

Managing Tree Root Zones



Photo by David W. Marshall, UF-IFAS Leon County Extension: Maintain a root-protection zone around trees by using mulch. This mulched zone may be carefully planted with groundcovers or understory shrubs, but avoid having lawn grasses too close to the trees.

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The two biggest challenges that I think we have in keeping our trees safe and healthy are proper pruning of trees to train them to grow correctly and managing the soil where tree roots grow.

I still believe that most people if asked, would guess that most roots on healthy trees grow straight down into the ground. If such an imaginary tree were excavated, the bottom of the tree would look somewhat like a carrot. While some trees do have a tap root that goes a few feet down, surprisingly most roots are located in the top foot of the soil. You see the biggest limiting factor to root growth is oxygen. This is why most roots are up close to the surface, because they need to be able to breathe. There is little gas exchange deep in the soil.

The other thing that often comes as a surprise is how far out from the tree roots go. I often hear many estimates, but few people really know that the roots on a typical forest-grown tree usually extend out 3 times farther than the branches extend from the tree. This is information that was obtained from studies done on Florida trees.

So what does this mean to you? Trees need their root zones managed as if they were growing in a natural forest setting. If you walk out into a forest you will notice that the soil is not bare and there is no grass lawn underneath the trees. Instead you will find a spongy layer of mulch often a few inches deep. This mulch is not piled up against the trunks of the tree but spread evenly over the ground much as a blanket over a bed. This mulch layer helps insulate and protect the ground from soil compaction, extremes of temperature, and as the mulch decays this oxygen rich layer builds organic matter. This mulch area is thus a good place for roots of trees to grow.

One of the best things you can do for a tree in your yard is maintain a mulch bed that is 2-4 inches deep and extends out as far as you wish to maintain and find aesthetically acceptable. In addition to keeping the soil as a healthy rooting zone, mulching around the base of trees can help avoid lawn mower and weed whip injuries to the trunk of the tree and exposed roots. It also keeps competing sod away from the base of the trees and is an effective way to recycle the nutrients from fallen leaves. Another bonus of mulch is that we have found that

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well mulched areas catch and absorb more rain water than bare soil or even grass lawn areas.

If you wish, you can plant some groundcovers or understory shrubs in the mulched area beneath trees. However, be careful to avoid cutting large roots or doing significant tree root damage when you are planting these areas. Properly planted and maintained with mulching, though, such groundcover or understory shrub plantings are much more desirable than having grass around the tree.

A natural forest has its own mulching process that recycles nutrients, absorbs rain water and maintains a cooler soil temperature on hot days. Mimic these areas where trees and lawns are mixed by mulching.

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