

HIKING TRAILS AT SQUAM LAKES NATURAL SCIENCE CENTER

Ecotone Trail

Distance: 1/3 mile

Time: 30 minutes

An ecotone is the “edge” where two different natural communities meet. Examples of ecotone areas include the shore where a lake and forest meet, the edge between a marsh and field, and the area between a thicket and pasture. The Ecotone Trail is a short hike following the boundary between field and forest. You will see excellent habitat with an abundance of food and shelter for numerous animals.

Forest Trail

Distance: 2/3 mile (follow the YELLOW blazes)

Time: 1 hour

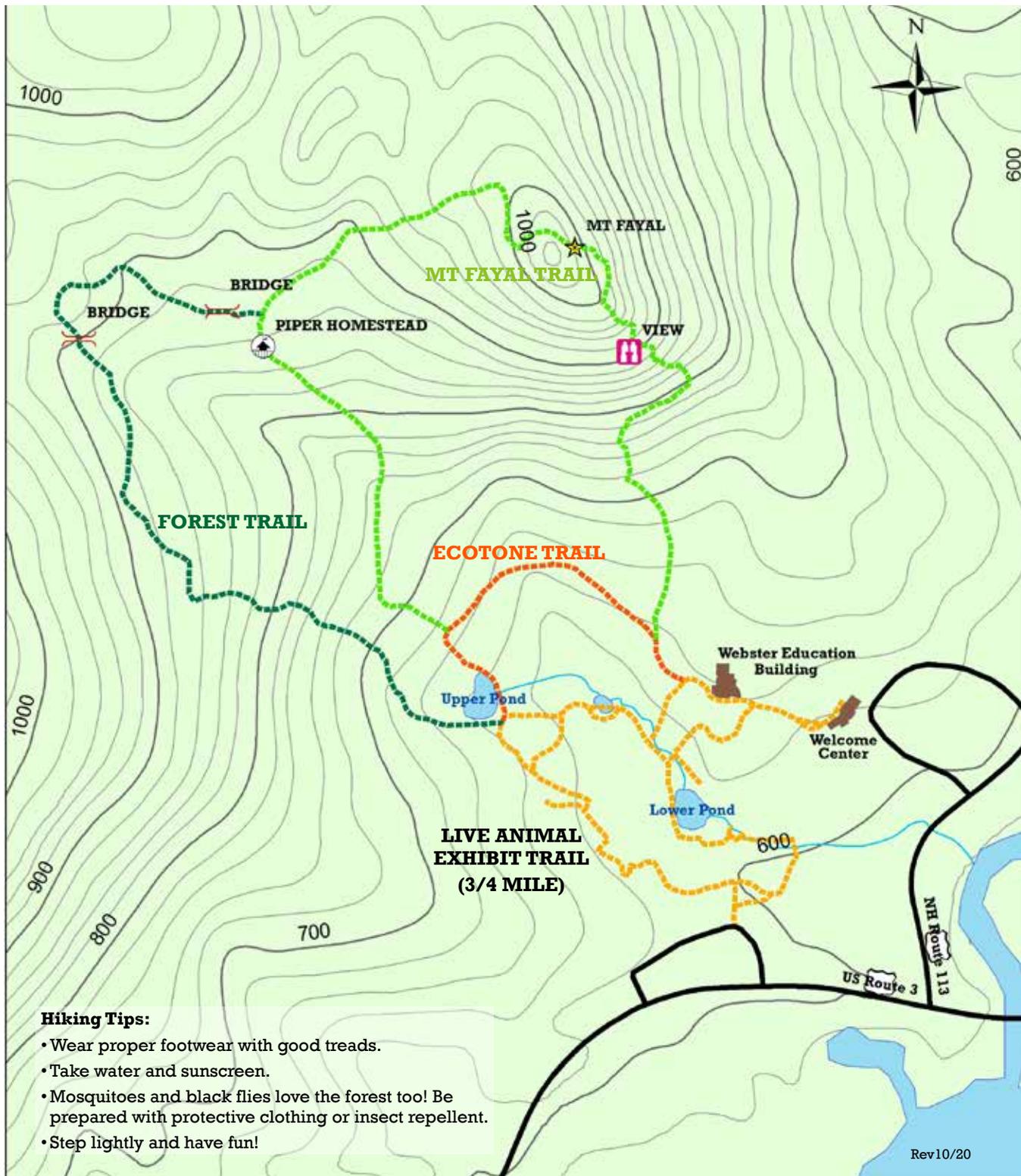
Explore 30 acres of forest. See reverse for self-guided trail interpretation to spot evidence of past and present human use, look for signs of how wildlife use and respond to an ever-changing forest, and see how forests can be managed for wood and wildlife. Along the way you'll see a few areas which have been harvested using different forestry techniques to demonstrate their effect on trees, wildlife, and other plants. Numbered posts will highlight learning stops along the way.

Mt. Fayal Trail

Distance: 1 mile (follow the RED blazes)

Time: 1 hour

This trail to Mt. Fayal, elevation 1,067 feet, offers beautiful views of Squam Lake. You may catch a glimpse of some truly wild creatures or interesting plants and trees. You will also be able to find signs of past human activity on this mountainside, such as the remnants of the old Piper Homestead. It includes the ruins of stone foundations of both the farmhouse and barn, and the stone walls outlining former sheep pastures. You will also walk along what once was the carriage road leading to the Piper Homestead.



Hiking Tips:

- Wear proper footwear with good treads.
- Take water and sunscreen.
- Mosquitoes and black flies love the forest too! Be prepared with protective clothing or insect repellent.
- Step lightly and have fun!

FOREST TRAIL: INTERPRETATION GUIDE | A FOREST FOR EVERYONE

1. Reproducing is Risky Business



Most trees must produce huge numbers of seeds to ensure their reproductive success. While a single mature oak tree may produce as many as 15,000 acorns per year, only around 60 of these successfully grow into mature trees! Acorn predation by birds, mice, and squirrels (not to mention bears, raccoons, and deer) is a particular problem for these oak trees. While squirrels and jays do hide, or cache, some acorns which later sprout, many more are eaten. To thwart these acorn predators, the oak's acorn crop varies tremendously from one year to the next. A crash in the crop one year may cause a crash in the acorn eaters' numbers as well, leaving a greater chance of seed survival the following year. These seeds will eventually help repopulate the clear-cut area visible from this spot.

2. Not all Pioneers are People

Pioneers rush in to take over new territory. When this area was clear-cut 70-80 years ago, birch and aspen sprouted where larger over-story trees once stood. They eventually created enough leaf cover for shade-loving beech and oak trees to establish and become dominant. A careful look may reveal old stumps that are evidence of this past tree harvest. Natural clearings caused by wind, lightning, insect attacks, and even beavers allow the same successional process by creating openings for fast-growing aspen and birch "pioneers". In time, their branches and leaves will shelter and allow shade-tolerant trees, such as beech and maple, to grow.

3. A Forest Returns

Much of New Hampshire has been logged repeatedly for timber or was cleared to make room for farms in the 17th and 18th centuries. A secondary forest returned when these farms were abandoned in the 19th century, and clearings were allowed to regrow. It may take a forest as long as 150-500 years to return to its primeval state. You are surrounded by a good example of the northern hardwood forest that makes up a large portion of southern Canada, northern New England, New York and Pennsylvania. It is considered a transitional forest because it includes tree species found in the oak-beech-hickory forests to the south and the spruce-fir boreal forest to the north. Key tree species of the northern hardwood forest include sugar maple, yellow birch, beech, red oak and ash with some white pine and hemlock (although there are no hemlocks in this spot).

4. Dead But Not Gone

Many people instantly think of firewood when they see a dead tree. Instead, think of wildlife! Dead trees are as important as living ones in a thriving forest. Large, dead hollow "snags", as well as living cavity trees, provide nesting sites for over 40 wildlife species in New Hampshire, including numerous bird species and mammals such as flying squirrels, raccoons, and gray foxes.

These snags have provided an insect lunch for numerous woodpeckers, as evidenced by the large number of holes in their trunks.



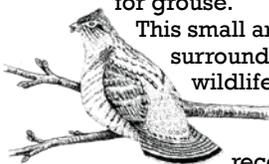
5. Tiny Insect vs. Mighty Pine

The large, multi-trunked pines all around you were shaped by a tiny insect called the white pine weevil. These trees undoubtedly grew up in an open pasture after other trees were harvested decades ago. In a sunny situation, weevils attack the terminal tips of a pine's main stem, causing side branches to grow upward and take over. While not valuable for lumber, these trees provide terrific nesting sites for some bird species and most likely produced the seed that started the better quality, single-stemmed white pine stand along the trail.



6. Nothing is Forever

Throughout history, fires, hurricanes, and farming have opened up patches of New Hampshire's forests. When sunlight floods in, a new generation of trees rapidly takes over. These small clearings can create temporary wildlife buffets, providing young twigs and shoots that are an excellent food source for deer, moose, and snowshoe hare. Buds of pioneering aspen and birch provide healthy meals for grouse.



This small area was clear-cut in 1995 out of the surrounding even-aged forest to help increase wildlife diversity. The tall saplings that have grown up since the clearing show how rapidly the forest begins to recover.

7. Better to Be Thin?

Trees, like everything else, are in a race for survival, competing for light and growing space. If overcrowded, the weaker trees die from lack of sunlight, insect attacks and disease. Here, many weak, poorly formed and diseased trees were thinned out to allow others to spread out and form a dense, healthy canopy. Look carefully on both sides of the trail for dead "snag" trees that were spared during logging in order to provide wildlife food, dens, and nesting sites.

8. Rotten to the Core, but Good as Gold

Even in death, trees provide valuable nutrients and living spaces for other plants and animals. It could take decades for this fallen tree to decompose. Meanwhile, as fungus actively reduces wood fiber to soil, slugs, centipedes, spiders and salamanders hide underneath the log. Wood-boring beetles and wasps squeeze beneath the bark for shelter and egg-laying, and moss clings to the surface. Thousands of microscopic mites bore



through the decaying wood itself, eating fungus and each other, while larger animals like mice and shrews find food and homes in this rotting pile of organic "gold".

9. Trees Have Preferences Too

Some trees prefer rich, fertile soil, while others thrive in dry, sandy soil. Look uphill to the top of the knoll. You'll see a stand of white birch and sugar maple trees growing on the ridge in the sandy, gravelly soil of a glacial esker formed during the last Ice Age, 12-14,000 years ago. An esker is a ridge formed when a stream flowed on or under the ice sheet, depositing sand and gravel along the way. Tree species are often good indicators of the soil type below.

10. Old, But Not Ancient

Nearly all of New Hampshire's forests have been logged, often repeatedly, during the past two centuries, leaving nothing as old as the old growth forest found in the western United States. This pocket of sugar maple, pine, and hemlock, however, is quite old (approximately 150 years) for New England. Some wildlife species such as the lynx prefer such old growth and need large continuous areas of older trees to meet their habitat needs.

11. Don't Fence Me In!

This forest was a sheep pasture until around 125 years ago. In fact, by the mid 1800's, nearly 75% of New Hampshire was cleared for farms and to fuel factories. Evidence of past agricultural use of this land includes stone walls, the homestead ruins found further along the trail, and old barbed wire. What signs of human activity can you detect as you continue along the trail?



12. Short-lived but Full of Life

Vernal pools are temporary springtime pools, filled with snowmelt and spring rain, which normally dry out by mid-summer. This pool teems with mating wood frogs and salamanders in early spring. Their tadpoles and larva must mature rapidly and leave before the water dries up. Why raise a family in such a risky location? Since they dry up, vernal pools contain no fish which prey on eggs, tadpoles, and adults.



13. Use It Like the Future Depends On It

The forest is a truly renewable resource. With careful management, this forest can continue to support future generations of both wildlife and humans. Managing the forest means protecting and valuing the resources it contains.