

Plant Profiles: HORT 2242 Landscape Plants II

Botanical Name: *Carpinus caroliniana*

Common Name: American hornbeam, blue beech, ironwood, musclewood

Family Name: Betulaceae – birch family

General Description: *Carpinus caroliniana* is a native large shrub to small tree that is widely distributed throughout eastern United States, south to Florida and Texas, and even into parts of Mexico. In the Chicago area it typically grows as an understory tree in abundantly moist, rich, mesic woodlands. It occasionally grows in slightly drier upland woods where it shares habitat with another native species, *Ostrya virginiana*, hophornbeam. In the landscape, *Carpinus caroliniana* is proving to be adaptable to sun, shade and a variety of soil conditions. This plant should be used more in the landscape as its size, attractive fall color and beautiful bark make it an asset to any garden.

Zone: 3-9

Resources Consulted:

"*Carpinus caroliniana*". *Possibility Place Nursery*. 2014. Web. 9 March 2014.

Dirr, Michael A. *Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses*. Champaign: Stipes, 2009. Print.

"The PLANTS Database." *USDA, NRCS*. National Plant Data Team, Greensboro, NC 27401-4901 USA, 2014. Web. 17 Mar. 2014.

Swink, Floyd, and Gerould Wilhelm. *Plants of the Chicago Region*. Indianapolis: Indiana Academy of Science, 1994. Print.

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Keywords/Tags: Betulaceae, *Carpinus caroliniana*, American hornbeam, blue beech, musclewood, ironwood, tree, deciduous

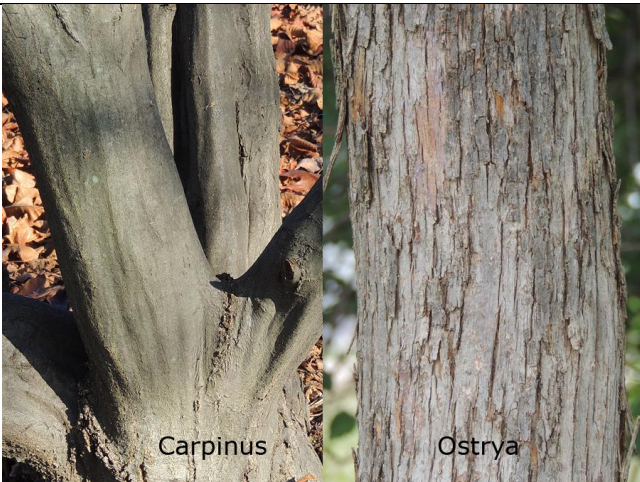


Whole plant/Habit:

- Description: *Carpinus caroliniana* is a large shrub to small tree with a rounded, broad spreading, and flat-topped crown. Though it is typically multi-stemmed it can also be grown with a single trunk. According to Connor Shaw, owner of Possibility Place Nursery, this species will grow more formal and upright in full sun but will be more loose and informal in shade.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: October 18, 2009
- Image File Name: american_hornbeam_1150609.png

**Bark:**

- Description: The attractive bark inspires this species multitude of common names. The blue-gray color gives rise to blue beech, the smooth sinewy texture supplies the name of musclewood, and the common name of ironwood comes from its heavy, hard wood. The bark is indistinguishable from *Carpinus betulus* but is a useful identification feature for the genus *Carpinus*. NOTE: This is an image of a tree at The Morton Arboretum labeled *Carpinus caroliniana* var. *virginiana* but accurately illustrates the bark features of straight species *Carpinus caroliniana*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: October 27, 2012
- Image File Name: american_hornbeam_7585.png

**Bark:**

- Description: Notice the smooth, fluted bark of *Carpinus* compared to the stringy bark of *Ostrya*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: October 27, 2012
- Image File Name: ostrya_carpinus_bark_7585s.png

**Branch/Twig:**

- Description: American hornbeam twigs are dark red and slender. The larger branches are the same gray color and smooth, sinewy texture of the bark.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: January 16, 2013
- Image File Name: american_hornbeam_2688.png



Buds:

- Description: The buds of *Carpinus caroliniana* are alternate with no true terminal bud. The imbricate reddish-brown buds frequently have hairs on the tips of the scales. They differ from *Carpinus betulus* buds in that they are divergent or come away from the stem while *Carpinus betulus* buds go towards or against (almost wrapping) the stem.
- NOTE: The small, thin structure in lower fork of this twig is just a dead twig.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: January 16, 2013
- Image File Name: american_hornbeam_2691.png



Flower:

- Description: *Carpinus caroliniana* is monoecious. It produces separate male and female flowers, called catkins, on the same plant. The catkins are not present during the dormant season but become evident when they emerge from buds in spring. The female flowers are not showy; however, the male flowers can be attractive in bloom. This image shows male catkins beginning to bloom and elongate in early spring. NOTE: This photo is of *Carpinus betulus* but would be similar to the male catkins of *Carpinus caroliniana*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: April 3, 2012
- Image File Name: european_hornbeam_1350762.png



Flower/Fruit:

- Description: The fruit clusters are distinctive and provides an excellent feature to use to identify the genus *Carpinus*. The nutlets of *Carpinus caroliniana* are subtended by an irregular 3-parted bract with the middle lobe the longest. They are very similar to the fruits of *Carpinus betulus* with slight differences in bract features and size.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: June 3, 2010
- Image File Name: american_hornbeam_8325.png

**Flower/Fruit:**

- Description: The two to four inch cluster of nutlets starts out a light, lime green, changing to reddish-yellow, and finally a tan-brown at maturity.
- NOTE: This image shows a cluster from a tree at The Morton Arboretum labeled *Carpinus caroliniana* var. *virginiana* but accurately illustrates the color of straight species *Carpinus caroliniana* fruit at maturity.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: October 20, 2007
- Image File Name: american_hornbeam_2529.png

**Flower/Fruit:**

- Description: Most of the nutlets fall off in autumn and are a favorite food source for a variety of wildlife. The remnant peduncle that held the 3-parted fruits frequently remains on the stem tip and can serve as a clue to the identification of the genus *Carpinus*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: January 16, 2013
- Image File Name: american_hornbeam_2692.png

**Leaf:**

- Description: The leaves of *Carpinus caroliniana* are alternate, simple, with a strong pinnate vein pattern, elliptical shape, doubly serrate margins and an acuminate (drawn out) leaf tip. It looks very similar to *Ostrya virginiana* however; *Carpinus caroliniana* veins rarely fork before they reach the edge of the leaf.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: June 3, 2010
- Image File Name: american_hornbeam_8327.png

**Leaf:**

- Description: The deciduous leaves vary in fall color from yellow to orange-red. The fall color can be highly attractive and complement any landscape.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: October 18, 2009
- Image File Name: american_hornbeam_5758.png

**Winter interest:**

- Description: The smooth, gray, fluted bark and branches adds a subtle beauty to the winter landscape.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: January 5, 2009
- Image File Name: american_hornbeam_1909.png

**Special ID feature(s):**

- Description: The beautiful smooth muscle-like bark and unique clusters of nutlets subtended by a 3-part leafy bract will serve as the best identification features for American hornbeam.
- NOTE: The bark image in the photo is of a tree at The Morton Arboretum labeled *Carpinus caroliniana* var. *virginiana* but accurately illustrates the bark features of straight species *Carpinus caroliniana*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: 2010
- Image File Name: american_hornbeam_8325s.png