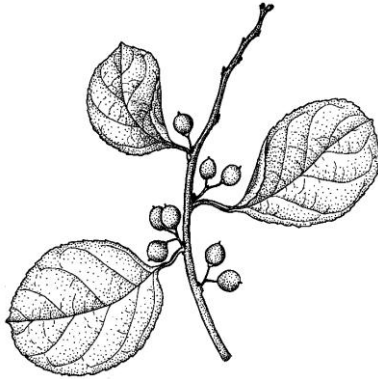


**Oriental bittersweet**  
*Celastrus orbiculatus* Thunb.  
**Staff-tree Family (Celastraceae)**

**DESCRIPTION**

Oriental bittersweet is a woody, deciduous vine that twines around and drapes itself over other trees and shrubs in successional fields and along forest edges, often completely covering the supporting vegetation. In the shade it grows less vigorously, sometimes forming small trailing shrubs.

Oriental bittersweet is very similar to the native American bittersweet (*C. scandens*). The female flowers and fruits of oriental bittersweet are located in the leaf axils along the stem; American bittersweet, in contrast, blooms at the tips of the stems. The two species cannot reliably be distinguished in the absence of female flowers or fruits. Although American bittersweet has generally narrower leaves, this difference is not reliable.



*Oriental bittersweet*

**Height** - Bittersweet climbs to heights of 50 feet or more when large trees are available to provide support.

**Stem** - The twining stems may reach a diameter of 4 inches, they often deform and eventually girdle the trunks or branches of trees around which they have grown.

**Leaves** - Mature leaves of oriental bittersweet are usually broadly rounded to nearly orbicular; however on young shoots they can be much more narrow, leading to confusion with the native species. The leaves are arranged alternately on the stem, and are deciduous; they turn yellow in the fall.



*American bittersweet*

**Flowers** - Bittersweet flowers, which appear in May or June, are small and greenish. In general male and female flowers are produced on separate plants, however sometimes a few perfect flowers are also present.



**Fruit and seed** - The fruits are yellow or orange capsules that open to reveal 3 or 4 bright red seeds with their fleshy arils. The seeds are bird-dispersed. The fruiting branches are frequently used in the florist trade for autumn decorations, resulting in human dispersal of seeds. Pollen viability and seed germination are much higher in Oriental bittersweet than in the native species.

## **DISTRIBUTION AND HABITAT**

Oriental bittersweet is native to China, Korea, and Japan; it was introduced for ornamental use about 1870, and has become naturalized from Maine to Louisiana and west to the Great Plains. In Pennsylvania it occurs mainly in the southern half of the state. It festoons itself on trees and shrubs on roadsides, along forest edges, fencerows, and old fields.

## **EFFECTS OF INVASION**

Oriental bittersweet grows extremely vigorously in open and edge habitats; it covers and kills other vegetation and inhibits old-field succession. It also appears to be replacing the less vigorous native species, *Celastrus scandens*, which grows in similar habitats. American bittersweet is classified as a threatened species in Connecticut.

## **REPRODUCTION AND METHODS OF DISPERSAL**

Bittersweet reproduces prolifically by seed, which is dispersed by birds. It also spreads by stolons and rhizomes, modified horizontal stems that grow at (stolons) or below (rhizomes) the soil surface. Shoots may also develop from the roots.

## **CONTROL**

**Mechanical** - High growing vines can be cut; or small plants can be pulled out by hand. Fruiting stems should be bagged and removed from the site. Frequent monitoring is suggested for areas not yet infested, so that invading plants can be removed while they are still small.

**Chemical** - Cutting large stems and immediately treating the cut surface with glyphosate or triclopyr has been a successful control strategy.

**Biological** - No biological control options are currently known.

## **NATIVE ALTERNATIVES FOR LANDSCAPE USE**

American bittersweet (*Celastrus scandens*) should be planted instead of the invasive, non-native species. Other native vines that might be considered include trumpet-creeper (*Campsis radicans*), virgin's-bower (*Clematis virginiana*), and Dutchmen's-pipe (*Aristolochia macrophylla*).

## **REFERENCES**

- Dreyer, G. L., L. Baird, and C. Fickler. 1987. *Celastrus scandens* and *Celastrus orbiculatus*: Comparisons of reproductive potential between a native and an introduced woody vine. *Bulletin of the Torrey Botanical Club* 114(3): 260-264.
- Fike, Jean and William A. Neiring. 1999. Four decades of old field vegetation development and the role of *Celastrus orbiculatus* in the northeastern United States. *Journal of Vegetation Science* 10: 483-492.
- Rhoads, Ann Fowler and Timothy A. Block. 2007. *The Plants of Pennsylvania: An Illustrated Manual*, 2<sup>nd</sup> edition. University of Pennsylvania Press, Philadelphia, PA.
- Rhoads, Ann Fowler and William McKinley Klein. 1993. *The Vascular Flora of Pennsylvania: Annotated Checklist and Atlas*. American Philosophical Society, Philadelphia, PA.

Robertson, D. J., M. C. Robertson, and T. Tague. 1994. Colonization dynamics of four exotic plants in a northern piedmont natural area. *Bulletin of the Torrey Botanical Club* 121(2): 107-118.

**Internet resources** - <http://www.upenn.edu/paflora>, <http://www.invasivespecies.gov>

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