

To Fertilize or Not to Fertilize, That Is the Question!

Mother Nature's Moment - March/April 2022
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This week, like many times in the spring of the year, I was asked to visit a client property to examine some large Arborvitae to see why they were not doing well. The client thought that she needed a price for fertilizing these “stressed trees”.

It has been a rainy week after many months of drought in the Chicago area. As I stepped into the back yard I noticed I was stepping onto completely sodden soil. My shoes were making sucking noises while walking the length of the lawn to the back property line where the big Arborvitae were planted. It was easy to see from a distance that the area around the trees was about an inch or two under water. I managed to get under the trees and check out the soil with my soil probe. No surprise that the heavily clay like soil was totally saturated to about a foot below the surface.



As I wrote out my notes to our client I was aware that she was expecting me to give her a price to fertilize, which I could have done. But no amount of fertilizer was going to fix

the problem, and it would be a waste of her money. The problem was not a lack of fertility in the soil which was a rich dark color and nicely mulched with shredded leaves. The problem was a lack of oxygen for the roots.

We have talked about it so many times... that roots, like



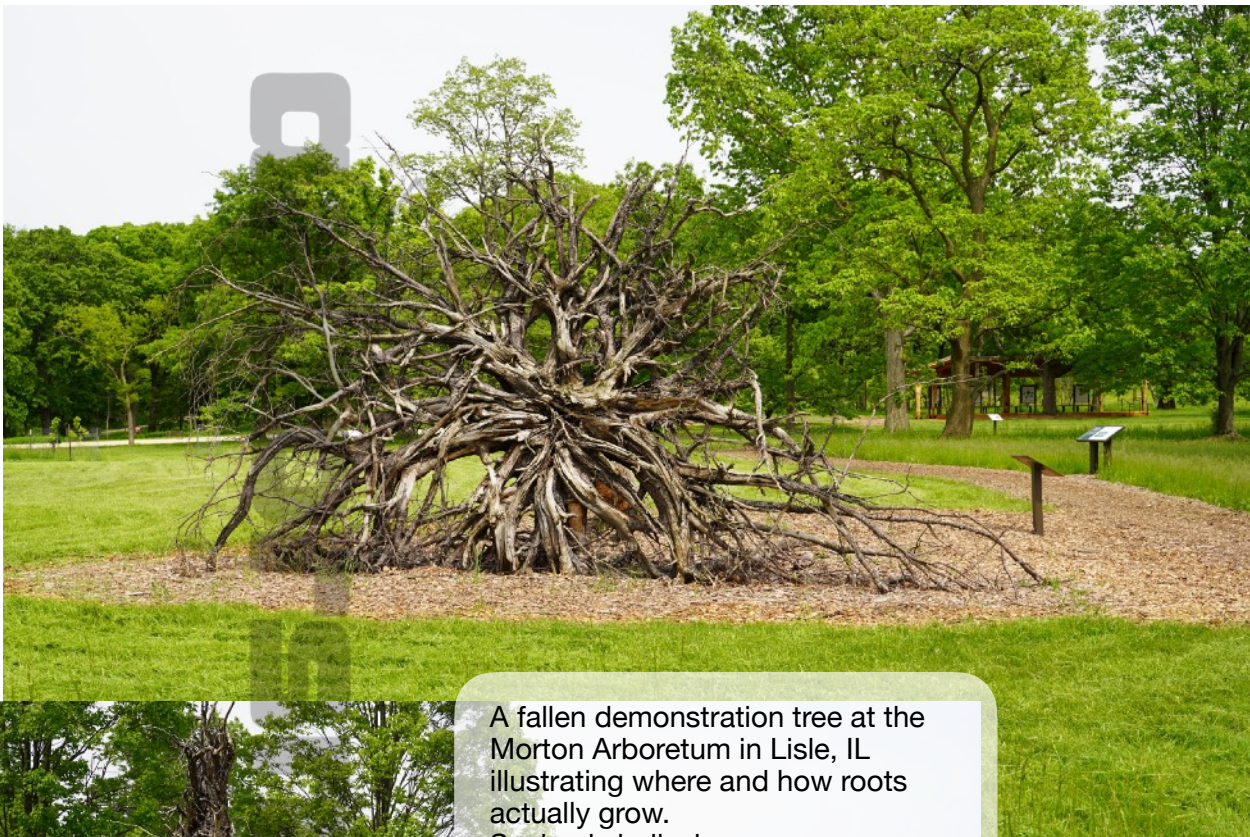


A 100' tall Red Oak in Pittsburg, PA that has fallen over and exposed it's root system, at least partially.

every other living organism, need oxygen to survive and air pockets in the soil to hold that oxygen. These air pockets are where the roots proliferate. In soil that is super saturated with water there are **no air pockets**, hence NO oxygen, hence very few tree roots, because the roots have drowned. Ergo, we have stressed trees that then become susceptible to many other insect and disease attacks due to the lack of necessary water and nutrients. That may seem counter intuitive, but they are stressed because they have so few roots to absorb the plentiful nutrients and water. Trees are just like humans in that when they get stressed out they are much more apt to get sick and even die.

You might ask, can't the roots go down to get air to breathe? The short answer to that is "NO!" But of course, I

can't give you just the short answer. Even though we talk about roots being close to the surface of the ground **all** the time, the truth is we can never say it enough because people just don't believe it. Even the Giant Redwoods that are hundreds of feet tall have roots that only go about 5 feet down into the soil. The important place for roots to inhabit are dozens of feet away from the trunk, but only about 8 to 12 inches deep into the soil, especially around here in NorthEastern Illinois. They radiate out in the



A fallen demonstration tree at the Morton Arboretum in Lisle, IL illustrating where and how roots actually grow. Seeing is believing.



same way bicycle wheel spokes do. If you don't believe me take a walk in the woods and look for the trees that have fallen over and look where their roots are. They spread out from the trunk like a giant pancake or spider web, not like a reflection of the tree above them.

So what I told my client and the answer to the big question was that fertilizing would **NOT** help her Arborvitae. She needs to find a way to keep her back yard free from standing water. We are not Landscape Architects but some successful solutions that we have seen include rain gardens and swales that divert water. French drains, that are often recommended by landscape companies seldom help and can often damage tree roots further exacerbating the problem.



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