



[www.natureswayresources.com](http://www.natureswayresources.com)

## **NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS**

**By John Ferguson**

I have talked about the value and importance of trees a lot over the last few years. I have been asked several times to compile all the information into one big list, so here it is.

The benefits of trees can be broken down into several categories: Environmental, Social, Health, and Economic. So, let us go through each of these areas.

### **Environmental:**

Planting trees are the quickest and cheapest way to fight climate change:

- One acre of mature trees removes as much carbon dioxide as produced by driving your car 26,000 miles (this is 26 pounds of carbon!)
- In addition to storing carbon in the wood of their structure, trees produce root exudates composed of carbon atoms that feed microbes and store carbon in the soil as humus
- three trees placed strategically around a home can significantly reduce energy requirements by 50%.

Note: When I purchased my first home over 40 years ago, it was on a lot with zero trees. The dining room/den area was on the southwest side of the house. If the air

---

**101 Sherbrook Circle • Conroe, Tx 77385-7750**  
**(936) 321-6990 Metro • (936) 273-1200 Conroe**



[www.natureswayresources.com](http://www.natureswayresources.com)

temperature outside was 90 degrees or above, we could not get the air temperature in those rooms below 85 degrees even with the ac running non-stop.

I planted three 5-gallon Chinese Tallow trees for quick growth and shade (they were not considered invasive back then). Within two years they were over 20 feet tall and providing good shade. The inside air would now cool to 75 degrees and the ac would cycle. I also planted three slower growing hickory trees in the same area to replace the Tallow trees. The hickories would eventually get much taller and wider which would provide more protection of the house from the sun and being deciduous, they would drop their leaves and allow the sun to warm the house in the winter. When the hickories became big, I cut down the tallow trees.

- Trees absorb odors and pollutant gasses (nitrogen oxides, ammonia, sulfur dioxide, ozone, smoke, and other gasses) cleaning the air.
- Trees remove particulate matter like dust and ash from the air that forms smog and causes breathing problems. Trees are great filters to clean and cool the air. For every square yard of forest floor there are 27 square yards of leaves and needles that blanket the crown.
- Reforestation protects topsoil from degradation from the baking heat of the sun, wind, and rain.
- Trees help prevent erosion as they act like an umbrella and reduce the energy from raindrops and reducing silting of bayous and streams. The slowing of the water stream allows more water to soak into the ground and recharge our aquifers.
- Tree roots help loosen soils allowing water to infiltrate the soil.

---

**101 Sherbrook Circle • Conroe, Tx 77385-7750**  
**(936) 321-6990 Metro • (936) 273-1200 Conroe**



[www.natureswayresources.com](http://www.natureswayresources.com)

- Microbes living on tree roots help biodegrade toxic chemicals.
- Trees prevent desertification.
- Scientists at the Swiss Federal Institute have discovered that trees scream (produce ultra-sonic sounds that we cannot hear) when they are thirsty. They also found that fungi on the root systems of trees filter out heavy metals in the soil preventing them from harming the tree. Additionally, trees use the fungal network to communicate with other trees even of different species.
- Research at the University of British Columbia has confirmed that trees talk to each other. We have known for decades that they share nutrients and transfer them to each other by the fungal network in the ground. They found that trees can also recognize their own siblings and can nurture them hence the new term "Mother Tree." It is strongly suspected that the fungus receives a commission from the tree for providing this service in the form of carbon compounds that it requires.
- Conifers forests also produce terpenes that rise into the air and causes moisture in the air above them to condense, which then forms clouds (reduces heating from sunlight) and eventually rain. This helps create the conditions they love which are cool and moist.
- A study in Sweden published in the Journal of Landscape Ecology found that for pollinating butterflies, it is important for them to be close to forests rather than agricultural fields. They examined 32,000 butterflies from 77 species while studying how landscapes affect the butterflies. When grasslands were surrounded by forests there were higher density of butterflies and increased number of species.
- Shade that trees provide, can reduce water requirements for turfgrass by 50% or more.

---

**101 Sherbrook Circle • Conroe, Tx 77385-7750**  
**(936) 321-6990 Metro • (936) 273-1200 Conroe**



**Social:**

- Trees are beautiful and pleasing to look at.
- Trees provide food for caterpillars which are high protein, energy dense food that birds need to feed their young.
- Trees provide beauty through their flowers and fragrance.
- Trees are host plants for many species of butterflies and moths.
- Trees provide a tapestry of colors, scents, and forms to enjoy that change throughout the year
- The color green that is found on tree leaves is relaxing to humans and relieves eye strain.
- Trees screen unattractive views and soften the hard outline of concrete, asphalt, steel, etc. which leads to an improved sense of community.
- Trees absorb and block sound, reducing noise pollution by 40-50% and even more in some cases.
- Under the canopy of a big shade tree is often a great place to relax and visit.

I know as a boy we would play outside even in the heat of a summer afternoon. When we became too hot our favorite place to cool off was under a big umbrella Chinaberry tree which produced a solid dense shade.

- Researchers have been studying trees in the forest and how they grow and work together. We now know that trees communicate with each other. This may be by

---

**101 Sherbrook Circle • Conroe, Tx 77385-7750**  
**(936) 321-6990 Metro • (936) 273-1200 Conroe**



[www.natureswayresources.com](http://www.natureswayresources.com)

airborne chemicals they produce, signals over fungal hyphae, and even by insect messengers.

We know that trees will share water or nutrients with each other as a tree in an area with an abundance of the resources will give or trade the resource with its neighbors. Trees also share the products of photosynthesis like sugars from an evergreen to a deciduous tree that has not leafed out. All this communication is becoming known as the "Wood Wide Web".

- Another 10-year study on forests, published in the journal Nature Communications (2018), has confirmed that the larger the diversity of animals and fungal species, the healthier the forest.

These same ideas apply to our flowerbeds and gardens, the larger diversity of plants, the less insect and disease problems we have.

Even little things like the type of mulch we use makes a huge difference. Pine or hardwood bark, dyed mulches, etc. do not contain or feed beneficial microbes. A good composted native mulch (sometimes called aged) which is made from hundreds of species of plants will contain thousands of species of good microbes. Little things add up to make our gardens healthier.

- Neighbor hoods with lots of trees have less violence and other crime.

- Trees and landscaping give us a sense of peace and reduce fear.

---

**101 Sherbrook Circle • Conroe, Tx 77385-7750**  
**(936) 321-6990 Metro • (936) 273-1200 Conroe**