

NATURALIST'S CORNER

A Super Woman Deserves a Super Tree

A newly planted tulip tree stands at the edge of a field in Mittineague Park. It is Julie's tree. Julie Schlobohm. A woman who no longer walks this earth but still resides in many people's hearts, including mine.

Julie was a long-time member of the Naturalists' Club and a strong environmental advocate. She pushed for a conservation restriction at Bear Hole Watershed — and got it. She was on the tree committee to establish street trees throughout West Springfield. She fought to prevent the transformation of Mittineague Park into a golf course. Julie was a superhero. She deserves a superhero tree.

The tree selected to honor Julie is the tulip tree (*Liriodendron tulipifera*). Also known as the yellow poplar, it is the perfect tree to represent her because it also works hard for the environment. I call it the Wonder Woman Tree! It tops the charts* in capturing and storing carbon and in cooling the air. It is a superhero in size, longevity, and growth rate. Plus, it's in the top 10% of trees to clean the air of pollutants. Not only that, but this tall, stately tree sports beautiful yellow and orange tulip-shaped flowers in the spring. Gotta love this tree!

There are many superhero trees that help fight climate change and provide services to our environment. First, if you'll excuse me, I must digress for a quick primer on earth systems before explaining why trees are such superheroes.

For millennia, immense amounts of carbon have been stored underground in the form of coal, oil, and natural gas. For a much shorter time, humans have been extracting these carbon-based fossil fuels and burning them for energy, releasing that carbon into the atmosphere as carbon dioxide (CO₂). The trouble is that CO₂ is a significant greenhouse gas, blanketing our planet and altering Earth's systems. We need help taking CO₂ out of the atmosphere. Our world supplies such helpers: oceans, grasslands, soil...and trees.

How, exactly, do trees help? Green plants absorb CO₂ from the air during photosynthesis, disassemble it, and make many compounds with it. (Let us not forget that oxygen is a byproduct of this marvelous process, allowing oxygen-breathing souls like ourselves to live on this planet!) Woody plants use that carbon to make support structures like trunks, roots, and limbs. Unlike most herbaceous plants, trees can live a long time, snatching carbon from the atmosphere and storing it for hundreds of years as wood. Like all living things, trees will someday die, and the carbon stored in them goes back into the atmosphere if left to decompose, so it is not a permanent solution. But hey, we need all the help we can get.

Some trees are especially good at carbon sequestration, the capture and storage of carbon. Here's a list of a few of them. In addition to being proficient at storing carbon, these superheroes offer myriad benefits for wildlife, help keep local temperatures cooler, and filter pollutants out of the air.

Speedy Softwood! Among conifers, pines are the best at sequestering carbon. Being evergreen, they can photosynthesize throughout the year, even in the winter when deciduous trees are leafless. Plus, they're speedy growers, taking in a lot of carbon from the air to add to their size. Because they grow so quickly, pines are often planted for harvesting and for windbreaks.

Captain Carbon! Oaks are long-lived trees, putting away thousands of pounds of carbon in trunks and roots during a lifetime. Our familiar red oaks can live for more than 300 years, and white oaks can live for 500 to 600 years. The Southern Live Oak, however, beats them both, tucking carbon away for a lifetime of about 1,000 years. Just look at a massive oak and realize that about half its dry weight is carbon! As for wildlife benefits, oaks are unrivaled. Few animals will pass up a fat-and-carbohydrate-rich acorn, and hundreds of wasps, butterflies, and moths utilize oak leaves.

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Under-Dogwood! For understory trees, the beautiful flowering dogwood and kousa dogwood can surely squeeze a lot of carbon into a little trunk. Black walnuts share this trait of dense wood. Provider of berries savory to wildlife, plus beautiful flowers, dogwood is no underdog.

Mr. Clean! Hemlock tops the list compiled by a consortium of tree experts for its amazing power to filter air pollutants. Its wax-coated evergreen leaves work year-round to absorb carbon and catch tiny particulate matter. Many other tree species with rough or hairy leaves are also good at trapping airborne contaminants.

Captain Cool Team! The Japanese zelkova's arching branches shade streets and sidewalks that would otherwise absorb and radiate heat. Teamed with horse chestnut and our hero the tulip tree, this team and other large-leaved trees provide solar relief under their umbrellas.

Trees alone will not reverse climate change, but they sure can be part of the solution. These superheroes can also prevent erosion, slow stormwater runoff and improve mental health. Be part of Massachusetts' effort to save 30% of the state's forests by 2030 and 40% by 2050. You may want to support tree-planting initiatives and advocate for existing forests. I'm sure Julie would be well pleased.

~Nancy Condon

* <https://species.itreetools.org/> A USDA Forest Service forest and community tree software tool.