

FORESTRY LEARNING OBJECTIVES

Forestry in New Brunswick

Knowledge of the importance of forestry in New Brunswick and how this resource is managed.

- History of forestry in New Brunswick
- Land tenures
- New Brunswick by the numbers
- Forest Management legislation and regulations
- Forest certification
- Duty to consult with Aboriginal Peoples

Forestry in Canada

Understand the value of Canada's forests to Canadians

- Canada's forests by the numbers
- Forest land ownership in Canada
- How much has Canada's forests changed over the years?
- Is timber being harvested sustainably?

Tree Physiology and Tree Identification

Know the parts and tissues of a tree, and be able to explain how a tree grows

- Parts of a tree
- Parts of a twig
- Leaf structure and function
- Dendrochronology

Understand the processes of photosynthesis and respiration

- Photosynthesis

Identify common tree species without a key, and identify specific or unusual trees using a key.

Know characteristics of the principle tree species in New Brunswick (shade tolerance, longevity, preferred habitat, and common uses and products)

- Softwood key for Acadian forest species
- Hardwood key for Acadian forest species
- Tree Identification <https://novascotia.ca/natr/forestry/treeid/>

Forest Ecology

Know the typical crown classes

- Crown classes

Knowledge of Forest Regions of Canada, particularly the Acadian Forest Region and the Boreal Forest Region.

- Forest Regions of Canada

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 succession
- Shade tolerance
- Forest soils
- Forest fires
- Ecosystem services
- Forests and earth's carbon balance

Forest Management

Understand the various silvicultural treatments associated with reforestation, stand improvement, stand regeneration, and harvesting

- Even-aged harvesting systems
- Uneven-aged harvesting systems
- Reforestation
- Pre-commercial thinning
- Commercial thinning

Understand the principles of annual allowable cut and stumpage as it relates to sustainable forest management

- Sustainable forest management
- Annual allowable cut
- Stumpage

Knowledge of non-timber products that our forest provide

- Non-timber forest products (NTFPs)

Forest Measurements

Be able to recognize some basic features on aerial photographs and know how to measure and determine distances and area on aerial photographs.

- Aerial photographs

Know how to use forestry tools and equipment in to measure tree age, diameter, and height.

- Tree measurements

Know how to use forestry tools and equipment to measure stand basal area, density, and stocking

- Stand measurements

Knowledge of LiDAR technology and how it is used in enhanced forest inventory in New Brunswick

- LiDAR

Forest Health

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

- Biodiversity
- Native insects and diseases
- Invasive species

Climate Change and Canada's Forests

Knowledge of the impacts of climate change on Canada's forests

- Canada's forests in a changing climate
- How our forest could look in the future
- Mitigation
- Adaptation