

Measurement of Gifford Pinchot Sycamore 10-26-2017

The team of Bob Leverett (AF National Cadre) and Frank Kaputa (assistant state coordinator for CT) met at Pinchot Sycamore Park in Simsbury CT on 10-26-2017 to re-measure the Pinchot Sycamore. The following are the details of the measurement.

Species: *Platanus occidentalis*, American sycamore

Location: The location of Pinchot is Simsbury, CT. GPS coordinates are:
N 41.84751 W 72.80684 Coordinates taken from Google Earth

Ownership: Town of Simsbury, CT.

Measurers: Robert T. Leverett (National Cadre), Frank Kaputa (assistant state coordinator for Connecticut)

Circumference: A 100-foot tape measure was used. Four measurements were taken of circumference at 4.5 feet above ground level, one from each quadrant. Measurements in feet were 28.5, 28.55, 28.6, and 28.7. Avg = 28.6. We then measure the narrowest circumference between the ground and 4.5 feet. The result was 28.35 feet. We chose 28.35 feet as the official circumference measurement.

Height: We used an LTI TruPulse 200X on a tripod to measure the Pinchot's height. We settled for 99.0 feet, which was one foot less than previous measurements, one made by Frank Kuputa and one by Cadre member Matt Markworth. Dead twigs at the top of Pinchot may be the answer for probable loss of a foot. Pinchot may be having a hard time maintaining the top of its crown. There are quite a few dead twigs.

Average Crown Spread: We used the ML routine of the TruPulse 360. Frank Kaputa took the spoke measurements. In feet, they are 74, 58, 79, 68.7, 80, 80.8, 67.5, and 56. Avg spoke length (including radius) = 70.5 ft. Average crown width = 141.0.

Total points: $28.35 \times 12 + 99.0 + 141.0/4 = 474.45$ or 474 points.

We took 4 images of the trunk from the 4 quadrants. Each image was taken 20 feet from the yardstick used for scale. Monica Leverett needed to hold the yardstick in two images. We then took an image of the entire tree. Images follow.



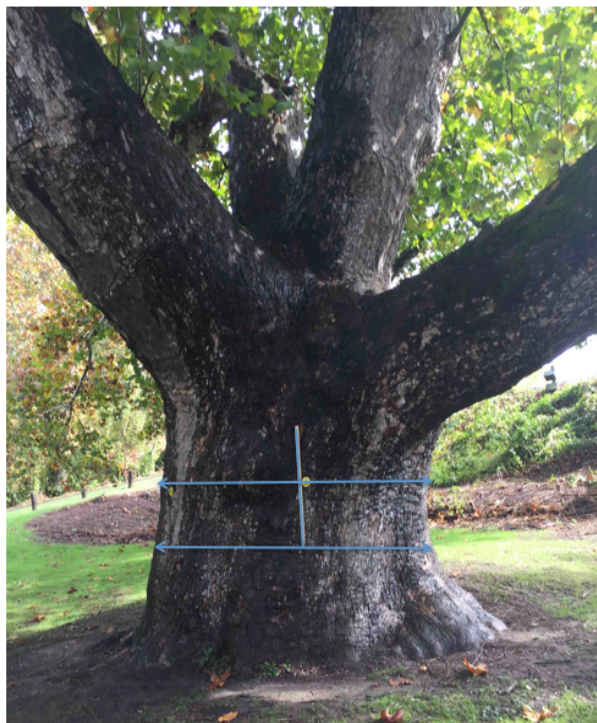








How well can the yardstick as a comparison device be used to reflect the width of the trunk? The next image helps answer that question.



Ref Object					Cal Diameter of Pinchot				
Excel	Excel	Excel	Act	Ratio	Excel	Excel	Excel	Proj	
hgt	width	Length	Length	Act/Excel	Hgt	Width	length	diam length	
1.31	0.08	1.312440475	3	2.285817953	0.03	3.14	3.14014331	7.177795951	Top diam
					0.01	3.17	3.17001577	7.246078966	Bottom diam
		Est	Adj Proj	Adj Top Proj	Act top				
Dist to marker		Dist to center	length	Circ	Circ	Diff	%		
20		24.5	8.79280004	27.62339601	28.6	0.97660399	3.4%		
		Est	Adj Proj	Adj Bottom Proj	Act bottom				
Dist to marker		Dist to center	length	Circ	Circ	Diff	%		
20		24.5	8.87644673	27.88617985	28.35	0.46382015	1.6%		
Top		Bottom							
Measured circumference		Measured circumference							
28.6		28.35							

NOTES:

Using Excel shape objects, we can estimate the width of the upper and lower diameter lines. The upper line projects to 8.792 feet. The lower line projects to 8.876 feet. Projected the diameters to circumferences and comparing to actual tape measures results in differences 3.4% and 1.6% of tape measured results. The projects from this side fall a little short of actuals. However, they re sufficiently close to lend credence to the actual measurements. The difference between the dist to the marker and the estimated distance to the center of the width line is a source of error. The measurer must have a fairly good feel for the width of the trunk from visual inspection.

Remember that the blue diameter lines actually pass through the center of the tree.

The result is good, but not great. The more out of circular the tree, the more this method falls short. Still, it gives us a good idea of whether or not the reported measurements are reasonable.