Harris County Big Tree Registry

A listing of the largest and most notable trees in Harris County sponsored by the Houston Area Urban Forestry Council

Measuring Rules and Procedures
(Amended from the Texas A&M Forest Service – Texas Big Tree Registry)

Tree Index
Trees of the same species are compared using the *tree index* formula: trunk circumference (in inches) + total height (in feet) + ¼ of the average crown spread (in feet) = tree index points, rounded to the nearest whole number (i.e. 147.5 points becomes 148 points for the Register). Trees within five points of one another are considered co-champions.

Recorded Values
All recorded *measurements* should be rounded down to the nearest whole number (i.e. 48.9 feet is recorded as 48 feet, or 132.6 inches is recorded as 132 inches).

Five-Year Rule
Trees must be re-verified every 5 years by a HAUFC representative in order to maintain their "champion" or "notable" status.

What Is A Tree?
Each specimen nominated for the Harris County Big Tree Registry must meet the following definition: ***"Trees are woody plants, having one erect perennial stem or trunk at least three inches in diameter at breast height (DBH, or 4½ feet), a more or less definitely formed crown of foliage, and a height of at least 13 feet"*** (Little, 1979). For low-forking specimens, this means that one of the forks must exceed 9½ inches in circumference at 4½ feet to qualify (see image **A**).
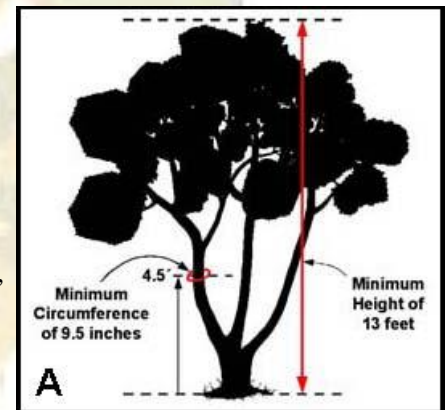
One Tree or Two (or More)?
In practice, it must be determined whether a tree has a single trunk or whether it represents two or more stems growing very close to one another. Trunks that have clear separation or included bark at or near the ground line should be considered separate trees; trunks of different species should also be considered separate stems, no matter how closely aligned. When following the circumference rules below, if the point below the lowest fork places the measurement at the ground line, the stems should be considered separate.
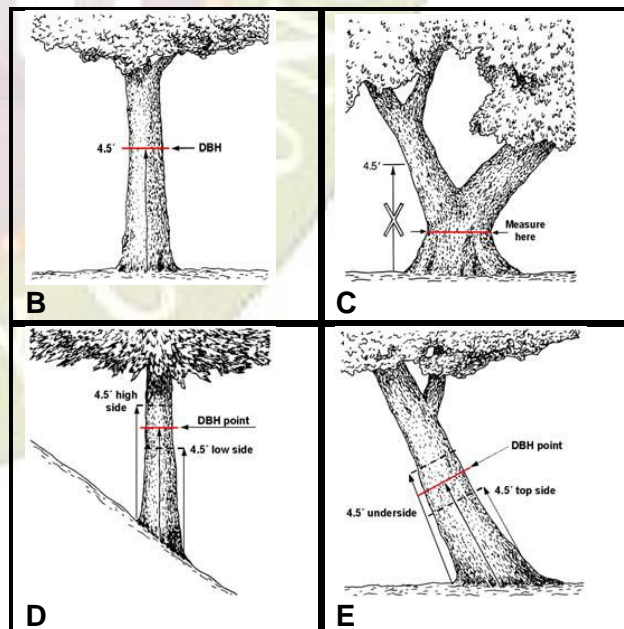
Circumference
General Rule: Record the smallest trunk circumference between the DBH point (4.5 feet) and the ground, but below the lowest fork. Also record the height above the ground, in inches, where measurement was taken (images **B** & **C**).

Determining DBH Point
Tree on Slope: Measure up 4.5 feet along the axis of the trunk on high and low sides; DBH point is midway between these two planes (**D**).

Leaning Tree: Measure 4.5 feet along both the top and undersides of the trunk; DBH point is midway between these two planes (**E**).

Low Branches: When determining where on the trunk to measure circumference, ignore portions that do not form part of the tree's crown, such as dead branches or forks, and epicormic sprouts.

Obstruction at DBH: If there is a bump, burl, branch, or other obstruction at the DBH point, measure circumference above and below the obstruction and record the smaller value. A buttress that forms between trunk and root system as a natural feature of the species (e.g. - baldcypress, water tupelo) should not be considered an obstruction.

Height
General Rule: Record the vertical distance between the ground line and the tallest part of the *live* crown, in feet. Also record the method used to determine this value. (Choices include: direct measurement [telescoping pole, climbing], clinometer, hypsometer, relascope, laser rangefinder, stick method, pencil method, comparison, and wild guess.)

Leaning Tree: Height is <u>not</u> measured or estimated along the length of trunk.

Recommended Methods for Beginners: There are many tools that can be used to estimate the height of a tree, but the simplest way uses little more than a ruler or pencil, good eyesight, and a friend!

One person stands near the trunk of the tree and the second person stands at a distance where both Person 1 and the top of the tree are visible. Person 2 holds a ruler (or pencil) upright at arms length and (carefully!) walks forward or backward until the entire length of their ruler covers the tree from base to top (**F**). Still holding the ruler at arms length, Person 2 turns their wrist right or left so that the ruler is now horizontal, with one end sighting the base of the tree. Now Person 2 instructs Person 1 to move away from the trunk in the direction the ruler is pointed (at a 90 degree angle) until they are standing where the end of the ruler points (**G**). Person 1 is now standing roughly the same distance from the trunk as the tree is tall. Use a tape measure to record this distance, in feet.
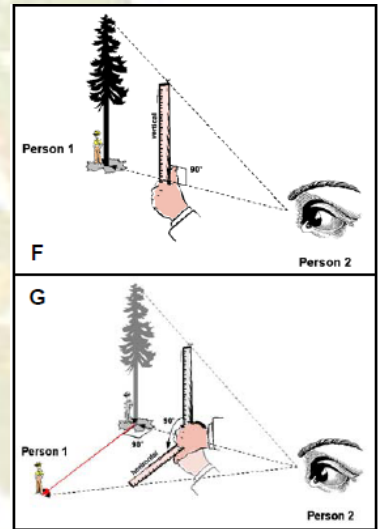
Crown Spread
General Rule: Along the *drip line* of the tree (**H**), two measurements of the crown width are taken and recorded (in feet), at right angles to one another. The first is the crown spread (**I**), which is the greatest distance between any two points along line. Once the widest spread has been found, turn the axis of measurement *degrees* and find the widest crown spread *in this plane* (**J**). The two perpendicular measurements are averaged for use in the tree index formula.

Drip line: This is the outline on the ground of the outermost leaves of the crown (**H**). Only live portions of the crown are included.