

FORESTRY CURRICULUM

Forestry Key Points

- 1F Identify common trees without a key and identify specific or unusual species of trees or shrubs through the use of a key.
- 2F Understand forest ecology concepts and factors affecting them, including the relationship between soil and forest types, tree communities, regeneration, competition, and succession.
- 3F Understand the cause and effect relationship of factors affecting tree growth and forest development (climate, insects, microorganisms, wildlife, etc.).
- 4 F Understand how wildlife habitat relates to forest communities, forest species, forest age and structure, snags and den trees, availability of food, and riparian zones.
- 5F Understand how the following issues are affected by forest health and management: biological diversity, forest fragmentation, air quality, aesthetics, fire, climate change, and recreation.
- 6F Understand basic forest management concepts and tools such as how various silvicultural practices are utilized, the use of tree measuring devices, and the best use of management practices.
- 7F Apply silvicultural concepts and methods to develop general management recommendations and goals for a particular situation.
- 8F Identify the complex factors that influence forest management decisions (e.g., economic, social, and ecological).
- 9F Understand the value of trees in urban/suburban settings and the factors affecting their health and survival.
- 10F Describe specific adaptations of wildlife to their environment and their role in the ecosystem.

Suggested Core Activities

- Students should identify common trees and shrubs in their local area without a plant key, and identify specific or unusual species of trees and shrubs using a key. Using plant presses, students should collect samples, and create plant identification collections for future study. (1F)
- Students should conduct tree ring research by using tree trunk slices to determine tree age, growing conditions, insect damage, and weather conditions. (3F)
- Students should use a clinometer, diameter tape, Merritt Hypsometer, prism, and loggers tape to measure trees in their local area. Using a variety of volume tables, the students should be able to calculate the volume of lumber for each tree. (6F)
- Students should download the PDF file "Forest Health" from eco-links written by the Temperate Forest Foundation. Team members should present their research on how the following issues are affected by forest health and management: biological diversity, forest fragmentation, air

- quality, aesthetics, fire, climate change, and recreation. (5F)
- Using the Penn State “virtual forest tour” on their computer, students should understand how forest practices and policy affect sustainability. Students should compare a mixed eastern hardwood forest in Pennsylvania to a douglas fir forest in Oregon. (2F, 3F, 6F, 7F, 8F)
- Students should create a presentation display showing the value of trees in an urban setting, and the factors affecting their health and survival. 9F
- Students should make a map of their local area forest or park, including wildlife inventories, tracks, habitat, food sources, and specific wildlife adaptations. (4F, 10F)

Top Resources

- Natural Resource Skills-Tree Identification
<http://gaia.flemingc.on.ca/~dhendry/nrstrid.htm> (1F)
- Dendrology at Virginia Tech, Dept of Forestry. Good maps, identification and quizzes for Canada and the US.
<http://www.cnr.vt.edu/dendro/dendrology/map/zonemap.htm> (1F)
- Penn State virtual forest
www.virtualforest.psu.edu (2F, 3F, 6F, 7F, 8F)
- University of Arizona tree ring research. Students can participate in tree ring exercises.
<http://tree.ltrr.arizona.edu/dendrochronology.html> (3F)
- Canadian Forest Service
<http://www.nrcan.gc.ca/cfs-scf/> (All)
- Temperate Forest Foundation - Silviculture practices, management, and eco-links.
<http://www.forestinfo.org/> (All)
- Canadian Pulp and Paper Association
<http://www.cppa.org/english/> (All)
- Private Forest Management Team. This site includes many forest management areas including measuring, harvesting, growth, yield, pests and disease, wildlife, and many others.
- <http://www.pfmt.org/default.htm> (All)
- Auburn University- Instructions and care of the increment borer.
http://www.pfmt.org/inventories/increment_borer.htm (6F)
- Tree measurement volume tables

<http://www.pfmt.org> (6F)

- Canada measurement volume tables
http://nfi.cfs.nrcan.gc.ca/terms/procedures_e.html#volumespecs (6F)
- Virginia Dept of Forestry
<http://www.dof.state.va.us> (All)
- Idaho Forest Products Commission-Forest health and conditions, biodiversity, and management implications.
<http://www.idahoforests.org/health.htm> (3F, 5F, 7F, 8F)
- Canada Forest Health
<http://www.atl.cfs.nrcan.gc.ca:8080/cfsnet/index-e.html> (3F, 5F, 7F, 8F)
- Urban forestry
www.americanforests.org/resources/urbanforests/ (9F)

Forestry Extended Studies

Students should explain how forest landowners can create the habitat requirements needed for wildlife species. (4F, 10F)

Students should recommend harvesting methods for even and uneven age stands. They will list the benefits of shelterwood, seed tree, and clearcut methods.

<http://www.forestinfo.org/Discover/reforest.htm> (2F, 6F,7F)

Students should list and diagram the different characteristics of the following forest types: Savanna, open, dense, understory, and complex.

<http://www.idahoforests.org/health2a.htm> (2F, 5F, 7F,8F)

Students should map, label and define the 12 forest regions of Canada.

http://www.canadianforestry.com/html/forest/forest_regions_e.html (2F, 3F, 5F, 7F, 8F)

Additional Resources

Canada Natural Resources Forestry and Energy Fact Sheets

<http://www.nrcan.gc.ca/statistics/factsheet.htm>

Georgia Pacific Forestry Education in Nature

<http://www.gp.com/EducationalinNature/subjects.html>

Canada Renewable Energy Forestry

<http://www2.nrcan.gc.ca/es/oerd/english/view.asp?x=700&mid=33>

BLM National Energy Initiatives

<http://www.blm.gov/energy/>

New Brunswick Natural Resources Forestry and Energy

<http://www.gnb.ca/0079/index-e.asp>

U.S. Dept. of Energy

<http://www.eere.energy.gov/>

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