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SPORTSFIELD AND FACILITIES

MANAGEMENT

August 2014

SportsTurf



FIELD OF THE YEAR:

AERATION & SEEDING WINNING COMBO FOR SEATTLE UNIVERSITY

FIELD SCIENCE:

MAINTAINING NATIVE SOIL vs. SAND-BASED fields



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On the cover:

Former golf superintendent Kevin White, now Athletic Fields Supervisor at Seattle University, perfects Championship Field, home to the Seattle University Men & Women's varsity soccer programs. The field serves as both the practice and game field. Its vicinity to Century Link Field also makes it an attractive venue for hosting training sessions and special events for MLS, NWSL, national teams, and English Premier League teams.



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From the Sidelines

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Water conservation coming to a field near you

The July 16 headline read, "California OKs \$500 fine for wasting water." The article began, "California water regulators Tuesday approved fines for washing cars, watering lawns or hosing down sidewalks after revised figures showed that residents have increased consumption despite calls for big cutbacks amid the state's severe drought. They are the **first** emergency conservation measures passed to try to force Californians to wake up to the three-year-long dry spell, the worst in decades."

Those of us who live in regions where drought is not yet considered an issue might ignore this news but my check of the US Drought Monitor, which is produced in partnership between the University of Nebraska-Lincoln, the US Department of Agriculture, and the National Oceanic and Atmospheric Administration, revealed that half of the 50 states have at least one area considered to be in at least short-term drought.

As a refresher, here are some points to consider to save water, courtesy of Grass Seed USA, a coalition of grass seed farmers and academics:

- Avoid overwatering: Many overwater their turf, which not only wastes water but harms the grass in the long run. A simple trick to determine whether your turf needs watering is to stick a screwdriver into the ground. If it enters the soil easily, your lawn has plenty of water already. If you have trouble getting the screwdriver into the ground, it's time to give the grass a drink.

- Adjust Watering to Temp: Suggest 0.2 to 0.25 inch of water 2 to 4 times a week starting in the early summer as the rain ends. During peak heat and drought stress irrigate 6 times per week at 0.25 inches per event. When considering

the fact that turf is a shallow rooted plant and to prevent leaching and ruff of nutrients, pesticides and water, irrigation rates should not exceed 0.25 inches.

- Water during the cooler hours for best results: Always water your turf during the cooler hours of the day. Early morning and evening are the ideal times to water. Cooler air and less wind mean water is absorbed directly into the grass, with less moisture lost to evaporation. Watering during the heat of the day can actually scald and burn grass.

- Save water by selecting a large, low drop sprinkler setting. Air currents can easily catch a light spray and keep the water from reaching your grass. To avoid this, adjust your sprinkler setting for larger drops closer to the ground rather than misting in the air. You'll end up with a more thorough watering while saving water and money.

- Keep your grass a little taller in the summer. You can also reduce the amount of water lost to evaporation by keeping your grass slightly taller in the summer, so that the blades shade the roots and soil surface.

- Create a routine and stick to it. Whatever watering routine you choose, try to stick with it. Grass does best with a consistent watering schedule, and starting and stopping a watering pattern can stunt your turf's growth. This is especially true right after fertilization.

Clarification

In our July issue on page 36 we published an article highlighting the 100th anniversary of The Toro Company. We should have alerted readers upfront that the article was written by a public relations agency that works for Toro. We regret not doing so. ■

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It's hot so keep cool

The heat of summer is here and it not only affects us as people but it affects our surroundings and the turfgrass we maintain. We can try to keep cool by going to the beach, jumping in a pool, running under the sprinkler or seeking air conditioning. The turf is not as fortunate. It needs help keeping cool, and lucky for the turf we are professional sports turf managers that can lend a helping hand.

Irrigation is a key. When was the last time you audited your system to ensure it was delivering the right amount of water where you need it? (See page XX for how to conduct an irrigation audit.) STMA has resources on irrigation use as does the Irrigation Association. Check the sprinkler heads, check the pressure and check that you are not watering at the wrong times leading to disease and other issues. Make sure the water is getting to the turf and not to some parking lot.

Lexington is one of the pilot sites for the Environmental Certification program that STMA is developing. The assessment tool is a good way to review your irrigation practices to ensure you are delivering water to promote healthy turf and be environmentally responsible. Other ways we can help the turf is to make sure we have proper mowing heights and sharp blades. Keep the crowns cool by not exposing them to the extreme heat and keep the blades sharp to minimize tear and openings for disease. You can also try to limit use

but this does not always work. At the end of the day what user group or individual does not want to feel cool grass under their feet when playing a sport or activity or just sitting down to take a break? Keeping turf healthy and cool helps people keep cool.

The summer heat also means that the year is now half gone. Hard to believe. Let's give a hand to all those maintaining professional soccer stadiums and baseball stadiums as they are in the busy time of their year keeping fields safe, playable and looking good. For us municipal folks, the Year has just begun. Take advantage of your new budgets and resources to strengthen your turfgrass and get it ready to handle fall play. August is when we have a 2-week window to get the football and soccer fields ready for high school play on August 20. Keep looking to STMA for resources that will help you do your job.

Summer is also a time for people to read so check the list of books recommended for certification prep. Who wouldn't want to sit down on cool grass on a nice summer evening to read a book that Dr. Goatley helped author? Think about becoming certified and help get the number of CSFM's to 200. Certification strengthens the profession and shows your commitment to being the best sports turf manager you can be. So enjoy the summer and know that people look forward to being on cool turf to help beat the heat and know you make a difference. ■



“WORKING FOR THE WEEKEND”: managing a large soccer complex

After a weekend of play the Waukegan (IL) Park District SportsPark soccer fields are in need of some rest. Most of the 13 natural turf fields play an average of 10 games each weekend beginning May 1 through October. The 138-acre Waukegan SportsPark includes those 13 natural turf soccer fields, a championship synthetic turf soccer/football field, four softball fields, two concession facilities, nine restroom facilities, a maintenance building, picnic areas and a playground with water spray features. Maintaining a soccer complex to a high standard is a diverse and complex process, most of which goes unseen by the general public. From a turf manager’s standpoint that is just

fine. Our goal is to provide the best playable, safe, and aesthetically pleasing athletic surfaces as possible.

The maintenance operations are under the direction of Certified Sports Field Manager, Noel Brusius. The SportsPark/Athletic Field maintenance crew is responsible for all aspects of the site and not just the turf or fields itself. This can include trash control, cleaning restrooms, building maintenance and program assistance.

Outside of hosting tournaments, special events or make-ups, all soccer field use is typically scheduled on the weekends. This provides a Monday-Friday work schedule that allows both rest and regular maintenance in addition to aggressive cultural practices. The phrase “working for the weekend” is one of our mottos.

Monday’s focus is on other areas of the complex, not the fields. Primarily trash clean up and restroom cleaning. With nine restroom buildings in use over the weekends, cleaning on Monday is a staff member’s full day job. Areas outside the soccer

» The phrase “**working for the weekend**” is one of our mottos.

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Facility & Operations

fields (what we call in-betweens) are mowed at 3 inches.

On **Tuesdays** the soccer fields are mowed in an east/west direction. The 30 acres of Kentucky bluegrass/perennial ryegrass fields for regular league play are mowed 2-3 times a week at 1¾ inches. This day is also our garbage/recycle day in which all the trash and recycling containers must be placed curbside for service.

Wednesdays are the day we maintain the 15 acres of common and landscape areas. This includes mowing, edging, and landscape detail including flower beds and/or tree rings. Wednesdays are also weekly meetings with the Recreation Department staff to review scheduled league games or upcoming tournament events. In a perfect world we would be able to paint all fields on Friday after being mowed.

In our case all painting gets done on **Thursdays**. This includes our regular soccer fields in addition to youth fields or any other layouts we have for a particular weekend, such as lacrosse or 3-on-3. Because we are limited on the number of fields, the youth fields are painted in red on top of full size fields in a perpendicular fashion to spread wear.

On **Fridays** all fields are prepped for use. Fields are first mowed (north/south) followed by goal placement with "No Play" signage in goal mouths. Also staff places player benches and recycling containers at each field. One vital aspect to our operations is our weekly overseeding practices to the goal mouth areas and any other high stress spots. 100% perennial rye is hand spread and left to be cleated in during play. This practice has proven to be crucial to maintaining adequate turf in the goal mouth areas. We learned quickly that if a soccer field is not in play, "Keep Off" signage must be placed on Fridays, otherwise the field becomes the weekend team warm-up practice site.

Play begins at 8:30 am on Saturday and wraps up around 6:00 pm on Sunday, when fields are closed and goals are put away. Illinois law mandates anchoring of soccer goals when in and out of use. Staff is assigned

Saturdays and Sundays to monitor restroom building maintenance, trash cleanup and enforce field closures.

The opening of the SportsPark has greatly enhanced the district's capacity to expand adult and youth league play and attract a number of tournaments. In 2014, seven soccer, one Ultimate Frisbee, one cricket and one lacrosse tournament have been scheduled. We just completed back-to-back weekends of US Soccer Club tournaments in June. With weekend tournaments comes a myriad of additional items to add to the Monday through Friday task list.

CULTURAL PRACTICES

Cultural practices play an important role in our operations. We are constantly doing some type of aeration. The overwhelming challenge in maintaining adequate turfgrass on our fields is related to two very common issues that occur when a field is constructed using native soils: 1. the soil was aggressively compacted by the contractor in order to meet grading requirements and; 2. less than desirable native topsoil was used. Soil testing has shown our soil structure is low in organic matter and high in clay content.

The bottom line is that ongoing compaction and drainage issues have made it extremely difficult to grow grass. Also the past two winter seasons have taken their toll on turf conditions, estimating 15-20% of *Poa* and perennial ryegrass turf loss. Gypsum applications at 500 lbs/acre are used to help combat soil conditions by helping to improve soil structure, nutrient uptake, and root penetration.

Aer-way slicing is performed monthly in multiple directions; Seed-a-vating is done at a minimum of twice in the spring and fall totaling more than 5,000 lbs/seed/year; deep tine aerating is done as much as possible, on average 4 times/year; core aeration is done every fall.

Our aggressive aeration on all fields has become essential with field

Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
<p>1) SP A 2) SP B 3) SP C (60 of US) 4) SP D 5) Dugdale (60) 6) SE Valley (60) 7) SW Valley (60)</p> <p>Wednesday's Landscape Detail</p> <p>Paint Soccer (Red & White) by Trail on #s 4, 5, 6</p> <p>Paint Fuel Lines</p> <p>Mow Crew at Today</p>	<p>1) SP B 2) SP C 3) Graebe 4) Bauer 5) Dugdale (70)</p> <p>Mow Softball (3rd-Coh) - New Subdivisions</p> <p>*Base Training @ PMF-K Sun, Mon, Tue, Wed, Thu, Fri, Sat @ 12:30 - 3:30</p> <p>Mark 200 ft on Softball Fields</p>	<p>6 AM START</p> <p>1) SP A (60 of US) (8:00) 2) SP B (8:00) 3) SP C (8:00) 4) SP D (8:00) 5) Belvidere N (10:00) 6) Belvidere S (10:00) 7) Graebe 8) Bauer 9) Dugdale (60) 10) SE Valley (60) 11) SW Valley (60)</p> <p>CF: 6-8</p> <p>Friday Pickups: - Goals - Cones (Red) - Done - Benches - Containers</p> <p>*Mow All Goals -> 4000 (mow) behind</p> <p>- Mow Soccer (10/5)</p> <p>7:30 - AME mowing *PIXEL: OFF @ NOON</p>	<p>1) SP A (60 of US) (8:00) 2) SP B (8:00) 3) SP C (8:00) 4) SP D (8:00) 5) Belvidere N (8:00) 6) Belvidere S (8:00) 7) Graebe (9:00) 8) SW Valley (10:00)</p> <p>*Soccer on # 1, 4, 5, 6, 8, 9, 10, 11, Champ @ 9:00 AM</p> <p>Paint Clean Up 1. Norel - Game 2. Joe - Game</p> <p>Preps 1. Tony - Game > S.P. Grossa Victory 2. Ted - Game 3. Steve - Game > S.P. 4. Billy - Game 5. Lance - Game > Belvidere Victory 6. Carter - Game</p> <p>Restrooms 1. Stan - 7-9:30</p>	<p>1) SP A (60 of US) 2) SP B 3) SP C 4) SP D 5) Belvidere N 6) Belvidere S 7) Graebe</p> <p>*Soccer on # 1, 4, 5, 6, 8, 9, 10, 11, Champ</p> <p>Paint Clean Up 1. Norel - Game 2. Joe - Game</p> <p>Preps 1. Tony - Game 2. Ted - Game 3. Steve - Game 4. Billy - Game 5. Lance - Game 6. Carter - Game</p> <p>Restrooms 1. Stan - 6-2</p>	





use that begins in May and goes through October. If all fields are not needed on a particular weekend a rotation is set in place giving the needed fields as much rest as possible. Before each season begins we shorten the fields to provide goal mouth areas time to recover; when the first major event of the year takes place (generally June) we lengthen to optimum sizes.

Fertility plays an important role as well. Since the complex opened in 2011 the soccer fields receive an average of 5.5 lbs/N/1000 per year. Soil samples are collected twice a year and any tweaks to the schedule are made. Granular applications are made every 4 weeks using a 50% slow release nitrogen ranging from .5/N/1000 to .75/N/1000. We supplement these granular applications with a foliar application at .10/N/1000 (25% SRN). Before major events micronutrients and amino acids are applied to help with recovery and stress from the anticipated increased traffic. It also helps aesthetically before play.

Herbicides and other pesticides continue to get evaluated on a year by year basis. Landscape and common areas receive spring and fall applications for general weed control. The soccer fields tend to be more challenging as we are consistently overseeding. Additionally *Poa annua* control measures have been attempted. Imprelis, Tenacity, Progress, and Xonerate have all been applied either as a weed or *Poa* control. The Sentinel Irrigation Central Control System, using three gateway field satellites and including 863 heads and 198 valves, is also part of maintenance responsibilities. ET rates are generated by an on-site weather station.

To enhance irrigation, improve drainage, and minimize localized dry spots, wetting agents are applied once a month for five applications

per year. There is also one synthetic field lined for football and soccer. Maintenance includes sweeping and grooming the field monthly.

Our complex has 15 acres of Native Plantings which are along the perimeter and between parking lots creating no-mow zones. A Rain Garden catches storm water from the maintenance facility and bioswales manage storm water runoff from the parking lots. Some contractual services are used to help properly maintain these natural areas. These services include invasive and weed control efforts. If time permits, staff is used to assist with contractual services to reduce overall costs.

Our success would not exist without the dedicated staff. Our 2014 staff includes full-time employee Tony Diaz and seasonal staff members: Miguel Gonzalez, Joe Ayala, Tomas Medina, Fernando Fernandez, Paul Fish, Jr., Rich Krapf, Billy Biang, and Scott Gordon. Also, interning this year is Drew Fleagle, Purdue University student in the Turf Science and Management program. These are the guys that make it happen, and having a staff that buys into the big picture of what you are working to accomplish is extremely important.

Trial and error are proving to be priceless as we have learned, and continue to learn, what it takes to maintain the SportsPark soccer complex and to achieve all goals above and beyond expectations. Our “working for the weekend” attitude assists us in accomplishing this. ■

Noel Brusius, CSFM, is Maintenance Worker III – SportsPark/ Athletic Fields (Parks Division) for the Waukegan (IL) Park District; Mike Trigg, CSFM, is Superintendent of Parks for the District.

PROTECT YOUR OUTDOOR POWER EQUIPMENT WITH PROPER FUELING & SAFETY

Editor's note: This article was written by Suzanne E. Henry, President, Four Leaf Public Relations LLC, which works with the Outdoor Power Equipment Institute.



Sports turf managers, coaches and athletic support organizations use outdoor power equipment regularly. You might use lawn mowers on your fields, a string trimmer to keep vegetation in check, a chain saw to clear downed trees, a generator to power on-site electrical needs by the field, or a utility type vehicle (UTV) to haul debris and trash.

But did you know that the gas you put in your car or truck may no longer be safe for use in your outdoor power equipment or small engines?

If you said no, you are not alone. Nearly two-thirds (64%) of Americans say they assume that any gas sold at the gas station is safe for all of their cars, as well as boats, mowers, chain saws, snowmobiles, generators and other engine products, according to a survey by Harris Interactive with the Outdoor Power Equipment Institute (OPEI) in 2013.

As higher ethanol blended fuels become more common in the marketplace, it is increasingly important for consumers to know what types of fuel can be used in outdoor power equipment. New fuel blends containing greater than ten percent ethanol—such as E15, E30 and E85—are becoming available at gas stations throughout the country and may be lower in price than other blends. Fuel containing greater than 10 percent ethanol can be harmful and cause damage to small engines. In fact, it's illegal to use more than 10 percent ethanol gasoline blends in outdoor power equipment.

To help educate consumers on proper fueling, OPEI, an international trade association representing 100 small engine, utility vehicle and outdoor power equipment manufacturers and suppliers, created the “Look Before You Pump” campaign to mitigate the risk of consumers inadvertently misfueling equipment investments.

Known by its emblematic prominent, red warning hand symbol indicating “OK” for 10 percent ethanol and “No” for mid-level ethanol blends (such as E15, E30, E85), the campaign is spreading nationwide and now appears in major retailer outlets and among independent equipment dealers.

Fueling your outdoor power equipment properly and maintaining it well can ensure your equipment is reliable and lasts longer. It's also important to use outdoor power equipment safely, so you and the people around you are not hurt. Here are some tips to help.

Drain gasoline from the tank and replace it before starting equipment that has been sitting for a while. Gasoline that is untreated and left sitting in a fuel tank for more than 30 days can deteriorate and destabilize. This can cause problems when you want to start or run your equipment. Before starting any equipment that has been sitting for a while, be sure to drain the old fuel from the tank. You may want to use a fuel stabilizer.

Turn off the fuel valve. After you are finished with using your equipment, switch the fuel valve off until it's time to use the equipment again.

Avoid using greater-than-10 percent ethanol gasoline blends in any outdoor power equipment or small engine. Never use greater-than-10 percent ethanol gasoline blends, which are now commonly available at gas stations throughout the country and may be lower in price than other blends. It is illegal to use

Fuel containing **greater than 10 percent ethanol can be harmful and cause damage to small engines.** In fact, it's illegal to use more than 10 percent ethanol gasoline blends in outdoor power equipment.



higher-ethanol gasoline blends in outdoor power equipment or small engines. What's more, such fuels can be harmful and cause damage to small engines.

Exercise caution when fueling. Fill your gasoline tank only when the engine is cold. If you need to refuel before completing a job, turn off the machine and allow the engine to cool. Don't spill when you fill. Never light a match or smoke around gasoline.

Be careful when starting your engine. Move your chain saw or other outdoor power equipment at least 10 feet (3m) from the fueling point before starting the engine.

Store fuel properly. Store gasoline in a clean, sealed plastic container that's specifically intended and designed for fuel storage, and store it away from direct sunlight.

Use the right type of fuel for your equipment. When it's time to refuel your equipment, be aware of the type of gasoline it needs and look before you pump.

Read your outdoor power equipment operating manual. Make sure you know how to properly use and maintain your outdoor power equipment. If you have lost your manual, search online for a replacement (remember to check the model number) or request one from the manufacturer.

MAINTAINING YOUR EQUIPMENT

Read and understand your owner's manual. Your manual contains the manufacturer's instructions for taking care of your small engine, including fueling instructions. If you have lost your manual, look online to find a replacement (remember to match the manufacturer and model number to your equipment) or request a new manual from the manufacturer.

Inspect your equipment for any problems. Make sure belts and hoses are not loose. Check for loose bolts and screws on machines that experience a lot of vibration during use. Accumulations of grass, leaves or excessive grease can cause a fire hazard. Check the line regularly on your trimmer and have replacement line or a new spool ready when you need it. Check the O-rings and hose connections on your pressure washer before its first seasonal use.

Sharpen those blades. Start each cutting season with a new or newly-sharpened chain saw blade. For a clean look and to promote healthy grass, sharpen the blades on push and riding mowers prior to mowing season.

Keep the spark alive and the oil flowing. Change your spark plug regularly as directed by the product manufacturer. See your owner's manual for a recommendation. Check oil level before each use in all small engines. This simple step can save you a lot of money and distress.

Ensure air flow is happening. Clean or replace air filters in outdoor power equipment prior to first use and throughout the season as needed.

Don't be afraid to seek out the professional advice or the service of a qualified servicing dealer. Take your riding mower or tractor to an experienced servicing dealer every year for a safety and maintenance inspection. If your equipment is experiencing problems, take it to a dealer.

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The screenshot displays the SportsTurf website with a navigation bar at the top containing links for Facebook, Twitter, YouTube, Email Newsletters, Article Archives, and Go Digital. The main content area features a sidebar with categories like Home, Deals, Equipment, Advertise, Green Media, Arbor Age, Landscaping and Irrigation, and Outdoor Power Equipment. A central article titled "The Price is right: Chad's certifications make him an industry leader" is highlighted, along with a "Find the products and services YOU NEED" section. A sidebar on the right promotes audio podcasts and a call to action: "Put your article in the hands of your audience to gain a competitive edge."

THINK SAFETY FIRST

Be careful when starting your equipment. When operating a lawn mower, inspect the mower for loose belts or hoses before you start it. Be sure no one else is nearby as you prepare to start the mower. If you use a riding mower, start it while sitting in the driver's seat, never while standing beside the mower.

Know safety procedures for every piece of equipment you use. Know how to stop the machine quickly. Do not remove or disable guards or other safety devices. Always slow down when operating any mower on a slope or difficult curve.

Commonsense is key when using a chain saw. Never carry a running chain saw when it is not being used, and be sure your work area is clear of debris that could trip you. If you are cutting down a tree, plan a retreat route for when the tree falls. Be aware of "kickback," which can happen when the nose or tip of the guide bar touches an object, or when the wood you're cutting pinches the saw chain in the cut.

Give portable electric generators lots of ventilation. Generators should not be used in an enclosed area, even if the windows or doors are open. The muffler on a generator can get extremely hot, so any combustible materials (leaves, grass, brush, etc.) should be cleared away before operating. Generators produce carbon monoxide, an odorless, colorless and poisonous gas.

Think safety when using your edger or trimmer. Wear protec-

tive gear. Ensure that your work area is clear of any stones or debris that could fly up. Never put your hands or feet near the cutting area. Stop the motor when moving from location to location with your trimmer.

Drive UTVs and lawn mowers with care. Always mow up and down slopes, never across. Avoid sudden starts, stops or turns. When a vehicle is loaded, the center of gravity is higher, and so is the risk of overturning. To keep the vehicle stable and avoid overturning, drive slowly and do not turn the vehicle in mid-slope or while on a hill.

Be aware of others in your work area. Pay attention to other people who might venture into your work area. Turn off your power equipment if it is not safe. If needed, block off the area with temporary signage or rope.

Dress for the job. Wear the proper attire for the work you are doing, including substantial shoes (no sandals or flip-flops), long pants and snug-fitting clothes. Protective glasses, chaps, eye or hearing protection, reflective clothing, head gear or gloves may be needed when operating certain types of outdoor power equipment.

Taking precautions to ensure your outdoor power equipment is fueled, maintained properly, and used safely, will help to keep you safe and your equipment in good shape throughout all seasons. For more safety tips for outdoor power equipment visit <http://www.opei.org/education/safety/tips/> ■

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John Mascaro's Photo Quiz

John Mascaro is President of Turf-Tec International

Can you identify this sports turf problem?

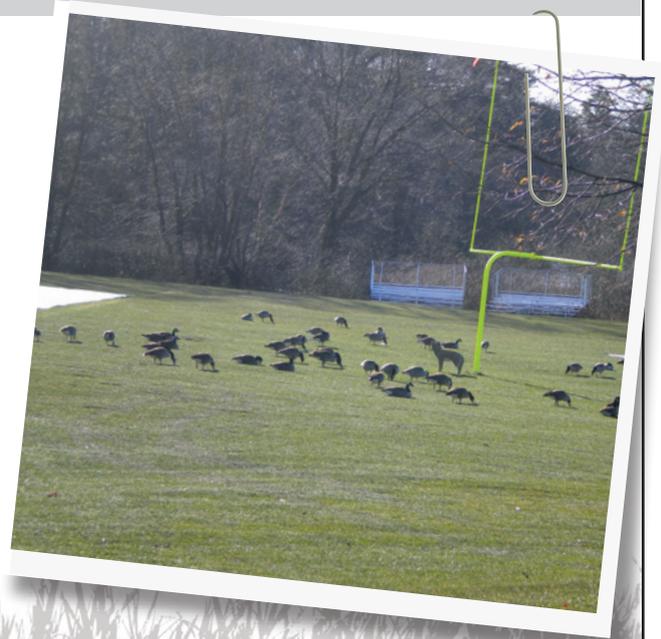
Problem: Geese on field

Turfgrass area: Private boarding high school

Location: Dedham, Massachusetts

Grass Variety: 50% bluegrass/50% ryegrass

Answer to John Mascaro's Photo Quiz on Page 23



Background illustration courtesy of istockphoto.com



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TOURING THE NEW HOME OF USA FIELD HOCKEY

Some dads build their kid a treehouse or a fort in the backyard.

Former Auntie Anne's Pretzel giant Sam Beiler built his daughter the largest and most spectacularly diverse, sports, entertainment and events complex in North America—Spooky Nook Sports.

Beiler originally wanted to build a few volleyball courts as a nod to his daughter's competitive passion, but when big dreams meet big dollars, big things happen and Spooky Nook is, if nothing else, big.

The massive, 50-plus acre complex lies in the rural heart of Pennsylvania's Amish country in East Hempfield Twp., minutes from downtown Lancaster. Despite its middle-of-nowhere feel amid farmland, Spooky Nook now appears on the international sporting map as it is the new home for

the US Women's Field Hockey program, formerly based in Southern California.

Moreover, the Nook is a veritable Ellis Island of amateur athletics welcoming sweat-soaked masses yearning to play from Pennsylvania and beyond. A July basketball tournament drew more than 350 teams. A national field hockey tournament in February drew 161 teams.

The air dome, the facility's signature landmark, resembles a giant bed pillow and is easily visible from the nearby highway. The Astroturf field beneath it must be watered regularly in order to comply with international field hockey safety standards.

Adjacent to the pillow is the sprawling, metal exterior of a massive, former distribution warehouse for Armstrong Flooring. The 700,000 square feet beneath that roof is where the Nook's legend is being forged.

▼ **Some of the 60,000 square-feet** of Connor Hardwood, the largest single expanse of Connor Hardwood in the world.



For 10 years before its rebirth, that facility was a dank, dark and dirty, man-made home for raccoons, mice, and creatures that climbed, but the basic structure was sound. Beiler bought the property for \$11 million, raccoons and all.

“When we walked the property in November of 2011 we both had a vision for what it could be,” said Steve Goris, Spooky Nooks Chief Operating Officer. “We literally sat down with a piece of graph paper and cut out all these little courts in different sizes and kind of laid out where things could line up...we handed that to some architects.”

Before the first mouse had been evicted, Goris’ calculator began whirring. “We wanted to figure out ways we could program so that we could get a return on investment,” he said. “We didn’t take a ‘build it and they will come’ attitude,” Goris said. “We did a lot of research. When you’re investing your money you need to diversify your portfolio. Well this business is kind of the same.”

On June 3, 2013, just 8 months after renovation work began on the \$25 million project, Spooky Nook opened its doors.

Now, the only creatures climbing inside arrive in cars, wear athletic gear, and pay to scale the 30-foot-high walls, synthetic rock arches, and other challenging features in the facility’s climbing center.

A separate “Clip N’Climb” area, the first of its kind in the United States, invites all levels of climber, young and old, to ascend walls and towers knobby protrusions.

Just inside the entrance is a food court with smoothies and other

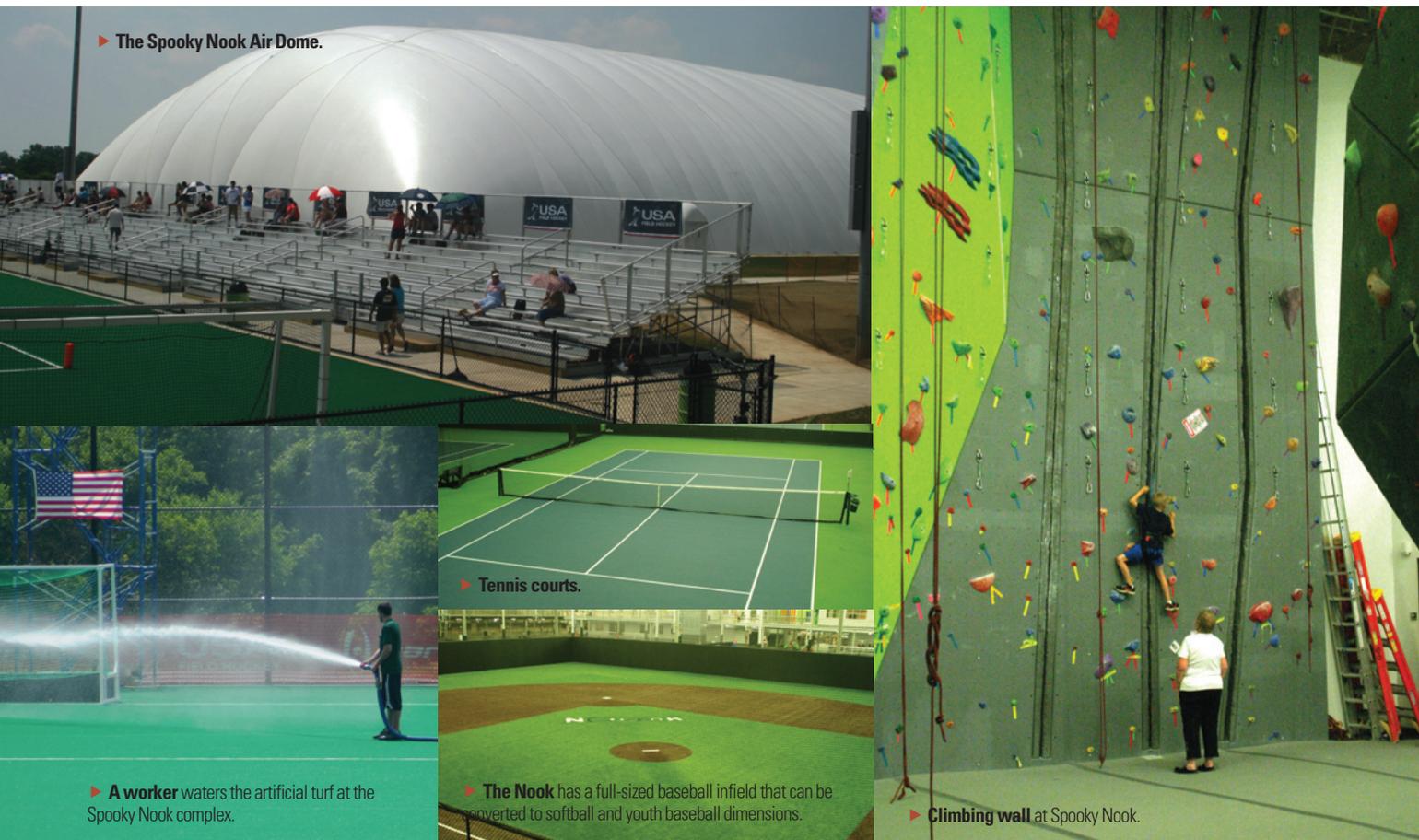
healthy foods, and an arcade whose primary function is to occupy the bored siblings of competing athletes or even competitors who are in between games.

A 100,000 square foot, elevated mezzanine concourse overlooks all of the indoor courts and fields. It also houses the general membership gymnasium as well as a special training area for competitive amateur and pro athletes. All the gym floors were installed by Ecore Commercial Flooring of Lancaster.

The 10 NBA-quality, Connor Sports hardwood courts total 60,000 square-feet, the largest single concentration of Connor Hardwood anywhere on the planet according to Spooky Nook’s Director of Business Development, Patrick Grant.

There are 28,000 square feet of modular Connor Sport Court distinguished by its blue color and used for multiple sports including basketball, volleyball, field hockey, and Futsal, a popular indoor, 5-on-5 version of soccer. There are six premium quality tennis courts. “We needed it to be able to do multiple sports. If you have a basketball game you need to be able to dribble on it and at the same time it needs to be able to take the pounding that indoor field hockey puts on it with sticks striking on it all the time. You can’t really do that on hardwood,” Goris said.

There are three 60-by-120 foot enclosed Astroturf fields as well as a full-sized, adult baseball infield that can be altered in size to accommodate softball and youth baseball. There are 13 baseball/softball batting



► The Spooky Nook Air Dome.

► A worker waters the artificial turf at the Spooky Nook complex.

► Tennis courts.

► The Nook has a full-sized baseball infield that can be converted to softball and youth baseball dimensions.

► Climbing wall at Spooky Nook.

and pitching tunnels with nets that can be raised to the ceiling. That corner of the building is popular with local colleges and high schools looking for winter workouts.

Jumping, running and sweating is not a prerequisite of facility use. There are more than 100,000 square feet of exhibit space, and smaller meeting rooms, for everything from birthday parties and banquets to reunions, conventions, proms and holiday parties.

Orthopedic Associates of Lancaster, a partner in the facility, has offices near the front of the building. It offers on-site physical therapy offices and sports injury urgent care for Nook participants.

The other half of the giant former warehouse is known as the field house. It is home to 110,000 square feet of flooring divided into two, 55,000 square-foot sections. The area can accommodate 10 full-sized indoor field hockey pitches, 30 volleyball courts, or 16 basketball courts. A 15-worker conversion crew is responsible for rolling out the Astroturf, or taking it off depending on the event being held.

Behind the facility is a full-sized, multi-use synthetic turf field. Water cannons and hoses keep the turf to international specifications. Nearly all of the water used is collected from rainfall via a complex system of rain gutters on the facility's 14-acre roof. One inch of rain yields a half million gallons of water which is stored in holding tanks.

The turf under the air dome is a water-based synthetic over a rubberized form of asphalt, a design that helps the field retain moisture. There

are two fields like it in the world, the other being Manheim, Germany, according to Grant.

Sensors detect moisture, temperature and wind speed. Two giant, tractor-trailer sized air rotations units process that information and maintain perfect conditions.

Three brand new, sand volleyball courts, covered with special volleyball sand, were recently completed. In typical Spooky Nook fashion, the courts can be converted for use in sand soccer, sand field hockey, and sand training for sports performance.

The only major hiccup in the for the Nook was a transportation and parking nightmare that occurred in late February when a 3-day national field hockey tournament and a 2-day state volleyball tournament overlapped. "It was all part of the learning curve," Grant said. "We felt like we've actually improved since then. We've expanded some of our lots, added additional parking, added additional staff, and we feel like it's behind us."

There's more growth on the horizon. The Nook will open a 132-room hotel in the spring of 2015, Goris said.

"We want it to feel like you are getting away from maybe from the sports environment to a place where you can kind of "Zen out" a little bit." ■

Jeff McGaw is a free lance writer in Harrisburg, PA.

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SALT SOURCES IN IRRIGATION WATER

Nearly all waters contain trace levels of salts, which should not cause a concern if the water is used for irrigation. In addition, water runoff from salt water can be a problem for crops and animals. The volume of water used for irrigation is so large that the amount of salt that enters the soil is minimal. The volume of water used for irrigation is so large that the amount of salt that enters the soil is minimal.

Storm surge related flooding could directly induce salinity problems if land previously free of such issues via storm water runoff.

The total volume of water used in a typical year is estimated to be 1.5 trillion gallons. This volume is used for a variety of purposes, including irrigation, and the amount of salt that enters the soil is minimal.

Salinity	ppm	ppm (mg/L)	Salinity (ppm)	Salinity (ppm)	Salinity (ppm)
Blue water	< 1	< 1000	100-2000	1.0-1.0	1.0-1.0
Brackish water	1-30	100-300	3000-30000	3.0-30.0	3.0-30.0
Sea water	30-35	3000-35000	30000-350000	30.0-35.0	30.0-35.0
Brackish water	1-30	100-300	3000-30000	3.0-30.0	3.0-30.0
Sea water	30-35	3000-35000	30000-350000	30.0-35.0	30.0-35.0
Brackish water	1-30	100-300	3000-30000	3.0-30.0	3.0-30.0
Sea water	30-35	3000-35000	30000-350000	30.0-35.0	30.0-35.0
Brackish water	1-30	100-300	3000-30000	3.0-30.0	3.0-30.0
Sea water	30-35	3000-35000	30000-350000	30.0-35.0	30.0-35.0

Salinity is a measure of the amount of dissolved salts in water. It is measured in parts per million (ppm) or parts per thousand (ppt). The amount of salt that enters the soil is minimal.

NATURAL WEATHER PATTERNS

Natural weather patterns can cause salt water to enter the soil. This is a natural process and should not be a concern.

Storm surge related flooding could directly induce salinity problems if land previously free of such issues via storm water runoff.

Salinity is a measure of the amount of dissolved salts in water. It is measured in parts per million (ppm) or parts per thousand (ppt). The amount of salt that enters the soil is minimal.

MANAGEMENT OF SALT IN IRRIGATION WATER

Management of salt in irrigation water is a key concern for farmers. There are several ways to manage salt in irrigation water.

Salinity is a measure of the amount of dissolved salts in water. It is measured in parts per million (ppm) or parts per thousand (ppt). The amount of salt that enters the soil is minimal.

Element	# of samples	Range	Average
Calcium	12	1.0-1.0	1.0
Magnesium	12	1.0-1.0	1.0
Sulfate	12	1.0-1.0	1.0
Chloride	12	1.0-1.0	1.0
Sodium	12	1.0-1.0	1.0
Iron	12	1.0-1.0	1.0
Zinc	12	1.0-1.0	1.0
Copper	12	1.0-1.0	1.0
Manganese	12	1.0-1.0	1.0
Phosphorus	12	1.0-1.0	1.0
Potassium	12	1.0-1.0	1.0
Nitrogen	12	1.0-1.0	1.0
Fluoride	12	1.0-1.0	1.0
Boron	12	1.0-1.0	1.0
Silica	12	1.0-1.0	1.0
Aluminum	12	1.0-1.0	1.0
Chromium	12	1.0-1.0	1.0
Cadmium	12	1.0-1.0	1.0
Lead	12	1.0-1.0	1.0
Mercury	12	1.0-1.0	1.0
Cobalt	12	1.0-1.0	1.0
Nickel	12	1.0-1.0	1.0
Selenium	12	1.0-1.0	1.0
Vanadium	12	1.0-1.0	1.0
Antimony	12	1.0-1.0	1.0
Strontium	12	1.0-1.0	1.0
Barium	12	1.0-1.0	1.0
Lithium	12	1.0-1.0	1.0
Yttrium	12	1.0-1.0	1.0
Zirconium	12	1.0-1.0	1.0
Niobium	12	1.0-1.0	1.0
Molybdenum	12	1.0-1.0	1.0
Chlorine	12	1.0-1.0	1.0
Bromine	12	1.0-1.0	1.0
Iodine	12	1.0-1.0	1.0
Fluorine	12	1.0-1.0	1.0
Oxygen	12	1.0-1.0	1.0
Hydrogen	12	1.0-1.0	1.0
Carbon	12	1.0-1.0	1.0
Nitrogen	12	1.0-1.0	1.0
Phosphorus	12	1.0-1.0	1.0
Potassium	12	1.0-1.0	1.0
Sulfur	12	1.0-1.0	1.0
Sodium	12	1.0-1.0	1.0
Calcium	12	1.0-1.0	1.0
Magnesium	12	1.0-1.0	1.0
Iron	12	1.0-1.0	1.0
Zinc	12	1.0-1.0	1.0
Copper	12	1.0-1.0	1.0
Manganese	12	1.0-1.0	1.0
Fluoride	12	1.0-1.0	1.0
Boron	12	1.0-1.0	1.0
Silica	12	1.0-1.0	1.0
Aluminum	12	1.0-1.0	1.0
Chromium	12	1.0-1.0	1.0
Cadmium	12	1.0-1.0	1.0
Lead	12	1.0-1.0	1.0
Mercury	12	1.0-1.0	1.0
Cobalt	12	1.0-1.0	1.0
Nickel	12	1.0-1.0	1.0
Selenium	12	1.0-1.0	1.0
Vanadium	12	1.0-1.0	1.0
Antimony	12	1.0-1.0	1.0
Strontium	12	1.0-1.0	1.0
Barium	12	1.0-1.0	1.0
Lithium	12	1.0-1.0	1.0
Yttrium	12	1.0-1.0	1.0
Zirconium	12	1.0-1.0	1.0
Niobium	12	1.0-1.0	1.0
Molybdenum	12	1.0-1.0	1.0

MANAGEMENT OF SALT IN IRRIGATION WATER

Management of salt in irrigation water is a key concern for farmers. There are several ways to manage salt in irrigation water.

Salinity is a measure of the amount of dissolved salts in water. It is measured in parts per million (ppm) or parts per thousand (ppt). The amount of salt that enters the soil is minimal.

MANAGEMENT OF SALT IN IRRIGATION WATER

Management of salt in irrigation water is a key concern for farmers. There are several ways to manage salt in irrigation water.

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GREEN SPORTS FIELDS USING TURF COLORANTS

▲ Digital images of colorant treated plots on a Miniverde putting green.

Most athletic fields require an established, growing turfgrass during the winter season in order to accommodate sports play. If it is a warm-season grass some people may overseed it with ryegrass for green color, particularly if the field is to be used for late winter and early spring sports. But that is not the only way of having a green athletic field. A relatively new option is to “paint the turf green.” For many years, overseeding has been the standard for providing green color over winter months. With the number of new and improved turf colorants on the market today, colorant manufacturers have given turf managers another option.

It has been called “instant overseeding”—the practice of applying a green turf colorant to dormant grass. Spring transition from overseeded grasses to bermuda-

grass is often problematic due to drought resistant cool-season grass varieties and extended cool and wet conditions in late spring, similar to what was experienced earlier this year in the transition zone. Applying colorant to semi-dormant to dormant bermudagrass fields provides an alternative to overseeding. But painting is not just for bermudagrass. I used bermudagrass in the above example since it is the most commonly overseeded grass. You can paint any grass; some even like to paint cool-season grasses such as tall fescue or bluegrass in order to mask unsightly blemishes.

FACTORS TO CONSIDER

One of the first questions asked is, “How much does one of these paint products cost?” A gallon of turf colorant

will run from \$30 to \$75, with most distributors giving volume discounts. These are concentrated products that are then further diluted before application. A typical dilution rate is one part colorant to seven parts water, although some manufacturers suggest their products can be diluted one part colorant to 15 parts water. So, carefully read the label to get an idea of how much area one can cover with the product of choice. The cost of colorant needed for per acre of athletic field using the higher recommended application rates would range from \$200 to \$500 an application, depending on colorant brand.

With seed prices currently a bit higher the past few years, using one of these products could save a field manager a bit of money when compared to overseeding. Overseeding also has added maintenance costs. Considering that overseeding will require ground preparation, seeding, watering, fertilizing, mowing, pest control, spring transitioning, etc.; colorants may be a significant labor saving alternative as well.

The painting process can be boiled down to pick/purchase a colorant, add water plus colorant to your sprayer, and begin spraying. Any type of sprayer will work, although a boom-sprayer would be much more efficient to apply. If the color is not even or dark enough, you can make additional passes to accommodate aesthetic needs. There is some clean-up, but no season-long care like with overseeding. Speaking of clean-up, be very careful to not get this product on anything you do not want green. Fences, goal posts, benches, protective padding, etc. will all absorb the colorant and may be permanently stained. Be sure to wear "old clothes and shoes" and I would recommend rubber gloves. Always use good judgment and wear personal protection equipment when using sprayers.

Depending on your field's use, there are a few other potential drawbacks to using a colorant. It does not provide a wearable playing surface like an overseeded grass. Once the dormant tissue is worn away, there is no regeneration until spring. So, the "wear factor" must be considered if you have a bunch of games or other events take place on your field during the winter.

THE RESEARCH

Over the past few years, we have conducted numerous studies at North Carolina State University to evaluate various colorant products. Our first detailed studies were applied to putting greens in fall 2008. Subsequent trials have included evaluations on bermudagrass and zoysiagrass at a great assortment of mowing heights. In total, we have evaluated more than 30 products. These products are from manufacturers/distributors such as BASF, Burnett Athletics, D. Ervasti Sales, Enviroseal, Geoponics, Harrell's, J.C. Whitlam Manufacturing, John Deere Landscapes, Milliken, Missouri Turf Colorant, Pioneer Athletics, Poulenger USA, Precision Laboratories, Solarfast, US Specialty Coatings, and World Class Athletic Surfaces. There has been a rapid increase in new products in the past 5 years in response to the growing interest in using colorants.

In the earlier studies we applied colorant treatments to completely dormant turfgrass in late October to early November using a boom sprayer at rates ranging from 40 to 160 gallons per acre (gpa). Applied to bermudagrass, colorant increased turf color from 38 to 67 percent

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Table 1. Visual colorant quality ratings following the application of turf colorant on bermudagrass in fall 2012.

Colorant Name	Colorant Quality Rating			Initial Color
	Week 1	Week 5	Week 10	
Bermudagrass	3.4	1.0	1.0	Not Categorized
Endurant	7.9	7.0	1.8	Dark Green
Enviroseal Go Green	7.0	7.0	6.8	Yellow Green
Evergreen	8.0	6.8	3.9	Green
Green Dye Turf Colorant	7.0	7.0	7.0	Yellow Green
Green Lawnger	8.8	8.3	7.0	Green
Green Lawnger-Graphics	7.0	6.0	2.4	Blue-Gray Green
Green Lawnger-Lineman	7.8	6.6	4.1	Green
Kameelyan-Bermuda	7.0	7.0	6.1	Green Blue
Kameelyan-Blue	7.0	7.0	7.0	Blue
Lesco Green	8.4	8.0	5.4	Green
Mtp Turfgreen	7.0	4.3	1.3	Blue-Gray Green
Original	7.3	6.9	5.3	Yellow Green
Regreen	7.3	7.0	6.5	Green Blue
Solarogen	7.8	7.4	4.8	Blue-Gray Green
Southwest Green	7.8	7.6	1.8	Black Green
Southwestern	3.0	1.1	1.0	Dark Green
SprayMax	8.1	6.0	3.9	Dark Green
Sugar Hill	8.0	6.0	1.8	Black Green
Super Cover	4.3	1.6	1.0	Blue-Gray Green
Titan Green Turf	7.9	7.0	5.8	Green
Turf Cote	1.8	1.0	1.0	Not Categorized
Ultradwarf Plus	8.0	6.0	1.6	Dark Green
Ultradwarf Super	8.1	7.5	2.8	Dark Green
Wintergreen	7.0	7.0	7.0	Green Blue

Quality ratings are based on the color of the colorant on a scale of 1-9 with 1=straw brown to 9=dark green. Products categorized as Blue and Yellow Green had a maximum rating of 7.



▲ Colorants applied to Tifway bermudagrass (left) maintained beside next to tall fescue area (right).

results, do not wait until the turfgrass is straw brown.

Some of the colorant-treated turf took a bluish tint over time (some quicker than others). While this may sound like a negative attribute, in one survey many people did not mind the bluish color. Why blue? Well, often green is produced by mixing blue and yellow pigments. The yellow pigments are generally not as stable as the blue pigments so as the products age, the blue tends to be the more dominant color. We also found that most of the darker, more bluish products held their color longer than the products that started out a more natural green color. The more natural green products tend to fade to a grayish color as they age.

Applying the colorants at 160 gpa provided turf color increases up to 44 percent greater than the 80 gpa treatments. Applying colorants at rates above 80 gpa also resulted in increased color longevity over the winter season. We did not expect to see such a significant rate response in longevity of the products.

More research is needed in this area to fully understand how to best use this information.

I often get asked, “What is the best colorant?” In fairness, no one turf colorant was clearly superior on both grasses in terms of natural green color at the time of application and at the end of the winter season. Results from our earlier studies generally indicated that the colorants with the best natural green color did not generally last as long as some of the others. This suggests that to have a natural green color for the duration of the study, reapplication will be necessary. A longer-lasting color, although it may have a blue-ish hue, can be achieved with minimum to no reapplication. ■

Grady Miller, PhD, is professor of crop science at North Carolina State University. Drew Pinnix, MS, is a graduate research assistant in the Crop Science Department at NC State.

relative to the control at the time of painting. Of course there was some variation in how the color was judged over time. But remember the saying, “beauty is in the eye of the beholder.” Most of these products will have a date in which they will need to be re-applied to get season-long green color. Over the 6 years we have tested these products, some years the color lasted the full winter and some years it did not. On average the best products will have good color for about 75 days.

GOOD RESULTS ON SEMI-DORMANT GRASS

In another study when the products were applied to semi-dormant turfgrass, the products performed much better due to the greater background color at the time of application. This is a very important point. Subsequent tests have proven that some background color goes a long way. Applied to semi-dormant turfgrass, the color will look better and may last longer. For optimum

John Mascaro's Photo Quiz

Answers from page 15

John Mascaro is President of Turf-Tec International

As most of you know, Canadian geese can cause significant damage to turf-grass and other surfaces due to their foraging and also their droppings cause additional problems on impervious surfaces. In addition, geese in large numbers or even small flocks that frequently visit the same area can overgraze and leave dead spots. As with many others who have struggled for goose control, this school has tried many different things, including fake coyotes, radio controlled cars (fun but frustrating), repellent sprays, lasers (these are no longer used due to FAA restrictions), chasing with utility vehicles and golf carts, dogs, as well as a

lifelike fox decoy. If you look closely at the photo, you will notice the fox decoy at the center of this flock. Apparently, the geese are showing no respect to the decoy. In fact, the Sports Turf Manager reported that as he moved the decoy around to different areas, the geese would actually go to the same area like he was protecting them!

Photo submitted by Peter Thibeault, CSFM, Sports Turf Manager at Noble and Greenough School, Dedham, MA.



If you would like to submit a photograph for John Mascaro's Photo Quiz please send it to John Mascaro, 1471 Capital Circle NW, Ste # 13, Tallahassee, FL 32303 call (850) 580-4026 or email to john@turf-tec.com. If your photograph is selected, you will receive full credit. All photos submitted will become property of SportsTurf magazine and the Sports Turf Managers Association.

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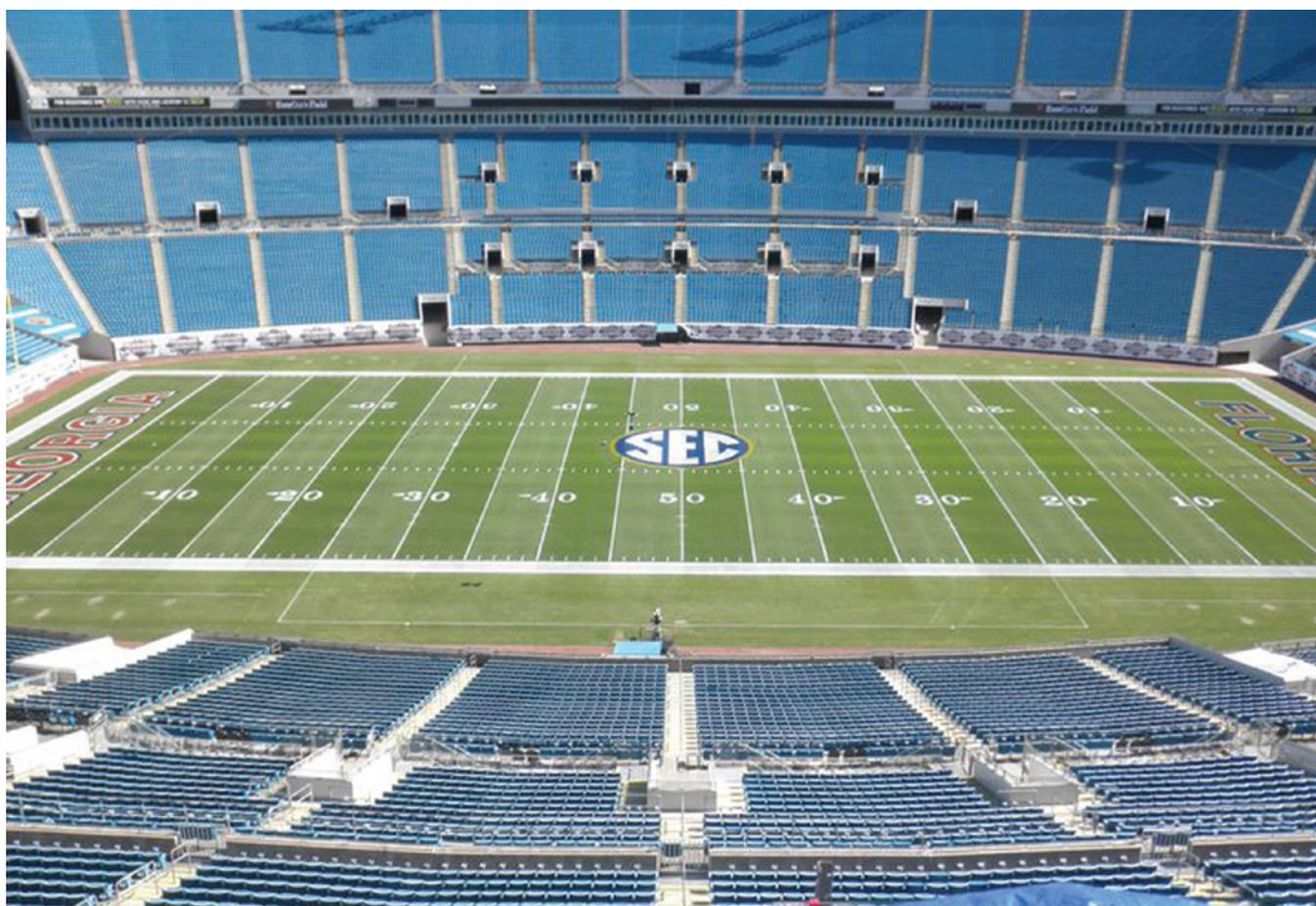
Maintenance of NATIVE SOIL compared to SAND-BASED FIELDS

While most turf managers would prefer having a sand-based field, a University of Missouri survey found around 80% of sports fields are native soil based compared to 20% being sand-based. Sand-based fields can have many benefits but unfortunately the cost of installation can be prohibitive. Regardless of the soil type, it is important to know what you are working with and how it will affect the way the field is managed.

First, let's look at what native soil and sand-based

systems are and what makes them different. A native system is an unaltered soil that was at the site before the field was built. It is usually a mixture of silt, clay, and sand. A sand-based system is typically 80-100% pure sand. The difference in soil particle sizes can cause native systems to be more prone to compaction, while sand-based systems have better resistance to compaction. Due to having higher nutrient and water holding capacity, native systems might have inadequate drainage while sand-based systems, with their higher infiltration rates, provide adequate drainage.

▼ Florida/Georgia football game on sand-based system at Everbank Field. Image courtesy of Natasha Restuccia.





◀ Left: **Bermudagrass** growing on native soil. Image courtesy of Natasha Restuccia. Right: **Bermudagrass** growing on sand-based soil. Image courtesy of Natasha Restuccia.

TOPDRESSING

In either situation it is important to topdress after aerifying. Light, frequent applications (about 1/8 to 1/4 inch depth) are preferred over less frequent, heavy applications. After topdressing, drag the material into the canopy. Topdressing material helps with thatch control as well as leveling out low spots. In native systems topdressing can be used to modify the rootzone. Topdressing with a medium coarse sand after core aerifying can help promote drainage and reduce the risk of compaction. In sand-based systems it is important to topdress using a material that is similar to the rootzone mixture already in place. Using materials with different particle sizes can lead to layering, which can have a negative effect on drainage over time.

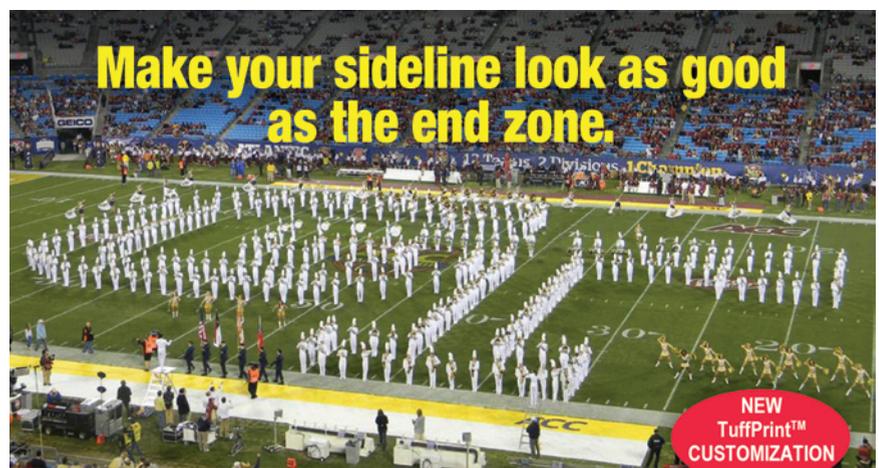
COMPACTION

In native systems, the soil particle size is not uniform which can lead to increased compaction. The coarser textured sand-based system is more uniform and has less risk of compaction. For multi-use fields there will be some level of compaction regardless of your soil. Less than 200 hours play per year is recommended to maintain good field conditions; however with multi-use facilities, this is not always realistic. If space allows, rotating or moving fields can help reduce localized compaction.

With native systems having a higher water holding capacity it is important to postpone play when fields are saturated. The increase in soil moisture not only increases compaction but it also increases the depth of the compaction, which is more difficult to remedy.

One way to manage compaction is with soil cultivation, specifically aerification. In native systems, aerifying with hollow tine cores that are 5/8 to 1 inch in diameter and 3 to 4 inches deep is most effective. For fields with lower use, aerifying twice per year (spring and fall) is enough. Fields that are heavily used can be aerified 6 to 8 times per growing season. In either situation it is important that the turf is actively growing when you aerify to insure optimum recovery. In sand-based systems, hollow tine coring twice per year is usually sufficient. Higher traffic areas like goal mouths and between hash marks might require additional aerifying. Consider your options when

aerifying, because repeated core aerification to the same depth can result in a compacted layer at that depth. Rotating soil cultivation methods such as deep tine aerifying, solid tine aerifying, or deep drill and fill can alleviate the problem.



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▲ **Layering in a sand-based system** caused by a buildup of organic matter. Image courtesy of Nick Fedewa.

root growth. In native systems, not watering right before an event allows the field to dry some before an event, which can reduce the risk of compaction. However, it is important to water right after the event to keep the turf from becoming stressed.

Sand-based systems have a poor water holding capacity and will require 1 to 1 1/2 inches of water every 3 to 5 days. Even in these situations, irrigation should be as deep and infrequent as possible to encourage deep root growth. Because of the increased infiltration rate of

IRRIGATION

The water holding capacity of native systems vs. sand-based systems will affect the way that field is irrigated. Native systems have a higher water holding capacity, allowing for less frequent watering. Native systems can be watered 1 to 1 1/2 inches every 7 to 10 days. Less frequent and deeper watering helps to encourage deeper

sand-based systems, irrigation can run before an event without the increased risk for compaction. Regardless of the rootzone system of your field, it is important to watch for signs of wilt, and water when necessary. Irrigation scheduling can be done using evapotranspiration (ET) data, soil moisture sensors, or visual evaluation and experience.

▼ **Standing water** on a poor draining native soil system. Image courtesy of Natasha Restuccia.



DRAINAGE

Native soil systems typically have lower infiltration rates due to the higher water holding capacity, smaller pore spaces caused by compaction, and lack of drainage system. These fields will mainly depend on surface drainage from crowns and slopes. When native systems become saturated and are unable to properly drain, it is important to postpone play. Under these conditions, native systems can have reduced traction and stability, resulting in poor playability of the field and an increase in injuries to players. Aerifying native systems can open pore spaces to allow for more water flow. If the drainage becomes an unmanageable issue, installing subsurface drainage is an option; however, it can be expensive.

In sand-based systems, drainage is not typically a problem. The uniform and coarse particle size allows for larger pore spaces and increases water infiltration. If the drainage of your sand-based field seems to be getting worse, take a look at the soil at a depth of 12 to 24 inches. Older sand-based systems can start to have layering due to resodding, organic matter buildup, or topdressing with the wrong materials. These layers will slow water infiltration and may need to be remedied through deep tine aerifying or renovation.

FERTILITY

For native systems, a soil test will tell you what your rootzone is lacking. This is a good place to start in determining a fertilizer regime. Native systems are higher in clay and organic matter, both of which increase the nutrient hold capacity of the soil. This higher nutrient holding capacity means that native systems can be fertilized less often with higher rates. During the season, fertilizer is needed to increase growth rates to help fields recover from increased traffic and wear. During other parts of the year when the turf is still growing, fertilizer should be used as needed to maintain growth.

While it is best to use a slow release fertilizer for its longevity, native systems can benefit from water soluble fertilizer for recovery in worn areas of turf. In that case, lower rates should be used. The budget is always a factor in fertilizer scheduling, so

» While it is best to use a slow release fertilizer for its longevity, **native systems can benefit from water soluble fertilizer for recovery in worn areas of turf.** In that case, lower rates should be used.

treat areas of extreme wear (like goal mouths and between the hash marks) separately.

Sand-based systems have much less organic matter and nutrient holding capability. In these systems, applying too much fertilizer at one time can lead to leaching. Leaching is not only an environmental issue, but can equal money lost. Try splitting fertilizer applications in half and apply in 14 day intervals for sand-based systems. In these systems applying less fertilizer more frequently helps to keep nitrogen available to the plant when it needs it. For sand-based systems applying potassium at a 1:1 rate with nitrogen can help with stress tolerance,

but should be done so to reduce losses as potassium can be readily leached.

The basics of turf management are the same for any situation; however, knowing what your rootzone consists of can give you a better idea of how your field will respond to those management strategies. By taking the soil in to account, both native and sand-based systems can be managed to obtain excellent playing surfaces. ■

Natasha Restuccia is a biological scientist in the Environmental Horticulture Department at the University of Florida.



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USING BODY LANGUAGE TO ASSIST YOUR WORK

Wouldn't it be great if you could read your co-workers intentions? Wouldn't it be neat to know in advance if the next person approaching you is hostile? How would you like to know if people are interested in what you have to say? Wouldn't you like to know the next time someone may be deceiving you?

Reading body language is a skill. Like any other skill in life to get good at, it requires practice. With practice you too can get good at reading body language, which can offer a multitude of advantages at work, at home, and elsewhere.

It has been well established by researchers that those who can effectively read and interpret nonverbal communication, and manage how others perceive it, will enjoy greater success in life than individuals who lack this skill.

HOW IS READING BODY LANGUAGE DEFINED?

It is a means of transmitting information, just like the spoken word except that it is achieved through facial expressions, gestures, touch, physical movements, posture, embellishments (clothes, hairstyles, tattoos, etc.), and even the tone and volume of one's voice. It does require that one be observant to detect "tells" (clues that our bodies give off). Consequently, it is inadequate to simply see the tell, but one must also understand what the tell means for any advantage in using the tell. Consider this: the human body is capable of giving off thousands of tells. Which ones are most important and how do we decode them?

The best place to start is to get baseline information about the person. Base lining in this context is defined as "observing a person's behavior when he or she is under normal, non-threatening circumstances." In other words, how does this person look, act and sound under normal conditions. This is valuable information because when people go off their baseline, there are usually reasons for this and we can usually figure out those reasons. To accomplish base lining simply observe and make mental note of what you observe. This may happen at social functions, meeting in stores, or at the workplace. Take note how they normally stand or sit, facial expressions, hand gestures, where their eyes look when asked a question, where their eyes look when answering a question, eye blink rate, how they sound when speaking, speaking tone, words per minute, speaking cadence, etc. Any and all information you can establish as baseline for that person.

WHERE TO LOOK FOR TRUTH IN BODY LANGUAGE?

All parts of the body give off information. Consequently, all parts of the body should be examined for tells and what they mean. As a beginning point, most body language experts would start with what's called the limbic system. The limbic system is something we all have in our brains, and it consists of numerous parts. What is significant is not where the limbic system is located or the parts names, but rather what the limbic system does. In the non-verbal world, the limbic system is

Body Area	Tells	What It Means	How It Can Help You
Upper Torso	Leaning away	Disagreement	If you're in a meeting and introduce a new concept, and people lean back – you now know what they think of your new idea.
Hands	Wringing hands (like washing your hands without water)	Nervousness, anxious, stressed	When a co-work or client hand wrings, it would be time to back off and allow the stress to dissipate.
Face	Tight lips	Hesitancy and secrecy	Tight lips suggest these people have more information to share, but are simply unwilling to share.
Feet	Direction of feet	Intentions	Where the feet point show the true intentions of the person, i.e., towards a door (wants to leave), towards a person (wants to connect with that person), etc.
Legs/Feet	Bouncing feet	Happy, confident	With a person in a sitting position and their leg crossed and the foot bouncing up and down indicates that person is feeling good about what they are hearing and seeing.

referred to as the honest brain. Consequently, it gives off a true response to information in the immediate environment. It reacts instantaneously, in real time, and without thought. Thus, it is the “honest” part of the brain. The rest of the brain is the non-honest parts of the brain. Those parts deceive and deceive often. An example of the limbic system would be if you are scared of snakes or spiders and you discover one 2 feet from you. The moment you see the snake or spider you will react (jump, scream, run, yell, etc.). This would be a limbic reaction (instantaneous, in real time, and without thought). These reactions are valuable as they are authentic. That is, they are an honest reveal of that person in that situation. There would be no deception involved as they don't have time to think about their reaction. It is only when we have time to think about our responses that we many times couch our response to “fit” the person/situation.

In my body language training, I examine multiple tells and their meaning in the western culture. The following table will give you a good starting point:

DETECTING LYING & DECEPTION

This may sound strange coming from a body language expert, but determining if a person is lying or being deceptive through body language is inadequate. Don't get me wrong; we can get some wonderful tips and clues through body language but to detect lying and deception a couple other features are required. In my training on detecting lying and deception, I refer to the features as a three-pronged approach. One is body language, another is the science of lying, and lastly is what I call content and structure. When all three parts are working in concert, you now have the best chance of detecting lying and deception.

Body language we have already touched on. The science of lying is a body of knowledge that researchers have captured and documented on; why people lie, the types of lies they tells, the frequency of lying, the type of damage done by lying, and the mental gymnastics that liars go through, etc.

The content and structure part relies on a person responding to questions you have asked. What comes out of their mouths is content and the way they structure the con-

tent is very important. Example: when I was a high school principal in Wisconsin a rock was thrown through a window. Two teens were sent to me, each one accusing the other of being the rock thrower. After a couple minutes of asking certain questions, watching their reactions, and listening to their content and structure, I knew who the rock thrower was.

A more high profile example of this would be Susan Smith, the South Carolina woman who in 1994 drove her car into a lake and killed her children. She had told the police her vehicle was abducted by a single African American man at a stop light. When she addressed the media she would plead, “Oh I need my babies back!” But never once was there a tear. As she spoke she said, “I just can't stress it enough that we just got to get them back home. Where . . . that's just where they belong, with their mamma and daddy.” Notice in her content and structure, she never referred to her children in the present tense. She referred to her children as “them.” Her estranged husband on

the other hand got up to the microphone and referred to the children in the present tense and called them by name.

There is a strong human emotion that takes over when you lose a family member. It's called hope. You never give up hope until you know different. Susan knew different and it played out with her content and structure.

Research indicates that up to 93% of all face-to-face communication is non-verbal, yet very few are trained to observe “tells” and know what they mean when they spot them. As a professional that interfaces with humans, it would behoove you to address this much needed skill for the highest level success in the workplace. ■

Jerry Balistreri, B.S., M.S., M.Ed., ASTD Certified Trainer is a retired CTE educator and administrator. Jerry offers training on how to read body language and can be contacted at balis@acsalaska.net.

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SPRINKLER AUDITS YIELD WATER SAVINGS, FINANCIAL OPPORTUNITIES

▲ **Doing the math** at an irrigation audit workshop at the STMA Regional meeting in Cincinnati in 2012.

“AUDIT” IS NOT A WORD THAT BRINGS ABOUT POSITIVE FEELINGS of personal harmony or financial well-being. A mere mention of the word can evoke a physiological response: sweating palms; involuntary twitches; a creamy gray pallor.

An irrigation audit, however, is like any other internal examination. It reveals performance strengths, structural weaknesses and procedural opportunities. Moreover, an irrigation audit can provide field managers and grounds superintendents statistical data for building a blueprint to improved turf conditions, reduced expenses, and the turf industry Holy Grail—water conservation.

There’s no better evidence for budget requests to upgrade a facility than a cost-benefit report to your board, council, commission or CEO. An effective

irrigation audit delivers sound projections for annual savings in water, power, personnel, maintenance, turf and equipment replacement, and more. Connect that with a dollar amount, and you’re in business.

Irrigation audits generate concrete information for the boardroom, but as importantly, for your frontline maintenance crews. They’re the day-to-day managers with eyes on the ground. Your technicians are key to handling acute problems, like lateral breaks, broken heads or plugged nozzles, while alerting you to more chronic conditions that begin to

appear over time, like inadequate pressure or loosening packing in your pump station.

DATA HOARDING AND DOCUMENTATION

An irrigation audit can be simple or exhausting. You can evaluate individual zones for distribution uniformity, assess specific areas in your facility for trouble spots or appraise the entire system top to bottom.

Irrigation consultant Brian Vinchesi advises identifying a specific goal or goals before commencing an irrigation audit. "It's good to know what you're hoping to accomplish with your system before you get started," he says. "Are you considering adding a new water source? Are you facing new watering restrictions on how much water you can use or the hours you can use it? Are you adding zones or fields? Are you looking for significant water savings?"

"There are numerous considerations," adds Vinchesi, president of Irrigation Consulting, Inc., in Pepperell, MA. "Sites change over time. More entities tap into your water source, which can affect available pressure and water quality. Fields might be added or eliminated. Safety concerns in sports turf facilities have changed over time. It's all part of the mix and should be evaluated and documented."

You have to be in the field to know your how well your program is performing. However, desk duties are part of the game. In the office, gather previous years' water reports, architectural blueprints, irrigation design plans, as-built drawings, water scheduling programs, water quality reports and other useful data used to manage water and other resources. And, before you step onto the field, Vinchesi strongly recommends adding a camera to your toolbox.

With your history and documentation secured, it's time to get outside, look things over and take down some notes and numbers. "Beyond equipment issues, which must be recorded, your best opportunities to improve water use are with management, like irrigation scheduling and uniformity," points out American Society of Irrigation Consultants President Ivy Munion, with

Simple sprinkler audit inspection checklist

- Check the coverage of full- and part-circle heads, ensuring that the sprinkler is adjusted to cover only the portion of the facility it is intended to.
- Check the radius of throw and ensure that the head is rotating completely. Check disbursement at each nozzle, ensuring that the orifice is not clogged, obstructed or excessively worn. Replace nozzles that appear worn, as they may alter flow rates, precipitation rates and coverage.
- Use a pitot tube to check nozzle-discharge pressure. Log all data for future reference. If several heads in a zone become weak or inoperative, there may be debris in the valve or a breach in the piping.
- Inspect the sprinkler housing for damage or debris.
- Check your low sprinkler heads for drainage.

ISC Group, Inc., in Livermore, CA. Look at your facility as a whole. Document turf wear, hot spots, soupy areas, compaction, drainage and the like.

Ideally, your system is performing at the designed volume, flow and pressure. Your original irrigation plans will provide those numbers. Take a pressure reading at the

water source. Inspect your cross-connections, master valve(s), flow sensors, pump station(s) and smart technology, looking and listening for smooth, proper cycling and operation. Check your metering devices, looking for the spinning leak dial. "In a multiple field complex, you need to really observe how everything interacts," Vinchesi



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asserts. “Record your start times and run times zone by zone, and how they all fit into your scheduling window. You might discover your system can’t handle your scheduling demands.”

Grab your foreman and inspect your control system and satellites; ensure connections are tight and your scheduling is on track and adjusted for the season. Record the number of field controllers, active zones on each controller, programmed runtimes for each zone, number of heads on each zone. Keep those records handy for your sprinkler inspections, where you can record head make and model, nozzle size, radius and distance of throw, and pressure at the head (using a pitot tube).

While Vinchesi likes to start an audit as is, without first tweaking the system, Munion wants the simple stuff rectified. “Broken or misaligned heads, rotors mixed with spray heads on the same zone, worn or clogged nozzles [are examples of] fundamental equipment transgressions [that] should be resolved before we start running

◀ **Bob Campbell, CSFM**, and former president of the STMA, works with an attendee during the hands-on irrigation workshop on a Cincinnati Bengals practice field.

catch-can tests,” she says. “Field changes over the years are horrible. We see more duct tape, pipe glue and bailing wire than we care to. Those things should absolutely be resolved in this process.”

Once the basics are in line, develop a punch list of items to inspect. Go to your valve boxes and ensure they’re off the field, accessible, buried to grade and well-drained. Clean them out and check the wiring to ensure connections are solid and dry. Look for leaking or weeping valves. Keep a log of everything you observe, good or bad.

GET INSIDE YOUR HEADS

The root byproduct of poor irrigation uniformity is overwatering. Runtimes are developed based on the weakest coverage area. We irrigate for the dry spot, regardless of what pours over the remaining landscape area. “Really consider how your system is zoned,” Vinchesi says. “Older systems might have been designed for sprinklers to just run across the field, but by zoning goal areas or infields you have greater control over turf wear and resilience without just pouring more water over the site. Fundamentally, irrigation is about control.”

The goal of a simple audit is to improve sprinkler distribution uniformity and zero in on accurate scheduling. It’s time to operate the system; checking each valve and head in each zone. Ensure that heads and nozzles match, and that each head is perpendicular to - and

to grade with - the surface. These are important performance and safety issues. Check nozzles for obstructions or wear, and replace with the specified nozzle size. Replace heads that don’t match design or operating specifications.

Check the pressure and rate of water discharged from your heads. Ensure that the operating pressure at the head is consistent with the manufacturer’s specifications. Too much pressure creates poor uniformity, wind drift and accelerated evaporation. Too little pressure affects radial sprinkler uniformity. While your there, measure the distance between heads. Your system should provide head-to-head coverage.

CAPTURING PRECIP RATES AND DU

Catch-can tests quickly reveal distribution uniformity (DU), or how evenly water is being applied to your fields, while measuring your precipitation rate in inches per hour. Locate your trouble spots, like infields, goal areas and/or the center of the field, and stake out

your catch cans in a uniform grid in multiples of four (28 catch cans, 40 catch cans, etc.) within that area.

By necessity, irrigators water to the driest areas, so you're assessing your lower-quarter distribution uniformity, or the poorest performing 25 percent of sprinkler coverage for the affected area. Run every zone that covers the affected area for 15, 20 or 30 minutes – enough time to register measurable amounts in the catch-cans that are convertible to inches or milliliters per hour. This reveals your problem heads/zones and your per-hour precipitation rate – data necessary for comparing what your site gets to what it needs (based on turf type, soil profile, drainage, evapotranspiration rates, sustained winds, sun exposure, etc.).

Whether you've conducted an all-inclusive, system-wide audit, or catch-can tested select areas within the park, you've gathered important data, and now it's time to put it to work. Provided your water volume, flow and pressure(s) are still at design levels, triage your repairs, plan any sprinkler head relocations, build you inventory and adjust scheduling accordingly. Get your crews out and start effecting the simple improvements, focusing on safety and equipment integrity, while planning larger projects that require significant budgets and disruption, like pump station issues or pipe sizing challenges.

Organize a regular irrigation system inspection program.

Determine which parts to keep in stock for quick repairs, including all sizes of pipe and fittings; electric valves; wire and connectors; swing joints and risers; and sprinkler heads and nozzles. Ensure that the spare parts are of the same make and model as those in the field. Product integrity plays a big role in efficiency.

Most field managers have inherited their systems with all their scabs and warts. Performing a system audit can put you in a position to truly improve your playing surface through a surgical approach, rather than constantly putting bandages on a tumor.

Vinchesi suggests enrolling in Irrigation Association certified landscape or golf irrigation auditor programs. "These courses, scheduled throughout the year across the country, are worth your time," he says. "They provide important standardized tools and procedures, and sources for valuable localized data needed to generate accurate irrigation schedules."

A proper irrigation audit documents core system problems and provides effective, triaged solutions as a blueprint for progress – with associated payback. Put your problems and solutions on the table and watch others wipe their sweaty palms and suppress their nervous ticks. ■

Luke Frank is a veteran green industry writer with extensive experience with irrigation topics.

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FIELD CONTRACTOR "BUILDS" THEIR COMMUNITY



▲ **Ted Mercer**, left, and his son, **Troy**, built and maintain a public ballfield in their hometown of Troy, OH with their own time and money.

Former Mercer Group, Inc., a regional athletic field contractor based in Troy, OH specializes in athletic field construction, renovation and maintenance of all types of athletic fields. Their clients consist of college, high school and parks and recreation sports fields.

Ted Mercer, owner of Mercer Group and a native of Troy, used to frequently drive by a park owned by the City of Troy located close to his office and warehouse. This site was the town dump in the 1950's and 1960's. Mercer couldn't help notice the dilapidated baseball backstop and the dirt field grown over with weeds. One day Mercer knew something had to be done.

So Mercer and his son, Troy, and a staff consisting of four went into action. Mercer approached Troy city officials in the fall of 2012 and asked permission to construct a youth baseball field. In return for Mercer Group installing and maintaining the field, the City of Troy would allow the field to be called "Mercer Group Field." The city park

board agreed, and thus the construction of the new field. All Mercer asked for was that the field be open to anyone who would want to use it.

"We wanted to give back and the city was tremendous in allowing us to do this," Mercer says.

Mercer's labor of love certainly didn't come easy. The journey toward a new field began in March 2013 with the leveling of the playing field. Parts of the field had to be raised more than 3 feet to provide a flat playing surface, which meant Mercer Group had to bring in more than 7,000 tons of dirt. One month later the dirt was graded and laser leveled to prepare for the topsoil over-layer. About 880 tons of topsoil was brought in. In late-summer 2012, the outfield was graded and seeded and the foul poles were installed. Over the winter, the outfield fence and backstop were installed. The outfield fence measures a uniform 225 feet from home plate, the exact same dimensions used at the Little League World Series' Lamade Stadium in Williamsport, PA.

Mercer's labor of love certainly didn't come easy. The journey toward a new field began in March 2013 with the leveling of the playing field. **Parts of the field had to be raised more than 3 feet** to provide a flat playing surface, which meant **Mercer Group had to bring in more than 7,000 tons of dirt**. One month later the dirt was graded and laser leveled to prepare for the topsoil over-layer. **About 880 tons of topsoil was brought in**.

Around the same time Mercer Group Field was taking shape earlier this spring, the Cincinnati Reds were getting a new profile installed in their infield at the Great American Ballpark. Mercer, who knows Red's groundskeeper Doug Gallant and his assistant, Chad Lavender, asked if they could have a few truckloads of the Reds' old topdressing. Two loads of the infield mix were brought straight from Great American Ballpark to put atop Mercer Group Field.

Once completed Mercer Group has continued to do the maintenance of the field including, but not limited to, mowing, infield screening and lining, fertilization of turf, as well as general ball field maintenance. Mercer Group donated all the construction and the maintenance costs of the field. All improvements were paid for by the Mercer Group and donated to the City of Troy.

The ball field is designed for 12U and under baseball and all ages of women's softball. The field is used by the general public. Mercer Group has plans each year to make improvements to the field. It is truly a public/private partnership with Mercer Group and the government entity of the City of Troy Park Board.

"As city budgets get tighter and tighter, we believe you will see more projects like this in cities across the country," Mercer says. "It is truly heart-warming to see a park area once used very little, to now see kids, both boys and girls, playing baseball and softball. I could not be prouder of our company for giving back to our community." ■



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325 YEARS LATER, Husqvarna in Tune with the Marketplace

Husqvarna shares its birth year with... Johann Sebastian Bach.

One of the world's greatest composers remains a powerful force in classical music because of the quality of his work — which consists of over 1,000 elegant pieces of music — from concertos and cantatas to sonatas and orchestral suites.

Like the Baroque works of the adored German musician, appreciated as much for his technical command as his artistry, Husqvarna too has endured for 325 years. But while Bach's compositions — of course — have not changed in that time, Husqvarna's output has evolved dramatically over 3-1/4 centuries.

Today, Husqvarna is the world's largest producer of outdoor power equipment. When our company started, on the banks of the Swedish river that gave us our name, "power equipment" did not exist. The company was founded to manufacture much-needed musket barrels

for the army of King Charles XI as they prepared to ward off a threat from Denmark.

In the years and decades and centuries that followed, Husqvarna has evolved both subtly and dramatically, keenly in tune with consumer demands, competitive opportunities and economic realities. Reading the list of products that the company has manufactured and marketed could take nearly as long as Bach's *Mass in B minor*.

Swords. Sewing machines. Wood-burning stoves. Motorcycles. Household products — from spittoons to cherry stone removers and herring fryers. At one time, the company had such a strong presence within the household that famed artist Ewert Karlsson said that "Husqvarna" was the first word he learned — since it was stamped onto the iron stove in his mother's kitchen, on the frame of his first bicycle, and on the housing of the family sewing machine.

A history of Husqvarna mirrors the history of Europe and, ultimately, the world. As technology has evolved,

Timeline

1689: Rifle factory

When Swedish weapons production took off in the late 17th century, hydropower was needed to handle certain mechanical operations. The drillingwork at the waterfalls in Huskvarna, southern Sweden, was our first plant.

1872: Breaking new ground

A very innovative and ambitious period, resulting in a broad array of new products: sewing machines (1872), hunting weapons (1877), wood stoves (1884), mincing machines (1890), and the first Swedish typewriter (1895).

1896: Bicycles

The era of bicycles begins — and lasts through 1962.

1903: The motorcycle era begins

Husqvarna earns a worldwide reputation, as its lightweight-yet-powerful engines helped make some of the most successful track racing and motocross bikes in history.

1919: The first lawn mower

Husqvarna acquires Norrahammars Bruk, the first step in the Group's current focus on outdoor power products. The first motorized Husqvarna lawn mower for commercial use is launched in 1947, and in 1959 the first homeowner model reaches the market.

1959: The first chain saw

Expertise in engines from the production of motorcycles is now utilized in new

product areas, as Husqvarna introduces its first chain saw — which used motorcycle muffler technology to achieve lower noise levels than its competitors.

1969: Setting new standards for ergonomics

When the Husqvarna 180 chain saw is released, it features a groundbreaking anti-vibration function that prevents "white fingers disease," a common problem for forestry workers around the world.

In 1973, Husqvarna introduces the world's first chain saw with an automatic chain brake. In 1999, the feature TrioBrake is introduced, enabling users to activate the chain break with the right hand — further reducing the risk of injury for forestry workers.

► **Top right:** During the past 325 years, in addition to outdoor power equipment, Husqvarna has manufactured muskets, swords, sewing machines, wood-burning stoves, motorcycles, household products, and much more.

Bottom right: Husqvarna began on the banks of the Swedish river that gave the company its name.



Husqvarna has been there, priding ourselves in our inventiveness, innovative capacity and technical proficiency. Glancing through a book about Husqvarna produced in 1989 to commemorate our 300th anniversary yields fascinating facts and photos, like those of Husqvarna motorcycles shown racing to victory on the world's fastest courses.

Like those long-ago motorbikes, today's Husqvarna products rest comfortably — when not in use — in garages and backyard storage sheds throughout the U.S. and the world. While the engineers and machinists who earned widespread acclaim on earlier products are long gone, they established a legacy that today's workforce holds dear — a commitment to high quality, proficiency, value and safety that has earned Husqvarna strong sales and a well earned reputation for leadership.



1978-1979: Outdoor power products expand

The outdoor operation continues to expand both through organic growth and through acquisitions. Power products now include chain saws, motorcycles, lawn mowers and power-cutting machines.

1980s: Strengthened positions in the U.S.

Organic growth and acquisitions expand Husqvarna's operations in lawn and garden. Two major acquisitions, Poulan/Weed Eater and Roper Corp, complement Husqvarna's product range, making the U.S. the largest market for garden equipment.

1995: The birth of the robotic mower

Husqvarna pioneered the market by

launching the world's first solar-powered fully robotic lawn mower. In 2013, a third-generation model with built-in GPS is introduced.

2002: Power cutters and diamond tools

When Diamant Bort International was acquired in 2002, the construction business doubled in size, turning into a world leader within its segment.

2007-2008: Expansion

Husqvarna expands in watering by acquiring the Gardena brand, followed by Zenoah (which enables expansion in Japan). Production in China is expanded through the acquisition of Jenn Feng and the construction of a new plant for

chain saws and other handheld products.

2009: Husqvarna demolition robot

Husqvarna's first remote-controlled demolition robot is launched, designed for all demolition tasks and for where it is too dangerous for workers to enter.

2012: Battery products

Husqvarna introduces a range of battery products for consumers and professionals.

Sidebar provided by Husqvarna.



Husqvarna's logo has evolved throughout the years, yet still harkens back to the motif of the company's original logo (left). All photos and graphics provided by Husqvarna.

Our mission statement as a 21st century company is quite specific: We provide innovative quality products and solutions to make garden, park and forest care, as well as construction easier for professionals and consumers around the world.

But I feel certain that elements of that mission — especially the references to innovation, quality and a commitment to making life easier for customers — have been important to the hundreds of thousands of Husqvarna employees who came before us.

Today's Husqvarna zero-turn mowers, professional chain saws, drill systems and dozens of other product lines may not bear a literal resemblance to the muskets and kitchen equipment of our past. But the precision of our products and the passion of our 14,000-plus employees in over 40 countries have remained consistent all these years. Perhaps what has been passed down is the "Gnosjo spirit," which our early workers were said to have — a blending of industriousness, inventiveness and resolve.

Often, as the head of Husqvarna's North American operations, I am asked what has made our company so successful in the highly competitive outdoor power equipment marketplace. That is a simple question, and — despite the complexities of the modern marketplace — demands a simple answer.

Perhaps I should borrow a line from one of my Husqvarna for-bearers, who wrote the following 25 years ago: "Thanks to our very capable, well trained personnel, our good products and our excellent reputation, we are well equipped to meet new challenges."

So true, 325 years into our history. ■

Alan Shaw is Head of Americas for Husqvarna, Charlotte, N.C.



◀ Husqvarna has prospered, evolved, and grown due to its commitment to engineering excellence, a strong entrepreneurial spirit and a passion for developing innovative, high-quality solutions.

Husqvarna: Looking Ahead

What does the future hold for Husqvarna?

A clue can be found from our 325-year past. Husqvarna has prospered, evolved, and grown due to our commitment to engineering excellence, a strong entrepreneurial spirit and a passion for developing innovative, high-quality solutions.

That begins with staying close to customers, whose input, insights and changing needs have fed our steady stream of new products and enhancements that not only promote ease of use but also showcase our focus on sustainability.

In 2014, we have unveiled a number of groundbreaking solutions that address our customers' demands for high-quality solutions. A few of the latest Husqvarna technological breakthroughs include:

- AutoTune, a technological and environmental advancement in professional chain saws that minimizes exhaust emissions and optimizes engine performance; it eliminates the need for carburetor adjustments.

- X-Torq, a technology that delivers lower fuel consumption and reduced exhaust emission levels in accordance with the most stringent environmental regulations; it is used predominantly in handheld products.

- Additions to our growing line of battery-powered products; these lightweight products are quiet and free from direct emissions.

- Continued enhancements to our line of self-operating robotic mowers, which save time and effort for homeowners and facility managers; they produce no direct emissions during use and consume very little energy.

- Additions to our line of industry-leading all-wheel-drive mowers, designed for uneven terrain and tough mowing conditions.

Looking ahead, Husqvarna will focus on continuing to grow our independent dealer sales and retail channel, while also focusing on high-growth geographic markets, especially in Latin America.

And with housing starts and existing-home sales on the rise once again, Husqvarna will continue to leverage our leadership position as the world's largest provider of outdoor power equipment.

Here's to the next 325 years!

Sidebar provided by Husqvarna.

Membership Application

SportsTurf MANAGERS ASSOCIATION

Experts on the Field, Partners in the Game.

Note: This form is valid only for first time STMA National members through September. Membership benefits continue through Dec. 31.

Fax to: (785) 843-2977

Or mail with payment to:
Sports Turf
Managers Association
P.O. Box 414029
Kansas City, MO 64141

Name _____ Title _____

Employer/ Facility _____

Business Home

Address _____

City _____ State _____ Zip _____

Home phone _____ Work _____ Cell _____

Fax _____ Email _____

Signature _____

Direct Supervisor Name _____

New Members*

As a new members, you receive a FREE conference registration, value \$375, to be used within 3 years! Just indicate your status on the conference registration form.

Did someone refer you to STMA? We would like to thank them, and reward them with an STMA \$100 voucher.

Person who referred you:

Facility name:

Membership Category:

- Sports Turf Manager \$55
- Sports Turf Manager Associate* (Additional member(s) from the same facility) \$55

Please select the primary facility type where you are employed:

- Professional Sports Higher Education Schools K-12 Parks and Recreation

- Academic \$55
- Student (verification of enrollment) \$25
- Commercial \$148
- Commercial Associate* (Additional member(s) from the same commercial company) \$75
- Affiliate (Person who is indirectly or on a part-time basis, involved in the maintenance/management of sports fields) \$50
- Retired \$50
- Chapter Dues (contact headquarters for amount)
Chapter name) _____ \$ _____
- Contribution To SAFE Foundation (research, education and scholarship): \$ _____
- Total Amount Enclosed:** \$ _____

Payment Method:

- Check Money Order Purchase Order #: _____

Credit Card: Mastercard Visa American Express Discover

Name on Card _____

Card #: _____ Exp. Date: _____

Signature: _____

*There must already be a national sports turf member from your facility or commercial member from your company before you may sign up in the Associate category.

Phone: 800-323-3875

www.STMA.org

*Not been an STMA national member since 2000. New student and affiliate memberships do not qualify for the free conference registration. However, all members are eligible to receive the \$100 voucher for referring a new qualifying member.

In order to receive the FREE conference registration, you must be a current member in the year that you use the registration.

CHAMPIONSHIP FIELD, Seattle University

■ **Category of Submission:** College Soccer
■ **Sports Turf Manager:** Kevin White
■ **Title:** Athletic Fields Supervisor
■ **Education:** Associate's degree in turf and landscaping
■ **Experience:** Bachelor of Science, Ornamental Horticulture/Turfgrass management
Experience: I have been working on the athletic fields at Seattle University for 4 years. Prior to Seattle University, I worked 8 years in golf course maintenance, 4 as an as-

sistant superintendent. While attending Cal Poly Pomona, our Turf Club would renovate a sports field each year.

■ **Full-time staff:** Peter Larson
■ **Part-time staff:** Emily Perales
■ **Original construction:** 2005
■ **Rootzone:** 100% sand
■ **Turfgrass variety:** Kentucky bluegrass/perennial ryegrass. We custom blend our varieties to ensure we get the desired traits for high wear and quick germination.

■ **Overseed:** : During heavy use periods, August to October, we seed weekly at 5lbs/1000. Our coaching staff does a good job using the entire field, so we treat it all the same. However, we do seed heavier in the goalmouths, sidelines and team bench areas.

■ **Drainage:** Gridiron system consisting of 4" double-wall ADS laterals spaced 10' o.c. draining into an 8" collection header that feeds into a retention vault under the field.



WHY STMA SHOULD CONSIDER YOUR FIELD A WINNER?

Championship Field is home to the Seattle University Men & Women's varsity soccer programs. It serves as both the practice and game field. Our vicinity to Century Link Field also makes us an attractive venue for hosting training sessions and special events for MLS, NWSL, National teams, and occasionally the English Premier League; in 2011 Manchester United trained while on tour in the US.

Each year seems to have more scheduled (and unscheduled) events. Normally we have a month of uninterrupted down time to renovate and prepare the field for summer camps and the start of training for the fall soccer season, but this year has been by far the busiest. In early spring, we hosted Santos Laguna twice and the Seattle Reign FC, the professional women's team. In addition to varsity soccer, Championship Field hosted our University Rec's men's and women's club soccer tournaments. At the end of spring soccer, we had 2 weeks before the next scheduled camp, and rumors were going around we were a potential host site for the USMNT while in town for the World Cup qualifier in June. Unfortunately, the USMNT decided to train elsewhere, but our little pitch soon became very busy nonetheless.

The first two weeks of July, we hosted DC United 3 days; Panama and Martinique during the Gold Cup matches; Seattle Reign FC twice; and a Special Olympics event all while our men and women's teams were running summer camps. In total, over 14 days we hosted 17 events and logged 81 hours of use with minimal wear.

Our biggest challenge is squeezing in maintenance amongst events. Between the men and women's teams, our 86,000 square foot pitch is in use nearly every day of the week. That doesn't leave much time for maintenance, so scheduling and active communication with coaching and Athletics staff is critical to our success, as well as being creative with our work.

Aeration and frequent seeding are two of the keys to our success. Our goal is to be on the pitch each week with a slicer, solid-tines or pulling cores. With aeration, we put out 5,000 pounds of seed each season.

We are also pesticide-free and mostly organic. Following a sound IPM program and using biostimulants and bridged organic fertilizers, allow us to keep from applying synthetic chemical pesticides. We combat *Poa annua* by diligently hand cutting it out, and maintaining a healthy, dense stand of perennial rye/Kentucky bluegrass.

At the end of each season, I am always amazed how much use our field receives, and how well it stands up to the daily rigors of training and games by both teams. I know the major key to our success is the passion and dedication our team puts into creating a quality pitch for our university's varsity soccer program.

SportsTurf: What channels of communication do you use to reach coaches, administrators, and users of your facility? Any tips for communicating well?

Kevin White: We use various forms of communication, from formal boardroom style meetings to informal texting. During the season, we have standing weekly meetings with the coaches, athletic directors and game operations staff to ensure ev-

eryone is on the same page. At Seattle University, our department, Facilities Services, is separate from Athletics, so an open line of communication is vital. We also see the coaches every day on the field where we can chat about field use, the upcoming game, or whatever. If I need a quick response, I can send a text. We have established a great relationship with our coaches and athletics personnel, and it is not uncommon to receive texts with pics of fields when the coaches are on the road saying, "Hey, check this out!"

The best advice I have for communicating well is to be positive and present solutions, not problems. Be visible and approachable. Concerning coaches, remember that they are used to telling people what to do, and do not respond well to negativity—especially if it is on the field during training! We all have jobs to do, so we must work together on a compromise that is reasonable for us both. I like to arrange meetings on the field to discuss options. It is an environment we are both comfortable in, and it is easier to visualize what we are talking about.

ST: What are your specific responsibilities? What is your favorite task? Least favorite?

White: I am responsible for the development and execution of maintenance programs for our athletic fields, including budget and labor: Championship Field, a natural grass soccer game/training field, and Logan Field, a synthetic rec/intramural and varsity softball with skinned infield. Additionally, we maintain the landscapes associated with the fields and other campus facilities. Seattle University is dedicated to, and recognized for, its environmental stewardship. Our campus grounds are 100% organically managed and pesticide-free, while our athletic fields are pesticide-free and receive organic products where practicable. I feel honored and proud to work with the talented and dedicated individuals within our department, especially those on our Turf Team whom I work with on a daily basis: David "DC" Clausen, Senior Gardener; Peter Larson, Gardener/Field Technician; John Easley, Irrigation Specialist; and a revolving door of student employees. Without their support, and the support of our manager, Shannon Britton, this award would not have been possible.

Equipment list

- John Deere Pro Gator
- John Deere 4520 Tractor w/Loader
- Wiedenmann XP6 Aerator
- Wiedenmann Terra-Combi Slicer
- SmithCo V62 Sweeper
- Toro RM3100D mower
- Redexim Verti-seed
- TyCrop QP450 topdresser
- Tow-behind roller
- Tow-behind 150 gal. sprayer
- Graco FieldLazer Paint Sprayer
- Each year we borrow a First Products V60 verti-cutter from the Seattle Seahawks.

Field of the Year



What I enjoy most is providing our teams a high quality grass field. A lot of that enjoyment comes in the challenge of dealing with two teams training and playing games on one field, which receives 700 to 800 hours of use per year. We are always trying to improve through trying new methods, new equipment, or new products. We're not satisfied with 'good enough'! I also find a great deal of satisfaction in working with and mentoring Peter Larson on Championship Field. Peter handles the daily maintenance and doesn't have a background in turfgrass management, but has really excelled in learning and absorbing the concepts and methods we employ to create a quality field.

I enjoy everything I do, but wouldn't mind sitting in fewer meetings. I think most things can be dealt with through email.

ST: How did you get your start in turf management? What was your first job?

White: I began my career in turf management on the golf side in Southern California, and feel fortunate to have worked at some great places with some incredible people along the way. Initially, I wanted to become a golf course architect, but after some advice from the late Dr. Kent Kurtz, while we were waiting in line at an airport, I chose to pursue Turfgrass Management at Cal Poly Pomona. Kent was a tough professor, wise mentor, and good friend. He had a way of pushing you to your limit, but always had your best interest at heart. His impact on me will last my lifetime; he just had that kind of effect on people!

Seattle University is the first sports turf job I have had, and it has been a very rewarding one. It has also been a great place to transition from golf to sports turf with having a grass field, a synthetic field, and a skinned infield. I've learned a lot in a short time, and continue to learn every day.

ST: How do you balance your family life with work demands?

White: I find it to be much easier now than when I was an assistant superintendent. Working in golf was difficult, and it put

a big strain on our marriage. Sure, we have busy seasons and long days now, but taking time off isn't really a challenge. The team knows how to do everything, which makes all the difference.

ST: What changes if any are you considering or implementing for the winning field in 2014?

White: We constantly make little tweaks to our maintenance program trying to make it better, but this year we decided to try something a little bigger. Following the final spring soccer game on May 12, we began the process of fraze mowing, recycle dressing and seeding. We then had 7 weeks to grow it back in before the start of the 2014 soccer season, which culminates in November when we host both Western Athletic Conference women's and men's soccer tournaments. It is going to be a very busy season!

ST: How do you see the Sports Turf Manager's job changing in the future?

White: I think we are going to have to continue to be more open-minded about maintenance practices and push boundaries in terms of field use for our natural surfaces. I do not think natural grass gets enough credit in terms of how much wear it can tolerate. The new technology in equipment and products, and the new breeds of turfgrasses that are emerging now is very encouraging and exciting. I do believe synthetic surfaces have a place in this industry. However, in my opinion I see an unfortunate trend going on across the country. Personally, I feel that we are losing an appreciation for the art and science of growing a quality stand of grass for sport. I see the profession I'm deeply passionate about and wholly committed to changing. I just hope we can slow, or reverse the current trend, and continue to do what we got into this business to do...grow quality grass! ■

STMA would like to thank Carolina Green, Ewing, Hunter Industries and World Class Athletic Surfaces for their continued support of the Field of the Year Awards Program.

By Kenzie Jay

For more on the latest news, please visit www.sportsturf.com and www.stma.org.

SAFE celebrates 10th anniversary

A decade; some may view it as just a 10-year span in time, but we view it as a celebration. And this year, it's time to celebrate some STMA members. Although we won't literally be popping champagne in our offices, know that our hats are off to you as we celebrate your success.

The SAFE Foundation, STMA's charity, takes pride in its ability to provide scholarships for individuals aspiring to be in the field. Since its inception in 2000, the SAFE Foundation has presented 120 students more than \$225,000 in scholarships and travel to the STMA Conference and Exhibition. For some, this year marks the 10-year anniversary since SAFE has presented them with scholarships, an equally rewarding and honorable recognition. So this month we caught up with them to see what they're up to now. Willing and ready to share their positive experience with us, we dove into the details about the scholarship process, the conferences and advice for future scholarship recipients.



Kyle Slaton



Shawn Mahonski



Nathan Salmore

WHERE ARE THEY NOW?

Scattered all over the United States, that's where. We tracked down where these SAFE scholarship recipients have made their mark over the past 10 years, working with communities and universities alike.

Kyle Slaton, a Penn State University grad, is the Director of Sports Turf & Grounds at Georgia State University. Slaton has been in this position 4 years and enjoys being in charge of all the NCAA athletic fields within the university grounds. Slaton's favorite part of his job is having the ability to come in during a rebuilding year and see the progress made within the grounds department and athletic fields.

A fellow Penn State grad, Shawn Mahonski, is the Athletic Field Manager at Towson University. With 9 years under his belt at this position, Mahonski credits his loyalty to Towson and college athletics to the unpredictability and array of challenges he is presented with, keeping every day interesting.

Nathan Salmore, a University of Massachusetts-Amherst grad, is the Assistant Grounds Superintendent at Longwood Cricket Club in Chestnut Hill, MA. Salmore claims he's enjoyed the past 4 years at LCC due to the unique challenge of maintaining both grass and clay tennis courts.



Matt Anderson



Nick Gow



Dan Blank

A graduate of Michigan State University, Matt Anderson is the Grounds Superintendent at the University of Arizona. Anderson said the love of being outdoors and around sports has kept him in Arizona since he began the position 3 years ago.

Nick Gow, an Iowa State University grad, is the Athletics Facility Manager for the City of Muscatine, Iowa. With his position, Gow is responsible for an eight-field soccer complex, an 18-field softball and baseball complex, and is a turf advisor for a golf course.

After 7 years in a non-related field, Dan Blank has taken his talents to Omaha, NE serving on the biggest stage of college baseball. Blank is the Turf Manager at TD Ameritrade Park, home of the NCAA Men's College World Series.

CONFERENCE TALK

One of the highlights of receiving the scholarship through the SAFE Foundation is the opportunity to attend the national STMA Conference. In addition to a financial scholarship, each winner's conference registration is paid for and each receives three nights lodging at the conference.

STMA's Annual Conference & Exhibition allows members to share information with other successful members of the sports turf industry and participate in educational seminars and hands-on workshops. Conference attendees are able to tour professional, college and municipal turf facilities that offer a range of insights to take back home. STMA works hard to plan exceptional conferences, but it's the unplanned friendships that make the biggest impression on the scholars.

"There were people that came up to me and introduced themselves to me at the first conference. I was able to talk to them and build a friendship," says Slaton. "The best part of the conference is making friends and seeing everyone."

Known for its eclectic host cities, fun events and exceptional speakers, the conference is unanimously the favorite of scholarship perks among the scholars.

"My ultimate best thing about going to the conference was going to see some of my friends that I only get to see at the conference," adds Mahonski, "also the education, the developments presented in the classes and hearing about the research."

The camaraderie among the sports turf managers isn't the only perk that has the conference buzzing. For Nick Gow, the speakers confirmed that the sports turf industry was the right path for him. "There are amazing speakers out there," he notes. "The ability to hear several professors talk about topics that interest me and expand my knowledge in the sports turf industry helped significantly."

CHANGES IN THE BUSINESS

Over the past decade, the sports turf industry has grown to be a highly visible profession with tremendous growth potential. Things are changing for the better, with rising salaries at top positions and new facilities and field conversions.

"The work I see people do (either on social media, newsletters, pictures), the quality of work people do blows me away," says Anderson.

The industry has secured a spot on the fast track to broader recognition with over \$1.29 billion in purchases of sports turf products and services annually, according to University of Missouri's Sports Turf AdvanTage. Technology has also seen a progression within the industry, helping sports turf managers' jobs become easier.

"It's amazing to look back at the first conference I went to. It's only been 10 years, and there is such a difference and improvement in equipment and types of fertilizers," says Slaton. "I can't imagine what the next 10 years will do. Technology is becoming a bigger part."

The combination of better technology and a growing industry has helped to better equip fields for use and safety. Nick Gow mentions how the growing industry has provided more opportunities for sports turf managers. "The green industry has really gone from growing grass to upper management of synthetic fields," he says. "It's a growing industry and will continue to grow. I've seen major improvements of high school facilities. The number one goal of a sports turf manager is to provide safe, quality athletic facilities for youth and adults in communities."

As the industry has become more recognizable, so have the rewarding aspects of sports turf management. Gow touches on a very important value of being a sports turf manager, and opens up the discussion for how others, such as coaches and players, can make a difference. According to Sports Turf AdvanTage, some of the most rewarding aspects of Sports Turf Management include: appreciation by coaches, players and fans, having a plan come together and seeing fields hold up to heavy traffic.

But the biggest draw, mentions Salmore, is the opportunity to work outside and around sports. "Working outside is a big draw," says Salmore. "Working around sports is great."

Blank shared in Salmore's enthusiasm claiming that being outside was also his favorite part about working within the green business. The desire to work around a particular sport is also important to some sports turf managers.

SCHOLARSHIPS

Every year, the SAFE foundation awards their scholarships to the most qualified applicants. The applicants are judged on academic preparation, cumulative grade point average, experience in sports turf

management, and references provided by student advisers and previous or current employers. They are also evaluated on their contributions to their school, department, and organizations to which they belong, as well as their career objectives. Although GPA is included, the scholarship is not focused on the idea of grade point average.

"I've recommended applying to scholarships to students and people I know in the industry all the time," says Anderson. "It's not just based on your academic performance and grades. More is taken in account than just your GPA. People think that is what it's all about, so they don't apply." Like any scholarship, the hope is to further encourage the academic success of the individual as well as provide some positive recognition of an individual's accomplishments.

Dan Blank discusses how beneficial receiving the scholarship was for him. "[It] solidified everything for me. It made everything real. It was a 'this is it, let's do this' kind of thing," he says. "It was a positive reinforcement and good to have on a résumé."

Almost all of the scholars claimed the recognition and having the scholarship on their résumé helped with job interviews. Most of the job interviews eventually landed them jobs in the long run.

"[The scholarship] shows that you're dedicated and interested in what you're doing," says Salmore. "It helped on my resume and job interviews. It definitely helped get the jobs that I applied for."

The scholarship is also an important introduction to STMA for those individuals interested in the sports turf industry. An STMA membership allows members to access job postings and a leg up on others applying for jobs within the industry. Shawn Mahonski received his current job as Athletic Field Manager at Towson University because of his membership with STMA.

At STMA, we make it a SAFE bet that applying for the scholarship will be worth it. With the easy application process and long-time benefits, we encourage all individuals planning a career in the sports turf industry to apply.

The application process includes simply printing and completing the application and returning it to the SAFE Scholarship Committee. It's as simple as that: just do it! SAFE's goal is to make it as easy as possible to apply for the scholarship. Nick Gow urges those interested to apply and apply every year. The scholars raved at how easy the process was, and mentioned how they recommend it to their interns and students because it could lead to something bigger and better. "Apply for every opportunity that is out there and take advantage. Most of them lead to somewhere or another opportunity," says Mahonski.

Ten years has come and gone, and these scholars are still reminiscing about the journey they've had. STMA applauds you and your dedication to the industry. Continuously grateful to our members, the SAFE Foundation and its scholarships would not be possible without the support and donations to help us fulfill our mission to enrich communities through championing safe, sustainable sports and recreation fields for all athletes. ■

Kenzie Jay is the SAFE Foundation intern and a University of Kansas journalism student.

List of Current CSFM's:

Richard Alford	CSFM	Amy Fouty	CSFM	Brandon Putman	CSFM
Kari Allen	CSFM	Mark Frever	CSFM	Jon Quist	CSFM
Matt Anderson	CSFM	Dale Getz	CSFM, CSE	Allen Reed	CSFM
Mike Andresen	CSFM	Jody Gill	CSFM	James Rodgers	CSFM
Weston Appelfeller	CSFM	James Gish	CSFM	Matthew Rogers	CSFM
Peter Ashe	CSFM	Josh Glover	CSFM	C. Tom Rudberg	CSFM
Ted Baker	CSFM	Ed Hall	CSFM	Connie Rudolph	CSFM
Robert Behr	CSFM	Kevin Hardy	CSFM	Dean Rush	CSFM
Bob Benyo	CSFM	James Hermann	CSFM	Jeff Salmond	CSFM
Steve Berg	CSFM	Shane Hohlbein	CSFM	Don Savard	CSFM, CGM
James Bergdoll	CSFM	Chris Hohnstrater	CSFM	Casey Scheidel	CSFM
George Bernardon	CSFM	Eric Holland	CSFM	Mike Schiller	CSFM Ret.
Larry Berry	CSFM	Jonathan Holland	CSFM, CFB	Don Scholl	CSFM
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Changes to CSFM program increase certification accessibility

Many sports turf managers and turf professionals will attest to the fact that an individual's experience "in the field" goes a long way towards making them a better professional. This is especially true for crew members and assistants working in the industry who put in long hours to ensure their fields are operating at their best.

STMA agrees. A discussion began in 2012 in the Certification Testing Subcommittee about slightly recalibrating the certification process to more fully take into account the real-world experience of crew members, assistants and student interns to broaden accessibility and opportunity for all in the industry.

A minimum of 40 points are needed to qualify for the Certification Program. Points are accumulated through education and real-world experience in one's career, with varying employment positions and achievements receiving different numeric values.

Previously, there had not been a formal point structure for crew members and assistants; the Certification Testing Subcommittee and STMA Board of Directors agreed that this needed to be rectified and there was consensus the experience point values for crew members and assistants be increased to reflect the value these individuals bring to their organizations. The following recommendations were made by the committee to the Board:

- Increase the crew member from 1 point per year to 2.5 per year
- Increase the assistant from 3 points per year to 4 points
- .1 point to be awarded per 100 hours worked for students in formal internship programs

The changes implemented allow a crew member with no formal education to be eligible to test for the Certification Program in 16 years, rather than 40 with the original point system. Additionally, the changes rightly acknowledge the importance of turf internships for students and their importance to the vitality of STMA.

PLANNING FOR THE FUTURE

Those individuals interested in and passionate about providing the best sports surfaces for all levels of play raising the level of the sports turf management industry should definitely consider becoming a Certified Sports Field Manager.

Besides increasing your earning potential by (on average) \$7,500, obtaining certification provides a wealth of personal benefits. Some of these include:

- Recognition of achievement and your expertise as a leader in your field
- Commitment to excellence and the very best ideals the sports turf industry strives to honor

Sample exam questions

The certification exam required of all applicants covers a broad range of sports turf topics but is extremely accessible to all who have experience in the field. The exam covers four major areas of sports turf management: Agronomics; Pest Management; Administration; and Sports Specific Field Management.

Agronomics

1. A 100 pound bag of fertilizer with an analysis of 18-5-9 would contain which of the following:

- 5 pounds of actual phosphorus
- 5 pounds of available phosphate
- 9 pounds of potassium
- 18 pounds of urea

Answer: B (5 pounds of available phosphate)

Pest Management

2. A herbicide with the label designation 2EC:

- Contains 2 parts per million active ingre-

dient concentration in the container

- Has an active ingredient concentration of 2%
- Contains 2 pounds of active ingredient per gallon of formulated product
- Weights 2 pounds per gallon

Answer: C (Contains 2 pounds of active ingredient per gallon of formulated product)

Administration

3. Providing feedback is one of the most important tools for improving performance. Which of the following is **not** true about providing feedback?

- Negative feedback should only be given at an annual review in order to reduce tensions throughout the year
- Supportive feedback is used to reinforce actions and behaviors that are desirable
- Constructive feedback is used to change

behavior that is ineffective or inappropriate

- It is important that employees understand the positive outcomes for performing well, as well as the consequences when performance is low

Answer: A (Negative feedback should only be given at an annual review in order to reduce tensions throughout the year)

Sports Specific Field Management

4. The most appropriate paint to use on a natural grass field is:

- Latex
- Oil-based
- Enamel
- All of the above can be used

Answer: A (Latex)

DOC'S DUGOUT IS BACK!

This new monthly feature will honor the people, places and equipment that helped to create the foundation for our association and advance the sports turf management profession. The "Doc" in Doc's Dugout refers to the late Dr. Kent Kurtz, who spearheaded the initial effort to preserve the history of STMA.

- Increased educational opportunities by expanding the availability of critical resources that will make you more effective in your position.

The CSFM program, now in its 14th year, has graduated hundreds of sports turf managers from across the industry and country, and continues to challenge those who want to "raise their game." The testing portion is challenging but definitely do-able, especially for someone who has worked on a field; 79 percent of people pass it on their first or second try.

If you are eligible to become certified and want to take your career to the next level, the CSFM program and STMA stand ready to assist.

Visit stma.org/csfm-program to learn more about the program, including details on the recalibrated point system for crew members and assistants, and to download the comprehensive application packet. ■



Roger O'Connor, left, former grounds crew leader for Wrigley Field, paints the field in 1984 using a type of paint striper. It uses a liquid propane tank (hopefully filled with compressed air and not propane) instead of a motor. It was silent and worked well, however it can lose pressure fairly quickly and need to be re-charged. If it was using LP gas, it would last much longer, but smoking near it was dangerous.

STMA Affiliated Chapters Contact Information

Sports Turf Managers Association of Arizona: www.azstma.org

Colorado Sports Turf Managers Association: www.cstma.org

Florida #1 Chapter (South):
305-235-5101 (Bruce Bates) or
Tom Curran CTomSell@aol.com

Florida #2 Chapter (North): 850-580-4026,
John Mascaro, john@turf-tec.com

Florida #3 Chapter (Central): 407-518-2347,
Scott Grace, scott@sundome.org

Gateway Chapter Sports Turf Managers Association: www.gatewaystma.org

Georgia Sports Turf Managers Association: www.gstma.org

Greater L.A. Basin Chapter of the Sports Turf Managers Association: www.stmalabasin.com

Illinois Chapter STMA: www.ILSTMA.org

Intermountain Chapter of the Sports Turf Managers Association: <http://imstma.blogspot.com/>

Indiana - Contact Clayton Dame, Claytondame@hotmail.com or Brian Bornino, bornino@purdue.edu or Contact Joey Stevenson, jstevenson@indyindians.com

Iowa Sports Turf Managers Association: www.iowaturfgrass.org

Kentucky Sports Turf Managers Association: www.kystma.org

Keystone Athletic Field Managers Org. (KAFMO/STMA): www.kafmo.org

Michigan Sports Turf Managers Association (MiSTMA): www.mistma.org

Minnesota Park and Sports Turf Managers Association: www.mpstma.org

MO-KAN Sports Turf Managers Association: www.mokanstma.com

New England STMA (NESTMA): www.nestma.org

Sports Field Managers Association of New Jersey: www.sfmanj.org

Sports Turf Managers of New York: www.stmony.org

North Carolina Chapter of STMA: www.ncsportsturf.org

Northern California STMA: www.norcalstma.org

Ohio Sports Turf Managers Association (OSTMA): www.ostma.org

Oklahoma Chapter STMA: 405-744-5729;
Contact: Dr. Justin Moss okstma@gmail.com

Oregon STMA Chapter:

www.oregonsportsturfmanagers.org
oregonstma@gmail.com

Ozarks STMA: www.ozarksstma.org

Pacific Northwest Sports Turf Managers Association: www.pnwstma.org

Southern California Chapter: www.socalstma.com

South Carolina Chapter of STMA: www.scstma.org

Tennessee Valley Sports Turf Managers Association (TVSTMA): www.tvstma.com

Texas Sports Turf Managers Association: www.txstma.org

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- F Sports Complex G Athletic Field and/or Park Architect/Designer
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 H Other (please specify) _____

2 Which of the following best describes your title? (check ONLY ONE)

- A EXECUTIVE/ADMINISTRATOR — President, Owner, Partner, Director, General Manager, Chairman of the Board, Purchasing Agent, Athletic Director
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3 Do you have the authority to buy, specify or recommend products and/or services for your business or organization?

- Y Yes N No

4 Yearly operating expenditures (excluding salaries)

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Q&A with Dr. David Minner

Professor, Iowa State University

Questions? Send them to David Minner at Iowa State University, 106 Horticulture Hall, Ames, IA 50011 or email dminner@iastate.edu. Or, send your question to Grady Miller at North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or emailgrady_miller@ncsu.edu.

Where skin meets grass

At our local community college, 24-inch wide strips of sod are being removed to realign all edges where the skin meets the grass. All the edges have a lip and are somewhat jagged after so many years of edging. We are removing 18 inches of sod to make straight lines again and then installing the 24 inches of new sod. How much of the aglime should we core out to replace with black dirt before installing with new sod? Is it even necessary to core out the aglime? Will the sod root down through aglime?

— Jon Baedke, Smitty's Lawn Landscape Garden, Fort Dodge, IA

Agricultural lime or aglime is sold as a bulk material to raise the pH of acidic soil and is readily available and widely used in farming communities. It is basically a calcium carbonate material with most of the particles in the range of 8 to 60 mesh size (mesh 8 about the size of BB's and below mesh 60 is like face powder). The best quality aglime for neutralizing acid soils is usually lighter gray to white and finer material; however those that are preferred for a baseball infield skin are tan/buff/red colored to reduce glare and have a more grainy appearance with less dust. Aglime is widely used as a baseball infield skin material because of its low cost, wide availability, and good playability under wet conditions. On the down side, aglime can become hard and dusty when insufficient water is used to manage the skin surface.

In my opinion the sod should be placed

on at least 6 inches of good topsoil. That would require excavating out most of the aglime since the aglime base pads are usually 4 to 6 inches deep. In projects like yours or whenever the skin field is reconfigured, there is a tendency to lay sod directly on top of the aglime because it requires less work. I suggest that you avoid this practice and put in a growing media that will create aggressive turf growth and a clean edge between the grass and base path.

Too often I see lazy contractors place sod directly on top of aglime or other infield skin materials when renovating infields. With adequate water the sod will root and begin to grow into the aglime and will look satisfactory for a while, perhaps the first season, but in time the aglime (think about it, it is lime with a very high pH) provides a poor growing media; droughty and low in organic

matter with a pH high enough to induce deficiency of other nutrients such as iron.

Grass growth is stunted and turf appears lighter green when grown on aglime. So my preference is to remove the aglime and replace it with good topsoil before sodding. It is interesting to note that weeds like goosegrass and spurge will readily grow in aglime fields but when it comes to finely manicured turf aglime is not a good growing media. Lips that form from blowing aglime also requires routine removal to promote aggressive turf growth at the edge where skin meets grass.

I've also notice a trend toward all grass base pads between home and first and home and third, especially when coaches and players are managing fields. They like it because there is less lip and skin to manage. I didn't like this non-traditional field look at first, but after putting in and managing a few fields with grass base pads, I certainly do understand the attraction; it is easier to mow grass than to manage skin and lips.

If you are converting from aglime base pads to grass base pads it is extremely important to excavate out all of the aglime and replace it with a good loam soil before sodding. Don't fill the base pads with sand in hopes of making it drain better because it will dry excessively in the shape of the old base pad and differential water of the strip usually never happens. Just use a good local native soil to fill the excavated base pad and then topdress with sand and compost to smooth the surface. It's always a struggle to keep the soil materials separate where the skin meets the grass. ■



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