

CMG GardenNotes #116

Lab Worksheet: Root Spread of Trees

Small group activity: For a tree in the area, mark the following rooting areas:

1. Tree Circumference

In inches, measure the circumference (distance around the tree trunk) at DSH (Diameter Standard Height, or 4 ½ feet).

Tree circumference: _____ inches

2. Root plate – Root plate radius = 3-6 times DSH. For this exercise, use 6 times DSH

1. Simplifying the math, multiple the tree circumference (in inches) by 2.
2. This is the estimated radius of the root plate in inches. Mark it with **pink flags** in 4 directions (north, south, east, west).

Root plate radius: _____ inches

This is the area where damage to the root system could lead to tree failure in wind storms. In this area, avoid routine cultivation and hardscape features that influence root spread and health. Avoid cutting or other damage to roots in this area.

3. Tree Protection Zone by Trunk Circumference Method – Circumference (in inches) / 2 = radius (in feet) of TPZ

1. Divide the circumference of the tree (in inches) by 2.
3. This is the estimated radius of the TPZ in feet. Mark it with **orange flags** in 4 directions (north, south, east, west).

Tree protection zone radius: _____ feet

This is the area where damage to the root system could directly influence tree health and vigor. In tree care this is the rooting area to focus on with watering, fertilizer, and minimizing soil compaction. The total area estimated here is rather accurate, but the shape of the area may not be round.

4. **Total Root Spread** – 5+ times tree height and/or canopy spread

1. Measure the radius of the drip line, to the nearest foot.
2. Multiple the number by 5
3. This is the estimated radius of total root spread. Mark it with the remaining flags in 4 directions.

Total spread radius: _____ **feet**

This area represents the total spread of the tree's rooting system. Within this area, roots may be concentrated in sections and void in other sections. The actual shape of this area may not be round.

Notes: Using the dripline actually only works for tree with round canopies. For trees taller than wide, 5+ times the height would be more accurate.

5. **Actual shapes of rooting area based on site**

Based on soil conditions, hardscape features and buildings, how might these circles actually adjust in shape to fit the available rooting space?