



Invasive Species

Leaflet

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A publication of N.C. Department of Transportation



No. 07 March 2010

Celastrus orbiculatus (Oriental Bittersweet)

Initial Introduction and Expansion in Range

Celastrus orbiculatus is native to Japan, Korea, and northern China and was introduced to the United States in the mid-1800s for ornamental purposes. The spectacular bright yellow and red-orange fruits of this vine continue to make it popular for cultivation. *Celastrus orbiculatus* is still widely sold for floral arrangements and wreaths providing additional avenues for spread and infestation. This plant is now found from Maine to North Carolina, and west to Illinois.

In North Carolina it is listed as a Class C state noxious weed. Anyone who suspects an infestation outside of the 18 regulated counties in western North Carolina should notify the N.C. Department of Agriculture and Consumer Services Weed Specialist at (800) 206-9333.



Celastrus orbiculatus has all of the attributes of a competitive and successful plant. It is a prolific seed producer and since the seeds are consumed by a wide variety of birds, it has the potential for long-range dispersal. It has a high rate of seed germination (up to 95 percent) with the highest rate of seed germination in lower light intensities. This ability to germinate in a closed forest canopy provides this plant with a "sit and wait" invasion strategy until it is released by a

disturbance that creates optimal conditions for rapid growth. It also expands vegetatively by rhizomes and through the ability to send shoots up from the roots known as root suckering.

Description and Biology

- Deciduous, woody, perennial vine growing up to 60 feet in height. It can also grow in dense, low patches.
- There are separate female (fruiting) and male (non-fruiting) plants.
- Leaves are alternate, glossy and rounded with finely toothed margins.
- Yellow fall color.
- Clusters of small, white-green flowers emerge between May and June from leaf axils.
- From August through September fruits ripen turning from green to yellow. In the winter, fruits split to reveal red-orange interiors that persist at most leaf axils (female plants).
- Stems have many raised whitish corky dots also known as lenticels.
- *Celastrus orbiculatus* can be confused with our native *C. scandens* (American bittersweet) which is becoming increasingly rarer.



- Generally, *C. orbiculatus* produces fruits that are a brighter shade of red and are found all along the stems in clusters of 3 to 7.
- *Celastrus scandens* produces larger clusters of fruit only at the tips of stems. These 2 species have been known to hybridize making identification even more difficult and resulting in the loss of the genetic identity of *C. scandens*.

Habitats Susceptible to Invasion

Most often associated with old home sites in the mountains of North Carolina, *C. orbiculatus* has escaped into surrounding natural areas. It is frequently found along forest edges, hedgerows, fields, disturbed woodlands and roadsides. It has started to appear sporadically in the piedmont. This aggressive invader has the ability to kill other vegetation by completely covering plants and preventing photosynthesis, and by making trees more susceptible to uprooting because of the excessive weight of the vine and also by girdling.

Prevention and Control

Identifying and eradicating populations of *C. orbiculatus* in forested areas before they are released by a disturbance is the best method of control. It is possible to dig and hand pull small initial populations taking care to remove all of the root system to prevent re-sprouting. All plant material should be bagged and disposed of in the trash.

A successful control technique for low dense patches of *C. orbiculatus* involves cutting the vegetation to the ground early in the growing season and allowing it to re-sprout. Approximately 1 month later, spray the foliage with a 2 percent solution of triclopyr.

Where vines have grown into the canopy, cut the stem 2 inches above the ground and immediately apply a 50 percent solution of triclopyr to the cut stem. This method is effective as long as the ground is not frozen. All treatments should be followed up the next year to monitor and control new seedlings and root sprouts.

THE LABEL IS THE LAW! ***WHEN USING ANY PESTICIDE, FOLLOW ALL LABEL INSTRUCTIONS***

Citations:

Smith, Cherri. 2008. Invasive Exotic Plants of North Carolina. N.C. Department of Transportation. Raleigh, NC.

Celastrus orbiculatus photography by Johnny Randall, N.C. Botanical Garden (*top*), Mike Kunz, N.C. Botanical Garden (*bottom left*) and Cherri Smith, NCDOT (*bottom right*).

This publication printed in cooperation between the NC Dept. of Transportation, and North Carolina Forest Service, with funding from the USDA Forest Service.

6000 of this document were printed at a cost of \$812.58 or 0.136 per copy.

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