

## BLACK MOUNTAIN

Big Chief Trail - 1.1 miles each way, moderate

The story of Black Mountain features fire and ice. Born as a ball of magma that cooled deep in Earth's crust, the mountain's tough composition allowed it to outlast the rock around it and, after millions of years, surface as a prominent feature on the landscape. But even rock domes aren't immune to the punishment of the glacial ice that scarred this landscape. Bring your sunblock on this hike: the Big Chief Trail ascends Black Mountain's warm, southern slope and emerges on each of Bald Mountain's dual summits, where you will be a giant compared to the plant community.

### Getting There

To reach the southern portion of the Donnell Pond Public Lands start on US Route 1 in Sullivan. Turn onto ME Route 183 and proceed about 4.5 miles. After crossing Down East Sunrise Trail (the former Calais Branch railroad), take the first left onto gravel Schoodic Beach Road. The left turn is marked by a blue and white Donnell Pond Public Lands sign. Shortly after entering the Public Lands, bear slightly right at a fork in the road and follow the Black Mountain Road for approximately 2.2 miles to a small parking area on your right. The trail starts just slightly beyond this parking area on the left.



Common broom-moss

### Naturalist's Notes



White pine, red spruce, eastern hemlock, and the occasional red maple form a low canopy here. This natural community is named to contrast with Montane Spruce-Fir Forests, which are found on higher sites (though there is some overlap in range) and usually have more herbaceous species.



### ① A Plant Community Keeping Its Cool

A sign for Big Chief Trail directs hikers into an evergreen forest.

[to map](#)

The cool, evergreen forest at the trailhead is a welcome relief on a hot summer day. Here, cobble-sized rocks poke through broom mosses and fallen pine needles. The heavy shade of red spruce, eastern hemlock, and white pine provides meager light for the few stems of Canada mayflower that survive here. This is a good place to listen for the ethereal song of the [hermit thrush](#) or the energetic carol of the [winter wren](#), which sings for eight seconds or more in what sounds like a single breath.

These plants and animals are characteristic species found in a [Lower-elevation Spruce - Fir Forest](#) ♀, a type of natural community common in Maine. A natural community is an assemblage of interacting organisms and their common environment. [Ecologists](#) classify and identify natural communities to learn about the organization and vulnerabilities of the natural world including habitat rarity, human impacts to nature, and past and present effects of climate change. Rare natural communities often support rare plant and animal species. To effectively conserve the rare species, it is often necessary to protect the natural community where they occur.

In Maine, spruce and fir are adapted to tolerate a cooler climate than their broad-



Red Oak leaves

### Naturalist's Notes



Bracken fern, wild sarsaparilla, wild oats, hairy solomon's seal, and starflower grow beneath mid-story striped maple here.

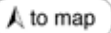
### Kid's Corner



Learn to tell sugar maple from red maple! Pick up a maple leaf. Are the notches between the lobes round, or do they come to a point? Sugar maple has round notches, but red maple has pointy ones.

leaved relatives. As cold air sinks into this valley, it becomes cooler than neighboring slopes, especially in winter. Cold air combined with thin, rocky, nutrient-poor soil on a gentle slope creates ideal conditions for this Lower-elevation Spruce – Fir Forest.

### ② Heating... Up! -68.104925, 44.578478



*At 0.1 miles, the forest transitions from evergreen to broadleaved.*

Sporadic dapples of sunlight widen into pools, welcoming a diversity of herbs ☿ into the **understory**. Large **northern red oaks** become prevalent in the canopy, growing beside **quaking aspen** and maples ☆.

The presence of red oak and northern hardwood trees (such as birch and maple) distinguishes this **Oak - Northern Hardwoods Forest** from other forest communities. Red oak tends to occur on warm, dry sites here in Maine. Orient yourself using **the map above**. What side of the mountain are you climbing? In the northern hemisphere, south-facing slopes, because they receive more direct sunlight, are generally warmer and drier than north-facing slopes. This makes them well-suited for Oak - Northern Hardwoods Forests, which are typically found on sheltered hillsides at low elevations, in warm, well-drained places. Red oak is the northernmost oak species occurring in Maine, but even it can't tolerate the colder climate of northern and western Maine, where it is rare.

*At 0.25 miles, the trail ambles up a short rocky slope, consisting of boulders ranging in size from a small suitcase to a golf cart.*

### ③ The Secret Lives of Plants -68.104607, 44.579466



*At the top of the slope, the ground levels out and the trail slices through a glade of small, single green leaves emerging in high density from the leaf litter.*

Canada mayflower plants appear to consist of a single leaf, but this plant is deceptive. Many of the single leaves here are connected by an underground stem called a rhizome, which unites them into much larger plants. Only where Canada mayflower emerges from the ground as two or three leaves will you find it flowering.

Soon the trail passes through a pool of light beneath a gap in the canopy where yellow-green hayscented ferns cover the forest floor. Like Canada mayflower, hayscented ferns are connected by a network of rhizomes. But competition for space here in the light is ruthless. Hayscented ferns release chemical toxins into the soil that inhibit the growth of other plants, including tree seedlings that might shade them out. This adaptation is called allelopathy.

*At 0.4 miles, the trail swings left to snake around rocky ledges where red spruce once again dominates the canopy. On this higher, steeper, more exposed slope, fallen trees litter the understory. Small amounts of bracken fern, lowbush blueberry, and bunchberry can be found here, having inherited the light from the toppled trees.*



Canada mayflower (top) and hayscented fern (bottom)

## Naturalist's Notes

This is quartz monzonite, a granite-like rock consisting of feldspar and quartz, but with considerably less quartz than granite.



Left to right: lowbush blueberry, rhodora, common juniper



Tunk Lake




Close-up of Low Elevation Bald

### ④ **Ice Beats Rock** -68.106181, 44.581162

[to map](#)

*At 0.4 miles, the trail climbs a second rocky slope.*

The blocky rocks that have settled here make the slope resemble a pile of massive ice cubes.

Black Mountain  originated as a pluton, or a rising mass of magma traveling up from Earth's liquid mantle. It cooled, hardening into rock, before it reached Earth's surface. Millions of years of weathering and erosion removed the softer rock around it, relieving it of some of the pressure that was holding it together. The release of pressure allowed the rock to fracture in layers, like the layers of an onion.

What happens if you allow water to freeze in a closed container? Because water expands as it freezes, it deforms or breaks the material that confines it. When water seeps into fractures in rock and freezes, it wedges the rock apart, breaking it into smaller pieces. In this case, the rock has broken into cubic boulders that have tumbled into a talus slope.

Even the hearty spruce thins atop the talus, and the understory becomes thick with lowbush blueberry, black huckleberry, sheep laurel, rhodora, and common juniper.

### ⑤ **The Work of Glaciers** -68.107563, 44.582244

[to map](#)

*Within about 50 feet, the trail crosses the first expanse of bald bedrock.*

From here forward, hikers must be careful to follow rock cairns that mark the trail. The natural community ([Low Elevation Bald](#)) is fragile enough to be damaged by footsteps. Between here and the top of the first summit, openings in the trees offer tremendous views of Tunk Lake to the south and east.

Like most of Maine's 5,000+ lakes and ponds, Tunk Lake is glacial in origin. Until approximately 16,000 years ago, what we now know as Black Mountain was beneath a thick, slowly moving sheet of ice. As the Laurentide Ice Sheet shifted through valleys, it scraped out basins, large and small. After global temperatures warmed and the glaciers retreated, these newly exposed basins filled with water, creating lakes and ponds.

Today, Tunk Lake is one of the cleanest lakes in Maine. It owes its pristine water and unspoiled scenery to the fact that its watershed is mostly contained within the Donnell Pond Public Reserve.

*From here, follow the row of cairns to the western summit of Black Mountain.*

### ⑥ **Bald is Beautiful** -68.107976, 44.583237

[to map](#)

*At the end of the first mile, stop on the western summit (marked by a trail sign) to admire the natural community.*

Some say that stress will make a person go bald; the same is true for bald mountain summits. The forces behind these treeless summits vary with elevation and climate,





Black chokeberry (L), three-leaved cinquefoil (R)

but common stressors include drought, wind, and fire. Low Elevation Balds, like this one, often follow fire. Fire kills mountaintop vegetation, causing it to release the soil held by its roots. Without roots holding it in place, the soil is more easily washed and blown away. In more sheltered spots like lower mountain slopes and valleys, soil accumulates quickly as lichens, mosses, and small plants help build up organic matter. Though lichens and low plants also establish themselves on barren mountain summits, relentless winds and a lack of moisture make soil accumulation a very slow process.

Visitors must stoop to get a good view of the natural community (Low Elevation Bald) on this summit; it is only a few inches tall. Low Elevation Balds are a mosaic of bare rock, herbs, and lichens. In patchy, dry soils, black chokeberry, three-leaved cinquefoil, lowbush blueberry, and common juniper grow close to the ground. Please stay on the trail.



Mountain holly

⑦ **Off to See the Wizard** -68.107658, 44.585098

[to map](#)

*At 0.8 miles, arrive in the forested gap between the two peaks.*

You can't see Wizard Pond from the trail, but a stream flowing from its outlet ambles through a cathedral of tall [red spruces](#) and [white cedars](#) where it crosses the trail. As you approach the stream, pay close attention to the forest; its age may surprise you. Protected on all sides by steep terrain, the forest near Wizard Pond is thought to be one of a few stands of unlogged old growth forest in the state.

You may wonder why these trees, presumably untouched by humans, are not larger. Forests near mountaintops, often rooted in thin soils, are subject to brutal winds that blow down large trees. Decaying trunks litter the forest here as evidence.

*From the stream, the trail winds steeply uphill, first through Lower-elevation Spruce - Fir Forest and later over rocky ledges alternating with breast-high black huckleberry and mountain holly. Mountain holly is a shrub with purplish leaf stems (petioles); black huckleberry is best identified by the faint, golden sparkle of resin spots on the underside of its yellow-green leaves.*



Black huckleberry, magnified

⑧ **The View from the Top** -68.105862, 44.587652

[to map](#)

*At 1.1 miles, arrive at the eastern summit.*

The summit of the east peak shares the same natural community as the west peak, but has more spectacular views. To the southeast, a peninsula juts out into Tunk Lake. To the southwest, a radio tower perched on the top of another peak (also part of Black Mountain). And in the distance to the northwest, a wind farm generates electricity atop Caribou Mountain.



Area map

## Naturalist's Glossary

**Ecologist:** A scientist who studies the relationship between organisms and their environments.

**Understory:** The layer of vegetation that grows between the ground and the highest layer of tree branches in a forest.

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*Natural Heritage Hikes is a project of the [Maine Natural Areas Program](#) in partnership with the [Maine Trail Finder website](#).  
For more Natural Heritage Hikes, please visit [www.mainetrailfinder.com](http://www.mainetrailfinder.com).*

*Designed and written by Kelly Finan, University of Vermont Field Naturalist Program*

*Map sources: Esri, DeLorme, HERE, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community*