

If you've read about Alice, you'll know that Wonderland is filled with variety and mystery. The Wonderland Trail is no exception. In a short jaunt, you will encounter a tree that loves fire, a flower that escaped captivity, and a forest that never grows old. You will shrink to the size of a beetle and travel back in time. Along the trail, riddles will guide you on to the next chapter.

Getting There

By bus: From Bar Harbor, take bus #7. Ask the driver to drop you off at the Wonderland Trailhead, just after Seawall Campground.

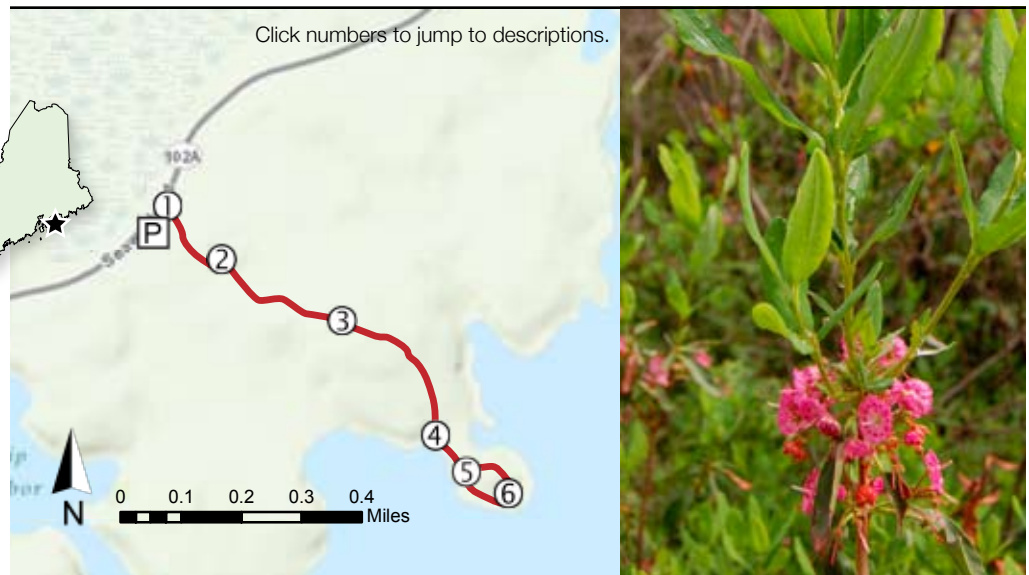
By car: Drive to Seawall Campground on Seawall Road in Southwest Harbor. The parking lot and trailhead are approximately 3,000 feet west of the campground on Seawall Road.

Naturalist's Notes

You've entered a Spruce - Fir Wet Flat, a natural community that occurs on cool, flat, poorly-drained sites. The cool, moist, maritime climate of the Downeast coast promotes the growth of moss here. Look for red spruce, alder, sheep laurel, lowbush blueberry, cinnamon fern, bunchberry, and sphagnum moss.



Snowshoe hare winter white and summer brown



① Into the Rabbit Hole?

The trail cuts through a corner of mossy forest 🌿 at the trailhead.

[to map](#)

With its fantastical settings, the Wonderland Trail is reminiscent of another Wonderland where Alice ventured with the white rabbit. Here, however, there are no rabbit holes; the hopping bunnies of this forest are snowshoe hares. Hares are born open-eyed, covered in hair, and ready to fend for themselves above ground. Unlike hares, rabbits are born blind, without hair and generally helpless in their holes.

The most northerly species of hare in the Eastern U.S., the snowshoe hare is named for its large feet, which allow it to travel easily through deep snow. In the fall, the snowshoe hare will shed its brown summer coat for a pelage of white camouflage. Sitting still in the snow, the hare is nearly invisible to predators.

Evergreen forests with dense shrubs provide good habitat for snowshoe hares. For the next half mile, watch for their light brown, pellet-like [scat](#) 1/2" to 3/8" in diameter and rounder than white-tailed deer scat, which tends to be oblong.

Next stop: What is this (left)?

Kid's Corner


The Story of Lichen

The forest was crowded, too crowded for some. No one lived out in the hot sun on the rocks where Fred the fungus and Alice the alga went looking for space. They found plenty of space but Fred struggled because there was no food for fungus. Alice got plenty of food from the sun but worried that the rock was too dry for her. They turned to each other and moaned of their troubles. "Wait," said Alice, "if you hold my hand I can share my food, and if I hold your hand you can protect me from drying!" Together, they became a lichen.




A fruticose lichen

② The World Beneath our Feet

 to map

The trail turns right to follow a wider path lined by alder and sheep laurel. A clearing to the left reveals a swath of bedrock.

Find a place where plants and soil give way to bare rock, and imagine you drank a potion that made you shrink to the size of a beetle. Are you surrounded by a desert of bare rock or a city of ornate rugs and oddly shaped towers? This colorful mosaic is a community of **lichens**. Lichens , representing a partnership of **algae** and **fungi**, come in at least three varieties:


- **Crustose**: completely flat, like textured paint.
- **Fruticose**: with stalks that are round in cross-section and grow sturdy and upright or form loose tangles that hang from tree branches.
- **Foliose**: leafy, with flattened lobes that spread across rocks or bark.

How many different types of lichens can you find? A *Cladonia* species is a good example of a fruticose lichen; its fine, pale green branches stand an inch or two high in tufts above the bedrock here. *Usnea* is another fruticose lichen; it grows in wispy beards from the surrounding evergreen trees. *Usnea* is sometimes called "Old Man's Beard."

Lichens are among the only organisms that can colonize bare rock. They initiate the **weathering** of this barren surface and are a first step in the development of new soil. Over many years, mosses will establish themselves here, to be eventually followed by larger plants. Lichens are everywhere, with more than 400 species in Acadia National Park.

Next step: Pitch pine is best at what?

③ Fire Wizards -68.31544, 44.231731

 to map

At about 0.3 miles, the forest opens into a scrubby, [Pitch Pine Woodland](#) .

Naturalist's Notes

Pitch Pine Woodlands are found on coastal outcrops with thin, coarse, dry soils. Look for paper birch, gray birch, sheep laurel and common juniper here. In Acadia, pitch pine is at the north-eastern corner of its range.



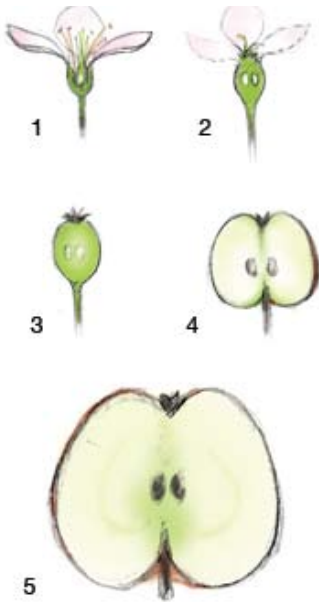
Needles in bundles of three are a good clue for identifying pitch pine.

Another of the Wonderland Trail's marvels is its pitch pines, which not only survive fire but actually need it to grow. Imagine someone standing over a pitch pine seed bed with a flamethrower instead of a watering can, and you wouldn't be too far from the notion of the right conditions for these trees.

Pitch pine's, thick, layered bark protects its living tissue from fire while burn damage stimulates growth in its recessed buds. Pitch pine also produces resin-covered cones that release seeds after fire melts away the resin. The seeds are adapted to grow on mineral soil, which is what they fall onto after the fire has burned away the duff.

Collectively these survival strategies make pitch pines not only fire proof, but also fire dependent. Without fire, under natural conditions, new pitch pine trees cannot grow. Left without replacements, the older trees will eventually die off and be replaced by white pines and oaks.

The most memorable fire on Mount Desert Island was the Great Fire of 1947, when one-fifth of the island burned. This fire is responsible for the pitch pine woodlands



Apple flower into fruit
Illustration by Kelly Finan



Rugosa rose "hips"

present on many of the island's mountains today.

Next stop: Is this rose more closely related to an apple or to a sunflower?

④ **Roses: The Great Escape**

[to map](#)

-68.312923, 44.22951

At about 0.5 miles, the trail makes a sharp left turn. Thorny rose bushes thrive beside the trail, reaching heights of nearly six feet.

Where do roses grow? Not just in gardens, but also in wild places. Maine has six species of wild roses, as well as several species of escaped non-native roses. Escaped roses, like the rugosa rose growing here, started in gardens and plantings. Then, because of the favorable growing conditions outside of the garden, they spread, and spread, and spread. They spread so much that they took over the habitats of native species, which is why they are called **invasive plants**.

The rose family (Rosaceae) is more than just roses. The rose family includes other familiar plants, including apples, cherries, strawberries, and raspberries, and less familiar plants like cinquefoils, avens, and agrimonies. Before the hike is over, you will probably have walked past, on, and under many different members of the rose family without even knowing it.

Inspect one of the rugosa roses growing beside the trail. In mid-summer, the rounded, green structure beneath the petals (hypanthium) grows into a rounded fruit, referred to as "rose hips." Apples and cherries form their fruit in the same way but are perhaps not shapely enough to be called hips. Can you find a rose that has lost its petals? If you do, look for the five-pointed, star-shaped remainder of the flower on the hips; five-parted flowers are a common feature of all members of the rose family.

Next stop: What non-fire disturbance is keeping this forest "young?"

⑤ **A Forest Trapped in Time** -68.312142, 44.228857

[to map](#)

At 0.6 miles, the trail forks.

Both options lead into the dense Maritime Spruce - Fir forest.

Take a close look at the trees in this forest. Are there large trees that appear to be older than the rest, or are they mostly the same size? Most of the **red spruce**, **white spruce**, and **balsam fir** that distinguish this **Maritime Spruce - Fir Forest** are less than 10 inches in diameter; this is a medium-aged forest with few old trees.

What happens to the older trees? Because of their location on the immediate coast, trees that grow too tall are eventually blown down or snapped by strong winds. Gaps created by fallen trees are soon filled with new growth, and in this way the forest maintains itself at a younger age than forests on more protected sites.


Before saplings fill in the forest gaps, other species like cranberry, crowberry, and ferns take advantage of the increased sunlight.



"Tip-up" on the edge of the Maritime
Spruce - Fir Forest

Next stop: How many years ago did this coastal rock form?

⑥ Origin (or Orogeny) of a Hard Coast -68.311109, 44.228346

 to map

At the point, the coastline consists of blocky pinkish-orange granite.

Imagine you have traveled back in time. 350 million years ago, much of the animal life still lived in oceans as primitive fish or mollusks. Back then two land masses (North America and Avalonia) were about to collide here, slowly closing the ocean between them as they slid toward one another.



Wonderland's pink granite

Tectonic plates are massive slabs of rock that “float” on the earth’s molten inner layers. They usually carry land masses, often entire continents, on them like passengers. Where tectonic plates bump into one another they generate heat and pressure that deforms the rock at the edges of both plates. Often, one plate will sink beneath the other, creating plumes of magma that rise from the descending (subducting) plate. The pink granite on the Wonderland coast formed as one of these magma invasions, cooling before it reached the surface of the earth. It was later exposed after surface rock eroded and the continental plates ever-so-slowly drifted apart to form the Atlantic Ocean. We call these collisions of tectonic plates, which often produce mountains, orogenies.

Naturalist’s Glossary

Alga: (Singular of *algae*). A one-celled or very small many-celled photosynthetic organism.

Canopy: The highest layer of branches in a forest or woodland.

Erosion: The process by which soil and rock are transported and deposited in other locations.

Invasive species: An organism that has been transported from its native range by humans and now outcompetes native species in its new ecosystem.

Lichen: A partnership between a fungus and an algae (single-celled photosynthetic organism).

Scat: Animal droppings.

Weathering (of rock): The physical and chemical breakdown of rock that can begin the soil-building process.

Woodland: A landscape that contains trees but with a less dense canopy (see canopy, above) than a forest. Woodlands are often found on thin, dry soils that cannot support large trees.

*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.*

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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