

# IL Big Tree Nomination Guide



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## What's New in 2019-2020

Welcome to the Illinois Big Tree Register (IBTR). This technical forestry bulletin serves as a guide to our big tree nominators and to our big tree nomination process. Please be advised that there are several new developments and requirements for all IBTR nominations:

- Co-champions: now within 3 points or 3% of champion
- Multi-, fused-stem, and anomalous form trees
- High-resolution digital photographs
- GPS coordinates (decimal degrees)
- Updated *Big Tree Nomination Form & Checklist*

## Scoring Big Tree Nominations

The “biggest” tree of each native species is determined utilizing a point system devised by American Forests®. Scoring, or total points, is based on the sum of three required tree measurements: circumference, height, and average crown spread.

$$\text{Total Points} = \text{Circumference (in.)} + \text{Height (ft)} + \frac{1}{4} \text{ Ave. Crown Spread (ft)}$$

Nominations with the highest point total are crowned champions. Additionally, the first nomination of the same species that falls within three points or 3% of a current champion tree will be crowned a co-champion. Champion big tree certificates are awarded to both the nominator(s) and the owner(s) of champion and co-champion trees.

**Table 1.** Illinois Big Tree nomination categories.

**Champion:** Species with the highest point total.

**Co-champion:** Species within three points or 3% of the current champion; only one co-champion per species will be listed on the IBTR.

**Contender:** Species within 25 points of the current champion; kept on file in case the current champion is dethroned due to removal, severe damage, or mortality.

## Definition of a Tree

A tree is a woody perennial plant with a minimum stem circumference of at least 9.5 inches measured at a point 4.5 feet above ground level; has a well-defined crown of foliage; and has a total vertical height of at least 13 feet (Little 1979).

## Eligible Tree Species

The IBTR only recognizes the 184± native tree species found here in Illinois. Naturalized species, minor varieties, hybrids, and non-native species are not eligible for the IBTR. Please refer to University of Illinois Extension [Technical Forestry Bulletin NRES-102](#) for a detailed list of eligible tree species.

## Policy Regarding Fused-stem, Multi-stem, and Anomalous Form Trees

In order to encourage fair competition and in order to maintain a level playing field, all future editions of the IBTR will only recognize single, independent stem champion trees. This policy was enacted to eliminate the undeniable circumference advantage most multi-stem, fused-stem, and anomalous form trees have over single stem, single pith trees with respect to the IBTR nomination process. An audit of past champion trees revealed an unusually high percentage of fused-stem, multi-stem, and anomalous form trees. Therefore, every effort will be made to advance the purity of single, independent stem trees for consideration to the IBTR.

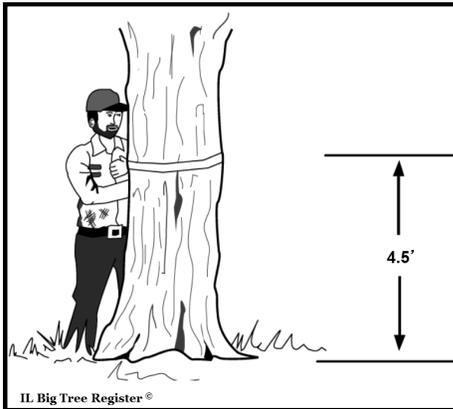
The IBTR coordinator reserves the right to (1) respectfully decline any nomination based on this policy, and (2) remove and retire any champion or co-champion tree found to be in violation of the spirit of this policy. Please contact the IBTR coordinator if you are unsure about the eligibility of your nomination as this will save you and our volunteer Big Tree inspectors a lot of time and it will save everyone a lot of frustration.

### Circumference Measurements

Circumference is measured on the largest independent stem, approximately 4.5 feet above ground level. Unfortunately, for measuring purposes, not all trees have a single, straight, branch-free main stem. Therefore, in order to properly measure tree circumference, it must be determined whether the tree has a single stem that can be measured exactly at 4.5 feet above ground level (Fig. 1); a single stem with a growth, defect, or branch directly at 4.5 feet; or falls under the category of a fused-stem, multi-stem, or anomalous form tree.

Please use inches when you submit your circumference measurements. In order to convert feet to inches, simply multiply your measurement by 12.

$$\text{Circumference (in.)} = \text{Circumference (ft)} \times 12$$



**Figure 1.** How to properly measure the circumference of a big tree nomination.

### Fused-stem Trees

**Defined:** Fused-stem trees result from the intimate union of two or more separate stems, with a shared multi-pith root mass, joined together near or along the base of the tree. A seam indicating the union is always present. If you were to theoretically slice through a fused-stem tree at ground level, the resultant stump would reveal multiple piths.

**Eligibility:** Yes; however, circumference measurements for fused-stem trees must be taken well above the intimate union where the tree has fused. In other words, the nominator must independently measure the larger of the two stems above the zone of fusion. The circumference measurement must be taken at or above 4.5 feet ground level, depending upon the growth form of the tree (Fig. 2).



**Figure 2.** How to properly measure a fused-stem big tree nomination.

### Multi-stem Trees

**Defined:** Multi-stem trees result when two or more distinctly separate stems originate below or near 4.5 feet ground level, resulting in multiple stump piths. When this occurs, which occurs quite frequently, only the largest independent stem shall be selected and measured for the IBTR nomination process (Fig. 3). Again, if you were to theoretically slice through a multi-stem tree at ground level, the resultant stump would reveal multiple piths.

**Eligibility:** Yes; however, only the largest independent stem shall be measured and recorded. The circumference measurement must be taken at or above 4.5 feet ground level, depending on the growth form of the tree.

**Figure 3.** This photo indicates where to properly measure circumference on a multi-stem nomination. Only the largest independent stem shall be measured and recorded.



### Anomalous Form Trees

**Defined:** Trees with atypical form that are often referred to as squatty, low branching, or low forking trees. These trees frequently do not have a single, straight vertical stem; rather, these trees are characterized as having low branching forked stems, often the result of separate stems that have grown into a massive cluster near the base of the tree (Figure 4).

**Eligibility:** No; anomalous form trees benefit from an unfair circumference advantage over single, independent stem nominations and thus violate the purity and spirit of the IBTR.



Figure 4. Example of an anomalous form tree.

### Tree Height

Total height is the measurement of the vertical distance between the base of a tree and its topmost branch. Frequently, the topmost branch will not be directly over the base of the tree, therefore, please adjust your measurements accordingly. In order to improve the accuracy of your measurements, please take several height measurement and average the results. Record this measurement on the IBTR nomination form.

Useful tools for measuring tree height include a telescoping height pole, a clinometer, and a laser rangefinder. Please note that of all three required big tree measurements, it is tree height that is most often miscalculated and overestimated. Volunteers are available to verify height measurements.

### Average Crown Spread

Average crown spread is determined by measuring the widest extent, or horizontal distance, of the tree’s crown and averaging it with a similar crown spread measurement taken at a right angle to the widest crown spread measurement (Figure 5). Useful tools for determining average crown spread include a 150-ft fiberglass tape and wire flags.

**Step 1.** Observe and identify the widest dimension of the crown, from crown edge to crown edge. Identify these two points on the ground with wire flagging or stakes. Use your fiberglass tape measure and record the horizontal distance, in feet, between these two ground-based points, termed “AB.”

**Step 2.** Observe and identify the crown spread at a right angle to the two measurement points identified in step 1. Again, use your fiberglass tape measure to record the horizontal distance between these two points, termed “CD.”

**Step 3.** Add the two crown spread measurements from step 1 (AB) and step 2 (CD), and divide by two. The resultant number is the average crown spread. Record this measurement on the IBTR nomination form.

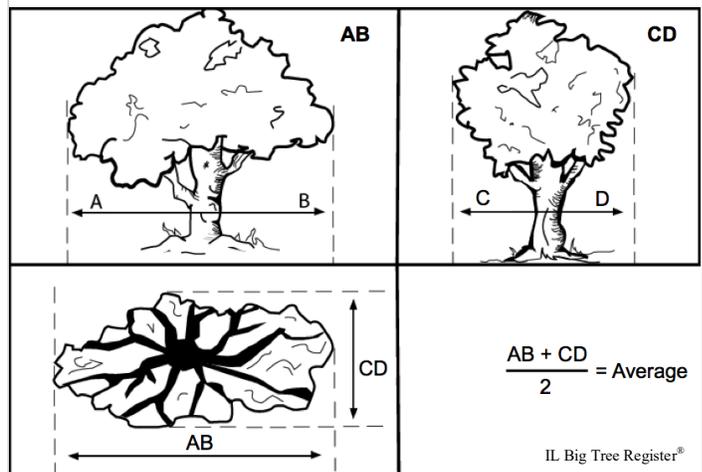


Figure 5. Illustration depicting “average” crown spread measurements.

### GPS Coordinates (Latitude and Longitude)

Detailed location information by way of GPS coordinates, or latitude and longitude, is now required for every big tree nomination. GPS coordinates must be submitted in decimal degree format and the GPS coordinates reported on the *Big Tree Nomination Form* must pinpoint the exact location of your big tree nomination. Handheld GPS units, most smartphones, and Google Earth are the three most common means of finding and reporting latitude and longitude.

**Example GPS coordinates in decimal degree format:**

- Latitude: 40.10285°
- Longitude: -88.22405°

Please refer to University of Illinois Extension *Technical Forestry Bulletin NRES-1103* for additional details about locating big tree nominations with GPS.

### High-Resolution Digital Photographs

High-resolution, greater than 1.0 megabytes, digital photographs (.jpg files) must accompany all big tree nominations — please email these photos. These digital photos serve three key purposes: (1) species identification, (2) form and eligibility, and (3) aesthetic beauty and bragging rights. These photos are invaluable and save our volunteers a lot of time verifying big tree nominations. In particular, the digital photographs must be sufficient in clarity and scope to positively identify big tree nominations to the species level (see below):

- Main stem of tree from two different angles
- Bark of the tree
- Twig with live terminal buds and axillary buds
- Leaves (entire leaf, not just leaflets)
- Fruit (nut, samara, drupe, pome, etc.); if available
- Flowers (if necessary to distinguish species)

Please refer to Baskauf and Kirchoff (2008) for expert advice on how to take and submit digital photographs of big tree nominations.

<https://tinyurl.com/y74jmpvk>

By submitting your digital photos, you hereby grant the University of Illinois permission to post the image(s) on the Internet / Social Media and to use the image(s) for the promotion of the IBTR without compensation.

### Tree Identification

Proper identification of our champion and co-champion trees is paramount to promoting and operating a high-caliber big tree program. Therefore, positive identification is required of all our big tree nominations. Please submit multiple photos of your nomination or seek the assistance of a trained professional proficient in tree identification. Local U of I Extension offices, arboreta, botanical gardens, IDNR offices, and forest preserve districts are great resources for assistance with tree identification.

**Table 2.** List of the most frequently misidentified species nominated to the Illinois Big Tree Register.

Species	Reason
<b>red mulberry</b> <i>Morus rubra</i>	White mulberry ( <i>M. alba</i> ) is frequently misidentified for red mulberry and based on past experience, it is the number one most misidentified big tree nomination. Red mulberry is significantly smaller than white mulberry. <b>ID Tip:</b> White mulberry leaves are typically shiny and smooth, whereas red mulberry leaves are usually dull and rough.
<b>slippery elm</b> <i>Ulmus rubra</i>	American elm ( <i>U. Americana</i> ) is frequently mistaken for slippery elm. Slippery elm is generally smaller than Am. elm. <b>ID Tip:</b> Am. elm has alternating layers of white and red inner bark; slippery elm only has red, dark layers of inner bark.
<b>oaks</b> <i>Quercus</i> spp.	There are 20 native oak species in Illinois. Identification by bark, twigs, buds, fruit, and leaves is essential. Naturally occurring hybrids do exist.
<b>hickories</b> <i>Carya</i> spp.	There are 10 native hickory species in Illinois. Identification by bark, twigs, buds, fruit, and leaves is essential. Naturally occurring hybrids do exist.
<b>butternut</b> <i>Juglans cinerea</i>	Hybrid butternuts are frequently mistaken for our native butternut. Most open-grown butternuts found in parks and yards are hybrid trees. <b>ID Tip:</b> <a href="http://extension.purdue.edu/extmedia/FNR/FNR-420-W.pdf">extension.purdue.edu/extmedia/FNR/FNR-420-W.pdf</a>
<b>paper birch</b> <i>Betula papyrifera</i>	Eurasian birch species are frequently mistaken for paper birch.
<b>tamarack</b> <i>Larix laricina</i>	European larch ( <i>Larix decidua</i> ) and other Eurasian larches are frequently mistaken for our native tamarack. Tamarack is generally a small tree here in Illinois. <b>ID Tip:</b> Tamarack has ≤ 22 cone scales.
<b>red pine</b> <i>Pinus resinosa</i>	Austrian pine ( <i>Pinus nigra</i> ) is frequently mistaken for red pine. <b>ID Tip:</b> Live red pine needles snap or break; whereas live Austrian pine needles bend.

### Duties & Expectations of Big Tree Nominators

Due to the fact that the IBTR is a volunteer-driven program, the responsibility lies with our big tree nominators to provide as much detailed information as possible in order to maximize our volunteer big tree inspectors' time and resources.

Therefore, big tree nominators must supply the following minimum information: (1) name and contact information of nominator, (2) name and contact information of owner, (3) accurate circumference measurements, (4) detailed photographs in order to verify eligibility requirements and to ensure proper species identification, and (5) precise GPS coordinates in decimal degree format.

### New Big Tree Nomination Form

All big tree nominations must be submitted through our official IBTR nomination form. Incomplete nominations will be returned to the nominator. This form may be downloaded from the Extension Forestry website:

		<h3>Illinois Big Tree Register 2020 Nomination Form</h3>	
<b>Big Tree Nominator(s):</b>		<b>Big Tree Owner(s):</b>	
Name(s) <input type="text"/>	Address <input type="text"/>	Name(s) <input type="text"/>	Address <input type="text"/>
City <input type="text"/>	State <input type="text"/> Zip <input type="text"/>	City <input type="text"/>	State <input type="text"/> Zip <input type="text"/>
Phone Number <input type="text"/>	Email Address <input type="text"/>	Phone Number <input type="text"/>	Email Address <input type="text"/>
<b>Big Tree Info &amp; Measurements:</b>		<b>Big Tree Location Information:</b>	
Common Name <input type="text"/>	Scientific Name <input type="text"/>	County Where Tree is Located <input type="text"/>	Located on Public or Private Property? <input type="text"/>

### Assistance with Big Tree Nominations

Your local University of Illinois Extension office should serve as your first point of contact for technical assistance regarding IBTR nominations. Many Extension offices have horticulturists or volunteer Master Gardeners and Master Naturalists who are willing to assist you with tree identification, tree measurements, and electronic submission of IBTR nomination forms.

### Office Finder—University of Illinois Extension <https://extension.illinois.edu/global/where-we-serve>

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Individuals in the greater Chicago area have a few more options regarding tree identification and tree measurement assistance. Please feel free to contact natural resource professionals, botanists, naturalists, and technicians employed by forest preserve districts, conservation districts, arboreta, and botanic gardens.

#### Chicago Botanic Garden (Northbrook, IL)

[www.chicagobotanic.org](http://www.chicagobotanic.org)

#### Forest Preserve District of Cook County

<http://fpdcc.com>

#### Forest Preserve District of DuPage County

[www.dupageforest.com](http://www.dupageforest.com)

#### Forest Preserve District of Will County

[www.reconnectwithnature.org](http://www.reconnectwithnature.org)

#### Kane County Forest Preserve District

[www.kaneforest.com](http://www.kaneforest.com)

#### Kendall County Forest Preserve District

[www.co.kendall.il.us/forest\\_preserve/](http://www.co.kendall.il.us/forest_preserve/)

#### Lake County Forest Preserves

[www.lcfpd.org](http://www.lcfpd.org)

#### McHenry County Conservation District

[www.mccdistrct.org](http://www.mccdistrct.org)

#### The Morton Arboretum (Lisle, IL)

[www.mortonarb.org/](http://www.mortonarb.org/)

**References:**

Hayek, J.C. (ed.). 2009. Forest Trees of Illinois. 10<sup>th</sup> ed. University of Illinois at Urbana-Champaign, College of Agricultural, Consumer, and Environmental Sciences, Cooperative Extension Service. 340 p.

Hayek, J.C. 2019. Locating Big Tree Nominations with GPS. Univ. of Illinois Extension, Tech. Forestry Bull. NRES-1103. 2 p.

Hayek, J.C. 2019. Checklist of Illinois Native Trees. Univ. of Illinois Extension, Tech. Forestry Bull. NRES-102. 7 p.

**Common and scientific names adhere to:**

ITIS (Integrated Taxonomic Information System). 2019. Online Database (<http://www.itis.gov>, 5 May, 2019). Smithsonian Institution, Washington, DC.

Little, E.L. 1979. Checklist of United States Trees (Native and Naturalized). Agriculture Handbook No. 541. U.S. Dept. of Agriculture, Washington, D.C. 375 p.

**Websites related to current topic:****ArcGIS Story Maps: Illinois Big Tree Champions**

<https://univofillinois.maps.arcgis.com/>

**National Register of Champion Trees**

<https://tinyurl.com/wjwfvn6>

**University of Illinois Extension Office Locations**

<https://extension.illinois.edu/global/where-we-serve>

**Baskauf & Kirchoff Photographic Standards**

[https://libres.uncg.edu/ir/uncg/f/B\\_Kirchoff\\_Digital\\_2008.pdf](https://libres.uncg.edu/ir/uncg/f/B_Kirchoff_Digital_2008.pdf)

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