

7. TREE CAVITIES



Many bird and mammal species rely on dead trees or snags for shelter and a place to nest. What you see here is a perfect example of a tree cavity made by an animal living here in the forest. Primary excavators are woodpeckers. Secondary nesters are birds and mammals that cannot make cavities on their own and depend on old and unused cavities.

Raccoons and birds such as Chickadees, Swallows, and Wood ducks are considered secondary nesters. During winter, different bird species will roost together in the same cavity. While their body temperatures drop dramatically, they fluff up their feathers and huddle tightly to conserve energy.

INDIAN PIPE INTERPRETIVE TRAIL



PRESERVE. PROTECT. EDUCATE.

Hirundo Wildlife Refuge
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Indian pipe or Ghost plant is a white herbaceous perennial plant and does not contain chlorophyll. Indian pipe forms a connection with both fungi and nearby trees and uptakes nutrients from both the tree and fungi. Since Indian pipe is not dependent on sunlight to grow, it can grow in very dark environments as in the understory of dense forest. Beech and pine trees are two species that Indian pipe uses.

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1. MAST



What are birds and mammals going to eat out here? Look around; try to notice trees and shrubs with mast. Mast consists of nuts, seeds, and fruits that animals eat. Big mast producers on this trail are Beech and Red oak trees. Their beechnuts and acorns provide fat and calories to sustain animals during migration and throughout winter.

While beech bark disease has diminished Beech tree populations, they still provide some mast. Although beechnut production has dropped significantly as the disease has spread. Oak trees are not found in large numbers further north than here at Hirundo, so beechnut production is an extremely important food source for mother animals such as Black bear. Look close; you may see claw marks from Black bears on Beech trees.



2. BEECH BARK DISEASE

Ouch! Those blisters look painful. Why do these trees have so many of them? Why don't other trees have them? What you see is a Beech tree with symptoms of the widespread disease called Beech Bark Disease. The relationship of an insect and a fungus causes the disease.

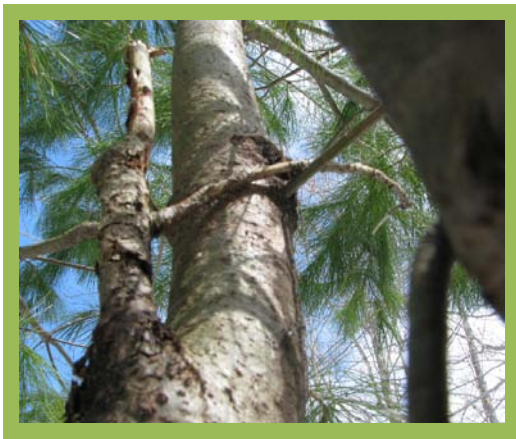


The beech scale insect makes tiny holes in the bark in order to feed, but these holes are large enough to allow the fungus, *Nectria coccinea*, to move into the tree as well. The insects move from tree to tree, carrying the fungal spores, spreading it to other beech trees.

Beech trees have no defense to this invasive disease and it has caused the life span and quality of beeches to decline.

3. WHITE PINE WEEVIL

Notice the lonely Eastern White pine here in the clearing. If you look closely towards the top of the tree you can see that the lead (terminal) shoot has been redirected several times. Why has the pine tree's growth been so irregular? The White Pine Weevil has caused this; an insect found throughout the state, which has negative effects to their host tree.



Overwintering females chew holes in the leader to feed and lay their eggs. Side shoots, also called lateral shoots, then take over the role of being the lead shoot. Weevils do not kill the entire tree, but by killing the lead shoot, it results in irregular, undesirable growth, and lowers its value as timber.

4. FUNGI

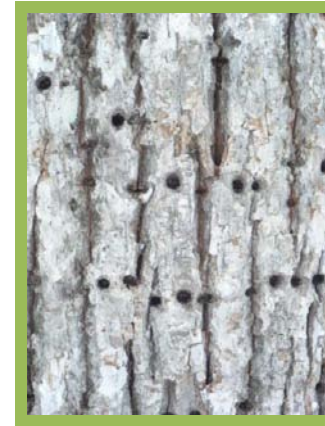


What is the purpose of fungi? We know some of it is harmful, such as the fungus that affects beech trees. Not all are harmful in fact; there are edible varieties and fungi that form beneficial symbiotic relations with plants are mycorrhizal fungi. Mycorrhizal fungi assemble in the upper soil layers breaking down old leaves, decaying wood and organic materials; absorbing water and nutrients that they pass onto trees through the plant's root system. Most fungi are beneficial and connect single trees to others creating a connected community; these helpful fungi pass nutrients from one tree to another.

**WARNING: Do not eat any of the fungi!
They may be poisonous!**



5. YELLOW-BELLIED SAPSUCKER



Holey Moley! What has happened to this tree? Take a look around. Are all the holes of similar diameter or are some noticeably larger than others? Is the tree located in a dense forest or are there some open spaces around it? You may think that an insect decided that this Ash tree was perfect for gnawing but these are holes of Yellow-bellied Sapsuckers.

Yellow-bellied Sapsuckers like forests with open spaces and gaps. The holes they create allow them to feed on the sweet sap and cambium, but the holes also attract insects, which the Yellow-bellied Sapsucker relies on for protein.



6. PORCUPINE

Stop and look to your left and right. Look up. Do you see the trees whose bark has been gnawed off? This is the work of a porcupine. We often imagine porcupine as being slow and dangerous, but they are excellent climbers and spend much of their time in trees! The North American porcupine is the largest of all porcupines. A single animal may have 30,000 or more quills! Porcupine are a favorite prey for fisher.

North American porcupines use their large front teeth to eat bark, stems, and twigs, and have been known to invade campgrounds and chew on canoe paddles and privies. Hemlock trees are a top choice for food; often you will see branches fallen to the ground around the tree. A porcupine can feed on one tree all winter long as it dens in a nearby suitable tree cavity.

