



What Is Killing My Trees?

Backyard Wisdom - January/February 2022
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Driving through Deerfield a few months ago I stopped to take a picture of the above (left) pictured declining Norway Spruce. Almost every day we get asked, “What is killing my trees and what can you spray on them to save them?” When I drove up to these sick trees my thoughts were similar. Is this being caused by a disease or by a bug?

Notice that the second picture (above right) is of healthy Norway Spruce, and they were only two doors away from the sick Spruce. What’s the difference?

Before I answer that question, look at the pictures with your *tree detective* glasses on and see if you can diagnose the problem. If I sent samples off to the University of Illinois Plant Lab they would correctly diagnose that these trees have some Rhyzospharea Needle Cast and some Borers. We could treat these issues with fungicides and insecticides and everyone would feel better because we diagnosed a problem and treated it. But we need to ask why do the same

species of tree, just a short distance away, not have Borers or Needle Cast? Most likely they were planted at the same time, by the same people, before the property was subdivided.

Can you see the differences?

- Do you notice how small the mulch ring around sick group of trees is? The Morton Arboretum suggests that if you apply mulch out to the edge of the branch spread of your trees, you can almost double the amount of tree roots. If I told my clients I could double the roots of their trees, thereby increasing their health, with an expensive spray, most would jump at the chance. Have you noticed the healthy trees are in a group, surrounded by mulch?
- Also, you may notice the slight mound of grass behind the declining Spruce in the first photo. This indicates that heavy equipment was brought in to install that soil berm. I have no idea *why* this was done but I strongly suspect that ***this is the real culprit of the trees decline.*** That heavy equipment caused soil compaction, which is killing those poor Spruce. Further, if I had had the courage to walk onto the property and take a soil sample, I bet that it is so compacted and dense that I would have had a hard time even getting my soil probe even a few inches deep. I know this because *it happens all the time.* And my clients want to know, ***“What’s killing my tree and what can I spray?”***

I wish that I could spray those Spruce and fix them. That would make me the hero, and give my clients a simple answer to their tree problems. ***Unfortunately, it is not a solution to the Spruces maladies because it’s too late for those Spruces.*** Sadly, I can’t be a hero, and even more sadly, it could have been easily avoided.

After the above tree photo incident, while walking in a nearby neighborhood I took the picture below. Can you see the tracks left by heavy equipment around these mature trees? They were smoothing out the soil after construction in preparation for a layer of dirt and seed or sod. The contractors were just doing their job and because they don’t understand how tree roots grow they think that they were helping the trees. In a year or two this 100 year old Oak will be dying or dead. As it declines it will be attacked by borers and may have symptoms that look like Oak Wilt or Sudden Oak Death, but neither of those are the cause.

Most people think that they know how trees grow. This misconception leads to the majority of tree decline and death. Following are TRUE facts about how trees grow:

- Tree roots do not grow down deep. According to Dr Gary Watson of the Morton Arboretum, ninety percent of all tree roots grow within the upper foot of soil.
- Tree roots grow near the surface because they need air to breathe. ***Fifty percent of healthy soil volume is comprised of air spaces that tree roots grow in and breathe through.***
- It takes many years for the soil microorganisms to build healthy soil structure with air spaces for healthy roots. But, it takes only an afternoon of heavy equipment to compact the soil to the consistency of concrete, crushing the soil

air spaces, killing roots and making it impossible to regenerate new roots.

As the trees decline they are attacked by secondary organisms which are just doing their job, eliminating weakened trees.

Here are the simple solutions:

• *Whenever you have any construction or digging done near trees, even if it is only 2 inches deep (such as for sprinklers or lighting), surround your trees with protective fences installed out to the edge of the branch spread. Then mulch inside that fenced area before construction to keep heavy equipment away from those precious tree roots.*

• *Even if the work is being done by a professional, remember they may know nothing about trees and how they grow.*

• *Even if you are not doing construction near your trees, do as the Chicago Botanic Gardens does and group your trees and*

shrubs together mulching them out to the branch spread.



Construction damage in a North Shore park

- *If you can keep digging or any soil fill or topsoil away from your trees and their fragile roots you will keep them healthy and living for a long time.*

Our certified Arborists ***love to consult*** with you before any changes are made in the landscape, rather than afterwards when your trees are suffering and there is little that can be done to save them.