

FROM THE WOODS

Sustainable Forestry



PennState Extension

AN EDUCATIONAL SERIES ABOUT FORESTRY FOR YOUTH

What is *sustainable forestry*? “Sustainable” means to maintain, continue, and keep, while “forestry” is the science and art of managing forests. Thus, sustainable forestry is about caring for and managing forests to provide the natural resources, such as wood and clean water, we need now and in the future. It also means sustaining other things we value from the forest like wildlife habitat and beautiful landscapes. Sustainable forestry is

concerned with all parts of the forest—trees, smaller plants, soils, wildlife, and water. It involves protecting forests from wildfire, pests, and diseases, and preserving forests that are unique or special.

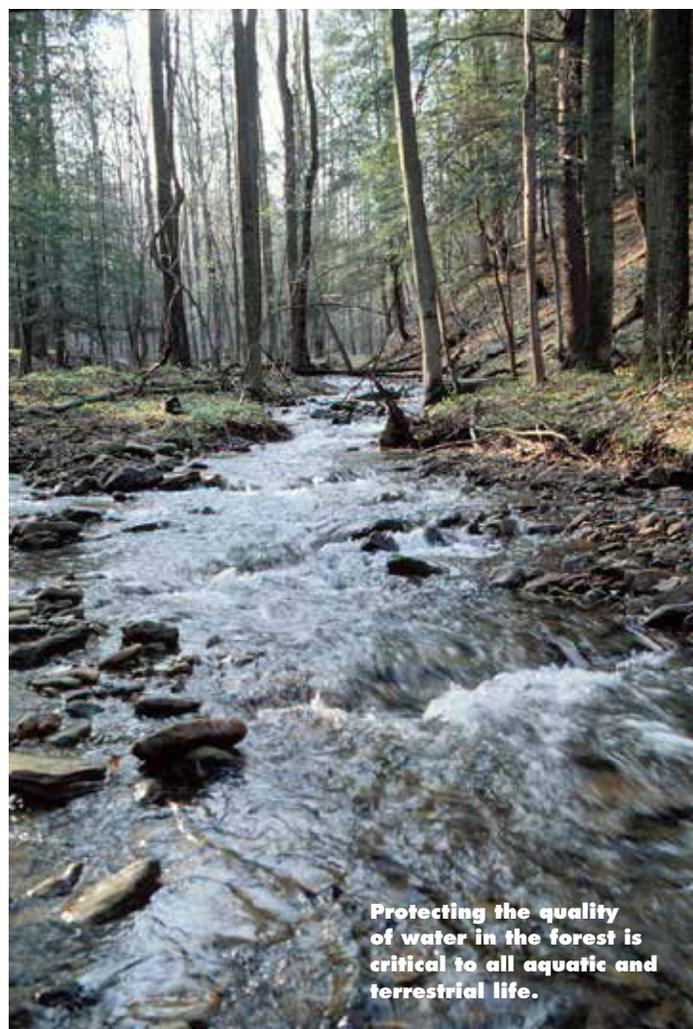
Sustainable forestry also puts an emphasis on people. People need forests for the resources they provide, and as a place to live or to make a living. Sustainable forestry ensures that future generations will have forests to meet their needs and

values. As you can see, sustainable forestry is complex and can involve many things. Let’s look at a few of these things more closely. You will also see how sustainable forestry can mean different

things to different people.



Sustainable forestry ensures that future generations will have forests to meet their needs and values.



Protecting the quality of water in the forest is critical to all aquatic and terrestrial life.



Sustainable forestry involves forward thinking. It’s just as important to think about which trees will be left after a harvest as which trees will be cut.

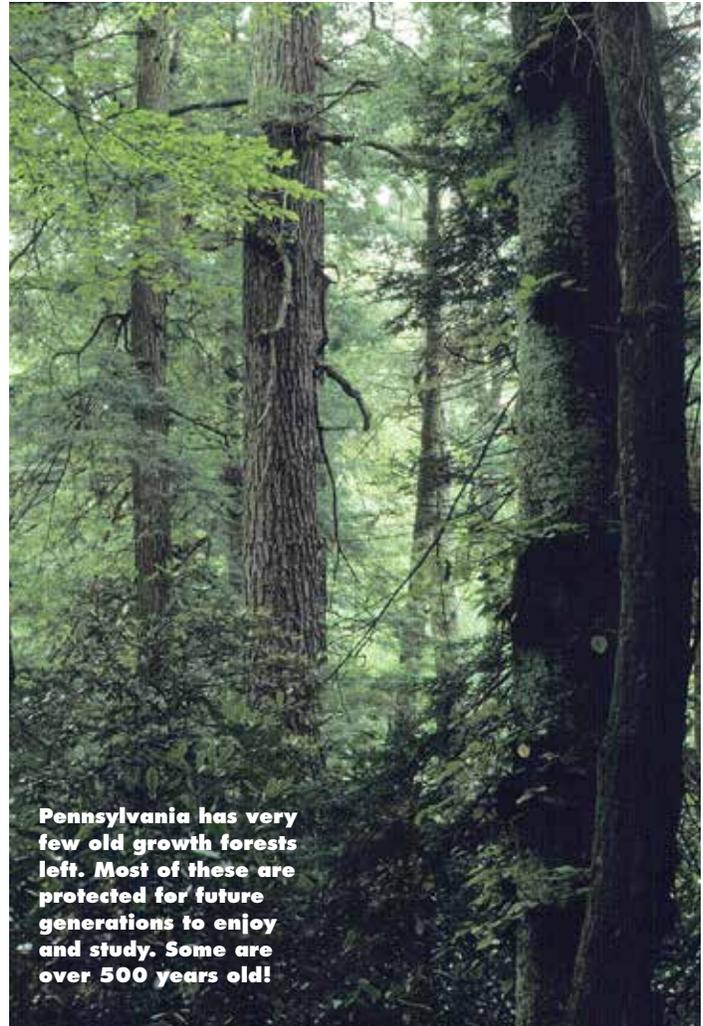
FOREST MANAGEMENT

To care for and manage a forest in a sustainable way it is necessary to use responsible management practices. These are often specifically adapted to each site. One of the most important practices is to look at whether the forest has enough natural seeds, seedlings, and tree sprouts (all called *regeneration*) to make a future forest. Excessive populations of white-tailed deer in a forest greatly reduce regeneration by eating young trees. Too many ferns or too little sunlight can also play a role. Many sustainable forestry practices can protect or encourage forest regeneration. They include putting up a fence to exclude deer, controlling weeds and other plants, and removing some trees to allow more sunlight to reach down into the forest.

When it comes to removing trees, or *timber*, from the for-

est, many practices can assure the forest's future. It is a good practice to think as much about which trees to leave as about which trees to cut. The trees left in the forest will continue to grow, occupying and regenerating the forest for many years to come. If they are chosen properly, the remaining trees can provide many of the same values and resources, and, perhaps, new ones in the future.

Other sustainable forestry practices include protecting forest streams and wet areas. Harvesting trees can disturb and expose soil in small areas. This is especially true on roads built for driving the machinery used to remove trees. The flow of rain or other water across, and under, roads must be carefully managed with *culverts* (large pipes) and proper road design. This helps prevent soil from washing into



Pennsylvania has very few old growth forests left. Most of these are protected for future generations to enjoy and study. Some are over 500 years old!

Browsing Concerns



Assuring that a forest has enough new trees to regenerate after a harvest is an important practice. Deer exclusion fencing (right) and tree tubes (left) can protect seedlings and stump sprouts from deer browsing.



a stream or wet area. Too much soil in water, or *sediment*, is harmful to aquatic life. Trees and other vegetation left undisturbed adjacent to streams or wet areas can also prevent soil from entering streams. These areas are called *buffer strips*.

FOREST HEALTH

Sustainable forestry is also about maintaining forest health. Many living and non-living things make a forest unhealthy. These include insect pests, diseases, wildfires, and extreme weather. Normally, the loss of individual or small groups of trees is not a



High tech tools such as Global Positioning Systems (GPS), Geographic Information Systems (GIS), and computer modeling assist forestry professionals in the practice of sustainable forestry.

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big concern. When larger numbers of trees die, it may signal a forest health problem. Sustainable forestry seeks to promote forest health by reducing things which seriously damage the forest.

CARING FOR SPECIAL SITES

All forests are special, but some areas are more unique than others. It is a principle of sustainable forestry to protect unique areas that are not found elsewhere or are uncommon. One example is very old forests. Almost all of the 17 million acres of forests in Pennsylvania were clear-cut at least once by the early 1900s. However, a few small areas were never cut.

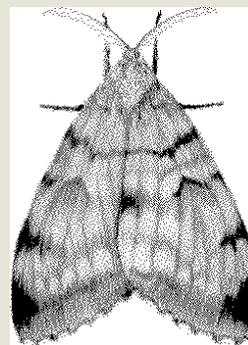
Most of these old forests are currently preserved.

DIFFERENT APPROACHES

People view sustainable forestry in many different ways. To a forest landowner, sustainable forestry might mean selling timber and yet passing the land to an heir in good condition. To a logger (a person who cuts trees for a living) sustainable forestry might mean protecting the trees left in a forest, and constructing roads properly. To a professional forester, sustainable forestry might mean selecting appropriate forestry practices for a given site. All of these people want to sustain forests, even though each views the forest

in different ways. Sustainable forestry is a broad but important concept. It requires concern and commitment on everyone's part.

Gypsy Moths



Gypsy Moths are just one of the pests that can impact forest health. They must be monitored and sometimes controlled to protect forests.

ILLUSTRATION: CHRIS JUNG