

**Marion Family Champion Tree Hunting:**

Name(s):

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Tree Species:

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Circumference (inches):

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Height (in feet):

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¼ Average Crown spread (in feet):

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Describe Location:

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If on private land please list owner and contact info:

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Sippican Lands Trust  
P. O. Box 848  
173 Spring Street  
Marion, MA 02738

# Finding Champion Trees in Marion



A cooperative effort to support family exploration of Marion's Forest wealth from the Sippican Lands Trust and the Elizabeth Taber Library

My Own Backyard Program



This program is supported with federal funds provided by the Institute of Museum and Library Services and administered by the Massachusetts Board of Library Commissioners.

“To-day I have grown taller from walking with the trees...”

Karle Wilson Baker

### Family Fun Finding Famous Forest Friend

This is a challenge for families to find the biggest of each tree species in Marion. It will be fun getting to know different species and spending some time in the forest too. The details on how to identify, measure, and locate a tree in order to nominate it as a “champion” of a particular species are below. Hopefully, a champion for each of the dozens of species found in Marion’s open spaces will be found.

#### Identify the species:

The MOBY backpack or the Elizabeth Tabor Library have field guides to help you in identifying the species of your tree. More help can be found at the Arbor Day Foundation website (<http://www.arborday.org/trees/whattree/>) or by using free apps like leaf snap <http://leafsnap.com/>.

**Measuring Trees for points:** The overall size of a tree is found using a formula developed by the American Forests organization. See guidelines at their website: [http://www.americanforests.org/wp-content/uploads/2014/12/AF-Tree-Measuring-Guidelines\\_LR.pdf](http://www.americanforests.org/wp-content/uploads/2014/12/AF-Tree-Measuring-Guidelines_LR.pdf). The points used to estimate the score for a championship tree come from three of the following measurements:

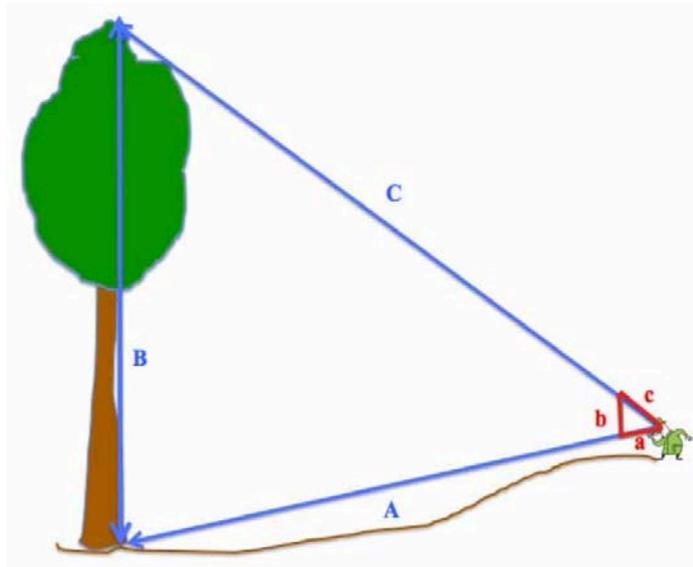
**Trunk Circumference (inches) + Height (feet) + ¼ Average Crown Spread (feet) = Total Points.**

**1) Finding the Circumference in inches:** The circumference of a tree is the distance around the trunk. If the tree is on flat ground, you first need to measure 4.5 feet (54 inches) up the tree. Then, carefully send a measuring tape straight around the tree trunk at that height to measure the circumference in inches. If the tree is on a steep slope measure 4.5 feet up from the high side and mark it, then measure 4.5 feet up on the low ground and mark it. Halfway between the high mark and low mark, carefully send a measuring tape around to measure the circumference in inches.

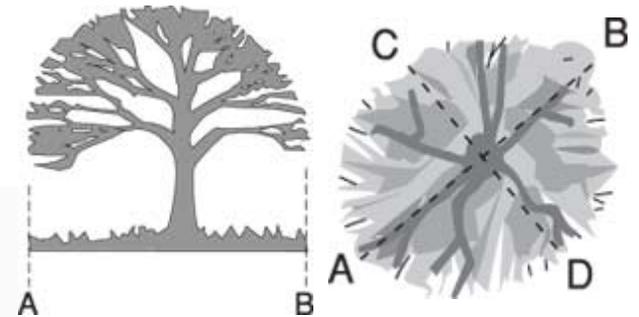
**2) Finding the Height in Feet:** There are several methods to find the height of a tree, which are detailed in the American Forest’s guide, including a smart phone app called “theodolite” that makes finding the measurement easier. The following are instructions for two of these methods:

**Easiest method:** Stand a person of known height next to the tree. Using a ruler, stand as far away as needed so the ruler is the same height as the person from your view. From this distance, take the ruler and estimate how many rulers high the tree is. Now, take the number of rulers and multiply by the person’s known height in feet. For example, if your person is 6 feet tall and you measured 4.5 rulers, the tree is  $6 \times 4.5$  or 27 feet tall.

**Better method:** Stand a distance away from the tree so you can see the top. Hold a ruler vertically at arm’s length so that you can measure how many rulers the tree is from the bottom to the top. This number is “b” in the diagram below. Next, measure the distance the ruler is held from your eye (“a”) in feet. Then, find the distance from your eye to the tree (“A”) in feet. Make sure all three measurements you have found are in feet. To calculate the height of the tree use the formula:  $\text{Tree Height (B)} = (A/a) \times b$ . For example, if the distance from the tree to your eye is 60 feet (A) and the distance from your eye to the ruler is 1.25 feet (a) and the tree is 1.5 rulers high (b), the height of the tree would be  $(60/1.25) \times 1.5$  which is equal to 72 feet high.



**3) Finding the Crown Spread in Feet:** The crown spread of a tree is the measurement of the mass of foliage and branches growing out from the tree. First, find the widest diameter of the canopy, place a stake under this point, and measure how far the stake is from the trunk in feet. This is “A” in the diagram below. Now, add another stake directly opposite “A” at the outer edge of the canopy on an imaginary line passing through the center of the tree and measure the distance from this stake to the trunk in feet (B). Do these same two measurements in feet for the shortest diameter of the canopy (C and D). To find the average crown spread, use this formula:  $\text{Average Crown Spread} = [(A+B) + (C+D)]/2$ . Now, to find a quarter of the crown spread divide the number you got by 4. If we use the example of  $A=15$ ,  $B=11$ ,  $C=7$ , and  $D=8$ , then we would end up with a crown spread of  $[(15+10) + (7+8)]/2$ , which equals 20 feet. Then, to find a quarter of this we divide 20 by 4 and get a final number of 5 feet.



#### Finding your location.

You can use mapping sites or smart phone maps to note your locations (in Latitude and Longitude). If you do not have access to either of these options make note of the address or the Sippican Lands Trust property you are on. If the tree is on private land, please obtain permission and the contact information of the owner so other volunteers can visit and confirm the tree.

#### Confirming your champion:

Send in a note with your name(s), the species name; the circumference, height, and 1/4 average crown spread; and the location description to the Sippican Lands Trust, 354 Front Street, Marion, MA 02738. Good luck and have fun!