



>> WHEN CATTAILS GROW in water they take up mass amounts of nitrogen in the water. Here cattails are being planted in drainage areas of an athletic field.



>> Top Left: A BLUE HARING perch on tree that fell in the pond makes up part of our buffer zone.
>> Middle Left: ST. MARY'S of Maryland helps teach high school athletic directors and coaches correct ways to fertilize their fields for grow in or regular maintenance.
>> Bottom Left: TEACHING COACHES how to mow sports turfgrass without causing injury to plants and avoiding weed encroachment and disease pressure.

OUTREACH & EDUCATION

This should be the most important step a sports turf manager takes in their strategic environmental plan for their property. Educating the general public in your environmental maintenance plan does not only highlight your company images, but it also serves as a tool for the public to understand how and what we are doing to protect our environment.

- Composting for difficult soils
- Wildlife Habitats/ Biological control

SUSTAINABILITY: it is not a small world after all

SPORTS TURF MANAGERS are not as few in numbers as you might think. The Sports Turf Managers Association (STMA) is more than 20 years old but we are still a fairly young national organization, although we have strengthened considerably under the leadership of president Troy Smith, CSFM and past presidents, educators, sports turf managers and CEO Kim Heck, along with her dedicated hard working staff who gave this organization its professional glow.

Valuable data can be gained from sports turf athletics fields, acreage and water sources and I would recommend the STMA try to inventory sports turf manager athletic fields/acreage/water sources, etc for important data that they can use for educational and lobbying aspects.

On a national scale, there are a lot of properties sports turf managers care for and in fact, we are often overlooked as professionals because the general public associates or compares our trade with golf course superintendents.

We all know it is two different worlds, but what have we done to highlight our properties, operational expenditures, investments and to protect our environment? We are all doing our part to stimulate the economy, promote safety on the field, and promote environmental awareness. Let's look at comparisons between golf courses and sports turfs from this recently documented survey.

Sports turf is growing consistently at a rate higher than golf courses, but let's look at the bigger picture. An 18-hole golf course averages 30,000 people a year and a sports turf professional football game can average 50,000 people per day/per game. That's a lot of folks for outreach and education; now imagine the amount of storm water that could be filtered and retained for irrigation.

Look at the acreage as a classroom through signage for millions of children and adults. Let's imagine we could preserve 5% for wildlife habitat from the total of 2,800,000 of sports turf and convert it into 140,000 acres of wildlife. That would equal a

\$455,000 fuel savings and consider the equipment hours and labor savings. Now, let's look at the ground work.

The amount of athletic fields/sports turf is difficult to estimate due to there is no accurate records kept for acreage. However we can break it into the following categories of K-12, colleges, universities, and professional fields according to the Turf Industry /Fact Sheet Sports Turf Advantage Division of Plant Sciences-Turfgrass Research Center College of Agriculture, Food and Natural Resources University of Missouri. There is a total of 2.8 million acres of sports turfgrass fields nationally and broken into four groups:

Type of Facilities	Total number of Facilities
Park & Recreation	13,000
College & Universities	2,200
K-12	16,000
Professional Sports	800

Total National Average of sports turf acreage = 2,800,000

According to the National Golf Foundation, the leading golf courses in the United States are broken down into five different categories:

Type of Facilities	Total number of Facilities
Public	7,958
Resort	995
Private	4,256
Semi Private	3,541
Military	197

Total National Average of golf course acreage = 2,542,050

- Storm Water Runoff Management
- Responsible turfgrass maintenance
- Responsible water management for turfgrass
- Reducing your carbon foot print
- Recycling
- Energy Performance

STORM WATER MANAGEMENT TIPS

Storm water pollutants should be every sports turf managers concern to help protect their local watershed. There are many things we all can do and should do to reduce the storm water pollutant load that is harming our local watershed and our local wildlife, food production and quality of life. First let's look at the storm water it filters, typically non pervious surfaces, for example, roof tops, parking lots, sidewalks and roadways generate lot of storm water pollutants. These are measured in gallons. Look at the ratio chart below.

Many gallons are affecting aquatic life in our local watersheds from alga bloom to contamination poison from heavy metals. Stop and think about where the water goes when you wash your turf equipment daily or the storm water runoff from rain events within your sports facility.

There are many different types of storm water pollutants that can reach your tributaries associated with your sports complex. A list below indicates harmful side effects to our local watershed. Understanding some of terms associated with managing storm water is critical. Best Management Practices or (BMPs) is a term use for managing storm water. The basics is know how much you are generating or averaging through a typical rain storm of 1 inch.

- Examples for reducing your nutrient load:
- Add rain gardens where storm water accumulates on your property.
 - Use cattails along culverts and ditch lines.
 - Plant several water lilies in storm water retention pond to block photosynthesis to prevent alga bloom.
 - Mow different heights around your athletic fields to slow down sheet water movement with higher grasses mows around the field.
 - Practice good housekeeping with all your

fertilizer products. Clean up spills or shop areas that stores fertilizers. Do not let them go down the drain.

- Clean all sports facility drains and keeps them free of silt and other types of yard waste that can harm your local watershed.

Here are some watershed pollutants to think about:

Metals. There are more than 50 elements that can be classified as heavy metals, 17 of which are considered to be both very toxic and relatively accessible. Toxicity levels depend on the type of metal, its biological role, and the type of organisms that are exposed to it. Human and aquatic life is at-risk when these types of metals are introduced into our local watershed. My thought on this is simple: we use these chemicals for a purpose on our sports fields, but let's not stop reading the labels for directions. Let's put safeguards into place (please look at the solution list). We have to be responsible for applying these chemicals or for looking at safer alternatives for pest control on your sports turfgrass.

- Mercury is one of the common metal pollutants.
- Polychlorinated biphenyls (PCB's)
- Polycyclic aromatic hydrocarbons (PAH)
- Organophosphate pesticides (herbicides and insecticides)
- Organochlorine pesticides DDT, chlordane and chlorothalonil
- Lead
- Arsenic
- Cadmium
- Copper
- Zinc
- Chromium

Nutrients. These chemicals affect plants and animals' survival rates in our local watershed. When too many nutrients make their way into local rivers, streams and the bay, they can create conditions that are harmful for blue crabs, bay grasses and other underwater life that might be harvested recreationally or commercially. Excess amounts of nitrogen and phosphorus, are two types of nutrients that are local and are a national reason for poor water quality in our watershed.

Nitrogen, broken down from activities

listed below.

- Emission from vehicles, turf equipment, electric utilities, etc.
- Chemical fertilizers applied in aquaculture and suburbia settings
- Treated wastewater discharge from industrial facilities and municipal wastewater treatment plants
- Manure from aquaculture land
- Septic systems that leach into watershed Phosphorus, broken down from activities listed below.
- Erosion sediment from stream banks in urban and suburban areas
- Manure from aquaculture land
- Treated wastewater released from municipal and industrial wastewater facilities
- Chemical fertilizers from aquaculture and suburbia land
- Natural sources and forest land

SOLUTIONS

- Incorporate cattails in swells or drainage areas on the sides of sports fields and other areas to absorb nitrogen and other harmful storm water pollutants.
- Wash off mowers on pervious surfaces like grassy areas.
- Provide secondary containment for all gas, oil, pesticides, fertilizers and spill kits.
- Provide rain gardens for sport fields, parking lots.
- Plant native trees and shrubs that can aid in filtering and reducing storm water pollutants.
- Incorporate buffer zone for rivers, lakes, ponds, streams, creeks, ditch lines, culverts and athletic fields.
- Naturalize areas within your complex.
- Patrol for recycling/litter.
- Feed the soil not the turf using 100% organic fertilizers that can stop volatilization and process a high WSN rate of 70% -80% for slow release feeding. Liquid fertilizer and synthetic fertilizers can break down fast, resulting in vitalization, rapid runoff and more high rates of WIN with 20-40 of product rapidly breaking down. These types of products break down very fast and which result in a flush of N at one time.
- Manage appropriated turfgrass for your climatic zone that can reduce your pesticide and fertilizer input.
- Add rain gardens where storm water accumulates and stands within your property.
- Plant several water lilies in storm water retention pond to block photosynthesis to prevent alga bloom.

One inch total rain fall non-pervious surface	
Roof Top (1000) sq-ft	600 Gallons of storm water runoff
Sidewalk/Streets (237,600) sq ft-	One Block 6,500 Gallons of storm water runoff
Parking Lot (43,560) sq ft	27,000 Gallons of storm water runoff
Tennis Court (7,200) sq-ft	4,100 Gallons of storm water runoff
Natural Turfgrass Athletic Field (80,000) sq-ft	20,000 Gallons of storm water (Depending on soil Structure)
Synthetic Turfgrass Athletic Field (80,000) sq-ft	27,154 Gallons of storm water run off

- Mow different heights around all your fields to slow down sheet water movement with higher grasses mows around the field.

- Practice good housekeeping with all your fertilizer products. Clean-up spills or shop areas that stores fertilizers. Do not let them go down the drain.

- Clean all sports facility drains and it keep them free of silt and other types of yard waste, that can harm your local watershed.

IMPROVING SOIL STRUCTURE IN A SUSTAINABLE WAY

Your soil profile can be a challenge to propagate turfgrass in athletic fields depending on your horizon zone. Soil textures can also be a challenge depending on the organics percentages in your sand, silt, or clay athletic fields. Applying compost can add beneficial fungi to fight certain turfgrass diseases and to help retain water, which in return reduce storm water runoff and provide much needed nutrients to turfgrass. Examples include: grass clippings, leaves, prunings, aeration cores, coffee grinds, annual flowers, shrub trimmings, shredded Christmas trees, and wood chips.

ENERGY PERFORMANCE

The Environmental Protection Agency along with Energy Star has developed a program called “The National Building Association for Professional Sports Stadiums and Athletic Facilities.” The program is a competition among other professional sports facilities and arenas for energy performance. The EPA picks one facility that has managed to reduce and conserve the greatest amount of energy and gives them an award to showcase their success.

Here are some other outstanding organizations that help promote environmentally sound sports turf maintenance:

- Global Sports Alliance: Kevin Trotta, turfpmguy@aol.com

- Audubon International: Jim Sluiter, jsluiter@auduboninternational.org

- EPA-Energy Star: Laura Senchack, LSenchack@icfi.com

- National Watershed Coalition: Michael Hebert, mhebert@mckinneytexas.org

Get involved with your local watershed association. Lead by example within your community and offer your ideas to conserve or protect your local watershed.

As sports turf managers, we should highlight and showcase our many different types of environmental stewardship to promote sports turf property for the general public. Together, we could reach over a million people a year through sporting events thorough outreach and education. We can filter over a billion gallons of storm water pollutants and conserve a million gallons of fuel and tons and tons food waste and yard waste through composting.

ST. Mary’s College of Maryland’s president, Dr. Joseph Urgo, is committed to protecting our natural resources. He stresses for all of us in every department on campus to be educators in everything we do regardless if we are faculty, staff or administration. His vision is for us to help him make our campus a learning environment and then it can become a positive one with endless possibilities.

Just like president Urgo goal if we work together through teamwork, then we can rally together to protect our nation’s athletic fields and set example on to how to reduce are carbon footprint and storm water pollutants. ■

Kevin Mercer is superintendent of grounds at St. Mary’s College of Maryland.

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