

Brush Management – Invasive Plant Control

Oriental Bittersweet – *Celastrus orbiculatus*

Conservation Practice Job Sheet

VT-314



Oriental Bittersweet. *Celastrus orbiculatus*



Oriental Bittersweet blanketing native plants

Oriental Bittersweet

Celastrus orbiculatus is native to temperate East Asia and has been considered weedy in all of New England and most of the Atlantic Coast States since 1971. Oriental bittersweet is a vigorously growing vine that climbs over and smothers vegetation which may die from excessive shading or breakage. When bittersweet climbs high up on trees the increased weight can lead to uprooting and blow-over during high winds and heavy snowfalls.

In addition, oriental bittersweet is displacing our native american bittersweet through competition and hybridization. Upland meadows, thickets, young forests, and beaches are most vulnerable to Oriental Bittersweet invasion and dominance. Similar to most invasive plants, *C. orbiculatus* has a high reproductive rate, long range dispersal, ability to root sucker, and rapid growth rates.

Description

Oriental bittersweet is a deciduous woody perennial plant which grows as a climbing vine and a trailing shrub. The leaves are alternate, glossy, nearly as wide as they are long (round), with finely toothed margins. There are separate female (fruiting) and male (non-fruiting) plants. Female plants produce clusters of

small greenish flowers, and each plant can produce large numbers of fruits and seeds.

The fruits are three-valved, yellow, globular capsules that at maturity split open to reveal three red-orange, fleshy arils each containing one or two seeds. The abundance of showy fruits has made Oriental bittersweet extremely popular for use in floral arrangements.

Similar Natives

American bittersweet (*Celastrus scandens*) is a very similar native that may be distinguished from *C. orbiculatus* by the location of its fruit - *C. orbiculatus* has small clusters in the leaf axils while *C. scandens* has clusters at its branch tips. The two species may be capable of hybridizing and since the native is relatively rare it is possible that its distinct genetic identity is threatened.

Control

Manual, mechanical and chemical control methods are all effective in removing and killing Oriental bittersweet. Employing a combination of methods often yields the best results and may reduce potential impacts to native plants, animals and people. The method you select depends on the extent and type of infestation, the amount of native vegetation on the

site, and the time, labor and other resources available to you. Whenever possible and especially for vines climbing up trees or buildings, a combination of cutting followed by application of concentrated systemic herbicide to rooted, living cut surfaces is likely to be the most effective approach. For large infestations spanning extensive areas of ground, a foliar herbicide may be the best choice rather than manual or mechanical means which could result in soil disturbance.

Biological Control

There are no known biological controls of bittersweet.

Mechanical Control

Small infestations can be hand-pulled but the entire plant should be removed including all the root portions. For climbing vines, first cut the vines near the ground at a comfortable height to kill upper portions and relieve the tree canopy. Try to minimize damage to the bark of the host tree. Rooted portions will remain alive and should be pulled, repeatedly cut to the ground or treated with herbicide. Cutting without herbicide treatment will require vigilance and repeated cutting because plants will resprout from the base.

Prescribed Burning

Prescribed burning for Oriental Bittersweet is not a viable option for control. It is likely that Oriental Bittersweet is actually favored by fire due to rapid growth in response to opening the canopy and the large nutrient flushes that usually occur after fires.

Chemical Control

Chemical control is most effective if the stems are first cut by hand or mowed and herbicide is applied immediately to cut stem tissue. Fall and winter applications will avoid or minimize impacts to native plants and animals. Repeated treatments are likely to be needed. In areas where spring wildflowers or other native plants occur, application of herbicides should be conducted prior to their emergence, delayed until late summer or autumn, after the last killing frost occurs, or carefully targeted^{1,2}.

Refer to the pesticide label for complete instructions on the use and application of a given herbicide. Some applications, by rule, may only be done by a certified pesticide applicator, and/or might require the applicator hold a special permit. Private landowners can apply anything purchased at your local garden store with out having a permit so long as it is not near

a water body or known public aquifer. You should contact the Vermont Agency of Agriculture Agrichemical Management Section if there are any concerns before applying any pesticides.

¹ – Plant Conservation Alliance (PCA) Alien Plant Working Group

² – Dreyer, G. 1988. “Efficacy of triclopyr in rootkilling Oriental Bittersweet and certain other woody weeds.” Proceedings of the Northeastern Weed Science Society.

Disposal

There are a few general rules of thumb that will ensure proper disposal. Be sure the plant is dead before placing in a mulch or compost pile. Either dry it out in the sun, or bag it in a heavy duty black plastic bag. If you have flowers and/or seeds on the plant, put the flowers and seed heads into the bag head first so that there is minimal risk in dispersing seed.

Information and Recommendations compiled from:

- Dreyer, G. 1988. “Efficacy of triclopyr in rootkilling Oriental Bittersweet and certain other woody weeds.” Proceedings of the Northeastern Weed Science Society.
- Howard, Janet L. 2005. “Celastrus orbiculatus. In: Fire Effects Information System.” U.S. Department of Agriculture, Forest Service. <http://www.fs.fed.us/database/feis/>
- Invasive Plant Atlas of New England (IPANE)
- Plant Conservation Alliance (PCA) Alien Plant Working Group
- The Nature Conservancy - Element Stewardship Abstract (and references therein)

CAUTION: The VT Agency of Agriculture Division of Agricultural Resource Management and Environmental Stewardship, Agrichemical Management Section regulates the sale and use of pesticides in Vermont. Many labels and registrations change from year to year, so applicators will want to be sure they are using a currently, registered product. Contact the Agrichemical Section (802-828-6531) for information on pesticide registration, how to acquire a special permit, lists of currently-licensed pesticide applicators, and other information pertaining to the rules and regulations governing pesticide application in this state.