

Planting Too Deep and Other Problems Below Ground

John Eisenhower, Integrity Tree Service, Inc.

Tree Problems and Our Diagnostic Approach

Trees have a wide variety of biotic and abiotic problems. These range from soil compaction and infertility, to insects and soil borne pathogens. Because the trunk, branches and leaves are easily seen, we often begin our problem diagnosis by focusing our attention on these obvious tree parts. As a result, we sometimes neglect to consider what's happening below ground. A balanced approach to diagnosing tree problems considers both above and belowground plant parts.

Planting Too Deep

Planting too deep is a primary cause of tree decline and death. Because oxygen is essential for cell metabolism in root tissue, trees often struggle to stay alive when roots are buried too deep. When oxygen is lacking, roots don't function at their optimum level. And when roots don't work, the entire tree system suffers. As go the roots, so go the shoots.

Can Trees Adapt to Deep Planting?

Most trees don't adapt well to deep planting. They begin to suffocate resulting in root dieback followed by corresponding dieback of foliage above. Some tree species send roots into the upper layers of soil where there is more oxygen. Some trees even develop adventitious roots from the buried trunk tissue. But all these new roots are seldom sufficient to provide a tree's long-term water and nutritional needs. These roots can also lose their normal outward orientation and wrap around the main stem or buttress roots. So even if a tree survives deep planting, it may have to deal with future stem- and root-girdling roots. Another problem related to deep planting is that trunk tissue is not well-adapted to excessive moisture. When planted too deep, soil can wick water against trunk tissue. This provides an environment conducive to fungal pathogens that can destroy the vascular cambium and lead to tree decline or death.

Why are Trees Planted Too Deep?

Trees are planted too deep for several reasons.

- ✓ Nurseries sometimes bury the root collar when bumping up trees to larger containers. The result is these trees are too deep in the container before they are ever planted in the landscape.
- ✓ Planting holes are dug too deep at the time of installation. Unfortunately this is often done intentionally to help stabilize the tree.
- ✓ Finish landscaping adds soil over the top of the root ball. Even fine-textured mulch like unscreened ¼" minus decomposed granite can prevent oxygen from reaching the root zone.
- ✓ Tree wells built with excavated soil can erode causing soil to migrate back over the top of the root ball.

Avoiding Planting Problems

- ✓ Before buying a tree look for the root collar to be sure it isn't too deep. Beware...if you don't see the flare.
- ✓ Plant trees at grade, even a little proud to allow for settling. It has been well said, "Don't plant trees; plant roots."
- ✓ If applying mulch, only apply a thin layer over the original root ball planted at grade.
- ✓ Dispose of excess soil. Don't build large tree wells that tend to erode and deliver soil back over the root ball.

Help is available!

If root problems are identified early, there are remedial measures that can be taken.

- ✓ Young trees planted too deep can sometimes be reset.
- ✓ Older trees planted too deep can be re-landscaped, removing soil above the root collar and terracing to grade.
- ✓ When girdling roots or other root malformations are found, they can be pruned out and corrected.

Air Technology

In the past, root collar examinations required hours of tedious work with hand tools. Invariably, damage to roots would occur while excavating around them. Air excavation tools now make it possible to examine a tree's root system quickly, safely and thoroughly with minimal damage to the roots or underground utilities. Soil is displaced and a full view of the root collar can be seen within minutes. If girdling roots or other problems are detected, they can be dealt with immediately and the excavated soil replaced when work is completed.