

Tree Mortality and the Community Forestry Program

Few people know more about tree death than the arborists and urban foresters who care for our nation's street and park trees. To get an overview of the worst causes of premature tree mortality other than insect or disease epidemics, 10 professionals representing all regions of the country were asked to rank the top 10 killers. Here are the results:

No. 1 Killer: *Construction Damage*

Every respondent mentioned this preventable cause of tree deaths and rated it strongly into the No. 1 position of infamy. It is clear that a priority challenge for urban forestry programs is public education stressing the value of saving existing trees during development projects of all kinds.

No. 2 Killer: *Improper Pruning*

If ever there was a gap between what is known in the technical sense and what is actually practiced, pruning is the prime example. Despite the research and educational efforts that have been done on this subject, respondents named poor pruning practices as the second greatest danger to urban trees. Specifically cited were topping, other excessive pruning (too much of the live crown removed at one time) and the kind of “flush cutting” that Shigo and others have shown to break down a tree's natural defenses against the invasion of decay organisms.

No. 3 Killer: *Vandalism*

This is one of the most difficult problems to prevent. In most cases vandalism is probably caused by an expression of anger or frustration unrelated to trees. Ways to prevent vandalism include planting larger trees (minimum of 2-inch caliper), pruning lower limbs to at least 8 feet above sidewalks as the tree grows, using trees with thorns, and involving residents in the selection, planting, and care of street trees.

No. 4 Killer: *The Wrong Tree for the Site*

Poor species selection dooms many trees right from the start. Disease resistance and suitability to soil and climate conditions were mentioned as the factors most often overlooked. Planting large tree species beneath utility lines was also frequently mentioned as asking for trouble. The involvement of qualified foresters and arborists in the planning stage of all planting projects could easily eliminate this unnecessary cause of tree mortality.

No. 5 Killer: *Lack of Watering*

A systematic means of watering during dry spells — especially newly planted trees — is one of the essentials of a well-managed urban forestry program. Enlisting the aid of local residents is one way to do this if equipment and paid personnel or contractors are not available to do the job.



Proper planting is essential for tree health.

No. 6 Killer: *Poor Planting*

Proper planting is essential. It requires special training for crews and close supervision. Planting too deeply was the problem mentioned by several of our respondents. Other problems typically include rough handling of new trees, allowing roots to dry, not removing the root containers or bindings, and planting root-bound trees without cutting or straightening encircling roots.

No. 7 Killer: *Soil Compaction*

Soil compaction is one of the slower and more insidious causes of tree mortality. Mulching and regular aeration are good ways to minimize the damage.

No. 8 Killer: *Bark Damage*

Lawnmowers and string trimmers are the main culprits here — or, more accurately, the people who operate them carelessly. Proper instruction and supervision are key solutions, with mulch helping even more.

No. 9 Killer: *Misuse of Herbicides*

Herbicides, especially those containing chemicals that work through reactions in the soil, should be kept away from the root zones of trees. Weed treatments on windy days should also be avoided and weed or lawn crews should be given special instruction about tree roots and how to avoid damaging them. Always read and follow label directions carefully.

No. 10 Killer: *Automobiles*

Not surprisingly, bark damage and the breakage of young trees caused by cars is a common occurrence in urban areas. Traffic barriers, proper curbs, and planting out of the reach of bumper and tailgate overhang can help reduce this damage.