

Unit A: Introduction to Forestry

Lesson 1: Defining Forests

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objectives:

1. Define a forest.
2. Explain the importance of forests.
3. Identify the types of forests.
4. Describe the uses of forests.

Recommended Teaching Time: 2 hours

Recommended Resources: The following resources may be useful in teaching this lesson:

- A PowerPoint has also been developed with use of this lesson plan
- <http://en.wikipedia.org/wiki/Forest>
- <http://forestry.about.com/library/tree/blwrldx.htm>

List of Equipment, Tools, Supplies, and Facilities

Writing surface

PowerPoint Projector

PowerPoint slides

Transparency Masters

Picture of forest

Terms: The following terms are presented in this lesson (shown in bold italics and on PowerPoint Slide #2):

- Commercial forestry
- Forest
- Forestry
- Log
- Native forest
- Old-growth forest
- Pulpwood
- Regrowth forest
- Silviculture
- Tree farm

Interest Approach: Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

Display a picture of a forest or take students to a forest. Ask them to identify ten “things” they see. Direct a class discussion that leads into the lesson.

Summary of Content and Teaching Strategies

Objective 1: Define a forest.

(PowerPoint Slide #3)

- I. A **forest** is a living, complexly interrelated community of trees and associated plants and animals. It is an ever-changing community.

(PowerPoint Slide #4)

- A. Plants dominate the land area. Animal wildlife may live in association with the forest community.
- B. Forests will live indefinitely on a given area of land unless seriously disturbed by people or altered by catastrophic events.
- C. Forests contribute to the stability of nature and consequently benefit many forms of life, including human beings.
- D. The study of forests and associated communities is known as **forestry**.

****Use TM: A1-1 or PowerPoint Slide #6 as material to help summarize this objective. Lead the discussion into why forests are so important. Have students give specific reasons why forests are important.**

Objective 2: Explain the importance of forests.

(PowerPoint Slide #7)

- II. Forests are a very important part of the environment. Forests cover about one-third of the earth's surface and Afghanistan has approximately 1,351,000 hectares of forests.

(PowerPoint Slide #8)

- A. A tree in a forest reflects the interaction between the genetic growth characteristics of the tree and the environment of the tree.
 - 1. The art of producing and tending a forest is called **silviculture**. The relationship between genetics and environmental influences must be understood for silviculture to be effectively practiced.

Objective 3: Identify the types of forests

(PowerPoint Slide #9)

- III. Forests once covered many of the world's continents. This vast natural resource promoted the growth of many countries.

(PowerPoint Slide #10)

- A. There are several types of forests.
 - 1. A **native forest** is one in which the species are voluntarily growing and are naturally present in the area. Native forests often have a variety of species and provide wildlife habitat.

(PowerPoint Slide #11)

- a. The majority of the forests in Afghanistan have been cut one or more times. This area is known as **re-growth forest** because if given enough time, it re-grows approximately every quarter century after cutting.

(PowerPoint Slide #12)

- b. An uncut forest is known as an **old-growth forest**.

(PowerPoint Slide #13)

2. A **tree farm** is an area that has been planted to select and improve tree species. Undesirable native species are not allowed to grow on tree farms. Practices are used to protect the trees and promote rapid, desirable growth.

(PowerPoint Slide #14)

- a. Regular harvest schedules are followed and usually result in higher wood production.
3. **Commercial forestry** is caring for a forest to improve the quality and quantity of wood when it is marketed.

****Have students figure out and discuss which types of forests they have in your area. Also have students get into groups and have them create a list of uses for forests. When they are finished have them share their lists with the class, then lead into the next objective.**

Objective 4: Describe the uses of forests.

(PowerPoint Slide #15)

IV. Forests have many uses. Products from the trees that grow in forests are used in many ways.

- A. The uses of forests are far greater than just the trees.

(PowerPoint Slide #16)

1. Economic benefits are the commercial uses made of forests. Raw materials are used for manufacturing useful products.
 - a. A **log** is a segment of the main stem, or trunk, of a tree that is suitable for sawing into lumber.
 - b. **Pulpwood** is the wood that is used to make paper and similar products.

(PowerPoint Slide #17)

- c. Forests provide a large number of other products including fence posts, maple syrup, nuts, berries, and many specialty wood materials.

(PowerPoint Slide #18)

2. Forests provide a number of important benefits to the environment.
 - a. Forests influence local climate. Trees can cool small areas in warm weather and reduce wind movement throughout the year.

(PowerPoint Slide #19)

- b. Forests conserve moisture. Trees reduce the loss of water to runoff and help retain snow as it is melting; maintaining groundwater supplies and reducing the chance of flooding.

(PowerPoint Slide #20)

- c. Forests provide habitat for wildlife. Many trees produce nuts or berries that are used as food by wildlife. Some wildlife species use leaves, holes in trees, and other places as nesting or bedding areas.

(PowerPoint Slide #21)

- d. Forests can be used for pollutant removal and detection. Trees remove some pollutants from the air. Trees reduce particulate in the air by holding it on leaf surfaces.
- e. Trees are used for noise reduction. Trees are often planted along roads to reduce the noise from passing vehicles.

(PowerPoint Slide #22)

- f. Forests provide recreational activities. People enjoy hiking in forests and observing tree growth and wildlife.

****Use TM: A1-2 or PowerPoint Slide #23 as material to help summarize this objective.**

Review/Summary: In order to review the objectives, have students take notes and review the terms and anticipated questions provided. Questions on PowerPoint Slide # 24 can also be used as a review.

Application: Students will relate the information to the forests in Afghanistan.

Evaluation: Use the following sample test to evaluate the students' comprehension of the material covered in this lesson.

Answers to Sample Test:

Part One: Matching

- 1. c
- 2. e
- 3. b
- 4. f
- 5. g
- 6. d
- 7. a

Part Two: Completion

- 1. genetics and environmental influences
- 2. moisture, temperature and soil
- 3. native
- 4. re-growth forest

Part Three: Short Answer

Influence local climate; conserve moisture; provide habitat for wildlife; pollutant removal and detection; noise reduction; and, recreational activities.

Sample Test

Name _____

Test

Unit A Lesson 1: Defining Forests

Part One: Matching

Instructions. Match the term with the correct response. Write the letter of the term by the definition.

- | | | |
|------------------------|----------------------|--------------|
| a. Commercial forestry | d. forestry | g. tree farm |
| b. forest | e. native forest | |
| c. silviculture | f. old-growth forest | |

- _____ 1. The art of producing and tending a forest.
- _____ 2. Species are voluntarily growing and are naturally present in the area.
- _____ 3. A living, complexly interrelated community of trees, associated plants and animals.
- _____ 4. An uncut forest.
- _____ 5. Area planted to selected and improved tree species.
- _____ 6. The study of forests and associated communities.
- _____ 7. Caring for a forest to improve the quality and quantity of wood when it is marketed.

Part Two: Completion

Instructions. Provide the word or words to complete the following statements.

1. The relationship between _____ and _____ must be understood for silviculture to be effectively practiced.

2. _____, _____ and _____ influence the types of forests that grow.

3. _____ forests often have a variety of species and provide wildlife habitat.

4. An area that has been cut one or more times is known as _____.

Part Three: Short Answer

Instructions. Provide information to answer the following question.

Forests provide a number of important benefits to the environment. What are they?

TM: A1-1

Forest – living community of trees, plants, and animals.

Forestry – study of forests and associated communities.



TM: A1-2

Forest Uses

Each year a tree captures an average of 11.8 kilograms of carbon dioxide from the Earth's atmosphere.

