

## How I First Learned About Trees and Water. The 2016 Drought.

In 2016, it didn't rain for seven months, from April to mid -October, in Wendell, MA where I live. And even the winter before, we'd barely had any snow. I have a shallow well, 12 feet deep. My well was bone dry for four months. I was recovering from an ACL surgery, a 7 to 9 month recovery time. I was hauling water, with one leg locked in a brace, to keep the garden plants alive on a five-acre property. That summer, I returned to a natural spring a friend had shown me years before, in the neighboring town. That spring was the miracle of that summer - at the base of a long steep hill of thick dense forest—a bubbling song in a land parched beyond measure. That spring provided drinking water for me for several months (When I go to the spring now, I always offer a prayer of gratitude to the water and trees). With no water at home, I bathed in the local skinny dipping pond. I snuck my toothbrush into the local food coop bathroom, and brushed my teeth there sometimes.

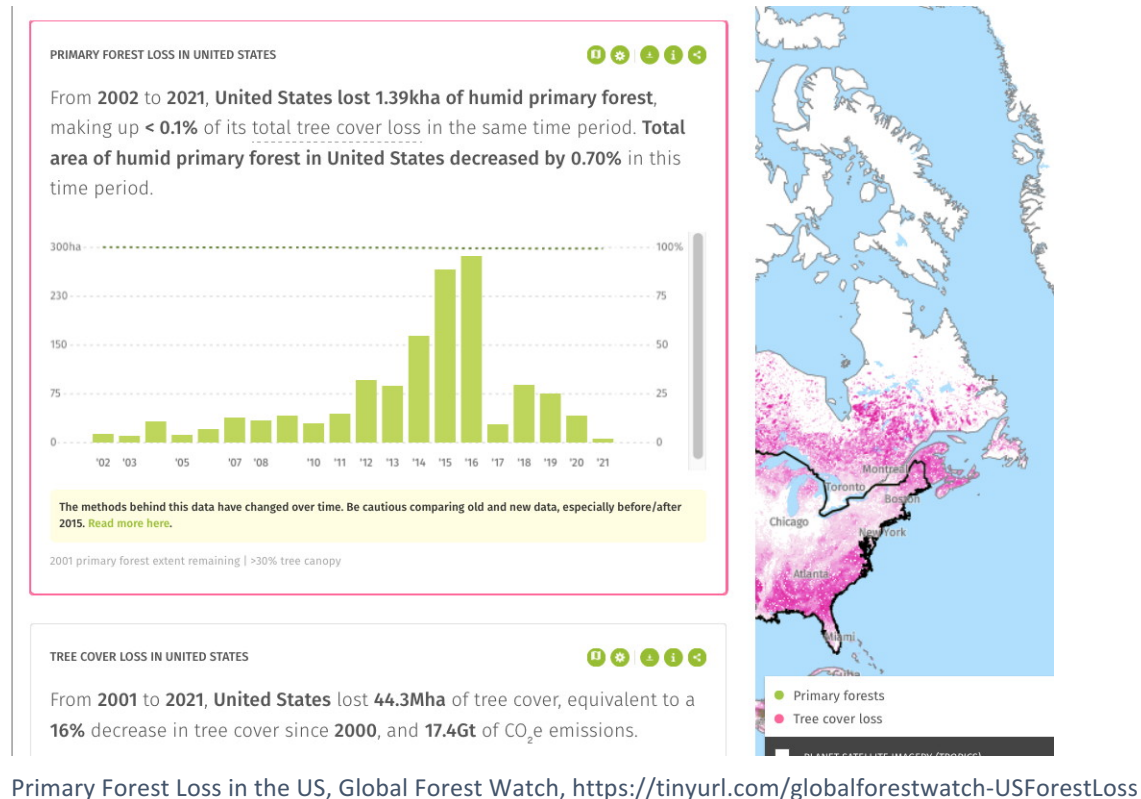
I'd never experienced anything like this before. This was not our weather. It was unnatural. The forecast would predict a week of rain, it would mist for four days, like a spray mister at a hair salon. I never dreamed it could just stop raining in New England— just like that, for more than half a year. It was the worst drought in 50 years.

I live by myself in a timber frame house I built. I am repair girl for this place. I thought, "well I can't call a plumber to fix the rain." So I set out to understand what was happening to the rain, why it had just stopped. I started searching on Google. I found a website called Two Visions Permaculture, whose author, Neal Spackman, was working to restore water to Saudi Arabia. The first article I read was, "Trees are More Awesome Than You Thought: Cloud seeding." I learned that trees seed 2/3 of the rain on the planet. I read a second article, "Trees are Awesome, Hydraulic Distribution," which explain to me that trees perform hydraulic redistribution in the earth, taking up rain water through their surface roots, and storing it underground. Trees make the difference between a living aquifer and a fossilized aquifer.

During that summer, I continued to research and check the news. I found the National Drought Monitor, and began to check it every few days. Everywhere, the trees and plants looked dirty and dusty. It had been months since they'd been washed by rain. A Boston Globe article about the drought said that birds were suffering from a form of avian botulism because there was no fresh water coming into the ponds and waterways.

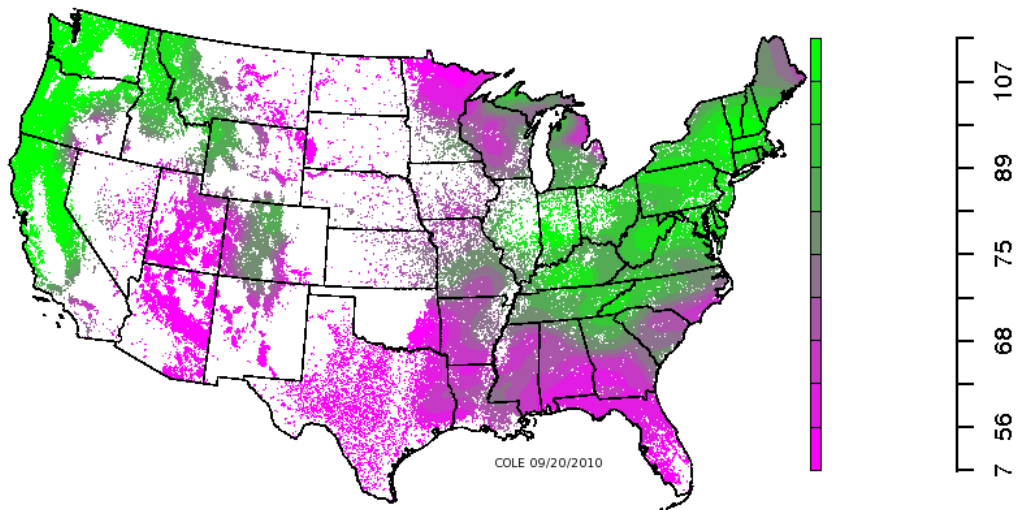
As I researched, I learned that the entire southeastern United States had been deforested between 2012 and 2015. Now our terrible drought started to make sense. I discovered Dogwood Alliance, a non-profit in North Carolina, who were raising awareness about the devastation of the Southeastern forests. A documentary, "Burned: Are Trees the New Coal,"

created by Vermont filmmakers, explained that 40% of Europe's renewable energy portfolio was biomass; chipping up whole ancient biodiverse forests from the Southeastern US, from multiple states, and shipping these wood chips to England and Europe to burn in massive coal electrical generation plants converted to burn wood chips. The energy industry was trying to replace fossil fuels with trees. One article said we could use up every tree on the planet, and only provide a fraction of the energy fossil fuels provide. Subsidies were being given to build many more wood burning electric plants in Europe, and the Southeastern US. Europe's renewable energy portfolio was created to fight climate change, but woodchips emit 30% more carbon than coal, since wood burns 30% less efficiently than coal. Just this morning (9-27-22), I found a chart on Global Forest Watch that showed an exponential increase in logging across the US between 2012 and 2016. <https://tinyurl.com/globalforestwatch-USForestLoss>



Primary Forest Loss in the US, Global Forest Watch, <https://tinyurl.com/globalforestwatch-USForestLoss>

**COLE Map**  
**Total Aboveground Carbon (metric tons/hectare)**



US Forest Carbon Density, 2010. Green areas are healthy carbon dense mature forests. Purple areas have low carbon density, due to timber extraction. From NCASI's COLE (Carbon Online Estimator).

<https://web.archive.org/web/20180325042144/http://www.ncasi2.org/>. COLE was removed from their website, though the images are accessible at the above link. Updated Forest Carbon Density maps can be found at the Global Forest Watch Dashboard link (see below.)

The vast majority of deforestation is from forestry. Most people don't understand the difference between Forestry: the science of managing trees for timber extraction, and Forest Ecology: the science of preserving healthy biodiverse forests to become mature old growth forests.

This summer we've had another severe drought, though not as bad as 2016. Ever since 2016, we've experienced increasing drought, interspersed with periods of heavy, erratic rain. This summer the Drought Monitor reported that farmers in our region did not have enough fresh grass in their fields to feed their livestock. They had to purchase hay for feed, putting huge financial stress on small farms. Some farms were irrigating from the Connecticut River. While hiking in the woods in Randall, MA, wild grapes way up in the trees were dropping tiny grapes the size of blueberries.

I've started asking friends, both locally and in other parts of New England, about their wells and water supplies. Many people's wells have run dry. The Drought Monitor noted an increase in well drilling contracts. Just last night I talked with a family member in Berwick, ME. He told me their town water supply comes from the nearby Salmon River. When it doesn't rain, he said the river water becomes unpotable and "gross." He told me this started happening in 2016 and has happened frequently ever since.

Resources Mentioned Above:

US Drought Monitor:

<https://droughtmonitor.unl.edu/CurrentMap.aspx>

Global Forest Watch is a project of the World Resources Institute:

Global Forest Watch:

<https://globalforestwatch.org>

World Resources Institute:

<https://research.wri.org/gfr/forest-extent-indicators/forest-loss>

Two Visions Permaculture, Neal Spackman. Neal Spackman reclaims desertified land in Saudi Arabia. The Two Visions Permaculture site has regrettably been taken down. These are Wayback Machine snapshots of the two articles mentioned above.:

Trees are More Awesome Than You Thought: Cloud Seeding:

<https://web.archive.org/web/20180321061452/http://www.twovisionspermaculture.com/tree-s-are-more-awesome-than-you-thought-cloud-seeding/>

Trees are More Awesome Than You Thought: Hydraulic Redistribution:

<https://web.archive.org/web/20180301053351/http://www.twovisionspermaculture.com/tree-s-are-more-awesome-than-you-thought-hydraulic-redistribution/>

Neal Spackman: Global Earth Repair Foundation:

<https://globalearthrepairfoundation.org/neal-spackman/>

Dogwood Alliance:

<https://www.dogwoodalliance.org/>

Burned: Are Trees the New Coal? Documentary, Film Makers Lisa Merton, and Alan Dater.

<https://burnedthemovie.com/>