

Forestry- 2010 Learning Objectives

Canada's Forests - General Information

1. Identify the eight major forest regions of Canada.
2. Identify the principal tree species in New Brunswick.
3. Know characteristics of the principle tree species in New Brunswick (shade tolerance, longevity, preferred habitat, and common uses or products).
4. How much of Canada's and New Brunswick's land area is forest, including how much is forested crown land and how much is privately owned?
5. What is the importance of New Brunswick's forests to people, the natural environment, and the economy?
6. Explain how forests have influenced our history in New Brunswick.
7. Identify the kinds and number of jobs that are forest-related today.
b) In Canada
a) In New Brunswick
8. Describe the various ways, including the processes, in which value is added to wood in New Brunswick.
9. Identify non-timber products derived from the forests of New Brunswick.

Tree Information

1. Use correct terminology to use a tree identification key.
2. Explain tree growth from photosynthesis to branch growth, from trunk growth to the role of roots.
3. Summarize the history of a tree by looking at growth rings (periods of drought, faster growth, scarring).
4. Classify trees in a stand according to their crown classes (dominant, co-dominant, intermediate and suppressed).

Forest Management

1. Understand the following forest management and silvicultural practices

Pre-commercial thinning

Semi-commercial thinning

Shelterwood cut (uniform and strip)

Sanitation cut

Crop tree release

Conversion cut

Clearcut

Site preparation, planting and plantation tending

Pruning

2. Explain how environmental concerns (such as water quality and habitat), recreation, wildlife, and aesthetics are incorporated into forest management.

3. Explain the concepts of even and uneven aged forests.

4. Describe the concept of sustainable forest management (SFM) and annual allowable cut.

5. Understand basic forest ecology concepts and factors affecting them (relationship between soil and forest types, tree communities, regeneration, competition and succession).

6. Explain the role fire plays in forest ecosystems.

7. Describe the principal insects and diseases that affect New Brunswick forests.

8. Debate the pros and cons of a natural forest versus an intensively managed forest with respect to biological diversity.

9. Explain forest certification and describe the most common certification systems in Canada.

Application/Analysis

1. Identify common trees without a key and identify specific or unusual species of trees or shrubs through the use of a key.

2. Use the following forestry equipment and tables:

- Diameter tape
- Increment borer
- Stereoscope (aerial photos, maps)
- Biltmore sticks (only for Canon)
- Hypsometer (Suunto, Vertex)
- Stocking charts

- Volume tables
- Site Index charts
- Prism
- Tree calipers (dbh)
- Compass
- GPS

3. Determine the age of a tree using an increment borer or tree cookie.

4. Identify evidence of presence of harmful forest pests in a forest.

5. Analyze issues related to environmental sustainability and the impact of forest management on the forest ecosystem (sustainability, biodiversity, climate change, invasive species).

Evaluation/Synthesis

1. Develop a management plan or prescription for a forested area.

2. Re-construct the history of a forest site (harvested, clear cut, stage in succession) based on information gathered at the site.

3. Examine current forestry issues from different user (forest companies, government agencies, general public, recreational groups, etc.) perspectives (clear-cut versus old growth, prescribed burns in protected areas, pesticide use, etc.).

Current Topic

1. Understand the effect of various forestry practices on the water table, water runoff, and regulation of water flow.

2. What impact do the Clean Water Act and Protected Watershed Regulations have on forestry operations in New Brunswick?