# JOHN'S CORNER:

## NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

### *by John Ferguson*

Questions we often get asked are: Why should I plant trees? When should I plant trees?

The answer to the second question is NOW! Late fall and winter are the best time to plants trees.

The answer to the first question is enormous. The benefits of trees are tremendous and without trees, life as we know it would not exist.

The benefits of trees can be broken down into several categories: Environmental, Social, Health, and Economic. So, let's 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, tree produce root exudates composed of carbon atoms that feed microbes and store carbon in the soil as humus
- Trees absorb odors and pollutant gasses (nitrogen oxides, ammonia, sulfur dioxide, ozone, smoke, and other gasses)
- Trees remove particulate matter like dust and ash from the air that forms smog and causes breathing problems

- 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
- Tree roots help loosen soils allowing water to infiltrate the soil
- Microbes living on tree roots help biodegrade toxic chemicals
- Trees prevent desertification

## Social:

- Trees are beautiful and pleasing to look at
- Trees provide food for caterpillars which then provide the high protein food birds need to feed their young
- Trees provide beauty through their flowers
- 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 is relaxing and relieves eye strain
- Trees screen unattractive views and soften the hard outline of concrete, asphalt, steel, etc.
- 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

## Health:

- Many trees produce a wonderful fragrance form leaves, flowers, roots, bark and wood that stimulates our immune system

- Looking at green leaves from trees help us relax and stimulate our immune system for better physical and mental health
- Exposure to trees and other greenery lowers heart rates and relaxes brain wave patterns
- Airborne chemicals emitted from green leaves lowers our blood pressure and helps us feel good.
- Many trees have medicinal properties
- Sounds from multiple song birds living in the trees lowers our stress levels
- The fragrance of the forest floor from fungi and other microbes decomposing dead wood (from the trees) lowers our blood pressure and sharpens our mental focus and it increase production of serotonin and other beneficial chemicals in our brains
- Parks with trees promotes greater physical activity
- Girls whom have a view of trees at home score higher on self-discipline tests
- Trees provide oxygen for us and other life forms to breathe
- The canopy of trees protects children from ultra-violet radiation
- Trees provide food for humans, animals, birds, insects and other life
- Studies have shown that if there is a view of trees out their windows patients heal faster with fewer complications
- Children with ADHD show fewer symptoms when they have access to trees and nature
- Neighborhoods with trees have less crime than neighborhoods without trees
- The environmental benefits of trees reduce asthma
- Trees by lowering particulate matter pollution outdoors reduced indoor particulate pollution in adjacent homes by 50%

**Economic:**

- Trees provide shelter, fuel, food, medicine and building materials
- Trees reduce the heat island effect in our cities as well as lower our electric bills (as much as 50% in some areas)
- The evaporation from a single tree can produce the cooling effect of a ten-room sized air conditioner operating 20 hours per day
- A lush canopy can reduce summer temperatures 6-8 degrees as compared to neighbor hoods without trees
- Trees around agricultural land increase yields of the main crop and reduce problems
- Trees clean the air, produce oxygen, intercept airborne particles, and reduce smog which helps meet urban air pollution requirements
- In urban areas with trees there are lower crime rates
- Trees used as windbreaks can reduce residential heating costs 10-15%, while shading and evaporative cooling can lower cooling costs by 20-50%
- Urban forests improve water quality
- A Palo Alto study found that trees in the city can intercept 135 million gallons of rainwater reducing flooding
- Trees capture and slow rainfall and their roots filter water and recharge the water table this reduces run-off which reduces flooding which saves stormwater management costs
- For every 5% increase in tree cover added to a community, storm water runoff is reduced by approximately 2%
- Trees clean and reduce polluted water from reaching our bays
- Homes with trees sell more quickly and are worth 5-15% more than those without trees

- Homes where the entire street is lines with trees sell for an average of 25% more than the same house without trees
- Trees enhance economic stability by attracting businesses, since people linger and shop longer when trees are present and they spend more money
- When a canopy of trees is present, apartments and offices rent more quickly, have a higher occupancy rate, workers have less absenteeism and are more productive
- Trees reduce wind velocity during storms reducing the damage
- If only three trees were planted for every unshaded single-family home in US cities, this would be 100 million additional trees, saving society $2 billion per year in energy costs
- Lower income neighborhoods have less trees and the lack of trees is associated with the problems they face

**"The wonder is that we can see trees and not wonder more"**

**Ralph Waldo Emerson**