

Autumn Olive - *Elaeagnus umbellata*

Identification

Autumn olive is a deciduous shrub from 3 to 20 feet in height. Bark is gray-brown and smooth with small white lenticels. Scattered thorns occur on many plants but may be absent. Leaves are alternate, elliptical and 2-3 inches in length, with silvery, dotted undersides (Figure 38). The whitish-yellow flowers occur in axillary clusters, giving way to red, juicy fruits (Figure 39, 40).

Habitat and Distribution

Autumn olive is native to China and Japan and was introduced into America in 1830. Since then it has been widely planted for wildlife habitat, mine reclamation, and shelterbelts (Figure 41). Autumn olive invades old fields, woodland edges, forest openings, pastures, road sides, rights-of-way, and other disturbed areas. It can grow in sandy, loamy, and somewhat clayey soils with slightly acidic to neutral pH, but does best on sandy, dry soils. It is drought tolerant and can thrive in very infertile and dry soil. Plants cannot tolerate wet conditions. Autumn olive is somewhat shade tolerant but cannot grow in moderate or deeply shaded environments. Because the fruits are readily eaten by birds and small mammals, this plant has the ability to spread rapidly. It is found throughout the eastern United States, from Maine to Iowa and south to Florida. In the South, it is a problematic invader in the Piedmont region and farther north usually spreading from older plantings.

Impact

Both its rapid growth and prolific fruiting allow autumn olive to disperse rapidly. It can form large dense thickets, creating a monocultural shrub layer. These thickets can displace native species, reducing biodiversity and altering successional states. Meadows and forest openings can quickly become dominated and the canopy closed, restricting light availability to the understory layer. Autumn olive is a nitrogen-fixing plant, which could potentially alter soil nitrogen availability, greatly alter ecosystems that are adapted to infertile soils. Autumn olive re-sprouts vigorously, making any control work difficult and allowing it to re-grow rapidly after disturbance.



Figure 38



Figure 39



Figure 40

Response to Disturbance

Good initial colonizer (post fire and post disturbance)
 Promoted by soil disturbance
 Promoted by fire
 Promoted by high light environments
 Sprouts vigorously after cutting

Reproduction

Primary means – seed
 Matures in 3-5 years on good sites
 High seed production
 (20,000-54,000 per year)
 High rate of germination (>90% with cold stratification, ~70% with no cold stratification)
 Flowers April to May
 Insect pollinated

Seed Dispersal

Bird and small mammal dispersed seeds

Growth Habits

Shrub/tree
 Rapid growth
 Somewhat shade tolerant
 Flood intolerant
 Drought tolerant
 Open habitats
 Grows on infertile soils
 Nitrogen fixer
 Early spring emergence

Response to Prescribed Fire

Not a control option
 Not a significant fire hazard
 Sprouts quickly after fire
 Colonizes quickly after fire



Figure 41

Control Recommendations

Thoroughly wet all leaves with Arsenal AC, Vanquish or Garlon 4 as a 1-percent solution in water (4 ounces per 3-gallon mix) with a surfactant (April to October).

For stems too tall for foliar sprays, apply Garlon 4 as a 20-percent solution in commercially available basal oil, vegetable oil, or crop oil (2.5 quarts per 3-gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray (January to February or May to October). Or, cut large stems and immediately treat the stumps with one of the following herbicides in water with a surfactant: Arsenal AC as a 10-percent solution (1 quart per 3-gallon mix) or a glyphosate herbicide as a 20-percent solution (2.5 quarts per 3-gallon mix). (See **Herbicide Quick Reference page 40-42**)