



Delaware Envirothon Forestry Key Concepts



Statistics below are from the 2020 Delaware Forest Resource Assessment which is integrated into the Forestry Key Concepts and Learning Objectives.

Forests and Society

- Beneficial role of trees and forests
- Forest land use and ownership
- Forest products and productivity

Since 1995, State Forest acreage has more than doubled from 9,100 acres to 21,126 acres, including 2,428 acres through the Forest Legacy Program.

Delaware is in a floral transition zone between northern and southern forest types, creating a diverse group of forest communities yielding a high number of tree species.

Tree Physiology & Identification

- Tree parts and functions
- Tree reproduction and lifecycle
- Identification of 29 native trees

Forest Ecology

- Components of a forest ecosystem
- Processes and cycles in a forest
- Developmental stages of forests

Delaware is home to 538 different species of mammals, birds, reptiles, and amphibians. Of these, 13 species are listed as endangered in the states and are forest dependent.

In 1957, loblolly pine forests dominated with just over 50% of the total forest acreage. Now, loblolly pine accounts for less than 20% of that acreage.

Sustainable Forest Management

- Silviculture principles & treatments
- Management objectives & strategies
- Maintenance of productive capacity

Forest Inventory & Mensuration

- Tree measurements & tools
- Plot measurement procedures
- Objectives for conducting inventories

Nearly 80% of Delaware's forests are currently either medium-or-fully stocked, indicating near optimum growth based on scientific growth curves.

Conserving forests that are critical to water quality and quantity, such as forested wetlands and riparian forests, is vital to Delaware's environment and economy.

Conservation of Forest Resources

- Importance of forest health
- Major issues facing forests
- Programs & regulations

Delaware Envirothon Forestry Learning Objectives

Students must be able to...

A. Understand the historical roles of forests in society

1. Know the historical role and importance of forests
2. Explain the various benefits of trees and ecological roles of forests
3. Explain the importance of trees in urban areas and aspects of urban forestry
4. Understand forest land use and ownership in Delaware
5. Know the economic value of forests and the many products they provide

B. Understand and describe the physiology of trees and methods for their identification

1. Know the different parts of a tree and their functions
2. Explain the reproduction of the two main types of trees.
3. Describe the lifecycle of a tree and explain how trees grow
4. Understand the method and terminology required to use a dichotomous tree key
5. Know and identify major tree and shrub species native to Delaware's forests

C. Understand and describe the various characteristics and processes of forest ecology

1. Understand the concept and processes of forest ecology.
2. Identify the abiotic and biotics components of a forest ecosystem
3. Explain the process of photosynthesis and nutrient cycling
4. Understand and illustrate the process and stages of succession
5. Understand the developmental stages, structuring, and types of forests

D. Understand and describe the methods and practices of sustainable forest management

1. Identify and describe the various silvicultural principles and treatments
2. Understand tree harvesting and regeneration methods
3. Describe the various forest management objectives
4. Explain forestry best management practices
5. Explain the forest management cycle and each of its component parts

E. Understand and describe the methods and tools used in a forest inventory

1. Understand the importance of forestry measurements and identify the tools used for each
2. Demonstrate proficiency using various forestry tools and interpreting the collected data
3. Explain plot measurement procedures used in a forest inventory
4. Understand and explain the various objectives for completing a forest inventory
5. Explain what site index means and know to read a site index graph

F. Understand and describe practices involved in the conservation of forest resources

1. Explain the importance of forest health
2. Understand the major issues affecting Delaware's forests
3. Identify Delaware's main forest pests and diseases
4. Understand the programs available aimed at conserving forest resources
5. Explain the various laws and regulations aimed at conserving forest resources