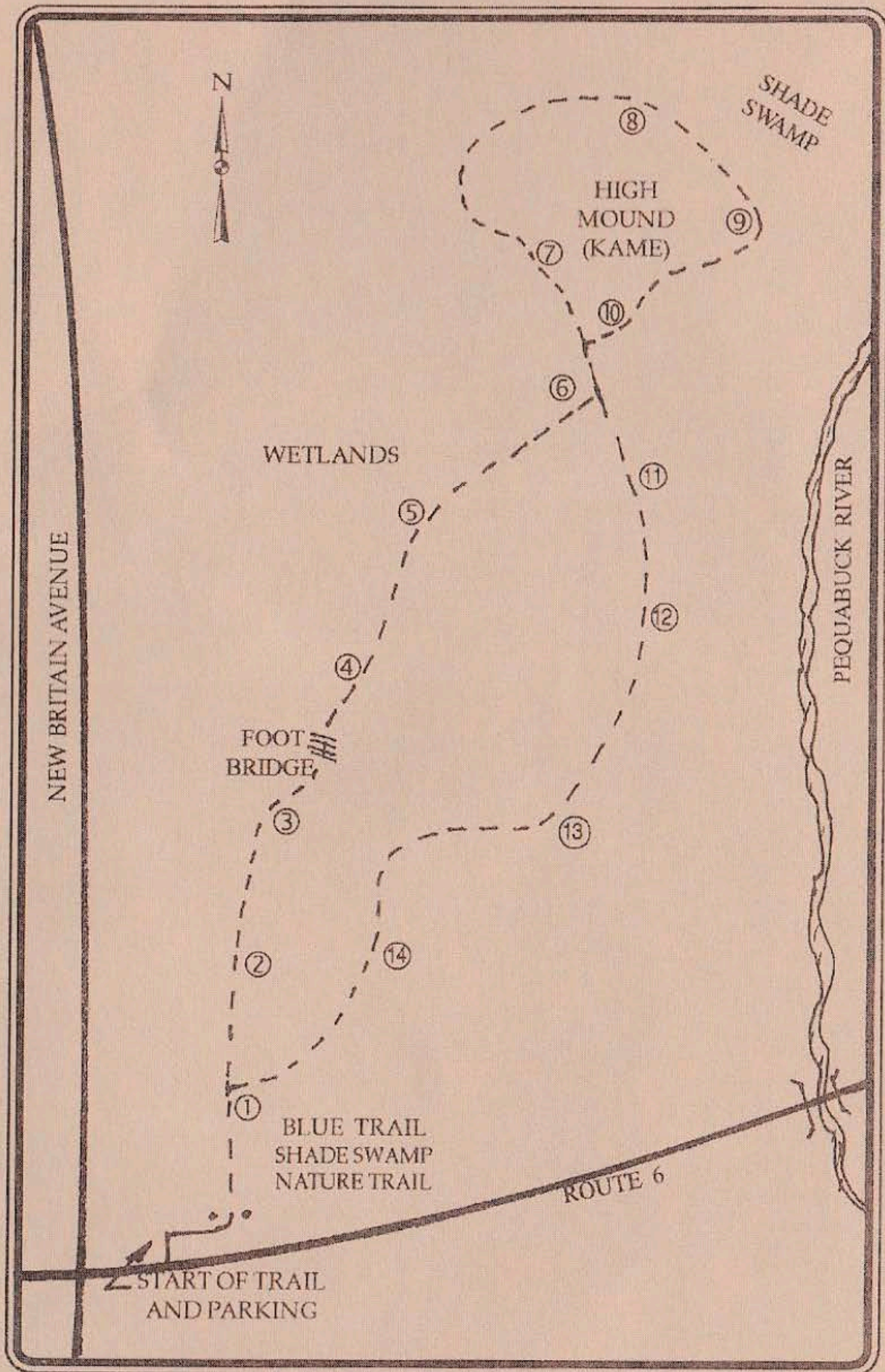
Continue straight, and then turn right to return to the bridge and retrace your steps to the parking area at the start of the trail.



Wood Duck - Female

Wood Duck - Male

BLUE TRAIL



BLUE TRAIL

Length 1 ½ miles

This trail offers relatively easy walking conditions with some short stretches of gradual to moderately steep slopes. Much of the trail follows a glacial "kame terrace." A kame is a ridge or hill formed of gravel deposited by heavily laden glacial streams during the last ice age. In this instance, as the glacier melted, a large ice dam backed up water creating a lake that extended northward beyond what is now the village of Farmington. Eventually, the ice began to melt and the lake drained, leaving a large remnant of ice buried in the lake deposits. As the ice melted, it formed Shade Swamp with the lake-bottom deposits forming the kame terraces now evident on either side of the swamp.

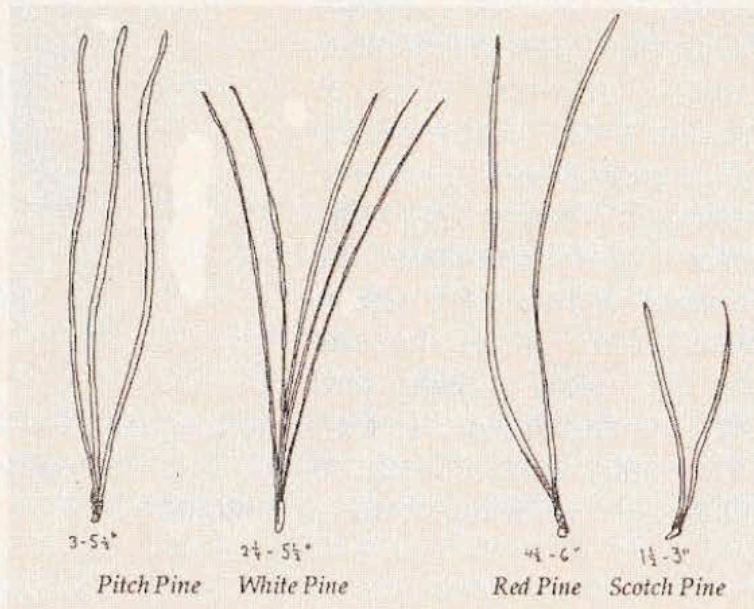
Parking

Parking for the Blue Trail is on the north side of Route 6, midway between New Britain Avenue and Village Gate of Farmington. Look for the remains of an old pavilion. Use care in leaving and entering the paved roadway. The entrance to the trail is located to the North of the parking area.

Trail Markers

1. The cages in this area, now in disrepair, are the remains of an old roadside wildlife area that has been abandoned since the early 1960's. As a matter of safety, do not approach these cages or the old spring house on your left.

Note the large pitch pine trees in this area. Pitch pines grow in sandy, well-drained soil, often indicative that the area was glaciated in prior times. Pine tree needles are borne in clusters. How many needles per cluster can be found on pitch pines? Did you know that the sap from pitch pine was once



used to make tar? Try to find some needle clusters from other species of pine along the Blue Trail. In this area, there are also white pine trees. White pine needles are borne in clusters of five. Notice the difference between the bark of the two species. In this area you may note the conspicuous tunnels of moles. These fossorial (digging) mammals find the sandy soil an easy medium in which to tunnel. There are three species of moles native to Connecticut. The eastern mole prefers the moist sandy loam of lawns, fields and golf courses. It avoids very dry soil. The hairytail mole prefers drier, sandy loam with good plant cover and is found in wooded areas. The unusual star-nose mole inhabits wet areas near lakes or streams. Moles are active day and night and throughout the year. Except for the damage they may do to lawns and golf course greens, they are beneficial, destroying insects and aerating the soil.

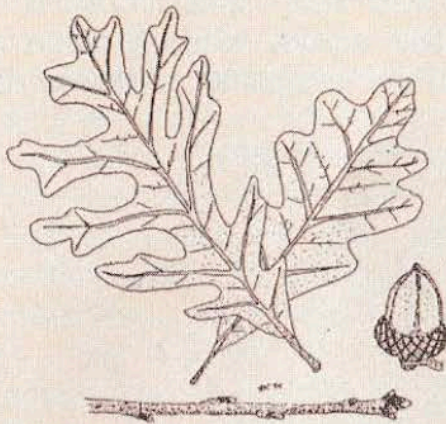
2. This area abounds with club mosses, a group of plants that was dominant during ancient times and from whose fossilized remains we mine today's coal. Club mosses, of which there are some eleven species in eastern North

America, are non-flowering plants. Like their allies, the ferns, they reproduce by means of spores. The combustible spores provided the flash in early flash photography. They spread, however, by means of an underground stem that "runs" along the ground, producing new plants. In fact, these evergreen plants are often called "running" pine or ground pine. Club mosses often grow in vast numbers; however, many colonies have been depleted by removal of plants for use as decoration. Club mosses are very slow-growing and



Club Moss

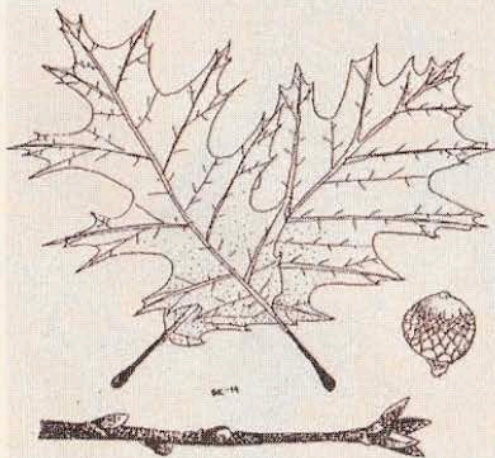
they are also difficult to transplant, a practice that should be discouraged. How many different species of club mosses can you find here and in other parts of Shade Swamp Sanctuary?



White Oak



Red Oak



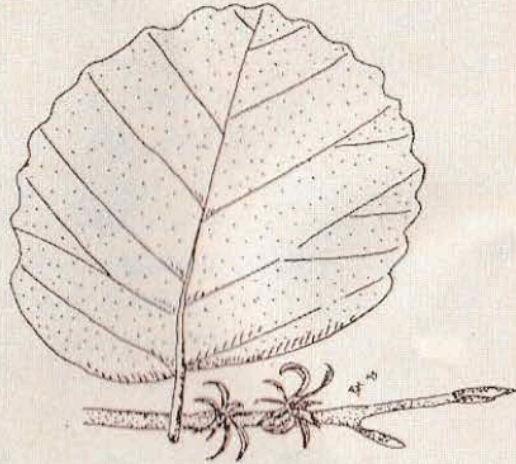
Black Oak

3. When one thinks of oak trees and acorns, squirrels often come to mind. Yet, oaks provide food for many of nature's creatures. During a prolific fall season, one large tree may produce over 100,000 nuts! Acorns provide an important food source for such diverse creatures as wild turkeys, raccoons, black bears, blue jays and white-tailed deer. White oak is a common species in this area and may be identified by leaves with rounded lobes and by light gray bark that has the appearance of large flat shingles. Prior to the introduction of corn to this area, about 750 years ago, acorns were a prime protein source for the Native Americans. If you've ever tasted acorns, you may recall a very bitter taste. This bitter taste comes from tannic acid, which can be removed by cooking. There are several other oak species in the Sanctuary and each species has different characteristics. Note the leaf shape, bark, terminal bud clusters and acorns to aid in identification. How many different oak species can you find? Note that red oak, another common species with pointed leaf lobes, was less preferred as a food source because the acorns are more bitter.

4. Red maple is the dominant tree in this area. You will notice that the land has become more "swampy" in appearance. This is an excellent location in which to look for

wildflowers, from the skunk cabbage of early spring to the spotted jewelweed, also called touch-me-not, that blooms in mid-summer. Many of the smaller trees are actually shrubs. A shrub is defined as having multiple trunks and some shrubs can be quite tall. One of these is witch hazel, an extract of which was a fixture in the bathroom medicine cabinet

in the not too distant past. An astringent, witch hazel was utilized as a remedy for everything from scrapes to muscle aches. It is still made in Essex, Connecticut. Witch hazel is one of the last plants to bloom, its small, yellow flowers persisting well into November. Why do you think this plant is called "witch" hazel? Another small yellow flower can be seen in the swamp in early spring. This is spicebush, a common wetland shrub. In summer, crush a spicebush leaf between your fingers and smell the pungent aroma. The red, oily spicebush berries can be dried and powdered as a substitute for allspice.

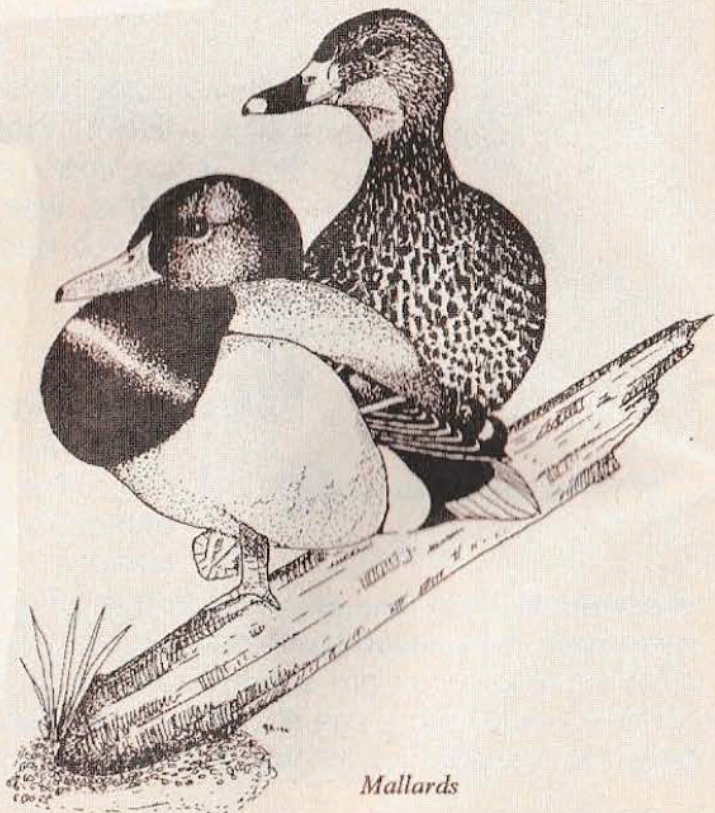


Witch Hazel

5. In this area, one cannot help but notice the profusion of ferns along either side of the trail. To the left, cinnamon ferns grow well in the wet soil of the swamp. One of our most common species, note the golden spore found rising from the base of the plant in late spring. To the right of the trail, on the drier slope, one can find the closely related interrupted fern. Common along roadsides, this species is easily identified by the fertile spore fronds found protruding from the center of each leaf.

These "interruptions" are quite noticeable, even after the spores have been released. There are numerous other species of ferns found within Shade Swamp. How many species can you identify along the Blue Trail?

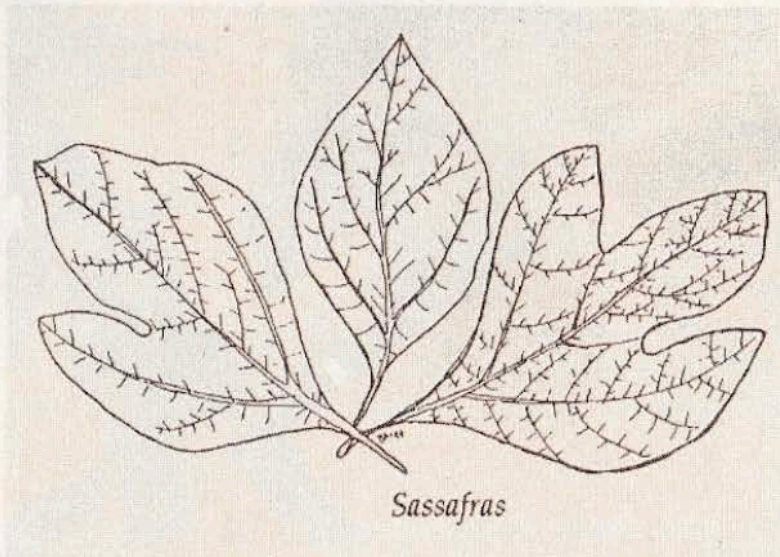
6. At this point, the trail leaves the red maple swamp and turns left, rising up onto the kame terrace. This is an excellent



Mallards

location in which to look for white-tailed deer tracks. Observe the scarcity of wildflowers and other herbaceous plants found on the kame compared to the adjacent red maple swamp. The well-drained, sandy soil does not provide the growing conditions required by many of the herbaceous plants, shrubs and trees found in the red maple swamp. At this point you may turn right to return to the parking area. If you wish to continue, follow the trail straight ahead to the top of the kame. In addition to the witch hazel, note the profusion of shadbush and sassafras in this area. Shadbush, also known as shadblow, is a shrub that blooms in the spring.

Legend has it that Native Americans knew that the shad were moving upriver to spawn when the white flowers of this shrub came into bloom. Sassafras is a medium-sized tree, whose leaves may be elliptical, two or three lobed. The leaves and twigs



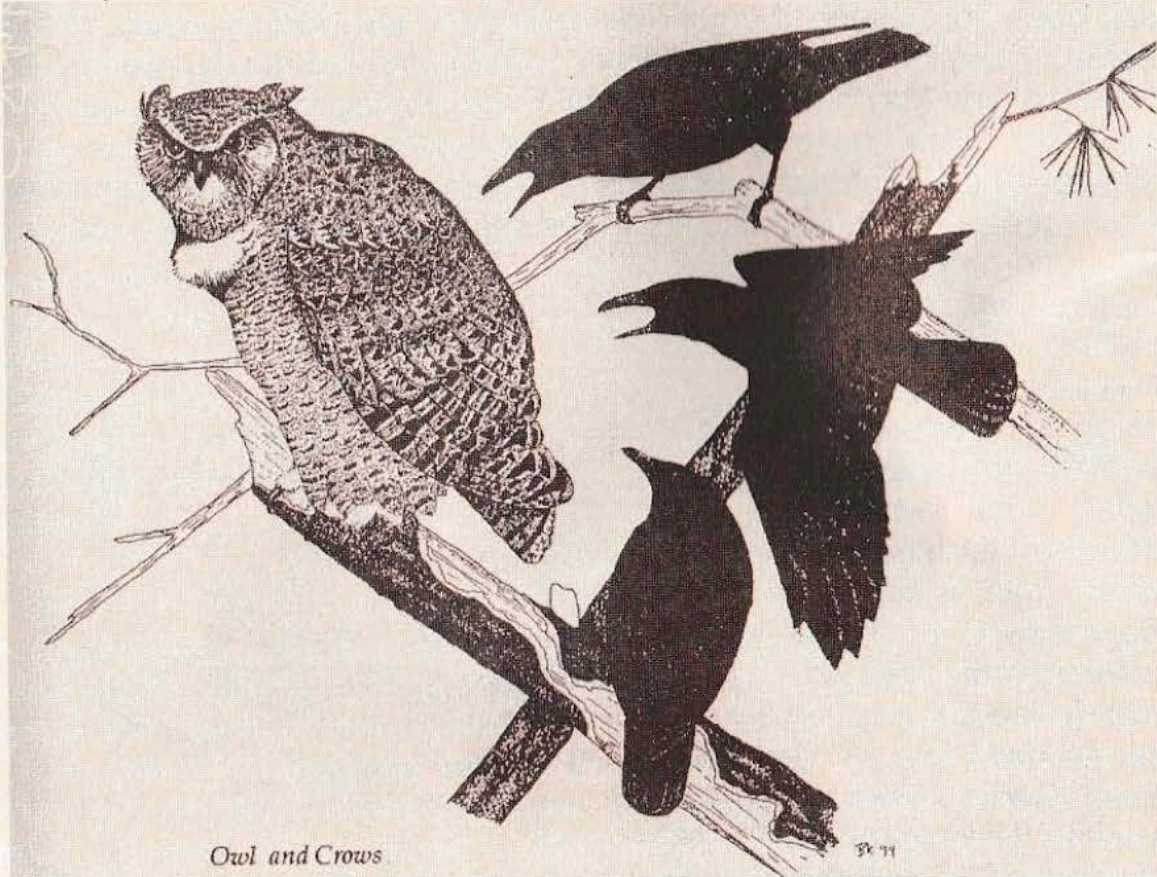
Sassafras

exude a spicy fragrance and the twigs have long been used to prepare an herbal tea. As you climb the terrace to the top of the kame, note the reappearance of large pine trees that grow well in drier soil.

7. At the top of the kame, one can look to the east, across the open portion of Shade Swamp and towards the Pequabuck River, a major tributary of the Farmington. Trees now obscure much of the swamp which, at one time, was more visible from this location. To the southeast, where the River intersects Route 6, is the approximate location where glacial outwash deposits blocked the original southward flow of the Farmington River, forcing it to flow northward toward Tariffville, as it continues to do today. In early spring, listen for the sound of spring peepers coming from the swamp below.

Wetlands like Shade Swamp serve important functions, not only as a habitat for wildlife, but also in flood control by absorbing water during flood stage and in purification of watercourses by filtering out impurities. Over the years, many Connecticut wetlands have been lost to development. Those who frequent this Sanctuary should be pleased that it has been preserved for all to enjoy. As you continue along the trail, please use care in descending this relatively steep slope.

8. The Pequabuck River has suffered from pollution generated by inadequate sewage treatment plants and industrial discharge. This



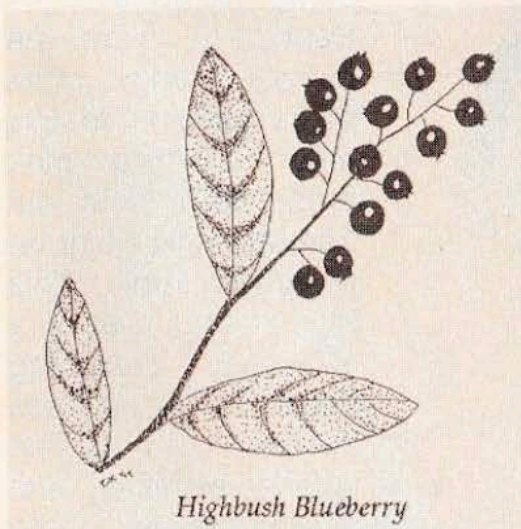
pollution limits the biological diversity of a swamp. Nevertheless, this remains a good area to observe wildlife at any time of the year. During the winter season, watch for tracks in the snow. In spring and fall, look for migrant waterfowl such as Canada geese, black duck, wood duck or mallard. In summer, look for signs of muskrat, whose dome-shaped houses constructed of marsh vegetation may be visible near the edge of the swamp. The quiet waters of the swamp breed mosquitoes and other insects, a nuisance to the hiker, but a source of food for numerous songbirds that make their nests in the grasses of the swamp. Great horned owls hunt the swamp and surrounding woodlands. They may be located by observing and listening to the crows that are common in this area. Crows do not care for owls and will attempt to harass them and drive them from an area. Investigate small groups of crows making a commotion in the pine trees anywhere along the Blue Trail. You may find an owl being driven from a daytime roosting spot. Owls may also be discovered by looking for "pellets." Owls swallow their prey whole, but they are unable to digest the bones and fur, rolling them up into pellets and regurgitating them. Should you find pellets on the ground, look up into the trees and you may find a roosting owl digesting last night's dinner.

From this vantage point, look across the swamp at the Rattlesnake Mountain ridge. Can you imagine what this view may have been like twenty, two hundred, or two thousand years ago?

9. The bristly green-briar found here continually encroaches upon the trail. This is a fine example of succession, a progressive change in the vegetation, and subsequently, in the animal life found in an area. Notice how the edge of the swamp is "drying out" and there are now grasses growing beneath the swamp red maples. Eventually, this area will be converted to forest similar to what you will now travel through as you leave the swamp and return to the beginning of the trail.

10. At this junction, the trail to the right returns to the red maple swamp. The Blue Trail continues straight towards the steep face of the terrace. A generation ago, this area was less forested. Bigtooth aspen, now gone, was a dominant tree. Aspens need a great deal of sunlight in which to grow. As the trees become larger, they provide shade that other tree species require for their seeds to germinate. The young trees thrive in the aspen's shade, growing taller than and eventually shading out the aspen trees. The aspens fall and quickly rot leaving nary a trace of their former dominance.

11. Two species of native pine trees, the pitch and the white pine, are common to this Sanctuary. In this area, two additional species of pine were originally planted. Red pines, common in northern New England, were planted about 1940. These trees are recognized by their reddish, scaly bark and long needles in clusters of two. The last of the red pine plantations have now died, the victims of disease and insect attacks.



Highbush Blueberry

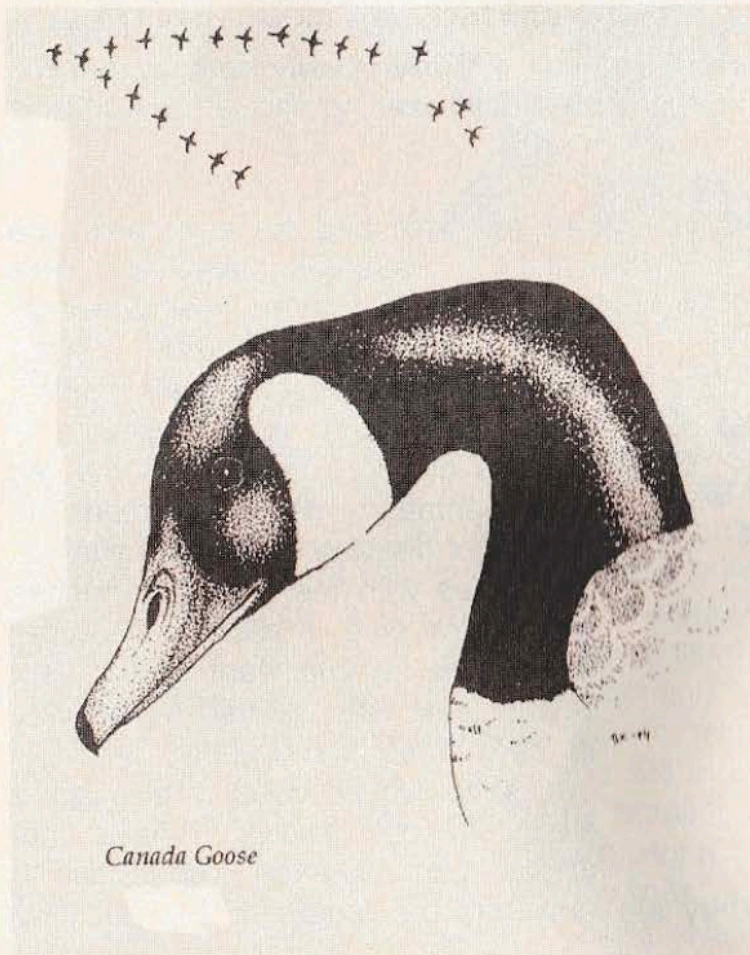
The pines with the orange branches are Scotch pine, a native of Europe, where it is an important timber tree. Scotch pine was planted extensively in early American forestry practice, but is no longer used to any great extent in this country. Note that Scotch pine needles also occur in

cluster of two, but that they are only half the length of the red pine needles.

12. This was once a good area in which to pick blueberries and huckleberries and you will see many of these ericaceous (members of the heath family) shrubs covering the forest floor. Now, however, the

shade of the trees prevents the development of fruit. Eventually, as succession progresses, the blueberry bushes will slowly disappear from this area.

13. Notice the many fallen logs on the ground in this area. These logs provide homes for a number of "decomposers," animals, plants and fungi that help the log to rot and return nutrients to the soil. Fungi come in a variety of colors. Unlike green plants, they possess no chlorophyll and cannot utilize energy from the sun to make their own food by means of photosynthesis. They derive their nourishment from the decaying plant material around them. Small animals like earth-worms, termites and millipedes feed upon the logs helping hasten their return to the soil. These small creatures, themselves providing food for larger animals, are an important component of the forest food web. Follow the trail along the terrace and descend, then turn left to follow the final section of the Blue trail. A wetland should be on your right.



Canada Goose

14. The Village Gate Retirement Community is to your left, a mere 75 yards up the slope. In summer, the foliage does a remarkable job of obscuring activity along the edge of the Sanctuary. Note the many young white pines growing in this area. White pine branches radiate out from a single point on the tree's trunk. This is known as a "whorled" branching pattern. The distance between two of the whorls signifies one year of growth. White pines grow more quickly in dry, well-

drained soils. Can you notice any differences in each pine's annual growth as you look up the terrace slope? Continue to the left trail junction, turn left, and retrace your steps to the trail entrance.

Birds of Shade Swamp Sanctuary

The following list includes species likely to be sighted on the Sanctuary property. Additional species are possible, particularly during the spring and fall migration. Unusual sightings may be reported to the Hartford Audubon Society (860-644-7353) or to Roaring Brook Nature Center (860-693-0263).

Great Blue Heron	Barred Owl
Great Egret	Long-eared Owl
Green Heron	Northern Saw-whet Owl
Canada Goose	Common Nighthawk
Wood Duck	Chimney Swift
Green-winged Teal	Ruby-throated Hummingbird
American Black Duck	Belted Kingfisher
Mallard	Red-bellied Woodpecker
Northern Pintail	Downy Woodpecker
Blue-winged Teal	Hairy Woodpecker
Common Merganser	Northern Flicker
Turkey Vulture	Pileated Woodpecker
Osprey	Eastern Wood Peewee
Sharp-shinned Hawk	Willow Flycatcher
Cooper's Hawk	Least Flycatcher
Northern Goshawk	Eastern Phoebe
Red-shouldered Hawk	Great Crested Flycatcher
Broad-winged Hawk	Eastern Kingbird
Red-tailed Hawk	Tree Swallow
American Kestrel	Rough-winged Swallow
Ruffed Grouse	Bank Swallow
Wild Turkey	Barn Swallow
Killdeer	Blue Jay
Solitary Sandpiper	American Crow
Spotted Sandpiper	Black-capped Chickadee
Least Sandpiper	Tufted Titmouse
American Woodcock	Red-breasted Nuthatch
Ring-billed Gull	White-breasted Nuthatch
Herring Gull	Brown Creeper
Rock Dove	Carolina Wren
Mourning Dove	House Wren
Black-billed Cuckoo	Winter Wren
Yellow-billed Cuckoo	Marsh Wren
Eastern Screech Owl	Golden-crowned Kinglet
Great Horned Owl	Ruby-crowned Kinglet

Blue-gray Gnatcatcher
 Eastern Bluebird
 Veery
 Swainson's Thrush
 Hermit Thrush
 Wood Thrush
 American Robin
 Gray Catbird
 Northern Mockingbird
 Brown Thrasher
 Cedar Waxwing
 European Starling
 White-eyed Vireo
 Solitary Vireo
 Yellow-throated Vireo
 Warbling Vireo
 Red-eyed Vireo
 Blue-winged Warbler
 Tennessee warbler
 Nashville Warbler
 Northern Parula Warbler
 Yellow Warbler
 Chestnut-sided Warbler
 Magnolia Warbler
 Cape May Warbler
 Black-throated Blue Warbler
 Yellow-rumped Warbler
 Black-throated Green Warbler
 Blackburnian Warbler
 Pine Warbler
 Prairie Warbler
 Palm Warbler
 Bay-breasted Warbler
 Blackpoll Warbler
 Black-and-white Warbler
 American Redstart
 Ovenbird
 Northern Waterthrush
 Louisiana Waterthrush
 Common Yellowthroat
 Wilson's Warbler
 Canada Warbler



Scarlet Tanager
 Northern Cardinal
 Rose-breasted Grosbeak
 Indigo Bunting
 Rufous-sided Towhee
 American Tree Sparrow
 Chipping Sparrow
 Field Sparrow
 Savannah Sparrow
 Fox Sparrow
 Song Sparrow
 Lincoln's Sparrow
 White-throated Sparrow
 Dark-eyed Junco
 Red-Winged Blackbird
 Rusty Blackbird
 Common Grackle
 Brown-headed Cowbird
 Northern Oriole
 Purple Finch
 House Finch
 Pine Siskin
 American Goldfinch
 House Sparrow

Plant List for Shade Swamp Sanctuary

The following list is not meant to be all-inclusive, but rather, is representative of the plants that can be found on the Sanctuary grounds. Please do not destroy, damage, remove or attempt to transplant any of the plants found within the Sanctuary. Leave all plants to be appreciated by those who will follow you along the Shade Swamp trails.

Trees, Shrubs and Vines

- Alder,
 - Smooth (*Alnus serrulata*)
 - Speckled (*Alnus rugosa*)
- Ash, White (*Fraxinus Americana*)
- Aspen, Quaking (*Populus tremuloides*)
- Beech, American (*Fagus grandifolia*)
- Birch,
 - Gray (*Betula populifolia*)
 - Yellow (*Betula lutea*)
- Bittersweet, Oriental (*Celastrus orbiculatus*)
- Blueberry,
 - Highbush (*Vaccinium corymbosum*)
 - Low (*Vaccinium vacillans*)
 - Low Sweet (*Vaccinium angustifolium*)
- Bristly Green-brier (*Smilax hispida*)
- Cherry,
 - Black (*Prunus serotina*)
 - Choke (*Prunus virginiana*)
- Chestnut, American (*Castanea dentata*)
- Crabapple (*Pyrus sp.*)
- Dogwood,
 - Flowering (*Cornus Florida*)
 - Gray (*Cornus racemosa*)
 - Silky (*Cornus amomum*)
- Grape (*Vitis sp.*)
- Hemlock (*Tsuga Canadensis*)
- Hickory, Shagbark (*Carya ovata*)
- Huckleberry, Black (*Gaylussacia boccata*)
- Sumac,
 - Larch, European (*Larix deciduas*)
- Laurel,
 - Mountain (*Kalmia latifolia*)
 - Sheep (*Kalmia angustifolia*)
- Maple,
 - Red (*Acer rubrum*)
 - Sugar (*Acer rubrum*)
- Oak,
 - Black (*Quercus velutina*)
 - Red (*Quercus rubra*)
 - Scarlet (*Quercus coccinea*)
 - Scrub (*Quercus ilicifolia*)
 - White (*Quercus alba*)
- Pine,
 - White (*Pinus strobes*)
 - Pitch (*Pinus rigida*)
 - Red (*Pinus resinosa*)
 - Scotch (*Pinus sylvestris*)
- Poison Ivy (*Rhus radicans*)
- Red Cedar (*Juniperus virginiana*)
- Rose (*Rosa sp.*)
- Sassafras (*Sassafras albidum*)
- Shadbush (*Amelanchier sp.*)
- Spicebush (*Lindera benzoin*)
- Spruce,
 - White (*Picea glauca*)
- Smooth (*Thus glabra*)

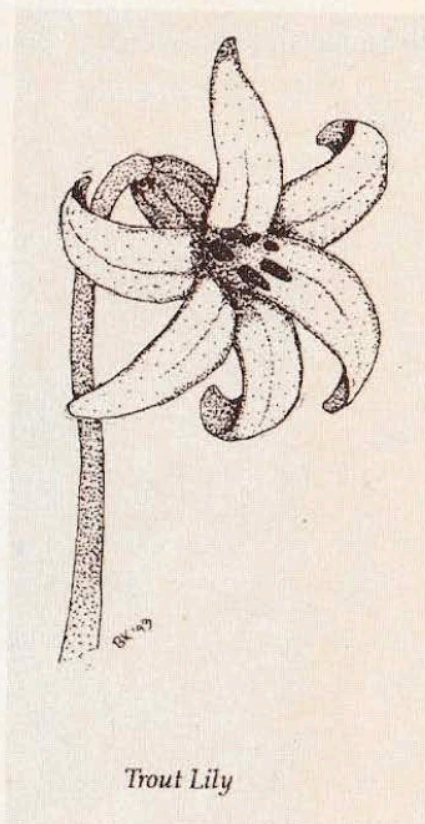
Staghorn (*Rhus typhina*)
 Sweet-Fern (*Comptonia peregrina*)
 Tupelo, Black (*Nyssa sylvatica*)
 Viburnum, Maple leaved
 (*Viburnum acerifolium*)
 Willow, White (*Salix alba*)

Winterberry,
 Common (*Ilex verticillata*)
 Smooth (*Ilex laevigata*)
 Witch-Hazel (*Hamamelis
 virginiana*)

Wildflowers

Arrow Arum (*Peltandra virginica*)
 Aster (*Aster* sp.)
 Bearberry (*Arctostaphylos uva-
 ursi*)
 Bluet (*Houstonia caerulea*)
 Boneset (*Eupatorium perfoliatum*)
 Bottle Gentian (*Gentiana clausa*)
 Canada Mayflower (*Maianthemum
 canadense*)
 Cinquefoil (*Potentilla* sp.)
 Duckweed (*Lemnaceae* sp.)
 Dwarf Ginseng (*Panax trifolius*)
 False Hellebore (*Veratrum viride*)
 Goldenrod,
 Lance-leaved (*Solidago
 graminifolia*)
 Rough-stemmed (*Solidago
 rugosa*)
 Jack-in-the-Pulpit (*Arisaema
 atrorubens*)
 Large Blue Flag (*Iris versicolor*)
 Marsh Marigold (*Caltha palustris*)
 Pickerelweed (*Pontederia cordata*)
 Pink Lady's Slipper (Moccasin
 Flower)
 (*Cypripedium acaule*)
 Pipsissewa (*Chimaphila umbellata*)
 Robin-plantain (*Erigeron
 pulchellus*)
 Skunk Cabbage (*Symplocarpus
 foetidus*)
 Spotted Jewelweed (*Impatiens
 capensis*)
 Spotted Wintergreen (*Chimaphila
 maculate*)
 Trout Lily (*Erythronium
 americanum*)

Wild Geranium (*Geranium
 maculatum*)
 Wild Iris (*Iris versicolor*)
 Wood Anemone (*Anemone
 quinquefolia*)
 Wolffia (*Wolffia* sp.)
 Yellow Iris (*Iris pseudocorus*)



Non-flowering Plants (Mosses, Club Mosses, Ferns)

Mosses

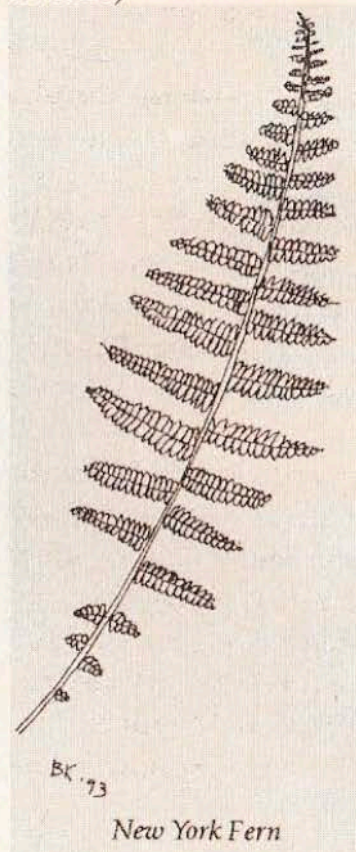
- Haircap Moss (*polytrichum commune*)
- Sphagnum Moss (*Sphagnum* sp.)
- Star Moss (*Mnium cuspidatum*)

Club Mosses

- Shining Club Moss (*Lycopodium lucidulum*)
- Running Ground Pine (*L. complanatum*)
- Wolf's Claw Club Moss (*L. clavatum*)
- Tree Club Moss (*L. obscurum*)

Ferns

- Cinnamon (*Osmunda cinnamomea*)
- Interrupted (*O. claytoniana*)
- Royal Fern (*O. regalis*)
- New York (*Thelpteris noveboracensis*)
- Sensitive (*Onoclea sensibilis*)
- Bracken (*Pteridium aquilinum*)
- Field Horsetail (*Equisetum arvense*)

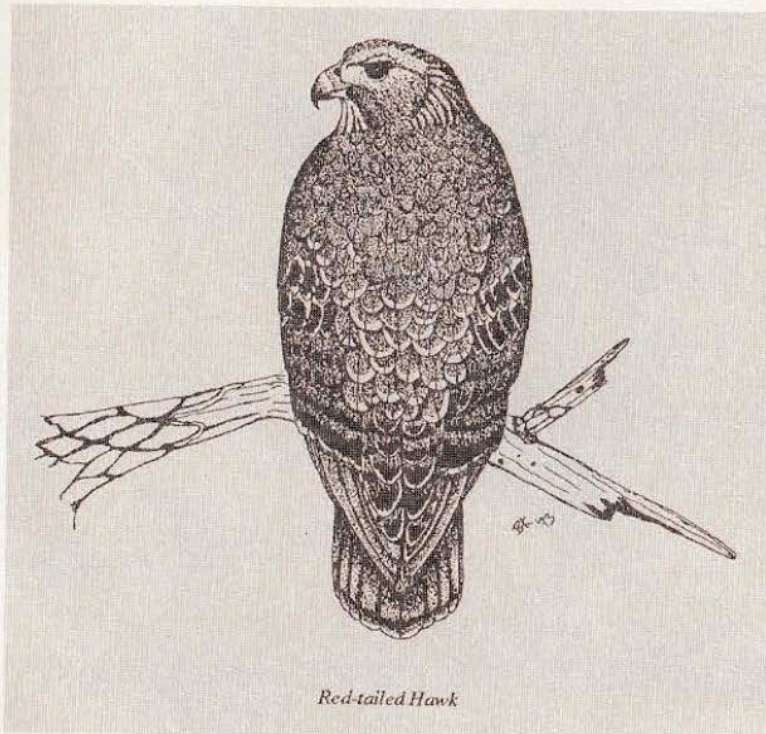


Mammals of Shade Swamp

Shade Swamp Sanctuary provides habitat for a wide diversity of mammal species. Many of these animals are nocturnal in their habitats and most are not likely to be seen by the casual observer. You may, however, find signs of these animals in the form of footprints, scat or feeding areas.

Opossum
Masked Shrew
Short-tailed Shrew
Hairy-tailed Mole
Star-nosed Mole
Eastern Mole
Little Brown Bat
Eastern Pipistrelle
Big Brown Bat
Red Bat
Eastern Cottontail
Eastern Chipmunk
Woodchuck
Gray Squirrel
Red Squirrel
Southern Flying Squirrel

Beaver
White-footed Mouse
Meadow Vole
Muskrat
Meadow Jumping Mouse
Coyote
Red Fox
Raccoon
Short-tailed Weasel
Long-tailed Weasel
Mink
Striped Skunk
River Otter
White-tailed Deer



Reptiles & Amphibians of Shade Swamp

Some of these species may be seen only at specific times of the year. Listen for the calls of frogs in the swamp and other wetland areas. Many of these species are seen only by the careful observer. Please note that there are no poisonous snakes in the Sanctuary.

Amphibians

Spotted Salamander
Northern Dusky Salamander
Northern Two-lined Salamander
Redback Salamander
Red-spotted Newt
Eastern American Toad
Fowler's Toad
Gray Treefrog
Northern Spring Peeper
Bullfrog
Green Frog
Pickerel Frog
Wood Frog

Reptiles

Common Snapping turtle
Painted Turtle
Spotted Turtle
Wood Turtle
Eastern Box Turtle
Common Musk Turtle
Northern Black Racer
Northern Ringneck Snake
Eastern Hognose Snake
Eastern Milk Snake
Northern Water Snake
Northern Brown Snake
Eastern Garter Snake

