Trees growing in confined spaces, such as pots, containerized planters, or small concrete soil cutouts located in parking lots or sidewalks; trees forced into small planting holes where the roots are twisted as planted; & trees planted in compact soil can form circling root systems.

As the circling roots enlarge they begin to girdle and strangle the tree trunk and other roots. Girdling roots cut off a tree’s ability to transport water and nutrients as they put pressure on the trunk. A tree trunk that is being girdled by a large root will appear flattened or depressed at the trunk base.

Trees with girdling roots will show signs of stress such as reduced growth, early season leaf defoliation, branch dieback, & splitting bark. Possibly only on the side of the tree where the root is growing.

Once a tree’s roots hit the edge of a container, they turn and grow along the container wall. If the tree replanted in a larger soil space, the roots will continue to grow in a circling pattern if not corrected. Tree’s with circling root systems will be more likely to fail during a storm event due to a lack of structural stability in the soil.
Correcting Circling/Girdling Roots after Planting

If a tree was planted without correcting for circling roots, it often dies from the problem within 2 years. Trees that become established may grow 5-7 years or longer before showing stress signs.

Newly Planted Trees:
Newly planted trees that have been in the ground for at least one year and are showing stress signs, can be tested above ground to determine if circling or girdling roots are the cause. Grasp the tree trunk a few feet from the ground, gently rock the tree back & forth. If the ground around the root ball moves or lifts the soil, the tree has circling roots & has not become established. To correct, wait until winter when the tree goes into dormancy, dig it up, prune the circling roots & replant the tree.

Established Trees:
Trees with circling/girdling roots that become established & show stress signs will need to be corrected to ensure the tree survives to mature size. This can be done in the winter by removing the soil with an air spade and pruning the roots. Pruning large roots can reduce a tree’s structural stability & reduce water & nutrient uptake. For that reason, root pruning on established trees should be conducted by a certified arborist that can evaluate whether or not the circling/girdling roots can be removed or if the tree should be removed entirely.

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