

Prudence Island CWMA
Weed Control Plan for Autumn Olive
[Adopted in 2007]



Growth Form



Seeds



Distinct silver scales on leaves

Overview

Although many non-native plant species occur on Prudence Island, Autumn olive (*Elaeagnus umbellata* Thunb.) is considered a high priority species for targeted control and removal efforts. Autumn olive was introduced to the United States from East Asia in the 1830s. It has been used widely to revegetate heavily disturbed areas and it is likely that Autumn olive was first introduced to Prudence Island by the Navy to beautify lands adjacent to fueling stations and dump sites. Autumn olive is capable of rapid growth and will form dense thickets which effectively shade out native plant species. Nitrogen-fixing root nodules make it possible for these plants to thrive in poor soils and typical habitats are disturbed areas, roadsides, pastures, and successional fields, although they may also invade grassland and sparse woodland.

Autumn olive plants are most often located within ten feet of the vegetated edge along the roads, shoreline, and wetland. Every effort will be made to reduce disturbance during this control effort. Cut stumps of mature plants will remain in place to limit the potential for disturbance and increased erosion in vulnerable areas. In some instances where Autumn olive plants are entwined with other non-native plant species (*e.g.* Asiatic bittersweet [*Celastrus orbiculatus*], Multiflora rose [*Rosa multiflora*], Japanese barberry [*Berberis thunbergii*]), the same control method (hand cut and apply herbicide to cut stems) will be employed on these species to avoid duplication of effort at some later date. By limiting disturbance and removing non-native species within the target areas, we are hoping to promote the replacement of non-native species by existing native grasses and herbaceous plants.

Consistent effort over a period of years is necessary to control Autumn olive since mature plants produce a large quantity of fruit which are widely dispersed by birds and other wildlife. Locations of control efforts in initial and subsequent years will be recorded and mapped so that follow up treatment and seedling removal efforts are more efficient. Plants do not produce fruit until they are three years old so it is critical that seedlings are removed in subsequent years to prevent later infestation. In the initial year of effort, larger established plants will be hand cut and an herbicide containing glyphosate will be applied to the cut stumps. The herbicide will be of commercial quality (*e.g.* Roundup) since professionals are not being employed for the program. The application of herbicide is necessary since cutting alone would result in thicker, denser regrowth. In subsequent years landowners / volunteers will continue to remove larger established plants (if present), regrowth (if this occurs), and young seedlings. The seedlings will be hand pulled provided there is sufficient soil moisture for the root system to be readily extracted, otherwise the seedlings will be cut and herbicide will be applied to the cut stems. All cut plant material will be removed (if possible) to an open site which is appropriate for chipping and / or brush burning.

Elaeagnus umbellata (Autumn Olive)

Priority

High - Autumn olive are commonly found in disturbed areas: roadsides, pastures, and successional fields; as well as grasslands and sparse woodlands. On Prudence Island, coastal shrub communities may also be heavily infested.

Description

Autumn olive may be either large multi-stemmed shrubs or small trees and grow to 20 feet. They have distinctive silvery scales that cover young stems, leaves, flowers, and fruit. Their nitrogen-fixing root nodules allow them to thrive in poor soils.

Current Distribution on Prudence Island

Infestation levels suggest that Autumn olive was originally planted by the Navy in two locations (near the T-Wharf and the DOD landfill along the eastern shore) at the southern end of the island. The greatest numbers of plants still exist in these areas. In recent years, the range of Autumn olive has expanded northward and may now be found in increasing numbers north of Broadway. The distribution of plants is still scattered throughout much of the island with a clear south to north gradient in numbers.

Measurable Objectives and Goal

Goal: Control or eradicate Autumn olive on Prudence Island.

- (1) Locate and remove all Autumn olive plants north of Nag Creek in Year 1 and 2.
- (2) Locate and remove all Autumn olive plants found north of the NBNERR South End Unit (the old Navy base) in Year 1 and 2.
- (3) Locate and remove widely dispersed Autumn olive plants within the NBNERR South End Unit in Year 2.
- (4) Eradicate the original Autumn olive infestations in the vicinity of the T-Wharf and the DOD landfill within three years.
- (5) Survey for new infestations and remove seedlings as they appear until Autumn olive has been eradicated from Prudence Island.

Control Options

Note: Control options may only be used with the permission of the appropriate landowner and compliance with applicable environmental regulations.

- (1) Mechanical - Seedlings may be pulled by hand if the soil moisture is sufficient to insure the removal of the root system. On larger plants, cutting alone typically results in a thicker, denser growth upon resprouting and should be avoided.
- (2) Chemical - A foliar application of glyphosate is effective at control. Glyphosate may also be directly applied to freshly cut stumps to minimize the impact on adjacent vegetation. Foliar and cut stump treatment is particularly effective late in the growing season (July - September) so efforts should be conducted during these months if possible. Basal applications of triclopyr alone or in combination with 2,4-D applied in March (dormant season) will also provide effective control.

Schedule

Note: Survey activities are appropriate at any time since some leaves typically persist on the plant throughout the year, making positive identification possible. Cut plant materials bearing viable seed should not be transported from the treatment site, to avoid further dispersal.

Year 1: Generate a map of existing plants or infestations across Prudence Island. Educate landowners and request permission to remove plants from private property. Cut and apply herbicide to stumps of all known Autumn olive plants beginning at the northern end of the island and progressing south.

Year 2: Continue the removal of scattered plants to prevent additional localized infestations. Revisit sites of previous season Autumn olive removal to re-treat adult plants if necessary and remove seedlings if found. Begin targeted removal of original infestations on the NBNERR South End Unit.

Year 3: Revisit sites of first and second year Autumn olive removal to re-treat adult plants if necessary and remove seedlings if found. Complete targeted removal of original infestations on the NBNERR South End Unit.

Year 4-6: Survey for the presence of new growth and remove if found.

Cost Estimates

The greatest costs associated with this program will be the labor associated with survey and control efforts. To the extent possible, volunteer effort will be utilized to minimize cost. Volunteer hours should be tallied so that they may serve as match if it becomes necessary to seek grant funding for this or future projects. The expense of herbicide treatments (approximately \$25 to \$100 annually) will be carried by NBNERR in initial program years as necessary. However, landowners will be encouraged to purchase sufficient herbicide to treat plants on their own properties.