

SELF-GUIDED NATURE TRAIL

SLIM BAKER AREA

301 New Chester Mountain Road
Bristol, NH



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Welcome to the non-profit Slim Baker Foundation, created in 1953 to oversee the Slim Baker Area for Outdoor Living. The Slim Baker Area, a 135-acre tract of conserved land on Little Roundtop Mountain in Bristol, New Hampshire, is a memorial to Everett "Slim" Baker, a dedicated, much-loved local conservation officer with the New Hampshire Fish and Game Department, who dreamed of setting up a "school for outdoor living" in the Newfound Lake area. The Slim Baker Area is the fulfillment of that dream.

For over six decades, the foundation has adhered to the two goals of the organization's original founding document:

- *To provide programs of outdoor recreation, nature study, and practical conservation for residents of the Newfound area and visitors.*
- *To perpetuate the memory, ideals and ideas of Everett D. "Slim" Baker, long-time resident and conservation officer of the area, and true lover of nature and mankind.*

The Slim Baker Area is maintained by the Slim Baker Foundation, and is open year-round for hiking, snowshoeing, and camping.

This self-guided nature trail follows two established trails at Slim Baker, starting on the Stephens Trail (orange blazes), near the Slim Baker Lodge, and connecting to the Greenan Trail (yellow blazes), near the back of the summit, making a loop back to the parking area. The trail requires approximately an hour to walk and can be completed either clock-wise or counter clock-wise. Starting from the Stephens trail, you will gain approximately 160 feet of elevation to the top. From the Greenan trail, you will gain approximately 180 feet. All trails require suitable footwear for some places of rough and steep terrain.

The natural features covered in this guide have been limited to those seen in most seasons, however, in proper season, look for the many flowers, birds, insects, and other wildlife which makes their home in the Slim Baker Area. To help you observe birds and other animals that frequent the area, it is suggested you bring binoculars and perhaps a bird or wildlife identification guide. We ask that you follow the guidelines for "HikeSafe", a program of the New Hampshire Fish and Game department. You can find more information here: <https://hikesafe.com/>

Stephens Trail – (counter-clockwise approach of the nature trail)

Stop One

"Eastern Hemlock"

Entering the Stevens Trail, you will see a variety of sizes of the eastern hemlock tree (*Tsuga canadensis*). This area is a softwood shelter, offering winter shelter for white-tailed deer (*Odocoileus virginianus*) from the wind and deep snow. The eastern hemlock is a shade-tolerant evergreen native to the United States. It has broad, pyramidal, pendulous, and widely-spaced branches, with fine, dark-green needles that give it a delicate, lacy feel. The tree has abundant brown cones that hang from branches like small ornaments. Look closely at the bark of the trees and you will see what is called stripping, which occurs when the white-tailed deer use their lower teeth to strip back the bark as a food source in winter. Another food source found in this area is *mast*, the fruit of forest trees and shrubs such as acorns and other nuts, important in the fall when the deer work to put on fat for winter survival.

Stone Walls

Stop Two

"Stonewalls Of New England"

Did you know that the origins of New Hampshire's stone walls date back to between 30,000 and 15,000 years ago when the Laurentide Ice Sheet made its way southward? As the ice sheet melted and receded, it left behind unsorted material from clay to boulders. Slate, schist, granite and gneiss bedrock were part of the materials left behind. Called *till*, it is the successful, key ingredient to New England's agricultural economy. Most stone walls were actually made from melt-out till, the geological material left above the lodgement till. Lodgement till is subglacial sediment or material that has been eroded from the underlying rock by the ice, therefore moved by the glacial ice until its deposition.

Many believe that New England's stone walls were created in the Colonial era, but in fact, they were erected much later in the 18th century. During that period, large-scale deforestation exposed more of the area's soils, allowing a deeper freeze / thaw cycle, pushing more stones to the surface. The golden age of stonewall building was between 1775 and 1825 of the Revolutionary period.

Stone walls are also extremely useful to many wildlife species, from foxes and chipmunks to insects and salamanders. The walls provide a useful travel lane, which has the benefit of elevation for stalking prey along with providing safe, covered areas for small rodents.

Trail Sign and Sharp Turn

Stop three

"Dead Trees"

White oak (*Quercus alba*) and red oak (*Quercus rubra*) belong in the classification of either the white oak group or the red oak group. If you can learn to place an oak into one of these two groups, you have taken your first step in identifying oaks. Here you will find a red oak, which has pointed lobes in its leaf structure and is slightly darker in coloration than a white oak, which you will see in an upcoming station. Red oak leaves also tend to be larger than white. Oak trees can produce

more than 2,000 acorns every year, providing an important food source for wildlife in the area. It's common for acorn crops to vary from year to year, though most oak species produce a good crop of acorns every two or three years.

As you look around, find the tree with the cavity or hole in it - you will find it in a white pine (*Pinus strobus*). This pine tree is relatively healthy but it has a cavity started, presumably by a woodpecker.

You will also see a dead tree in this area as well. Dead trees provide an ecological value which includes providing wildlife habitat, cycling nutrients, aiding plant regeneration, decreasing erosion, influencing drainage and soil moisture, along with being a carbon storage source. Small birds and rodents find the cavities to be ideal for many reasons. Woodpeckers depend on dead trees for food and shelter. Approximately 45% of all bird species depend on dead trees at some point in their life cycle. Some nest in trees, some create nests on broken top snags, and others forage for insects on the bark. Bats roost in the flaking bark of snags and cavities. Amphibians, such as salamanders can be found in abundance when there are dead trees on the ground.

Looking around at this forest type, the hemlock-hardwood-pine forest is the most wide-spread habitat in New Hampshire. It is considered the "transitional forest habitat between lower elevations of Appalachian oak-pine habitat and the hemlock- hardwood-pine forests which cover almost 50% of New Hampshire, most of it south of the White Mountains" (extension.unh.edu/resource/hemlock-hardwood-pine-forests).

The understory of this forest type plays an important role within the shelter aspects. It has been thought that squirrels may play a key role by burying acorns, which helps to regenerate oak stands. This typically happens under stands of white pines.

Cardigan View

Fourth stop

"Food Sources & Views"

Between two White pine trees on your uphill ascent, you can view Cardigan Mountain in the background, to your left. As the crow flies, the mountain is less than 6 miles away. In geologic terms "the Cardigan Pluton is the largest in New Hampshire and is part of the New Hampshire Plutonic Series, which were created and emplaced during the Acadian Orogeny" (<http://www.geologyuppervalley.com/p/mt-cardigan.html>).

Looking at the ground cover in both north and east corners, you can find low bush blueberries (*Vaccinium angustifolium*). Lowbush blueberries provide a sweet meal to grouse, turkeys, mourning doves, thrushes, bluebirds, and scarlet tanagers. These small, flavorful and antioxidant-packed fruits are common in abandoned fields, in succession forests, on mountaintops, and along roadsides. They grow best in well-drained, gravelly soils with a surface layer of organic *duff* with a pH of 4.0 to 5.0, but will not thrive under a forest canopy that offers dense shade.

Lowbush blueberries are spread both by seed and through the growth of underground stems called rhizomes. Over many years, a seedling will develop into an irregular plant mat that can

stretch from a few inches to many feet in size as rhizomes gradually grow out into surrounding soil. These mats are called clones, since all the stems in these mats are identical.

There are two species of lowbush blueberries that dominate the New Hampshire landscape:

- *Vaccinium angustifolium* - "low sweet," is our dominant species, especially in the southern counties. It has smooth leaves and stems. Fruit color can range from light, powder blue to jet black.
- *Vaccinium myrtilloides* - often called "sour top", is more common in the northern areas of the state and on mountain tops. Its leaves and stems have fine, white hairs and plants are usually more branched than *V. angustifolium*.

(Reference: <https://extension.unh.edu/resource/growing-fruits-wild-lowbush-blueberries-fact-sheet>).

Young Forests

Fifth stop

"Forest Succession"

The meaning of bio-diversity can be confusing to many people. It is not hard to figure out that it refers to the number of plants and animals found, however it also refers to the number of species, rather than to the number of individuals. This distinction is important in understanding why aged forests are not as diverse as new forests. They may contain a large number of individuals, yet may have very few different species, and thus are not very diverse at all.

As forests get older, conifers and hardwoods take over from the fast-growing softwood trees. These trees produce great amounts of shade and don't allow the sun-loving bushes adequate sunshine to be able to grow abundantly. The number of species thus dwindles to those that can live in limited sunlight. This limits the number of kinds of plants that can survive, cutting down on the number of species that are found.

Likewise, the number of animals, having fewer kinds of plants to eat, become represented by fewer species. If they can't eat, they can't survive. For the same reason, predators drop in number and species because there are fewer prey to feed upon. Moral of the story: habitat diversity creates species diversity.

White Oak
Sixth stop
"Oak Trees & Acorns"

As you continue to climb, you may have seen the lobed leaves of the white oak (*Quercus alba*). It is one of the pre-eminent hardwoods of eastern North America. The bark is light ash-gray, scaly or shallow-furrowed, variable in appearance, often broken into small, narrow, rectangular blocks and scales. The leaves are dark green to slightly blue-green in summer, brown and wine-red to orange-red in the fall. The fall foliage is showy. Acorns are produced generally when the trees are between 50-100 years old. White oak species are at the northern edge of growth within this general location.

Glacial History of the Slim Baker Area
Seventh stop
"Glacial History"

The valley below was once part of the Glacial Lake Franklin Deposit that had extensive glaciofluvial and glaciolacustrine deposits along the valley walls of the Pemigewasset River Valley. Below, towards the Pemigewasset river (not viewable from this site) are Stream Terrace Deposits from the Pleistocene to Holocene era. Within this area are sand and boulders on terraces which were created by post-glacial deposition, or erosion of glacial deposits. Many of the stream terraces identified in this area are believed to be re-worked deposits graded to the level of Glacial Lake Merrimack following the drainage of Glacial Lake Franklin.

Along the southeast sides of the Little Round Top area, there is more till, along with boulders that would have peeled off as the glacier receded. Looking at the rocks as you hike along, one may think that the linear marks on the rocks are glacial striations, or the grinding marks left behind during movement. The marks are actually the movement of the flat ocean floor, which was uplifted and tilted during continental collisions of Pangea. The bedrock formations are part of the folding of the rocks during this process, along with the depositional layers in its creation.

As you look closely, you may see what is called "Stoss & Lee" formations or topography. This type of glaciated landscape exhibits small hills or other formations, and gentle, eroded slopes on the up-glacier or upstream side. On the steeper side or the lee side, it is less eroded. You can see several of these formations along the Stephens Trail.

Summit
Eighth stop
"Summit of Little Round Top Mountain"

Welcome to the Summit of Little Round Top Mountain, elevation 1,093, overlooking the town of Bristol, NH. This area is also referred to as Inspiration Point. Ahead, you can see the wooden cross, and to the right, there is memorial to Dean Stevens. As you scan the area, you can see low bush blueberries, which provide a source of food for animals as noted in an earlier station.

Notice the open area in the forest below. This area was recently harvested in an effort to attract migratory songbirds, create edge habitat, and retain the view shed of the mountains beyond and of the town below. Forested edges provide migratory birds, and other wildlife species, with the necessary food and cover needs for survival.

It is also important to mention the soil type. Along the summit, this area consists of dry ridges and hilltops which encompass shallow soils sitting on ledge underneath, therefore trees are shorter due to fewer nutrients and harsher growing conditions.

During the month of September, the summit is a great spot to view broad-winged raptors, such as hawks and falcons, during migration. They tend to concentrate in large numbers as they use warm air currents rising from the ground, called thermals, and updrafts off ridges, to aid in migration. Both thermals and updrafts allow the birds to soar on the wind and minimize flapping, which conserves energy.

Take a closer look at the rock formations around you. On the north side of the cross on the summit, you can see several rock types. Quartzite can be light brown to white, or light gray on weathered surfaces. Upper Rangeley Formation rock type, which is rust-colored due to the iron rich or sulfidic presentation, is also present here. Meredith porphyritic granite can also be seen, which has giant phenocryst of orthoclase feldspar in it. Look around to see if you can find traces of this beautiful rock.

Back side of Summit to Shelter

Ninth stop

"Hemlock Trees in Winter"

As you turn 180 degrees from the cross, you now face the southeast. In front of you are hemlock trees with large overhanging branches. These branches and the dense population of this species at this particular spot, create a shelter area, which serves as a winter habitat for deer. Lower snow depths, and the thermal layer this creates, is attractive to deer. South facing slopes tend to have greater snow melt in the winter which allows deer to paw through to access acorns as a food source.

Continuing on the Stephens Trail, you will descend down to the lean-to. As you descend, notice the rock ledge. Some trees in this area are smaller on this ledge area but may in fact be older than other trees of their size. Trees growing along the ledge have limited access to nutrients along with tougher growing conditions as soils in this area can be shallow.

Area Around Lean-to shelter

Tenth stop

"Dead & Downed Trees"

Just above the Lean-to shelter and after the trail levels off, notice the taller trees which provide perches for avian predators. Dead trees provide smaller mammals, insects, and amphibians, with detritus organic matter. Detritus refers to the remains of dead plants and animals, like fallen leaves, manure, and litter. It is a collective term given to all these things found in the soil. New England has the greatest biomass on the landscape, attracting the eastern red-backed salamander (*Plethodon cinereus*), among other organisms such as earthworms and millipedes.

After Lean-to Shelter / Greenan Trail

Eleventh stop

"Small Gap Openings in Forests"

As you continue to descend beyond the Lean-to shelter, there are several small gap openings provided by forestry practices which also happen from natural treefall. This gap opening provides a hole in the canopy which can influence nutrient cycles and preserve the biodiversity of late successional forests.

Look closely at the ground and notice that as the trees move off the ridges and onto the lower slopes and benches, or flatter areas on the slopes, the trees gain in height and grow more vigorously. The nutrient accumulation in this area makes the soils richer and deeper. Upslope, where the soils are thinner, the mineral and organic matter have moved downward during rainfall and snowmelt.

There are more sugar maple trees in this area, and because this species requires nutrient-rich soil to thrive, we know there is a higher content of nutrients. Looking under the taller hardwood trees, you can see that there is an understory of trees. In this understory, or under closed canopy, you will find shade-tolerant species such as beech, hemlock, and spruce trees, just waiting for an opening in the canopy above to take off.

Rock ledge Area

Twelfth stop

"Rocky Habitats"

After slightly descending, you will now ascend along the near-vertical ledges of the northeast aspect below the summit of Little Round Top. Notice the jagged rocks and the small cave-like entrances above. Areas like this are attractive to bears, bobcats, and porcupines, for denning sites. Denning simply means a place of shelter, retreat, a cave or hiding place for an animal. To know if a porcupine is denning in the area, look for *nip* trees as evidence of porcupines in the areas. *Nip* trees are typical of porcupines feeding on hemlocks in winter.

Rocky outcrops such as this typically sustain mountain maple trees (*Acer spicatum*), ferns, and lichen. Considered one of the toughest organisms on earth, lichen, or lichenized fungus, is actually two organisms functioning as a single, stable unit. Lichens comprise of a fungus living in a symbiotic relationship with an algae or cyanobacterium (or both, in some instances). There are about 17,000 species of lichen worldwide. Ferns are a group of vascular plants that reproduce via spores and have neither seeds nor flowers. Types of ferns you will find growing in the Slim Baker Area include sensitive fern (*Onoclea sensibilis*), cinnamon fern (*Osmundastrum cinnamomeum*), and christmas fern (*Polystichum acrostichoides*), along with a few others.

Stumps

Thirteenth stop

"Tree Stumps"

As you move along the trail, you may see tree stumps of various sizes. Some stumps are from timber harvesting and some are from trees falling on their own. Ruffed grouse (*Bonasa umbellus*) will use these logs as drumming logs.

Male ruffed grouse, also known as partridge, are aggressively territorial throughout their adult lives and typically defend roughly 6-10 acres of woodland, which is usually shared with one or two hens. This "drumming" display, during which he creates a sound reminiscent of a lawn mower starting up, is his way of defending the property he has claimed. This sound is made by the male beating his wings against the air to create a vacuum. The drummer usually stands on a log, stone, or mound of dirt, roughly 10-12 inches above the ground when drumming, hence the name "drumming log." He does not strike the log to make the noise; he only uses the drumming log as a stage for his display.

Notice again that there are snags above and dead trees below, where the standing dead tree provides feeding and nesting areas for birds and mammals, such as owls and woodpeckers. Downed woody material provides habitat for fungi, moss, insects and other invertebrates, amphibians, snakes, and small mammals. It is also important to note that dead trees are important for nutrient cycling and the creation of future soil.

New / Intermediate Growth – (timber harvest near parking lot)

Fourteenth stop

"Early Successional communities"

You have now walked past an opening in an old stone wall, an important link to our history of farming, as referenced earlier along the hike. You may have also noticed the opening of a small clear-cut, looking up towards the summit, which provides for edge habitat and the clearing of the view shed to the mountains above. Now you start to descend along an old logging road and make a sharp left or northerly turn. Along this section of trail, you can see a younger forest, which provides cover and a food source for many wildlife species, including birds and bats that can find insects within this forest type. Known as early successional communities, these areas contain shoots and sprouts of young trees springing up again in incredible numbers from the root systems of older trees following a timber harvest. Moose and deer will browse in this habitat for food and the high stem density of these younger trees attracts grouse, woodcock, and snowshoe hare. To keep the land healthy, we need a balance of different habitats, including both mature tree stands and younger forests.

Look closely, and you will see that the trees are approximately the same age. This area was cut using a timber harvest technique called Selection Harvest. The reasons for this harvest were for specific results deemed by the working forester of the Slim Baker Foundation. These forestry results included improving the growth of desirable trees while creating conditions for regeneration of desired species of new trees. The skid trails and group openings have a wider range of species regenerating because more sun is reaching the ground and leaf litter was

scarified. Scarification, in botanical terms, involves weakening, opening, or otherwise altering, the coat of a seed to encourage germination. Scarification is often done mechanically, thermally, and chemically. The seeds of many plant species are often impervious to water and gases, thus preventing or delaying germination.

Along Stonewall / Near Additional Parking Lot

Fifteenth stop

"Reading The Landscape to Unlock Its History"

As you look around the area, including as you walk closer to the trailhead parking lot, you can see many large white pine in the area. White pine will be more of a component of the future stand rather than a dominant species. White Pine growth is a sign, which can provide a picture to explain species succession after field abandonment. Pines regenerate well in old fields because they compete better in grass than hardwoods do. Although this type of soil might be better suited for growing hardwoods, its past use as field favors pine growth. As the forest progresses beyond its field origin, hardwoods will regenerate more easily.

About Us:

The Slim Baker Area is a 135-acre tract of conserved land on Little Round Top Mountain in Bristol, New Hampshire. This area was set up in 1953 as a memorial to Everett "Slim" Baker, a local conservation officer with the New Hampshire Fish and Game Department. Slim dreamed of setting up a "school for outdoor living" in the Newfound Lake area. The Slim Baker Area is the fulfillment of that dream.

When Slim became sick in the spring of 1953, six men from the community were instrumental in making Slim's dream come true. The following men were: C. Maurice Gray, Superintendent of Schools; John C. Greenan, Bristol's physician; Albert Genetti, Principal of the High School; Cheever Newhall, manager of his family's Pinnacle Farm Apple Orchard; Luther Mitchell, co-owner of Cardigan Sports Store; and Richard "Wink" Tapply, Director of Bristol Community Center now known as the Tapply Thompson Community Center.

Reba Follansbee donated 125 acres of land in honor of her father Herbert, for the development of a recreation and conservation area encompassing the Little Round Top area and the surrounding land that now makes up the Slim Baker Area.

Thank you for taking the time to walk the Slim Baker Self-Guided Nature Trail. The work of our foundation relies on our generous volunteers and donors. Please consider donating to the Slim Baker Foundation, where every dollar helps to provide educational opportunities to our local youth and visitors from both near and far. Donations can be made through our website at: slimbaker.org/donate or mailed to: Post Office Box 232, Bristol, NH 03222. You can also follow us on Facebook @Slim Baker Foundation.

References:

Page 4: extension.unh.edu/resource/hemlock-hardwood-pine-forests, accessed on 9/7/2022

Page 4: <http://www.geologyuppervalley.com/p/mt-cardigan.html>, 9/7/2022

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