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September 2023 Vol. 39 No. 9

The Official Publication of the Sports Field Management Association

Schools and Parks Baseball Field of the Year **10** | The Benefits of Managed Turfgrass Spaces **26** Insect Pests of Cool-season Sports Fields **28** | Tackling Annual Bluegrass **50**

Team Effort

Women in Turf come together for Little League Softball World Series





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Editor's Note



John Kmitta Associate Publisher / Editorial Brand Director jkmitta@epgacceleration.com 763-383-4405

In this issue, we are proud to highlight the efforts of the sports field managers who volunteered for the Little League Softball World Series (LLSWS) in Greenville, N.C. I had the pleasure of attending some of the LLSWS games held at Stallings Stadium at Elm Street Park, as well as the two Athletes Unlimited professional softball games at Max R. Joyner Family Stadium at East Carolina University. The volunteers did an impeccable job preparing and maintaining the fields for the Little League players and professionals alike, and it was great to witness their efforts and dedication firsthand.

I want to thank SFMA President Sun Roesslein, CSFM, for inviting me to Greenville to cover the event. Also, my thanks to Chris Ball, CSFM; Little League Senior Director of Communications Kevin Fountain; Stallings Stadium On-Site Media Contact Scott Rogers; and Sean Rhomberg and Eric Rhew with Athletes Unlimited. There were a lot of moving parts and logistics to provide me with media access, so I appreciate the group effort.

The passion of the fans was impressive, and the atmosphere was electric. On more than one occasion, people saw my media badge and camera and asked which team I was there to cover, to which I replied, "the grounds crew." That often led to more in-depth conversations about the magazine, the grounds crew and the profession. It was great to discuss the efforts that went into giving all the athletes in Greenville amazing, safe playing surfaces. As such, my biggest thanks goes to all the volunteers who journeyed from throughout the country to dedicate their time, skills and knowledge. Thank you for being an amazing representation of the sports field management profession, and an example for the young people who were on the field and in the stands. And thank you for allowing me to hang out with you and be a part of the experience. Keep up the great work.

THE "X" FACTOR

You will note in this issue that the former "From the Twitterverse" section has a new name. This was primarily driven by Twitter's own name change to "X" as Elon Musk looks to reinvent his "super app." But our change is also an overdue adjustment as we look to share sports field management posts from a range of social media platforms.

CORRECTIONS

The photo on page 28 of the June issue of *SportsField Management* was published without a photo credit. It should have been credited as *Photo by Alyssa Siegel-Miles, University of Connecticut.* Also, the stock image chosen for page 31 of that issue should not have been included, as it was not consistent with sustainable landscaping practices. **SFM**

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From the CEO



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Chair: Brad Thedens, CSFM Board Liaison: Chase Straw, Ph.D. Members: Matthew Arms, CSFM; Philip Braselton; TJ Brewer, CSFM; Joe Churchill; Forrest Jammer; John Kmitta; and David Schwandt. The partnership between SFMA and our 34 chapters is priceless. We share a common goal of serving our members and the sports field management profession to the best of our ability. We've all heard that TEAM means Together Everyone Achieves More. And that truly fits the roles that chapters and the national association play.

Chapters provide local support and often provide more personal interaction and engagement opportunities for members in their area. They serve as regional channels of information to current and future sports field management professionals. Some of the key functions that chapters provide include:

 Sharing information on services, programs, publications, and events that the chapters and SFMA provide.

■ Providing expertise, particularly region-specific knowledge.

■ Educating and developing professionals.

Recruiting members.

■ Engaging and connecting members through local programs.

 Developing leaders through chapter opportunities and enhancing essential skills.

 Advocating for the profession and the association through direct contact with stakeholders and end users.

■ Listening to and conveying trends and potential issues to SFMA.

A successful relationship between a chapter and the national association is reciprocal and mutually beneficial.



Laura H. Simmons, MBA, CAE SFMA Chief Executive Officer LSimmons@ Sportsfieldmanagement.org

The chapter relies on the resources and support of the association for operations, while national benefits from the local or regional knowledge and expertise of the chapter. When the relationship is working well, both entities benefit.

SFMA's Board of Directors and Chapter Relations Committee are committed to the ongoing enhancement and support of this partnership. The committee, chaired by Jason Bowers, CSFM, is working to provide more resources for local chapter leaders. Marketing and information templates will be created, social media support has been increased, a solid program for the COTS (Chapter Officer Training Session) is in development, Town Hall meetings for education and networking have been launched, and chapter information will be made readily available at the 2024 Conference & Exhibition to help attendees connect with a chapter in their region. We have also streamlined some processes for chapters — such as providing an online form for submitting events to be posted on the SFMA website for all to see and access.

If you are not a member of your regional chapter, I strongly encourage you to consider it. This is a great way to expand your network, share and gain knowledge and increase your expertise. **SFM**

Laura Simmons, MBA, CAE

Member Spotlight

SFMA has begun recognizing a member of the association who exemplifies the role of a sports field manager. SFMA was honored to highlight Zach Van Voorhees, CSFM, in July and Maritza Martinez in August.

ZACH VAN VOORHEES, CSFM

From June 3 to 10, 2023, Zach Van Voorhees, CSFM, embraced a new leadership role, a pivotal week coinciding with the town's highlight of the year, the NCAA Division II World Series. Steering a team of 20, Van Voorhees oversaw operations at the National Training Complex (USA Baseball) and Thomas Brooks Park. His meticulous planning ensured the Coleman Field playing surface met MLB standards, while his handling of challenges enabled the seamless execution of 14 games in seven days. His commitment, professionalism and expertise exemplified the qualities of a dedicated CSFM and SFMA member.

MARITZA MARTINEZ

Maritza Martinez's path from Dodge County, Georgia, to a pivotal role at St. Louis CITY SC exemplifies the dynamic nature of sports field management. With a background rooted in nature and a love for plants, Martinez's unexpected pivot toward sports field management during her time at Abraham Baldwin Agricultural College set the stage for her remarkable journey. An internship with the Gwinnett Stripers solidified her dedication, igniting a passion that would shape her future.

Beyond the traditional perception of grass upkeep, Maritza sheds light on the multidisciplinary collaboration that fuels successful field management. Her pursuit of a master's degree at the University of Tennessee mirrors her unwavering commitment to growth. Martinez's mission to inspire the next generation of sports field managers by highlighting the STEM aspects of the field showcases her dedication to its future. To follow her ongoing journey, connect with her on X (formerly Twitter) @maritzamows.

SFMA wants to highlight its members! Email Whitney Webber at *wwebber@sportsfieldmanagement.org* with your nominations, including accompanying stories highlighting the accomplishments of SFMA members.

Innovative Awards Program

SFMA acknowledges that continuous advancements in technology, science, products and services are contributing to the enhancement of the sports field management profession. In recognition of the companies leading this evolutionary progress, SFMA established the Innovative Awards Program.

ELIGIBILITY CRITERIA

Open to all SFMA Commercial members participating in the upcoming SFMA Annual Conference and Exhibition. Participating companies must showcase their products, services or technologies at the SFMA Exhibition. Each company is allowed one submission per year.

QUALIFICATION REQUIREMENTS

The submitted product, equipment, service or technology must meet the following criteria:

■ It should have been introduced for sale between the end of the current year's SFMA show and the conclusion of the subsequent year's SFMA show.

• It should significantly enhance the efficiency and effectiveness of sports field managers, prioritizing the creation of safer and more playable playing surfaces for athletes.

Applications must be submitted by October 15.

SELECTION PROCEDURE

A panel of SFMA non-commercial members representing all membership categories will evaluate the entries. Each year, there may be one or more recipients of the award. The panel of judges will grant awards to companies whose services, products, technologies or equipment align closely with the provided definition of innovation.

NOTIFICATION AND RECOGNITION

The identity of the winner(s) will remain confidential until their announcement on the first day of the trade show. SFMA will honor the winner(s) by:

Making a special announcement during the trade show.

Providing a dedicated logo for the company's use in promoting their award-winning product, service, technology or equipment.

■ Including coverage in SFMA communications and conference press releases.

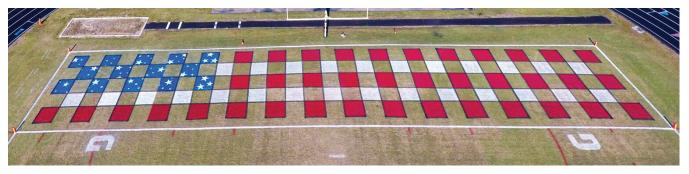
Displaying special signage at the winner(s) booth(s) within the SFMA Exhibition.

■ Extending verbal and visual acknowledgment during the Annual SFMA Awards Banquet.

Visit https://www.sportsfieldmanagement.org/ innovative-awards/ to complete the brief online application.

Stars and Stripes Contest winner

Congratulations, for the second year in a row, to Marc Moran, CSFM, and his turfgrass students at Atlee High School for winning the SFMA Stars and Stripes Contest. Their outstanding work garnered almost 700 votes, earning them this well-deserved recognition.



Moran has been awarded a complimentary registration to SFMA's 2024 Conference and Exhibition in Daytona Beach, Florida. His winning design will be showcased at the event, further highlighting their talent and achievements.

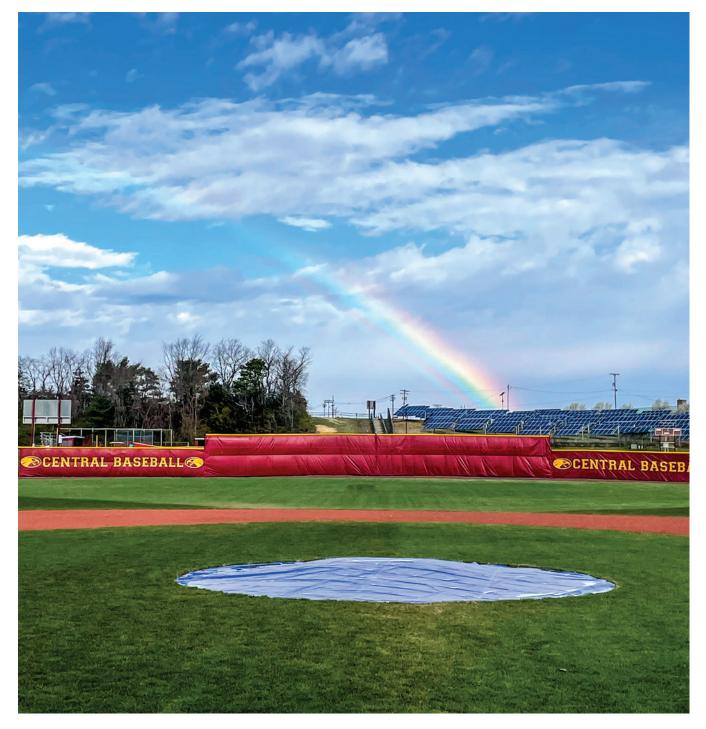
Moran has served as the Agriculture/Turf Science teacher at Atlee High School for the last 25 years. He holds a BS in Agricultural Education from Virginia Tech and pursued further education at Penn State University. Notably, Moran, alongside two other teachers, played a pivotal role in developing Virginia's inaugural Turf Science Curriculum back in 2001. Since then, this program has consistently attracted between 40 and 60 students, with close to 60 enrolled in the current year, proving its enduring success.

Kudos to Marc Moran and his dedicated students for their exceptional contributions to the field of turfgrass and agriculture education!

2024 SFMA Conference

Planning is heavily underway for the 2024 SFMA Conference and Exhibition! Visit https://www. sportsfieldmanagement.org/conference/ for conference details, education and CEUs, travel and hotel information, exhibitors and sponsorship offerings. **SFM**



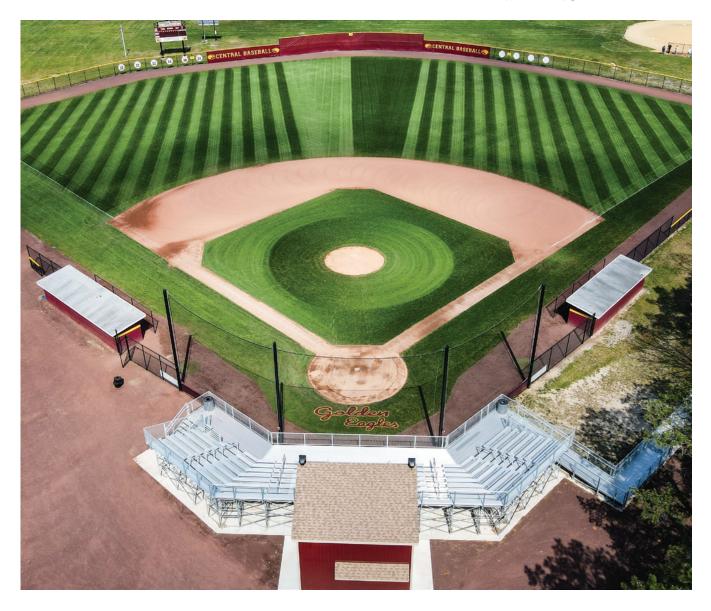


AL KUNZMAN FIELD AT AL LEITER PARK CENTRAL REGIONAL SCHOOL DISTRICT, BAYVILLE, NEW JERSEY

The Field of the Year Awards program is made possible by the support of sponsors Carolina Green Corp., Precision Laboratories, John Deere and World Class Athletic Surfaces.

The Central Regional School District was given a gift of a donation to renovate the baseball field; and although it was before my arrival, the project was handed to me at the end of the renovation. The district realized that it had to invest in a sports field manager to keep it in good condition for the future of the field. They made that investment in hiring me and invested in the grounds department with new equipment. Although the renovation was not perfect due to lack of direction and oversight, the district allowed me to do what was necessary to get the field where I wanted it to be. My vision was to set a standard of quality to that of a highlevel college field or Minor League Baseball field. The Central Regional School District should be commended for investing resources to get all the sports fields safe and playable, while recognizing that a competent sports field manager is the place to start. We utilized the highest-quality products to create the field: Tuckahoe Turf Farms Kentucky bluegrass, DuraEdge Pro infield conditioners and DuraEdge BlackStick for the mounds. These products allowed us to be on top of everything on the ballfield and never concerned with playability. I graduated from this school district and proudly played varsity baseball on the previous — tired — ballfield. It's been an honor to be chosen to be the vision and maintain the prestigious new ballfield at Central Regional School District.

- Keith Fisher, supervisor of grounds





Level and category of submission: Schools and Parks Baseball

Field manager: Keith Fisher

Title: Supervisor of grounds

Education: High school

Experience: Head groundskeeper, Atlantic City Surf 1999-2000, 2003-06; assistant head groundskeeper, Jersey Shore BlueClaws, 2001-02; assistant groundskeeper, New York Yankees, 2014; head groundskeeper, Toms River Regional Schools 2015-19; grounds foreman, Middlesex County Vocational School District, 2019-21; supervisor of grounds, Central Regional School District, 2021-present.

Original construction: 1964

Turfgrass: Kentucky bluegrass, ryegrass

Rootzone: Sandy loam

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SportsField Management (SFM): Congratulations on the Field of the Year win. What are you most proud of with this win, and/or what do you think stands out most about the winning field?

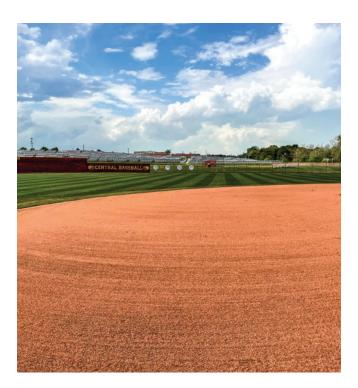
Keith Fisher: What I am most proud of with this win is the fact that I was able to come back to my own high school — where I graduated from and played high school baseball - and provide the student athletes with the best possible baseball field. I have always tried to give back to the school with my sports field knowledge. When Al Leiter, an alumnus, gave a donation to the district to rebuild the baseball field, they knew they had to hire someone to maintain it to the level they expected. I was approached, and the district created my position and really bought into my vision for the overall care of not only the baseball field but all athletic fields and grounds. Frank Burlew, Robert Lovenstein and Sal Guzzo deserve a lot of credit for the success of this field because they stepped up and followed my lead to improve what was already there. Also Dr. Parlipenedes and John Scran deserve credit for getting the field into my hands. The district has a proud baseball tradition, and I'm excited I can add to that. What stands out the most about this field is the way it allows me to show how proper field management can bring a professional-quality sports field to the high school level. That can be achieved at any school with the passion and drive to do a good job and create a safe field.

SFM: What attracted you to a career in sports field management, and what has been your career path through the industry?

Fisher: I played sports throughout my life, and I also had a passion for the fields I played on. I began my career in landscaping, but that quickly changed when my brother was working in Florida for the Vero Beach Dodgers and moved back to work for the Atlantic Citu Surf. He needed an assistant for the 1999 season and that's where it all began. I loved being on the field and being a part of the process of getting a field ready for play. I spent another year in Atlantic City and then moved to the Jersey Shore BlueClaws and then back to Atlantic City until 2006. I worked for two different landscape companies after I left Atlantic City, but still did baseball field work when I could. In 2014, I was hired as an assistant groundskeeper with the New York Yankees. It was a dream come true to work in Major League Baseball. Unfortunately, I had to return closer to home for my family, so this led me to work at a school district in Toms River, then Middlesex County, where I won this award in 2020. Now I'm lucky enough to have ended up at Central Regional School District where my children — Faith and Tommy — will play on the athletic fields that I maintain.

SFM: Who would say are your mentors in the industry, and/or what is the best piece of advice you have received?

Fisher: Everywhere I have been, someone has had a part in my success in this industry. From my brother Brian Fisher in Atlantic City to Bill Butler for the BlueClaws, Dan Cunningham and the staff with the Yankees, Coach Ken Frank, John Curry, Wade Bell-Dublis and staff in Toms River and Fran Cap in Middlesex. Those men helped mold me into the person and sports field manager that I am. When I started working for the public school system, The New Jersey Sports Field Managers Association was very helpful in guiding my transition from baseball only to all athletic fields. Scott Bills, Rich Watson, Brad Park, Don and Debbie Savard, Fred Castensciold, Bernard Luongo, Zack Holm, Craig Tolley, Jim Ianetti, Jessica Phillips and Matt Olivi. Also, when this field was built, they brought in a turf consultant, George Pierpoint, and he is someone I lean on when I have questions. They have all had a major impact on my career. The great thing about our industry is you can always reach out and ask



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– Trevor Austin – LSU Sports Turf Manager Vears ago, LSU decided to move to Celebration[®] Bermudagrass across its sports facilities. Over

the years, the athletic grounds staff has installed Celebration on the soccer, softball, baseball, practice fields, and the crown jewel, football's Tiger Stadium. Across the maintenance spectrum for Celebration, the LSU grounds staff have been innovators from day one. They continue to produce a championship product year in and year out.



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FIELD OF THE YEAR



for help. I am proud that I am at the stage of my career where people now look to me for the same guidance and support that I have been provided with throughout my journey in sports field management.

SFM: What are the biggest challenges you have faced with the winning field, and how have you approached those challenges?

Fisher: The biggest challenge was not being a part of the renovation of the field. There were issues that we found out after I was hired as the field was being finished. The irrigation failed during the summer,

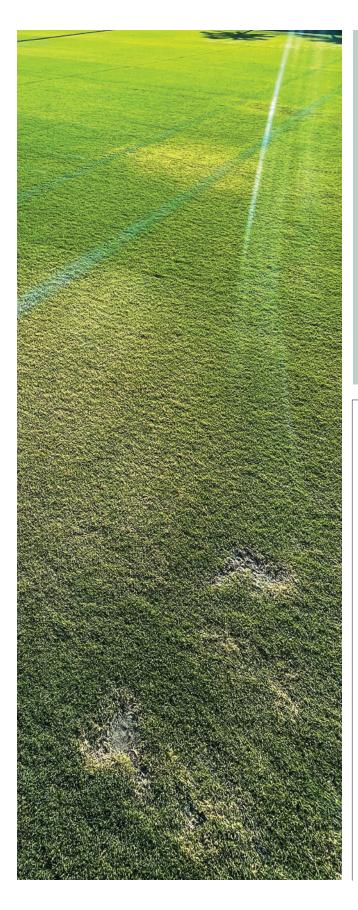


which in turn killed the new Kentucky bluegrass. The outfield was not graded properly, no warning track was created, no bullpens and no equipment. The school administration and board of education supported my vision for not only the baseball field but for the grounds department as well. Once we established what was needed, we ordered a mower, aerator, topdresser and an infield machine; but supply chain issues delayed all the equipment. I then focused on working with the crew that was at the district for years to build and enhance their knowledge. It wasn't that they didn't know how to do the job correctly, it was that they were never given the time or tools necessary to get it done in the past. Having a great administration and board of education was instrumental in overcoming those challenges.

SFM: How has your career benefited from being a member of SFMA?

Fisher: Being a part of the SFMA family is extremely important to my career. It allows me to be able to reach out and connect with a multitude of professionals. It has also helped validate my philosophies on sports field management with literature on the website and monthly mailings. Being a presenter at the 2023 conference allowed me to put my sports field management practices — especially baseball — on display and help other sports field managers in similar situations. I am able to educate myself and my employees through training and field days that are offered by SFMA and our local chapter, NJSFMA. SFM

JOHN MASCARO'S PHOTO QUIZ



CAN YOU IDENTIFY THIS TURFGRASS PROBLEM?

PROBLEM: Deep dents on the turf and irregular brown areas

TURFGRASS AREA: Professional football team's training fields

LOCATION: Miami, Florida

TURFGRASS VARIETY: 419 bermudagrass

Answer on page 33

John Mascaro is president of Turf-Tec International

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Team Effort at LLSWS

Women in Turf come together for Little League Softball World Series

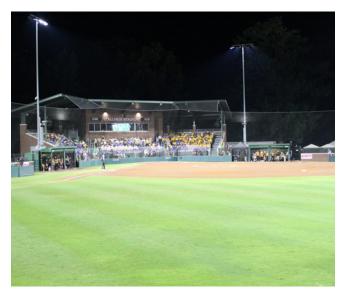


By John Kmitta

Sports field managers from throughout the country were part of the all-female volunteer grounds crew in charge of the 2023 Little League Softball World Series (LLSWS), August 6-13 in Greenville, North Carolina.

In addition to managing the LLSWS field — Stallings Stadium at Elm Street Park — the crew also prepared and maintained the softball field at East Carolina University for two Athletes Unlimited professional softball games held on August 9.

The crew was responsible for all the field maintenance before, during and after the games. This is the second year the all-female crew came together for the LLSWS. The volunteers ranged from high school turfgrass students to seasoned veterans.



Photos on this page by John Kmitta



Photo by John Kmitta



Photo by Dawn South

Sarah Martin, CSFM, City of Phoenix, said the best part of being on the LLSWS crew was getting to know the other volunteers, hearing their stories, learning from them and becoming friends.

"Working with an all-female crew was amazing, and I am grateful to have had the opportunity," said Martin.

This was the third year Cheryl Miller of the Asheville Tourists has worked the LLSWS, having worked the first two years of the tournament as an employee of Little League Inc.. "While my time has ended with Little League as an employee, now I get to enjoy being just a volunteer with the rest of the ladies," said Miller. "I think it's important to show the teams, families and fans that having a career in the turf industry is an option that is available to anyone."

Miller was motivated and inspired by working alongside some of the most experienced female trailblazers in the industry, but also by the younger students. "To see the next generation paint their first foul line or drag an infield for the first time on such a big stage, there's nothing like it," said Miller. "You watch them become passionate with all the things you're passionate about with this job. It's just the best feeling."

"In March of 2022, I made a post on Twitter about my love for the turf industry," said LLSWS crew member Brynn South. SFMA President Sun Roesslein, CSFM, saw the post and invited South to Greenville.

"I grew up watching Little League softball and baseball on TV, just dreaming that one day I could go and watch the tournament," said South. "The offer to work this tournament was something I couldn't pass up. Knowing that I could help provide these young girls a playing surface that I could only dream of just made the decision much easier."

Megan Muesse, Texas A&M, returned for her second year at the LLSWS.

"As a student, I'm not sure what I want to do with my career," said Muesse. "So, being able to learn from all these women what they do for a career, and the path that led them there, is very valuable for me to learn from and apply to my life."

Added Muesse, "The best message that I can give women — or to anyone — is to just get involved. It may be scary to go out of your comfort zone, but it's worth it once you do."

Martin echoed that advice, "Step out of your comfort zone! The people you meet, friendships you form, and the knowledge you gain is well worth it."

South shared the words of fellow LLSWS grounds crew member, Chrissie Segars, Ph.D., "In a world that wants women to whisper, I choose to yell!"



Photo courtesy of @womeninturfteam on X (formerly Twitter)



Photo by John Kmitta



Photo by John Kmitta



Photo by Dawn South



Photo by Dawn South



Photo by John Kmitta



Photo courtesy of Tiger Turfgrass



Photo by Dawn South



Photo by Dawn South



Photo by John Kmitta



Photo by John Kmitta



Photo by John Kmitta





Photo by John Kmitta

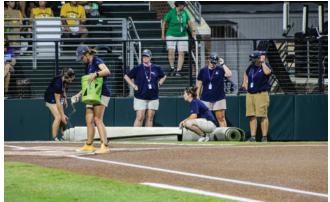


Photo by John Kmitta



Photo by Dawn South



Photo by John Kmitta

Continued on page 24





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Continued from page 22



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The Benefits of Managed Turfgrass Spaces



Individuals engaging in recreation and relaxation in Central Park, New York. All photos by Michael R. Barnes, Ph.D.

By Michael R. Barnes, Ph.D.

A broad narrative exists among those not involved in turfgrass management and research that turfgrass spaces provide few benefits beyond simple aesthetics. Most commonly, such narratives frame this comparison based on the high amounts of inputs needed to maintain turfgrass areas in relation to the perceived limited benefits. These narratives, however, leave out the broad variety of benefits both ecologically and socially of properly managed turfgrass spaces — including sports fields. So how did we get to this place where there is an imbalance between the negative aspects individuals hold and the lack of positive aspects?

UNDERSTANDING ECOSYSTEM SERVICES

Two connected factors have played a significant role in this imbalance being created and persisting until today: 1) comparing vastly different landscape types and 2) a lack of research on cultural benefits.

Before we dive into those two factors, it would be helpful to discuss the concept of ecosystem services. Ecosystem services provide a framework for categorizing benefits of nature. Those benefits are organized into three broad categories.

Cultural ecosystem services refer to outputs from ecosystems that affect the physical and mental states of people (e.g., recreation).



Neiman Sports Complex, St. Paul, Minnesota.

Provisioning ecosystem services are more tangible material outputs that can be biotic and abiotic (e.g., decorative flowers).

■ **Regulation and maintenance** ecosystem services refer to the abiotic and biotic effects of environments that impact human comfort, health and/or safety (e.g., cooling).

Within each category there are a vast number of subcategories to enhance the specificity of benefits. This helps researchers better capture specific differences between landscapes and ecosystems and then compare the relative benefits between different types of nature. With a little background on ecosystem services, we can discuss the two factors mentioned earlier: inappropriate landscape comparisons, and missing cultural ecosystem services.

WHY IS TURFGRASS DEVALUED?

First, turfgrass greenspaces rarely are compared on a like-to-like basis with other surface types. Often, turfgrass is compared with landscapes that share minimal characteristics in common with it such as prairies or forests. Although these landscapes have immense value, they don't afford the same use and functions as turfgrass. For example, it would be quite difficult to hold a soccer match in a forest without a lot of risk. So, although a forest will provide significantly more CO₂ absorption than a turfgrass sports field, its uses and functions are distinctly different.

So, to what should we compare turfgrass areas? These spaces provide a comfortable ground cover, which allows a variety of activities to take place on them. The logical comparisons are then alternative "ground covers" (e.g., artificial turf and hardscape) or lack of ground cover (e.g., dirt). When we compare the ecosystem services, what do we find? Natural turfgrass areas contain far more ecosystem services than the alternatives, which provide — at best — minimal services, or — at



University of Minnesota St. Paul Campus, St. Paul, Minnesota.

worst — disservices, or outputs that negatively impact environmental or human well-being (e.g., increased heat). Therefore, when using like-to-like surface comparisons we can say that turfgrass greenspaces provide:

■ Increased CO₂ sequestration.

Increased cooling to combat urban heat effects.

■ Increased opportunities for safe and sustainable recreation and relaxation.

It also should be noted that these ecosystem services or benefits can be enhanced further by the adoption of best management practices and lower-input turfgrasses, allowing turfgrass spaces to increase their benefits while maintaining quality.

The second factor is related to an issue from the research and academic side, whereby, until recently, cultural ecosystem services have received little attention. The ecosystem services framework was first widely adopted for use in the natural sciences, which prioritized work on provisioning and regulation and maintenance services of landscapes, which makes sense given their perspectives. However, this meant that the area in which turfgrass is strongest — cultural services — was not talked about nearly as frequently to its ongoing detriment.

An observation from my initial work in the world of turfgrass science was that individuals largely glossed over the surface on which activities were taking place. While researchers would talk about the benefits of parks, for example, they would mention that people could play frisbee in the park, but never mention what surface it was on – which was most likely turfgrass. So, what may seem obvious to folks in the industry is sadly overlooked by many.

What kinds of benefits do turfgrass areas have specifically related to cultural ecosystem services compared to similar surfaces?

Continued on page 37

Insect Pests of Cool-season Sports Fields

By Geoffrey Rinehart

Integrated pest management (IPM) is a process of integrating several approaches to the management of insects with the goal of keeping damaging populations below threshold levels. For insects, these threshold levels are usually expressed as "individuals found per square foot" or "per trap" over a given period of time.

Some popular scouting techniques include soap flushes (helpful for cutworms, sod webworms and cranefly larva) and pitfall traps (for adult billbugs). It's important to realize that many beneficial insects are at work regulating pest populations by way of predation and parasitism. Thus, successful IPM programs seek ways to preserve these beneficials by using targeted threshold levels and applying products that minimize off-target impacts.

Broad-spectrum products such as pyrethroids provide quick knockdown of pests that come into contact with the product, but these products can also knock back beneficial populations. Active ingredients such as chlorantraniliprole, tetraniliprole, spinosad and *Bacillus thuringensis* are more targeted to pests and have relatively little impact on beneficials within the turfgrass system.

Some varieties of tall fescue, fine fescue and perennial ryegrass contain symbiotic fungi called endophytes. Endophytes grow between cells of the turfgrass plant and can be transmitted via seed. These fungi help to impart some degree of drought tolerance, but, more notably, render the plant unpalatable to surface-feeding insects. Examples of surface-feeding insects include chinch bugs, billbugs, sod webworms, armyworms and cutworms (note: grubs are a "root-feeding" insect). It's important to be aware that testing for endophytes may be inconsistent among seed companies, and those varieties that have been shown to possess endophytes often have their potency dissipate with time if seed is stored at high temperatures or for long periods of time.

Sound turfgrass cultural practices are the foundation for integrated pest management. In an increasing number of jurisdictions, pesticide usage on school grounds is being restricted, so it is especially incumbent



Billbug. Photo by Geoffrey Rinehart

upon field managers to implement proper cultural practices. Except for grubs and — at certain life stages — craneflies, most of the notable insect pests of coolseason fields are surface feeders. With this in mind, using turfgrass varieties that contain endophytes will go a long way toward preventing insect damage.

The population threshold levels represent ranges of pest populations. Typically, the turfgrass should be able to sustain populations in the higher part of that range if root growth is good and the sward consists of healthy plants. Cultivating to control thatch; aerifying to relieve compaction and allow better soil oxygen exchange; irrigating properly; ensuring adequate fertility for the species and use level of your field; and mowing at the high end of the mowing range (based upon the species and desired function of the field) all go a long way to encouraging a well-maintained, durable field that is more tolerant of pests. Overwatering, over- or underfertilizing, mowing too low or not cultivating can lead to unthrifty turfgrass swards that are most susceptible to insect pest pressures.

An important factor in limiting insect pest populations is the presence of beneficial predators. Beneficials are insects and other arthropods that provide natural control of pests when present in sufficient populations, and can be specific or generalists. Since many beneficial predators in a turfgrass system are generalists, fostering conditions that provide alternative food sources will help to ensure that they are present in sufficient populations to provide control during the time of year when pest insects are present. Research has shown that some beneficial predators' alternative food sources are more available when turf is maintained at a higher mowing height. Mowing height should accommodate the intended use of the field and functionality of the playing surface, but mowing a little higher while accomplishing these goals is beneficial.

GRUBS

A primary group of insects found on cool-season grasses includes species of white grubs. This insect group belongs to the Scarab family of beetles and are turfgrass root feeders as juveniles (grubs). Common anatomical characteristics of grubs include a creamy white C-shaped body, six legs and a brown-black head capsule. Grub species include Japanese beetles, masked and European chafers, Oriental beetles, May-June beetles and Asiatic garden beetles. These species can be identified by their raster pattern, which is the arrangement of bristles and hairs located on the underside of their abdomen.

Throughout most of the northeast, transition zone and Midwest, the most common grubs are Japanese beetles and masked chafers. These are "annual grubs" that only go through one life cycle within a 12-month period. Beginning as an egg laid by females in mid-July to early August, grubs hatch and progress through three juvenile instars from August-September/October, growing progressively larger. With cooler autumn temperatures, grubs will travel deeper into the soil to overwinter as third instar larva. With warmer spring temperatures, grubs will slowly move further up in the soil profile and resume feeding on turfgrass roots before going into pupation in late May-June. They then emerge as adults, which feed on ornamental plants and mate by mid-July, starting the cycle over.

DAMAGE AND SYMPTOMS

Lighter damage may occur in the spring in areas with high grub populations, but turf damage is most evident in August through early October since cool-season grasses have fewer roots at the end of summer and additional stress from root-feeding grubs can compromise plant health. Damage can be worse in droughty summers. Symptoms of grub feeding include gradual thinning of the turf stand, wilting, yellowing/browning of turf, and irregular dead patches. Additionally, birds, skunks and raccoons may be observed digging up grub-infested areas, causing further damage. Dead patches will roll back easily (like lifting a carpet) since the grass roots have been eaten.

To monitor grub populations, cut a few square-foot sections of sod and peel back to examine the top 2" of soil and count the C-shaped grubs observed. Repeat this procedure in three to four samples around the field. If there is an average of 10-12 grubs/square foot or greater, a chemical control may be necessary (especially if the field has had grub damage in past seasons). Fields at or below this threshold can typically survive well with extra care in watering and making sure fertilizer applications and fertility levels are adequate.

If the field has had grub infestations from previous seasons, and monitoring in April/early May indicates populations above threshold levels, apply an insecticide labeled for season-long grub control in May. These products are applied to prevent grub infestation later in the summer, and include imidacloprid or the neonicotinoid alternative chlorantraniliprole. Additionally, an OMRI-certified product containing *Bacillus thuringensis var. galleriae* can be used as an "early curative" control. This product works best when applied at the first instar stage of the grubs (late July to mid-August).

PREVENTION AND CULTURAL PRACTICES

Cultural practices are a key to maintaining turfgrass health, enabling a field to lower pest pressures. Proper fertility and increasing mowing heights while still maintaining playability of the field will help grow a healthier plant and a robust root system that will withstand grub infestations better. Additionally, keeping the field on the "drier side" in the late summer and early autumn can be helpful by desiccating white grub eggs that are laid in July.

CHINCH BUGS

Chinch bugs feed by inserting their piercing-sucking mouthparts into leaf sheaths and crown tissue and suck out plant fluids, causing localized yellow or brown patches. Non-endophyte turfgrasses such as Kentucky bluegrass tend to be more susceptible to chinch bug feeding, and heat- and drought-stressed turf is the first to show damage. A majority of chinch bug damage occurs in mid- to late summer. For biological control, the big-eyed bug is the primary predator of hairy chinch bugs. Products with systemic activity (i.e., neonicotinoids or chlorantraniliprole) are recommended if spring adult populations are significant. Contact products can be used curatively.



Fall armyworm damage to a tall fescue field without the endophyte (right) and a tall fescue field with endophyte (left). Photo by Dr. Kevin Mathias.

Symptoms will include an irregular pattern of dead turf very close to healthy turf. The adult chinch bugs are very small (~1/6" long) and have a gray-black body, white wings, and reddish legs. Nymphs (juveniles) are smaller than adults and are orange to red with white bands across their back. Wing "pads" are present on the fourth and fifth instar nymphs. Monitoring for chinch bugs can be accomplished via soap flush — mix 3-5 oz. of dish soap in 3-5 gallons of water and gently pour this mixture onto the area where you suspect activity. Saturate the soil and wait a few minutes to observe insects floating to the surface. The soapy water will irritate them to emerge from the soil and then a count can be conducted. Research suggests that 15 to 25 chinch bugs per square foot may warrant control when chinch bugs are actively feeding in the summer.

Chinch bug damage is usually less noticeable in spring and early summer (the most noticeable damage usually occurs in late summer/early fall). Hairy chinch bugs have two generations per year in most locations. After adults emerge from overwintering in spring, they mate, and the adult females lay eggs in early summer. Second generation adults lay eggs from mid-July to late August and the second-generation nymphs (juveniles) develop in the fall.

BILLBUGS

There are several billbug species, but the bluegrass billbug and hunting billbug are the most common in turfgrasses. Damage symptoms resemble drought and can occur from late June to early August, so sometimes the damage goes unnoticed in dry conditions since it is difficult to distinguish from drought. The life stages that cause the most damage are the first two larval instar stages. Females lay eggs inside the turfgrass stem. When the eggs hatch, the first two larval instars tunnel through the stem and then feed on the crown of the plant and roots. Since the adults crawl along the ground, pitfall traps can be used to monitor activity. One important indicator of damage from early instar larvae is the presence of frass, created as the billbugs chew on and then excrete leaf stems.

Another way of identifying billbug damage is the "tug test." If the turf leaves tug away easily and frass is present, this is a strong indication of billbug feeding. (Conversely, grub feeding will keep the lower stem and crown in place, but the turf will have very few roots.) Endophyteenhanced grasses can be used to deter billbug feeding. Manage thatch to appropriate levels. Be sure to adhere to appropriate fertilizer and irrigation practices. In fields that have had high billbug pressure in the past, spring applications of contact or systemic insecticides can be made based on monitoring with pitfall traps and growing degree day models. Preventative applications are targeted at adults in May prior to egg lay.

SOD WEBWORMS AND CUTWORMS

Sod webworm larvae are tan/gray with small dark spots and brown heads, and reach ¾" to 1" fully grown. After overwintering as late instar larvae, the adults emerge as tan moths. Female moths of sod webworms fly just above the ground surface in spring in a zigzag pattern, laying eggs as they fly. The eggs land in the turf and

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Dan Farnes, Director of Fields and Grounds America First Field, Real Salt Lake



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Landmarkseed.com High-Quality, Value-Added Seed caterpillars soon emerge. These caterpillars will feed on the leaf tissue just above the thatch layer.

Depending on your location, there may be different sod webworm species present and, thus, variation in developmental periods. The caterpillars are active at night and early morning prior to dawn, so this makes detecting them difficult. Symptoms include webbed tunnels in the thatch and green pellets (frass). Other symptoms include yellow/brown patches where the caterpillars have fed on the leaf blades. The preferred host is Kentucky bluegrass. Chlorantraniliprole and spinosad provide biorational control options for sod webworms. Pyrethroids such as bifenthrin, cyfluthrin and lambda cyhalothrin would be options for rescue treatments of these insects.

Cutworms are typically more of an issue on very low-cut turf such as golf course putting greens, but may occasionally affect sports fields. There are a few different species of cutworms (actually caterpillars) that can affect turf, but the common species include black, variegated and bronze cutworm. These caterpillars have a "pebbly" textured skin, and the black cutworm has a brown-earthen color tone, while the others are lighter in color. Black cutworms feed at night and burrow in the soil profile during the day. The presence of birds digging can be an indicator of cutworm presence. The most effective monitoring technique is a soap flush.

Damage includes clipping (cutting) turfgrass leaves off directly above the ground surface. Cultural control includes a few options. Females lay eggs on the tip of turfgrass leaves, so collecting these clippings and disposing of them far away from the field can help to reduce insect pressure. Biorational products for control include chlorantraniliprole (which also provides season-long grub control) and spinosad. Pyrethroids provide curative, contact-based control.



Fall armyworm damage to a tall fescue field without the endophyte (right) and a tall fescue field with endophyte (left). Photo by Dr. Kevin Mathias.

FALL ARMYWORMS

Fall armyworms are generally a relatively minor pest on cool-season sports fields in the northeast and mid- to upper Midwest. Depending on the year, they have the potential to cause more damage for cool-season grasses in the transition zone east of the Rockies. The adults of the fall armyworms (which are in the same Noctuidae family as cutworms) overwinter in southern Texas and Florida and are blown northward over the course of the growing season by storms and wind currents from the south. Although typically not in large enough numbers to cause widespread damage to turfgrasses, in 2021 high overwintering populations and strong summer wind currents brought them north toward the end of the summer. Widespread damage occurred over areas that had never experienced that level of damage in decades. As a tropical insect, their life cycle slows dramatically with cooler nighttime temperatures in September.

Managing sports fields for reduced insect damage can be accomplished by optimizing IPM techniques. Selecting turfgrasses that have improved insect resistance and implementing proper primary cultural programs — such as mowing, fertilization and irrigation — are the cornerstones of IPM programs. Using control products based on threshold levels, and that have minimal impact on beneficial insects, will provide a high-quality sports turf with fewer insecticide applications. **SFM**

Geoffrey Rinehart is lecturer, turfgrass management, Institute of Applied Agriculture, University of Maryland.

The author would like to acknowledge Dr. Kevin Mathias for his contributions to this article.

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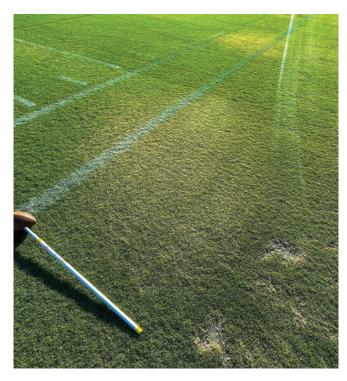
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JOHN MASCARO'S PHOTO QUIZ





ANSWER From page 17

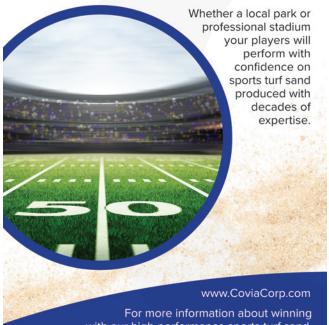
The deep dents on the turf and irregular brown areas on this professional football team's practice fields are the result of the fields being used as helicopter landing and parking areas. As with many professional stadiums, they are always having some sort of event during the football season, as well as during the offseason. These practice fields are located next to Hard Rock Stadium in Miami, Florida. During the offseason, the stadium hosted the 2023 Formula 1 Miami Grand Prix around the perimeter of the stadium. Since the practice facility is in the same area, it was decided that the practice fields would make a perfect landing area for VIPs who were flying in by helicopter to attend the race. For preparation, one net pole had to be removed to allow for more clear air space. The brown areas on the 419 bermudagrass are lightly singed turf from the helicopter jets blowing down at the turf during landing and takeoff. The depressions in the fields surface were caused by the helicopter tires. The entire area around the stadium was transformed into a giant park, which also included the stadium surface being used as the "Team Hospitality Village."

Photo submitted by Edwin Lamour, director of grounds at the Miami Dolphins training facility in Miami, Florida.

John Mascaro is president of Turf-Tec International

If you would like to submit a photograph for John Mascaro's Photo Quiz, please send a high-resolution digital photo to John Mascaro via email at *john@turf-tec.com*. If your photograph is selected, you will receive full credit. All photos submitted will become property of *SportsField Management* magazine and the Sports Field Management Association. COVIA BESTSAND

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Turf Tank Two line marking robot

The updated Turf Tank Two line marking robot has been meticulously crafted, utilizing robust research and development, constructive feedback from users and a focus on elevating the user experience to new heights The Turf Tank Two incorporates dual motor drives for enhanced momentum and optimized wheels for superior traction, resulting in marking times that raise the bar in the industry, including football in 3 hours and 29 minutes and an llvll soccer pitch in less than 24 minutes. The Turf Tank Two boasts more than 120 layouts and more than 10,000 combinations, based on individual dimensions and needs.

The sprayer module has been significantly upgraded to make fine-tuning as straightforward as a twist of a knob. It adjusts disc height and width, and includes a disc ruler for improved oversight. Precise tolerances deliver sharp, crisp lines between 5 and 15cm. The rack-and-pinion system allows for easy adjustment from minimum to maximum in one smooth motion. The height of the sprayer discs can be easily adjusted in 5mm increments.

Maintenance has also been simplified, with the module now designed as a separate component. Just by loosening two screws, users can easily access specific parts; and a one-hand solenoid removal feature allows for quicker working when the robot has finished painting.

A new front panel offers convenient pause/resume options with LED indicators that display the robot's status along with a start/stop sprayer button. An LED indicator on the battery ensures a swift status check — even when the battery is not plugged in. To make for even smarter operating, batteries can now be replaced without the need to power down the robot.

A newly designed compartment increases both efficiency and the ease with which paint is inserted. Bypassing the need for heavy lifting, the tilted pump cover permits up to 20 liters of paint to be easily slid into the robot and ensures that the suction rod can extract and use all the paint. Battery access has been



simplified, requiring a single movement to lock it in place. Additionally, handles on the front and back make loading and unloading from vehicles easier.

In the palm of your hand is where the user experience is propelled to new heights. Users can now batch edit fields, place layouts inside layouts (e.g., an llvll soccer pitch with two 8v8 fields inside), as well as design custom routes and measure directly on the map.

All of these functions are performed within the comprehensive visual layout editor that lets users change or remove any line of a field. Any line can be made dashed, new lines can be added to existing layouts and new layouts can be converted into templates for future use. All templates within the app can be swiftly moved and precisely placed using the drag-and-drop features.

Brand new in-app guides help users navigate through most features, and a newly integrated wizard provides a walkthrough for the cleaning and priming process of the paint system.

To make sure that lines are staying straight, a new augmented reality calibration routine guides users to correct any discrepancies by simply using the tablet's built-in camera to take a picture of the painted lines.

These features are also available in Offline Mode, ensuring full functionality of the Turf Tank Two even when an internet connection is not available.

Turf Tank Customer Service can now help customers through remote access, which allows them to assist in setting up pitches, diagnose problems and provide support instantly wherever the user is.

Trilo T1 vacuum

The Trilo T1 vacuum, available from STEC, is a debris loader designed to transform your utility cart into a vacuum sweeper. Simply place the skid-mounted T1 into the bed of the utility cart and it is ready for use. Remove the T1 when done and your cart is reverted back to its normal functions. The compact size and design allow the unit to reach places most sweepers and vacuums can't, such as fence lines or along buildings.





The 13-foot suction hose easily collects grass clippings, litter or leaves into the one-cubic-yard hopper. This capability makes the T1 an ideal solution for parks and recreational facilities, golf courses and sports fields.

The self-contained unit requires no power from the vehicle on which it is mounted, while the flexible hose allows for smooth and easy operation of the T1. The sloped design allows for compacted debris to funnel directly into the hopper and slide out when unloaded, allowing for easy maintenance and clean-out.

FireFly Automatix autonomous EV mower

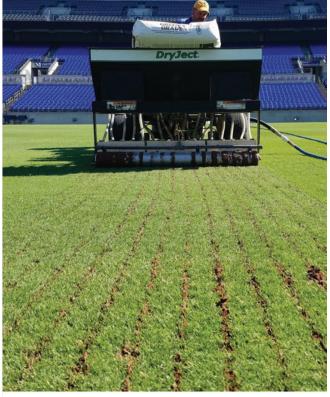
FireFly Automatix, Inc., introduced its M100-AV mower. This commercial reel mower cuts a 100-inch width, adding to FireFly's line of autonomous mowers. The M100-AV is FireFly's first all-electric vehicle (EV), promising energy savings and environmental benefits. FireFly is currently accepting pre-orders and anticipates delivering the first production models this fall.

The M100-AV can operate without on-site supervision and includes LiDAR-enabled obstacle detection and avoidance for safety. Additionally, FireFly's newest mower provides intelligent path planning, so no boundary wires are needed and mowing patterns are optimized for maximum efficiency.

Powered by an advanced LiFePO4 battery, the M100-AV can quietly mow up to 25 acres per charge at speeds of 7 acres/hour and recharge in two hours. With no gasoline or operating emissions, the mower is predicted to decrease fuel costs by 87%, as well as reducing owners' carbon footprints.

Already a force in the turf production industry, FireFly will enter larger markets with the M100-AV. The robotic mower's ideal applications are sports fields, golf courses and municipalities.

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The mower offers many other value-adding features:

■ Four independent electric drive motors synchronized with two independent steering motors to achieve low-impact traction.

■ Wide stance and balanced weight distribution allow for low ground pressure and sidehill performance.

■ The RoloRocker cutting unit design achieves a more stable ride through the field, enabling higher speeds and a better aftercut appearance.

■ SyncLift position-based lift technology reduces the need for a clean-up pass.

Drive motors are engineered for a 100,000-plus-hour life and low maintenance.

Rain Bird 11000 Series rotors

Rain Bird introduced a new rotor series designed to make irrigating sports fields, stadiums and large commercial turf applications more efficient and cost effective. The 11000 Series provides excellent water distribution



uniformity over a full 105-foot radius, making it possible to irrigate an area that's 25 percent larger with 40 percent fewer heads than a traditional rotor solution. The 11000 Series rotors also have an exposed diameter of just 2.7 inches, making it far less likely to affect athletes practicing or competing on the field. "A tupical sports field irrigated bu

a standard one-inch rotor solution will require 35 rotors around its

perimeter, 15 of them on the field of play," said Jeffrey Johnson, Rain Bird's senior product manager for commercial valves and rotors. "The 11000 Series rotor can irrigate the same field with 22 rotors, only eight of which are on the field of play. That translates to fewer components and less piping for lower costs, faster installation time and less maintenance."

Born from Rain Bird's golf rotors but optimized for sports fields, the 11000 Series rotor features a 30-345-degree, reversing, part-circle mode and a nonreversing, full-circle mode with an optional opposing nozzle for enhanced close-in watering, all in a single body. The 11000 Series rotors come with nozzles pre-installed and can be adjusted with a standard screwdriver. The highly efficient rotor produces larger water droplets to guarantee maximum efficiency and uniform coverage, while the Seal-A-Matic (SAM) check valve prevents wasteful low-head drainage.

The 11000 Series rotor has a 1.5" ACME inlet, simplifying installation with swing joints if desired for superior flow and performance. Snap-ring access from the top of the rotor makes maintenance and adjustments faster and easier. Optional features include a sod cup or rubber covers in green for synthetic turf or purple for non-potable water use.

PBI-Gordon Arkon herbicide liquid

PBI-Gordon's Arkon herbicide liquid has been approved for use in most U.S. states (excluding California and Alaska). The U.S. EPA previously approved Federal registration for the herbicide. Arkon is labeled for use on established cool- and warm-season turfgrass species across a wide variety of use sites: sports facilities; residential and commercial lawns; golf course greens, fairways and roughs; and sod farms. It will be available for sale nationwide in 2024 and will be included in PBI-Gordon's Green Dividends Early Order Program in fall 2023.

Utilizing the proprietary active ingredient Pyrimisulfan, Arkon provides dependable post-emergent control of sedges (yellow, purple, and annual), kyllinga (green false green. cockscomb and annual). dollar weed. chickweed. henbit and manu other labeled broadleaf weeds. Additionallu, research has shown that the liquid herbicide reduces the number and viabilitu of nutsedge tubers. SFM



Continued from page 27



Park visitors enjoying a comfortable patch of grass to relax in Point State Park, Pittsburgh, Pennsylvania.

■ A comfortable surface on which to relax and recreate due to texture and temperature.

■ Space for socialization to occur in an easily accessible natural environment.

• A place in which both observational and hands-on learning can take place either directly involving the turf itself or serving as a comfortable space to engage with other learning materials.

Managers can also hold workshops and open houses for community members, explaining how well-maintained turfgrass can contribute to the local environment and how, by investing in these spaces, they can benefit the environment and be a point of pride for the community. This could also be broadened to include local schools and youth sports organizations to disseminate benefits to younger generations about the importance of turfgrass spaces and its long-lasting benefits.

If the details of ecosystem service benefits aren't enough, or seem too far detached from your day-to-day experiences or those of the people you serve, I propose a different perspective. Turfgrass greenspaces — whether a lawn, park or sports field — are canvases that can provide a broad range of experiences that facilitate and enhance human health and well-being from the youngest to the oldest in our communities and deserve to be recognized as such. **SFM**

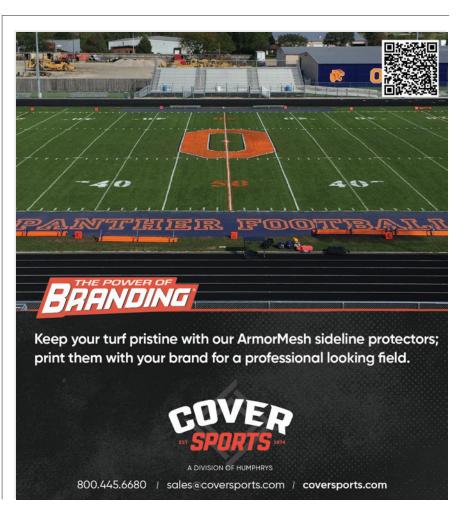
Michael R. Barnes, Ph.D., is researcher and lecturer in the Department of Horticultural Science, University of Minnesota Twin Cities.

COMMUNICATING THE BENEFITS OF TURFGRASS

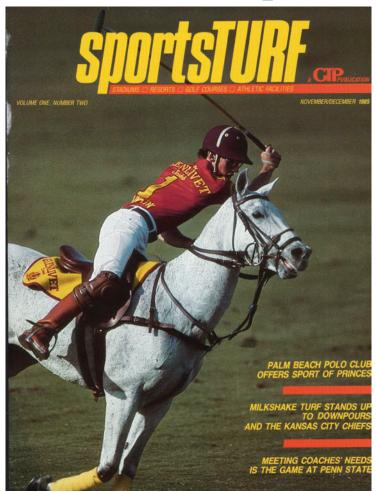
Sports field managers and staff can be critical in communicating and showcasing the multiple benefits of the spaces they manage. Benefits can be communicated both directly and indirectly to players, coaches, spectators and community members through a variety of means:

Managers can utilize digital platforms such as social media and the facility's website to share key maintenance or renovations happening at their facility — emphasizing its impact on gameplay and safety. This could be done in collaboration with coaches and athletes to share personal testimonials about performance, safety and quality of the playing surface.

■ During larger events and tournaments, managers could invest in passive informational signage or staff-facilitated educational opportunities highlighting benefits of the facility for both players (e.g., reduced injury risk, performance) and spectators (e.g., aesthetics).



November/December 1985



In this retrospective, we will examine historic issues of *SportsTurf* magazine, predecessor to SportsField Management magazine.

In this issue, we are going back in time once again to 1985 and examining the November/ December 1985 issue of SportsTurf.

The second-ever issue of the magazine featured the bold choice of putting a horse — and rider — on the cover. The white/gray steed and its rider — both adorned in maroon and gold (and clearly sponsored by Glenlivet Scotch) — were the prime focus against the backdrop of the turfgrass polo field.

The related cover story, beginning on page 10 of that issue, detailed the visit of Prince Charles and Princess Diana to the Palm Beach Polo and Country Club.

The article stated, "Clearly the prince was enjoying himself thoroughly as he sped over the immaculately groomed turf. Wearing a bright green shirt labeled No.4, he played defensive back, using a string of thoroughbred polo horses — which had been chosen for him by his polo manager."

Although the article focuses heavily on the royal visit, it does delve into the unique turf care and maintenance of the Tifway bermudagrass fields (which measure 10 acres in size). The article highlights the field specs, irrigation, drainage and pest

> management, as well as horse and player safety.

The November/December 1985 issue also profiled Penn State turfgrass legend Bob Hudzik, and how he fostered communication with coaches of all sports on campus. At the time, Hudzik oversaw not only all campus grounds and athletic field maintenance, but also the management of the university's two golf courses. "Each sport has its own special characteristics that can be helped by the height and density of the turf," said Hudzik. "What is right for rugby may not be right for field hockey. The only way to find out is to ask the coach "

Palm Beach Polo Club Offers Sport of Princes



Meeting Coaches' Needs Is the Game at Penn State

George Toma and his son, Chip, were profiled in this issue, which highlighted their work at the Kansas City Chiefs' turfgrass training camp fields at William Jewell College in Liberty, Mo. (Arrowhead Stadium had an artificial turf surface at the time). Said Toma, "During the regular season the players take enough of a beating on artificial turf. It's our job to make sure that these natural fields are in excellent shape so that the players stay healthy and perform to their potential."

The author of the article added, "Although their employers have chosen artificial turf for Arrowhead, George and Chip Toma share the belief that a properly constructed and well-maintained grass athletic field provides more than just aesthetic pleasure. It can help prevent sports injuries and add to the athletes' enjoyment of the game."

The Nov/Dec 1985 issue of SportsTurf also introduced the "Rebound" section (letters from readers). Most of the letters were about the debut issue of the magazine. For example: "Congratulations on your first issue. I share your excitement and enthusiasm for this new publication. I'm proud to be one of your advisory board members and will do all I can to continue the pace set by your first issue. It's





just great!" — William B. Knoop, Extension Turf Specialist, Texas A&M University, Dallas, TX. SFM

All content for this section is pulled from the SportsTurf/ SportsField Management archives, an ongoing cooperative project of EPG Brand Acceleration, SFMA and the Michigan State University

Milkshake Turf Stands Up To Downpours and The Kansas City Chiefs

REBOUND LETTERS FROM READERS

Libraries (https://sturf.lib.msu.edu/index.html).

If you have any personal stories/anecdotes about the early days of the magazine, please contact John Kmitta at jkmitta@epgacceleration.com or 763-383-4405.

Field Groomers

FORCE Z-23

The Force Z-23 by ABI was engineered to empower ballfield groundskeepers and sports field managers to get their work done with maximized efficiency. The patented design enables a lighter, smaller-footprint, zero-turn platform to do the work of much larger and heavier equipment. Users can easily swap out additional attachments on the job, with no tools required. Trusted by dozens of professional baseball teams, the Force is a commercial-grade machine that can do it all with zero-turn efficiency and hand-worklevel precision. The Force's versatile system of quickchange attachments enables users to handle game-day prep, daily grooming, regular maintenance or seasonal renovation of entire fields. Use one machine to laser grade, edge, groom, finish, aerate, overseed and fertilize. The Force Z-23 handles whatever nature throws at you to get your field in safe, playable condition with professional-level results.



GREENSGROOMER

For almost 30 years, GreensGroomer has delivered top performance for sports field management professionals, relying on a "low complexity and high reliability" design formula. Many consider the GreensGroomer line of synthetic turf maintenance solutions a leader for new field installations. GreensGroomer's line of groomers includes Integrated, Original and Wide-format units. Additionally, a range of attachments extends unit functionality and allows for differing maintenance requirements or preferences. GreensGroomer's most advanced design is the Integrated Sports Turf Groomer, with heavy-duty frame, smooth rolling/ lifting assembly, advanced brush design and integrated adjustable spring tine rake. This unit improves efficiency by allowing for true one-pass performance. All units are designed, fabricated and assembled in the United States.



REDEXIM TURF TIDY

The Turf Tidy is a versatile sweeping machine, allowing for dethatching, verticutting, sweeping or flail cutting. The Turf Tidy's fully floating head follows the ground contours, ensuring accurate cutting and excellent pickup. Wet and dry leaves, pine needles, sweet gum tree balls and even cores are quickly and easily cleaned up. The high-lift hopper can easily be emptied into a trailer or dumpster.



STEC FAIRWAY BRUSH

The STEC Fairway Brush is a multipurpose, tow-behind implement that will help you and your staff be as efficient as possible in your field grooming and maintenance practices. This ground-driven rotary brush will help with dethatching, dew removal, working in topdressing, reducing worm castings, multidirectional cutting and controlling turfgrass diseases. The ability to switch between precut and topdress modes quickly and easily makes this an ideal machine for sports fields and golf courses. The electrical cylinders allow you to tow and control the brush with a variety of carts and vehicles that are already part of your equipment fleet.



TORO FIELD PRO 6040 INFIELD GROOMER

The Toro Field Pro 6040 infield groomer features commercial-grade construction, ergonomic operator comfort and versatile attachment options. Clear sightlines allow operators to accurately grade the field without straining to see what they're doing. The Field Pro 6040 MultiTool includes an integrated MultiTool box grader and a MultiTool adjustable carrier to guickly and accurately grade, groom and perfect infields. When fitted with the optional laser grading system, the Field Pro 6040 will easily grade infields for optimal playing conditions. Additional attachment options include drag mats, grooming brooms, tooth rakes and more. The MultiTool box grader is constructed of high-strength steel with a changeable wear edge. It can be fitted with an optional tool holder for implements such as an edger, root cutter and planer blade. The MultiTool adjustable carrier allows for coarse or fine scarifying with standard solid or spring tine toolbars. Hydraulically controlled depth and angle adjustment provide precise interaction.



TURF TEQ POWER RAKE

The Turf Teq Power Rake is perfect for all types of field grooming, turf renovation and baseball diamond revitalization. The unit features a 36-inch-wide drum. The pivot angle of the drum can be adjusted to the left or right from the operator position. The unit also features a hydrostatic transmission, 13-horsepower Honda engine and on-the-go differential lock. The multi-use capability of the machines allows you to convert it to a power edger, power broom, brush cutter or plow.



WIEDENMANN TERRA GROOM

The Wiedenmann Terra Groom is a multi-functional groomer used best on athletic fields to brush in sand and any other topdressing materials to achieve even distribution of infill on surfaces without leaving lines and stripes. It can break down cores, disperse dew, and reduce mower maintenance, while promoting healthy grass growth. When used on artificial turf, the Terra Groom raises the artificial turf fibers and levels the surface and/or the infill material. It consists of three rows of special groomers — two straight

and one zigzagmounted — all three easily interchangeable. The working width is 74 inches and is available with a 3-point hitch mounting frame to attach it to a tractor (or any vehicle above 15 hp.). It can also be fitted with bogey wheels and an electric actuator to be attached to utility vehicles. **SFM**



The following sports field management industry photos are pulled from a variety of social media feeds.

If you would like your photo to be featured in future editions, tag us @sportsfield_mag.

Scan the QR code for links to all of our feeds.













@womeninturfteam

@AmyFouty (right) and @Maritzamows



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@turfgrasstiger

Truly an incredible experience to have two of our students as members of the all @womeninturfteam Grounds Crew at the Softball @LittleLeague World Series this past week. To see our students fully immersed in the industry is something truly special. We are so proud of Liz and Kat! Launching Thriving Futures in PWCS







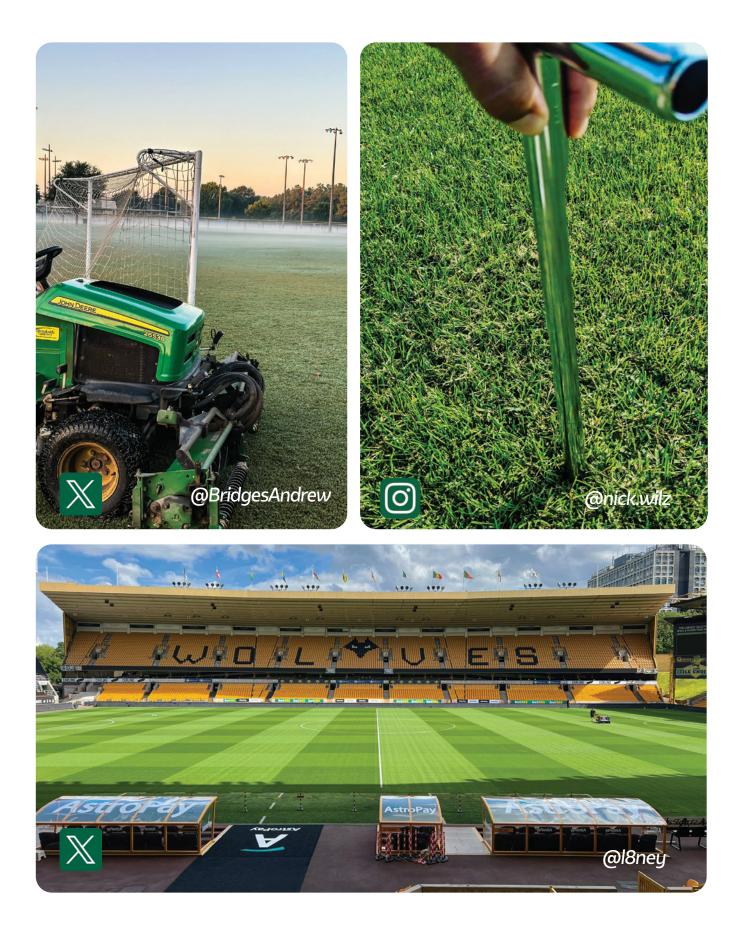
@baawein

We love hosting the Little League Softball World Series here but today this old field is going back to its roots. In just a few days it will be a baseball field again.









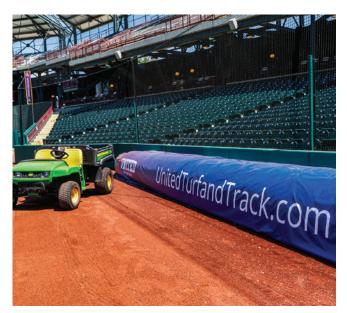
OKC Dodgers partner with United Turf and Track

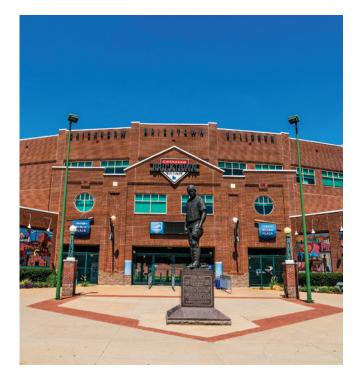
The Oklahoma City Dodgers entered into a partnership with local field construction and maintenance company United Turf and Track to ensure Chickasaw Bricktown Ballpark remains a premier destination for minor league, college and high school baseball.

"Chickasaw Bricktown Ballpark is one of Oklahoma City's most beloved landmarks," said United Turf and Track COO/CFO Michael Grady. "As the official maintenance provider for the Oklahoma City Dodgers, United Turf and Track is proud to ensure the Chickasaw Bricktown Ballpark playing surface maximizes athletic performance and creates an electric fan experience while helping athletes find their footing as they pursue their dreams of playing at the next level."

Under the partnership, United Turf and Track will execute field renovation projects, perform laser leveling of the infield clay, and provide maintenance services on grass and clay surfaces requiring special equipment.

"As the Triple-A affiliate of one of Major League Baseball's most storied franchises, field quality and game-day experience are of paramount importance to the Oklahoma City Dodgers organization," said Jim Flavin, OKC Dodgers VP, Corporate Partnerships. "United Turf and Track has a proven history of constructing and maintaining state-of-the-art athletic fields and playing surfaces. We are confident this partnership will continue to position Chickasaw Bricktown Ballpark as one of the best baseball venues in America for players and fans alike."





In addition to OKC Dodgers baseball games, Chickasaw Bricktown Ballpark hosts numerous other events throughout the year. Those events include the Oklahoma High School Baseball Series in March, OSSAA Baseball State Championship Games in May, WinterfFest and snow tubing from November to January, and a variety of community walks and runs, concerts, parties, corporate outings, meetings, seminars and more..

Barenbrug joins The A-LIST

Barenbrug has joined the Alliance for Low Input Sustainable Turf (A-LIST) as a new member. Barenbrug brings a wide range of high-quality genetics that are adapted to low input situations that will help further sustainability for the industry.

Barenbrug has more than a century of experience in developing and delivering innovative turf solutions that meet the needs of turf professionals and consumers.

The A-LIST stated that it is excited to have Barenbrug as a member, which will help further the mission of promoting low input and sustainable grass varieties. The A-LIST conducts independent trials across the United States and Canada to identify and certify the best performing varieties under reduced inputs. The A-LIST also educates the public and the industry about the benefits of low input turfgrass for water conservation, reduced chemical use and lower maintenance costs. "Barenbrug consistently produces high-quality grass varieties that are adapted to low input situations," said A-LIST Executive Director Kyley Dickson. "To add a company with its dedication to sustainability shows they are a company that we want in the A-LIST. Barenbrug's expertise and innovation will be a valuable asset to the A-LIST and its members."

A-LIST members in addition to Barenbrug include DLF, Mountain View Seeds, Landmark Seeds and Lebanon Seaboard. These members provide the most advanced and sustainable turfgrass varieties on the market today.

Landmark Seed announces new director

Landmark Seed Company promoted John Patton to the position of director. Patton has a lifetime of experience in the turfgrass industry as he grew up working on his family-owned sod farm in Maryland.

After graduating from Virginia Tech with a BS in Agronomy, Patton started his own landscaping business specializing in hydroseeding and sod installation serving the Baltimore-Washington area. After nine years of selfemployment, Patton sold his business and began his seed career in 1992 with Lofts Seed as general manager of their Beltsville, Maryland, office.

Thanks in large part to acquisitions, mergers and promotions, Patton has had many career paths in the seed industry, including positions at Sunbelt Seeds, ABT, Seed Research of Oregon and DLF Pickseed USA. Patton also worked for GreenTech, a modular sports field company, where he was involved with the installation of Virginia Tech and Michigan State football fields in addition to the 2004 Olympic Stadium installation in Athens, Greece.

Since 2015, Patton has worked with the Landmark Seed Company as director of international sales, building their international business footprint. Patton's primary functions will include overseeing the sales staff and directing all sales activities. In addition, he will also be responsible for pricing and growing the Landmark brand through strategic partnerships around the globe.

Genesis Turfgrass joins UTA

Genesis Turfgrass joined United Turf Alliance (UTA) as its newest owner. Based in Glen Rock, Pennsylvania, Genesis Turfgrass serves customers in Pennsylvania; Delaware; Maryland; Washington, D.C.; Virginia; West Virginia; and New Jersey.

Mike Del Biondo founded Genesis Turfgrass in November 2005. With more than 25 years of green industry experience, Del Biondo's mission was to provide products and knowledge to industry professionals. That mission has grown Genesis Turfgrass to two locations and 40 employees today. The company provides products and support to lawn and landscape services, sports complexes, athletic fields, golf courses, nurseries, sod and organic farms, agriculture, vineyards and infield tracks.

The new partnership between Genesis Turfgrass and UTA is a logical move for both organizations as they align to better serve turfgrass professionals.

The addition of Genesis Turfgrass makes the third new UTA owner this year, following the announcement of D & K Products joining UTA in June. UTA now has nine owners serving turf professionals throughout the country.

A-LIST creeping bentgrass approval

Breeders have worked for decades to improve the quality and performance of turfgrass varieties. Breeding often emphasized the level of fertility and water for optimal growth desired by users. However, turf managers are having to balance improved variety management practices with environmental dictates. Reduced inputs have become the norm, not the exception, in the world of turfgrass management.

The A-LIST sees the need to add another species of turfgrass to its trials to help improve its mission of low input and sustainability. Creeping bentgrass cultivars will now be added to A-LIST approvals. Breeding efforts have greatly improved the ability of disease resistance, heat tolerance, and reduced input requirements of creeping bentgrass. A list of certified varieties that have been proven to be able to meet the mission of the A-LIST through demonstrated trials are listed below. Creeping bentgrass trials will be a part of the trials for A-LIST varieties now and into the future.

Certified Varieties:

- 007XL
- **7**77
- Macdonald
- Piper
- Oakley
- Piranha
- Diplomacu
- Proclamation
- Declaration
- Spectrum
- Match Ply
- Luminary SFM





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SFMA 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, Dale Croft, dale.croft@ocps.net

Gateway Sports Field Management Association: www.gatewaystma.org

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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

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

Mid-Atlantic STMA: www.mastma.org

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

Minnesota Parks and Sports Field Management Association: www.mpsfma.org MO-KAN Sports Turf Managers Association: www.mokanstma.com

Nebraska SFMA https://nebraskaturfgrass.com/nesfma

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

Sports Field Managers Association of New Jersey: www.sfmanj.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 SFMA: www.socalsfma.com

South Carolina Chapter of STMA: www.scstma.org

Tennessee Valley Sports Field Management Association (TVSFMA): www.tvstma.org

Texas Sports Turf Managers Association: www.txstma.org

Virginia Sports Turf Managers Association: www.vstma.org

Wisconsin Sports Turf Managers Association: www.wstma.org

Hunter®



Tackling Annual Bluegrass

We have experienced high populations of annual bluegrass on our bermudagrass fields here in Oklahoma the last few years. I would like to use chemical control this year, but I am not sure of my options considering our long, cold winters. What are your thoughts?

A: I believe annual bluegrass (*Poα annuα*) has to be considered among the top five weeds on athletic fields. It withstands low mowing and cold conditions, and prefers wet, compacted soils. It produces huge numbers of seeds that begin germinating in late summer and may continue to germinate throughout the fall, winter and spring. Although classified as an annual, weed scientists have discovered perennial biotypes. Scientists have also documented annual bluegrass resistance to multiple herbicides.

It is hard to talk about weed control without first mentioning cultural practices. Although cultural practices may not provide adequate weed control, they can still impact weed density and your ability to use specific chemicals for weed control. Manage your cultural practices to grow the thickest, healthiest stand of turfgrass possible. Consider if you must overseed in the fall, as this will have a significant influence on available chemical control options. There are significantly more pre- and post-emergence control programs available for non-overseeded fields.

When overseeding, timing of establishment will come into play when considering your options. For example, commonly used pre-emergence products such as pendimethalin, prodiamine, dithiopyr, and oxadiazon (granular formulation) applied in the fall may effectively control annual bluegrass, but they must be applied two to four months before overseeding (depending on product and rate); otherwise, the overseeding grass can be heavily damaged. Super early pre-emergence applications may also miss a substantial amount of late-germinating bluegrass.

Post-emergence programs have the same issue in that many annual bluegrass post-emergence products cannot be applied to ryegrass, and some can only be applied to totally dormant bermudagrass. Some products can be applied days to a few weeks before overseeding without any injury to ryegrass, whereas others cannot. For example, in the sulphonyl herbicide family, foramsulfuron, rimsulfuron and sulfosulfuron can be used to control annual bluegrass close to overseeding, but trifloxysulfuron needs be applied at least three weeks before seeding.

The last chemical control strategy that is often used with non-overseeded fields is the use of non-selective herbicides. In Oklahoma, as with many other areas that grow bermudagrass, total dormancy of the turfgrass is expected. Once the bermudagrass is dormant, non-selective products such as glyphosate, glufosinate or diquat may be used. There are also benefits to mixing products with a different mode of action in the tank to increase activity while also managing to prevent herbicide resistance. Some managers may also mix pre-emergence products in with post-emergence products to get longer-lasting control.

Cold winters, as you suggested, have implications with picking a chemical control program. In the transition zone of the United States, or in regions north of the transition zone that are using bermudagrass, winterkill or winter injury is a reality. For example, the pre-emergence herbicide indaziflam provides very good and long-lasting control of annual bluegrass. However, it has up to a 12-month overseeding or sprigging interval, and a six- to eight-month sodding interval. In an area that experiences winter bermudagrass damage, waiting that long before re-establishing a turfgrass can be a huge issue. Product, application rate and timing, as well as residual activity, must be given strong consideration in your environment.

There are far more products and use-options available than those mentioned in this article. With all the factors, products and scenarios to consider, I encourage you to speak with your state's turfgrass specialist or weed scientists to help you figure out the best plan to use in your situation. This is also another great reason to attend local SFMA meetings and learn more about the experiences of other field managers in your area. **SFM**



Grady Miller, Ph.D.

Professor and Extension Turf Specialist North Carolina State University

Questions?

Send them to Grady Miller at North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or e-mail grady_miller@ncsu.edu

Or, send your question to Pamela Sherratt at 202 Kottman Hall, 2001 Coffey Road, Columbus, OH 43210 or sherratt.1@osu.edu

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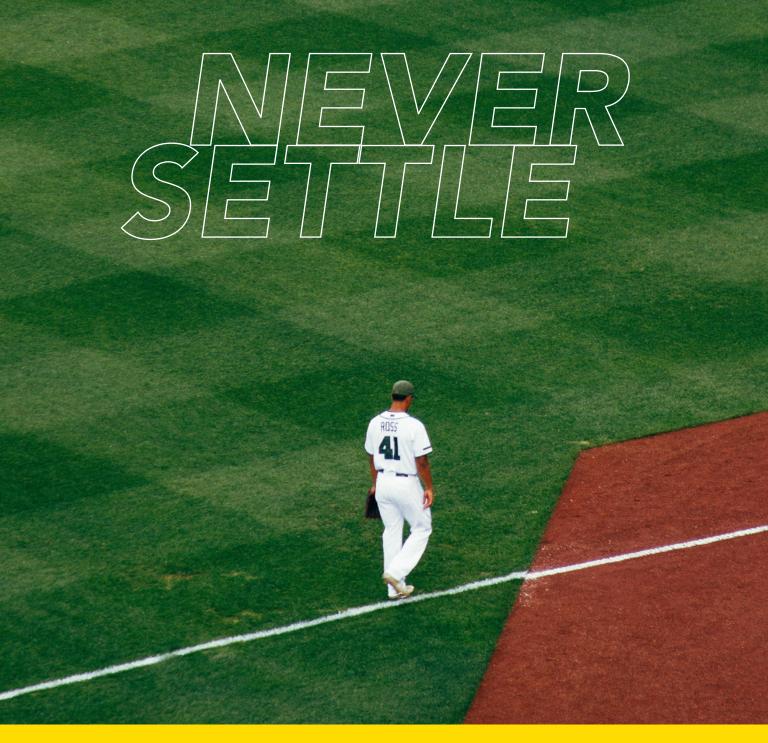


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