# Oklahoma Forests & Forestry

OSU EXTENSION
4-H YOUTH DEVELOPMENT

## Objectives

- Participants will gain knowledge regarding the importance of forests in Oklahoma
- Participants will be able to define forestry
- Participants will gain an appreciation of the value of forests
- Participants will be able to define single and multiple use forest management

## Materials:

- Handout

## Life Skills:

- Critical Thinking
- Problem Solving
- Decision Making
- Learning to Learn

## Background

"Oklahoma, with a land area of over 44 million acres, has one of the most diverse landscapes of any state. The southeastern corner, with an elevation of only 300 feet above sea level, receives more than 50 inches of precipitation annually. While the northwestern corner of the panhandle (elevation 4978 feet at Black Mesa) averages only 16 inches. This variance of precipitation and elevation results in a diverse set of conditions to those interested in Oklahoma's forests. However, this also presents challenges for those planting trees, particularly in the most western parts of the state." (Little, 2002)

"Originally, Oklahoma had 12 million acres of forest cover, over a fourth of the total surface area of the state. Today, we have about 8 million acres, having lost 4 million acres to land clearing practices such as urban development, construction and conversion to cropland and pastureland.

About 4.5 of the 8 million acres of forest are considered "commercial" forest land, capable of producing sustained yields of wood products. The majority of this is the southern pine area in eastern Oklahoma, and areas of quality hardwood in the northeast. These lands are primarily owned by private landowners (64%). The remainder is owned by forest industry (23%), National Forest (5%), and other public entities (8%).

The remaining 3.5 million acres are considered "non-commercial" forest yielding few saleable products other than firewood. This area is primarily the post oak-blackjack oak of Central Oklahoma. The earliest settlers appropriately named this area "cross-timbers" reflecting the difficulty they encountered when attempting to make their way west." (Little, 2002)

The majority of this forestland is located in the 18 eastern-most counties of the state. (See Figure 1)

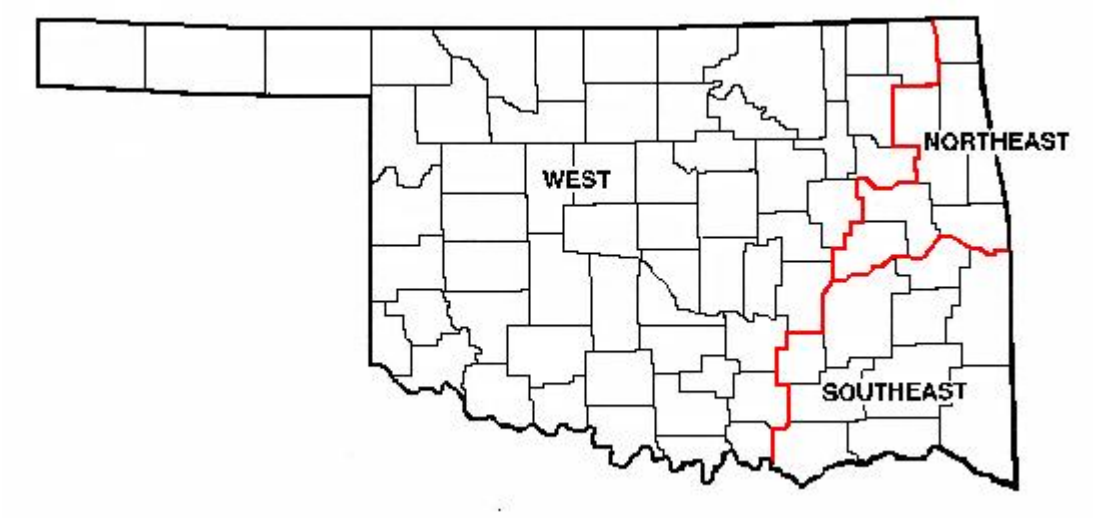


**Figure 1: Map depicting the where the majority of forest land occurs in Oklahoma**

Every year, each Oklahoman uses the equivalent of a 100-foot tall, 18-inch diameter tree in the form of paper, lumber, fuel and a variety of other products. Today, forestry is an $80+ million a year industry in Oklahoma. Value added forestry products made in Oklahoma could increase that figure nearly 3-fold. Additionally, forest grazing and forest wildlife are important economic resources to Oklahomans who engage in hunting, fishing, livestock production and various non-consumptive outdoor recreation activities. The value of these non-timber resources is believed to exceed $600 million annually.

## What is Forestry?

"Forestry is defined as the art and science of establishing, caring for, and/or managing forests. A more contemporary definition as applied to Oklahoma is establishing, caring for, and managing trees and shrubs to produce goods, services or benefits for people, or to solve environmental problems. This definition uses the multiple use concept, where more than one "output" is enhanced on the same area, based upon the objectives of the landowner" (Little, 2002).

## What determines Value?

Value is defined as the relative worth, merit or importance of an object.

There are a number of different categories into which values can be placed. Listed below are some ways that values can be categorized:

**Aesthetic values** is the worth placed on something for its natural beauty.

**Economic values** are those based in financial terms (dollars and cents).

**Educational values** are based on the worth of something in its benefit to teach or learn.

**Ecological values** are those that each species has as part of an ecosystem.

**Personal values** are those you take for yourself and which constitute a critical part of your values and are apparent in attitudes, beliefs and actions.

**Social values** are principles that indicate how you relate meaningfully to others in social situations, including those involving family, friends, and co-workers. These can also be viewed in terms of the way a person was raised to believe in something.

**Recreational values** is worth in terms of leisure.

## What is the Value of a Forest?

Here are some reasons why forests are of value to us.

Forest surfaces absorb ***water*** and aid in controlling soil erosion and runoff. They are important in slowing winter snow melt and during the summer help to reduce stream runoff and sediment deposit.

Forests produce ***oxygen*** and remove carbon dioxide from the air. One mature tree absorbs approximately 13 pounds of carbon/year. For every ton of wood a forest grows, it removes 1.47 tons of carbon dioxide and replaces it with 1.07 tons of oxygen (Society of American Foresters, 2007).

Forests provide ***recreation*** opportunities for individuals and families such as hiking, camping, hunting, fishing, observing wildlife and many other activities.

Forests may serve as ***forage and grazing*** areas for livestock. While overgrazing can be detrimental, moderate grazing may remove understory plants which compete with trees.

Forests provide ***windbreaks*** which help to reduce the force of wind on buildings and ***reduce energy costs*****:** Three well-placed mature trees around a house can cut air-conditioning costs by 10-50 percent, while trees and other landscaping can increase property value by 5-10 percent (Society of American Foresters, 2007). Windbreaks also protect the land from wind erosion and topsoil loss.

Forests serve as ***noise and vision buffers*** , especially in urban areas. When these buffers are placed correctly they aid in reducing noise and/or unwanted views.

Forests provide ***products*** such as lumber, plywood, pulp and paper, nuts, seed cones, fuelwood, resin and berries. Other products include syrup, cosmetics, perfume, chewing gum and crayons. There are over 5,000 products that are made from trees.

As you hopefully see, forests are valuable to many people for many different reasons. Value is the worth that an individual (or group of individuals) place on something and these values are subject to different interpretations by different people. Because of these differences, conflicts may arise when people or groups value the same resource for different reasons.

## Forest Management

Because of the "opportunity" for conflict, the organization or individual responsible for forest management must make plans and choices in deciding which values to seek in a particular forest. Good forest managers consider needs and proper use. The easiest plan for a manager is a **single use**. This may mean harvesting, setting land aside for aesthetic purposes or for recreation. A more difficult plan is a multiple use of the land. This plan takes into account many needs and values over the same period of time. The same forest area may produce water, wildlife, wood and other forest products as well as recreation.

In **multiple use** forests all of the uses must be well managed for maximum benefit. If some uses are poorly managed, conflicts may occur. Foresters and land managers must work hard to prevent conflicts between different users of the forest.

A forest manager must also think in terms of costs and benefits. They must question how much the forest stand is worth at the present time, future economic value and potential increase of value by applying various forest practices. This job becomes more difficult when other values such as recreation, aesthetics and watershed protection are considered.

## Process the Activity:

Discuss the following questions"

- Share something that is of value to you. Why do you place value on this? Is this of value to someone else? Does this object have a single use or does it provide multiple uses?
- Can you think of additional values that forests provide?
- Can you think of uses of the forests that conflict with other uses? How would you resolve those conflicts?

**Activity Sheet**

Match the activity on the left with associated value on the right. Values will be used more than once.

___ 1. Planting trees to reduce soil erosion and runoff.

___ 2. Taking a day trip to photograph forest wildlife.

___ 3. Planting trees along an urban highway.

___ 4. Managing forests for lumber production.

___ 5. Planting trees to reduce the force of wind.

___ 6. Going on a family camping trip.

___ 7. Planting trees to reduce unsightly objects or views.

___ 8. Harvesting maple syrup.

___ 9. Managing forests for livestock.

___ 10. Planting trees to reduce wind erosion and topsoil loss.

___ 11. Using forests to cleanse the air.

___ 12. Managing forests to reduce stream runoff.

___ 13. Utilizing livestock to remove under-story plants which compete with trees.

___ 14. Planting trees to reduce energy costs.

___ 15. Using trees for firewood.

A. Water

B. Provide oxygen and remove carbon dioxide

C. Recreation

D. Forage and grazing

E. Windbreaks

F. Noise and Vision Buffer

G. Products

**Activity Sheet**

Match the activity on the left with associated value on the right. Values will be used more than once.

_A_ 1. Planting trees to reduce soil erosion and runoff.

_C_ 2. Taking a day trip to photograph forest wildlife.

F/B 3. Planting trees along an urban highway.

_G_ 4. Managing forests for lumber production.

_E_ 5. Planting trees to reduce the force of wind.

_C_ 6. Going on a family camping trip.

_F_ 7. Planting trees to reduce unsightly objects or views.

_G_ 8. Harvesting maple syrup.

_D_ 9. Managing forests for livestock.

_E_ 10. Planting trees to reduce wind erosion and topsoil loss.

_B_ 11. Using forests to cleanse the air.

_A_ 12. Managing forests to reduce stream runoff.

_D_ 13. Utilizing livestock to remove under-story plants which compete with trees.

_E_ 14. Planting trees to reduce energy costs.

_G_ 15. Using trees for firewood.

A. Water

B. Provide oxygen and remove carbon dioxide

C. Recreation

D. Forage and grazing

E. Windbreaks

F. Noise and Vision Buffer

G. Products

**Contributing Authors**

Kevin Allen, Ph.D.
State Extension Specialist — 4-H Environmental and Natural Resources
Department of Natural Resource Ecology and Management

Craig McKinley, Ph.D.
State Extension Specialist — Forestry
Department of Natural Resource Ecology and Management

**Resources**

Oklahoma 4-H Forestry Judging website at http://nrem.okstate.edu/Extension/judging.html

Oklahoma 4-H Forestry Judging Manual. 2007 revision.
4-H Forestry Program—Unit A: Trees
4-H Forestry program—Unit B: Forests

Oklahoma 4-H at http://oklahoma4h.okstate.edu/index.htm

Oklahoma Forestry and Wildlife Camp website at http://whatisforestry.org/youth-camp.php

Oklahoma Cooperative Extension Forestry at http://nrem.okstate.edu/Extension/pubs.html

**References Cited**

Elbert L. Little, Jr., ***Forest Trees of Oklahoma.*** 2002

Society of American Foresters (SAF). 2007. <http://www.safnet.org/aboutforestry/facts.cfm> Accessed 14 Sept 2007.