

## SOME STEWARDSHIP OPTIONS

The goal of woodland stewardship is to maintain or improve woodland health. As you become better acquainted with your woodland, you might detect signs of past disturbance.

Invasive plants, gaps in woodland composition and structure, deer and livestock damage, and habitat fragmentation signal disturbance and all can threaten woodland health.

Below are several stewardship options you might want to consider to counter these threats. These stewardship tools also can have the effect of protecting the associated values of woodland aesthetics, biological diversity, and wildlife habitat. For additional management suggestions, contact your district forester or other natural resource professional.

*“The Lord giveth and the Lord taketh away, but he is no longer the only one to do so. When some remote ancestor of ours invented the shovel, he became a giver: he could plant a tree. And when the axe was invented, he became a taker: he could chop it down. Whoever owns land has thus assumed, whether he knows it or not, the divine functions of creating and destroying plants.”*

—Aldo Leopold  
*Sand County Almanac*

### ■ Recognizing and Controlling Invasive Plants

Plants found where they do not naturally occur are considered alien, exotic, or non-native. If they also grow and spread rapidly, allowing them to establish over large areas and displace native vegetation, they are termed *invasive*. Ironically, many invasive plants found their way to Iowa woodlands after being introduced as species that were thought to be desirable because of their ornamental or conservation and wildlife values. Invasive species thrive in part because of the absence of natural controls, such as insect pests or disease, in their new habitats.

Conservation biologists consider invasion by exotic species, along with habitat destruction, to be the two great destroyers of biodiversity worldwide. Some of the known effects of invasives are:

- Increased pressure on threatened and endangered species and their habitats;
- Loss of native sources of food and shelter important to local insects, birds, and other wildlife; and
- Alteration of ecological processes, such as the suppression of tree seedlings needed to regenerate a woodland.

The invasive plant species that most threaten the health of Iowa woodlands are garlic mustard, common buckthorn, multiflora rose, and tartarian honeysuckle. These species can invade any woodland community. Both mechanical and chemical methods can help control these invasives. Often the best approach is to employ more than one method. The aim here is to improve the understory habitat for native tree seedlings, shrubs, and herbaceous vegetation.



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## ■ GARLIC MUSTARD (*Alliaria petiolata*)

This herb was used in cooking by early settlers who brought it from Europe. Its leaves and stems have a distinct garlicky odor when crushed.

First-year plants feature a clump or rosette of scallop-shaped leaves. Mature plants, from 12 to 48 inches, have tiny, white flowers and slender fruit capsules that produce pepper-like seeds. Growth starts early in the spring, rapidly producing a dense cover that shades out tree seedlings and early native wildflowers—like blood root, trillium, and Jacob’s ladder—especially in disturbed woodlands. The seeds are carried on the feet of humans and animals, animal fur, moving water, clothing, and equipment.

Garlic mustard stands are found throughout the state, but most problems occur in eastern Iowa. Key to control is getting an early start before plants become widespread. Garlic mustard forms many seeds that can remain alive in the soil for as long as five years, allowing the species to quickly dominate the woodland floor. Control methods, therefore, have to be repeated, and annual monitoring is necessary.

## ■ CONTROL METHODS

Pulling, cutting, and use of herbicides are options.

Hand pulling is a good option when infestation is light and there also are desirable native species present. Pull when soil is moist, grasping low and firmly on the plant in order to remove entire root system. Pulled plants should be bagged and removed from the site if possible, especially if flowers—with seeds in the making—are present. Contact your district forester about disposal options.

Stem cutting may be preferred for larger infestations. It can be done through much of the summer. Cut stems as close to the ground as possible. If flowers or seed pods are present, bag clipped stalks and remove from the site. With mature pods, use care to avoid scattering the seed.

(Some Wisconsin natural resource professionals store pulled or clipped plants in black plastic garbage bags for 2–5 years. Heat build-up in the bags kills the seeds.)

The systemic herbicide, glyphosate (e.g., Roundup) is effective for very heavy infestations where the risk to native plant species is minimal. Glyphosate is quickly inactivated by soil and has no residual effects, but it will kill any plant it contacts, so extreme care must be taken to direct the herbicide and limit drift. This herbicide can be applied any time of year on green plants as long as the temperature is above 50 degrees Fahrenheit and no rain is expected for 8 hours. Early spring or late fall applications are less likely to harm desirable native plants.



### ■ COMMON BUCKTHORN (*Rhamnus cathartica*)

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Common buckthorn originated in Eurasia and was introduced to North America as an ornamental plant in the mid 1800s. Considered a tall shrub or small tree, it can grow 20-25 feet and up to 10 inches in diameter. Common buckthorn bears round, black berries. Its dull, green leaves have tiny teeth on the margins and twigs often end in thorns. Although exotic buckthorn is recognized as a serious invader of wooded areas, it is still legally sold as an ornamental.

Buckthorn's dense growth shades out native understory plants in Iowa's oak-hickory and riparian woodlands, especially threatening oak regeneration and native wildflower establishment. It prefers lightly-shaded areas and competes aggressively with local plants, particularly on well-drained soils. Female buckthorn shrubs can produce abundant fruit—with many seeds—yielding numerous seedlings. Seeds can remain viable in the soil for years.

### ■ CONTROL METHODS

Studies have demonstrated that applying glyphosate herbicide to the cut stems of buckthorn during August and September is effective in killing invasive buckthorn patches. Follow-up treatments are necessary, however. Others have reported good results in applying triclopyr herbicide (e.g., Garlon) to cut stems both between late May and October and during the winter months.

Cut stems with a hand lopper or small chain saw. Apply herbicide to the freshly-cut surface. By adding blue or red dye to the herbicide solution, you'll be able to see which stumps you've treated.

### ■ MULTIFLORA ROSE (*Rosa multiflora*)

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This plant was brought to the United States from Japan in 1866 for use as a rootstock for ornamental roses. Later, it was promoted for use in controlling soil erosion and as a "living fence" benefiting wildlife as a shelter and food source. It occurs statewide and is classified as a noxious weed in Iowa because its rampant, tenacious growth in pastures disrupts cattle grazing. Multiflora rose, like buckthorn, can form impenetrable thickets that exclude more desirable native plant species.

This rose is a dense, spreading shrub with curved thorns and wide, arching stems. Clusters of small, white flowers appear in the spring followed by small, hard, red fruits (hips). Birds eat the fruit and spread the seeds. A multiflora rose plant annually may produce 1,000,000 seeds, which can remain viable in the soil for up to 20 years.

### ■ CONTROL METHODS

Mechanical and chemical methods are the most widely used for managing this invasive plant. Frequent, repeated cutting or mowing (3-6 times during the growing season for 2 to 4 years) is one option. To minimize disturbance in high-quality natural areas, cutting of individual plants is preferable to mowing. Application of glyphosate herbicide to freshly-cut stems may be the most effective method of control, especially if the chemical is used late in the growing season.



### ■ TARTARIAN HONEYSUCKLE (*Lonicera tatarica*)

This Eurasian shrub was introduced to North America as an ornamental in 1752. Relatively shade-tolerant, it occurs in forest edges and in woodlands that have been grazed or otherwise disturbed, especially in the eastern two-thirds of Iowa.

Exotic honeysuckles are stout, erect shrubs growing 3 to 10 feet tall. They have smooth, bluish-green leaves, pairs of fragrant, pink to red, tubular flowers, and yellow, orange, or red berries. Honeysuckle grows in dense thickets, shading out more desirable native, understory plants, such as woodland wildflowers and young trees.

### ■ CONTROL METHODS

Hand pull seedlings and small plants in lightly-infested areas, taking care to limit disturbance to soil.

In shaded woodland habitat, where exotic honeysuckle tends to be less resilient, repeated clipping of the stems to ground level during the growing season may be effective. *However, if cut only once and left to grow, exotic honeysuckles often will form stands that are more vigorous than they were prior to cutting.*

Herbicide application may provide more effective control. Treat seedlings with a systemic herbicide like glyphosate applied to the foliage. In established stands, cut stems to the ground and apply glyphosate to the cut surface. Regardless of the method, controls should be applied prior to seed dispersal (late summer or fall) to minimize reseeding of the treated area.

Controlling invasives in your woodland requires a long-term commitment, including annual monitoring and repeating treatments as needed. Invasives can overwhelm and displace existing vegetation with stunning speed and tenacity.

Many Iowa woodlands still are recovering from earlier disturbances, and will continue to undergo plant succession. Controlling invasive plants will improve the understory habitat for native seedlings, shrubs, and herbaceous vegetation, which will help ensure that your woodlands will develop the structure and composition of a healthy community.

**NOTICE:** Mention of pesticide products in this booklet does not constitute endorsement of any material.

**USE PESTICIDES WISELY:** Always read the entire pesticide label carefully, follow all mixing and application instructions, and wear all recommended personal protective gear and clothing. Contact your county office of Iowa State University Extension for any additional pesticide use requirements, restrictions, or recommendations.



*native Iowa wildflowers - Jacob's ladder, trillium, and bloodroot*