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**VEGETATION MANAGEMENT  
GUIDELINE: AUTUMN OLIVE,  
*Elaeagnus umbellata* Thunb.**

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Autumn olive (*Elaeagnus umbellata* Thunb.) occurs in disturbed areas, successional fields, pastures, and roadsides where it has been widely planted. It has been noted from prairies, open woodlands, and forest edges. Autumn olive rarely is encountered in dense forests or on very wet sites.

Autumn olive is a nonleguminous, nitrogen-fixing woody shrub. Plants flower and develop fruits annually after reaching three years of age, although two-year-old plants

have been known to flower. An individual plant can produce up to 3.6 kg (8 lb) of fruit. Seed dispersal appears to be mainly by falling fruit and birds (Sternberg 1982). Birds seem to be the primary vector for dispersal, but raccoons, skunks, and opossums also are known to feed on the fruit. Once established, this species is highly invasive and difficult to control. Burned, mowed, or cut plants will resprout vigorously.

In high quality natural communities, young seedlings and sprouts can be hand pulled in early spring when adequate ground moisture is present to allow removal of the root system along with aboveground growth. Autumn olive is easily seen in early spring because its leaves appear while most native vegetation is still dormant.

Root systems have been effectively killed and resprouting prevented by cutting the plant off at the main stem and applying herbicide to the stump. Roundup herbicide (a formulation of glyphosate) has been used effectively to control autumn olive when used as a 10–20% solution and applied directly to the cut stump (Eckardt 1987). Although the Roundup label specifies a higher concentration for cut-stump application (50–100%), this lower concentration is effective. Roundup can be applied either by spraying individual stumps with a low pressure, hand-held sprayer or by wiping each stump using a sponge applicator (sponge-type paint applicators can be used). With cut-stump treatment, herbicide is applied specifically to the target plant, reducing the possibility of damaging nearby, desirable vegetation. Cut-stump treatment is particularly effective late in the growing season (July–September), but also is effective during the dormant season.

Glyphosate is a nonselective herbicide, so care should be taken to avoid contacting nontarget species. By law, herbicides only may be applied according to label directions and by licensed herbicide applicators or operators when working on public properties.

Recommended practices on buffer and severely disturbed sites are the same as above for high quality natural communities. In

addition, the following treatments are effective.

Thin-line basal bark treatments with triclopyr herbicides (trade name Garlon) have demonstrated 95% kill (Kuhns 1986). Undiluted Garlon 4 (or Garlon 4 diluted 50:50 with diesel fuel) should be applied in a thin, pencil-point line around the base of the plant 15–30 cm (6–12 inches) above the ground. Application can be made with a hand-held sprayer and should be performed during the dormant season to minimize risk to nontarget species. A narrow band of Garlon 4 completely encircling the stem is needed.

Great care should be exercised to avoid getting any of the mixtures on the ground near the target plant since some nontarget species may be harmed. This method should not be used in high quality natural areas because the diesel fuel may kill vegetation around the tree. Avoid using triclopyr if rain is forecast for the following 1–4 days; runoff can harm nontarget species.

Foliar application of dicamba herbicides (available under the trade name Banvel) and 2,4-D herbicides (available under a variety of trade names, including Crossbow) can provide total kill with little or no regrowth the following year (Kuhns 1986). Banvel is mixed at the rate of 1 oz per gallon of water plus 0.5 oz of surfactant. The 2,4-D herbicide should be mixed according to label instructions. One hundred percent coverage of foliage should be performed during the growing season (April–September); this control measure thus is best suited to shorter plants. Although application can be done any time during the growing season, summer application (July–August) is especially effective. Banvel and 2,4-D are selective against broadleaf plants, so care must be taken to avoid contacting desirable, broadleaf vegetation. Do not spray so heavily that herbicide drips off the target species. Foliar spray of herbicides should only be used in less sensitive areas because of the potential for contacting nontarget species. The herbicide should be applied while backing away from treated areas to avoid walking through it.

Although glyphosate (Roundup) is an ef-

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fective foliar spray when applied during the growing season (Eckardt 1987), it is not recommended because it is nonselective. Use of this herbicide as a foliar spray can result in unnecessary damage to nontarget species.

Repeated pruning of established plants to ground level without subsequent herbicide application is not effective for autumn olive control. Each regrowth results in a thicker stem base and denser branches.

Prescribed burning has not proven effective in controlling established autumn olive (Eckardt 1987).

#### **LITERATURE CITED**

- Eckardt, N. 1987. Autumn olive: Element stewardship abstract. Unpublished report for The Nature Conservancy, Minneapolis, Minn. 5 p.
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