

# Girdling Roots: Killers Below Ground

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Girdling roots are often overlooked as the common killers that they are. Even self-proclaimed arborists overlook these killers below ground.

Girdling roots are roots that have become misdirected and encircle the tree's trunk. As both the roots and the trunk grow in diameter, the encircling roots come in contact with the trunk and exert ever-increasing pressure, year after year. This pressure restricts, and eventually, halts the growth of the trunk. The pressure from girdling roots severely reduces the tree's ability to conduct water, nutrients and starches by crushing the vascular tissue at the base of the tree. The usual result is a slow decline which can take five years or more for easily noticeable symptoms to appear and another five years or more to kill the tree. Occasionally, this sequence of events can move much faster.

Girdling roots can occur in almost any species. They are commonly found in maples, ash, honeylocust and linden.

The causes of girdling roots vary. Improper planting depth and failure to remove at least the top half of the burlap when planting *balled and burlapped* stock or leaving trees grow too long in pots before planting or transplanting to a larger pot. Another cause is when planting in heavy clay soils, the roots resist venturing out into the compacted clay soil. Instead, they circle back along the edge of the hole, eventually coming into contact with the tree's trunk.

By the time we get a call about a tree that is declining due to girdling roots, the decline is usually quite advanced. The area around the trunk must be excavated. This will help the arborist to determine the depth and condition of the root flare. Using our air spade, compressed air is directed towards the base of the tree and the soil is gently removed. The offending root or roots are located and surgically removed. With larger trees, this can be an exhausting and laborious task. Even under the best of situations, it is a time-consuming chore. Many times when we excavate, we also find root collar rot fungi associated with the girdling root. These pathogens also contribute to the decline and must be dealt with. The earlier this problem is detected, the easier it is to correct.

After girdling roots are removed, this area needs to be left open to allow for proper drying. Some trees may take four or five years to show improvement. In many cases, we need to re-examine after several years, to make sure no new root collar rot fungi have invaded the weakened area.



*Girdling root destroying a Norway maple.*

## **Several early warning signs that girdling roots may be present:**

- No root flare where the tree meets the ground; all or a portion of the trunk may go straight into the ground like a telephone pole.
- Portions of the foliage turn fall colors earlier than the rest of the tree or other similar trees.
- Frost cracks and associated bark damage or decay near the base of the tree.
- Branch tips die back, usually in the top and middle portion of the crown.
- Crown width that is disproportionate to crown height, giving the tree's crown a mushroom shape.

Being able to recognize these early warning signs allows for timely root collar examination and removal of girdling roots. Call your Wachtel Certified Arborist if you suspect that your trees may be falling victim to these killers below ground.