



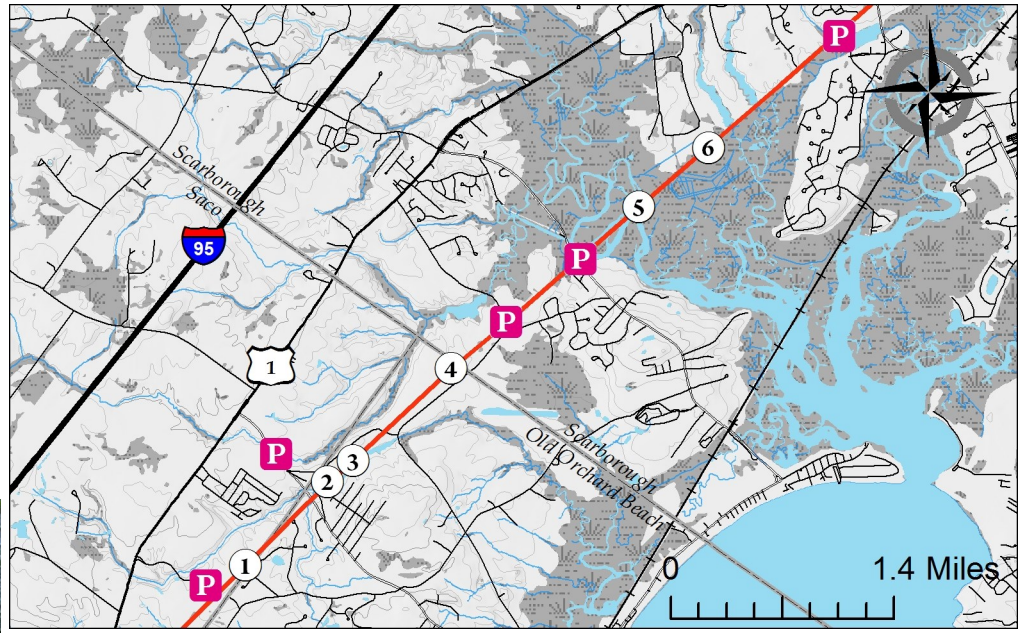
# Natural Heritage Hikes Eastern Trail

Saco to Scarborough— 5.25 miles, easy

*The section of the Eastern Trail between Saco and Scarborough contains some of the most intact natural areas of the trail. This section highlights several of the more common forest types found in southern Maine, as well as Maine’s largest salt marsh. However, many of these natural areas are threatened by land use and environmental impacts. From invasive plants to sea-level rise, the Eastern Trail is ground-zero for observing landscape change.*

## Getting There

The Eastern Trail may be accessed at various locations in Saco, Old Orchard Beach and Scarborough. While this guided hike begins from the Mill Brook Road parking area in Saco, accessed from Route 1, these points of interest can be accessed from any of the parking areas described on the map. For a more expansive map of the Eastern trail, visit [www.easterntrail.org](http://www.easterntrail.org).



One indicator of healthy, late successional forest is an abundance of large, coarse woody material. The artist’s conk mushroom (*Ganoderma applanatum*, pictured above) fruits impressively on large hardwood logs.

① **Mill Brook Entrance** -70.414644, 43.529945

*The ecological value of age class diversity.*

In the field of ecology, ‘succession’ refers to the change, over time, in plant or animal communities as they respond to disturbance or the creation of a new substrate. In southern Maine, historic disturbance events have included logging, clearing of forest land for agriculture, fire and windthrow. Following disturbance, forests are described as ‘early successional’, and contain many species specialized to young forests, such as the rare New England Cottontail. The oak-pine forest near the Mill Lane entrance to the Eastern Trail can now be described as ‘mid-successional’. This means that trees have had an opportunity to grow and mature for a number of years, but are still relatively young and even-aged. Mid-successional forests may have high timber value, and contain many of the characteristic plant and animal species typically found in a well established forest. However, because a majority of lower New England’s forest is mid– successional, numerous habitat values associated with



Japanese knotweed is one of Maine's most problematic invasive plant species.

### Naturalist's Notes

Did you know that parts of Japanese knotweed are edible? Known in Japan as *itadori*, there are many traditional recipes that use this plant, including preparing young shoots to be eaten like asparagus or rhubarb, or pickling.

While it is unlikely that we humans can eat our way out of our knotweed problem, research is currently being done to determine if the psyllid *Aphalara itadori* — an insect species endemic to Japan specializing on Japanese knotweed — can be safely released in the United States.



Hemlock woolly adelgid infested branch (Photo: USFS).

younger or older forest are missing. In particular, older 'late successional' forest contains a diversity of habitats including large, coarse woody debris and standing snags important for species of bats, flying squirrels, land snails

### ② **Volcanic invader** -70.401061, 43.540314

*Once planted for horticultural beauty, Japanese knotweed has become a seriously weedy problem.*

Because the Eastern Trail passes through many developed areas, it is no surprise that many of Maine's invasive plants can be found along the trail. A plant is determined to be 'invasive' if it is non-native and may cause either environmental, economic or physical human harm. One of Maine's most well-known invasive plants is [Japanese knotweed \(\*Fallopia japonica\*\)](#). Japanese knotweed is a large, herbaceous plant in the buckwheat family that is adapted to volcanic slopes in Japan, where it is often the first species to regrow after disturbance from lava or ash deposits. No wonder it has no trouble breaking through expansion joints and cracks in pavement! Japanese knotweed threatens natural habitats in Maine by crowding out native species. One of the most heavily impacted habitat type is floodplain wetlands, where invasive plant fragments are transported from place to place by the ice scour and eroding actions of rivers and streams.

### ③ **Hemlock forest** -70.398192, 43.54205

*When in need of a cool-down on a hot summer day, Hemlock Forest is just the place to go.*

Eastern hemlock casts a very dark shade, with [less than 2%](#) of full sunlight passing through its canopy to the forest floor. Well adapted to growing in low light conditions, eastern hemlock seedlings and saplings can persist in the understory of these dark forests for [up to 400 years](#) while waiting for optimal conditions to mature into the forest canopy! [Hemlock forests](#) contain relatively few understory plants, but are valuable to many animal species including flying squirrels which utilize tree cavities and consume abundant fungi from the forest floor; whitetail deer which take advantage of the thin snow-pack within hemlock forest for wintering habitat; brook trout which benefit from cooler streams beneath the forest canopy, and many others. Unfortunately, hemlock woolly adelgid — a non-native tree pest that defoliates and eventually kills hemlocks — is becoming increasingly common in south coastal Maine and may ultimately lead to the decline of eastern hemlock. In causing a reduction in hemlock needles, woolly adelgid is already allowing more light to reach the forest floor in some areas and changing the ecology of hemlock forest.



Huckleberry (*Gaylussacia* sp.) can be distinguished from other members of the blueberry family by resin glands on the underside of the leaves.



Maine is the northern edge of the least bittern's breeding range. Photo credit: Jeremiah Hayden.



Typical saltmarsh vegetation, with smooth cordgrass (*Spartina alterniflora*) low marsh adjacent to the river channel and matted saltmarsh hay (*Spartina patens*) high marsh in more elevated areas.

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#### ④ The Back to School Habitat -70.385829 43.550791

*By the end of August, Red Maple Swamps will begin reminding you of fall— red maples in wetlands are some of the first trees to turn their autumn colors.*

[Red maple swamp](#) is one of the most common forested wetland types in southern Maine, and - no surprise - is named for its dominant tree species. These forests typically occur on large poorly drained flats, not directly adjacent to streams or large bodies of water. The understory often contains a carpet of peat moss, and abundant [cinnamon fern \(\*Osmunda cinnamomea\*\)](#). Here, a number of shrubs in the Ericaceae, or heath family, can also be found including [lowbush blueberry \(\*Vaccinium angustifolium\*\)](#), [sheep laurel \(\*Kalmia angustifolia\*\)](#), and [huckleberry \(\*Gaylussacia baccata\*\)](#). While it can sometimes be difficult to differentiate between these species, particularly in the absence of fruits and flowers, huckleberries can be distinguished during the growing season by the abundance of yellowish resin glands on the underside of the leaf. If one wipes a leaf from a huckleberry on a piece of paper, a yellowish film will be visibly left behind.

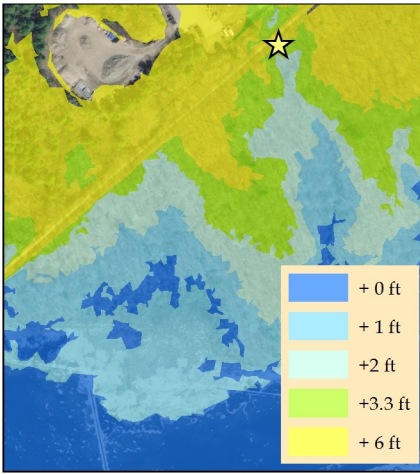
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#### ⑤ Maine's largest salt marsh -70.367161 43.562874

*At nearly 2,500 acres, Scarborough Marsh is more than twice the size of Maine's next largest salt marsh.*

[Scarborough marsh](#) is incredibly important for a variety of wildlife including rare animals such as least bittern and saltmarsh sparrow as well as rare plants such as [saltmarsh false-foxglove \(\*Agalinis maritima\*\)](#) and [dwarf glasswort \(\*Salicornia bigelovii\*\)](#). Salt marshes also have considerable values for people including flood prevention and attenuation, and as nurseries for commercial fish species. Because of its ecological and cultural importance, Scarborough marsh is of specific interest to the Maine Geological Survey and Maine Natural Areas Program for working to understand the impacts of sea level rise on the marsh and surrounding areas.

Salt marsh vegetation occurs in patterns with plant species most salt and flood tolerant at lowest elevations (most frequently tidally inundated, to least salt and flood tolerant at higher elevations (less frequently tidally inundated). Low marsh is dominated by [smooth cordgrass \(\*Spartina alterniflora\*\)](#), while high marsh is dominated by extensive lawns of [saltmarsh hay \(\*Spartina patens\*\)](#) and [black rush \(\*Juncus balticus\*\)](#). Many of the rare species associated with salt marshes depend on these extensive high marsh lawns. It is still poorly understood if the same diversity of low and high marsh will continue to exist following a rapid rise in sea level.



⑥ **Rising tides may be the wave of the future -70.354141 43.571213**

*Many low lying upland areas are anticipated to be tidal by 2100, using most sea level rise predictions.*

While there is agreement among experts that climate change will cause the sea level to rise over the next 100 years, there is disagreement what the effects of this sea level rise will be on natural systems. Based on differing rates of climate warming, forecasts estimate a range from 1- 6+ feet of sea level rise by 2100. Today, oak and pine are dominant at this site but with ~3 feet of sea level rise, future visitors may be looking out at salt marsh!

Sea level rise scenarios above current highest annual tide, courtesy of the Maine Geological Survey. The star indicates the location of observation point ⑥.

*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).*

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*Map sources: Maine Office of GIS, Esri*