

Cornus florida

Cornaceae family

Flowering dogwood, cornel, boxwood, arrowwood, white cornel, Cornelian tree

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Description: *Cornus florida* is a deciduous, multi-trunked, flowers generally bisexual, shrub or small tree. Flowering occurs before or during leaf emergence. Insect pollinated. Plants mature and bear seeds about 6 years of age. The plant sprouts vigorously from the root crown when cut or damaged.

Variation: Several varieties and forms are recognized by many authorities, although they currently are not commonly accepted. Many cultivars have been developed in the horticultural trade, with hundreds of selections named.

Size: 10-55 ft. (3-16.8 m) tall; 25-35 ft. (7.6-10.7 m) wide. In the southern U.S., plants can reach a diameter of 18 in. (46 cm). In the northern U.S., *Cornus florida* tends to have a shrub habit.

Leaves: Leaves opposite. Leaf blades/lamina simple; ovate; acute to acuminate; 2-8 in. (5-20 cm) long; 2-4 in. (5-10 cm) wide; margins entire to slightly wavy; apex acute; upper surface dark to bright green, glabrous to appressed pubescent; lower surface paler green, appressed pubescent, veins pilose. Petioles to 0.4 in. (1 cm) long; pubescent.

Inflorescence: Showy; 2-4 in. (5-10 cm) in diameter; terminal. Inconspicuous yellow flowers surrounded by 4 large petaloid bracts, obovate; usually cleft at apex; white to salmon/pinkish; 2 in. (5 cm) in diameter.

Flowers: Small inconspicuous flowers; in clusters of up to 20 flowers surrounded by large white/pink bracts. Flowers yellow; minute; sepals 4; petals 4, yellow-green; stamens 4, alternating with petals; style 1.

Fruit: Drupe (berry-like); in clusters of 2-6. Round to oval; having thin, mealy flesh; glabrous; smooth; yellow to red; 0.3-0.7 in. (0.7-1.8 cm) long; 0.2 in. (0.6 cm) in diameter. Each drupe contains 1-2 cream-colored, ellipsoid seeds averaging 0.3-0.4 in. (0.7-0.9 mm) long. Poisonous to humans.

Bark: Gray; smooth when young. Grayish brown; thick, rough with angular scales to finely blocky in maturity. Twigs slender; opposite; green or purple later turning gray,

often with glaucous bloom; having malpighian hairs (unicellular, attached in the center with two arms parallel to leaf surface).

Roots: Roots tend to be shallow, with depths less than 3 ft. (1m).

Habitat: An understory species. *Cornus florida* favor well-drained, light upland soils to deep, moist soils; in mesic deciduous woods, on floodplains, lower to middle slopes, bluffs, in ravines, along streams. It doesn't grow as well on dry, upland slopes and ridges. It is very shade tolerant. It is reportedly sensitive to drought and flooding.

Species distribution in US states: AL, AR, CT, DC, DE, FL, GA, IL, IN, KS, KY, LA, MA, ME, MI, MO, MS, NC, NH, NJ, NY, OH, OK, PA, RI, SC, TN, TX, VA, VT, WV

Species images:

Whole plant:

http://plants.usda.gov/java/largeImage?imageID=cofl2_008_ahp.tif

http://www.sbs.utexas.edu/bio406d/images/pics/crn/cornus_florida.htm

http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/cornus_florida.html

Bark:

<http://www.forestryimages.org/browse/detail.cfm?imgnum=1346060>

http://www.missouriplants.com/Others/Cornus_florida_page.html

Leaf:

http://www.sbs.utexas.edu/bio406d/images/pics/crn/cornus_florida.htm

http://www.missouriplants.com/Others/Cornus_florida_page.html

http://www.ibiblio.org/openkey/intkey/images/Cornus_florida_leaves03.jpg

Colored leaves:

http://plants.usda.gov/java/largeImage?imageID=cofl2_005_ahp.tif

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=1349+3162+1294+0071

Buds (leaf and flower):

http://www.ibiblio.org/openkey/intkey/images/Cornus_florida_leaf_buds01.jpg

http://www.ibiblio.org/openkey/intkey/images/Cornus_florida_leaf_buds02.jpg

<http://www.cas.vanderbilt.edu/bioimages/species/frame/cofl2.htm>

<http://www.cnr.vt.edu/DENDRO/dendrology/syllabus/factsheet.cfm?ID=44>

<http://www.forestryimages.org/images/768x512/1346017.jpg>

Inflorescence:

<http://www.cas.vanderbilt.edu/bioimages/biohires/c/hcofl2-flon-branch10535.JPG>

<http://www.forestryimages.org/images/768x512/1380082.jpg>

Flowers:

<http://www.cas.vanderbilt.edu/bioimages/biohires/c/hcofl2-flclose10534.JPG>

http://www.missouriplants.com/Others/Cornus_florida_page.html

Fruit:

<http://www.cas.vanderbilt.edu/bioimages/species/frame/cofl2.htm>

<http://www.duke.edu/~cwcook/trees/cofl.html>

Seeds:

http://plants.usda.gov/java/largeImage?imageID=cofl2_002_ahp.tif

Expected timing of growth stages:

Germination: Spring

Flowering: March-mid-June, depending on location.

Bud break/Leaf out: Leaves appear during or after flowering. *Need info.

Leaf/canopy development: *Need info.

Fruit ripening: August-October, depending on location.

Seed dispersal: mid-October-November or later.

Leaf coloration: Late September.

Leaf fall: Early October-early November.

Phenophases to be monitored for NPN:

Flowering

- *First flower*
In at least 3 locations on the plant, a flower has opened completely. Flowers are considered 'opened' when the reproductive parts are visible between unfolded or opened flower parts. For *Cornus florida*, ignore the four large, white bracts and watch for the opening of the small flowers in the center of the showy bracts.
- *Full flower [Intensive only]*
The plant has reached its peak floral display. This occurs when half (50%) of the flowers on the whole plant have opened completely.

- *Last flower*
The last visible flower has opened completely and is still fresh.

Leaf out

- *First leaf*
In at least 3 locations on the plant, the very first green tip of a young leaf has visibly moved out of the leaf bud.

Leaf elongation

Note: These measures can be difficult to estimate without a few seasons of practice.

- *25% leaf elongation [Intensive only]*
The majority of young leaves have unfolded completely and have expanded to one-quarter (25%) of their mature size. Leaf elongation may also be estimated by viewing the canopy as a whole. At 25% leaf elongation, the canopy appears to be approximately one-quarter (25%) full.
- *50% leaf elongation [Intensive only]*
The majority of young leaves have unfolded completely and have expanded to half (50%) of their mature size. Leaf elongation may also be estimated by viewing the canopy as a whole. At 50% leaf elongation, the canopy appears to be approximately half (50%) full.
- *75% leaf elongation*
The majority of young leaves have unfolded completely and have expanded to three-quarters (75%) of their mature size. Leaf elongation may also be estimated by viewing the canopy as a whole. At 75% leaf elongation, the canopy appears to be approximately three-quarters (75%) full.
- *Full leaf elongation [Intensive only]*
The majority of young leaves have unfolded completely and have expanded to 95-100% of their mature size. At full leaf elongation, the canopy appears to have reached its full density.

Fruit ripening

- *First fruit ripe*
In at least 3 locations on the plant, a fruit has become ripe. For *Cornus florida*, a fruit is considered ripe when it is bright red in color or when it has been eaten by wildlife.

- *50% of fruit ripe* [**Intensive only**]
For the whole plant, half (50%) of the fruits are ripe.
- *All fruit ripe* [**Intensive only**]
For the whole plant, virtually all (95-100%) of the fruits are ripe.

Leaf color change

Note: If drought seems to be the cause of leaf color change for a plant, please make a comment about it for that plant.

- *First leaf colored* [**Intensive only**]
In at least 3 locations on the plant, the green leaves have begun to change to their late season colors.
- *25% of leaves colored* [**Intensive only**]
For the whole plant, one-quarter (25%) of the leaves (including any that have fallen to the ground) have changed to their late season colors.
- *50% of leaves colored*
For the whole plant, half (50%) of the leaves (including any that have fallen to the ground) have changed to their late season colors.
- *75% of leaves colored* [**Intensive only**]
For the whole plant, three-quarters (75%) of the leaves (including any that have fallen to the ground) have changed to their late season colors.
- *All leaves colored*
For the whole plant, virtually all (95-100%) of the leaves (including any that have fallen to the ground) have changed to their late season colors and there is virtually no green left in the leaves.

Leaf fall

Note: If drought seems to be the cause of leaf fall for a plant, please make a comment about it for that plant.

- *First leaf fallen* [**Intensive only**]
In at least 3 locations on the plant, a leaf easily falls off into your hand when touched or gently handled. First leaf fallen may also be indicated by the presence of at least 3 leaves on the ground below the plant (that are not apparently from another individual nearby).

- *25% of leaves fallen* [**Intensive only**]
For the whole plant, one-quarter (25%) of the leaves have fallen.
- *50% of leaves fallen*
For the whole plant, half (50%) of the leaves have fallen.
- *75% of leaves fallen* [**Intensive only**]
For the whole plant, three-quarters (75%) of the leaves have fallen.
- *All leaves fallen*
For the whole plant, virtually all (95-100%) of the leaves have fallen.

Did you know? Due to its hard, strong, heavy, fine-grained, and shock resistant wood, *Cornus florida* was used for shuttles in textile manufacturing, and is used for tool handles, and tool parts. It is also used for golf clubs, roller-skate wheels, knitting needles, and similar items. It is also a very valuable species for wildlife; all parts of the plant are used as food by various animals (and, the fruits are poisonous to humans, but not to animals).

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Notes

The USDA PLANTS symbol for this plant is COFL2.
The ITIS Taxonomic Serial No. for this species is 27806.

BBCH codes for phenophases used for this plant are available from the USA-NPN office upon request.

Proposed modifications, updates or corrections to this protocol are welcome; please direct correspondence to the USA-NPN National Coordinating Office.

Prior versions of this species protocol will be made available in a documents library on USA-NPN webpage.

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Protocol compiler: Patty Guertin, Theresa Crimmins

Reviewers: Ellen Denny

USA National Phenology Network
National Coordinating Office
1955 East 6th Street
Tucson, AZ 85719
www.usanpn.org