



GIRDLING ROOTS

Girdling roots on a tree can be a serious problem that will lead to the decline and premature death of that tree.

A girdling root is exactly as it sounds; a root that grows around the stem or other roots essentially choking the tree. As the tree grows in circumference it encounters a girdling root and attempts to grow around the root.

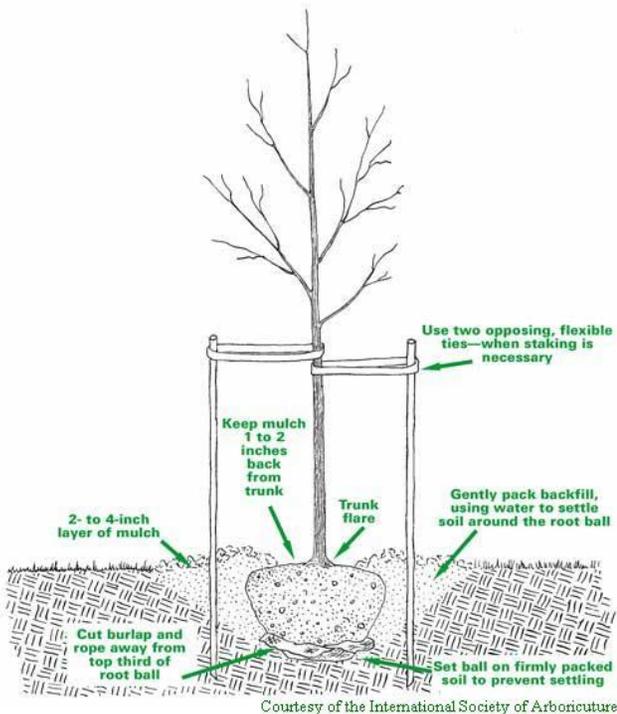
What happens over time is that the flow of water and nutrients is restricted to the above ground portion of the tree and the roots themselves. There is not an immediate impact, but rather a slow prolonged decline, possibly taking 20 to 30 years, resulting in the eventual death of the tree. It can also cause a weakened stem at the point where the tree grows around the root that can result in future wind throw.



How Does This Happen?

Research has shown that the main cause of girdling roots is improper tree planting procedures; planting the tree too deep. A tree that is planted only a few inches too deep can eventually grow girdling roots. A tree should be planted with the root flare at or slightly above ground level. Trees that grow naturally in a forest always have their root flare and buttress roots visible above ground and very seldom will have a girdling root.

At tree planting make sure that the main structural roots are at grade which means that some soil may need to be carefully removed off of the top to the root ball (balled & burlap and container trees). The roots should radiate away from the trunk like the spokes on a wheel. Roots that appear to be growing at angles that would eventually lead to a girdling root should be removed at planting time.



Courtesy of the International Society of Arboriculture

Signs & Symptoms of a Girdling Root

There are some tell tale signs of a possible girdling root on your tree.

- 🌳 A thinning crown and branches especially towards the top of the tree. Also trees that turn fall color earlier than other trees of that species are stressed, possibly from girdling roots.
- 🌳 Visible roots toward the soil surface that grow at angles around the trunk.
- 🌳 A straight trunk at the soil surface that looks like a telephone pole indicates that the tree was planted too deep. You should be able to see the buttress roots of a properly planted tree.
- 🌳 A flat area on the trees lower trunk is an area to look for a girdling root.



What Can Be Done to Save the Tree?

Carefully excavate the soil around the trunk exposing the roots until you see the root flare or buttress roots. This can be done with a small trowel or flat screwdriver and a hand blower. If you see any roots that are girdling the tree cut them back to the parent root if possible. Then cut the root on the other side of the trunk, the area that is girdled, and attempt to remove the root piece.

Depending on the size and location of the root it may not be possible to cut and remove; this is not an exact science and discretion may need to be used. Upon completion of root removal, keep the hole open and gently slope the sides for a more natural appearance.



The removal of any roots may cause some die-back in the crown of the tree, but this is better than losing the entire tree after a long slow death from strangulation.

For more information about girdling roots visit these web sites:

<https://www.extension.umn.edu/garden/yard-garden/trees-shrubs/img/guide-stem-girdling-roots.pdf>

<https://counties.uwex.edu/outagamie/files/2016/07/girdling-root.pdf>

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