



## AUTUMN OLIVE

(*Elaeagnus umbellata*)

## & RUSSIAN OLIVE

(*Elaeagnus angustifolia*)

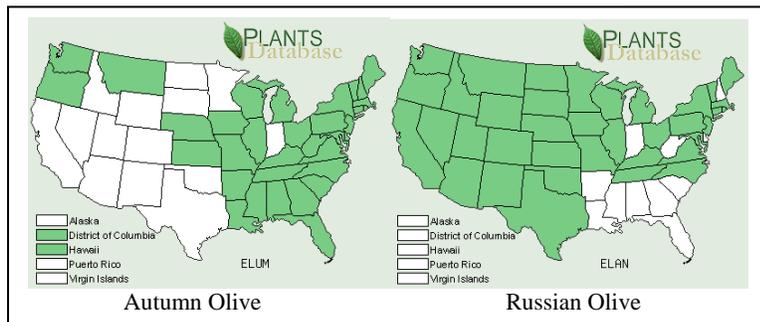
### IN BRIEF

Closely-related Autumn olive and Russian olive grow as shrubs or small trees. Both were introduced for landscaping, roadbank stabilization and wildlife food but now invade open forests, edge habitat and fields.



© Photo by Elizabeth J. Czarapata

Autumn olive.



Autumn olive branch.

## AUTUMN OLIVE

(See below for Russian olive)

### DESCRIPTION

**Plant Habit.** This deciduous woody species grows from 6 to 20 feet tall as a shrub or small tree, typically with multiple stems. Infested areas create dense thickets.

**Stems.** Twigs and young branches appear silvery or golden brown due to brown or orange scales that make the stem appear speckled.

Branches often are armed with sharp thorn-like branches.

**Bark.** Gray and fibrous on older plants.

**Leaves.** Oval or elliptic with blunt points, arranged alternately along stem. Leaf edges are smooth and often wavy. Leaf size ranges from 2-4 inches long and up to 1.5 inches wide. Upper leaf surface is green to gray-green and smooth, and the underside is silvery and scaly.



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Tubular, 4-petaled flowers of autumn olive.



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Gray, fibrous bark of autumn olive.

**Flowers.** Fragrant, tubular, 4-petaled flowers appear in leaf axils individually or in clusters from late April to May. They are creamy white to light yellow.

**Fruit.** The small, rounded, single seeded fruit is borne on short stalks and ranges from 1/8 to 3/8-inch long and 3/16-inch wide. The fruit is silvery with brown scales in early summer, becoming juicy and yellow and ripening to a copper-speckled pink/red in fall.



Ripe autumn olive fruits in fall.



Emmet Judziewicz, WI Herbarium  
Silvery underside  
of autumn olive leaf.



David J. Eagan, WDNR  
Silvery scales present on the underside of  
an autumn olive leaf.

**Habitat.** Open woods, forest edges, roadsides, fencerows, old fields, pastures, sand dunes and heavily disturbed areas such as mine spoils. Colonizes infertile soils due to its nitrogen-fixing ability. Does not do well in densely forested areas but will move into forests from roads and edges and occupy forest gaps. Rarely found in wet soils.

## RUSSIAN OLIVE

*(See above for Autumn olive)*

### DESCRIPTION

**Plant Habit.** This deciduous, woody species grows from 10-30 feet in height, taking the form of a large shrub or small tree.



© Photo by  
Elizabeth J. Czarapata  
Mature Russian olive tree.

**Bark.** The thin gray bark can be peeled off in narrow fibrous strips.



Alternate, lance-shaped leaves of Russian olive.

**Stems.** Twigs are silvery and scaly when young, becoming light brown and lacking scales when mature. Twigs may develop spike-like, terminal thorns.

**Leaves.** Leaves are alternate, willow-like, longer and narrower than Autumn olive, silvery gray above and below and with smooth edges. Leaf size ranges from 1 to 4 inches long and 1/2 to 1 inch wide.

**Flowers.** Clusters of 4-petaled, silvery-white to yellow flowers bloom in late spring in the leaf axils. Spicy in fragrance.

**Fruits/Seeds.** Abundant fruits mature from August to October. They are dry and mealy, yellow or reddish-brown with a dense covering of silvery scales, and about 1/2 inch long, resembling a small olive. Fruits stay on the tree



Flower of Russian olive.

throughout the winter.

**Habitat.** Riparian areas, lakeshores, old fields, roadsides, forest edges and gaps, sandy floodplains. Tolerant of dry to moist soils, low nutrients, high salinity, shade and extreme heat and cold.

### A COMPARISON OF DISTINCTIVE FEATURES

Autumn olive	Russian olive
Elliptical to oval leaves	Narrower, lance-shaped, willow-like leaves
Leaves green above, silvery/scaly below	Leaves silvery/scaly above and below
Young stems have brown & orange scales	Young stems have silvery scales
Terminal thorns on twigs	Terminal thorns on twigs
Fruit small, rounded with silvery surface flecks, pink to red when ripe, juicy	Fruit larger, olive-shaped, yellow to brown with silvery surface scales, dry & mealy

### LOOK-ALIKES

Two shrubs resemble Russian and autumn olive, but both have opposite leaves: Silver buffalo-berry (*Shepherdia argentea*) which is non-native, and the native Russet buffalo-berry (*S. canadensis*) which has brown-scaly young twigs and undersides of leaves.

### LIFE HISTORY AND INVASIVE BEHAVIOR

Autumn olive and Russian olive are closely related and similar in life history and invasiveness. Reproduction is primarily by seed, but also from root-crown sprouting and suckering. Seeds can remain viable for 3 years. Although not in the legume family, both species have nitrogen-fixing root nodules and are able to tolerate infertile soils and disrupt nutrient cycles in native plant communities. Their prolific and rapid growth enable them to compete with native plants for water, light and other



Dry, silvery fruits of Russian olive

resources, eventually displacing them entirely, resulting in dense thickets. Russian olive can also disrupt site hydrology and create a fire hazard. Both begin producing flowers and fruit after only 3-5 years, eventually producing up to 8 pounds of fruit per plant. Seeds are dispersed mainly by birds but also by mammals and water flow. These species are highly invasive in some habitats and regions, and once established are extremely difficult to control.

### IMPACT ON FORESTRY AND FORESTERS

On Forestry: Autumn and Russian olives both outcompete desirable vegetation. They are challenging and expensive to eradicate and can interfere with tree regeneration. Russian olive can alter local hydrology in lowland riparian forests by rapid evapo-transpiration and stabilization of formerly flooded soils, rendering sites inhospitable to native lowland tree species. Dense thickets may create hazardous fuel loads for wildfires.

On Foresters: These species form dense thorny thickets, making it difficult to work in infested areas.

### CONTROL METHODS

	Method	Timing
<b>Manual / Mechanical</b>	Hand pulling (with a Weed-wrench or other tool) or digging.	Spring, summer, fall
<b>Chemical</b>	Basal bark treatment (triclopyr)	After fall frost and before leaf-out in spring.
<b>Combination Treatments</b>	Cut-stump and herbicide application (glyphosate or triclopyr)	Late summer and fall

#### Mechanical

Seedlings can be dug or pulled out by hand or with tools like a Weed-Wrench if the soil is loose enough to ensure the whole root is removed. Both species have the ability to produce root crown shoots and suckers. Cutting or mowing without herbicide treatment stimulates prolific resprouting from the root stump. Burning also results in vigorous resprouting. Mechanical girdling on thin-barked specimens can be effective.

#### Chemical

For basal bark treatment, apply triclopyr in a 6 to 15 inch-wide band around the trunk near the base. Treated area should be about three times the diameter of the trunk). Basal bark treatment is recommended for stems less than 6 inches in diameter. A 12.5% active ingredient solution is effective. Because high air temperatures and low humidity can make chemical products volatile, application of triclopyr over 80°F should be avoided. Use basal bark treatment after a fall frost and before leaf-out in spring. Foliar spraying with triclopyr, glyphosate and metsulfuron-methyl have all proven effective on small shrubs and resprouts.

#### Combination Treatments



Dense growth of autumn olive.

Forest Invasive Plants Resource Center - <http://www.na.fs.fed.us/spfo/invasiveplants/>

Late summer and fall are the best times for cut-stump herbicide application because plant energy is moving downward to the roots in preparation for leaf-fall and dormancy. Spring is the least effective time for treatment. Two herbicides are recommended for cut-stump application: glyphosate (20-25% active ingredient) and triclopyr (12.5% active ingredient) with a non-toxic bark-penetrating oil.

***NOTICE:** Use pesticides wisely. Always read the product label carefully. Follow all mixing and application instructions and wear all recommended protective gear and clothing. Contact your state department of agriculture for any pesticide use requirements, restrictions or recommendations. Many states require individuals involved in the commercial application of pesticides be certified and licensed.*

[Click here](#) for further information on the use of pesticides.

## **HISTORY AND LORE**

Russian olive is a native of Asia and southern Europe, and autumn olive is native to eastern Asia. Since the 1800s, Russian olive and autumn olive have been used in North America for erosion control, strip mine reclamation, wildlife habitat and as ornamentals in landscaping. Due to its adaptability, Russian olive has been a popular tree for shelterbelts and windbreaks in saline and semi-arid environments. Despite the food and cover these trees provide for birds and wildlife, research has determined that native species provide more benefits without the devastating alterations in nutrient cycling, hydrology and loss of native biodiversity.

## **LINKS and REFERENCES**

### **Websites**

Ohio DNR – Autumn and Russian olive factsheet  
<http://www.dnr.state.oh.us/dnap/invasive/7russianolive.htm>

Weeds Gone Wild – Russian olive factsheet  
<http://www.nps.gov/plants/alien/fact/elan1.htm>

Minnesota DNR – Russian olive factsheet  
<http://www.dnr.state.mn.us/invasives/terrestrialplants/woody/russianolive.html>

Illinois Natural History Survey – Autumn olive factsheet  
<http://www.inhs.uiuc.edu/chf/outreach/VMG/autolive.html>

Wisconsin State Herbarium – Collection records for Autumn olive and Russian olive  
<http://www.botany.wisc.edu/wisflora/scripts/detail.asp?SpCode=ELAUMB>  
<http://www.botany.wisc.edu/wisflora/scripts/detail.asp?SpCode=ELAANG>

### **Books / Field guides**

[Invasive Plants of the Upper Midwest: An Illustrated Guide to their Identification and Control](#), by Elizabeth J. Czarapata, University of Wisconsin Press, 2005.

Forest Invasive Plants Resource Center - <http://www.na.fs.fed.us/spfo/invasiveplants/>

Invasive Plants Field & Reference Guide: An Ecological Perspective of Plant Invaders of Forests and Woodlands, by Cynthia D. Huebner, U.S. Forest Service, 2005.

(Also online -- <http://www.fs.fed.us/r9/wildlife/nnis/invasive-species-field-guide.pdf>)