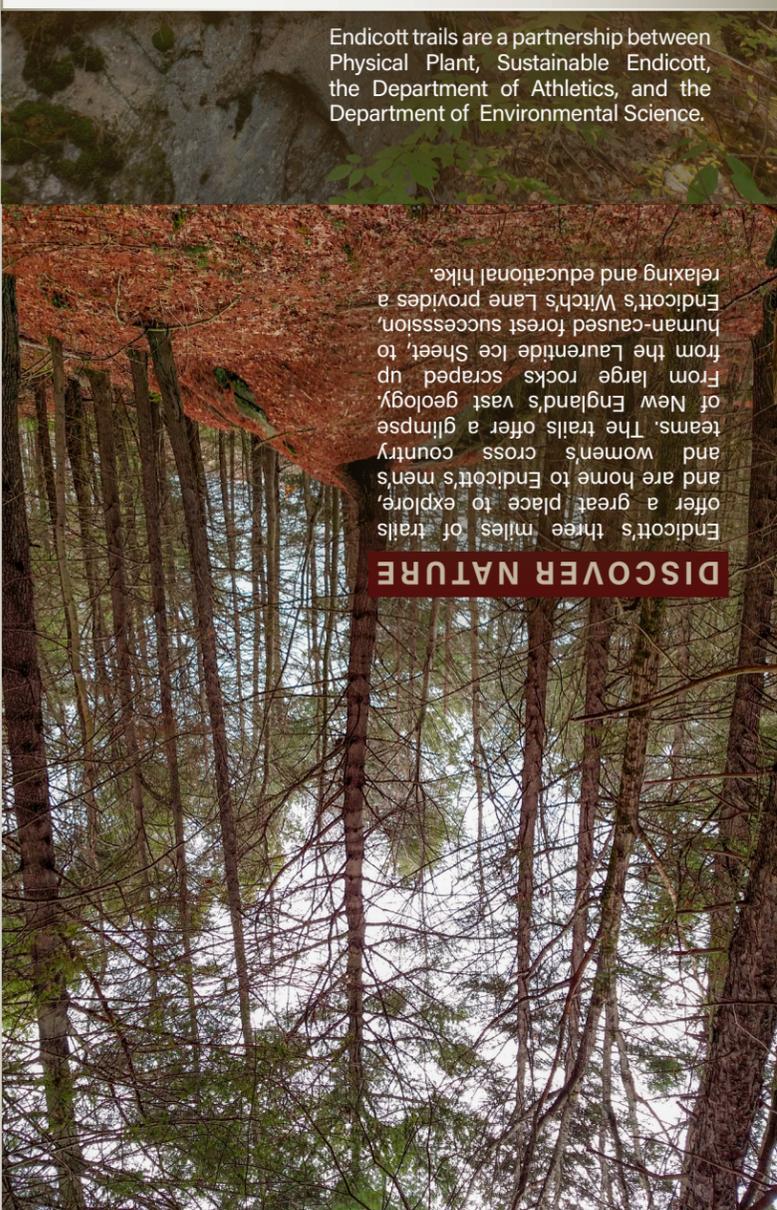




## TRAIL GUIDE

Endicott trails are a partnership between Physical Plant, Sustainable Endicott, the Department of Athletics, and the Department of Environmental Science.



## DISCOVER NATURE

Endicott's three miles of trails offer a great place to explore, and are home to Endicott's men's and women's cross country teams. The trails offer a glimpse of New England's vast geology, from large rocks scraped up from the Laurentide Ice Sheet, to human-caused forest succession, Endicott's Witch's Lane provides a relaxing and educational hike.

## STONE WALLS



Laurentide Ice Sheet expansion

### Glacial Deposits

15,000-30,000 years ago, the Laurentide Ice Sheet headed south from Canada through New England. The ice sheet scraped up the bedrock and deposited billions of stones throughout New England.

From the mid 1300s to about mid 1800, New England was in the Little Ice Age. The frozen soil caused stones to be unearthed when the summer sun warmed the soil.

### Colonial Growth

Colonial pioneers took advantage of the rich soils in New England. By the mid 1800s, farmers had cleared acres of land and upheaved the soil, revealing the stones underneath.

Stones were piled into walls to protect farmland and to remove the unwanted stone from the fields. With the advent of mechanized farm equipment, masonry was added to many walls, especially those along roads and front yards.



New England Stone Wall

### Fun Facts

- During the Little Ice Age, temperatures were 1-1.5 degrees Celsius cooler than historical average.
- In 2015, global annual average temperatures were 0.90 degrees Celsius warmer than the 20th century average.

<http://www.earthmagazine.org/article/history-science-and-poetry-new-englands-stone-walls>

## ENDICOTT'S VERNAL POOLS



Salt Marshes are also wetlands. They provide habitats and food storage. Endicott has one by Patch Beach.



Dragonfly Nymph



Twelve Spotted Skimmer

### Wetlands

Wetlands are areas where water, sediments, and detritus drain into a low-lying outlet, creating a home for a variety of organisms.

Vernal Pools are seasonal wetlands found on the West Coast and the Glaciated Northeast. During the summer and fall months they are dry. In winter and spring, the water accumulates, allowing for aquatic species to thrive.

### Why Does it Matter?

Wetlands are home to a wide range of insects, amphibians, birds, and mammals. Insects that eat mosquitoes, like dragonflies, lay their eggs in wetlands. Frogs and other amphibians also use the nutrient-rich waters to raise their young.

Wetlands provide important ecosystem services, such as water purification and nutrient cycles. These cycles help to ecosystems healthy.

### Fun Facts

- Boston is primarily a wetland that was filled in during the 1700s.
- Wetlands sequester carbon in their plants and carbon dioxide in the soil.

<http://www.epa.gov/wetlands/why-are-wetlands-important>

## AMERICAN CHESTNUT & CHESTNUT BLIGHT



American Chestnut



American Chestnut leaf



American Chestnut fruit

### American Chestnut

Endicott is home to a small stand of American Chestnuts, a fast-growing decay-resistant hardwood. The American Chestnut is an ideal tree for our ecosystem and in the 19th century, American Chestnuts made up 40% of the Eastern hardwood forests. Carpenters value the wood for its light weight and longevity.

### The Blight

The fungus *Cryphonectria parasitica* has infected most native American Chestnuts. The fungus was discovered in New York in 1904. Within 50 years, close to four billion American Chestnut trees died from the Chestnut blight. The fungus attacks the bark of the tree, creating cankers throughout the tree. Postules may appear and burst with spores, spreading the fungus.

### Fun Facts

- American Chestnuts produce a nut that is edible to both people and wildlife.
- The wood was used for furniture, shingles, fences, and more.

<http://www.forestry.gov.uk/chestnutblight>

[http://www.forestpathology.org/dis\\_chestnut.html](http://www.forestpathology.org/dis_chestnut.html)

## WOOLY ADELGID & EASTERN HEMLOCKS



Eastern Hemlock infested with HWA



Healthy Hemlock



Inside view of a HWA egg sac



Hemlock after infestation

[https://polk.oes.ncsu.edu/?page\\_id=155208](https://polk.oes.ncsu.edu/?page_id=155208)

### Damage to Hemlocks

Hemlock Woolly Adelgid (HWA) lay eggs on the native Eastern Hemlocks. HWA aphids attach to Hemlocks, deplete the tree's nutrients, and eventually kill the tree in 2-4 years.

Within months of infestation, a Hemlock can start to discolor and lose its needles. Infested Hemlocks are vulnerable to disease and infestations from other species.

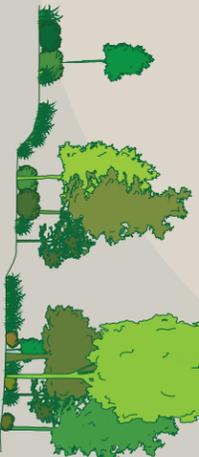
### Life Cycle of HWA

HWA are all females; they reproduce asexually. As the eggs hatch in the late spring, the larvae immediately attach to the hemlock needles and start to drain the nutrients. By March of the following year, each nymph can lay 50-175 eggs, thereby worsening the infestation.

### Fun Facts

- There are no natural predators to HWA in this region.
- The Tooth-necked Fungus Beetle has been introduced to combat the infestation.

## Succession at Endicott



Shrubs and other small bushes start to grow.

Sun-loving trees like Aspen and Birches, grow. Shade tolerant species (Maples, etc.) grow in the underbrush.

The faster-growing trees start to die and sturdier trees surpass and shade the sun-loving trees. Species such as Oak, Elm, and Pine dominate the lower sections of Endicott.



Striped Maple leaf



White Oak leaf



Sassafras leaf



Gray Birch leaf

### Fun Facts

- A fire in the 1990s cleared part of Endicott's forest and started the forest succession all over again.
- We now have small birches and aspens growing in the sun rich upper forest.

[www.dnr.state.mn.us/biomes/succession.html](http://www.dnr.state.mn.us/biomes/succession.html)

## WITCH'S LANE

### Salem Witch Trials

In January of 1692, Reverend Samuel Parris' daughter and niece accused three women of being witches. Tituba, Parris' slave and one of the accused, confessed and the paranoia began.

Women from all over Suffolk, Essex, and Middlesex counties were accused of witchcraft and put on trial. By May of 1693, all of the accused were pardoned, but the damage was already done. Almost 200 women were accused of witchcraft, 19 people were hung, and a 71-year old man was pressed to death by heavy stones.

### Endicott's Escape Route

During the paranoia, women were scared for their lives. Women accused of witchcraft, if not executed, risked death in the prisons. Witch's Lane, which runs through the Endicott trails and campus, was once used to help some of the accused women escape from Salem.

### Fun Facts

- The paranoia originated in Salem Village and Salem Town, now Danvers and Salem.
- England had ended their 300-year witch hunt only 10 years prior to the Salem Witch Trials.



Witch's Lane today



Salem Witch Trials

<http://www.smithsonianmag.com/history/a-brief-history-of-the-salem-witch-trials-1751624897/?no-ist>

## ENDICOTT & SURROUNDING TRAILS MAP

- Horseshoe Bend ..... A
- Rivers' Ridge ..... B
- Old Tree House ..... C
- Fitzy's Fork ..... D
- Cell Tower ..... E
- Endicott Access/Exit Points ..... ●
- Off-Campus Access/Exit Points ..... ●
- Emergency Exit Only  
(private property) ..... ●
- Floods after Rain ..... ■■■■
- Bridge ..... —



For a PDF of the trail map,  
SCAN HERE.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community