

Dealing with Exposed Tree Roots

Texas A&M AgriLife Extension Service — Galveston County Office



PHOTO BY William M. Johnson

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Mature shade trees in the landscape are valuable assets in terms of their increasing home property values, providing screening for reducing noise, lowering summer energy demands by shading living areas, etc. The

downside to beautiful shade trees is that surface roots sometimes pose problems as a tree matures. However, they deserve special consideration and care whenever digging, mowing, or construction threatens to interfere with roots.

When grown in landscapes, many shade trees form noticeable surface roots as they mature. The worst offenders are Arizona ash, oaks, sycamores, and pines.

However, even though tree roots appear to "come to the surface" (as many

people believe), such is not the case. Although trees do send some roots down deep for moisture and stability, most tree roots tend to grow much more shallowly than most people think with the majority of roots found in the top 12 inches of soil. In fact, more than 50 percent of a tree's roots are in the top six inches of soil.

Large surface roots start out below-ground as thin roots. As a tree matures and its primary roots age, the roots increase in girth, just as the tree's trunk does. A small root that started out only a couple



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of inches below the surface is now visible as a monster 4-inch-thick root on the surface! The problems worsen as the tree canopy shades the ground underneath, causing the lawn grass to thin out. This is due to the effect of shading.

Bermudagrass does not tolerate shade well and St. Augustine has the best shade tolerance of lawn grasses used in this area. However, even St. Augustine will not grow in dense shade. Thus, vegetation becomes sparse under large mature trees with dense canopies. Without some type of ground vegetation to hold soil particles, tree roots are further exposed by soil erosion.

Homeowners want to know what will happen if surface roots are just cut off, i.e., will it harm the tree? Although this depends on how many roots are removed and how the job is done, the answer is almost always "yes." A tree will suffer when its roots are damaged extensively.

People are surprised to learn that a tree has as much "growth" underground as it does above-ground. It is important to understand that a single surface root is the origin of a very extensive network of feeder roots. These feeder roots are a tree's "vital lifeline" to the water and nutrients it takes up from the soil. The removal of one large surface root can result in the demise of thousands of feeder roots.

In spite of that warning, it may be necessary at some point to cut a surface root for safety reasons. Take the value of a particular tree into account when deciding how harshly to deal with its exposed roots.

Removing one or two surface roots

should not be a problem. I would not remove too many large ones at once as this may place stress on the tree or even destabilize the tree. If there are a number of roots that need to be removed then you should remove them over a period of a few years to give the tree a chance to regrow supporting roots elsewhere.

If a surface root absolutely must go, excavate the soil adjacent to the root in order to make a clean vertical cut. Then remove the offending root. After a tree's root is cut, it would be a good idea to leave the cut end of the root exposed to the open air and not cover with soil for 2-3 days.

This will provide sufficient time for the root to form a healing layer of cells over the wound tissue and to deter invasion by any fungal disease pathogens that may be present in the soil. You don't need to apply a pruning paint or fungicide. The tree's natural healing ability will close the wound to infections. Since surface roots don't just happen overnight, plan ahead. If some surface roots must be cut, the ideal time of year to do the job is January and early February while the tree is dormant. After removing a surface root, help the tree recover by providing supplemental water during dry weather periods.

Solving the surface root problem without surgery is much better option. The area under a large tree can be planted with an attractive, shade-loving ground cover, such as Asiatic jasmine, Vinca or mondo grass. To prepare the area, carefully break up the top 1-inch layer of any compacted soil between surface roots with a spading fork.

The objective is to provide a gradual zone between compacted soil and the new topsoil, but don't spade deeper than 1 inch deep to avoid extensive injury to the tree's feeder roots. Over that, spread a maximum of 2 inches of garden soil mix.

Be very sure to add no more than 2 inches of a good garden soil per year; tree roots can suffocate—and the tree may die—if more than that is added in a year. Also, sprinkle a light application of a general purpose granular fertilizer (15-5-10, if possible; 13-13-13 would also be satisfactory) over the area.

Knowing that surface roots represent a potential headache, avoid planting shade trees closer than 6 feet from paved surfaces such as sidewalks and 15 feet from house foundations.

Some tree species seem to be more prone to surface roots than others. Unless you determine that you really need one, avoid choosing extremely fast-growing shade trees, most notably Arizona ash, silver maple (which I do not recommend at all for this area), poplar and willow, which develop surface root problems sooner and quite extensively.

However almost any large, older tree in a home landscape will produce some surface roots. The notorious species are likely just fast-growing species that bring the problem to the surface faster than others.

