

Neighbourhood Volcanoes

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Landscape trees have a rough life. Rooted in one spot day in and day out, year after year, they suffer from – well, boredom, I imagine. They may need to contend with helpful watering by territorial dogs, materials-testing by energetic kids, entanglements with errant kites, or issues like restricted root area, drought stress, competition from turf grasses, reflected heat from pavement and buildings, and damage from deicing salt.

However, in recent years there has been an epidemic of seismic proportions which threatens the wellbeing of our beloved shade trees: volcanoes. Over the past 10 to 20 years we have had an outbreak of mulch-volcanoes. These monstrosities seem to erupt at the base of landscape trees, particularly young ones, and the results aren't pretty.

Geologists and botanists have been hard at work trying to account for this phenomenon. Until a cure can be found, though, the public is urged to be on the lookout for sudden eruptions of mulch volcanoes, and to spread the word about how bad they are.

Banking mulch around the trunk of a tree can have severe detrimental health effects. For the tree, just to be clear. One issue is that insect pests are chicken. Like vandals and Internet trolls, they are afraid to do their dirty work if they think anyone can see them. They like it dark and damp, like the ambiance under a mulch pile, or in the case of Internet trolls, in Mom's basement. A mulch volcano gives wood-boring insects free access to the tree's trunk.

Who doesn't like a cute rodent? OK, some of us probably don't. Trees are not fond of them either, because mice, meadow voles and pine voles all enjoy the taste of tree bark. But eating bark takes rodents time, during which they can be vulnerable to predators. Once under a mulch volcano, though, leisurely lunches are on.

Tree roots need oxygen. This may seem obvious – of course they do, and they get it through their veins, right? Trees do have vascular systems and they also make oxygen via photosynthesis, but they lack something akin to hemoglobin to transport oxygen to all their parts. Turns out that roots get their oxygen via the soil surface. Anything which obstructs access to the surface will smother them.

Another problem is adaptation. Generally, it's a good thing. To a large extent, trees are "self-optimizing," meaning they adapt and respond to changes in their environment. But mulch volcanoes are a wrench in the machine.

When the base of a tree is buried by mulch, this limits oxygen to the tree's roots. So it begins making adaptive (adventitious) roots to compensate. Fine rootlets will sprout from the trunk in response to its true roots being smothered by wood chips. However, over time the mulch will break down and subside, and as a result, those trunk-roots will dry out and die, which further stresses the tree.

Finally there is the issue of water. Transplanted trees may need additional water for several years. The rule is one year of supplemental watering for each 2.5 cm of trunk diameter. Mulch volcanoes act like a thatched roof, shedding water effectively. Young trees typically have all or nearly all their roots under that mountain of mulch, (not) nice and dry.

Maintaining mulch 5-10 cm deep around a tree in a ring extending at least to the branch tips is beneficial, as long as the mulch does not contact the trunk. Please help stamp out mulch volcanoes in your lifetime! You won't even burn your foot.

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