

# Forest Pest Control - Vegetation

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## Vegetation Management

Growth of desirable tree species can be increased significantly by using vegetation management practices to control undesirable species that compete for light, water and nutrients. Management also can be used to improve wildlife habitat, to reduce fire hazard, and to maintain right-of-way and recreation sites. Herbicides can be used with hand or mechanical clearing, prescribed fire, and / or weed mats in an integrated weed management strategy that is effective and environmentally sound. They can be important tools that provide safe and effective vegetation management with less risk than alternative control methods and often lower energy or labor inputs as well.

## Exotic Invasive Plant Species

Invasive non-native plants can and do disrupt native plant and wildlife habitats and communities. Once established, limited infestations of these plants can spread over large areas. **Invasive plants may be second only to habitat destruction as a threat to biodiversity.** They are estimated to cost the US more than \$34 million annually in lost productivity, lower quality, weed control, and containment on crop and range lands and in aquatic environments. Here are examples of some invasive plants and problems that they can cause.

### Kudzu



*Kudzu smothering vegetation (Kentucky.com)*



*Kudzu has massive tap roots (bjherbest.com)*

**Kudzu** (*Pueraria montana* var. *lobata*) is a climbing, semi-woody, perennial vine in the pea family. It smothers plants with a solid blanket of leaves, girdles woody stems and tree trunks, and breaks branches or uproots trees and shrubs through the sheer force of its weight. Once established, Kudzu plants can grow about a foot per day.

Vigorous vines may be 100 feet long with stems  $\frac{1}{2}$  to 4 inches in diameter. Massive tap roots are 7 inches or more in diameter, 6 feet or more in length, and weigh as much as 400 pounds.

Thirty vines may grow from a single root crown. Long-term control requires destruction of the extensive root system because any remaining root crowns can lead to re-infestation. Mechanical methods involve cutting vines just above ground level and destroying all cut material. Close mowing every month for two growing seasons or repeated cultivation may be effective. If conducted in the spring, cutting must be repeated, as regrowth appears to exhaust the plant's stored carbohydrate reserves. Late season cutting should be followed up with immediate application of a systemic herbicide (e.g., glyphosate) to cut stems. This allows the herbicide to move into the root system. Repeated applications of several soil-active herbicides have been used effectively on large infestations in forestry situations.

## Bush Honeysuckle



*Egg-shaped honeysuckle leaves (discoverlife.org)*



Using a weed wrench to extract honeysuckle stump ([environmentalconsulting.com](http://environmentalconsulting.com))

**Bush honeysuckles** (*Lonicera maackii* and other species) are upright deciduous shrubs that can be 6 to 15 feet tall. The 1 to 2-½ inch, egg-shaped leaves are opposite along the stem and short-stalked. Pairs of fragrant, tubular flowers less than an inch long are borne along the stem in the leaf axils. Flowering generally occurs from early to late spring but varies for each species and cultivar. The fruits are red to orange, many-seeded berries. Native bush honeysuckles may be confused with these exotic species and cultivars, so proper identification is necessary. Unlike the exotics, most of our native bush honeysuckles have solid stems.

Exotic bush honeysuckles can rapidly form dense shrub layers that crowd and shade out native plant species. They decrease light availability, deplete soil moisture and nutrients, and may release toxic chemicals that prevent other plant species from growing in the vicinity. Exotic bush honeysuckles may compete with native bush honeysuckles for pollinators, resulting in reduced seed set for native species. While the abundant fruits of exotic bush honeysuckles are rich in carbohydrates, they do not offer migrating birds the high-fat, nutrient-rich food sources needed for long flights that are supplied by native plant species.

Mechanical and chemical methods are the primary means of control of exotic bush honeysuckles. Hand removal of seedlings or small plants may be useful for light infestations but the soil should be as undisturbed as possible. Exotic bush honeysuckles in shaded forest habitats tend to be less resilient, so repeated clippings to ground level, during the growing season, may result in high mortality. Clipping must be repeated at least once yearly because bush honeysuckles that are cut once and left to grow will often form stands that are more dense and productive than they were prior to cutting.

Seedlings of exotic bush honeysuckles can also be controlled by application of a systemic herbicide, such as glyphosate. Established stands may be managed best by cutting the stems to the ground and painting or spraying the stumps with glyphosate.

## Multiflora Rose



*Multiflora rose (cipwg.uconn.edu)*



*Multiflora rose fruits*

*photo: James H. Miller, USDA Forest Service, Bugwood.org*

**Multiflora rose** (*Rosa multiflora*) is a thorny, perennial shrub with arching stems (canes), and leaves divided into five to eleven sharply toothed leaflets. There are a pair of fringed bracts at the base of each leaf stalk. Beginning in May or June, clusters of showy, fragrant, white to pink flowers appear, each about an inch across. Small bright red fruits, or rose hips, develop during the summer. They become leathery and remain on the plant through the winter.

Multiflora rose was introduced to the East Coast from Japan in 1866 as rootstock for ornamental roses. In the 1930s, the US Soil Conservation Service promoted it for use in erosion control and as "living fences" to confine livestock. State conservation departments soon discovered value in multiflora rose as wildlife cover for pheasant, bobwhite quail, and cottontail rabbit and as food for songbirds. They encouraged its use by distributing rooted cuttings to landowners free of charge. However, it is extremely prolific and can form dense

thickets that exclude native plant species. This exotic rose readily invades open woodlands, forest edges, and succession disturbed land.

Multiflora rose reproduces by seed and by forming new plants that root from the tips of arching canes that contact the ground. Birds readily seek the fruit and are the primary seed dispersers. The average multiflora rose plant may produce a million seeds per year, which may remain viable in the soil for up to 20 years. Passing through the digestive tract of birds enhances seed germination.

Mechanical and chemical methods are widely used methods for managing multiflora rose. Frequent, repeated cutting or mowing (3 to 6 times per growing season for two to four years) has been effective in killing multiflora rose. In high quality natural communities, cutting of individual plants is preferred to site mowing to minimize habitat disturbance. Various herbicides have been used successfully in controlling multiflora rose. However, long-lived stores of seed in the soil make follow-up treatments necessary. Application of systemic herbicides (e.g., glyphosate) to freshly cut stumps or to regrowth may be the most effective methods, especially if done late in the growing season. Plant growth regulators have been used to control the spread of multiflora rose by preventing fruit set.

## Winter Creeper



*Winter creeper is an evergreen climbing woody vine that forms a very dense ground cover (nature.org)*

**Winter creeper** (*Euonymus fortunei*), a woody evergreen vine, was introduced into the US from Asia in 1907 as an ornamental ground cover. Subsequently, it has invaded forests throughout the eastern US. The plant can be a small shrub, growing in mats along the forest floor to 3 feet in height or a vine climbing trees to heights of 40-70 feet. The opposite leaves are dark green, oval, slightly toothed, glossy, and thick. The young stems are green, becoming light gray and corky with age. Its inconspicuous, yellow-green flowers have 5 petals.

Winter creeper aggressively invades open forests, forest margins, and openings. The dense ground cover often resulting from an infestation can displace native understory species and restrict tree seedling establishment. Winter creeper can also smother and kill shrubs and small trees.

Juvenile plants with small root systems can be pulled by hand when the soil is moist. However, manual removal of larger plants must include destruction of all roots and runners because portions of the root system left in the soil can sprout. Applications of herbicides for containing glyphosate or triclopyr over successive years may give satisfactory control.

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## References

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<http://www.ext.colostate.edu/mg/Gardennotes/331.pdf>