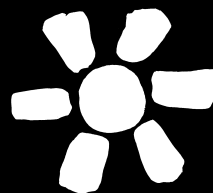


OVERVIEW

Privately and publicly owned forests are often managed to some degree to provide several different resources. In this activity students will learn how forests are managed to meet a variety of human and environmental needs.

**BACKGROUND****Benefits for Landowners**

Multiple use management involves making choices about the types of activities that can take place in particular areas. Some forest ecosystems cannot support certain activities and certain activities cannot take place in the same area at the same time. For example, few people would want to take a hike along a strip mine or camp next to a logging operation. Loggers would have a tough time doing their jobs if people using off-road vehicles were driving through an area where they worked. Protecting a watershed or a commercial fishery might mean carefully planning other activities, such as road building or mining.

Forestlands produce many benefits for owners, but not for non-industrial private landowners in Pennsylvania. Financial benefits are not generally the primary reason for owning forestland. The vast majorities cite other reasons as being more important to them. The recreation and aesthetic enjoyment previously discussed is the primary reason that 30 percent of landowners own forestland.

Twenty-five percent of private forest landowners cite the primary reason for owning forest is that it is simply a part of a farm or residence. Another 12 percent believe that farm or domestic use is the most important reason for owning forestland. For them the forest is a source of fence posts, fuel wood and similar products. Land investment is the primary reason of ownership for nine percent, while only one percent of private forest landowners held their land primarily for timber production. Eighty percent of the timber is cut from private forest annually.

While generating income is generally not the primary reason landowners own forestland, it none the less can be a potential benefit to a landowner. Timber harvesting is the most obvious way to

generate income from forestland.

Alternative or secondary enterprises on forestlands can produce special forest products and/or services.

In Pennsylvania, the choices for a forestland based business are diverse. They include (1) forest wood products, such as sawlogs, pulpwood, firewood, logging byproducts (sawdust, wood chips), charcoal, decorative wood, greenery, cones and seeds; (2) wild crops and plants for culinary, pharmaceutical or artistic uses, such as nuts, berries, various herbs, flowering plants, grasses, lichen and bark; (3) specialty crops, such as Christmas trees, mushrooms, honey, maple syrup, paulownia (a fast-growing tree), ginseng, pond-raised fish and farm-raised venison; and (4) recreation access and services, such as hunting preserves, duck blind rentals, campgrounds, summer camps and nature trails and tours (Penn State Forest Stewardship Series, No. 11, 1997).

Education

Forested areas are excellent outdoor classrooms for conducting a multitude of educational activities. Most of the nature centers and environmental education centers in Pennsylvania are located in or near a forested area and make frequent use of these forest services.

Aesthetic Value

Forests are valued for their beauty. Imagine the new green leaves of spring interspersed with the whites of flowering dogwood; the deeper greens of summer mixed with the pinks and whites of mountain laurel and later rhododendron; the bright reds, oranges and yellows, turning to the browns of fall; the blanket of white snow in winter. Regardless of the time of year, there are few scenes as beautiful or as inspiring as a forest scene.

Physical and Mental Health

Many people find forests a place to renew their own physical and/or mental health. Forests can serve as an important

GRADE LEVELS:

Grades 5–8

OBJECTIVES: Students will (1) identify ways that people use forest resources, (2) explain that forests are managed to satisfy a variety of human needs and (3) explore how different forest uses can be balanced with each other.

PENNSYLVANIA PROPOSED ENVIRONMENT & ECOLOGY STANDARDS ADDRESSED:**4.2.7**

C. Explain natural resource distribution.

4.4.7

B. Explain agricultural systems' use of natural and human resources.

4.7.7

A. Describe diversity of plants and animals in ecosystems.

C. Explain natural or human actions in relation to the loss of species.

4.8.7

A. Describe how the development of civilization relates to the environment.

C. Explain how human activities may affect local, regional and national environments.

D. Explain the importance of maintaining the natural resources at the local, state and national levels.

4.2.10

C. Analyze how man-made systems have impacted the management and distribution of natural resources.

4.4.10

B. Explain the functions of the components of the food and fiber system.

4.7.10

A. Explain the significance of diversity in ecosystems.

C. Identify and explain why adaptations can lead to specialization.

4.8.10

A. Analyze how society's needs relate to the sustainability of natural resources.

C. Analyze how human activities may cause changes in an ecosystem.

D. Explain how the concept of supply and demand affects the environment.

ESTIMATED DURATION:

Preparation time: 20 minutes. Activity time: 50-minutes

MATERIALS NEEDED: Art supplies

place of exercise and of solitude for people, a place to get away from the hustle and bustle of every day life. Sometimes that's just what the doctor ordered. In fact, it has been shown that patients who can look out their hospital window at soothing green forest scenery have faster recovery rates.

PROCEDURES

1. Ask students to think of what they use or how they benefit from forests. Have them make a list on a piece of paper.
2. Ask students to name animals that live in forests and record their answers on the chalkboard under the heading "Wildlife." (Encourage students to come up with less obvious examples such as fish, insects, worms and microorganisms. Reminder: students should use animals that are indigenous to Pennsylvania).
3. Ask students what types of recreational activities they or their families have enjoyed in the forest. Record their answers on the chalkboard under the heading "Recreation." For example, exercise, solitude or fun (If your students did the Activity "Playing Lightly in Pennsylvania Forests," they can use the recreational activities generated from that activity).
4. Have students list products that people get from forests and record their answers on the chalkboard under the heading "Products." If students don't mention them, be sure to add oil, natural gas and minerals to the list because they are also extracted from forestlands. Then ask students what needs are satisfied by each product on the list (e.g., wood for construction, paper and other products, maple syrup for food, minerals for industry, hydroelectricity for energy; watershed protection of ecosystems; gas and oil for cars and other vehicles).
5. Explain that forests may be managed with an emphasis on different needs. For example, some forests may be managed to meet the needs of wildlife, others to meet recreational needs or to meet the need for forest products and some forests can be managed to meet many or all of the above mentioned needs.
6. Divide students into teams of four. Tell team members to pretend they are forest managers and need to man-

age a forest for wildlife. What strategies would they use to promote wildlife? What would wildlife need to survive in the forest? Examples include food, water, shelter and space. Have each group share its ideas and record them in a column on the chalkboard next to "Wildlife."

7. Now have students pretend to manage a forest for recreational use. Have them brainstorm what a forest manager would need to do to promote recreation. What types of activities might go on in the forest? What would the manager need to provide for these activities (e.g., roads, trails, parking, restrooms, campgrounds, picnic areas)? Ask them to share their ideas and record them on the chalkboard next to "Recreation."
8. Finally, have students pretend that as forest manager they must manage a forest to provide products for people. What things would they need to consider to manage the forest in this way? Which resources will be removed from the forest? How will they be taken out and what will be needed so the resources can be removed? Once again record the group's ideas on the chalkboard in a column next to "Products."
NOTE: As a timesaving alternative to doing steps 6–8, divide your group into three teams and have each brainstorm a list of ideas for one category ("Wildlife," "Recreation," or "Products").
9. Explain that, in many cases, forests today are managed for more than one use at a time. Have students look at the lists they created and ask them these questions:
 - ◆ Which activities listed can go on at the same time in the same forest?
 - ◆ Which activities on the list might conflict with one another if someone tried to manage both at the same time?
 - ◆ Would those activities always conflict or would they conflict only at certain times and under certain conditions?

EXTENSION

- Students will enjoy putting on mystery dramas to show multiple uses of a forest area. Divide students into teams of four. Explain that each team will

perform a silent skit depicting a particular forest use. Secretly assign each team a forest use such as hiking, camping, logging, skiing, mining or living in a wildlife habitat. Send teams to different areas to quietly discuss or practice their skits. After about 10 minutes, bring teams back and have each team silently present its skit. After each skit, have other teams guess what forest use was being portrayed.

ASSESSMENT

1. Have students create a bird's eye view of a forest that is being managed for multiple uses. They may show different activities going on in different areas of the forest or multiple activities taking place in the same area. Regardless, students should be able to explain why certain activities can or cannot co-exist in the same area.

Adapted from Project Learning Tree, American Forest Foundation, 1996, "A Forest of Many Uses."