

FORESTRY 101

Monitoring Your Woodlands

by Doug McLaren

“Your kids are growing up so quickly.” How many times have you heard relatives or friends make this comment about your children? When you are with them on a daily basis, you don’t seem to notice how fast they are truly growing. The same can be said about your woodlands.

Unless you make at least an annual visit to the different sections of your woodlands and make some basic measurements of the trees, you, too, will be missing the gradual increase in increments of height, diameter, and value of these trees. You will also be missing the in-growth (new trees becoming established in the canopy) or death of some of those established stems.

As a good forest steward, it is important for you to monitor the growth of your woodlands. Few owners realize that the trees in their woodlands are in a constant state of change even without any management. The trees are constantly battling for the soil nutrients, sunlight, and water in each of the individual sites. This competition for needed resources by each tree is ongoing and there are winners and losers. The trees that are successful will usually dominate and become the largest trees within the individual areas. By monitoring this process you will be in a better position to influence your woodlands’ growth and development.

There are several factors that play into this competitive growth of trees. First is species. Some trees are natural born competitors. Yellow-poplar is a good example. During the late 1930s and early 40s, many of the old

grazing and corn fields in Kentucky were abandoned. If there was an old yellow-poplar, either in the field or in adjacent woodland edges, yellow-poplar would quickly dominate and become established almost exclusively, because the open fields were exposed to the sunlight necessary for the establishment and continued growth of yellow-poplar which can be very competitive in that environment.

Another example of competition is the dramatic

and swift seeding-in of an old field after a wildfire. Such a fire could expose the soil to new seeds in the mineral soil or seeds from adjacent windblown sources. Windstorms, ice storms, insects, and logging can have the same effect on the establishment of a new stand of trees as when the original canopy is destroyed or altered.

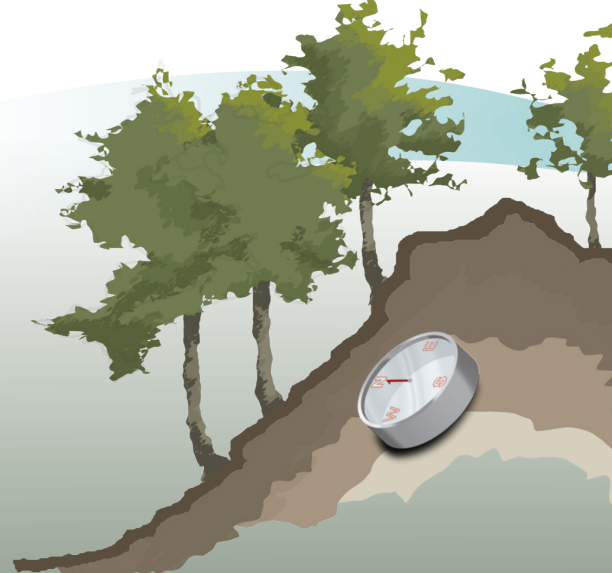
Soil texture, fertility, moisture, and depth will greatly affect the species of trees growing on a site. These factors also affect the rate of growth. Normally, deep soils will retain moisture and have more nutrients available for tree growth. Shallow soils can limit the amount of tree growth because of bedrock, gravel, or potentially excessive moisture.

The direction the slope is facing (its topography) and where on that slope the tree is found, has a tremendous influence on species



Photo courtesy: Ray Hicks, retired forestry professor

Many hillsides in Kentucky were cleared for agricultural production -- primarily corn. Most of these hillsides have reverted back to forests and in many cases are pure yellow-poplar stands.

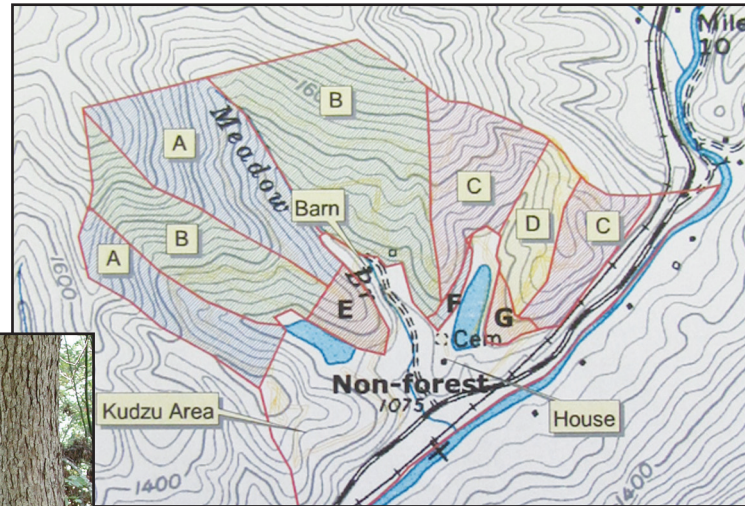


composition and growth potential. Trees found near the top of the slope are more competitive in soils that are usually more eroded, thinner, less fertile, and unable to hold adequate moisture. Slopes that face south and southwest will receive direct sun during the hotter times of the day. These slopes have hotter and thinner soils, making trees' growth potential less than that of their neighbors on slopes facing north and northeast, which have cooler conditions. Trees at the bottom of any slope typically will be growing in deeper soils and have more moisture and nutrients. In general, trees growing on the lower north and northeast slopes tend to have better growing conditions.

How can all of this information about tree growth be used in your over all woodland management plan? Monitoring your woodlands on an annual basis will help you to make adjustments to your plan when necessary. This regular monitoring will also allow you to notice any problems in your woods before they become much more difficult to

address. Issues such as invasive species, insect problems, or even timber theft/trespass are much easier to deal with when they have not been given time to become major problems. The map in your woodland management plan (which should be developed by a professional forester) should show you that your entire acreage has been subdivided into "stands," or smaller units, based upon growth potential and species domination. These stands will vary in size and shape and are based upon your individual management objectives.

Foresters making their periodic visits will take growth data from each of these individual areas and be on the lookout for any problems that may require an update to your woodland management plan. Between the visits of your cooperating forester you should consider making some basic measurements to help in maintaining and monitoring the growth



Map courtesy: Kentucky Division of Forestry

A map is an important part of a woodland management plan. Maps created by professional foresters will designate the various "stands" for management and monitoring purposes.

Woodland owners should not feel alone when it comes to keeping up with their trees. Professional foresters, either Kentucky Division of Forestry, Kentucky Association of Consulting Foresters, or industry foresters, are available and willing to assist woodland owners in monitoring their woodlands. Spending some time with your cooperating forester on your woodland property is an invaluable way to tap into their knowledge and expertise.

Photo courtesy: Dylan Dillaway,
Louisiana Tech. University

and health of your woodlands. A better understanding of the trends that are developing in your woodlands will provide you and your forester a quick reaction time for making timely updates and alternative choices in your ever-changing woodlands' plan. In the next installment of Forestry 101, we will discuss how to go about such monitoring. Information is power, and the more information you have, the better off you will be in getting the most out of your woodlands ownership experience.

About the Author:

Doug McLaren is an Area Cooperative Extension Specialist with the University of Kentucky Department of Forestry. Cooperative Extension Service, Department of Forestry, University of Kentucky, 107 Thomas Poe Cooper Building, Lexington, KY 40546-0073; Phone: 859.257.2703; Fax: 859.323.1031; E-mail: dmclaren@uky.edu

The direction a hill faces will significantly impact the productivity of the hillside. North facing slopes will have cooler growing conditions and retain more moisture than south facing slopes.