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Sodium Affected Soils

Though not a plant food nutrient, sodium plays a critical role in soil and turfgrass health. The primary problem posed by high sodium is not a toxicity hazard, but a rapid decline in soil structure that can begin when sodium base saturation exceeds the critical 5% level. High sodium reduces soil permeability, resulting in drainage and compaction problems that cause a decline in turf vigor. For the turfgrass manager it's critical to understand how sodium accumulates in the soil and what steps can be taken to amend high sodium levels.

The primary cause of soil sodium accumulation is poor quality irrigation water, but its not just water-borne sodium that creates the problem. A number of other factors influence the sodium permeability hazard of irrigation water, such as bicarbonate and calcium levels.

If irrigation water poses a sodium permeability hazard a number of treatment strategies can be employed, depending on water quality and soil type. Irrigation water treatment has become a hot topic in recent years, in part due to the increased reliance on poor quality municipal effluent water. But treatments are often over-prescribed or sold to treat sodium related problems that simply don't exist. Before making amendment decisions ensure that your soil and irrigation water quality analysis is conducted by an accredited, reputable laboratory. Moreover, seek the advice of a Professional Agrologist before deciding on your amendment or treatment options.

Inside this issue

Cookie Conservation

Girl Scouts of the USA (GSUSA) will soon be using its famous Girl Scout cookie boxes to raise awareness about the global need to develop stronger sustainability practices within the palm oil industry. Beginning with the 2012-13 cookie season, each cookie box will include a GreenPalm logo as a symbol of Girl Scouts' commitment to address concerns about the deforestation of sensitive lands currently caused by the production of palm oil.

The GreenPalm program aims to promote certified sustainable palm oil, to prevent the destruction of the rainforests, and to support the Roundtable on Sustainable Palm Oil (RSPO).

Reclaimed Water

Reclaimed water or recycled water is treated to remove solids and certain impurities, and is a terrific used for sustainable landscape irrigation or to recharge groundwater aquifers. The water conservation that reclaimed water brings is a terrific solution for previously used water and stormwater rather than discharging the treated water to surface waters such as rivers and oceans.

Most water systems need to dispose of reclaimed water somewhere…. so why not just put it in landscapes right?

However there is also a problem with reclaimed water, many times that most are not aware of, and that problem is sodium. Most reclaimed water contains high levels of sodium. When reclaimed water is used for irrigation the sodium becomes held in the soil, and continues to build up the more it is applied until it reaches a toxic level for the plants, and the landscape becomes damaged.

Have you ever seen a white crusts that develops on a dead landscapes soil after the water evaporates?

Sodium is the invisible poison in water. You will never see it, but it will slowly poison the soil and kill the landscape. The plants will not look aesthetically pleasing and will become stressed.

The solution is simple and cost effective. Use fertigation to inject specially formulated organic products to release the sodium, and to build the soil biology to produce a healthy soil. This will move the sodium out of the root zone and restore the health of the landscape.

A Member's Landscape Restoration Project

Austin Ranch is a 1900 acre development in north Dallas that has 35 acres of landscapes in common areas, apartments, offices, and retail. The area is irrigated from a well fed lake and the water is high in Sodium.

They use to irrigate 24 hours a day 7 days a week, and the landscape was in very poor condition from the buildup of Sodium in the soil from the irrigation water. In a word their water usage was unsustainable.

They needed help, and turned to Turf Feeding Systems to help them solve their water and landscape issues.

The project began in August 2011, and has already shown terrific plant response and is well on its way towards a full recovery.

They installed a fertigation system at the irrigation pump station to treat the irrigation water with a blend of Sodium Blocker and organic based soil and plant nutrients. This combination released the sodium tied up in the soil and the nutrients brought the soil health back and fed the landscape back into recovery.

The fertigation program reduced their water window from 24 hours a day down to 6 to 8 hours per day, which reduced the costs associated with constantly running the well pump. In addition, by using less water from the well, it then became available for use in the next phases of development, which previously it was not.

Sodium is the biggest limiting factor for irrigating landscapes with well water and reclaimed water. But, there are safe economical practices to treat those issues and recover the landscape.

Bermuda Triangle to Become Humpback Whale Haven

The Bermuda Triangle holds an often maligned and mysterious place in ocean lore, but for endangered humpback whales, it's about to get a little more welcoming.

The National Oceanic and Atmospheric Administration (NOAA) recently announced a letter of intent signed by the Bermuda Department of Environmental Protection to establish a sister sanctuary to NOAA's Stellwagen Bank National Marine Sanctuary for the gentle giants.

The sister sanctuary would not be the first for Stellwagen Bank, located in the Gulf of Maine, and its humpback whales. Beginning in 2007, Stellwagen established the world's first sister sanctuary with the Dominican Republic's Santuario de Mamiferos Marinos de la República Dominicana to protect the endangered migratory marine mammal on both ends of its range.

There are five distinct populations of humpbacks in the North Atlantic, with Stellwagen Bank being the feeding grounds for one of the groups. The other four are off the coasts of Nova Scotia, Norway, Greenland and Iceland. Down in the Caribbean, the whales mingle during breeding season, and one of the largest congregation spots is off the coast of the Dominican Republic.

But protecting just two points in the humpbacks' range is not enough to ensure their survival. Bermuda will protect the species in its migratory corridor, rather than the furthest reaches of its range, the first marine mammal sanctuary to offer such a waypoint.

"This is a first step in putting together conservation stepping stones throughout their migration," said Nathalie Ward, coordinator of the Sister Sanctuary Program for Stellwagen Bank National Marine Sanctuary.

When the Bermuda sanctuary is established, hopefully by the end of this year, NOAA will issue a memorandum of understanding to exchange data that will include photos of the whales and coordinate research, education and strategies for engaging locals in whale conservation. The massive creatures are threatened not only from direct human pressures, such as ship strikes or fishing net entanglement, but also indirect pressures such as pollution and ocean noise.

The goal is to grow the family of sanctuaries throughout the Caribbean, Ward told OurAmazingPlanet. NOAA is currently negotiating memorandums of understandings with the French Antilles and some Dutch territories in the eastern Caribbean.

"If we don't have protection in different parts of the humpback's range," Ward said, "it's going to impact our population."

The sanctuaries allow for more focused research that can reap benefits for the whales.

"This is really a pioneering program," Ward said. "The expansion of our Sister Sanctuary Program will play a powerful role in protecting endangered humpback whales, and the opportunity for international cooperation in marine conservation is invaluable."

Critter of the Season—
The Big Cypress Fox Squirrel

The Big Cypress Fox Squirrel is a species in decline through much of its former range. While this critter is dwindling in numbers, it is commonly seen on golf courses, particularly in Southwest, Florida. Some of the healthiest populations of the squirrel are to be found on the fairways and habitats of the links in Lee and Collier Counties, Florida.

Fox squirrels may have earned their name from their gray and red fur coat that resemble that of a gray fox, from their comparatively large size and thick bushy tail, and/or from peculiar way of running along the ground which gives the appearance of a small fox.

Fox squirrels live from four to seven years of age on average in natural conditions. One individual lived to 18 years of age in captivity.

Fox squirrels spend more time on the ground than gray squirrels and are slower moving. They forage for acorns, nuts, fruits, insects, mushrooms, buds and tubers, so they require habitats with an open understory. These include open pine flatwoods, sandhills, mixed pine-hardwood areas and rangeland interspersed with trees. In Florida, the fox squirrel may also be found in cypress stands and occasionally mangrove swamps.

The University of Michigan Commits $100 Million to Sustainability

The University of Michigan will add 37 hybrid vehicles to its fleet of buses and install solar panels on its North Campus as part of an additional $14 million commitment to greening the campus.

The University has already devoted $64 million for green buildings and $20 million to support the Office of Campus Sustainability and M-ride, a free campus transportation system that aims to lower emissions and noise pollution by reducing vehicular traffic.

The 37 vehicles - the first of which will be delivered in December - will result in one of six University buses being a hybrid. And in addition to the solar panels, a new golf course on the South Campus will be powered by geothermal energy, a first for the University.

Another priority is to promote sustainable agriculture and support local Michigan farmers. From the residence halls to the unions and hospitals, the university is introducing purchasing guidelines to ensure at least 20% of its food comes from local, sustainable sources.

Good job UM! Keep up the great work.

Ford, Toyota to work together on hybrid trucks

Ford Motor Co. and Toyota Motor Corp. have decided to work together on a gas-electric hybrid engine to power pickup trucks and sport utility vehicles.

The companies signed a deal to share development costs, saying they want to make the technology more affordable for customers and bring it to market faster.

Both companies now sell hybrid cars, but trucks need a different system with power to tow and haul heavy loads.

Hybrid trucks would help automakers meet stricter government fuel economy and pollution standards in the U.S. and other countries. In the U.S., the fleet of new cars and trucks will have to average 56.5 miles per gallon by 2025, although trucks will have lower mileage targets.

It will take a year for the companies to figure out who will do what research, Ford product development chief Derrick Kuzak said. He said it would be at least two or three years after that before a system can be developed. The companies aren't sure yet what kind of gas mileage it will get.

Ford said it's the first time it has worked with Toyota on any project.

It's not the first hybrid system for pickup trucks and SUVs. General Motors Co., Chrysler and BMW AG collaborated on a system unveiled several years ago. The system powers some GM pickups and SUVs but has not sold well.

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