



Woodland Health Practices Handbook

A Practitioner's Guide for Creating, Enhancing, and Maintaining Natural Areas



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Introduction

Many landowners value the natural areas on their property, whether woodland, field, or wetland. Scenery, nature trails, privacy, wildlife viewing opportunities, and shelter from the summer sun and winter winds are among the land features they value. Many owners of small natural areas (Figure 1) wish to improve the value they get from their property by implementing a number of practices, such as:

- enhancing wildlife habitat
- improving water quality for a creek, stream, or river that flows through the property
- saving time and money by reducing lawn mowing and maintenance
- improving access for recreation, nature exploration, or solitude

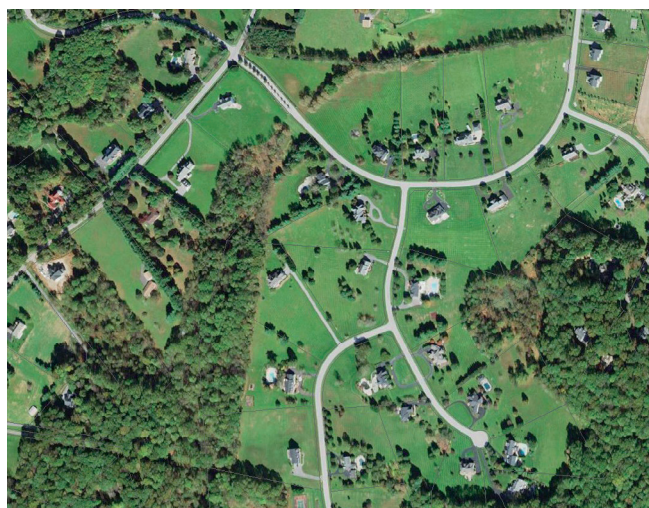


FIGURE 1: Owners of small-acreage properties with lawn and/or woodlands can benefit from a variety of practices found in this handbook.

- increasing hobby or enterprise opportunities for wood and woodland products, such as firewood, syrup, or cultivating edible or medicinal plants
- saving energy by creating shade/cooling from summer sun and/or windbreak during the winter.

This manual is for green industry professionals—such as arborists and landscape architects—working on private properties of 1–10 acres. The information in this guide will help this group to gain background on why and how to address common woodland health issues. *The aim is to help green industry professionals identify opportunities to expand their business by offering services in small woodland management, assisting woodland property owners to meet their individual goals and improve woodland and ecosystem health—becoming what we’ll call “woodland health professionals” (WHP)* (Figure 2).

The key for WHPs is to identify which of the services and opportunities outlined in this guide are appropriate for their business model. Not all the services and opportunities will be appropriate for every business, but a successful WHP has a wide variety of skills and expertise at their disposal, such as tree harvesting and pruning, invasive species control, habitat improvement for wildlife, and recreation access development. Additionally, WHPs and/or their employees should hold certifications in a wide variety of skills from state or national organizations. In this way, the WHP provides a “one-stop shop” for small-acreage owners wishing to get the most from their land.

The next step in growing the business is for the WHP to connect with their clients. The WHP should first discuss with the woodland owner their land use objectives.

Woodland Ecology—Principles of Succession

Around the world, natural systems are always changing and shaping the environment on a daily basis. Some processes are easier to see than others. Some can bring changes in a matter of minutes or hours, such as a severe storm, while other changes can take a human lifetime, such as the growth of woodlands.

In this chapter, we introduce several principles related to the concept of woodland succession. Succession is the natural progression from one dominant vegetation type to another over time in the absence of disturbance. It occurs when one type of vegetation follows another through a series of predictable natural/biological changes over several years. For example, woodlands are in a constant state of change as plants compete for light, water, nutrients, and space to grow. In a few years an unmanaged old field filled with grasses is invaded by mixed herbaceous plants such as goldenrod and blackberries, which then give way to small trees and shrubs and eventually to larger trees. Light is generally the most important factor in this transition. The trees that outgrow their competitors in height develop large crowns that capture more sunlight and shade out other plants. As a woodland matures, many trees are shaded out by neighboring trees and die.

Woodlands with mostly deciduous/hardwood trees have trees of different diameters, but in many cases they are the same age. The larger diameter trees have won the competition for sunlight and their crowns are in the upper canopy. They are known as dominant or co-dominant trees, labeled as D and CD in Figure 7. Trees overtopped by dominant and co-dominant trees are intermediate or suppressed and receive little direct sunlight.

As you walk through a woodland, look up into the canopy to see which tree species have been most successful.



FIGURE 7: In this even-aged forest, the more dominant trees, labeled D (dominant) and CD (codominant), have won the competition for light over the others, labeled I (intermediate) and S (suppressed).

These are usually the best prospects for the future. Some tree species growing lower in the canopy, such as sugar maple, red maple, oak, beech, hemlock, and black gum, may respond positively to increased light once overtopping trees die. Conversely, some tree species are unable to compete in the higher canopy and are well suited for growing in shade. Examples include dogwood, witch hazel, and eastern hophornbeam.

The plants you see on one property may be different from what grows on neighboring lands, or even in different parts of one woodland property.

Succession can be broken down into four basic habitat stages as shown in Figure 8.

- In Stage 1, “herbaceous opening,” the ground is covered with a mix of grasses and other nonwoody plants.

ENHANCING WILDLIFE HABITAT ELEMENTS

Wildlife habitat includes food, cover, water, and available space within a species' home range. Enhancing wildlife habitat can be a main objective motivating clients to take action (Figure 14). As you visit the client's property, identify and point out habitat elements that are limiting or missing, particularly for the landowner's desired species. Different land care practices can be implemented to enhance habitat elements. For example, brush piles or dense thickets provide good wildlife cover and create a transitional brushy border along an existing woodland edge. Nut and fruit trees provide a good food source called "mast," such as acorns, crabapples, or berries, for wildlife diets. Dead standing trees, called "snags," and trees used by wildlife, called "den trees," can be enhanced or created using certain techniques. Wolf trees are tall woodland trees with great, spreading branches

that once stood alone in a pasture but are now surrounded by smaller trees. They provide valuable mast and denning habitat. Below are the components that make up wildlife habitat (Figure 14) and a short list of the elements enhanced by land care practices. See pages 42–46 in *The Woods in Your Backyard* for more information.

- 1) Food—hard and soft mast (fruits and nuts); leaves, twigs, and buds; insects; planted food plots
- 2) Cover—rock piles, caves, and ledges; cavity trees; snags, tree tops; brush piles, dense vegetation
- 3) Water—wetlands; streams; springs and seeps; seasonally wet areas called vernal pools
- 4) Space—all elements in the home range of wildlife species of interest

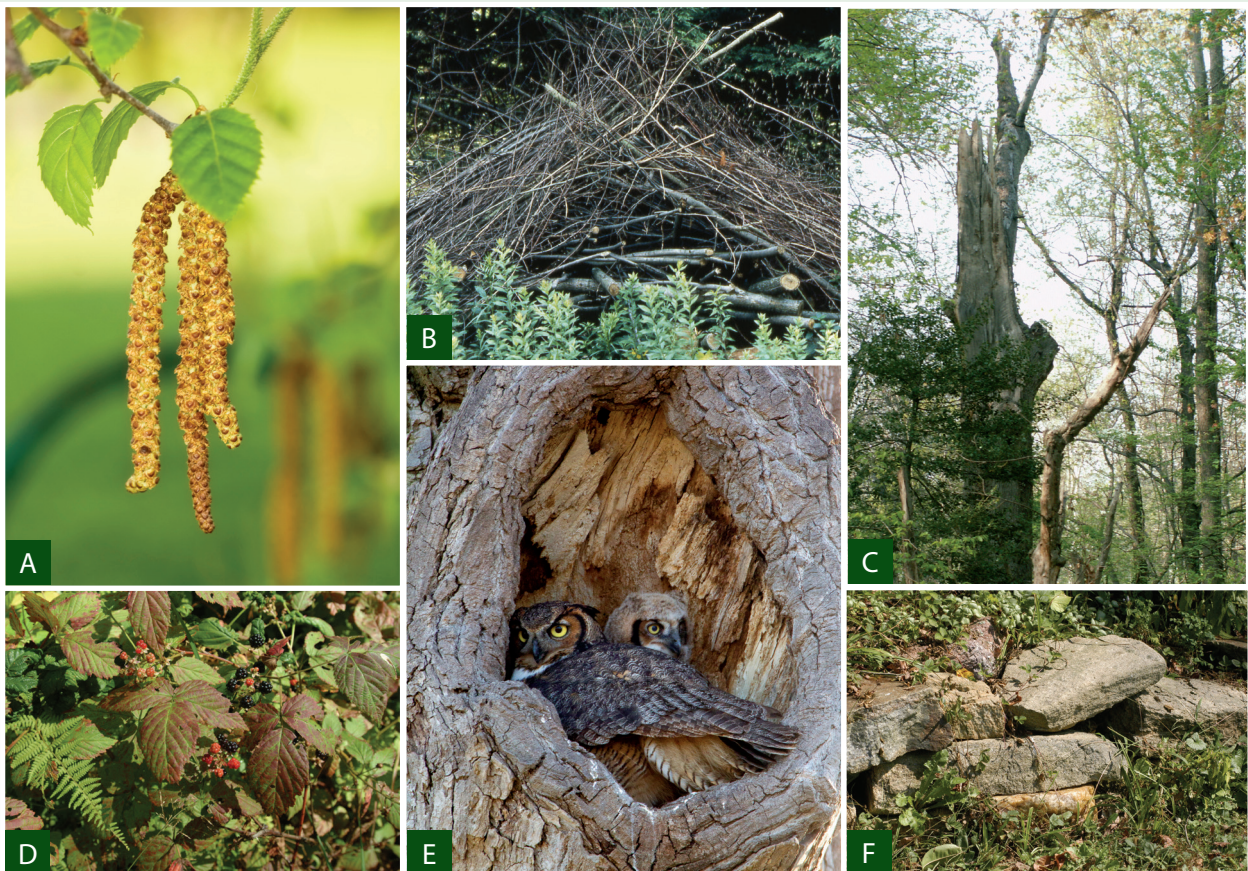


FIGURE 14: *Enhancing wildlife habitat elements.*

(A) Catkins, such as on this white birch, provide an important source of soft mast. (B) A brush pile provides cover. (C) Snags provide important wildlife habitat for birds and mammals. (D) Berries provide soft mast for wildlife. (E) Den trees can attract a variety of wildlife species, including great horned owls. (F) Rock walls provide cover for reptiles and small rodents.

Occasional Mowing

Maybe your client is still unsure about committing to reforesting an area that they have been maintaining as lawn. If their goal is to improve wildlife habitat, you could suggest that they consider changing mowing practices (Figure 27) in areas they do not want to convert to woodland. Avoid mowing tall grass from mid-April to late July, when birds and small mammals use the habitat for nesting and rearing their young. Consider mowing smaller blocks annually to develop diverse vegetation. To do this, divide the mowed area into thirds and mow only one-third once each year (Figure 28). This frequency maintains lush grassland habitat but discourages trees and shrubs. You may need to increase mowing frequency if you find invasive shrubs such as multiflora rose, autumn olive, and shrub honeysuckle becoming established. It is important not to mow the entire area in any one year because wildlife depends on the area's food and cover resources.



FIGURE 27: Warm-season grasses provide habitat for many wildlife species. Combined with manicured lawns, these can be aesthetically pleasing and good for wildlife.

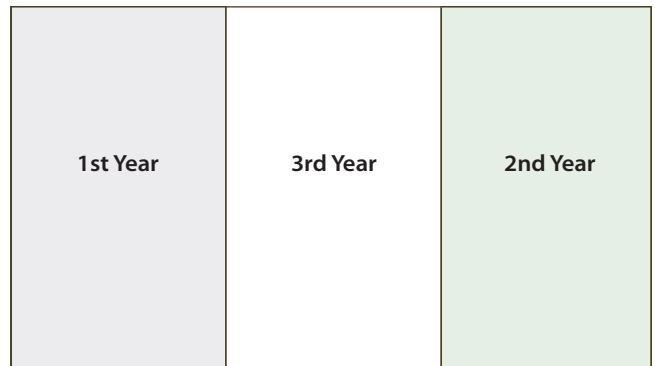


FIGURE 28: Changing mowing practices can help improve wildlife habitat. For example, mowing only $\frac{1}{3}$ of the area annually is often recommended. One method of strip mowing is shown here.

Old field areas with intermixed openings and scattered trees are a unique habitat type (Figure 29). They provide excellent habitat for a variety of bird and mammal species. Old field habitat is often lacking. Unmanaged fields fill in with trees and become closed canopy woods after many years. Consider identifying old fields on the property and begin maintaining them as natural habitat



FIGURE 29: An old field area.

FIGURE 28: A method of strip mowing a property.



FIGURE 34: Chosen tree management.

- A) This hickory chosen tree has been freed of competition on at least two sides by removing trees.
- B) A dense canopy.
- C) Chosen tree management has removed several competing trees.
- D) A more open canopy can benefit more than one crop tree.

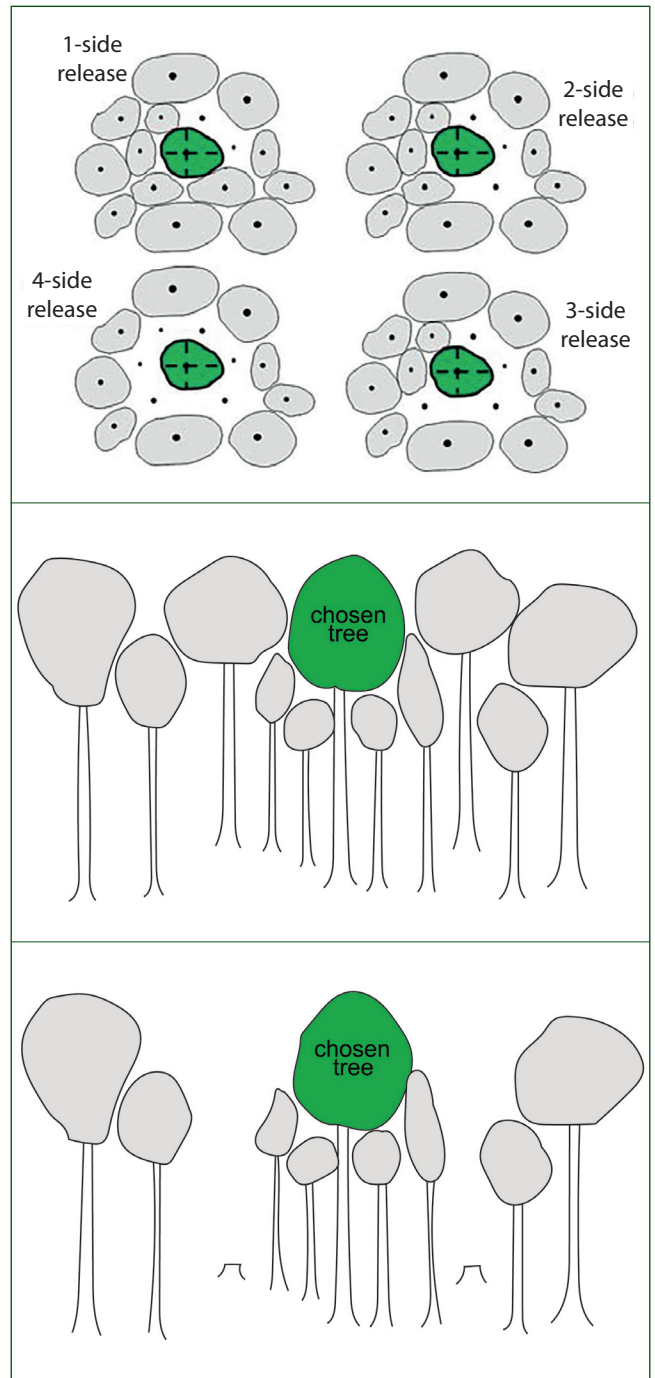


FIGURE 35: Chosen tree management techniques.

ment, only trees competing with the chosen trees are removed (Figure 36). If no chosen tree is present, then no cutting or removal is done in that area. Traditional thinning allows more light to reach the woodland floor across a large area by removing trees from all layers of the woodland canopy. Chosen tree management removes only trees whose canopies are touching the canopy of



FIGURE 45: An open area created by disking can create some of the same benefits for wildlife as planting a food plot.

lations. On smaller properties, food plots may invite conflict with wildlife or neighbors. Be sure to assess the situation before investing in this practice.

Brush Piles for Wildlife

Cover protects wildlife from weather and predators by providing safe places to eat, sleep, breed, and nest. Creating brush piles is an easy way to improve wildlife habitat using readily available materials: the trees or limbs you cut in releasing chosen trees, pruning, or clearing storm damage, or even discarded Christmas trees. Brush piles provide cover for small mammals, rabbits, amphibians, reptiles, quail, and birds such as wrens. Cover is most difficult to find in winter, so providing winter cover will improve the likelihood that wildlife will stay on the property year-round.

Brush piles are especially valuable at borders between fields and woodlands. Start with large rocks or logs on the bottom to create a foundation and matrix of tunnels and nooks (Figure 46). Then lay the brush flat in a loose crisscross pattern to form a mound approximately 5 feet high and 15 feet or wider at the base.

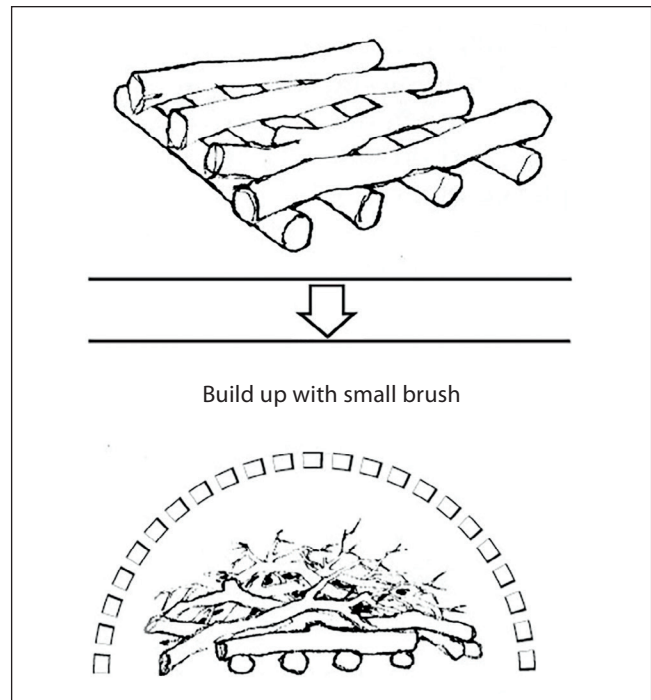


FIGURE 46: One method of brush pile construction.

Hinge-Cutting for Wildlife

Hinge-cutting provides cover and browse for wildlife while removing undesired and competing trees. Use a hand-saw or chainsaw on small trees to cut through halfway, and then push them over so that they stay alive but so their tops are now touching the ground (Figure 47). The tree or shrub continues to produce vertical shoots that provide cover and browse close to the ground. This is beneficial to deer and other wildlife. Timber stand improvement involves removing unwanted trees that are competing with desirable trees. Hinge-cutting can be used to remove some of these competing trees. Hinge-cutting can be done anytime of the year, but cutting during the dormant season will maximize regrowth and habitat value when spring arrives.

Firewood

Some clients may want firewood and have the means to cut and haul trees when they are on the ground, but they may not be comfortable felling trees on their own. Consider providing the felling of trees that are unhealthy, diseased, insect-infested, or damaged by storms, or those that may present a hazard to people in the woods, as sources of firewood. If trees are felled for chosen tree management, they are a good source of firewood if they are accessible. Remember to leave active den trees and adequate number of snags for wildlife.



FIGURE 47: Hinge-cutting can provide important cover and browse for wildlife.

Part 3: Improving Privacy, Aesthetics, Natural Havens, Recreational Opportunities, or Products from the Woodland

National surveys of woodland property owners demonstrate that they purchased their land for many reasons. Some wish to have more privacy. Others want to get away from urban environments and enjoy a more natural setting. A third group is interested in the land's opportunities for recreation. This section contains land care practices that can address each of these interests.

Enhancing Privacy

The orientation of small acreage properties in open subdivision landscapes can result in residences being close to each other even though the combined acreage is substantial. The addition of dusk-to-dawn lights, sheds, access roads, and other structures can create noise, unwanted light, and annoyance. The implementation of natural vegetation barriers for privacy can improve quality of life and landowners' enjoyment of their property. Below are some project ideas that use tree planting and natural succession to improve privacy over a period of years without the use of fences and other construction, which becomes expensive.

- **Privacy line of trees along property line.** Planting at least two rows of fast-growing conifer trees and hardwoods set back at least 10–15 feet from the property line (Figure 48) will produce a natural barrier over time. You may want to mix in some

slower growing but long-lived trees for longevity of the barrier. To improve privacy in winter, plant conifers or broadleaf evergreens such as mountain laurel or American holly. Plant the first row at 10-foot spacing and stagger the second row so it lies halfway between the trees in the first row. This will maximize the screening for privacy. Any additional rows would be staggered between the trees of the previous row. Make sure that planted trees are at least 25 feet from houses to minimize problems later when the trees mature.

- **Fence line vegetation.** Most fields have trees and shrubs along a wire fence because birds deposit seeds while perching and the seeds germinate and grow. The species will vary with the seeds available from vegetation growing in the surrounding area. You can mimic this process by installing a piece of fence wire for birds to perch on about 10–15 feet back from your property line. Another wire can be installed 5–10 feet in from the first. Some of the



FIGURE 48: Conifers provide year-round visual screening.

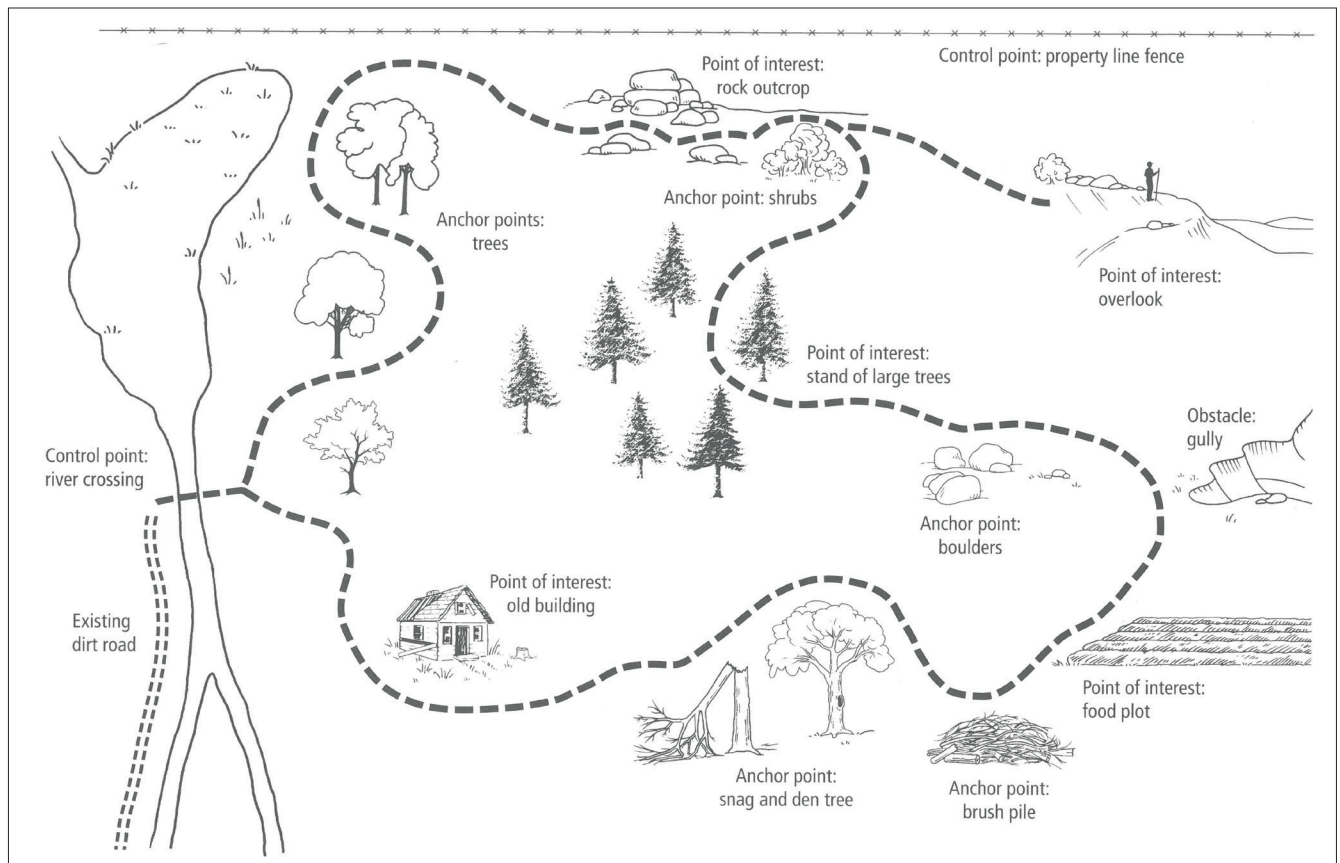


FIGURE 50: A well-designed trail can provide access to many parts of a property.



FIGURE 51: Two types of trails.

A) A Trail in the woods.

B) A trail through early successional habitat.

reduced erosion, try to keep trails below a 10% grade whenever possible. To reduce grade, the trail should zigzag (switchback) across steep slopes, or avoid these areas entirely. Consult the Woodland Health Assessment Checklist and note special features to include or avoid. Lay out the trail using plastic ribbon or flagging linking features you want to visit. If the parcel includes stone

walls, look for breaks in them. The breaks may indicate old road or trail locations you can re-create. Walk the trail in both directions and adjust it as needed before cutting trees or clearing brush.

Points to consider in ideal trail layout:

- Pass through different kinds of vegetation: mature forest, young woodland, conifers, a meadow, etc.
- Feature a scenic vista, showy spring wildflowers or fall foliage, and a clearing, if possible.
- Try to include points that engage the senses: sight, smell, touch, and hearing.
- A loop trail may be more desirable.

Trails in Wetlands and Riparian Areas

Trails provide opportunities to observe wildlife. If the property includes a wetland or riparian area, place a narrow trail set back 10 feet or more from the streamside corridor with occasional extensions to the water's edge. Clear away enough brush from viewpoints so people can observe but not disturb the wildlife. If the trail enters or crosses very wet areas, consider installing small bridges

Using aerial or ground spray application equipment such as a tractor, ATV (Figure 64), backpack sprayer, or spray bottle, mist herbicide mixture onto the foliage of targeted plants. Direct the spray to evenly cover plant foliage. Do not spray to the point of runoff.

Basal Bark

Generally used to control thin-barked trees, woody trees, and shrubs less than 6 inches in basal diameter. Treating larger trees uses a lot of herbicide and may not be cost effective.

Using a low-pressure backpack sprayer (Figure 65), thoroughly wet the lower 12–15 inches of the stem



FIGURE 65: A low-pressure backpack sprayer can be used for basal bark applications and spot treatments to control undesirable invasive plants in the understory.



FIGURE 66: For basal bark application, spray the lower 12–15 inches of the stem completely around the tree, including the root collar area. It is common to add blue dye to clear herbicides so the area sprayed is visible.



FIGURE 67: To treat a large cut stump, spray or paint the outer area of lighter-colored wood in the stem cross section. For small stumps, treat the entire surface.

completely around the tree, including the root collar area (Figure 66). Do not spray to the point of runoff.

Cut Stump

Used to control resprouting of cut hardwood stumps.

For water-soluble herbicide mixtures, spray or paint the living tissue or sapwood (the outer area of lighter-colored wood in the stem cross section) of freshly cut stumps immediately after cutting (Figure 67). If using an oil-soluble mixture, treatments can be applied to stumps up to 1 month after cutting. In this case, spray the sides of the stump to the root collar and the sapwood around the entire circumference of the cut surface until thoroughly wet, but not to the point of runoff.

Hack and Squirt

Generally used to control individual trees 1 inch in diameter and larger.



FIGURE 68: Making cuts to receive herbicide in a hack and squirt application.



FIGURE 77: Female tree-of-heaven seed clusters.

A) Seed pods before dispersal
 B) Aerial view of female tree-of-heaven trees with brown (spent) seed clusters.

Tree-of-heaven cannot simply be cut down, as this will trigger the tree to send up hundreds of root sprouts. Instead, the trees need to be treated with an herbicide between early July and mid-November, and then cut 30 days later, or cut the tree and treat the stump with herbicide immediately. For more information see the Resources List at <https://extension.umd.edu/woodland/woods-your-backyard/resources>.

Male tree-of-heaven should also be removed, leaving some to serve as “trap” trees where SLF congregate and can be easily destroyed with insecticide treatments. You can monitor male tree-of-heaven trees for signs of SLF. Adhesive tree bands applied and monitored from May to August will help determine if SLF is in the area and will control all life stages of the insect. Other preferred tree species include walnut, maple, sumac, and apple. Egg masses may also be on young black birch, black cherry trees, or any other smooth-barked trees.

To minimize the chances that SLF hitch a ride in your vehicle to a new area, park away from the tree line and leave windows up. Inspect your vehicle and eliminate any SLF in the vehicle before leaving.

Gypsy Moth

The gypsy moth is a highly destructive tree pest in the northeastern, mid-Atlantic, and upper midwestern United States. It is native to Europe and Asia and escaped from a captive breeding program in Massachusetts in the 1870s. The leading edge of the infestation reached Pennsylvania in the late 1970s, and by the 1990s, gypsy moth had reached West Virginia.

The moth’s caterpillars (Figure 78) defoliate oak trees, but will also feed on willow, birch, apple, alder, box elder, hawthorn, and blue spruce. Deciduous trees can usually tolerate up to 50% defoliation without serious effects. Repeated defoliation over several years will, however, weaken trees, leaving them vulnerable to other pests and diseases.

The nonflying female gypsy moths (Figure 79) lay tan-colored masses in July on trees, rocks, and buildings. The eggs hatch the following spring and the caterpillars mature in the summer. The males can fly miles from their hatching point.

The easiest way to assess woodlands for infestation is by surveying for egg masses before they hatch. The best time to do this is in the fall after leaves drop. Remove and destroy any egg masses by scraping them into bags for disposal or into solutions of soapy water.

If gypsy moths are present on a client’s property, the scope of the infestation will determine how you should respond. A small-scale presence can be controlled by



FIGURE 78: Maturing gypsy moth caterpillars with red and blue spots and yellowish lines running the length of the body.

Creating a Land Care Plan

This chapter will show you how to combine the interests and objectives expressed by the landowner with practices available from you, the woodland health professional (WHP), into a short Land Care Plan that contains recommendations for projects and practices, along with estimated costs and other relevant information. This will allow the landowner to decide which practices they want you to complete (Figure 83).

The Woodland Health Assessment Checklist and Management Actions Tables are companion tools (see Chapter 2) used to help clients assess issues of higher concern in



FIGURE 83: *Work with your clients to develop a Land Care Plan to help reach their management goals.*

their woodlands and begin to plan how to address these issues. We hope that application of the Checklist will also bring opportunities to discuss larger environmental benefits such as cleaner streams, better-managed wildlife habitats, and a reduction in invasive exotic species.

Once concerns are identified and prioritized, you can develop a simple Land Care Plan to give your clients options of applicable projects for improving the health of

their woodlands and increasing their enjoyment of the property. The Land Care Plan is driven by the landowner's goals and objectives for the property. The client can then

decide which projects they want to accept, or negotiate some variation on the proposed project(s).

A Land Care Plan template is provided here for use by WHPs. The components of the plan are:

WHAT IS A "HABITAT AREA"?

The Woodland Health Assessment Checklist and Management Actions Tables use the term "habitat area" to help you define the various areas of your client's property. These properties are rarely uniform, containing varieties of trees, shrubs, terrain, and other features. Many properties' natural areas can be subdivided into 2–5 subareas based on the type and/or size of its vegetation. For management purposes, we call subareas with similar vegetation "habitat areas." Possible habitat areas include:

- Lawn or other intermediate use areas that your client wants to stop mowing and/or convert into a natural area
- Shrubby areas or edge habitat
- Groups of fruit and/or nut trees
- Stands of trees: pine, hardwood, or mixed pine/hardwood—they can be separated into young woodland (less than 30 feet tall) or mature woodland
- Single tree or plant species, such as groups of hickories, oaks, mountain laurel, blueberries
- Riparian areas (streams, rivers, or ponds) and/or wetland areas
- Old fields or pastures.

LAND CARE PLAN TEMPLATE

Land Care Plan

Developed by:

Date:

Clients	
Clients' Goals	
Property Summary/ Description	

Woodland Health Assessment Checklist Results Summary

I) Woodland Diversity and Composition
II) Woodland Structure
III) Habitat Assessment
IV) Site-Level Considerations

LAND CARE PLAN SCENARIO C: The Schlosbergs

Land Care Plan

Developed by: C. Keeble & Sons, LLC

Date: August 24, 20XX

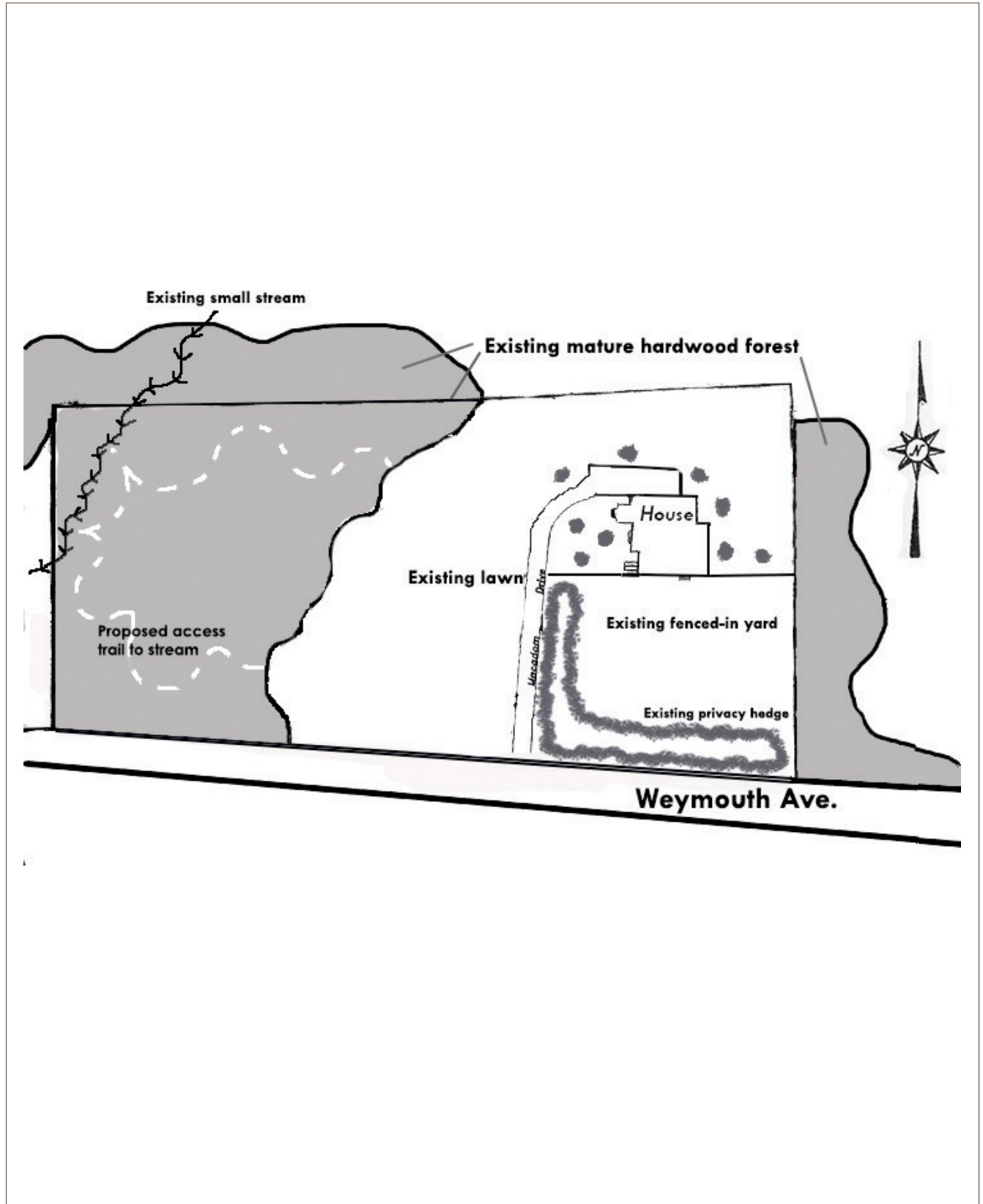
After visiting your property and completing the Woodland Health Assessment Checklist, we are recommending a number of practices for your consideration. We would be happy to discuss with you the recommendations to provide more detail and associated costs.

Clients	Hunter and Mary Schlosberg, 8 Weymouth Ave, Oak City PA 19048 (267) 555-0033
Clients' Goals	<ol style="list-style-type: none"> 1) Less lawn, privacy screening, early successional habitat 2) Healthier woods (large crowns, better growth rates, diversity of species) 3) Manage deer population
Property Summary/Description	<ul style="list-style-type: none"> - 5.5 acres total; 3.5 acres lawn and fenced yard around house, 2 acres mature woodland. Mature woodland also exists along the east border of the property. - The owners bought the property two years ago. Previous owners planted ornamental and non-native trees in the lawn areas. - The existing mature woodland is predominantly mixed oak with scattered trees killed by gypsy moth a few years ago that created some large canopy openings. Undesirable trees and shrubs, many of them invasive, are starting to fill in the openings. Large grape and Oriental bittersweet vines are entangled in many of the canopy trees. - There are some areas along the stream where the stream bank has become unstable and eroded due to high water flow from storm events. - There is a lack of connection between the existing woodland on the western part of the property with the woodland area along the east property line. There is also a lack of privacy screen from the adjoining property to the north. - Deer have increased in number since they purchased the property due to loss of habitat from nearby development. Owner is interested in letting friends archery hunt. - The property has no soft edge habitat between the lawn and the woodland areas. - There is no trail or maintained access through the existing woods to the small stream.

Woodland Health Assessment Checklist Results Summary

I) Woodland Diversity and Composition	<ul style="list-style-type: none"> - High concern for lack of plant diversity in the woodland. Oak trees killed by gypsy moth have created openings, allowing exotic invasive trees, shrubs, and vines to become established. Smaller native trees and shrubs are being overtopped and overabundant deer have browsed out most native vegetation. - High concern for overall tree health due to large grapevines and Oriental bittersweet in canopy of the mature trees and those on the ground, hindering new regeneration.
II) Woodland Structure	<ul style="list-style-type: none"> - Dead oaks provide snags for wildlife habitat and dead wood on the ground for ecological benefits. - High concern for invasive species that may take advantage of increased light and outpace native trees and shrubs.

Property Map with Proposed Projects: The Schlosbergs



Conclusion

With so many possibilities for managing natural areas, the options can be overwhelming. Understanding your client's objectives will enable you to create a customized Land Care Plan. Establishing priorities within the Land Care Plan is essential to determining the best way to allocate time and resources. Armed with the knowledge gained through the Woodland Health Assessment Checklist, the Management Actions Tables, and the land care practices discussed in this publication, you and your client can choose and implement practices

that will best achieve the client's goals and objectives for the property (Figure 84).

It is important to remember that you and your client should treat the Land Care Plan as a flexible framework for the property. Revisit the Woodland Health Assessment Checklist with the client every few years to ensure that the projects are on track and to determine whether priorities have shifted. Keeping the lines of communication open will contribute to your relationship with the client and help to improve the health of their natural areas.



FIGURE 84: Active management by a WHP and the landowner is helping the property owner enhance existing natural areas and create new areas.

Woodland Health Assessment Checklist & Management Actions



The checklist is available for free download at
www.extension.umd.edu/woodland

How to use this assessment:

The Woodland Health Assessment consists of two parts:

1. the Checklist and
2. Management Actions

The checklist will assist you in assessing a variety of conditions on your property. Each condition includes a statement of “higher concern” or “lower concern.” These statements will assist you in identifying potential areas for management, based on your objectives.

The Management Actions identify potential management projects for the property.

Provider company: _____

Employee performing assessment: _____

Date of property visit: _____

Client name & address: _____

Client phone & email: _____

Property location (if different from above): _____

I) WOODLAND DIVERSITY AND COMPOSITION

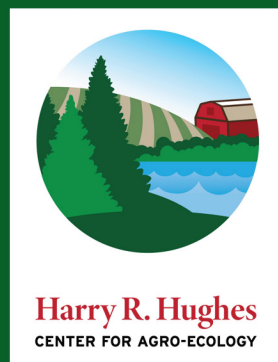
Every property is different. Each contains a unique mix of tree and plant species due to the site conditions relevant to that particular place and to the past history of the land. In general, a woodland that contains a diversity of native tree species with few (or no) exotic invasive plant species is more beneficial to a diversity of wildlife.

I a) Checklist

	Higher Concern	← →	Lower Concern	
<p>Plant diversity & desirability: The woodland has low tree species diversity, in the canopy and/or throughout the forest. One or a few tree species dominate the site. Few desirable species (in relation to the client's objectives) are present.</p>	■	■	■	Many tree species are present (10 or more), without a single species being overly abundant. Desirable species (in relation to the client's objectives) are abundant.
<p>General tree health: Trees have poor growth form (crooked, rotten, small crowns), low vigor, or damage from prior logging or storms.</p>	■	■	■	Trees appear healthy with large, well-formed crowns. Trees generally appear to have good growth, form, and vigor.
<p>Insects and Diseases: The woodland is currently affected by insects or diseases capable of causing mortality or significant injury, or it contains tree species that could be affected by insect and/or disease threats nearby capable of causing mortality or significant injury.</p>	■	■	■	There are no current or looming forest insect or disease issues capable of causing mortality or significant injury, and there is a diversity of tree species unlikely to be impacted.

Notes:

Woodland Health Practices Handbook
was developed with cooperation
from these organizations.



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