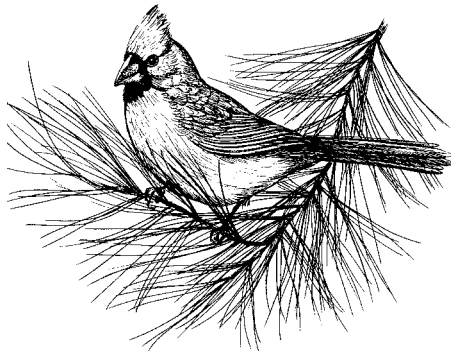




Blair Woodland Natural Area Trail Guide



First Edition, 2005

Campton Conservation Commission

Welcome to the Blair Woodland Natural Area

The Blair Woodland Natural Area was given as a gift to the Town of Campton in 2002 to be kept as a natural area for wildlife and the general public for “low impact” uses such as nature study and enjoyment while walking, snowshoeing, cross-country skiing, picnicking, or fishing. The 17-acre natural area is maintained by the Campton Conservation Commission and includes several wetland areas, a regenerated pasture, roughly 1,000 feet of riparian habitat, and mixed hardwood/coniferous forest habitat. The natural area also features aspects of Campton’s rich historical legacy.

To protect the vegetation and minimize disturbance to wildlife, we ask that you observe the following guidelines:

- 1. Please stay on the trails.**
- 2. Please access the forest only near the kiosk along Route 3.**
- 3. Foot travel is welcome, but bicycles, motorized vehicles, and horses are prohibited.**
- 4. Please practice low-impact, day use activities; do not disturb plants, animals, or rocks, and pack out any trash.**
- 5. Hunting, trapping, camping, and fires are prohibited.**
- 6. Dogs must be leashed at all times.**

Scientific research is encouraged with prior approval by the Campton Conservation Commission.

Thank you

For protecting the Blair Woodland Natural Area

Blair Woodland Natural Area

Trail Guide



1 As you enter the natural area near the kiosk, you are entering a White Pine grove. The pines here are about 30 years old, pioneers in the succession of an old farm field. Early on, the pine saplings grew thick and shaded out other species, forming a uniform stand of mature pines; the acidic layer of needles and dense shade still prevent many other species from growing. There are, however, several maple and beech saplings in this area, suggesting the future composition of the forest to come.

To the left of the trail, several young Slippery Elms can be identified by shaggy, peeling bark and rough-textured leaves with asymmetrical bases. Slippery Elms grow slowly and are named for their slimy inner bark, used by Native Americans as a cough and sore throat remedy.



2 The trail bends and crosses old potato farm rows, visible as parallel mossy ridges. Here, numerous Gray Birches are another pioneer species, distinguished by finely furrowed whitish-gray bark, v-shaped branch scars, and heart-shaped leaves which turn yellow in autumn. Notice the straight Quaking Aspens on the left; aspens often grow in stands with a shared root system, so what appear to be separate trees are actually clones! The flat leaf stems of aspens (look on the ground to find a fallen aspen leaf) are blown by the slightest breeze, causing the leaves to tremble, even on calm days.

Since birches and aspens are relatively short-lived, many of these trees will soon die and be replaced by the maples, oaks, and beeches in the understory. The dead birch and aspen “snags” are still extremely important to wildlife, providing habitat for bats and cavity-nesting birds; a pair of Black-Capped Chickadees has been observed nesting at the top of a nearby aspen snag.



3 As you make your way down the short hill, note the shift in forest composition from pine and birch to hemlock and fir. Shade-loving Eastern Hemlocks have short, oval needles with whitish undersides and brown furrowed bark; the parallel rows of holes found on many hemlock trunks are the “signatures” of Yellow-Bellied Sapsuckers (a species of woodpecker) looking for insects. The small, loosely-bound cones of hemlock trees are food for birds and mammals. The dense branches of hemlocks also provide winter protection for white-tailed deer, grouse, and other wildlife. Rich in tannin, the bark was formerly used in the leather industry, and the Native Americans used the inner bark as flour and the leaves for tea.

Look left through the dense conifers at the marsh; this area is formed by a slow-moving stream and is home to many summer bird species. Listen for the “witchity-witchity-witchity” of the Common Yellowthroat (a warbler) in spring and summer; in late spring at dawn and dusk, the unique nasal “peent” of the American Woodcock is often heard as the male performs its extensive courtship ritual. In addition to providing wildlife habitat, wetlands also filter pollutants and prevent runoff, thus helping to purify the water supply.

Back along the trail, a wide range of mushrooms appear late in the summer. What we see as a mushroom is really only the fruiting part of the fungus; most of the organism is hidden underground as a vast fungal network of hyphae, or strands, that may cover several acres!



4 The decomposing log to the left of the trail represents a valuable microhabitat for insects, small mammals, mosses, and fungi. Ecologists estimate that a decomposing log such as this may contain thousands of insects and nematodes, close to a million mites, and miles of fungal hyphae!



5 As you cross the stream on the bridge, look for moisture-loving Jewelweed and Jack-in-the-Pulpit in the streambed. Jewelweed, a relative of garden impatiens, has bright orange flowers

that bloom in mid- to late-summer, attracting bees, hummingbirds, and other pollinators. These flowers are followed by seed pods that spring open when touched, explaining Jewelweed's other name, Touch-Me-Not. Jack-in-the-Pulpit has leaves that resemble those of poison ivy, but the purple and green striped flowers hidden under the leaves are quite distinctive.

Other wetland plants visible from the bridge include large fountainlike Cinnamon Ferns, Mountain Crowfoot and Common Ragwort (both members of the Buttercup family), and Sensitive Fern. This fern's beadlike fertile fronds mature after the rest of the plant dies back in fall. Further downstream, notice the extremely straight tree with thin, flaky bark. Can you name this tree, which is the only deciduous needle-leaved tree that commonly occurs in this area? It is a Tamarack, another indicator of wet areas.

In the marsh, listen for Parula Warblers in early spring as they pass through on their way to their summer breeding grounds. The Parula Warbler's distinctive song is a buzzy, upward-slurring trill. Also listen for the "see me—here I am—vireo" call of Red-Eyed Vireos nesting in the marsh. Vireos call almost constantly throughout the day in summer; their cuplike nests, woven of grasses and strips of birch bark, resemble small hornets' nests and have been found in the alder shrubs in the marsh.



6 At the fork in the trail, bear right onto the Schuyler Matthews Trail, named for F. Schuyler Matthews (1854-1938), a noted artist and naturalist who summered in Campton. He is best known as the author of several books relating to wildflowers, birds, and trees; including his "Field Book of Wild Birds and their Music," in which he rendered bird songs into musical scores. To learn more about F.S. Matthews and Campton history in general, visit the Campton Historical Society, located at the old Town House on Route 175 (www.watervillevalleyregion.com/HistoricalSociety/).

As you start up the hill at the junction, stop to observe the large White Pine to the left. This pine is about 50 years old, estimated by

counting the side branches (one pair per year). The gaps between the branch pairs vary from year-to-year, indicating years of hearty or sparse growth. The split in the trunk was caused by the White Pine Weevil, a destructive insect pest.



7 Halfway up the hill, stop to examine the large Red Oak on the right, identified at ground level by the deep reddish furrowed bark. Can you identify the greenish structures which cover the trunk? These are lichens, a combination of a fungus and algae. The algae convert the sun's energy to sugars, while the fungus breaks down the substrate to provide minerals. Although they often grow in environments that would be harsh for many organisms, lichens are extremely sensitive to pollution, so the presence of lichens is an indicator of clean air. How many different lichens can you find on this oak tree?



8 This very straight tree is a Red Pine, a common species of nutrient-poor, acidic sites. Compare this Red Pine to the White Pine about 20 feet from the trail. While the Red Pine has reddish scaly bark, few side branches, and rough-textured needles in bundles of two, the White Pine has brownish furrowed bark, many side branches, and smooth, pliable needles in bundles of five.

Groundcovers include Wild Oats, Solomon's Seal, and Lowbush Blueberry. Wild Oats, also known as Bellwort, is an early spring bloomer with pale yellow, drooping bell-like flowers; Solomon's Seal boasts a row of small white bell-shaped flowers which hang from the undersides of the leaf axils; later, the blue-black fruits are food for wildlife.



9 These two White Pines have been growing together for quite some time; can you use the formula to estimate their age?

Note the contrasting habitats on either side of the trail. To the left, a more open combination of mature White Pine and Red Oak dominates, while the seep and stream to the right creates favorable

growing conditions for Hemlocks and Red Maples. Although a common forest tree, the Eastern Hemlock is in danger due to an introduced insect pest, the Hemlock Woolly Adelgid, an aphidlike insect. The adelgid is spread mainly through infested nursery stock and invariably kills the trees it infests. The loss of the Hemlock in New Hampshire would have serious consequences for wildlife that depend on it.



10 As you round the bend, look for the Royal Fern (*Osmunda regalis*) on the left. Royal ferns are distinguished by their pinnate fronds comprised of oval leaflets; the tips of fertile fronds die off in mid summer. The presence of Royal Ferns indicates wet sites, as do the snags about 10 feet to the right of the trail. Can you name this very straight tree? It's a Tamarack; notice the large woodpecker hole about 25 feet up the trunk. On the ground, look for Wintergreen, a fragrant evergreen herb. In early winter, the bright red berries of Japanese Barberry near the wet area may stand out. This non-native plant can spread aggressively in disturbed areas, but in this case is most likely a sole survivor of the grassy field that once dominated this area.



11 Notice the distinctive square ridges scattered about this area; according to local lore, these are the remnants of old tent sites used by Italian laborers during the original construction of Route 3. The laborers were provided with canvas tents for year-round lodging; they then mounded up the earth surrounding the tents to keep out winter drafts. The exact age of this piece of history is unknown; call it one of Campton's archaeological mysteries!



12 Here is a good opportunity to compare the different conifer groups found in this area: pines, hemlocks, spruces, and firs. You are already familiar with the furrowed bark, and round-tipped needles on "lacy" branches that identify Hemlocks; unlike other conifers, the live branches of Hemlocks sometimes reach all

the way to the ground. Hemlocks also are much more shade-tolerant than other conifers.

Compare the Hemlock's traits to those of Balsam Firs, which have highly fragrant needles that lie in a plane (think "firs are flat"), distinctive upturned cones, and smoother bark dotted with resinous "blisters." This sticky resin was once commonly used to mount specimens onto microscope slides.

Try to find a Red Spruce; these trees have scaly bark and prickly needles that often give the branches a roundish appearance. The entire tree is typically very pointed. In contrast, the needles of pines grow in bundles of 2-5, and the branches are more spread out on the trunk. Can you identify each type of conifer in this stand?



13 To the left is a clump of Indian Cucumber, a common herbaceous plant of hardwood forests. This foot-high plant is identified by a single whorl of lance-shaped leaves topped with a second, smaller whorl containing the unique long-stamened flower. Outside of flowering time, Indian Cucumber somewhat resembles Starflower, another common flowering plant. Starflower can be distinguished by the presence of one or two small white star-shaped flowers in early spring. To further distinguish between the two plants, look closely at the leaf veins of each: while the Indian Cucumber has parallel veins that run the length of the leaf, starflower leaves have one midvein from which several side veins originate.

Do you hear a high-pitched "peek!" from up in the trees? Look for Hairy or Downy Woodpeckers searching for insects inside the trunks. Although the two species are nearly identical, the Hairy Woodpecker is slightly larger and has a longer beak with respect to its body size. Woodpeckers use their stiff tail feathers to brace themselves against tree trunks.



14 Here is a mixed stand of three types of maples commonly found in lowland forests: Red, Sugar, and Striped Maple, each of which has distinguishing characteristics. Red Maples live up

to their name, with tiny red flowers, bright red buds, followed later in the year by brilliant red foliage. Red Maple's bark is smoother than that of Sugar Maples, and is distinguished by circular, weblike rings that commonly occur around old branch scars. Red Maple leaves have finely saw-toothed margins and squared sinuses between the lobes; in contrast, Sugar Maple leaves have smooth margins and u-shaped sinuses between the lobes. While Sugar Maples are common on upland ridges and moist valleys, Red Maples are often indicative of wetter, swampy sites. Striped Maples have very striking, green-and-white striped bark and rather large, toothed leaves that turn bright yellow in autumn. This common understory species does not grow as large as red or Sugar Maples.



15 More old crop rows are visible in this section of trail. Note the presence of the same pioneer species—Gray Birch and even-aged White Pine—that thrived in the sunny conditions of the abandoned field. Also note the large Paper Birch, another sun-loving species. Its chalky white, peeling bark makes it one of the most readily-identifiable trees in the region. The Paper Birch is New Hampshire's state tree. The Black Cherry snag to the right was another pioneer; its dark, scaly bark resembles potato chips. Cherry twigs, when crushed, have a distinctive cherrylike odor. What shade-tolerant saplings do you see in the understory that will eventually comprise the next generation of forest?

The forest floor here is dominated by low-growing Canada Mayflower, a member of the lily family identified by two elliptical leaves and a short terminal cluster of fragrant white flowers. In fall, translucent red berries form and are eaten by ruffed grouse, chipmunks, and white-footed mice. Also look for Partridgeberry, a creeping ground cover with small, round, opposite leaves with a single prominent white midvein. The slightly downy white flowers smell vaguely of jasmine and later develop into twin red berries.

To the right is one of several vernal pools on the property. Vernal pools, which dry up during the summer, are important as breeding grounds for amphibians; the lack of fish (which eat the eggs and tadpoles) in vernal pools provides increased safety for these

important species. Listen for Blackburnian Warblers in spring and early summer.



16 As you round the bend in the trail, look for an interesting Red Maple to the right; the original tree fell but did not die, and the branches continued to grow, eventually forming a line of new trunks. Also interesting are the relatively large Striped Maples; can you find the largest? Because this particular specimen is large (for a Striped Maple!), the bark has lost much of its distinctive striping. In summer, look up to see the dense canopy created by the large, goose foot-shaped leaves.



17 This triple-trunked Gray Birch snag, when living, provided a great deal of shade, evident by the large Hemlocks nearby. Its death opened the canopy, allowing light to reach the ground; it will be interesting to follow the changes in this small area as the understory “takes advantage” of the increased light. Light-loving spruces and balsams are already growing densely, as are the blueberries a few feet from the trail. The large White Pine nearby has long competed for light; observe how the trunk has corkscrewed as the tree grew toward the changing light.

At the base of the birch, a Christmas Fern is successfully growing. This is one of several evergreen ferns in the area, persisting through winter under a blanket of snow. Look closely to see the fine hairs along the margins of a leaflet. Unlike the Royal Fern, the spores are located on the back of the frond, rather than on a separate fertile frond.



18 What are the miniature-looking “trees” on the forest floor? They are Ground Pines, not actually pines but rather clubmosses, seedless plants closely related to the fern you just saw at the last station. Like ferns (and fungi!), they reproduce by spores instead of seeds. Look closely to observe the tiny, scale-like leaves. Ancient clubmosses were tree-sized, and entire forests once covered

the earth; as generations of the giant plants died, they were buried and compressed into coal.

Before you descend the hill, look below for bird visitors to the vernal pool; a mallard family has been observed here. Also listen for the calls of Green and Wood Frogs.



20 This very old tree is another common pioneer species; it probably thrived in the sunny conditions of the old farm field. It is related to a tree we saw at Station 15, which had unique white bark. Right—it was a Paper Birch; this tree’s bronze-toned bark and wintergreen-scented twigs identify it as a Yellow Birch. The bark of young Yellow Birches is smooth and often shiny; as the tree ages, the bark becomes flakier. Yellow Birch saplings grow densely and are an important winter food source for White-Tailed Deer. Look for the familiar hoof prints of the resident deer in this area.

What are growing at the base of this old birch? That’s right—lichens.

The vernal pool to the right persists into late summer, providing habitat for amphibians; look for Green Frogs hiding among the leaves at the pond’s edge. Also listen for the distinctive “quacking” call of breeding Wood Frogs in spring.

Winterberry Holly, a common wetland plant, grows abundantly toward the center of the pond; its bright red berries grow in the leaf axils and provide food for overwintering birds.



21 Here the pool continues beyond the property boundary; this portion of the pool is perennial, which means that it does not dry up during the summer. From the trail, you can look for the Wood Frogs you’ve heard calling as they float among the aquatic shrubs searching for mates. If you are patient (and have a pair of binoculars handy), you may see their throats expand when they call.

Evergreen Wood Ferns are abundant on either side of the trail here; turn over a frond to see the dark brown structures, called sori, which

contain the spores. Unlike many ferns, these do not die back in winter. Although Wood Ferns resemble Lady Ferns, the latter are distinguished by comma-shaped sori and by their preference of wet sites. We will see some Lady Ferns closer to the river.



22 The area around this White Pine knoll is frequented by Chickadees, Red- and White-Breasted Nuthatches, and Brown Creepers year-round, and by Golden-Crowned Kinglets and Tufted Titmice in winter. These birds often form mixed flocks and are lively consumers of seeds and small insects. Nuthatches have an unusual habit of walking head-first *down* tree trunks; listen for their call, a nasal “yank.” The rustic bench, constructed by Ian and Jess Halm in the fall of 2004, is a fine spot from which to observe these species.

The knoll is also home to an interesting plant community. Aromatic Hay-Scented Ferns grow densely to the right of the trail; gently turn over a delicate frond to see the distinctive cup-like sori. These feathery-looking ferns turn rusty-brown in the fall.

Look for a unique, orchid-like flowering plant to the left of the trail. This is Helleborine, an introduced plant with pale purple, lipped flowers and slightly hairy, alternate leaves. Also look for Jewelweed, usually a plant of wet areas.



23 Here is another example of succession at work; this fallen Bigtooth Aspen has created an opening in the understory. Already, species that had been shaded out are returning; watch out for Poison Ivy along the trail! Recognizable by its three shiny leaves, Poison Ivy thrives in disturbed areas. Aside from the fallen aspen, what other evidence is there of a previous disturbance?

Groundcovers along the trail include the now-familiar Canada Mayflower and Starflower, as well as Shinleaf Pyrola and Trailing Arbutus. A basal whorl of round leaves, topped in late summer by a nodding waxy white flower help to identify Shinleaf; Trailing Arbutus is a creeping ground shrub related to blueberries, cranberries, laurels, and Wintergreen. Its woody stems, heart-shaped hairy

evergreen leaves, and small, fragrant white or pink flowers set arbutus apart. Although the leathery leaves give Trailing Arbutus a tough appearance, the plant is extremely sensitive to disturbance; even picking one flower can loosen the roots, causing the plant to die.

Can you identify the tree on the left with shaggy bark and rough-textured, asymmetrical leaves? It's a Slippery Elm.



24 This small, opposite-leaved shrub to the right of the trail is a Maple-Leaved Viburnum, a common member of the Honeysuckle family found in the understory of oak or beech-maple forests. Pairs of lobed, maplelike leaves distinguish this head-high shrub, as do flat bunches of small white flowers and black drupes (pitted fruits). Ruffed Grouse, Cedar Waxwings, Eastern Chipmunks, and Red Squirrels sometimes eat the seeds, while White-Tailed Deer browse the twigs (look for ragged ends, evidence of deer browsing).



25 At the junction, turn right to cross the bridge, constructed in the spring of 2003 by students from Plymouth Regional High School. Lush vegetation grows in the wet soil of the marshy area. We have already seen several of the plants, including one with juicy stems and thin, “watery-looking,” opposite leaves. Can you name this plant; it bears orange flowers and “popping” seeds. It is Jewelweed, or Touch-Me-Not. The leaves of this plant, when crushed, are a poultice for the Poison Ivy rash; in fact, Jewelweed is often (but not always) found in close proximity to Poison Ivy.

Also abundant in the sandy streambed are Lady Ferns, Watercress, and Sensitive and Cinnamon Ferns. Look for deer tracks in the sand, as well as for chipmunks venturing out onto the fallen tree that bridges the streambed. What are the large trees growing in the marsh? They are Red Maples.

A relative of the American Robin, the Veery, can often be heard in the area; listen for the downward-spiraling “veer-veer-veer” of this secretive, ground-dwelling bird.



26 You are now on the Abenaki Trail, so named because the Native Americans were said to have traveled along the river corridor here, long before cart or car travel. On this side of the marsh, the forest composition changes and is comprised mainly of mature Red Oak and Red Maple. In spring, look for the tiny red flowers of the Red Maples. We rarely think of trees as flowering; because trees are pollinated by wind, they do not need to attract insect or bird pollinators and therefore have less showy flowers.



27 The many chewed stumps in this area indicate a population of beavers nearby. Although commonly associated with small streams, beavers inhabit larger bodies of water such as the Pemi River. Like many rodents, beavers' incisors grow continuously, and beavers must gnaw on woody material to maintain the length of their teeth.

The oak/maple-dominated forest gives way at the river's edge to hemlocks and birches. Most likely, these trees along the riparian zone were left as a buffer, allowing the hemlocks to mature.

As you round the bend, look on either side of the trail for Hobblebush, with its large, prominently-veined, heart-shaped leaves. Note particularly Hobblebush's opposite leaves, hairy terminal buds, and small white flower heads, which resemble those of Maple-Leafed Viburnum. Look closely at the arching growth habit of the branches; these take root upon touching the soil, and the resulting dense tangle of stems gives Hobblebush its name (as any bushwhacker can readily attest!). The leaves turn magenta at first frost.



28 This opening is home to several spring ephemerals such as Trout Lily and Wood Anemone. These herbs flower very early in spring—before leaf-out—to take advantage of the sunny conditions on the forest floor. After flowering, many of these ephemerals completely die back, leaving no trace of their presence outside of a few brief weeks in April or early May. Trout Lily sports

a single nodding yellow flower on a long stalk between two mottled basal leaves. The resemblance of these leaves to the spotted flank of a trout earned the flower its name. Deeply lobed leaves are the hallmark of the Wood Anemone, a member of the Buttercup family. Also called Windflower, its white flowers open during the day and close again at night. Unlike Trout Lily, the leaves of the Anemone persist throughout the summer.

To the left, note the Beaked Hazelnut, a shrubby, multistemmed tree that is related to birches. The Beaked Hazelnut's sharply-toothed leaves turn yellow in autumn; look closely at the base of each leaf to see a distinctive flaplike stipule. The Hazelnut's outstanding characteristic, however, is the nut, encased in a velvety green covering out of which protrudes a curved, tubelike "beak. Look for the developing nutlets, which occur singly or in twos or threes, in mid-summer; the mature nuts are food for Blue Jays, squirrels, foxes, and chipmunks. As shade-intolerant shrubs, Hazelnuts thrive in forest edges and clearings and rarely grow larger than about 15 feet in height.

A great deal of debris has been deposited in the floodplain by frequent high water events. These floods bring sediments to the area that enrich the soil; this is evident by the rich diversity of plant life in the floodplain. Many of the plants in the floodplain are well-adapted to living in sandy or gravelly soil, as well as to occasional submersion.



29 To the left is a small tree with distinctive lopsided heart-shaped leaves and a straight trunk with furrowed bark. This is an American Basswood, also called a Linden. Mature Basswoods attract large numbers of honeybees with their many cream-colored flowers and often serve as hive sites. The flowers later mature into small nutlets growing from elongate bracts, specialized leaves which help distinguish the tree. This particular tree is too young to have started flowering (Basswood begins flowering at about age 15). Like the leaves, the winter buds are also lopsided on the branch tips; their bright red color is highly visible amidst the grays and browns of winter.

A little further on, look for the prostrate Ground Cedar, which,

as its name implies, resembles a miniature cedar. This is another Lycopodium, or clubmoss. Like true cedars, the leaves of ground cedar are small scales.



30 This sturdy-looking tree is a Hophornbeam, another relative of the birches. Its incredibly hard wood earned it the name Ironwood, and has historically been used to make handles for tools and yokes for oxen. Hophornbeams are very slow-growing, long-lived trees with scaly bark that peels in long strips and an extremely straight trunk from which numerous branches extend at right angles.

Male and female flowers occur on the same tree on drooping structures called catkins; these mature into small nutlets, each enclosed in a papery sac. These nutlets are grouped in conelike clusters which resemble hops, giving Hophornbeam its name. Hophornbeam is often confused with its close relative Hornbeam, a “muscular” tree with smooth gray bark.

Nearby groundcovers include Virginia Creeper, Hog Peanut, Groundnut, and Smooth Aster. The sharply-toothed palmately-lobed leaves of Virginia Creeper turn flaming red in the fall. The grapelike purple berries are foraged by several species of woodpeckers and thrushes, and the stems are a food source for White-tailed Deer. Two other viny covers, Hog Peanut and Groundnut, grow densely in this open area. Both members of the Pea family, Hog Peanut has three leaflets on a twining vine, while Groundnut has seven leaflets. Both have pale purple to pink beanlike flowers.

Smooth Asters are characterized by a whorl of toothed, lance-shaped leaves and several daisylike flowers. Like all members of the Compositae, each “flower” is actually numerous flowers.



31 Visible upriver is the Blair Covered Bridge, a well-known piece of Campton history, framed below by the Pemigewasset River and above by Mount Tecumseh (named for a Shawnee Indian chief). The original bridge was built in 1829 and was destroyed in 1868 by an arsonist. The present span was built in

1869 and includes one original timber. At 292 feet, the Blair Bridge is the second-longest covered bridge entirely within the boundaries of New Hampshire.

The Pemi River, which originates at Profile Lake in Franconia Notch and ends at its confluence with the Merrimack River in Franklin, NH, has also seen its share of history. The Native Americans, followed by the settlers, used the river as an important trade route. Later, industrial and municipal discharge had transformed the Pemi into one of the most polluted rivers in New Hampshire. The extensive clean-up efforts of the 1960's and 70's is testament to the profound impact that good stewardship can have on waterways.

Can you identify the tall shrub growing along the riverbank? In winter, it has bright red berries in the axils. It's a Winterberry Holly. Look among the dense cover for a small patch of irises. Identifiable by their long, swordlike leaves, irises spread by fleshy underground stems called rhizomes.



32 As you re-enter the woods, notice the mature American Beech on the left. Beeches, relatives of oaks, have smooth gray bark and shiny, toothed leaves with prominent parallel veins. The leaves turn rusty brown in the fall and often stay on the tree through the winter, shedding at leaf-out in spring. The long, sharply-pointed buds form in the fall and help distinguish the beech. The nuts are enclosed in a prickly case and are a favorite food of Black Bears, Red Squirrels, and Eastern Chipmunks. Although mature Beeches such as these are rare in this particular plot (due to its mid-successional state), they are perhaps a clue as to the mature forest to come.

Can you identify the small conifer to the left? Its sharp needles and neat, pointed outline should give a clue to its identity. It's a Red Spruce.



33 This boulder, split open by water freezing and thawing in crevices, is a good spot to sit and listen to the water rushing

over the rocks below and admire the view. Observe the diverse community of lichens growing on the boulder. Lichens are often referred to as soil builders due to their ability to colonize rock by using the rock's minerals as a food source. As generations of lichens die, their remains feed larger plants such as mosses; in time, rooted plants can anchor and grow.

On the river, look for Sandpipers, stout-bodied relatives of Woodcocks, which fly with shallow, fluttery wingbeats just over the surface of the water. Their long bills enable them to probe in sediments for aquatic insects. Listen for their twittering call. You may also see a Common Merganser paddling along the riverbank with her young neatly following in single-file. Female mergansers are reddish in color and have a distinctive spiky crest; the black-and-white males are less commonly seen. Mergansers use their long, serrated bills to catch small fish.

Near the boulder, chickadees seek protection in winter among the hemlocks; patient visitors to the boulder may be rewarded by a close encounter with an ever-curious "black-cap" as it flits from branch to branch. In the wild, chickadees spend winter nights in tree cavities.

The tree just to the right of the boulder has been girdled, or entirely stripped of a ring of bark. Girdling invariably kills the tree by starving the roots of the sugars produced by the leaves; the phloem, or conducting tissue, is just under the outer layer of bark. Pioneers cleared land for farming by girdling trees. It is unknown whether this tree was girdled by an animal or by a human, as several species of animals, including porcupines, girdle trees to expose the nutritious inner bark.



34 Descend the short bank to more closely inspect the jigsaw-puzzle split in the boulder, as well as the varied plant communities along the river. The taller shrubs with wavy-edged, parallel-veined leaves are Speckled Alders, thicket-forming shrubs of wet areas. The "speckling" refers to the lenticels, or spots on the branches; these help in gas exchange for the plant. Notice the two distinct types of cones; the fatter, more open cones are the female

cones, while the longer, thinner cones are the males.

The moist riparian zone also supports a wide variety of mosses, including the pale green, feathery Sphagnum Moss (also called peat moss); Sphagnum Moss is often associated with wet, nutrient-poor sites such as bogs or shorelines.

Look for the dainty four-petalled flowers of Bluets, or Quaker Ladies. These small herbs spread by underground rhizomes. Another abundant plant in this area is Wood Betony, which has fernlike foliage and pale yellow flowers arranged in a pinwheel; Cowwheat, with yellow-and-white hooded flowers arranged in a long spike, is also plentiful.

Two kinds of Spirea — Meadowsweet and Steeplebush — are abundant on the floodplain. Both have elliptical, finely-toothed leaves and flowers arranged in spikes, but Meadowsweet has white flowers, smooth leaves, and a bushy habit, while Steeplebush's (also called Hardhack) flowers are pink, the leaves are white-wooly underneath, and the plant is a straight spike.

Those willing to traverse the rocky floodplain will find two fragrant members of the Bayberry family. Sweetfern, an indicator of gravelly sites, is not actually a fern, but a small shrub. Its wavy leaves, when crushed, emit a distinctive spicy smell. Look for this plant in the upper zone of the floodplain, closer to the treeline. The larger Sweet Gale can be found at the water's edge and is distinguished by long, thin, fragrant leaves and dark red, shiny bark.

Notice the rounded boulder about 20 feet from shore. Many baptisms were performed atop this boulder when Blair Chapel, located across Route 3 from the parking area, was active, from 1889 to 1911.



35 At the top of the short, steep hill, turn left onto Leah's Way, named for Leah Gray, the property donor who often used this trail to explore the forest. Here, listen for the loud "peter-peter-peter" call of the Tufted Titmouse, a gray bird easily recognized by a pointed tuft of feathers on its head, large black eyes, and a stout beak. Titmice are often found in flocks with chickadees and nuthatches, and are common visitors to feeders.



36 In fall and winter, when the trees are bare, look left to see the Pemi River from above. Also notice the abrupt transition from a shaded area with many large White Pines to one with more mature oaks and maples. What differences do you notice between the ground cover and understory of the two areas?

To the right, notice the double- and triple-trunked Red Maples. A closer look reveals that these trees were once cut; the multiple trunks are growing out of the perimeter of the old stumps. Beyond the maples, about 40 feet from the trail, is the wetland area.

Listen for the hoarse, robinlike song or the “chip-burr” call of the Scarlet Tanager, a spectacular bright red bird with black wings. Although they are brilliantly colored, Scarlet Tanagers often hide in the dense canopy of oaks, where they search for caterpillars and other insects.



37 Here, Pink Lady’s Slippers line both sides of the trail. Lady Slippers are one of several orchid species native to New England. Although their numbers are increasing, they are still vulnerable to disturbances and overharvesting by zealous flower collectors. For this reason, *please do not pick the Lady Slippers (or any other flowers); leave them for others to enjoy.* Lady Slippers tolerate a narrow range of environmental conditions; they require slightly acid soil and survive only due to a symbiotic relationship with a specific soil fungus. As a consequence, nearly all Lady Slippers die upon transplanting. The fine hairs covering the plant also contain a chemical that can cause a rash similar to that of Poison Ivy.

Even when not in bloom, Lady’s Slippers are easily recognizable by their two large, parallel-veined, slightly-hairy leaves. How many plants can you find in this area?



38 We have arrived again at the bridge over the wetland. As you cross, stop one last time to listen for birds or to observe animal tracks in the sandy streambed. Bear right onto the Chickadee

Path at the end of the bridge.



39 To the right, the wetland extends out to the trail; Witherod, or Wild Raisin, is common in the low-lying marshy area. You can identify this relative of Hobblebush by its opposite elliptical leaves which turn reddish-purple in fall. Look closely to see the diagnostic pairs of hairy, brown buds at the bases of the leaves. Winterberry Hollies and Jewelweed are also abundant in this wet area.



40 This interesting area of large red pines supports a diverse assortment of herbaceous plants. Look for Bunchberry about five feet to the right of the trail. The white “petals” of the flower of this member of the Dogwood family are actually modified leaves; the true flowers are tiny, green structures located within the circle of bracts. Can you identify the Trailing Arbutus, Starflower, Canada Mayflower, and Cinnamon Ferns nearby?



41 Perhaps you are familiar with the unique waxy white nodding plant to the left. It looks like a little pipe, and in fact it is Indian Pipe, one of several plants known as saprobes, or plants that, like fungi, get their food from other organisms and thus do not photosynthesize. Unlike fungi, however, Indian Pipes possess true leaves, stems, roots, and flowers, and are therefore plants. Amazingly, Indian Pipes belong to the Heath family and are therefore close relatives of blueberries, azaleas, Wintergreen, and Trailing Arbutus! The nodding flower ripens to an upturned pinkish-purple fruit; the entire plant may persist, blackened and withered, through the winter.

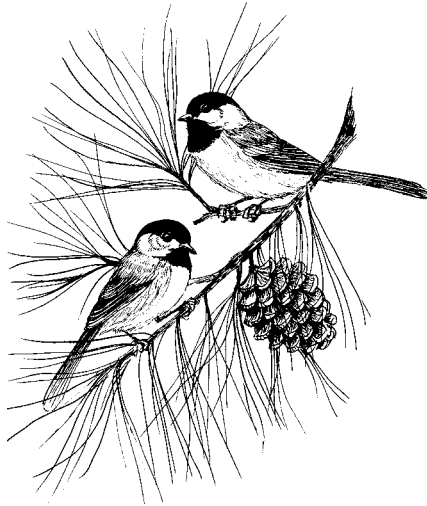


42 This Red Maple has a rather large gall, most likely caused by injury to the tree by an insect. Galls can be found on many plants and represent the plant’s attempt to heal itself.

As you bear right onto the bridge, stop again to look out over the

wetland and to listen for birds in the tops of the white pines.

Thank you for visiting Blair Woodland Natural Area.



**If you would like to keep your
trail guide, please deposit a
\$1.00 donation at the kiosk;
otherwise, please return it at
the kiosk for others to use.**



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