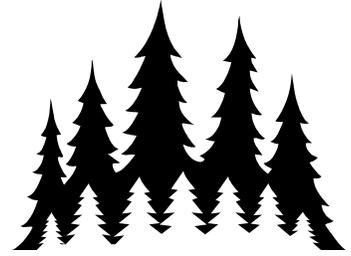


Before you visit the Forest Discovery Trail: Pre-visit Information and Activities



For additional assistance in planning your trip to the Forest Discovery Trail, please contact Clare Long, the Conservation Education Program Leader, White Mountain National Forest, at (603) 528-8707 or at cclong@fs.fed.us. Resource specialists or forest interpreters may be available to accompany your group.

Students will learn most from the Forest Discovery Trail if they become familiar with some basic forestry concepts before visiting the trail.

Key concepts/themes to introduce

1. The northern forest ecosystem is a complex system of natural and human-influenced interrelationships, processes, and cycles.
2. The northern forest, both historically and at present, has ecological, scientific, economic and social value.
3. Humans manage forestlands for multiple uses by researching forest ecology, establishing management objectives, and determining and carrying out management practices.

Introductory ideas for students

To care for something well, you have to learn a lot about it. For example, when taking care of a new pet or farm animal, you learn what it eats and how much, where it likes to sleep, what illnesses it could get and how to avoid and treat them, and so on.

Taking care of a forest is similar, though much more complex, since hundreds of species of plants and animals live there, each with different needs. A forest is a community, much like your own community, in which different people have different roles that help them meet their basic needs (food, clothing, water, and shelter). A community of people is made up of doctors, farmers, carpenters, resource managers, bakers, loggers, engineers, artists, teachers, firemen, and more. What would happen if there were no more farmers? Every job is important and contributes to the balance of the community.

People depend on a variety of forest resource and amenities from forests, including trees and their wood products. Every day, we use products made from trees; these trees came from our forest communities. When resource managers manage a forest well, they harvest trees carefully, in a way that provides wood for people to use, creates jobs, and maintains the forest's health. New trees grow to replace cut ones, and the forest community continues on.

The following activities will help prepare your students for the concepts/themes they will encounter during their visit to the Forest Discovery Trail.

Introductory activities for students

PLT activities

The following pages list PLT activities that help teach the core themes addressed at the Forest Discovery Trail. PLT materials are free of charge to teachers who take a low-cost, one-day training course. Contact your state's PLT coordinator to find out about upcoming workshops.

New Hampshire PLT:

- Phone: 603-226-0160
- Toll-free: 800-677-1499
- Email: info@nhplt.org
- Website: www.nhplt.org

Maine PLT

- Phone: 207-626-7990
- Email: meplt@zwi.net
- Website: <http://www.mainetreefoundation.org/programs/plt.html>

Wood Wise

We use myriad forest products throughout each day, often unknowingly. Among the Project Learning Tree Fact Sheets included in this curriculum, you'll find one entitled, *How Do We Benefit From Our Forests?* This fact sheet lists many forest benefits. The Project Learning Tree High School Activity *What's A Forest to You?* lists even more, including many products students would never guess were derived from trees, from suntan lotion to chewing gum to baseballs.

Ask students to consider how they benefit from forests and then brainstorm answers. Discuss their answers as a class and fill in benefits that they may have overlooked. Have each student keep a journal for a day in which he/she lists all the forest-derived products the student uses during the day. Where did those wood products come from?

Correlations to NH Frameworks of Learning:

Social Studies: Economics 5.
Economics 9.

Science: Earth/Space Science 4c.

Correlations to ME Learning Results:

Science & Technology: B. Ecology.

Social Studies: Economics: Personal & Consumer Economics A.

Graphing forestland ownership

Maine has the highest percentage of forest land of any state in the country. New Hampshire has the second highest. Ask students who they think owns the forest land in their state. Using the *Graphing Forestland Ownership* handout, have students use pie charts and bar graphs to explore who owns our forests.

The *Who Owns NH's Forests?* fact sheet, included in this curriculum packet, offers an overview of New Hampshire's land ownership distribution. Maine teachers can download a similar fact sheet from Maine PLT's website, www.mainetreefoundation.org/programs/plt.html.

The University of New Hampshire hosts a website that allows you to view detailed maps of New Hampshire, whether you're interested in seeing an overview of the whole state or the details of a specific parcel. The maps show land ownership distribution and allow you to view aerial orthophoto and topographical overlays. You'll find this tool at <http://granitweb.sr.unh.us>. (*This site requires a high-speed internet connection to generate maps.*)

Correlations to NH Frameworks of Learning:

Social Studies: Geography 10.

Geography 11.

Geography 15.

Science: Science, Technology & Society 2c.

Correlations to ME Learning Results:

Science & Technology: Inquiry & Problem Solving J.

Social Studies: Geography: Skills & Tools A.

Recommended Pre-visit PLT Activities Grades 9 through 12



Each recommended activity is correlated to the NH Curriculum Frameworks and the ME Learning Results. Abbreviated correlations are listed below. The full listing is available online at <http://www.plt.org>.

Note: The referenced activities are including in the Project Learning Tree PreK-8 Activity Guide (herein referred to as PreK-8) and the secondary modules The Changing Forest: Forest Ecology and Exploring Environmental Issues: Focus on Forests (herein referenced to as FE and FF, respectively).

NOTE: The following abbreviations have been used in noting correlations.

Correlations to NH Frameworks of Learning:

Abbreviation: Science: Life Science 3b
Framework: Science: Life Science: Students will demonstrate an increasing ability to understand how environmental factors affect all living things (i.e. individuals, community, biome, the biosphere) as well as species interactions.

Abbreviation: Social Studies: Geography 14.
Framework: Social Studies: Geography: Students will demonstrate an understanding of the connections between Earth's physical and human systems; the consequences of the interaction between human and physical systems; and changes in the meaning, use, distribution, and importance of resources.

Correlations to ME Learning Results:

Abbreviation: Social Studies: Geography: A. Skills and Tools SG #1
Learning Result: Social Studies. Geography.
A. Skills and Tools.
Secondary Grades (9-12)
1. Use mapping to answer complex geographic and environmental problems.

Abbreviation: Science and Technology: A. Classifying Life Forms SG 2.
Learning Result: Science and Technology.
A. Classifying Life Forms.
Secondary Grades (9-12)
2. Describe similarities and differences among organisms within each level of the taxonomic system for classifying organisms (kingdom through species).

Theme: The northern forest ecosystem is a complex system of natural and human-influenced interrelationships, processes, and cycles.

PreK-8 #95: Did You Notice?

Overview: In this activity, students will study changes in their local environment over short and long periods and will identify patterns of change.

Correlations to NH Frameworks of Learning:

Social Studies: Geography 11.

Geography 14.

Geography 15.

History 16.

History 17.

English Language Arts: Speaking, Listening & Viewing 3.

English Language Uses 5.

English Language Uses 6.

English Language Uses 7.

FE1: Adopt a Forest

Overview: Forests support a diversity of plants and animals that vary according to the geographic location of the forest. In this activity, students will identify a section of a local forest or wooded area for study and investigate the types of plants and animals that live there. Through this investigation, students will identify the biological and structural diversity within a forest ecosystem.

Correlations to NH Frameworks of Learning:

Science: Science as Inquiry 1a.

Science, Technology, and Society 2b.

Science, Technology, and Society 2c.

Life Science 3a.

Life Science 3b.

Life Science 3c.

Earth/Space Science 4c.

Unifying Themes and Concepts 6a.

Correlations to ME Learning Results:

Mathematics: C. Data Analysis and Statistics. SG 2.

C. Data Analysis and Statistics. SG 2.

C. Data Analysis and Statistics. SG 3.

Science and Technology: A. Classifying Life Forms SG 2.

B. Ecology SG 4.

Social Studies: Geography: A. Skills and Tools SG #1

Visual and Performing Arts: SG 9.

FE6: Story of Succession, Part A

Overview: By using their adopted forest as a guide, students will be able to identify the various stages of forest succession. Students will observe successional growth as it happens in three experimental test plots. In this activity, they will learn the ways succession is affected by wind, fire, disease, and human intervention.

Correlations to NH Frameworks of Learning:

Science: Science as Inquiry 1a.

Science, Technology, and Society 2c.

Life Science 3b.

Earth/Space Science 4c.

Unifying Themes and Concepts 6a.

Unifying Themes and Concepts 6b.

Unifying Themes and Concepts 6c.

Unifying Themes and Concepts 6d.

Mathematics: Communication and Connections 2b.

Geometry, Measurement and Trigonometry 4c.

Data Analysis, Statistics, and Probability 5a.

Correlations to ME Learning Results:

Mathematics: C. Data Analysis and Statistics. SG 2.

F. Measurement SG 1.

Science and Technology: B. Ecology SG 4.

L. Communication SG 3.

Social Studies: Geography: A. Skills and Tools SG #1

Visual and Performing Arts: SG 9.

Theme: The northern forest, both historically and at present, has ecological, scientific, economic and social value.

PreK-8 #32: A Forest of Many Uses

Overview: Privately and publicly owned forests are often managed to provide many different resources. In this activity, students will learn how forests are managed to meet a variety of human and environmental needs.

Correlations to NH Frameworks of Learning:

Science: Life Science 3b.

Earth/Space Science 4c.

Social Studies: Geography 14.

FF1: What's a Forest to You?

Overview: Forests provide us with wood, food, rubber, medicines, paper, and many other products. They also contribute to our recreational, aesthetic, and spiritual needs. Forests help purify water, prevent erosion, and modify climate. In this activity, your students will have an opportunity to explore the role that forests play in their lives and to compare their thoughts to those of their classmates, friends, and family members.

Correlations to NH Frameworks of Learning:

Science: Life Science 3b.

Earth/Space Science 4c.

Unifying Themes and Concepts 6a.

Social Studies: Geography 14.

Correlations to ME Learning Results:

Science and Technology: J. Inquiry and Problem Solving SG 2.

FF4: Who Owns America's Forests?

Overview: Did you know that the American public owns 331 million acres (134 million ha) of forests, almost half (45 percent) of the 737 million acres (298 million ha) of forests in the United States? In this activity, students will read maps and will figure out where forested lands are located around the nation and whether they are publicly or privately owned.

Correlations to NH Frameworks of Learning:

Social Studies: Economics 9.

Geography 11.

Geography 14.

Mathematics: Communication and Connections 2b.

Numbers, Numeration, Operations, and Number Theory 3c.

Data Analysis, Statistics, and Probability 5a.

Functions, Relations and Algebra 6a.

Correlations to ME Learning Results:

Mathematics: B. Computation SG 1.

Science and Technology: L. Communication SG 4.

Social Studies: Geography: A. Skills & Tools SG 1.

Geography B. Human Interaction with Environments. SG 1

Visual and Performing Arts: SG 1.

SG 9.

Theme: Humans manage forestlands for multiple uses by researching forest ecology, establishing management objectives, and determining and carrying out management strategies.

FF5: Balancing America's Forests

Overview: What's the difference between a national forest and a national park? Are park rangers and foresters the same? What guidelines exist for managing our public lands? It's clear that managing the nation's public forests is no easy task. The way that a forest manager tackles a problem may depend on what federal agency he or she works for. In this activity, your students will learn more about the people and agencies that manage our public forests, and will invite a panel of local experts to address them.

Correlations to NH Frameworks of Learning:

Social Studies: Civics and Government 2.

Civics and Government 4.

Geography 14.

Correlations to ME Learning Results:

Science and Technology: M. Implications of Science and Technology SG 1.

M. Implications of Science and Technology SG 2.

Social Studies: Civics & Government: Purpose and Types of Governments SG 2.

Graphing Forestland Ownership



Maine has the highest percentage of forest land of any state in the country. New Hampshire has the second highest. This activity will help you explore forest land ownership in New Hampshire, Maine, and the United States.

1. Using Data Set A, create three bar graphs comparing ownership across Maine, New Hampshire, and the country. Write a one sentence summary of each graph.
 - a) Compare ownership by private individuals in Maine, New Hampshire and the US.
 - b) Compare ownership by private industry in Maine, New Hampshire and the US.
 - c) Compare ownership by government in Maine, New Hampshire and the US.

2. Using Data Set B, create three pie charts comparing ownership within Maine, within New Hampshire, and within the United States. Write a one sentence summary of each graph.
 - a) Compare the percentage of forested area owned by private individuals, industry, and the government within New Hampshire.
 - b) Compare the percentage of forested area owned by private individuals, private industry, and the government within Maine.
 - c) Compare the percentage of forested area owned by private individuals, private industry, and the government within the United States.

Graphing Forestland Ownership



Data Set A: Land area in Maine, New Hampshire, and the United States, acreage listed by total land area, and ownership category.

	Maine	New Hampshire	United States
Total acres	19,753 thousand acres	5,700 thousand acres	2,263,230 thousand acres
Total forested acres	17,699 thousand acres	4,818 thousand acres	748,923 thousand acres
Total forested acres owned by private individuals	9,281 thousand acres	3,267 thousand acres	363,381 thousand acres
Total forested acres owned by private industry	7,449 thousand acres	463 thousand acres	66,380 thousand acres
Total forested acres owned by government (local, county, state, and federal)	970 thousand acres	1,088 thousand acres	319,161 thousand acres
Total acres National Forest (included in government ownership)	40 thousand acres	717 thousand acres	148.456 thousand acres
Smith, Miles, Vissage and Pugh. 2002. <i>Forest Resources of the United States: A Technical Document Supporting the USDA Forest Service 2005 Update of the RPA Assessment</i> . U.S. Department of Agriculture Forest Service.			

Data Set B: Forest area in Maine, New Hampshire, and the United States between 1630 2002.

	Maine	New Hampshire	United States
1630	18,180 thousand acres	5,490 thousand acres	1,045,435 thousand acres
1907	14,900 thousand acres	3,500 thousand acres	759,140 thousand acres
1938	16,036 thousand acres	4,664 thousand acres	759,814 thousand acres
1953	17,088 thousand acres	4,848 thousand acres	756,167 thousand acres
1963	17,425 thousand acres	5,019 thousand acres	761,936 thousand acres
1977	17,718 thousand acres	5,014 thousand acres	743,633 thousand acres
1987	17,713 thousand acres	5,021 thousand acres	737,750 thousand acres
1997	17,711 thousand acres	4,955 thousand acres	746,958 thousand acres
2002	17,699 thousand acres	4,818 thousand acres	748,923 thousand acres
Smith, Miles, Vissage and Pugh. 2002. <i>Forest Resources of the United States: A Technical Document Supporting the USDA Forest Service 2005 Update of the RPA Assessment</i> . U.S. Department of Agriculture Forest Service.			

Note: 40 thousand acres = 40,000 acres
 17,699 thousand acres = 17,699,000 acres