Envirothon New Brunswick
Forestry Learning Objectives

Key Point 1—Tree Physiology and Tree Identification

Learning Objectives:

1. Know the parts and tissues of a tree, and be able to explain the growth cycle and life cycle of a tree.
- How a Tree Grows
- Parts and Tissues of a Tree
- Dendrochronology

2. Understand the processes of photosynthesis and respiration and how they are important to the growth and reproduction of trees.
- Photosynthesis

3. Identify common tree species without a key, and identify specific or unusual trees through the use of a key. Know characteristics of the principle tree species in New Brunswick (shade tolerance, longevity, preferred habitat, and common uses and products)
- Native Trees of New Brunswick
- Scientific Names of NB Trees
- Softwood Key for Acadian Forest Species
- Hardwood Key for Acadian Forest Species

Key Point 2—Forest Ecology

Learning Objectives:

1. Know the typical crown classes.
- Crown Classes

2. Understand forest ecology concepts and factors affecting them, including the relationship between soil and forest types, tree communities, regeneration, competition, and primary and secondary succession.
- Forest Soils
- Forest Succession
- Forest Fires

3. Identify the abiotic and biotic factors in a forest ecosystem, and understand how these factors affect tree growth and forest development. Consider factors such as climate, insects, microorganisms, and wildlife.
- Biotic and Abiotic factors
- Assessing Tree Health
- Exotic Insects and Diseases
- Native Insects and Diseases
- Impacts of Climate Change on Canada's Forests
- Insects and Diseases

Key Point 3—Sustainable Forest Management

Learning Objectives:

1. Understand the term silviculture, and be able to explain the uses of thinning, clear-cutting with and without seed trees, coppice management, even-aged and uneven-aged management, shelterwood, and selection.
    *   Glossary of Forestry Terms
    *   Silvicultural Treatments
    *   Growing Canada's Forests

2. Understand the methodology and uses of the following silviculture treatments: Planting, weeding, pre-commercial thinning (PCT), commercial thinning and harvesting.
    *   Silviculture Systems
    *   Silvicultural Treatments
    *   Precommercial Thinning

3. Know how to use forestry tools and equipment in order to measure tree diameter, height and basal area.
    *   Forest Inventory
    *   Aerial Photos

4. Understand how forestry management practices and policy affect sustainability.
    *   Sustainable Forest Management

5. Understand how economic, social and ecological factors influence forest management decisions.
    *   Forest Management

6. Learn how science and technology are being utilized in all aspects of forest management.
    *   Transformative Technologies

Key Point 4—Trees as an Important Renewable Resource

Learning Objectives:

1. Understand the importance and value of trees in urban and community settings, and know the factors affecting their health and survival.
    *   Urban Forestry
    *   Forest Values

2. Understand the economic value of forests and know many of the products they provide to people and society.
    *   Biodiversity
    *   Biomass
    *   Carbon Sequestration
    *   Economic Benefits
    *   Non-timber Forest Products

3. Explain the "Ecosystem Services" provided by trees, and understand why trees and forests are important to human health, recreation, wildlife, and watershed quality.
    *   Forest Ecosystem Products

Key Point 5 – Forestry in New Brunswick and Ccanada

1. Have knowledge of the history of forestry in New Brunswick
   - Chronology of Forestry in New Brunswick

2. Knowledge of Forest Regions of Canada, particularly the Acadian Forest Region and the Boreal Forest Region.
   - Map of Forest Regions of Canada
   - Acadian Forest Region
   - Boreal Forest Region
   - Great Lakes-St. Lawrence Forest Region

3. Knowledge of the value of Crown lands in New Brunswick and how this resource is being managed.
   - Managing New Brunswick Crown Forest