

The Exotic Plant Problem: Defending Your Lands from an Unfriendly Takeover

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Trees and Shrubs (PART I of a two-part series)

Exotic pest plants are marching across the southern landscape and occupying our lands. These foreign invaders—often called non-native, alien, or noxious weeds—occur as trees, shrubs, vines, and grasses. Some have been introduced into this country accidentally, but most were brought here intentionally as ornamental; or for livestock forage. They arrived without their natural predators of insects and diseases that tend to keep most plants in a natural balance, and they are now essentially free to spread without too much opposition, except from control and eradication measures applied by landowners and managers trying to defend their property from an unfriendly takeover.

Most alien plants come to your property from their migration along right-of-ways and stream margins. The more rapid invaders arrive by windblown seeds or spores, some are widely scattered by bird- and animal-dispersed seeds, while others are actually planted by unsuspecting or poorly informed landowners and land managers. Some of these alien plants are still heavily relied upon for cattle forages, crops and even wildlife plantings. The main problem with these exotics is their aggressive nature and their ability to dominate a site and crowd out native beneficial plants. Few of these have any wildlife value that cannot be replaced with less aggressive native plants and many (especially grasses) have no wildlife value whatsoever and are more of a detriment to wildlife than a help.

The first line of defense against an alien plant takeover is a constant surveillance of adjoining right-of-ways, stream banks, and internal roads and trails for any new arrivals. With the first sign of an unwelcome plant, effective control measures should be started. Early detection and treatment will minimize efforts and costs that come with treating well-established plants or full-blown infestations. In some cases, largescale conversions from exotics to natives (i.e. pastures) is the only solution to eradication of exotics to a more wildlife friendly native grassland. More effort is required for successful eradication of established infestations, but it still can be accomplished with proper treatments described here. Part 1 of this series will concentrate on trees and shrubs and Part 2 will deal with grasses and vines.

Troublesome Plants and Effective Herbicide Treatments

If an alien plant infestation is spotted or already occurs on your land, then proper and effective eradication measures should be undertaken or spread is inevitable. Continued treatments and retreatments will probably be necessary to be successful. Most alien and troublesome plants are perennials, having extensive tough runners or roots. This means that effective herbicide applications offer the best means of containment or eradication,

because herbicides can kill roots and do so without baring soil to erosion.

To be successful, 1. *the most effective herbicide for the species should be used*, 2. *applied using a correct method*, and 3. *applied during an optimum time period*. Only herbicides registered by the Environmental Protection Agency for forestry use in the Southeast will be discussed here. Herbicides in other use areas (such as non-cropland, right-of-way, pastures and rangeland, etc.) may be just as effective, or even contain the same active ingredient of those mentioned. Read and thoroughly understand the herbicide label and its prohibitions before and during use.

Many herbicides and some target plants require the addition of a good non-ionic surfactant to the spray tank to be effective. Other important points are to always use clean water and mix your spray solution thoroughly before applying. If possible, forgo applications during periods of severe drought as herbicide effectiveness can be greatly reduced during these times. And, always wear your personal protective equipment prescribed on the label or in supplementary materials. Oftentimes, Ammonium sulphate will enhance herbicide effectiveness.

Exotic Tree Control

Exotic tree species hinder reforestation as well as forest stand and right-of-way management. Some occur as scattered trees while others occur in dense infestations. Silktree is continually spreading along stream networks, chinaberry is appearing more in new forests, and tallowtree has extensive infestations in wet forests, replacing native species. All use roadsides for gaining access to your lands and often occur together

Silktree or mimosa (*Albizia julibrissin*)

Nature: Small legume tree, growing 30-40 ft. tall, that reproduces by abundant seeds and root sprouts. It has feathery deciduous leaves, showy pink blossoms that yield dangling flat pods, and smooth light brown bark.

Origin: Native to Tropical America.

Range: Found along roadsides and forest borders from MS to FL and north to KY and VA.

Uses: A traditional ornamental with infestations originating from old home-site plantings.



Mimosa

Herbicide control: Apply Accord, Roundup, Garlon 3A, or Garlon 4 as 2% solutions in water (8 ounces in a 3-gal. sprayer) with a wetting agent to thoroughly wet all leaves in July to October. Apply Transline as a 0.2% solution in water (1 ounce in a 3-gal. sprayer) to thoroughly wet all leaves, stems, and bark in July to Sept. Transline controls only legume and is often safe on surrounding non-leguminous species.

Chinaberry (*Melia azedarach*)

Nature: Medium tree growing to about 50 ft. tall that spreads by prolific seeding. It has lacy, bipinnate leaves that are dark green and blue flowers that yield rounded yellow fruit (poisonous).

Origin: Introduced from Asia and traditionally planted at home sites in the Southeast.



Chinaberry

Range: Grows along forest borders and in disturbed habitat throughout the Southeast, but rare at high elevations.

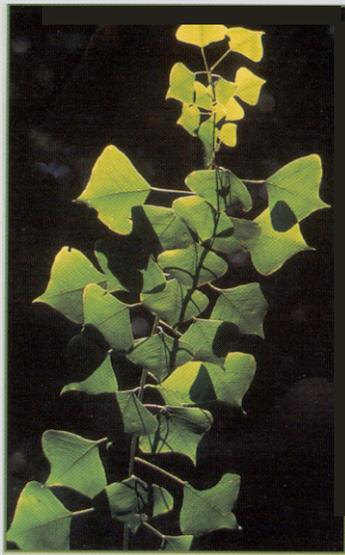
Uses: Traditional ornamental, with potential uses of its extracts for natural pesticides.

Herbicide control: Apply Garlon 3A or Garlon 4 as a 2% solution in water (8 ounces in a 3-gal. sprayer) with a wetting agent to thoroughly wet all leaves in July to Sept.

Popcorn tree or tallowtree (*Sapium sebiferum*)

Nature: Shade-tolerant, small tree growing to 50 ft. tall that spreads by bird-dispersed seeds. It has light-green heart-shaped leaves that have bright fall colors, long drooping flowers, and bundles of white waxy "popcorn-like" seeds in winter.

Origin: Introduced from China to the U.S. Gulf Coast in early 1900s. Benjamin Franklin first imported it into the U.S. as a source of candle wax.



Popcorn tree

Range: Occurs in the coastal plain from NC south to FL to TX with severe infestations on wet forest sites and coastal prairies in east TX to FL. Occurs as an ornamental in OK and AK and is spreading into all upland areas.

Uses: Ornamental. Waxy seeds traditionally used to make candles. Honey plant for beekeeping.

Herbicide control: Apply Garlon 4 in diesel, mineral or vegetable oil with a penetrant (check with herbicide distributor) to young bark completely around the trunk up to 16 inches above the ground in spring. Use a 5% solution (18 ounces in 3-gal. sprayer) when less than 6 inches in diameter, up to a 20% solution (2 quarts in 3-gal. sprayer) when greater than 6 inches. Apply Arsenal AC to the foliage of seedlings in July to October, as a 1% solution in water (4 ounces in 1-gal. sprayer) plus a wetting agent (non-target plants can be killed or injured by root uptake). For large trees, make stem injections using Arsenal AC or Garlon 3A in dilutions and cut spacings specified on the herbicide label (anytime except March and April). Apply Velpar L to the soil surface within 3 ft. of the stem (one squirt of spotgun per 1 inch dbh).

Exotic Shrub Control with Herbicides

Exotic shrubs often occur with exotic tree species and present similar problems. The most extensive invader of bottomland hardwoods is Chinese privet, with infestations stopping regeneration of hardwood-pine forests. Exotic shrubs have some value as wildlife forage, and are often established by misinformed hunter groups.

Bicolor or Bushclover (*Lespedeza bicolor*) and Serecia lespedeza (*Lespedeza cuneata*)

Nature: Although still planted for quail food, these plants often invade surrounding forests, replacing native plants. Bicolor is a shade-tolerant, 3-leaflet, legume shrub up to 10 ft. tall that spreads by bird- and animal-dispersed seeds.

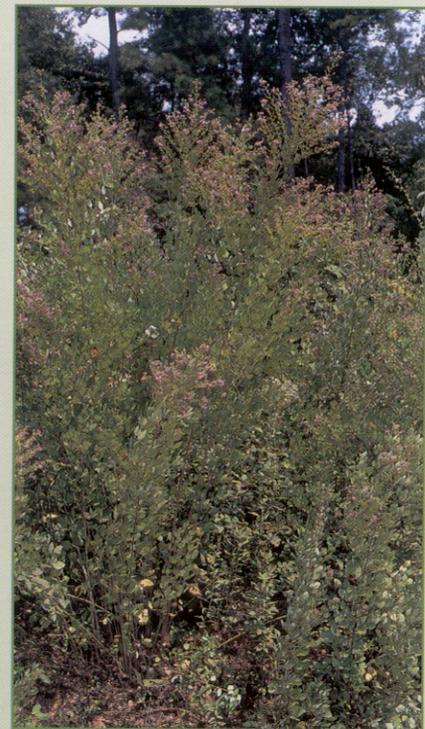
Serecia is not really a shrub, but a semi-woody plant to 3 ft. tall with many small 3-leaflet leaves feathered along erect, whitish stems.

Bicolor has small purple flowers and serecia has tiny cream-colored flowers during summer. Both will form dense stands that prevent pine and hardwood regeneration or land access.

Origin: Introduced from Japan.

Range: Found as infestations throughout the Piedmont and Coastal Plain in the Southeast.

Uses: Wildlife food for birds and soil stabilization.



Serecia lespedeza



Bicolor or Bushclover

Herbicide control: Apply Accord, Roundup, Garlon 3A, or Garlon 4 as 2% solutions in water (8 ounces in a 3-gal. sprayer) with a wetting agent to thoroughly wet all leaves in July to Oct. Apply Transline as a 0.2% solution in water (1 ounce in a 3-gal. sprayer) to thoroughly wet all leaves and stems in July to Sept.

Chinese privet (*Ligustrum sinense*) and Japanese privet (*Ligustrum japonicum*)

Nature: Shade-tolerant, tall shrubs or small trees growing to about 30 ft. tall, with evergreen leaves, that spread by bird-dispersed seeds and by under-

ground runners. Both species have leafy stems with opposite leaves. Chinese privet leaves are less than 1 inch long and Japanese privet leaves are 1-3 inches long and leather-like. Both have showy clusters of small white flowers in spring, yielding large clusters of round, dark-purple berries during fall and winter. Both are rapidly spreading and will form dense exclusive stands.

Origin: Both introduced from China.

Range: Scattered throughout MS north to TN and KY and east to AL, GA, SC, and NC.

Uses: Traditional Southern ornamental shrubs.

Herbicide control: Apply Accord or Roundup as a 3% solution (12 ounces in a 3-gal. sprayer) or Arsenal AC as a 1% solution (4 ounces in a 3-gal. sprayer) in water with a wetting agent to thoroughly wet all leaves in August through Sept. For stems to 7" tall for foliar sprays, apply Garlon 4 to the young bark completely around the trunk up to 16 inches above the ground in Jan. to Feb. or May to Oct. using a 20% solution (2 quarts in 3-gal. sprayer) in diesel, mineral or vegetable oil with a penetrant (check with herbicide distributor). Or, cut large stems and paint the stumps with Velpar.

Multiflora rose (*Rosa multiflora*)

Nature: An "pen growing thorny rose, having been planted widely 20 to 40 years ago for living fences, wildlife cover, and windbreaks. It has cluster of white roses in spring, unlike our native single roses. Multiflora rose reproduces by seeds, root sprouts, and rooting at the ends of arching branches. It forms



Multiflora rose

dense thickets that prevent tree regeneration and land access.

Origin: Introduced from Japan and Korea.

Range: Most of the Eastern U.S.

Uses: Some wildlife value.

Herbicide control: Apply Escort at 2 ounces per acre (0.6 dry ounces in 3-gal. sprayer) in water and a wetting agent in May, wetting foliage to run-off. This may damage fescue and bahiagrass.



Chinese privet

The Rehabilitation Phase

The most important final part "an eradication and rehabilitation program is the establishment of fast growing native plants that will out-compete with any surviving unwanted plants. Actually, this often means planting genetically-improved Southern pine seedlings and ensuring their initial rapid growth through cultural means. Another option is the planting of heavily shading plants such as Partridge Pea or Browntop millet or improved forage grasses, however forage grasses are actually introduced plants that can spread through your lands.

Native plants are increasingly becoming available for planting for rehabilitation, but limited seed supplies and the absence of well-developed establishment procedures hinder their current use. In the near future, with the commendable efforts of organizations like the Alabama Wildflower Watch, native plant seeds will become commercially available in adequate supplies. This will leave the development of proper establishment procedures as the last barrier that will require intensive study. Native plants do have native predators and require proper seed treatments to assure timely germination, thus their establishment will be more challenging than the commonly available alien plants.

Caution

Pesticides used improperly can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife. Use all herbicides and pesticides selectively and carefully. Follow recommended practices for the disposal of surplus herbicides and pesticides and their containers. Next issue will explore grass and vine problems.

Author's Note: Use of trade names is for reader's information and does not constitute official endorsement or approval by the U.S. Department of Agriculture to the exclusion of any suitable product or process.