

Tree Surface Roots

By Clark McAlister

I often get calls and emails from concerned homeowners about trees with large, exposed root systems in their landscapes. As trees age, their buttress roots, the roots closest to the trunk, swell and expand to stabilize the weight of the tree above. Sometimes these roots will grow thick enough to bust up pavement surfaces. The most common complaints are about surface roots that interfere with the lawn. Exposed roots cause uneven undulations in turf. These roots are not fun to mow over, and they can ruin a lawnmower blade in short order.

Contrary to popular belief, the root systems of most trees grow within the top 8-12 inches of soil. Even trees like pines, which are often associated with “tap roots”, will still have relatively shallow root systems that extend out past the drip line (a measurement from the base of the trunk to the branch furthest away from the trunk). Roots need oxygen to function properly, and most of the oxygen available in the soil is found near the surface.

As with trunks, roots also expand in girth year to year. Over time, some of the older roots close to the soil surface will enlarge enough that they expand above the soil surface and become exposed. Natural soil erosion will also help make these roots more visible. Once this happens there is little that can be done to hide the roots without seriously damaging the tree. Root pruning is often attempted but should only be used when roots far from the trunk are damaging concrete areas.

Some homeowners will attempt to spread new soil over the exposed roots and replant the area with grass seed. This may work temporarily but given time the tree roots will show through the new soil. Another popular solution is to spread a thick layer of mulch over the surface roots. This method can cause damage to the tree by starving the roots of oxygen. It is never a good idea to attempt to change the soil level underneath established trees.

Unfortunately, there is no great solution for exposed roots. You may just have to accept that they are part of having mature trees. One potential fix that is least harmful to the tree is to fill the area with groundcover plants that do not need to be mowed.

Exposed tree roots may be avoided by limiting tree planting in areas known to encourage shallow rooting. Soils that are compacted, waterlogged, or contain heavy clays promote shallow roots. These soils have small amounts of oxygen which encourages growth near the soil surface. If trees are already growing in compacted soils, aerating lawn areas around the trees can help reduce the compaction. Avoid planting trees in areas where standing water is observed after light rain showers.

Landscapes with irrigation systems are more prone to develop shallow-rooted trees. Most systems run too often. If you have an irrigation system, it is best to water deeply and infrequently. This forces roots to grow slightly deeper into the soil to obtain water. In the absence of natural rainfall, one inch of water per week is the recommended irrigation rate.

Some trees are naturally prone to surface root development. These include poplars, maples, willows, sycamores, alders, elms, mulberrys, honeylocusts, and figs. Avoid planting these tree species in or near turf areas if future surface root development is a concern.