

ANGEL FALLS

Angel Falls Trail - 0.7 miles each way, easy

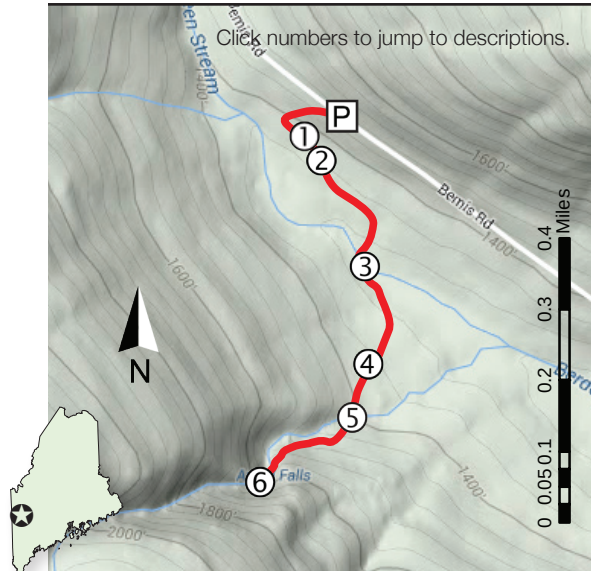
Angel Falls shares its name with the world's largest waterfall in Venezuela, and in Maine, its reputation is no smaller. A gentle walk through this Northern Hardwoods Forest is an excellent opportunity to reintroduce yourself to one of the greatest sculptors of Maine's landscape: water.

Getting There

From North: From the intersection of ME Routes 4 and 17 in Oquossoc Village in Rangeley, follow ME Route 17 south for about 18 miles and turn right onto Houghton Road (about 1.2 miles beyond a bridge crossing the Swift River). On Houghton Road cross a bridge over the Swift River, and at the T-intersection, turn right onto Bemis Road and drive 3.4 miles. Park on the left side of Bemis Road just before the yellow sign marking the trailhead.

From South: From the intersection of ME Routes 17 and US Route 2 in Mexico, follow ME Route 17 north for about 17.5 miles and turn left onto Houghton Road, about 4 miles beyond Coos Canyon in Byron. (It will be just after a large field on the left side of the road.) Cross a bridge over the Swift River, and at the T-intersection, turn right onto Bemis Road. Drive 3.4 miles, and park on the left side of Bemis Road just before the trailhead.

Safety Note on Roads: Houghton and Bemis Roads are logging roads. Logging roads may require four-wheel drive and may not be appropriate for small cars or cars with low clearances. Be sure to park on the side of the road where you will not block traffic. Logging vehicles always have the right of way.



① Gravel to Gold -70.708057, 44.788935

[A to map](#)

Just northeast of the parking lot, look for a red blaze on Bemis Road marking a rocky dirt road that descends to the left. Walk this road downhill for 0.2 miles to an abandoned quarry.

Would you believe there's gold in western Maine? The water in Mountain Brook, after pouring over Angel Falls, feeds into the Swift River about five miles downstream of the falls. If you took Route 17 to get here, you may have spotted gold-oriented tourist attractions or even a few people panning for gold in the Swift River, which runs beside the highway. Most of the gold found in Maine comes from places in streams where gold has weathered out of bedrock and accumulated in the sediments. But the people who dug this hole weren't looking for gold—it was sand that they were after. Glacial deposits, like this one, are “gold mines” for these construction materials.

As recently as 17,000 years ago, Maine was covered entirely by a massive, slowly shifting sheet of ice that scraped and gouged everything that it came into contact with, rounding off mountains and broadening valleys. Gradually, the bottom of the glaciers became dirty with the sediments (clay, sand, gravel, and rocks) that they collected. When the climate warmed and the glaciers began to melt, they released this “load,” mostly in the form of glacial till, which formed a thick layer atop the bedrock. Geologists describe till as “unsorted,” meaning that it consists of a jumble of different-sized sediments ranging from clay-sized (the smallest) to boulder-sized



The maximum extent of glacial ice during Pleistocene time (2 million years ago to 10,000 years ago)
Image courtesy of the USGS



Red trillium



Starflower



Canada mayflower



Tapped maple tree with sap bucket hanging from tap

(the largest). After the glaciers melted, plants colonized the till and aided in the development of a covering of soil.

Then how did a pile of sand get here? Unsorted sediment, like till, is sorted by running water. Slower moving water can pick up and carry small sediments, while faster moving water can transport larger sediments, too. Where water slows down, as it does at the bottom of a hill or where a stream enters a lake, it will drop the larger sediments that it no longer has the energy to carry. As the glaciers melted, the water that flowed over, within, and at the base of the ice was able to transport finer sediments, like silt and clay, further than larger sediments, like the sand and gravel deposited in this valley.

Though sand and gravel don't sound particularly valuable, especially when compared to gold, they are very important to the construction industry, which uses them in huge quantities to make concrete.

② **Sunlight to Syrup** -70.707233, 44.788430

to map

Two paths depart from the southern end of the quarry.

Be sure to follow the one with the red blazes.

People began classifying plants and animals centuries ago, organizing them into groups based on how closely related they are to one another. Only recently have we started applying this science of classification to habitats, or what ecologists call natural communities. Natural communities are assemblages of organisms that share a common environment, and that recur across the landscape. Some natural communities, like this [Northern Hardwoods Forest](#), are common and widespread in Maine, while other natural communities, like [Pitch Pine - Heath Barrens](#) or [Subalpine Meadows](#) are rare.

In this example of a Northern Hardwoods Forest community, [sugar maple](#), [American beech](#), and [yellow birch](#) grow together above starflower, red trillium, and Canada mayflower. These species are characteristic of Northern Hardwoods Forests, and are adapted to live on the well-drained soil of relatively low hill slopes, where this community is found. Mammals, birds, reptiles, insects, and fungi are all also part of the community, though they are often not as visible as the plants.

The sugar maples in this community may look like ordinary trees from the outside, but beneath their bark flows sap with twice the sugar content of other maples. When trees and other plants photosynthesize, they use energy from the sun to trigger a series of chemical reactions that combine atoms from carbon dioxide and water into sugars that the plant eventually converts into energy. In February and March, warmer days and cold nights cause water inside the trunks of sugar maples to freeze and thaw, and gasses within the trunks to expand and contract. The result is that during the day, the sugar-rich sap in the tree is under very high pressure and will readily flow out through a tap hole in the bark. Once harvested, maple sap is boiled to remove excess water, turning it into maple syrup.



Mayfly nymphs usually have three “tails”



Stonefly nymphs usually have two “tails”



A caddisfly larva inhabits a long, narrow case built of tiny sticks or stones
Macroinvertebrate images courtesy of the North American Benthological Society



Pileated woodpecker holes in a diseased beech tree

③ Talking to Bugs about Water Quality -70.707186, 44.787250

[A to map](#)

At 0.3 miles, the trail crosses Berdeen Stream, a shallow creek.

How would you describe this stream? It’s relatively shallow and wide, without steep banks. It flows down a gentle slope and the largest rocks in the streambed are about the size of suitcases. Together, these observations paint a picture of a relatively slow, mild-mannered stream.

The speed at which a stream flows, or its velocity, is one of the factors determining what can live in it. The bubbling generated by fast-moving water introduces oxygen to a stream, making good habitat for brook trout and other fish and invertebrates with high oxygen requirements. In contrast, when a storm event washes soil into a stream, fast-moving water can keep silt and other sediments suspended in the water column (turbidity); too much sediment can “choke” certain organisms. Streams beside lands with disturbed soils are especially prone to this type of pollution.

In some places in Maine, the health of streams is compromised by non-point source pollution. This type of pollution is what rain washes off of the land and includes both natural and man-made materials such as soil, salt, fertilizer, and oil residue. To assess the health of streams, scientists sample macroinvertebrates (small, backbone-less organisms such as mayfly nymphs, stonefly nymphs, and caddisfly larvae that are visible to the naked eye) that are highly sensitive to pollution. If these “picky” species are present in a stream, it indicates to the scientists that the stream is healthy. Look here for mayfly nymphs, stonefly nymphs, and caddisfly larvae.

④ Birds, Bugs, and Beeches -70.706731, 44.785441

[A to map](#)

At 0.5 miles, the trail passes to the right of a dead balsam fir tree with a large woodpecker hole near the base.

Next time a tree dies in your yard, think twice before you cut it down. After a tree dies, it rapidly becomes home to beetle larvae, carpenter ants, and other insects. Dead standing trees, or snags, are a buffet for woodpeckers and other insect-eating birds. In addition to small, round holes, look for large, rectangular holes in this snag. Holes of this shape are the calling card of the pileated woodpecker, one of the largest forest birds on the continent. Identifiable by its fiery red crest, pileated woodpeckers don’t only use snags for food but also for communication and shelter. Loud, rhythmic drumming tells other birds “this is my territory.” Pileated woodpeckers nest in cavities that they excavate in large snags; they are often spotted emerging from holes that seem impossibly small for such a large bird.

Less than 50 feet up the trail, look for an American beech tree with a red blaze painted on it.

How would you describe the bark of this tree? While American beech trees are usually recognizable by their smooth, thin, pale gray bark, this one is covered in disfiguring lesions that make the bark rough and cracked.

The beech’s thin bark offers no defense against the beech scale, a tiny insect introduced from Europe in the late 1800s. And still worse, while burrowing into the bark

Naturalist's Notes



Downstream of here, Mountain Brook feeds into Berdeen Stream as one of its tributaries. Eventually, the water in Berdeen Stream enters the Swift River, then the Androscoggin River and the Kennebec River, finally entering the Atlantic Ocean at the Gulf of Maine.



Dull, grayish white bark of a paper birch (left) beside glossy, golden bark of a yellow birch (right)

to feed, the insect infects the tree with a destructive fungus. The tree tries to isolate the fungus in ugly cankers, but fails. These openings in the bark make the beech tree more susceptible to infestation from insects, and subsequently woodpeckers. Too many holes and disruptions in the bark prevent the movement of life-supporting nutrients and the tree gradually weakens and dies. The decline of beech affects many species, like bears, that depend on beechnuts for survival.

⑤ **Tumbling Trees** -70.707776, 44.783750

[to map](#)

At 0.6 miles, the trail crosses Mountain Brook just downstream of the falls.

Compare this brook to your earlier observations from Berdeen Stream. The stream channel is narrower and steeper, and is interrupted by larger, boulder-sized rocks. Even the banks are different from those of Berdeen Stream; instead of sandy banks grading into a more mature forest, Mountain Brook is bordered by small yellow birch and [paper birch](#) trees growing between large boulders.

While the stream may look relatively calm today, the birch trees and boulders on the banks indicate that, in times of high water, this section of Mountain Brook is much more destructive than Berdeen Stream. Birches, identified by their peeling bark, have tiny, wind-dispersed seeds, and are usually the first trees to colonize an area after a disturbance. Their conspicuous presence on the banks of this stream indicates that the banks are sometimes subjected to high volume flows, or flows that are strong enough to knock down trees and tumble boulders.

⑥ **Soft as a Rock?** -70.709563, 44.783122

[to map](#)

At 0.7 miles, arrive at Angel Falls.

We're all familiar with the expression "hard as a rock," but did you know that some types of rock are harder than others? Because of their composition and the heat and pressure that shaped them, granite and quartzite are less susceptible to damage from wind and water than less hard or "soft" rocks, like certain sandstones, which are more easily [eroded](#) by these forces.

The [bedrock](#) of Maine is made of many layers of different rock types, some softer and more erodible than others. Over millions of years, a stream traveling over the landscape will progressively cut a channel into the soft rock beneath it. Waterfalls form where the water encounters a more resistant rock layer. Unable to cut through it, the water runs off the end of the outcrop. Over time, a waterfall forms here, the plunging water carving a deep pool at the base of the falls.

In the case of Angel Falls, thick beds of the erosion-resistant rock quartzite (part of the Rangeley Formation) hold up the falls, while the softer surrounding rock erodes away.

When you are done visiting the falls, retrace your steps to return to the trailhead. To explore and share more of Maine's extraordinary natural features, be sure to check out the other Natural Heritage Hikes covering dozens of trails from the coast to the western mountains.

Naturalist's Glossary

Invertebrate: An animal lacking a backbone. For example, an insect.

Larva: A distinct immature form many animals pass through before metamorphosis into adults. In the larval stage, the juvenile organism looks very different from the adult.

Nymph: An immature form of some invertebrates that, unlike those invertebrates with a larval stage, does not change greatly in appearance as it grows.

Erosion: The process by which wind and water transport soil and rock from one area to another.

Bedrock: The consolidated layer of rock beneath the soil and glacial deposits.

*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.*

Designed and written by Kelly Finan

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