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The Roots of Sustainability—by Michael Chaplinsky

Up to 60% of the total food manufactured by a plant through photosynthesis exits out its root system for the *sole* purpose of feeding the beneficial microorganisms that exist around the roots in the area called, 'The Rhizosphere'

It's pretty amazing, that plants recognize the importance of having a healthy microbial culture around so much, that they freely give up to 60% of their manufactured wealth. The plants feed the beneficial microorganisms (fungi, bacteria, actinomycetes) around their roots for the expressed purpose of gaining personal protection and increased nutrition. Since this occurs in nature and has since the beginning of time, then naturally everything we do should follow this science and evolutionary track. So for that reason, soil biology is an important part of a plant's health and survival.

The use of soil improving/microbial enhancing/root building products will greatly help promote a health soil and rhizosphere. Proven products like humates used during the winter months will cause your plants to excel in the spring. Just because a plant is dormant doesn't mean its dead. Plenty of change can occur at the microbial and chemical level that won't be apparent until the spring flush arrives.

The goal is to have ***Sustainable Landscapes*** that use a minimum amount of resources to reach excellence. This can be accomplished through the use of quality organics added to the soil to promote and propagate healthy soil biology with biodiversity. Healthily soils will benefit the soil structure, the soil microorganisms, and the plants. Plus it's a very in cost effective way to manage a nutrient program.

Story continued on the web at: www.audubonlifestyles.org

Inside this issue

Mycorrhizal Fungi?

This is one of the best kept secrets in the landscape business…

The word "mycorrhiza" (plural: mycorrhizae or mycorrhizas) comes from the Greek language and literally means "fungus roots." You may not know it, but mycorrhizal fungi are crucial parts of the health of 95% of the plants growing throughout the world. In fact, they've been helping plants grow for millions of years!

Mycorrhizal fungi are tiny, harmless critters that attach themselves to plant roots and actually help plants to make use of water and organic nutrients in the soil. They live on the roots of roughly 95% of all earth's plant species. In exchange for what they provide the plant, the plant offers the fungi a meal of sugars (fixed carbon) produced by the photosynthesis process.

10 Facts About Water

Our Earth seems to be unique among the other known celestial bodies. It has water, which covers three-fourths of its surface and constitutes 60-70 wt % of the living world. Water regenerates and is redistributed through evaporation, making it seem endlessly renewable. So why worry?

Actually, only 1% of the world's water is usable to us. About 97% is salty sea water, and 2% is frozen in glaciers and polar ice caps. Thus that 1% of the world's water supply is a precious commodity necessary for our survival.

To follow are 10 more facts about water:

1. One drop of oil can make up to 6.6 gallons of water undrinkable.
2. 70% of the world's water is used for agriculture, 22% for industry and 8% for domestic use. Low and middle income countries use 82% of their water for agriculture, 10% for industry and 8% for domestic use. High income countries use 30% of their water for agriculture, 59% for industry and 11% for domestic use.

3. A person is able to survive one month without food but only five to seven days without water.
4. Of all the Earth's water, 97.5% is salt and 2.5% is fresh. Of the fresh water, about 70% is locked in glacial ice and 30% in soil, leaving under 1% (.007% of the total fresh water) readily accessible for human use.
5. A water footprint, or virtual water, is the amount of water used in the entire production and/or growth of a specific product. For example, 2.2 lbs of beef has a water footprint of 4,226.8 gallons; one sheet of paper has a water footprint of 2.6 gallons; one cup of tea has a water footprint of 9.2 gallons; and one microchip has a water footprint of 8.5 gallons.
6. It takes 25 to 50 gallons to take a five-minute shower; 2-7 gallons to flush a toilet; 2 gallons to brush one's teeth; and 20 gallons to hand wash dishes.
7. 6,000 children die each day from preventable water-related diseases.
8. The population of the United States is approximately 304 million; the population of Europe is approximately 732.7 million; 1.1 billion people lack adequate drinking water access; and 2.6 billion people lack basic water sanitation.
9. The average American uses about 151.9 gallons of water per day, with about 60% of that being used out-of-doors (watering lawns, washing cars, etc.) The average European uses 66 gallons of water per day. 1.1 billion people lack adequate water access, using less than 5 gallons per day.
10. The average American uses 30.3 times more water than a person who lacks adequate water access; the average European uses 13.2 times more water than a person who lacks adequate water access.

The Colorado Golf Carbon Project Makes Huge Strides At This Year's Golf Industry Show

On Thursday, February 10, 2011, Golfpreserves® presented a check for $12,000.00 to the Golf Foundation of Colorado representing carbon sequestered from 1,800 acres of the more than 2,000 acres of turfgrass donated by golf courses participating in the Colorado Golf Carbon Project. Golfpreserves® assessed, verified, and calculated the amount of carbon sequestered using scientific research developed at Colorado State University and the USDA/ARS in Fort Collins where this donated check will help to continue the research in turfgrass carbon storage, carbon footprint of turf systems and their environmental stewardship.

The United States Golf Association, The Lawn Institute, Audubon Lifestyles, The International Sustainability Council, Turf Feeding Systems, and Golfpreserves® are leading this effort by being the first to purchase *Carbon Certificates* representing a total of 1,800 metric tons of carbon dioxide, removed from the atmosphere by photosynthesis and stored in the soil by turfgrass, at verified sites in Colorado. These sites include THE BROADMOOR, Colorado Springs, Colorado, APPLEWOOD, Golden, Colorado, BRECKENRIDGE, Breckenridge, Colorado, and EAGLE RANCH, Eagle, Colorado.

"This is the first time that certificates created from carbon sequestered by turfgrass have been purchased in the United States. The major purchasers are the leading representative organizations of both the golf and turfgrass industries, the USGA and the Lawn Institute, the research foundation of Turfgrass Producers International. This is also the first time that carbon sequestration certificates' purchased proceeds have been dedicated to research for carbon sequestration, energy management, and environmental stewardship as it is related to turfgrass operations," says Noble Hendrix, co-founder of Golfpreserves®.

"Audubon Lifestyles and the ISC are excited to be part of a program that put economic value on the environmental process of sequestering carbon. It is our hope that the Colorado Golf Carbon Project serves as a successful pilot that can be expanded nationwide in an effort to support environmental research and help establish and communicate the economic and environmental value of carbon that is sequestered by turfgrass," said Eric Dodson, CEO of Audubon Lifestyles. "It is important to note that the benefits of turfgrass are not limited to golf courses. The turfgrass in home lawns, sports fields, parks, and roadsides, are all equally beneficial in sequestering carbon, but of equal importance is we are finally putting economic value on environmental assets," concluded Dodson.

Critter of the Season— Spring Peepers

Spring peepers are to the amphibian world what American robins are to the bird world. As their name implies, they begin emitting their familiar sleigh-bell-like chorus right around the beginning of spring.

Found in wooded areas and grassy lowlands near ponds and swamps in the central and eastern parts of Canada and the United States, these tiny, well-camouflaged amphibians are rarely seen. But the mid-March crescendo of nighttime whistles from amorous males is for many a sign that winter is over.

Spring peepers are tan or brown in color with dark lines that form a telltale X on their backs. They grow to about 1.5 inches in length, and have large toe pads for climbing, although they are more at home amid the loose debris of the forest floor.
They are nocturnal creatures, hiding from their many predators during the day and emerging at night to feed on such delicacies as beetles, ants, flies, and spiders.
They mate and lay their eggs in water and spend the rest of the year in the forest. In the winter, they hibernate under logs or behind loose bark on trees, waiting for the spring thaw and their chance to sing.

Learn Moreabout Spring Peepers at:
eNature.com

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The Roseate Spoonbill

The most distinctive characteristic of the roseate spoonbill is its long spoon -shaped bill. It has a white head and chest and light pink wings with a darker pink fringe and very long pink legs. The roseate spoonbill is about two and a half feet in length with a wingspan of about four and a half feet. Both males and females have the same plumage and coloring. The male is slightly larger than the female and its bill is a little longer.

The roseate spoonbill can be found on the coasts of Texas, Louisiana and southern Florida. It is also found in the tropics and in Central and South America. The roseate spoonbill lives in mangrove swamps, tidal ponds, saltwater lagoons and other areas with brackish water.
Roseate spoonbills are very social.

They live in large colonies with other spoonbills, ibises, storks, herons, egrets and cormorants. Roseate spoonbills fly in flocks in long diagonal lines with their legs and neck stretched out.

A Birding Experience—by Ronald G Dodson

I spent a couple of months working out of Dunedin, Florida this winter and nearly every morning I would take a walk, ending up traipsing through a bit of natural Florida called Hammock State Park. While the Park is not huge by some sanctuary standards, it is a green oasis in the midst of urban growth. The sounds of vehicular traffic fade into the distance and I walk the trails that are bordered by oaks that are festooned with Spanish moss. Being in Florida and close to the Gulf, there are plenty of watery habitats in the park, including a couple of nice streams that meander their way through the greenery on their way to the Gulf of Mexico.

Water, vegetation and Florida equal plenty of wildlife and that includes lots of birds. Seeing birds while thinking about the fact that my Upstate New York home was covered in a couple of feet of snow, always made these walks more pleasant!

On 3 occasions while poking through the park I spied a pinkish colored bird either sitting on top of a decapitated, lone palm tree trunk or skulking along the side of one of the creeks in the distance. Unlike the Egrets or Herons, who were not overly shy, these pinkish birds seem to always keep their distance and are just far enough away that even with binoculars I could really get a great look at them. But, clearly their pinkish color and their odd shaped bill made mistaking the roseate spoonbill impossible.

Continue this story on the web at: www.audubonlifestlyes.org

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Additional Resources & Sources

Audubon Lifestyles	www.audubonlifestyles.org
The International Sustainability Council	www.thesustainabilitycouncil.org
American Society of Golf Course Architects	www.asgca.org
The United States Golf Association	www.usga.org
Golfpreserves	www.golfcourseproject.com
eNature.com	www.enature.com
Turf Feeding Systems	www.turffeeding.com
National Geographic	www.nationalgeographic.org