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Small Woods, Big Opportunities Series

This series serves as an introduction to issues and practices common to small family forest owners.

Keeping Your Woods Healthy

Dr. Jeff Stringer and Christopher Reeves, Forestry

Before a landowner can approach the subject of improving woodland health, each owner must have some idea of how to define and then assess woodland health. Fortunately, there are some simple ways of gauging the health of woodlands. It is also often easy to determine what is making woodlands unhealthy and what can be done to improve woodland health. Assessing woodland health involves both evaluating individual trees as well as being able to evaluate the woodlands as a whole.

What is a Healthy Woodland?

It is generally agreed upon that regardless of landowner objectives healthy hardwood forests in Kentucky have the capacity to regenerate and maintain a diversity of native tree, shrub, and ground layer species that naturally occur together on the appropriate site and soils. It is helpful that many practices have been developed to maintain these attributes and the majority of landowners can use and benefit from them. One subject that must be discussed and understood before moving forward with evaluating woodland health is the difference between individual tree health and woodland health. It is important to understand that healthy woodlands can contain individual trees that are in poor health and will eventually die. For example, as woodlands age trees get bigger and some get overgrown and die. Some may be reaching their maximum age. All of this is a part of natural stand development.

Although this tree is dead it doesn't indicate the entire woodlands is unhealthy.
Jeff Stringer, UK Forestry Extension

This is true whether we are discussing a woodlands that is being managed for timber production, old-growth, or recreation. It is similar for a human population, in that the population can be healthy but it will include those who are ill or lacking in vigor due to old age. The population is healthy as long as the entire population is not in this condition and young, healthy individuals are present to sustain the population. The same is true for woodlands. Woodlands may be healthy, even with individual trees that are in the process of losing vigor and/or are dead as long as there is adequate regeneration and ages of trees to replenish and maintain native species composition.

Exotic Invasives

One widely agreed upon tenet of woodland health is that native species should have adequate growing space and these native species should be able to naturally regenerate. This one tenet is universally at risk because of the occurrence of exotic (non-native) species that can occupy growing space and crowd out native species. This reduces natural biodiversity. Wildlife may also suffer as some exotic species may produce berries and fruit that wildlife eat that are often of much poorer quality than native berries and fruits. Some exotic species can also stop native tree species from regenerating if they are plentiful enough.

Presence of invasive species, such as bush honeysuckle, impedes the growth of native vegetation
Renee' Williams, UK Forestry Extension

Contact a forester to help determine if the presence of exotic invasives is significant enough to warrant control or treatment. There are specific methods that have been developed to control a broad range of invasive plants, and forestry and natural resource professionals should be consulted for specific and detailed control recommendations. Trying to undertake control of some invasive species without a technical understanding of the species and the woodlands situation could lead to ineffective control

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or make things worse.

There are woodlands that may currently be devoid of invasive species, however this may not last. If invasive species are present in surrounding countryside, especially if they are present on an adjacent property, the risk of serious invasion must be anticipated. Woodland owners should know how to determine if they are at risk. Woodland owners should also know what management practices might contribute to creating a problem, and how to deal with a problem if it occurs. Remember that just because exotic invasive species are not currently a problem, many factors may well put woodlands at risk for invasion.

Age and Woodland Health

The aging of woodlands is not inherently bad. However, the aging of individual trees and species within woodlands can create problems for woodland owners and lead to problems with woodland health. Problems with aging trees occur in particular in woodlands where all of the overstory trees are approximately the same age, these species reach their biologic maturity, and the main canopy starts to decline quickly. This is particularly important when the canopy contains short-lived species. This may create a situation where instead of having a few individual scattered trees die, the majority of the canopy may collapse. Significant canopy mortality causes problems with use and enjoyment of the woods and can lead to invasion from exotics.

Foresters can help determine whether the vast majority of trees in the canopy are reaching biologic maturity. In older woods, woodland owners need to plan and potentially undertake silvicultural practices that will ensure that overstory trees are kept at the proper density and the woods are capable of vigorously regenerating. Practices such as thinning and release give more room for canopy trees to grow and regeneration practices such as a midstory removal as part of the oak shelterwood method can facilitate regeneration. If the canopy is already in decline, woodland owners may choose to start regeneration where needed. Even small woodlands can maintain several age classes of trees by harvesting and regenerating group openings (0.5 to 1.5 acres in size). Keeping multiple age classes helps to maintain diversity and potentially increases the overall vigor of our woodlands. A wide range of species will be present in woodlands if the size of openings are in the recommended range.

Protecting Woodlands from Abuse

Care should be taken so that activities undertaken do not harm the woodlands. Also, woodland owners need to be concerned about protecting their woodlands from the carelessness of others. If care is not taken during logging, dragging logs can result in damage to trees that are to be retained. If not planned correctly, logging can also affect the ability of the woodlands to regenerate the species desired. If soils are worked when they are wet and skidding is not controlled, significant compaction can occur to the soil outside of skid trails, landings, and roads that are expected to be compacted during a harvest.

Work with loggers on road placement to avoid damage during timber harvests.
Jeff Stringer, UK Forestry Extension

Often a forester can help significantly with these issues. It is also important to protect woodlands from trespass including unauthorized harvesting. It is helpful to have boundaries marked to aid in making loggers working on adjacent property clearly aware of where the property boundary is. While issues such as ATV trespass and dumping are an issue, clearly marking boundaries can help. Uncontrolled wildfire can also be a problem. Foresters can help layout fire lanes and prescribe other practices that can help to reduce the occurrence of wildfire.

Maintaining healthy woodlands is no accident. Oftentimes active plans are necessary to ensure that woodlands remain healthy or that an unhealthy woods is improved. By following a few basic principles, such as ensuring healthy vigorous tree canopies, monitoring or controlling invasive species, and protecting woodlands from damage, owners can rest assured their woodlands are healthy.

For More Information

Kentucky Division of Forestry: forestry.ky.gov

UK Department of Forestry: ukforesty.org

References

How to Keep your Woodlands Healthy. 2010. Kentucky Woodlands Magazine: Volume 5 (2):2-5.

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