

# SportsField

## MANAGEMENT

June 2020

Vol. 36 No. 6

The Official Publication of the Sports Turf Managers Association

Soil Health **14** | The *SportsField Management* Interview: Elliott Josephson **18**  
Smart Irrigation **20** | Get Your Fields Ready for Play **26**

## Field of the Year

### Schools and Parks Baseball

Park Hill South Baseball Field, Riverside, Mo.

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320



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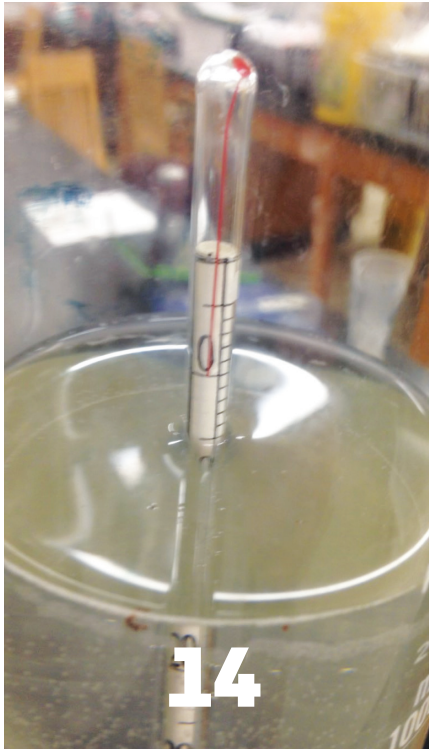
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# Contents

JUNE 2020  
VOL.36, NO.6



14

8

Field of the Year Schools and  
Parks Baseball  
Park Hill South Baseball Field,  
Riverside, Mo.

14

Soil Health  
Things You Should Know About  
Your Athletic Field Soil:  
Soil Texture and Compaction

18

Profile  
The SportsField Management  
Interview: Elliott Josephson

20

Irrigation and Water Management  
More "Pop" Per Drop: Smart Irrigation

26

Fields and Facilities Maintenance  
Use This Time to Get Your Fields  
Ready for Play

36

Industry Insights  
Athletic Fields in These  
COVID-19 Times

38

Industry Research  
Texas A&M study: Repurposed  
coffee grounds can benefit turfgrass,  
landscapes

40

Networking  
Leaders in Their Fields  
Share Common Ground



38



18

## DEPARTMENTS

6

Editor's Note

7

STMA President's Message

17

John Mascaro's Photo Quiz

30

Equipment and Technology Focus

42

From the Twittersverse

44

Innovations

46

STMA In Action

48

Marketplace

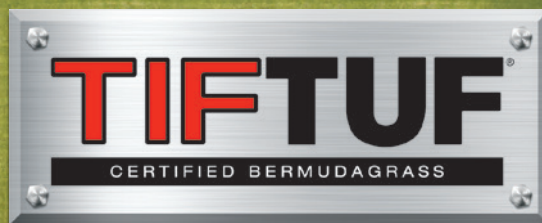
49

STMA Chapter Contacts

50

Q&A





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# Editor's Note



**John Kmitta**

Associate Publisher/  
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I was recently asked what I look forward to most when things begin to trend back to “normal.” I think we all long for a time when we can safely assemble with our friends and family, be able to give hugs and enjoy each other’s company. But, beyond that, my response was “live sports.”

From the standpoint of my role on the magazine, I long for the days of live sporting events so that the sports field management industry can get back to normal, that fields can once again be graced by athletes of all ages and talent levels, and, ultimately, that the stands can once again be packed with cheering fans.

As the industry works toward a return to play, I have been thoroughly impressed by the efforts of STMA and its members to work together, share information and help each other through these challenging times.

From a personal level, sports will always bring out the inner fan. Sports-related TV programming during the pandemic — such as the NFL Draft and ESPN’s “The Last Dance” documentary — have been welcome distractions. But as someone who grew up in the Chi-

cago area during the late ‘80s and early ‘90s, it just makes me miss sports even more this time of year. I think of the joy of watching my favorite team on TV and then going outside to shoot hoops with my brothers and friends as we all tried to be “Like Mike.”

Now, as a parent, the lack of live sports hits home even harder. My daughter’s high school track season was suspended (and ultimately cancelled) after only two meets. My son’s spring soccer season never even got off the ground. Watching the reality of that set in for both of them was difficult. Luckily, they both have several years of competitive sports ahead of them. My heart goes out to any high school and college seniors whose seasons and/or athletic careers came to such an unexpected end.

But, like most parents, coaches, administrators and sports field managers, I look forward to the day when our youth athletes can once again be with their friends and teammates, take to the playing field, and make memories that will last them a lifetime, so that they too will someday look back and realize how much they love live sports. **SFM**

## SportsField MANAGEMENT

Formerly *SportsTurf* magazine

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Plymouth, MN 55441

The Official Publication Of The Sports Turf Managers Association

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**Publisher’s Notice:** We Assume No Responsibility For The Validity Of Claims In Connection With Items Appearing In *SportsField Management*.

*SportsField Management* (ISSN PENDING) (USPS 000-292) (Reg. U.S. Pat. & T.M. Off.) is published monthly by EPG Media & Specialty Information at PO Box 96, Port Jervis, NY 12271.

**Postmaster:** Send address changes to *SportsField Management*, PO Box 2123, Skokie, IL 60076-7823. For subscription information and requests, call Subscription Services at (763) 383-4492. Subscription rates: 1 year, \$40 US & Poss.; 2 years, \$65 US & Poss.; 1 year, \$65 Canada/Foreign Surface, 1 year, \$130 Airmail. All subscriptions are payable in advance in US funds.

Send payments to *SportsField Management*, PO Box 2123, Skokie, IL 60076-7823. Phone: (847) 763-9565. Fax: (847) 763-9569. Single copies or back issues, \$8 each US/Canada; \$12 Foreign. Periodicals postage paid at Port Jervis, NY and additional mailing offices. COPYRIGHT 2020, *SportsField Management*. Material may not be reproduced or photocopied in any form without the written permission of the publisher.

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# President's Message

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and Steve Ware

When I had the honor of standing on stage and talking to the membership in West Palm Beach, Fla., in January, my message was about sports field managers being memory makers and collaborators. At that time, little did we know what kind of memories that we would be making today.

Because of the COVID-19 pandemic, many of us have been forced into unfamiliar technologies (but I still haven't caved on the social media thing yet), and we have had video meetings, conference calls galore, and some great Zoom happy hour sessions with friends and family. We've celebrated holidays and birthdays virtually. One thing this crisis has taught me is that we are a resilient group of people that make memories wherever we are, and we can make the best of any situation.

We have fought Mother Nature tooth and nail through hurricanes, tornadoes, droughts and floods. We have dealt with doubleheaders with practice the next day, football games that go into five overtimes, winter soccer matches with snow on the ground, and as many games played on one field as the daylight will allow. But what we are fighting now in this crisis continues to exemplify the resilience of the sports field manager.

That resilience is shown in our members' collaborating to share ideas on how best to recover fields



**Jimmy Simpson, CSFM**

STMA President

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that have had little or no maintenance inputs in the past 6 to 8 weeks. The STMA's Route to Recovery webpage is a great example of the combined efforts of many sports field managers, vendor partners and STMA staff to deliver relevant, concise and timely information for those who need it. This crisis has proven that no matter what obstacle is in front of the sports field manager, we will work tirelessly to find a positive outcome.

These memories were truly not the ones that I thought we would be making this year, but they are still extremely special, nonetheless. I have been afforded the opportunity to see this industry grow together in a collaborative way to help each other succeed in a time of great stress. These are the memories that you all are helping to create, and for that I can never say thank you enough. Please continue to reach out to those around you, because your thoughts and ideas can lift the spirits of others more than you know. **SFM**

Collaborating in change together,  
Jimmy Simpson, CSFM









## PARK HILL SOUTH BASEBALL FIELD RIVERSIDE, MO.

The baseball field was started in the summer of 2007 as part of a renovation project of the athletic complex including a soccer stadium, eight tennis courts and a softball field. Since baseball season is in the spring, it was going to be the last field constructed. The previous baseball field faced a different direction; in order to have more space, the new baseball field was turned another direction. The topsoil was excavated and hauled away, and the area of the field was used for staging of all materials needed to build a soccer stadium with grandstands, press box, light poles, synthetic turf along

with everything necessary to build restrooms, concession stands and storage. A mobile concrete batching plant sat where second base is currently located, along with every forklift, bulldozer and dump truck. As a result of the poor surface, the baseball field was not playable for the first season. Eventually, a drainage system had to be installed along with a lot aerating and topdressing in order to get it prepared for the second season when the field became my responsibility.

Over the last couple of years I feel like I have gained a pretty good understanding of the field. Over the

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past year the weather has been difficult — last summer into the fall we were in a drought, then winter came early and we had one of the wettest winters. Since winter lingered, it kept the baseball team off the field until the first game. Also, I had the challenge of my supervisor — with whom I have worked for 17 years — abruptly leaving the district. He was the person who made sure I had all of the materials I needed for my job, would give me advice if needed, and I considered a friend. After his departure, there

was a restructuring. My supervisors became two people without any experience of athletic facilities and the resources needed.

Over the past year there have been a few improvements made to the baseball field. In the summer of 2018, the school district decided to add lights to the baseball field. This resulted in boring to run the electrical wires, which required the irrigation for the complex to be turned off. The scoreboard was very faded and needed a facelift. Additionally, the soccer field got new turf so I

was able to repurpose some turf for in front of the dugouts where it is always in the shade and very wet. I was able to turf the home team bullpen and plan to do the visitor bullpen this offseason.

Since I have been on the job for 22 years, I like to find ways to make the job more fulfilling and present an aesthetically pleasing field. I find myself putting my head down and continuing, instead of getting consumed with distractions that come with the job.

— Eric Jones, head groundskeeper

**Category of submission:** Schools and Parks Baseball

**Field manager:** Eric Jones

**Title:** Head Groundskeeper

**Experience:** I have worked on sports fields in the Park Hill School District for 22 years. I started working here as a summer job, but eventually became the head groundskeeper of the district. I currently manage a high school complex with a soccer stadium, softball field, baseball field, turf and natural grass football field and tennis courts.

**Students/interns, part-time and seasonal staff:**

Cameron Hockensmith

**Original construction:** 2007

**Turfgrass:** Bluegrass and rye

**Rootzone:** Silty clay loam

**Drainage system:** French drain





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

**Jones:** I am most proud of this win because it is the second time I have won Field of the Year (I also won for my softball field in 2013). I have had a goal to also win for baseball, and I have now accomplished that. Since FOY is judged by your peers, it is a lot more meaningful than just the reaction of people who are not in the business.

**SFM:** What are the biggest challenges you face?

**Jones:** My biggest challenge is balancing my time and still keep the integrity of the field. As a high school sports field manager there are a lot of other requirements to the job instead of maintaining one or two fields.

**SFM:** What advice do you have for other sports field managers?

**Jones:** My advice would be to be prepared to do the “and then some” as George Toma would say!

**SFM:** What attracted you to a career in sports field management?

**Jones:** It really just happened, a summer job turned into a full-time job maintaining schools, which then turned into maintaining sports fields. Since I am not one who

likes to sit still, the changing daily environment and requirements fit me, along with my artistic side, which creates a passion for painting logos and mowing patterns on the fields.

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

**Jones:** My former supervisor, Andy, knew I had a passion for sports and sports fields. He would always include me in decisions, and always tried to help me grow as a sports field manager. If he didn't know an answer, he would consult with our vendors or fellow sports field managers to try to get a solution. I always appreciated his help and felt like I worked with him instead of for him.

**SFM:** What is the greatest pleasure you derive from your job?

**Jones:** The greatest pleasures of my job are hearing the players' reactions when they show up and see the field, and the conversations with the opposing coaches wanting field-maintenance tips.

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

**Jones:** I feel being a member of STMA has benefited my career by allowing me to network with other sports field managers and create friends throughout the USA.





### Judge's Comments

I feel the entry from Park Hill South is very deserving of Field of the Year. The detail with which the field is managed is very evident. From the nutrient management to the meticulous way the field is edged is proof the field is managed by a true professional. I was very impressed with the time and thought that went into the mowing patterns. This field is definitely a winner in my opinion.

— George Trivett, CSFM

**Editor's Note:** A panel of 11 judges independently scored Field of the Year entries based on playability, appearance of surfaces, utilization of innovative solutions, effective use of budget and implementation of a comprehensive agronomic program. We have asked the judging panel to provide insight into why each winning field was selected, and we will share those comments with the corresponding field profiles.



## Monthly Maintenance and Fertility Programs

### JANUARY

- Budget for paints and fertilizers
- Perform preventative maintenance on equipment

### FEBRUARY

- Order paint and fertilizer for season
- Winter cleanup
- Repaint scoreboard
- Do any necessary cleanup
- Last-minute prep on field
- Edge base paths if needed
- Pull tarp off mound and home plate to do any necessary work
- Prepare and maintain pitcher's mound

### MARCH

- Apply 18-12-12
- Apply 40 bags of Turface, nail drag into infield
- Mow 2-3 times a week at 2 inches
- Spot seed infield
- Mark fair lines
- Mark batter's box, logo, etc. for games
- Apply moisture to infield skin for games and practices
- Edge as needed
- Prepare and maintain pitcher's mound

### APRIL

- Mow 2-3 times a week at 2 inches
- Spot seed from use
- Irrigate as needed
- Mark fair lines
- Mark batter's box, logo, etc. for games
- Apply moisture to infield skin for games and practices
- Edge as needed
- Prepare and maintain pitcher's mound

### MAY

- Apply 18-0-18
- Mow 2-3 times a week at 2 inches
- Spot seed from use
- Irrigate as needed
- Mark fair lines
- Mark batter's box, logo, etc. for games
- Apply moisture to infield skin for games and practices
- Edge as needed
- Prepare and maintain pitcher's mound



### JUNE

- Mow 2-3 times a week at 2 inches
- Spot seed from use
- Slice aerate
- Irrigate as needed
- Drag as needed

### JULY

- Irrigate as needed
- Mow 2-3 times a week at 2.75 inches
- Drag as needed

### AUGUST

- Spray Q4 for broadleaf/crabgrass
- Mow 2 times a week at 2.75 inches
- Irrigate as needed
- Apply 13-13-13
- Monitor field during summer heat

### SEPTEMBER

- Slice and core aerate
- Seed with bluegrass
- Mow once a week at 2.75 inches
- Irrigate as needed

### OCTOBER

- Edge field for spring season
- Run irrigation when needed
- Mow 1-2 times a week at 2.25 inches
- Clean infield of weeds
- Edge infield

### NOVEMBER

- Clean up warning track
- Finish edging infield
- Apply 18-46-0
- Winterize irrigation at end of month
- Last mowing
- Put field to bed

### DECEMBER

- Watch it snow
- Count days until baseball season

SFM

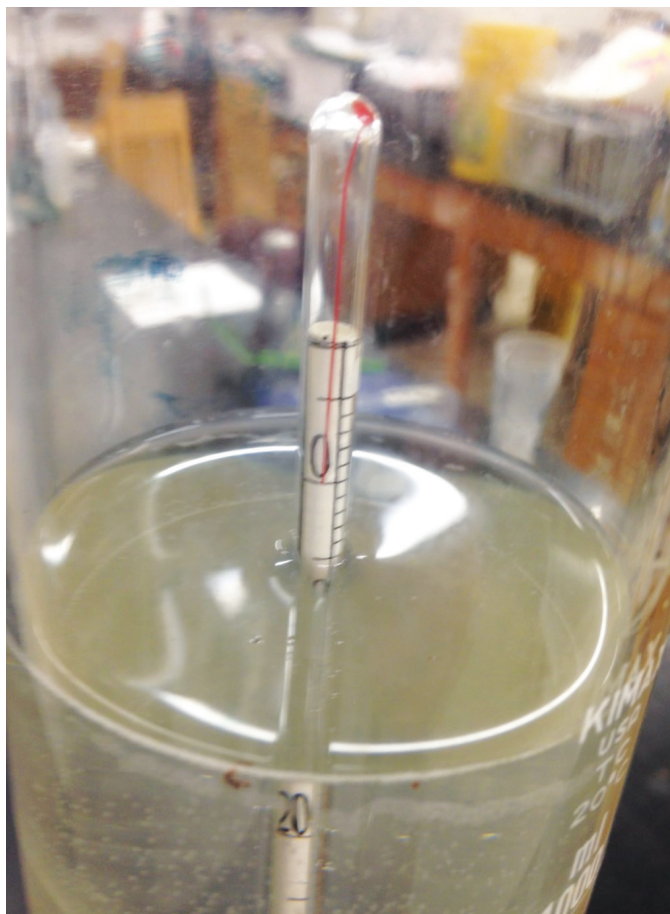


# Things You Should Know About Your Athletic Field Soil: Soil Texture and Compaction

By Barry Stewart, Ph.D.

One of the first things I would like to know about my soil is where it came from. What are its origins? Previously, you would have had to obtain a soil survey for this type of information, but the USDA Natural Resource Conservation Service (NRCS) made this quite easy for us with the SoilWeb app. Fire up the app, and, voila, you can find out what soil map unit you are standing on — give or take a couple social distances (12 feet or so). Now, most modern athletic fields are not constructed for on-site materials, but this will give us some idea of what our subsoil might be, as well what the drainage pattern and landscape looked like before our fields were built.

Many fields are constructed using cut and fill operations, so it may be possible to ascertain which places were cut and which places were filled. Also, if you know from where your soil was sourced, you could look up that location and see the soils that exist there and see their properties. The SoilWeb app will give you a visual soil profile, as well as the description of that soil series. You can dig deeper and find out about the suitability of your



**Figure 1. Soil Hydrometer**

soil for many different uses. It's like having a soil survey in the palm of your hand.

While the information from SoilWeb is useful to have, it is far more useful to have data from actual soils samples from your site. But what data do we need? First, I would like to know about the particle size analysis and particle

size distribution of my soil. Many athletic field soils are very uniform as they were hauled in with the expectation that the field or the complex was being covered with the same material.

If there are known areas of different soil texture within a field or complex, then more than one sample may need to be analyzed. For athletic field soils that are not sand based, a particle size analysis by the hydrometer (see Figure 1) or pipette method is all that is needed for particle size analysis. For sand-based fields, I would like to know the particle size analysis, as well as the sand size distribution. Many labs will do a particle size analysis for \$50 or less, and about the same figure sand distribution.

Once we have the percentages of sand, silt and clay determined,

we can place our soil on the soil textural triangle (see Figure 2 on page 16) and determine its texture. This will go a long way in giving us information about how this soil will perform. Engineers look at soils a bit differently, and tell us that soils behave as the finest 20 percent of the soil particles. This implies that if your soil is 20 percent or more clay,



it will behave like a clay. Soil structure may modify this somewhat, but it is something to remember when looking at water movement and infiltration. Knowing soil texture also allows us to contemplate what action we might take to modify our soils. Soils with 50 percent or more sand are candidates for modification by blending in more sand. To improve our porosity, we are trying to get sand-particle-

to-sand-particle contact and pore space created by bridging between the sand particles. If we do not have at least 60 percent sand, this will not happen readily. If I were doing a modification project, I would want to get to at least 75 percent sand. For a soil with 40 percent sand or less, I would recommend some type of sand cap that could be applied slowly by yearly topdressing or an all-at-once sand cap.

For soils with more than 80 percent sand, I would also like to know the distribution of the sand particles. The USDA sand size classification scheme is presented in Table 1. Examination of this data will determine if we have a sand that is likely to compact well or one that resists compaction. A soil that has about 20 percent in every sand particle size is termed a well-graded sand, and will have the tendency to compact as the

**Table 1. USDA soil particle size classes**

\*USGA classifies fine sand as 0.15 - 0.25 mm and very fine sand as 0.05 - 0.15 mm

| Particle size class | Diameter in mm |
|---------------------|----------------|
| Gravel              | < 2            |
| Very Coarse Sand    | 1.00 - 2.00    |
| Coarse Sand         | 0.50 - 1.00    |
| Medium Sand         | 0.25 - 0.50    |
| Fine Sand           | 0.10 - 0.25    |
| Very Fine Sand      | 0.05 - 0.10 *  |
| Silt                | 0.002 - 0.05   |
| Clay                | < 0.002        |

**Table 2. General relationship of bulk density to root growth based on soil texture. USDA NRCS 1996**

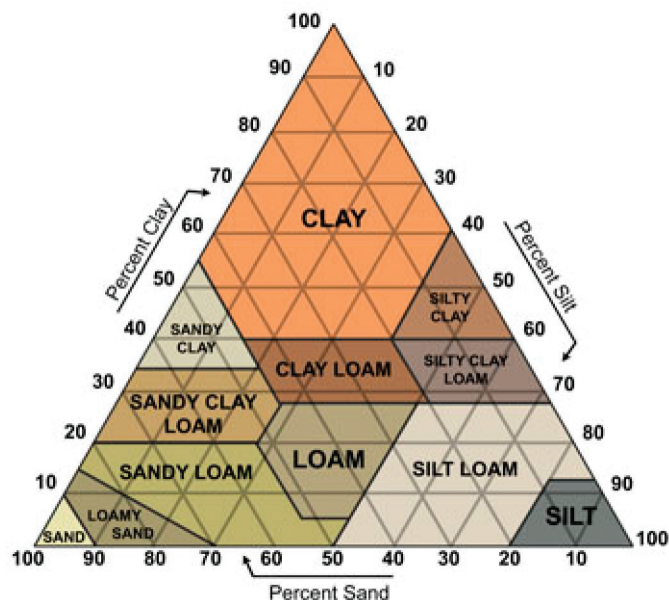
USDA NRCS, 1996. Soil Quality Information Sheet, Compaction. April, 1996. 2 pages

| Soil Texture                            | Ideal BD                     | BD affecting root growth | BD restricting root growth |
|-----------------------------------------|------------------------------|--------------------------|----------------------------|
|                                         | -----g/cm <sup>3</sup> ----- |                          |                            |
| Sands, loamy sands                      | <1.60                        | 1.69                     | >1.80                      |
| Sandy loams, loams                      | <1.40                        | 1.63                     | >1.80                      |
| Sandy clay loams, clay loams            | <1.40                        | 1.60                     | >1.75                      |
| Silts, silt loams                       | <1.30                        | 1.60                     | >1.75                      |
| Silt loams, silty clay loams            | <1.40                        | 1.55                     | >1.65                      |
| Sandy clay, silty clay, some clay loams | <1.10                        | 1.49                     | >1.58                      |
| Clays <45% clay                         | < 1.10                       | 1.39                     | >1.47                      |



finer particles will fit in the pore space between the larger particles. These are excellent sands for use in concrete and mortar mixes as they pack together well, and a good concrete sand even contains fine gravel. This is why very little very fine sand, silt and clay is allowed in a sand that meets the USGA particle size specification. The best sand for resisting compaction is a poorly graded or uniform sand. This is a sand that has a majority of its particles in one or two adjoining particle sized classes. A USGA spec sand has a minimum of 60 percent in the coarse and medium sand categories. Because the particles are so uniformly sized, the pores created between them will also be uniform; and since there are few particles from other size classes, there are fewer fine particles to fill these pores. So, knowing particle size analysis and sand distribution allows us to know a great deal about drainage characteristics such as infiltration and hydraulic conductivity, pore space and water retention, potential for water runoff, cation exchange capacity and load-bearing capabilities.

The next thing I would like to know about is soil compaction. One of the best tools for finding soil compaction is a trained set of eyes. Look for areas of turf that look thinner than the rest of the field, areas that have standing water after a rain and remain wet longer than other areas, look in high-traffic areas such as near the soccer goal mouth or between the hash marks of a football field. Look for indicator plants that thrive in compacted areas like path rush, goosegrass, knotweed, and *Poa annua*. Once we have identified areas that may be compacted, we now must take a measurement.



**Figure 2. USDA Soil Textural Triangle.**

Bulk density is the gold standard for measuring soil compaction. Usually a core sampler is driven into the ground with a slide hammer.

A soil core of known volume is brought back to the lab and dried and bulk density is determined. Bulk densities of about 1.6 g/cm<sup>3</sup> (see Table 2) begin to impede root growth, and bulk densities of 1.8 stop root growth. Take samples in areas of good turf growth and poor turf growth and compare them. If areas of higher bulk densities are found, those areas will need extra care in terms of aeration.

Measuring soil bulk density is a slow process, but it is unaffected by soil moisture content. Soil penetrometers and Clegg Impact Soil Testers (CIST) give us immediate field readings, but they are affected by soil moisture and, in the case of the CIST, grass conditions. A penetrometer is a good tool for looking for soil compaction — especially with depth — but the readings are dependent on soil moisture, and area sampled per reading is very small, so many readings must be

taken. Make penetrations in areas of good turf growth and poor turf growth and compare them. Use the data collected to find areas that need extra attention. The CIST is used to identify areas of surface hardness, which is not the same as compaction, as surface hardness has a contribution from grass. Closely mown grasses (1/2 inch or less) have harder surfaces than taller grass (1 inch) due to more biomass. Surface hardness is also affected by soil moisture. Water lubricates the soil particles, which results in less

particle-to-particle friction and softens the surface. The CIST is a useful tool for identifying hard areas of the field, and these areas are likely compacted.

On many athletic fields the compaction is limited to the top one or two inches (25 to 50 mm) of the soil. The best method to alleviate compaction is hollow-tine aeration and knowing the compacted areas so they can be given extra care. The relationship between soil compaction, soil texture and root growth is shown in Table 2. This illustrates that one of the benefits of having a sandy texture is that there is still pore space when the soil is somewhat compacted. Soils with finer textures have little pore space when compacted, and root growth suffers at lower bulk densities. **SFM**

*Barry Stewart, Ph.D., is associate professor at Mississippi State University. He teaches courses in Athletic Field Management, Golf Course Operations, and Plant Science. His current research focuses on athletic field quality and sustainable turfgrass management. He is a part owner of the Green Bay Packers.*



## JOHN MASCARO'S PHOTO QUIZ

### CAN YOU IDENTIFY THIS TURFGRASS PROBLEM?

**PROBLEM:**

Line of dead turf starting at temporary football field steel upright and ending at fence pole.

**TURFGRASS AREA:**

High school field

**LOCATION:**

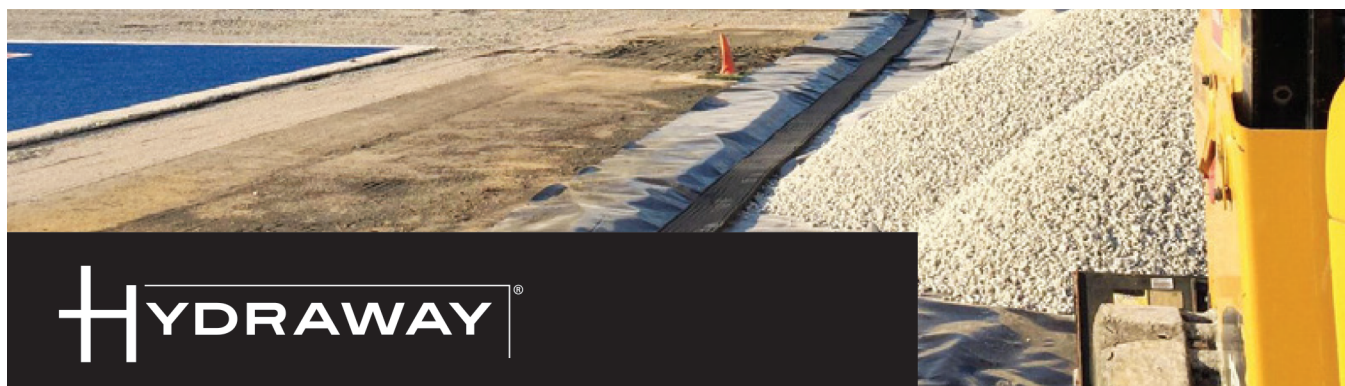
New Jersey

**TURFGRASS VARIETY:**

Bluegrass mix

*Answer on page 33*

*John Mascaro is president of Turf-Tec International*



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# The SportsField Management Interview: Elliott Josephson

In this edition of the *SportsField Management* Interview, we meet Elliott Josephson, sports facilities superintendent for the City of Ankeny (Iowa). Josephson holds a 2-year AAS degree in Golf Course and Athletic Turfgrass Management from Kirkwood Community College in Cedar Rapids, Iowa. He served on the Iowa Sports Turf Managers Association Board of Directors from 2015-2018, having served as president in 2017. In 2016 his facility received the STMA's Environmental Facility Certification. Since 2019, Josephson has served on Iowa Turfgrass Institute Board of Directors. In January 2020, he was recognized as the 2019 Iowa Sports Turf Manager of the Year.



Elliott Josephson

**SportsField Management (SFM):** Please tell us about Prairie Ridge Sports Complex, how many fields you manage, your crews, and your typical duties (under normal circumstances).

**Josephson:** PRSC is 132-acre youth sports complex with 36 baseball, softball, soccer, football and lacrosse fields. Playing fields are about 45 acres. Crew is two full-time, year-round staff; seven, nine-month seasonal staff; and 20 to 25 high school/college kids to work on the weekends. Normal office duties include hiring/training/overseeing staff, managing relationships/scheduling of our five club groups plus outside tournaments and overseeing budget and capital improvement funds. I'm considered a "working manager" in the field, so duties include everything from irrigation and fertilizer to mowing to field prep on baseball/softball fields or painting soccer/football/lacrosse fields or aerating fields.

**SFM:** What attracted you to the sports field management industry?

**Josephson:** In high school and college I worked in lawn care, and in college we started taking care of the owner's high school fields. I enjoyed making the

fields look good for the game. I had friends enrolled in golf course turfgrass management programs, so I decided to switch my major to that. I always enjoyed working outside doing manual labor, and I like baseball and football, so I thought it would be fun as a career.

**SFM:** What would you say are the biggest accomplishments of your career and/or what are you most proud to have achieved?

**Josephson:** This past offseason, I was nominated by a peer/good friend for Iowa Sports Turf Manager of the Year, and was humbled to be given that award from the ISTMA

Board of Directors at our annual state conference.

**SFM:** What are the biggest challenges you face (or have faced), and what advice do you have for other sports field managers when it comes to facing similar challenges?

**Josephson:** Over-usage and sharing of fields. A lot of our fields are used for multiple sports. For example, as soon as baseball is over, the outfielders on five fields are turned into football fields, so there is no offseason. With adding lacrosse, three of the football fields now are used in the spring and summer when they used to not have any events. Also, we are redoing one soccer field a year, which we have moved all games and practices from that field to another football field.

[In terms of advice,] control what you can. For us, the fields are over-used, but when we do have a break, they recover. We just try and do what we can to keep them in the best playing condition that they can be, and safe for the youth that are using them. Also, try to manage your work and personal time the best you can. Our jobs require us to work a lot of hours due to game schedules, weather, field maintenance and staffing, but sometimes you just have to walk away and take a weekend off. Spend time with your family and enjoy your hobbies. This is something I still struggle with, but have got better at just walking away at the end of





a workday and going home knowing that the work will still be there tomorrow.

**SFM:** Who are your mentors, and what is the best advice you received during your career?

**Josephson:** My dad, Jerry Josephson. He got me interested in turf and taught me what a good work ethic was. He taught me how to do things right the first time and to always do my best. He and I still talk turf and field maintenance every time we are together. I wouldn't be who I am today if it weren't for him and his work ethic. Another would be my first employer in sports turf, Chris Schlosser, head groundskeeper for the triple AAA Iowa Cubs. When I was first getting into sports turf, I was lucky to be hired by Chris and learn from one of the best. 15 years later, he and I still have a great relationship, and I know I can go to him with any ideas or questions.

**SFM:** Your facility achieved STMA's Environmental Facility Certification. What does it mean to you to be

recognized for your environmental sustainability and stewardship, and what advice do you have for other field managers with regard to achieving this certification?

**Josephson:** I am proud to have the certification, and we try and make sure people know that we are certified. We have banners hanging around the complex so users/visitors know about the certification. If nothing else, it helps let people know that we are trying to do it the right way. Our industry is always being watched by the public, and whatever we can do to show that we are responsible and doing things the right way will help us to be looked at as professionals.

**SFM:** What is the best part about being a member of STMA?

**Josephson:** I enjoy the social media relationships/followings that I have, going to national conference and meeting/hearing other sports field managers talk about their facilities, and then being able to follow them and see what they are doing. There are so many ideas and good information shared among each other on social media. **SFM**



# More "Pop" Per Drop: Smart Irrigation

By Shane R. Evans, Kelly Kopp, Paul G. Johnson, Neil C. Hansen, Ph.D., and Bryan G. Hopkins, Ph.D., CPSS

Lawn grass acreage is steadily increasing as urban populations grow. These areas include home lawns, community parks, athletic fields and golf courses. In the United States, there are more than 41 million acres of lawn grass, with a large percentage being irrigated (Evans, 2020). To put this into perspective, this is equivalent to ~31 million football fields that would cover an area equal in size to the state of Wisconsin. Additionally, as populations increase, there is also an increase in water demand, resulting in dwindling water supplies (Evans, 2020).

With ~50% of total homeowner water use attributed to lawn irrigation, landscapes containing large areas of lawn grass have a large overall demand for water in some regions. While some question the value of irrigating lawn grasses in urban landscapes, the plants provide many positive ecosystem services, including saving energy for cooling, reducing heat island effects, cleaning air, fostering healthy oxygen and carbon cycles, and providing important mental health benefits to residents. Grass is especially beneficial with regard to carbon sequestration, minimizing soil erosion and leaching of chemicals to groundwater and, of course, recreation and aesthetics. The following are several factors that should be considered for optimizing water application to lawn areas while enhancing the ecosystem services they provide.

## SPECIES AND VARIETY SELECTION

Some grasses survive drought better than others (see Figure 1). For example, Kentucky bluegrass will typically recover well after drought causes it to enter dormancy. Bermudagrass is also a very drought-tolerant grass.

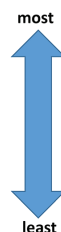
However, there is a large difference between the minimum amount of water required for grass to tolerate drought and the water required to keep the grass healthy, growing, and actively recovering from stress.

Cool-season grasses have a C3 photosynthetic system that results in poor heat tolerance and relatively high water demand. In contrast, warm-season grasses have a C4 photosynthetic system that results in relatively high tolerance of higher air temperatures and more efficient water use. General species and variety recommendations emphasize those that have exhibited high quality in the National Turfgrass Evaluation Program (NTEP) or other evaluation programs and that are also well adapted for other important traits. In general, varieties that root relatively deeply

### Relative Water Stress Tolerance of Turfgrass Species

#### Warm-season grasses

- Bermudagrass
- Buffalograss
- Zoysiagrass
- Centipedegrass
- St. Augustine grass
- Paspalum



#### Cool-season grasses

- Wheatgrasses
- Tall fescue
- Fine fescue
- Bluegrasses
- Ryegrasses

Figure 1

tend to perform better in terms of water efficiency. It is recommended to choose species and varieties that not only meet athletic field needs, but also root deeply and are water conserving.

## NUTRIENT MANAGEMENT

There is a strong interaction between plant nutrition and water relations in plants. In general, a fertile soil with ample nutrition (not deficient or excessive) will enable good grass growth, which in turn allows adequate root growth to explore the soil for stored moisture. Soil and tissue testing are valuable — although imperfect — tools for evaluating nutrient requirements and efforts utilizing complicated, and unproven, fertilizer programs



are unnecessary. At a minimum, soil nutrient test concentrations should be at sufficient levels for phosphorus and potassium, as well as most of the secondary macronutrients and micronutrients. Nutrition can be further customized by monitoring nutrient concentrations in plant tissues.

Although these nutrients are important, the most important, especially with regard to water, is nitrogen. Either deficient or excessive nitrogen can result in poor water use efficiency in grasses. Nitrogen deficiency results in poor color and poor overall plant health. Alternatively, excessive nitrogen results in short-term color improvement, but the long-term result is drastically reduced rooting depth and density, which increases water use and frequency of irrigation.

### STRESS MANAGEMENT

Too much stress isn't good, but some stress can make lawn grasses stronger. Intentionally inducing slight desiccation of grasses in the spring (before the extreme heat of summer) signals a physiological response for roots to grow more deeply. The grass should be stressed to the point of it turning slightly grey and retaining footprints and then fully irrigated immediately afterward.

Deeper root systems result in more efficient water use, whereas shorter root systems make grass more susceptible to heat and other stresses, resulting in the need to irrigate more frequently. This may also decrease plant water use efficiency as more water is lost below the root zone due to leaching (along with mobile nutrients).

Appropriate cultural practices are also vital for healthy grass roots. This is especially true with regard to mowing height and frequency. Along with general impacts on plant health, these can also impact rooting depth/density and, thus, water use efficiency. Contrary to popular opinion, studies have shown that height of cut does not impact athlete speed. Short heights of cut can, however, increase ball roll speed (stimp) for soccer and other similar sports, and is an important factor. Reasonably short mowing heights can also increase crown density, which improves sheer strength and footing. However, the shorter the height of cut, the shorter the root system, especially for species with upright growth habits, such as Kentucky bluegrass.

Most grass species perform best at mowing heights of approximately 2 inches; although, in general, they may reasonably tolerate mowing heights of approximately 1 inch with careful management. There are seemingly successful exceptions. For example, many sports fields with Kentucky bluegrass are mowed as short as  $\frac{3}{4}$  inch, but there are opportunity

costs — including the requirement for more water and more frequent mowing. Bermudagrass and other species with prostrate growth habits perform well at even lower mowing heights, with relatively less impact on water relations.

### IRRIGATION MANAGEMENT

In general, irrigation is best applied deeply and infrequently, and more than a week may pass in between irrigations during the cooler parts of the growing season. However, "infrequent" irrigation may be applied every other day to low-mowed grass during the heat of summer due to relatively shallow root systems.

Rooting depth decreases as summer heat increases and, therefore, must be examined periodically so that enough irrigation water is added to reach the bottom of the root zone. Frequent, light irrigations do not wet the

**Efficient irrigation also  
requires a properly designed,  
installed, and maintained  
irrigation system without  
leaks and with high  
distribution uniformity.**

soil deeply and may result in shallow rooting. In contrast, over-irrigation may force water beyond the root zone, which is wasteful of water, as well as nitrogen and other mobile nutrients. This is especially true in sand-based soils that are prone to leaching losses.

Efficient irrigation also requires a properly designed, installed, and maintained irrigation system without leaks and with high distribution uniformity (DU). Poor uniformity results from systems with leaks that are not maintained or properly designed/installed. Now, no system is perfectly uniform, and it is common with athletic and other high-quality surfaces to elimi-

nate dry spots by watering to ensure the health of the driest area. However, this results in overwatering of other areas. Although perfect uniformity is not achievable, relatively high DU will result in maximum water use efficiency. Measuring and correcting problems that decrease DU should be a regular activity for irrigation managers (Irrigation Association, 2007).

Scheduling the frequency of irrigation is equally important, and there are multiple technologies available to help manage irrigation scheduling. In recent years, evapotranspiration (ET)-based smart irrigation controllers have been shown to reduce water consumption by up to 62 percent as compared to manually programmed time-based controllers (McCready et al., 2009). In most cases, these smart controllers use soil moisture sensors and/or ET calculators to effectively manage irrigation frequency. Soil moisture sensors can provide real-time data and may be used in conjunction with smart irrigation controllers, which can be effective when used properly. Calculating and replacing water lost by ET can also be an effective means of determining water application for smart controllers.

### IRRIGATION CONTROLLERS

We conducted research on replicated plots to determine the effects of WiFi-enabled smart irrigation controllers on lawn grass health/quality and water consumption in Logan, Utah (see Figure 2). Three controllers used — including the Orbit B-Hyve WiFi sprinkler system (Bountiful, Utah), the Rachio smart sprinkler (Generation 2, Denver, Colo.), and the Skydrop Halo smart sprinkler system (American Fork, Utah). The controllers were programmed to schedule irrigation based on weather data received through a wireless internet connection. The control for the experiment was a Hunter XC-400 (San Marcos, Calif.) irrigation controller. The base programming for this controller was chosen according to Utah State University (USU) Extension recommendations and based on historic (previous 30-year) climate data and a



Figure 2

recommended irrigation depth per application of 0.5 inches. Irrigation occurred every 3, 3, 4 or 6 days in June, July, August and September, respectively. The Kentucky bluegrass was grown using recommended cultural management practices.

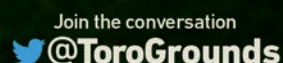
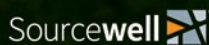
There were differences in water consumption and grass health across controllers. Comparing total water application for the four controllers, there were two distinct groups. The Rachio and B-Hyve controllers applied 8,500 and 8,200 gallons of water over the course of the study. The Skydrop and the manually programmed (USU guidelines) Hunter controllers applied 33 to 37 percent less water than the others (see Figure 3 on page 24).

A variety of plant health measurements were taken (Evans, 2020) including normalized differential vegetation index (NDVI) (Figure 3). In 2018, initial measurements of NDVI for each controller began relatively high (0.70 of a possible 1.0). As the season progressed, NDVI values for Skydrop and Hunter controllers decreased each month, while Rachio and B-Hyve controllers maintained relatively high readings. The NDVI trends and associated plant health decreased along with water application with the Hunter and Skydrop controllers applying less water each month as compared to Rachio



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and B-Hyve controllers. The differences in water application may explain changes in NDVI readings between the controllers as reduced water application also resulted in decreased grass health. In 2019, the Skydrop and Hunter controllers continued to apply less water, but a different trend emerged for NDVI. This may in part be attributed to much higher amounts of rainfall recorded in late August and September of 2019. It is important to note, however, that during both years of the study, NDVI never dropped below 0.61 or rose above 0.72. In terms of aesthetic quality, this difference might be noticed by some and not by others.

Applying less water resulted in lower NDVI values. But does the drop in NDVI affect playability and aesthetic value? Does the potential reduction in water use of 33 to 37 percent justify these lower NDVI values? Such questions must be answered by each landscape manager, because a variety of factors can influence land-use decisions. The human factor has a large impact on water management and the idea of what constitutes an ideal landscape. This will differ depending on whether you ask the field manager, those who use the field, or those who simply observe the lawn. In Figure 4, plots A and B received higher water than C and D. Less water resulted in less healthy grass, but the results may very well be acceptable if slightly less healthy grass is an acceptable trade off with water conservation.

In many cases, however, water conservation is highly desired, and even mandatory, and the irrigation controllers evaluated in this study can help achieve a balance between aesthetics and water consumption. We do not present these results as an endorsement of any particular product. All can be effective water-conservation tools, and they each may be programmed to be more water conservative.

The results of this study show that, over the course of two growing seasons, thousands of gallons of water may be saved with a minimal drop in plant quality,

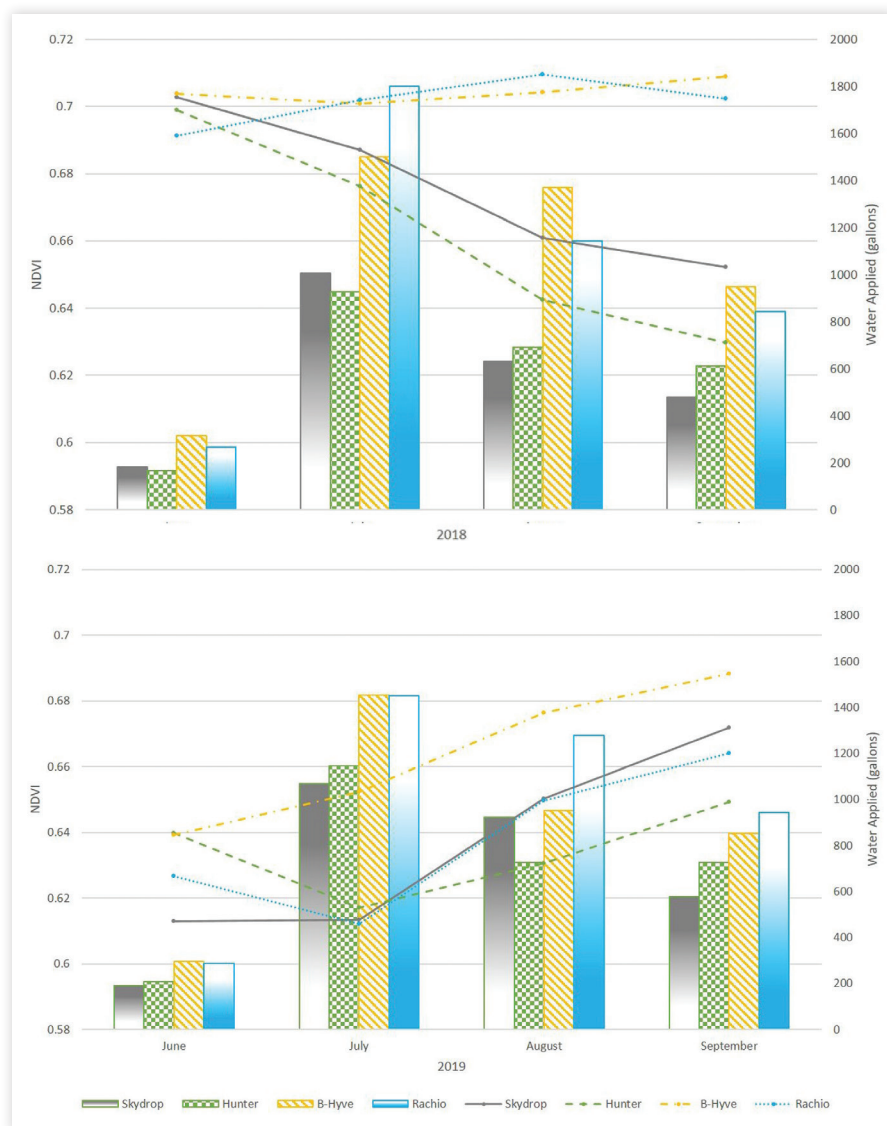


Figure 3

as measured by NDVI. Additionally, when comparing water application of the smart irrigation controllers to the manually programmed controller, similar water savings were achievable when using University Extension recommended irrigation schedules. **SFM**

*Shane R. Evans is lawn water conservation educator in the Department of Horticulture Science at the University of Minnesota.*

*Kelly Kopp is professor, Extension water conservation and turfgrass specialist in the Plants, Soils, and Climate Department at Utah State University.*

*Paul G. Johnson is department head, professor, Turfgrass Management/Genetics in the Plants, Soils, and Climate Department at Utah State University.*





Figure 4

Neil C. Hansen, Ph.D., is department head and professor of Soil Science in the Plant and Wildlife Sciences Department at Brigham Young University.

Bryan G. Hopkins, Ph.D., CPSS, is a professor of Soil Science in the Plant and Wildlife Sciences Department at Brigham Young University.

This article is based on a presentation of the same title given by Dr. Bryan G. Hopkins at the Sports Turf Managers Association Conference, West Palm Beach, Fla., on Jan. 14, 2020. (<https://intelliquestmedia.com/store/events/sports-turf-2020/202001112>)

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# Use This Time to Get Your Fields Ready for Play

By Mary Helen Sprecher

Everyone's hoping for greener pastures in the months to come. For the moment, however, many states are in lockdown and schools are closed. The question, of course, becomes this: what's happening with sports fields — or, rather, what should be happening with them?

Most sports fields are sitting idle until teams return to practice and play on them. So what should you be doing to keep them in shape for when they are open for business?

Basic maintenance is the key. If maintenance crews in your state are considered essential employees, the shutdown shouldn't be too much of an obstacle.

In some states, under current regulations, contractors can do maintenance work (but not new construction), so, understandably, the scope of work that can be done in each individual case may vary greatly. However, all red lights must turn green at some point, and it is necessary to get facilities into the best possible shape for the time athletes can return.

Whether you're able to have a crew come in or whether you're limited in the scope of work that can be performed, basic maintenance is possible.

No matter what type of field you have, take some time to check the condition of the field's various amenities, such as lighting, irrigation and fencing. If something is broken or malfunctioning, put in a service call



Atlanta Braves Sun Trust Park. Photo courtesy of The Motz Group, Cincinnati, Ohio

now. When fields open for play, it's likely that vendors will be inundated with service requests and may not be able to get to you right away.

Synthetic fields might not need mowing or weeding but they still require touch-up work to keep them in good shape. Keep debris, including leaves, twigs and other matter to a minimum by using a lawn sweeper or leaf blower.

"It is still important to brush the field on occasion," said Rick Barstow of The Motz Group in Cincinnati, Ohio. "This will provide the opportunity for uniform UV exposure to the turf fiber, and prevent any potential vegetative growth."

Walk the field, slowly and carefully, looking at the surface at all

times. You're checking for irregularities — low spots, areas of wetness and other places where the turf does not look uniform. If you find those spots, document them "in writing, with pictures," said John Schedler of Bakara Sports in Fort Worth, Texas. "Check infill levels and fiber conditions."

"Infill depths can be monitored with an infill depth gauge," said Barstow. "The proper infill depth is based upon the design of the system that is installed. Contact your turf manufacturer for these recommendations. Base deviations should be addressed by your turf installation contractor. Seam repairs should be documented and are typically addressed by the turf installation contractor. This is something that the



owner can be trained on. It is important to use the proper turf recommended materials while conducting the repairs (glue and seaming tape)."

Irrigate the fields and let them drain. Does water collect in any one spot? If so, snap a picture and ask your contractor for recommendations on how to proceed. It may be a quick

If you're considering using a disinfectant, algicide or other chemical on any synthetic field, check with the turf manufacturer first since not all substances work for all field types.

Natural grass fields of any type will need mowing, irrigation and weed and pest control, as a rule. They should also be kept free of debris —

too long without being mowed, it will grow long enough to where it can't be mowed down to its regular playing height without being scalped."

The problem won't get better with time, he added; in fact, it will get worse. "In particular, hybrid bermudagrass fields are going to start getting a lot of vegetative top growth as the days get warmer," said Titchener.

"One of the characteristics that makes bermudagrass such a desirable turf species for sports fields is that it is dense at low cutting heights and has a tight-knit network of stolons, which allow great footing while playing sports. However, if allowed to grow vertically, bermudagrass will grow thinner, taller shoots, and will have a significantly less dense network down near the thatch and soil layer.

"Later on when we come and mow the field down to normal playing heights, we would find a surface that is no longer dense enough to be ideal for playing on. For this reason, it is important to be at least mowing once a week. Another option to consider is the application of a plant growth regulator (PGR). Turf managers have

had a lot of success using products containing active ingredient trinexapac-ethyl. These products encourage horizontal growth of rhizomes and stolons, and limit vertical growth. This PGR will allow turf managers to mow less frequently while still maintaining a dense healthy turf stand. A licensed applicator must be used to purchase and apply plant growth regulators."

And care doesn't stop there, Titchener added. "It is also important to keep an eye on disease and pest pressure. Before mowing, the field should be inspected for any signs of disease or pests. If allowed to go unchecked, an entire field can be lost to diseases/pests,



USSSA Space Coast. Photo courtesy of AstroTurf Corp., Dalton, Georgia

fix — or something that requires professional intervention.

And no matter how much time you have on your hands, don't embark on any DIY repairs without consulting your paperwork.

"Check the warranty language in your contract for any work performed on your field outside of general maintenance (grooming, infill additions, debris)," said Barstow.

"The owner doesn't want to risk violating any provisions within the warranty," added Schedler. "And it's also very important to follow the warranty requirements for maintenance and repair."

both organic (leaves, pinecones, twigs, etc.) and inorganic (litter) — for the health of the turf and the safety of players when they return.

If the care of the field doesn't usually fall to you, it still needs care.

"It would be impossible to simply walk away from a natural grass sports field for many weeks and expect that it can be brought back to game-ready condition over the course of a couple days or even a week," said Sam Titchener, CFB, of Colony Landscape, San Jose, Calif. "As far as basic maintenance goes, it is imperative that the field be getting mowed at least once per week. If the turf stand goes



causing hundreds of thousands of dollars in damage. It may be worthwhile to maintain an existing pesticide program or introduce new fungicide and pesticide programs.”

The fact that a field owner, coach or athletic director has limited time is understandable – as long as some of that time is devoted to the field. One day per week can make a huge difference if you plan your time well, making it a priority to inspect the field for pests and other issues, and apply any treatments to encourage healthy growth, in addition to mowing.

“For baseball and softball fields, it will be important to keep an eye on skinned areas such as the infield, warning tracks and pitching mounds,” said Titchener. “Clay areas such as mounds and batters boxes should be kept tarped to maintain the integrity and moisture of the clay. Infields and warning tracks should be kept weed free. For infields and warning tracks that have already been completely overgrown with weeds, I have had a lot of success using a sod cutter to cut weeds out of a large area of weeds in skinned areas.”

If it all sounds like too much work, Titchener has a cautionary scenario: “If fields are left unchecked for too long, they may no longer be easily salvageable, and turf managers must look at more involved processes to get fields playable by the time sports return to the facility.” (These may include ripping out the field and re-sodding it at a tremendous cost). **SFM**

Mary Helen Sprecher wrote this article on behalf of the American Sports Builders Association (ASBA), a



**Crusader Athletic Complex.** Photo courtesy of Fisher Tracks Inc., Boone, Iowa



**Hayward High School.** Photo courtesy of Verde Design, Santa Clara, California

non-profit association helping designers, builders, owners, operators and users understand quality construction of many sports facilities, including sports fields. To get up to speed on all the aspects of sports field care, ASBA publishes Sports Fields: A Construction and Maintenance Manual,

an excellent resource with extensive (but user-friendly) information on design, construction, maintenance, repair, accessories, amenities and more. The book is available from the ASBA website at [sportsbuilders.org](http://sportsbuilders.org) and can be purchased in either hard copy or as a downloadable pdf.





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# UTVs for Sports Field Professionals

Editor's Note: These materials were provided by John Deere.

A staple for professional grounds crews, utility vehicles (UTVs) have been used for decades on campuses, sports complexes, and large properties. These versatile machines provide professionals with a go-to tool for moving materials and people, as well as performing daily tasks. But with so many options on the market, selecting the right machine for your needs can feel overwhelming. To help make the buying process easier, there are a few steps you should take to determine the right type of machine for you and to make the purchasing process as easy as possible.

When most people think about UTVs, they associate the machine with the most common job it performs: transporting people and materials from job to job. By being able to move around a facility faster, crews can easily get more done in a single day. Unlike large trucks, these compact machines can travel on almost any terrain, including sand, turf, dirt and mud. However, these machines do even more with the addition of attachments. UTVs can be used for spreading seed, raking dirt, plowing snow and more. There are hundreds of different tasks that can be tackled head-on with attachments.

So how do you determine the right model for your operation? There are many key factors to consider before purchasing a UTV, so it's important to focus on six questions:

1. What type of power source do you prefer?
2. How much will you need to haul?
3. What kind of terrain will you be working on?
4. How fast are you looking to travel?
5. How many people will be in the vehicle at once?
6. What types of jobs do you want to use the machine for?

There are several power options for UTVs – gas, diesel or electric. The decision between gas or diesel is primarily based on your fuel preference or any local requirements that may impact your choice. An electric model can be ideal in areas where fuel restrictions are limiting, or if you ever need to use a machine indoors. Additionally, electric-powered machines offer the added benefit of eliminating fuel costs. However, while all types of UTVs can be used all day, an electric model may be overloaded by heavier hauls and will need an over-night recharge to be ready to tackle the next full workday.

Understanding your intended use and property will also drive your decision. For example, with terrain, vehicles are built for specific applications. While some UTVs are designed to withstand the tough terrain, others flourish in more turf-oriented settings. Additionally, size, speed and weight are also critical considerations. The size of the UTV directly correlates to the amount of horsepower it puts out and weight it can haul or tow. For some people, hauling heavy materials, such as mulch and gravel, may be a key priority. For others, transporting people and getting around quickly could be the sole reason for purchase. Knowing how you will be utilizing the UTV will help you make the most strategic purchase for your crew.

You should also keep in mind the types of jobs you will be completing, and if there are attachments that





can expand the uses of your machine. These machines can be equipped with hundreds of attachments for a wide diversity of tasks. From sprayers and spreaders to blades and tool carriers, attachments can help grounds crews be more resourceful while completing daily jobs.

Additionally, upgrades such as cabs with heating and air conditioning can enable crews to work year-round in any weather conditions.

Additionally, there are many upgrades that support a UTV being a key addition to any fleet. Upgrades such as power steering and additional seating options help you customize your UTV to meet the needs of your crew. The addition of LED lights and increased storage capabilities are a few more upgrades that make a UTV ideal for any job.

Once you sit down and figure out what type of machine you want and your intended uses, you should work with your dealer to discuss the available options and the best solution for your operation. The dealer is an expert and can help streamline the decision process and ensure you are selecting the right machine for you. Additionally, a good dealer will work with

you to set up equipment demos, ensuring you have time behind the wheel to test the machine.

A dealer can also play an important role in the purchasing process. Many dealers have relationships with financial institutions and can assist with the

financing process. For example, John Deere dealers are closely tied to John Deere Financial, and can work on behalf of their customers to coordinate a payment schedule that aligns with the needs to the customer, and can suggest other additions, such as attachments or parts, that could be included in the financing agreement. This will help spread out costs in the long run. Whether you finance with a dealer or choose to use a third-party lender, it is important to research your options before making a purchase.

By clearly understanding your needs, working with a dealer to strategically purchase the right UTV and attachments, and determining the right financial plan, you can increase productivity and efficiency, ultimately maximizing the potential for your crew. **SFM**

**You should also keep in mind the types of jobs you will be completing, and if there are attachments that can expand the uses of your machine. These machines can be equipped with hundreds of attachments for a wide diversity of tasks.**





# UTVs



## BOBCAT COMPANY INTRODUCES NEW GAS-POWERED UTILITY VEHICLES

The new 2020 Bobcat UV34 and UV34XL gas utility vehicles deliver reliable performance and productivity with gas-engine convenience. The UV34 and UV34XL gas models have an all-new chassis for increased durability and ride quality, an enhanced suspension system, increased towing capacity, a new gas engine and more integrated accessories.

A newly designed 39.9-hp. two-cylinder SOHC engine

delivers generous horsepower and hardworking performance. The 900-watt stator offers increased output for electric-powered attachments.

The UV34 and UV34XL gas utility vehicles are designed with an all-new chassis that gives operators additional comfort, strength and performance for the job. The chassis design improves ground clearance and off-road capability while allowing more range of motion in the suspension for superior ride quality. Bobcat UV34 utility vehicles offer seating for an operator and two passengers, while the extended UV34XL has room for an operator and five passengers.

Bobcat UV34 utility vehicles can carry up to 1,250 pounds, and can easily tow up to 2,500 pounds of trailered equipment and materials.



## CATERPILLAR UTILITY VEHICLES

Caterpillar offers four models of its first-ever Cat utility vehicles – the gasoline-powered Cat CUV82 and diesel-powered CUV102 D, which are two-seat models, as well as the gasoline-powered Cat CUV85 and diesel-powered CUV105 D, which are five-seat models. Cat UTVs feature a rugged steel cargo bed and offer 1,000-pound total rear cargo capacity and 2,000-pound towing capacity. *(Continued on p. 34)*

## UTV Trends

For insight into UTVs for sports field management applications, *SportsField Management* recently asked several leading UTV manufacturers about UTV trends, as well as advice for finding a UTV that best suits your needs.

According to Amy Vincent, product application specialist at Caterpillar, UTVs have clearly moved from being just a recreational vehicle to a work-centric product — often replacing pickup trucks for use in various markets.

“UTVs combine the benefits of ATVs and pickup trucks into one easy-to-maneuver vehicle, merging the load-hauling and towing capabilities you want with the lightweight off-road vehicle you need,” said Vincent.

Vincent added that UTVs now combine durability, stability, quiet operation, comfort, and maintenance simplicity.

“To ensure maximum durability, manufacturers have focused on developing UTVs that are designed to withstand the toughest of conditions, minimizing downtime,” said Brooks Hastings, product manager, John Deere. “Versatility is also important with UTVs, as every customer has very different needs. Manufacturers have expanded their offerings to provide a full line of vehicles with a variety of terrain, cargo and passenger capabilities.”

Hastings added that comfort continues to be a top priority with UTVs, and manufacturers have met this need by introducing a variety of new features designed to boost comfort, including cabs with air conditioning and heat. *(Continued on p. 34)*



## ANSWER

From page 17

What caused this line of dead turf starting at this New Jersey's high school's temporary football field steel upright, traveling through the ground by the end zone corner and eventually connecting with the fence pole might surprise you. The temporary steel upright was not grounded, and when a thunderstorm rolled through, lightning struck the goalpost and had to dissipate somewhere. It traveled through the ground and eventually found this fence-post. This is a good example of the dangers of lightning. Lightning strikes travel at the speed of light (670,000,000 mph) and there are 1,400,000,000 strikes every year on earth. The temperature of the lightning reaches 54,032° F (30,000° C), which is five times hotter than the sun. Lightning kills approximately 2,000 people a year. Luckily, no one was injured in this particular storm, but it just goes to show you not only the dangers of a direct lightning strike, but that people and objects much further away from the strike can also be in danger.

Photo submitted by Brad Park, research and outreach agronomist for Rutgers University in New Brunswick, N.J.

*John Mascaro is president of Turf-Tec International*



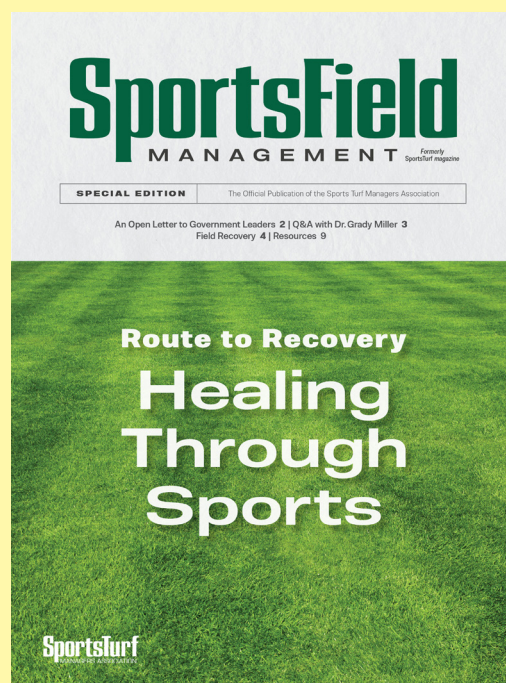
If you would like to submit a photograph for John Mascaro's Photo Quiz please send it to John Mascaro, 1471 Capital Circle NW, Ste #13, Tallahassee, FL 32303 call (850) 580-4026 or email to [john@turf-tec.com](mailto:john@turf-tec.com). If your photograph is selected, you will receive full credit. All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

## Route to Recovery Special Edition

The Sports Turf Managers Association (STMA) created a Recovery Task Force to help sports field managers respond to the challenges regarding COVID-19.

*SportsField Management* is proud to bring you the results of the hard work put in by the Recovery Task Force with the *Route to Recovery* special edition.

In this special edition, you will find expert insight and resources to help you deal with current challenges, as well as to help plan for when fields are reopened for play.



Visit <https://read.epgmediallc.com/i/1241769-may-2020-recovery-guide>

(Continued from p. 32) Cat utility vehicles boast a four-wheel independent suspension system with a front sway bar to provide unmatched stability at full load. A long swing-arm suspension, custom-tuned springs and shocks deliver a balance between a smooth ride and hauling loads. Features such as smooth acceleration, clear sightlines and engine braking capability make the Cat UTV well suited for hauling and towing. The intuitive column shifter allows the driver to easily maneuver through all the gears. The choice of two-wheel drive, four-wheel drive or four-wheel drive/lock modes permits the driver to match vehicle drive to ground conditions.

### JOHN DEERE TX WORK SERIES GATOR UTILITY VEHICLES

The John Deere TX Work Series Gator utility vehicles are designed to power through any job. Equipped with four-wheel suspension, the models offer



a smooth ride no matter what the operator is hauling. A 15.5-hp. engine deliver exceptional torque, low-end lugging power and fast acceleration. The durable deluxe cargo box offers 16.4 cubic feet of capacity and converts into a flatbed configuration to allow for larger cargo. Regardless of the job at hand, the TX Work Series utility vehicles provide turf professionals with the power needed to complete tough daily tasks.

### KIOTI K9 SERIES UTV

The Kioti K9 2400 and K9 2440 offer an abundance of storage, an ergonomic design and contemporary

styling. The 24-hp., three-cylinder diesel engine — which makes way for ground speeds up to 31 mph — allows operators to tackle any task with strength and efficiency. The K9 2400 has one of the largest all-metal beds in its class, with 1,102-pound capacity, a standard spray-in liner and an optional hydraulic dump kit, allowing for a full range of towing and hauling capabilities. The K9 2440 offers an abundance of storage and two rows of seating — capable of carrying five passengers comfortably.

- 24-hp., three cylinder, in-line vertical, water-cooled Daedong diesel engine
- Ground speed up to 31 mph



(Continued from p. 32) “As the multipurpose utility vehicle market grows, the demand for work-capable utility machines will grow in this segment,” said Chris Box, Kubota product marketing director. Durability and speed will be a consumer demand, Box added.

“The trend that jumps out to me is the continued advancement of electric power in vehicles,” said Andrew Ihrke, product marketing associate, Toro commercial division. “Many customers are finding long-term savings and meeting new green initiatives as battery-powered technology advances and allows them to get the same jobs done that they used to get done while using gas. While it does not cover all classes of utility vehicles, it continues to drive progress and innovation. We also see a lot of specialization, as different vehicles are available to meet the needs of all areas of a job.”

When it comes to selecting the UTV that’s right for you, Ihrke recommends finding the right size vehicle for the job you’re looking to accomplish.

“With so many different jobs, one size will not fit all within a fleet,” he said. “Understanding the features each product offers will help tailor the perfect fleet for any stadium/sports complex/park.”

Box added that price point is often the first thought when considering a new machine.

“It is important to remember ease of maintenance, operating cost, operator comfort, and standard features all go into the overall cost consideration,” said Box. “Whether it is spraying, towing a trailer, or transporting equipment and people, you need a machine that can do it all without being a headache to the user or a strain on your budget. Also, consider parts availability and



- Hydraulic power steering
- Full 12-inch ground clearance
- 1,598-pound payload capacity
- 1,300-pound towing capacity
- Standard spray-in-liner
- Front hitch receiver
- Front/rear hydraulic disc brakes
- Adjustable suspension
- HD, Turf, ATV and Tomahawk tire options



#### KUBOTA RTV-X1120

The RTV-X1120 is Kubota's most well equipped utility vehicle. Designed for the commercial customer and daily heavy-duty work, the Kubota RTV-X1120 combines Kubota quality

with enhanced power, torque and performance. Kubota-built and all-terrain proven, the 24.8-hp., 3-cylinder liquid-cooled diesel engine has a well-earned reputation for providing extra acceleration. The engine and VHT-X transmission provide a top speed of 29 mph, as well as plenty of hill-climbing power. Designed for reducing operator fatigue during long workdays, the RTV-X1120 features adjustable ergonomically designed 60:40 split bench seats, digital dashboard display, power steering, easily accessible parking brake and large under-seat storage compartments.

#### TORO WORKMAN GTX

Toro has raised the bar with two new additions to its lineup of Workman GTX Utility Vehicles. The new Workman GTX Lithium-Ion Lifted and Workman GTX EFI Lifted models each provide an additional three inches of ground clearance compared to traditional Workman GTX machines.



The higher clearance makes it easier for operators to drive over rough or uneven areas without causing damage, plus it reduces the risk of accidentally dragging debris that can gouge the turf.

The lithium-ion technology powering the new Workman GTX Lithium-Ion Lifted model is built to deliver hours of reliable performance. And because the lithium-ion power packs are nearly 26 percent lighter than lead-acid batteries, it makes a big impression on productivity without leaving a big impression on the turf. **SFM**

the brand's dealer network to ensure that you are provided quality service in a timely manner."

According to Vincent, it is important to consider are how fast do you need to go, what type of fuel you have easily accessible, and how many passengers you need to carry.

Vincent added that it is important to consider load-hauling capabilities, stability and ease of maintenance.

"UTVs are often used to haul substantial loads on large properties, such as 1,000-pound spray rigs," she said. "Therefore, you want to select a utility vehicle with enough rear cargo and/or towing capacity to handle the tasks at hand."

In terms of stability, Vincent said it is important to pick a UTV with a suspension system that provides stable and smooth transport on any terrain, whether you're hauling a full load or not.

"When it comes time to service your equipment, it needs to be quick and simple," Vincent added. "Some UTVs on the market today were purposely designed with this in mind, providing easy access to service points so you can perform necessary maintenance even when you're out in the field."

Hastings said it is important for sports field managers to determine their needs and how they will use a UTV.

"Think about key factors such as the power source, how much you plan to haul, type of terrain, machine speed, number of passengers and the jobs you intend to complete," said Hastings. "By determining these needs, you'll be able to narrow down your options to find the machine for you." **SFM**

# Athletic Fields in These COVID-19 Times

By Barry Stewart, Ph.D.

The COVID-19 crisis has had a profound effect on many athletic fields in Mississippi and throughout the southeast. When the lockdowns and social distancing began, high schools were getting into the heart of their softball and baseball seasons and some were starting to prepare for spring football. Our park and rec fields were coming out of dormancy. Hopefully, most had gotten their spring pre-emergence herbicide treatments down, but I am sure that some had not. Overseeded fields were just starting to really grow as the weather warmed a bit. Now we have many different situations out there. Some institutions were able to not miss a beat in their field management routines and their fields look like they could host a tournament tomorrow. On other fields, the gates were locked mid-March and they have not been maintained since. The question is how we get the fields that were neglected ready for play.

## MOWING

For us, the timing of the COVID-19 crisis was somewhat fortuitous in that it came in a period in which our temperatures were below normal with cool nights. This slowed the growth of our bermudagrass. Unfortunately, this has also been a good growth period for any cool-season weeds that were in our fields, and this has been a very good year for *Poa annua* and other cool-season weeds. On many weedy fields these weeds have held



back the bermudagrass, and it may not even be fully greened up — although it is getting close. These are very competitive weeds, but their lifecycle is winding down. It is too late to control them with herbicides. The best tool to control them is a mower. On many fields the bermudagrass is not over 1 inch high and the weeds are much higher, so in our first mowing we will mostly be mowing weeds. For that reason, field managers may want to mow once or twice with a rotary mower and collect the clippings before getting out the reel mower. The vacuum action of a rotary deck may also suck up some of the senescent leaves from last year's grass as well. Once you can get out the reel mower, I would try to get to my intended mowing height as quickly as I could. Most of the places I have seen will not have a lot of scalping — the bermudagrass is not growing fast yet. If you have access to a turf sweeper, it would be a very good time to use it.

Once we get to our intended cutting height, follow the 1/3 rule to determine when to mow — not

a calendar-based schedule. If we are mowing at 1/2 inch, this means mow when the grass reaches 3/4 inch, or if we are mowing at 1 inch, mow when we hit 1.5 inches. This might be a time to contemplate moving your mowing height up a little with the uncertainty of the coming season. If your normal mowing height is a 1/2 inch, consider 5/8 inch; if your normal mowing height is 3/4 inch, consider 7/8 inch;

or if you are at 1 inch, perhaps 1-1/4. These higher mowing heights might allow you save on some mowing but still have you near your usual height of cut. The increased mowing height may actually slow the growth of the grass a bit. Research done at the University of Wisconsin found that grass at greens height grew 40 percent faster than grass at collar height, so it stands to reason that increasing our mowing heights could decrease our growth rates. Only if there is a paucity of manpower and/or funds, consider mowing heights of over 1.5 inches for bermudagrass fields. As our mowing heights creep above 1.5 inches our traffic tolerance decreases.

If the budget allows, this is an excellent time to apply plant growth regulators (PGRs). Applying a product like trinexapac-ethyl will cut our mowing by about 50 percent, and make scalping less likely if we miss a mowing due to wetness or lack of manpower. The savings in mowing normally cover the cost of the PGRs.



## FERTILIZER

If you have not had a soil test for a couple of years, now is the time. If you have a current soil test, follow the recommendation for lime, P and K application. Fields that were walked away from in mid-March or the first of April probably had not been fertilized yet. Once we begin to mow we should also commit to fertility. For fields that are being maintained, following the 1/3 rule 1/2- to 3/4-lb. of N per 1,000 ft<sup>2</sup> month is recommended, and this should be upped to 1 lb. once the field starts to receive traffic. A fertilizer that is half quick-release N and half controlled-release N would be preferred. If a full-scale mowing program cannot be committed to (mow at an acceptable height of cut following the 1/3 rule) then a full fertility program should not be started. If a field is only being mowed high every couple weeks, then only about 1/4 to 1/3 lbs. of N per 1,000 ft<sup>2</sup> per month is recommended. This will give the bermudagrass a fighting chance to fend off weeds while not promoting too much growth.

## WEED CONTROL

Hopefully, most field managers were able to get their spring pre-emergence herbicide applications out on time, which would have been prior to mid-March. Some fields may not have received these treatments, and it is not too late to apply them. You have missed the initial flush of crabgrass and goosegrass germination, but that flush may have been delayed by competition from un-mown cool-season weeds. If there has been emergency of crabgrass, goosegrass and other warm-season

weeds, applying a post-emergence herbicide when the weeds are young is most effective. A tank mix of a pre-emergence herbicide and a post-emergence herbicide would be a very timely application.



**With no play scheduled for the fields, once we get our mowing under control and our fertility program started, it would be an excellent time for aerification, vertical mowing, and topdressing if manpower and budget allow.**

If heavy weed pressure developed during the time the field was not maintained, it is likely that a seedbank of winter weeds developed. With that in mind, a fall pre-emergence herbicide application will be very important. This application should be made as soil temperatures fall below 70 degrees Fahrenheit.

## CULTURAL PRACTICES

With no play scheduled for the fields, once we get our mowing under control and our fertility program started, it would be an excellent time for aerification, vertical mowing, and topdressing if manpower and budget allow. This would also be an excellent time to apply lime, P and K if needed. This is an opportunity to do many of the cultural practices that often are neglected because of busy schedules. This would be a fantastic time to fraze mow fields, but it is a manpower-intensive practice and may not be practical at this time.

The longer maintenance is delayed, the more the bermudagrass is going to grow. As it grows without mowing pressure it will grow vertically seeking more sunlight, and turf density will decrease, allowing weeds to get a foothold and making getting back to normal conditions more difficult. Fields that are not maintained until August may be thin and not safe for fall play. These thin fields may also not have as much traffic tolerance and may not hold up to the wear and tear of normal use. The hard work that has made many outstanding athletic fields can be undone in one summer. **SFM**

*Barry Stewart, Ph.D., is associate professor at Mississippi State University. He teaches courses in Athletic Field Management, Golf Course Operations, and Plant Science. His current research focuses on athletic field quality and sustainable turfgrass management. He is a part owner of the Green Bay Packers.*

# Texas A&M study: Repurposed coffee grounds can benefit turfgrass, landscapes

By Kay Ledbetter

Remember when grandma dumped her coffee grounds on the flowerbed and garden? Well, she was on to something.

Ben Wherley, Ph.D., Texas A&M AgriLife Research turfgrass ecologist in the Texas A&M Department of Soil and Crop Sciences, College Station, Texas, has taken advantage of the growing popularity in cold-brewed coffee and the truckloads of spent coffee grounds not previously available.

He and master's student Garrett Flores recently concluded two studies to determine how much value these cast-off coffee grounds might have.

Their study attracted the attention and a seed grant from the U.S. Golf Association Green Section as well as GeoJava, a company started by Chad McNair, CEO of Aspen Beverage Group in San Antonio.

## GROUNDNS FOR MORE THAN JUST COFFEE

"Initially I thought it was kind of cute and quaint that someone would be looking at coffee grounds picked up from Starbucks or the local convenience store to try to build a product around," said David Mayer, owner of Mayer Materials, Fort Worth, Texas. "We have been using coffee chaff from the two largest coffee roasting companies up here for years as a key component in our compost products, but never had the volume to justify looking at it as a standalone product line."

After visiting with Wherley's team, Mayer said they quickly realized that spent coffee grounds may have potential not only to improve existing fertilizer performance but also to potentially rival peat moss — a non-renewable resource — as a viable organic matter component in U.S. Golf Association (USGA) rootzone mixes.

The USGA has specific guidelines for rootzone mixes, which must include organic matter to improve the water holding capacity of the soil. Peat moss is the most commonly used organic matter at this time.

## GAINING MOMENTUM IN INDUSTRY

"We were most excited about this part of the research, for it could have an enormous impact in the golf course and sports field construction industry," said Mayer.



*Amending the sand root zone of a new putting course with coffee grounds. Texas A&M AgriLife photo by Ben Wherley.*

A partnership with McNair and his team was created, Texas Java Partners LLC, that researches, develops and produces coffee-based fertilizers, composts and organic matter root-zone amendment products.

Wherley said Aspen Beverage Group supplied much of the spent coffee grounds for his team's research projects, which looked at the cast-off products as a surface application, perhaps as a fertilizer or compost, and as a soil rootzone amendment in sand-based systems.

Spent coffee grounds have about a 2.5 to 3 percent nitrogen content, and a carbon-to-nitrogen ratio of about 20 to 1, which seemingly could make them desirable for fertilizer application, said Wherley.

Wherley and Flores compared fresh and composted grounds to other organic and synthetic fertilizers and sphagnum peat moss, which is commonly used as a soil amendment in sand-based sports fields and golf course putting greens.

## STUDYING FERTILIZER BENEFITS OF COFFEE GROUNDNS

The two-year topdressing fertilizer study tested seven different organic and synthetic fertilizers against coffee grounds — fresh and composted — as well as a

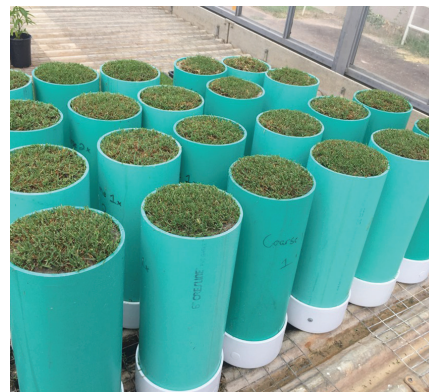




*Results of the coffee grounds study were viewed at the Texas A&M AgriLife turf field day in October, 2019. Texas A&M AgriLife photo by Ben Wherley.*



*Used coffee grounds being generated from Aspen Beverage, San Antonio. Photo by Chad McNair.*



*Root zone amendment study in the greenhouse. Texas A&M AgriLife photo by Garrett Flores.*

control. The study also tested two application rates for each treatment.

“Our observation from this study determined that direct application of spent coffee grounds by themselves provided minimal benefit,” said Flores. “However, when the spent coffee grounds were added with another source of fertility, the nutrients appear to be retained over an extended period compared to organic and especially synthetic fertilizers.”

### AN ALTERNATIVE TO PEAT MOSS?

In the soil amendment research, Flores said the focus was to determine if spent coffee grounds could serve as an alternative rootzone amendment to sphagnum peat moss.

The treatments studies included coarse spent coffee grounds, fine spent coffee grounds and peat moss — all added at 10 percent and 20 percent by volume — and straight sand as a control. Coarse and fine spent coffee grounds were compared primarily to understand the differences in nutrient and water retention and resulting benefits on turf growth.

Flores said their observations from two separate greenhouse studies using Tifway bermudagrass showed a temporary period of mild chlorosis during the initial four to six weeks of establishment. However, growth, color, density and nutrient retention over the subsequent three months following an initial application of nitrogen fertilizer were as good or better in the columns amended with spent coffee grounds than those amended with peat moss or the sand-alone control treatments.

Treatments were also subjected to a six-week dry-down period at the conclusion of each study to determine how many days treatments could go before wilt was observed.

Coffee-ground-amended rootzones did not show wilt until later in the dry-down period compared to other treatments, and they also showed much stronger recovery and vigor after re-wetting, said Flores.

“While additional testing is still needed, the results suggest spent coffee grounds may offer good potential for use as a sand rootzone amendment in turf and landscape situations,” said Wherley. “Also, while showing little benefit when topically applied alone, when combined with another nutrient source they show good promise, which suggests they may work well as an ingredient in organic fertilizer production.”

### IN THE FIELD

In a larger demonstration test, Wherley’s group used spent coffee grounds as a sand rootzone amendment in a 13,000-square-foot natural grass putting course they recently constructed at their research field laboratory in College Station.

“After just under a year, the grass appears to be doing very well,” said Wherley.

Mayer said they are thrilled with the results of the research and were able to use it in the production of several new products for the market this spring.

“Dr. Wherley and his team noted that coffee had this remarkable ability, and our partners at Sigma Agri-Science and American Plant Food identified a way to harness this potential to produce a hybrid lawn and turfgrass fertilizer product,” said Mayer. “We have already moved lots of this product into the landscape market and retail garden centers for spring applications this year.” **SFM**

*Kay Ledbetter is Texas A&M AgriLife communications specialist. For more information, contact Ledbetter at [skledbetter@ag.tamu.edu](mailto:skledbetter@ag.tamu.edu) or Ben Wherley, Ph.D., at [b-wherley@tamu.edu](mailto:b-wherley@tamu.edu).*

# Leaders in Their Fields Share Common Ground

**Editor's Note:** These materials were provided by Toro.

In November 2019, Toro facilitated a meeting of groundskeepers and sports field managers across multiple sports to share their insights. We expected to hear about their challenges, best practices and unmet needs. But we weren't expecting to discover what they had in common.

While the fact they got together isn't headline-worthy in itself, there was a takeaway worth mentioning: The value of networking can't be overestimated. It was an interesting look at how different perspectives can help solve similar challenges.

Toro followed up with two of the participants, Minnesota Twins Head Groundskeeper Larry DiVito, and Minnesota Vikings Turf Manager Grant Davisson, to look back at that day and provide a glimpse of the challenges they face. Here are five things that stood out.

## 1. THEY TALK ABOUT MORE THAN TURF

"We're all working toward the same end result, which is to have the greatest product on earth," said Davisson. "So it's nice to get together and relax and talk about problems we have. But it's never about turf. It's always interpersonal issues."

DiVito has had the same experience. "In those meetings, we end up talking less about grass and more about dealing with people and events," he said. "Sometimes you hear technical tricks, but more often than not, it's tricks for dealing with people."



*Minnesota Twins Head Groundskeeper Larry DiVito, Minnesota Vikings Turf Manager Grant Davisson, Minnesota United FC Head Groundskeeper Ryan Moy, Hazeltine National Golf Club Superintendent Chris Tritabaugh, and Real Madrid C.F. Director of Grounds and Environment Paul Burgess met at The Toro Company Headquarters in November, 2019.*

## 2. THEY HAVE CUSTOMERS TOO

According to DiVito, a big part of the job is figuring out how to make people happy without compromising your maintenance program. "You're there to keep your clients happy, and in our case, the clients are the players, coaches and upper management," he said. "But at the same time you're there to grow grass."

"We all have owners and general managers who are in the public eye," said Davisson. "We all work for people who have an opinion on how the field is going to look. It's a customer service industry. We have to create that product. And when we get together, it's good to talk about that." He also said they talk about working with the media and TV crews, because they share most of the same area camera operators and sports reporters.

## 3. THEY DON'T BUILD THEIR CREWS ON EXPERIENCE ALONE

"After doing this type of work for a long time, I've learned that hiring is more important than training because we end up being together a lot," DiVito said. For him, finding the right people that fit in, get along and have the right work ethic is critical. "We can train them how to operate machines, but we can't train personality, and we can't train work ethic if somebody doesn't have one. And then I just try to give them room to work. They know I'm there, but I'm not directly watching what they're doing. There's accountability, but I also try and give them some room to do what they need to do."

Davisson said he looks for knowledge, but there's something even more important. "I want people who've worked in the industry and people who have good references, but most of all, I



want people who want to learn,” he said. “A turf background is important, but a master’s or even a bachelor’s degree in it isn’t necessarily required.”

Davisson said they also discuss their young interns and how they’re doing on the job. “In a sense, we’re communicating who the future is. A lot of my guys have gone to work for Larry and vice versa, so it’s interesting to see how they’re ‘growing up’ in the industry.”

#### **4. EVEN IN THE WAYS THEY’RE DIFFERENT, THEY SOMETIMES FIND COMMON GROUND**

“The biggest difference between what I do and what they do is that I have more frequent events,” said DiVito. “We have 81 games, and it becomes more about consistency rather than one big event. But, at the same time, we’re on television every night and we’ve got millions of dollars’ worth of players on the field

at any given time — just like a professional soccer or NFL team would.”

For DiVito, the goal is to have the field play as close as possible to the same every game, so players know what the speed and the bounce of the ball are going to be from one day to the next. The only variables are seasonal changes in climate and day-to-day weather conditions that drive subtle differences in the field.

Turfgrass maintenance aside, getting in 81 games in a season can be a grind, both mentally and physically. Football and soccer seasons typically only have one or two events per week, but a baseball team can be at home seven or nine days in a row. However, that doesn’t mean field managers from other sports can’t relate. “For Paul with Real Madrid or Grant with the Vikings, a lot of their time is spent on the practice fields — so that’s a little more

in line with the physical demands of what I do,” DiVito added.

#### **5. THEY’RE WILLING TO SHARE BEST PRACTICES**

We asked Davisson if he could share any tips and he was quick to respond. “My entire life is a spreadsheet — that is, for scheduling,” he said. “And just being there is the number-one thing you can do.”

His other tips: Don’t over-explain things to GMs. They don’t want to know all the specifics; they just want to know if the field is good — yes or no. And, also, be part of the dialogue beforehand if you think there’s going to be a problem. “That could be something like, ‘If you’re going to practice out there in the rain, this is what’s going to happen,’” said Davisson. “Give people a heads up, because it’s going to be a lot easier if there is a problem.” **SFM**

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# SportsField

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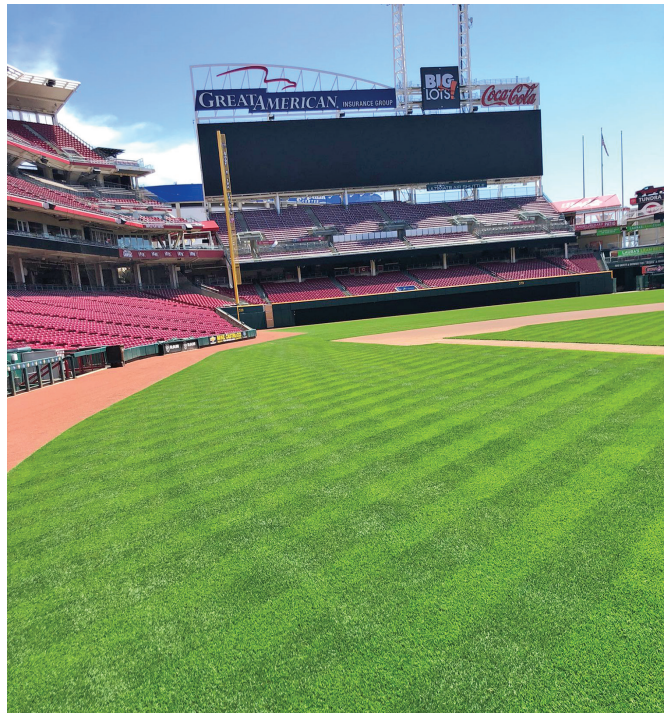
The following are some industry Tweets from the past month:



@\_TJBrewer

Solid performance by the crew today! Started with lazer in the fog and ended with a sunburn!

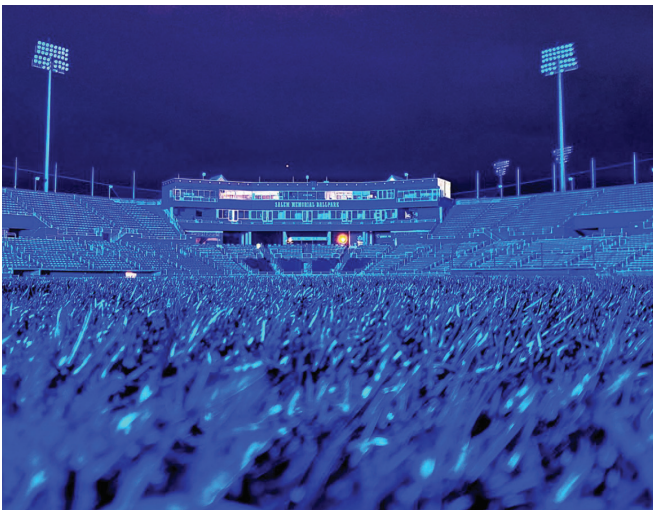
APRIL 27



@TurfSpartanLord

2<sup>nd</sup> verticut of the year on our new Kentucky Bluegrass field to clean out organic matter at the surface. It stands the grass back up and gives us a tighter cut as well. #MaintenanceMonday #ReduceGrain #ControlOrganicMatter #LightFrequent #reds

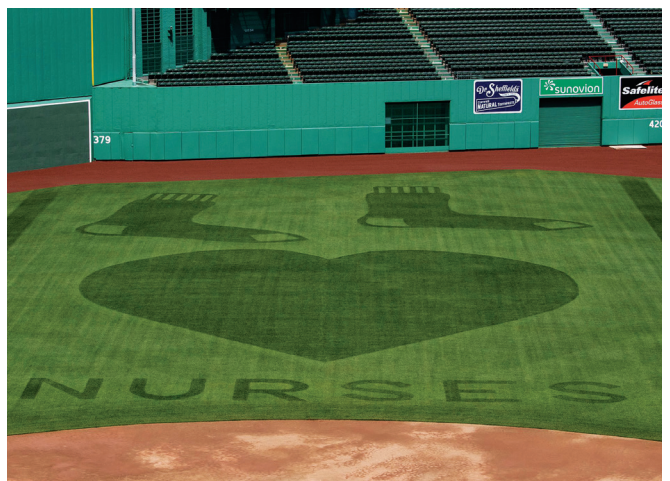
MAY 4



@salemredsox

Tonight we #LightItBlue at Salem Memorial Ballpark to honor the frontline workers of the COVID-19 pandemic. THANK YOU from the bottom of our hearts for all that you're doing for our community during this time.

MAY 1



@Drm3llor

Thank you nurses!!! #NationalNursesDay #NationalNursesWeek #nursesrock #Red heart

MAY 6





**@spartygrad95**

Bunker sand isn't in budget this year so for \$180 in steel we will screen the 8 years of edged bunkers and reclaim about 80% of sand. #MuniLife

**MAY 8**



**@TurfBlade**

Why #PRE #herbicides are important...a picture is worth a 1,000 words...or at least one webinar on it...

**MAY 9**



**@ATurfMan**

During this closure, Rene's been busy with cultural practices on our Franz Campus field. I think it's paying off! Like a proud angler with hisunker!

**MAY 9**



**@BPolimer**

Starting more of our irrigation systems. We have a unique setup at Alphabet Field. Solar system charges large batteries that feed an inverter and then runs our IQ system. Cell modem for control and a high gain antenna for better cell coverage.

#sportsturf #irrigation

**MAY 11**



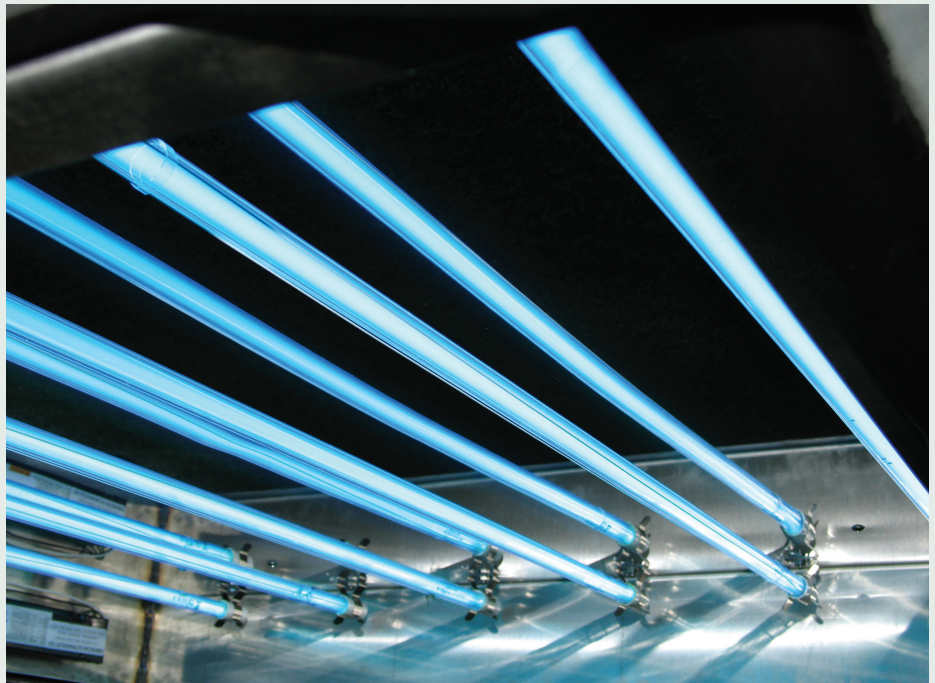
# GreensGroomer UVC technologies

In the constant battle against the spread of disease, scientists are continually on the hunt for new weapons that specifically target pathogenic microbes in order to contain the spread of diseases. Of utmost importance is disinfection of exposed surfaces, whether for outdoor facilities or surfaces and equipment within institutional settings. Synthetic playing surfaces, counters, tables, handrails, lockers, floors, cabinets, drawers, sinks, toilets, and bath/showers can all be harbingers of germs.

According to GreensGroomer, an efficient remedy is the use of UVC light. It disinfects by destroying the DNA and RNA of bacteria, eliminating the possibility of reproduction.

D Niels Ryberg Finsen was the first to employ UV rays in treating disease, and was awarded the Nobel Prize for Medicine in 1903. He invented the Finsen curative lamp, which was used successfully through the 1950s. The Westinghouse Corporation developed the first commercial UVC germicidal lamps during the 1930s, primarily for hospital sanitation. Built around the idea of exposing bacteria to germicidal ultraviolet lights with powerful exposure, this method of disinfection is still used daily in hospitals, water treatment facilities, and a host of other industries. It gained very early approval from the FDA and the U.S. Department of Agriculture.

One use for this technology is the disinfection of synthetic playing surfaces. The GreenZapr unit manufactured by GreensGroomer is one example of the UVC approach. The mobile unit is simply pulled across the synthetic turf field with a common tow vehicle at a predetermined rate of speed for maximum effectiveness. The GreenZapr uses a total of 16 specifically designed UVC lamps, designed to operate at a distance of 2.5 inches from the playing surface. UVC light breaks the molecular bonds within microorganismal DNA, thereby destroying them and rendering them harmless and prohibiting growth and reproduction. It is a process



*UVC bulbs disinfect the surrounding area*

similar to the UV effect of longer wavelengths (UVB) on humans, such as sunburn or sun glare. Microorganisms have less protection from UVC and can't survive prolonged exposure.

Although the use of UVC for disinfection of synthetic playing surfaces is relatively new, many other industries use this approach for indoor sanitation. Hospitals, sports fitness facilities, nursing homes/assisted living communities, food-service operations, and hotel/resort properties can all make use of this technology.

These units come in a variety of styles, such as mountable or stand-alone units, handheld wands, or push units. All employ UVC bulbs in order to disinfect the surrounding area. The miniZapr by GreensGroomer uses two of these approaches and provides great flexibility. The miniZapr has a base unit or floor module that is pushed by the user, as well as a handheld wand built into each unit. Depending on the area to be disinfected, it is available in 18- and 36-inch widths. This makes it possible to have maximum mobility no matter the setting. The base unit is used to disinfect areas such as floors and wrestling mats while the handheld wand is used to disinfect areas such as toilets, countertops and lockers.





*GreensGroomer miniZapr*

In terms of UVC light intensity, eight proprietary high-energy UVC bulbs are employed with powerful reflector modules on the base units. This allows the maximum amount of light to be focused in a given area. The handheld wand uses two high-energy UVC bulbs. The units can be powered by an on-board generator



*GreensGroomer GreenZapr*

for outdoor use, or through a standard 110v wall outlet (with a 50 foot power cord).

Disinfection and cleaning of public areas are no doubt a complex and time-consuming issue, but keeping the public safe from harmful pathogens is of the utmost importance.

## HUNTER I-50 ROTOR

The Hunter I-50 large turf rotor is built to conquer the most demanding conditions. The powerful internal drive mechanism and versatile arc adjustment style are derived from Hunter's time-proven golf rotors, so irrigation professionals can ensure top performance in every application. The I-50 has a durable, stainless-steel riser and color-coded nozzles to simplify maintenance and identification in the field. The rotor pushes past the challenges of poor water quality and harsh soil conditions by stopping internal and external debris infiltration that can cause other rotors to perform less than their very best. To prevent non-rotation, the robust planetary gear drive of the I-50 offers the highest torque output on the market, while the highly reliable drive mechanism stops failures that could create maintenance delays. **SFM**



## Not a member?

### Sign up as a New Visitor, receive STMA resources for free

STMA's new membership program invites non-members to sign up as a New Visitor. This will provide access to all of STMA's technical resources including the recent Route to Recovery Guide: Healing through Sports. This program is valid until Oct. 1.

There are more than 500 resources available. Some of these include:

- Sports Field Design and Construction — Everything you need to know before you start a project and how to provide oversight during a project.
- Cultural Practices for Athletic Fields — In-depth bulletins on mowing; irrigation and water conservation; fertility; soil cultivation and topdressing; seeding; sprigging; sodding; organic and IPM practices; and managing weeds, diseases and insects.
- Environmental Stewardship for Sports Fields — In addition to other environmental best practices, STMA has developed four infographics to help you promote the benefits of natural grass at your facility and to the public. They are available in a printable PDF (see example on page 47).
- Synthetic Fields — Including selection, costs and management practices.
- Field Safety Resources — Including checklists, lightning safety and field hardness testing.
- Detailed Field Maintenance Calendars for warm-season and cool-season turfgrasses and managing turfgrasses in the transition zone.

And much more, including field dimensions, webinars, podcasts and videos, and top personal development resources to help you succeed in your career.

The New Visitor link is accessible at [STMA.org](https://STMA.org) and the form only requires a few pieces of information. Sign up today and take advantage of all the STMA offers.

## Consider Board Service

In the next issue of *SportsField Management*, the STMA Nominating Committee will be soliciting for

board nominations for the 2021 association elections. Interested, but not quite sure you a) have the time, or b) have the qualifications?

Board service can be a most gratifying volunteer activity. The satisfaction that comes with knowing that you made a difference in an organization is immeasurable. As an STMA board member, you give confidence and accountability to the membership. Volunteering for board service is one way to validate your leadership abilities and enhance your credibility with your peers, your employer, your community and the industry. STMA strives to be effective and efficient with your time and resources, and has dedicated a headquarters staff to help make your board volunteer experience a rewarding one.

### What are the time requirements?

- Attend and actively participate in board meetings (typically four per year, usually in January, March, July and October). This year the board has met virtually, and only plans three meetings.
- Chair one or more committees.
- Attend special events, as needed.
- Attend and actively participate in the annual conference.

All expenses incurred for board participation are covered by STMA.

### What are the qualifications?

Because board service has time commitments, those interested usually self-nominate through the STMA Board Interest form. That form is electronically available in June at [STMA.org](https://STMA.org).

The form asks for details on STMA committee service, STMA chapter involvement and service with other organizations. Another question seeks information about the qualifications you would bring to the board, if elected. You will be asked for your vision for the STMA. The questions are very straightforward, and the Nominating Committee uses that information, as well as additional outreach, to determine the slate of candidates. Considerations are also given to providing a diverse slate, representing all regions of the country, and slating those who have strengths that are needed to fulfill the association's strategic plan.

Consider participating in the elections for 2021. Fill out a Board Interest form. **SFM**



# ENVIRONMENTAL BENEFITS OF NATURAL TURFGRASS

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## Trap and Store Carbon

Over the course of a year a 2,500 sq. ft. lawn will absorb enough carbon dioxide to produce oxygen for a family of four, and a soccer field can offset the carbon produced by a car driving 3000 miles.



## Erosion Control

The average soccer field can absorb 50,000 gallons of water prior to runoff occurring. Turfgrass systems are used to stabilize soil, slow water flow, and filter out sediments in the water prior to the water entering storm drains or natural bodies of water.

## Dust and Pollen

Turfgrass leaf tissue and its fibrous root systems are very effective at trapping much of the 12,000,000 tons of dust that is released into the atmosphere each year in the United States.



## Contaminants

Turf systems are efficient at holding onto nutrients, such as phosphorus, and household and industrial pollutants. Turfgrasses filter soil and remove chemicals before they enter surface or groundwater.

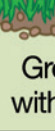


## Temperature Modification

Natural grass athletic surfaces can be up to 30 percent cooler than asphalt on a hot summer day. The overall environmental cooling effect of turfgrass can be seen by comparing natural turfgrass surfaces to home AC units. The front lawns of 8 average houses have the same cooling effect on the atmosphere as twenty-four 3-4-ton air conditioning units.







# TURFTIME

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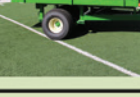
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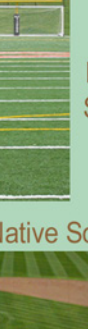
# Turf & Soil Diagnostics

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Natural &  
Synthetic  
Turf

Sand-based and Native Soil Fields



Baseball / Softball Skin Areas

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testing or more information  
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email: [lab@turfdiag.com](mailto:lab@turfdiag.com)  
web: [www.turfdiag.com](http://www.turfdiag.com)

A high-angle, top-down photograph of a person wearing a plaid shirt and a blue cap, operating a red riding lawn mower on a vast, bright green grassy field. The mower is positioned in the upper center of the frame, moving away from the viewer. The field is uniform in color and texture, suggesting a well-maintained sports field or golf course. The lighting is bright, casting a soft shadow of the mower and operator onto the grass.

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MANAGEMENT

## STMA Affiliated Chapters Contact Information

**Sports Turf Managers Association of Arizona:** [www.azstma.org](http://www.azstma.org)

**Colorado Sports Turf Managers Association:** [www.cstma.org](http://www.cstma.org)

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

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

**Florida #3 Chapter (Central):**  
407-518-2347, Dale Croft,  
[dale.croft@ocps.net](mailto:dale.croft@ocps.net)

**Gateway Chapter Sports Turf Managers Association:**  
[www.gatewaystma.org](http://www.gatewaystma.org)

**Georgia Sports Turf Managers Association:** [www.gstma.org](http://www.gstma.org)

**Greater L.A. Basin Chapter of the Sports Turf Managers Association:**  
[www.stmalabasin.com](http://www.stmalabasin.com)

**Illinois Chapter STMA:** [www.ILSTMA.org](http://www.ILSTMA.org)

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

**Indiana:** Contact Clayton Dame,  
[Claytondame@hotmail.com](mailto:Claytondame@hotmail.com) or  
Brian Bornino, [bornino@purdue.edu](mailto:bornino@purdue.edu)  
or Contact Joey Stevenson,  
[jstevenson@indyindians.com](mailto:jstevenson@indyindians.com)

**Iowa Sports Turf Managers Association:**  
[www.iowaturfgrass.org](http://www.iowaturfgrass.org)

**Keystone Athletic Field Managers Org. (KAFMO/STMA):** [www.kafmo.org](http://www.kafmo.org)

**Mid-Atlantic STMA:** [www.mastma.org](http://www.mastma.org)

**Michigan Sports Turf Managers Association (MiSTMA):** [www.mistma.org](http://www.mistma.org)

**Minnesota Park and Sports Turf Managers Association:** [www.mpstma.org](http://www.mpstma.org)

**MO-KAN Sports Turf Managers Association:** [www.mokanstma.com](http://www.mokanstma.com)

**New England STMA (NESTMA):**  
[www.nestma.org](http://www.nestma.org)

**Sports Field Managers Association of New Jersey:** [www.sfmanj.org](http://www.sfmanj.org)

**North Carolina Chapter of STMA:**  
[www.ncsportsturf.org](http://www.ncsportsturf.org)

**Northern California STMA:**  
[www.norcalstma.org](http://www.norcalstma.org)

**Ohio Sports Turf Managers Association (OSTMA):** [www.ostma.org](http://www.ostma.org)

**Oklahoma Chapter STMA:**  
405-744-5729; Contact:  
Dr. Justin Moss [okstma@gmail.com](mailto:okstma@gmail.com)

**Oregon STMA Chapter:**  
[www.oregonsportsturfmanagers.org](http://www.oregonsportsturfmanagers.org)  
[oregonstma@gmail.com](mailto:oregonstma@gmail.com)

**Ozarks STMA:** [www.ozarksstma.org](http://www.ozarksstma.org)

**Pacific Northwest Sports Turf Managers Association:** [www.pnwstma.org](http://www.pnwstma.org)

**Southern California Chapter:**  
[www.socalstma.com](http://www.socalstma.com)

**South Carolina Chapter of STMA:**  
[www.scstma.org](http://www.scstma.org)

**Tennessee Valley Sports Turf Managers Association (TVSTMA):** [www.tvstma.com](http://www.tvstma.com)

**Texas Sports Turf Managers Association:**  
[www.txstma.org](http://www.txstma.org)

**Virginia Sports Turf Managers Association:**  
[www.vstma.org](http://www.vstma.org)

**Wisconsin Sports Turf Managers Association:** [www.wstma.org](http://www.wstma.org)

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**JOHN DEERE**

**Q: Many sports field managers are maintaining fields with limited staff during this pandemic. What are some things that can be done differently during June to conserve resources?**

**A:** Temporarily raising the height of cut on fields is first. This will allow you to mow less often but not violate the 1/3rd rule. It also frees up a little more time to complete necessary-but-time-consuming work such as edging. Mowing is the most important practice, but remember that mowing is a stress. Any defoliation to the turf is detrimental as it causes reduction in carbohydrate production and storage, as well as a temporary reduction in root growth. So, all of our other management strategies (pest control, fertility, watering) are there basically to compensate for the injury we cause by mowing. If we want to reduce these other maintenance practices, not mowing as frequently and at a higher height is not a problem, so long as you don't scalp it when mowing and you transition it back to field height correctly. An industry standard on lowering heights over time is to begin by cutting with a rotary unit, making several passes to disperse excess clippings, and then gradually bringing the height down over a couple of weeks.

As a side note, if fields are saturated but the window to mow them is really short, it's better not to mow, and allow them to grow a little longer than cause damage to the field. Soil disruption and compaction issues are much more difficult to deal with down the road than tall grass.

Grass that grows quickly requires more inputs, so one way to reduce those inputs is to limit applications of fertilizer and water. Since recovery from wear and foot traffic isn't a concern, judicious applications of slow-release nitrogen at half-rates will maintain color and growth at a manageable rate. The use of plant growth regulators (PGRs) like trinexapac-ethyl can reduce leaf growth by ~50% and are a great option right now for those able to buy them and apply them. It must be noted that if a second lockdown goes into

effect for an extended time, the growth rebound/surge after the PGR has worn off could cause issues, and needs to be part of the decision-making process on whether to use one or not. Also, PGRs should only be applied to irrigated fields and at times when the turf is not stressed, or they can cause phytotoxicity.

If you did not get the chance to apply a pre-emergence herbicide before lockdown, you may have more crabgrass pressure than normal. A combination of one-half the label rate each of quinclorac and topramezone is very effective for post-emergence control of crabgrass. This can be applied at all stages of crabgrass growth but if you apply early, remember to check and make sure that more crabgrass does not germinate in these areas. For broadleaf weed control, remember to switch during summertime to herbicides that are amine based or that contain low-volatility esters. In addition to drift, ester-based herbicides will not remain on the leaf long enough to get into the plant tissue during warm temperatures, resulting in less control. For annual bluegrass, methiozolin (Poa-Cure) has been registered but is not yet labeled for use on athletic turf; so, if you have issues in cool-season turfgrass, you may wish to attempt manual removal or spot applications of a non-selective herbicide. Non-selectives can also be used to spot treat weeds on infields that aren't being dragged.

A reduction in mowing will allow for extra time to get detail work done while staff numbers are low, and a sound weed control program will keep turf healthy and ready for sports when they return **SFM**



**Pamela Sherratt**

Sports turf extension specialist  
The Ohio State University

**Questions?**

Send them to Pamela Sherratt at 202D Kottman Hall, 2001 Coffey Road, Columbus, OH 43210 or [sherratt.1@osu.edu](mailto:sherratt.1@osu.edu)

Or, send your question to Dr. Grady Miller, North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or [grady\\_miller@ncsu.edu](mailto:grady_miller@ncsu.edu)



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# SportsField

## MANAGEMENT

SPECIAL EDITION

The Official Publication of the Sports Turf Managers Association

STMA Playing Conditions Index 2 | Crisis Sports Field Management 4 | Town Hall Meetings 8



# Route to Recovery

## Healing Through Sports, Part II

**SportsTurf**  
MANAGERS ASSOCIATION

# STMA Playing Conditions Index

STMA recommends utilizing the [Playing Conditions Index](#) (PCI) to assess the playability of your natural grass fields. The data gathered through the instrument will provide excellent insight into the readiness of your fields' playing surfaces and your athletes return to play post-COVID-19. The instrument addresses the complexities involved in conditioning sports fields for safety, playability and fan enjoyment. Information from the PCI should be shared with administrators, coaches and athletic directors. It will provide a basis for your joint decision-making regarding play. STMA encourages sports field managers to work with their media departments on providing game day field conditions to their fans and other constituents. The recommended process and form for working with your media departments are as follows:

## What is the PCI Media Advisory?

The Playing Conditions Index (PCI) captures STMA members' knowledge and expertise of turfs and grasses, the effects of weather, proper maintenance and care, as well as other factors affecting field-playing conditions. The PCI packages and presents the members' expert evaluation of the field in a concise and easy-to-understand manner. The Index allows STMA members to provide relevant information to the media and become a consistent provider of this information.

## Why roll out the PCI?

STMA is rolling out the PCI to educate the media on the work of STMA members and the important role they play in athletic events. By putting this system in place, STMA and its members are cemented as the leaders in creating and maintaining athletic fields and playing surfaces. This will also help to positively influence employers and enhance the professional reputations of STMA members.

## What does STMA hope to accomplish?

The PCI will make field conditions a more easily referenced and more precise piece of information for use by the media and other communication professionals. It will help to establish STMA as the acknowledged expert and provider of playing conditions data. The PCI will "institutionalize" STMA in the minds of the media as an important contributor to the success of sporting events. It will also add value to STMA membership through increased exposure of the organization and by establish-

ing STMA as an organization that actively involves and promotes its members.

## PCI Media Advisory Bulletin instructions and guidelines

- If you do not already have a relationship with your sports information director and/or local media, be sure to introduce yourself and begin building a professional relationship.
- Prior to beginning the program, STMA suggests you have a short conversation with your sports information director in regards to the Playing Conditions Index and what it entails.
- It is recommended to set a specific time aside each week for the completion of the PCI; this will make it much easier to prepare the media advisory.
- The media advisory should be completed the day of an event several hours prior to game time. In many cases, sports information directors release "game day notes" with specific references to current weather, temperature, injuries, etc., an hour or so prior to game time. The advisory will need to be completed and given to a member of the sports information office in time to be included in these "game notes."
- To fill out the STMA PCI Media Advisory Bulletin
  - Note the venue, time, date, and what sport is to be played on the field.
  - Transfer the corresponding number from the PCI Worksheet to the Media Advisory (5 – Excellent, 4 – Above Average, etc.).
  - Indicate how the performance of the field will affect the performance of the athletes using the surface.
  - In the comments section of the advisory, make note of specific conditions affecting the field including weather, temperature, amount of precipitation received, etc.
  - Provide the STMA PCI Media Advisory Bulletin directly to the public relations or marketing arm of your athletic department or organization.
- Although there is not a PCI assessment for synthetic surfaces, there is a section in the Media Advisory Bulletin for synthetic surfaces. This is to allow members who manage synthetic fields an opportunity to provide information to the media on how the field is playing based on temperature, precipitation, age of the field, etc.

[Click here](#) to download the full PCI form in Excel spreadsheet format.



## STMA PCI Media Advisory Bulletin®

Venue: \_\_\_\_\_

Date: \_\_\_\_\_

Game Time: \_\_\_\_\_

### Playing Surface

☐ Baseball / Softball☐ Football / Soccer / Lacrosse

### Playing Conditions Index

5-Excellent

4-Above Average

3-Average

2-Below Average

1-Unplayable

The STMA Playing Conditions Index is an overall field quality rating that takes into consideration factors such as weather, turf health, drainage, maintenance, and events or activities scheduled for the field.

### Game Day / Game Week Considerations

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### Field Playability & Effect on Athlete Performance

Playing field conditions affect performance. While all STMA-member managed fields are professionally managed for safety and appearance, field attributes vary by design, maintenance, and other variables.

The field at \_\_\_\_\_ has the following performance attributes:

#### Natural Surface

Speed ☐ Fast☐ Average☐ SlowTraction ☐ Tight☐ Average☐ Loose

#### Synthetic Surface

Speed ☐ Fast☐ Average☐ SlowTraction ☐ Tight☐ Average☐ Loose

#### Comments:

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This playing field is professionally managed and maintained by STMA member \_\_\_\_\_.  
STMA members are committed to producing safe and aesthetically pleasing playing surfaces for athletes at all levels.

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# Crisis Sports Field Management

By Michael Goatley, Jr., Ph.D., Pamela Sherratt, and Brad Fresenburg, Ph.D.

Nothing reminds us of how fragile our lives, jobs and relationships are until they are seriously disrupted by an unforeseen event. The COVID-19 pandemic will be another event that will be remembered for how it changed the way we do things, even in managing turfgrass-

es. The 2020 pandemic has certainly impacted the sports field industry, and its effects will continue even as/after social distancing restrictions are relaxed and public activities on our sports fields return.

For situations where budgets and labor forces were not severely

impacted by the pandemic, sports field managers have taken advantage of the downtime in what are typical high-turfgrass-use periods in the spring season to complete a variety of activities/projects that otherwise would not have been possible: irrigation and drainage installa-



Photo by Wes Ganobcik, Columbus Clippers



tions; earlier-than-ever removal of ryegrass overseeding from bermudagrass playing fields; fraze mowing; rebuilding/renovating infield skins, pitching mounds, and batter's boxes; re-grassing of goal mouths; and taking advantage of numerous online professional training and recertification opportunities. If the budget allowed and labor wasn't restricted by social distancing requirements, there have been great opportunities to really get sports fields in shape at a time when anything but standard maintenance requirements aren't possible due to use schedules.

However, these are the best-case scenarios, and many sports field managers received an almost immediate directive from their administration to be ultra-creative in managing their labor forces — not just to address social distancing guidelines, but to handle a budget that has already been cut and might continue to shrink. Predicting what is going to happen for the rest of 2020 in sports field management will likely be as accurate as most of our pandemic models have been to this point in time, because this is such a fluid situation; it's uncharted territory from a variety of perspectives and perceptions.

Necessity brings out the best (and sometimes worst) of human ingenuity, and quite often our management and business models will never be the same again. In times of reduced budgets and labor restrictions, there are some strategies specific to the management of our sports fields that can be applied:

#### **REMEMBER THAT YOU ARE IN CHARGE OF TURFGRASS GROWTH.**

One of the best arguments that classified most turfgrass managers as “essential employees” to governmental agencies is the fact that when environmental conditions are appropriate, grass is growing. Keep it growing, but only at a level that you



*If grounds are too wet but grass needs to be mowed, it's best to leave it alone and deal with long grass down the road, than deal with soil damage and unsafe playing conditions.*

*Photo by Pamela Sherratt*

can properly maintain. Grass is a very adaptable plant that changes its morphology based on mowing height. It likely can't be unmown at your facility, but be reasonable with your cutting heights depending on the grass you are growing and the labor available to you. If able, consider purchasing and applying a plant growth regulator (PGR) to reduce mowing requirements. Although it sounds contradictory, spending a little money for a PGR can actually save money in the long term in labor, fuel, etc. Similarly, consider that not addressing recurring or likely pest issues at your facility can end up costing more money, and potentially result in field closure later this year over player safety concerns from poor-quality turfgrass. There will always be valid arguments for preventative versus curative pest management approaches, so be sure that you have defined (and properly communicated) your strategy for pest management given your situation. Your fields are going to open eventually, and a playing surface covered in

weeds will have footing and playability issues. The more mature those weeds become, the more challenging they are to control. Do you have a history of intensive grub pressure? Although there are no guarantees you will have a heavy grub population this year, most people find that these types of pests tend to be recurring. If a grub problem is not addressed at the right time, the root system of cool-season fields is compromised, and turfgrass health and playability will become a serious problem later this summer. Some fungal pests, such as Pythium blight or gray leaf spot, can be devastating over a very short time period under the right environmental conditions. Although it is likely most sports field managers will not have to treat for these diseases this year, it is wise to have appropriate fungicides on hand to immediately address diseases that can kill turfgrass in a matter of hours to a few days. One teachable point the pandemic has provided is to cause us to better evaluate the most



important products and supplies that should be stockpiled to address the next crisis situation.

When you learn of a likely return to field use, begin adjusting cutting heights down to the desired levels and increase your mowing frequency. More than one sports field manager has suggested that they are going to try to reset their clientele expectations regarding field cutting heights and hopefully restore the cutting height to a taller, more manageable height than what they had previously delivered.

It's appropriate to reduce nitrogen inputs where trying to reduce turfgrass growth, but utilize your N inputs in areas that you are trying to improve or restore. Cool-season turfgrasses typically require 0.5-1 lb. N/1,000 sq. ft. per active growing month, and warm-season turfgrasses typically require 0.5-1.5 lb. N/1,000 sq. ft. per active growing month. During periods of no or very limited use, make N fertility decisions that fit your ability to manage. For some, controlled-release N fertilizers that cost more per pound of N are still more budget- and maintenance-friendly choices for their situation, while others are finding that using cheaper, water-soluble N sources on a more frequent basis still best meets their needs. Both strategies work.

Once restrictions are lifted, employ fertilizer best management practices to save money. Determine the exact square footage of fertilized areas, and only purchase the amount necessary for the application. Also, slightly reducing the fertilizer application rate (adjusting from 1 lb N/1,000 sq. ft. to  $\frac{3}{4}$  lb N/1,000 sq. ft.) can make a difference when it comes to budget dollars. Spreading your fertilizer over several applications will be more beneficial than all at once (i.e., two applications of 0.5 lb. N/1,000 sq. ft. versus one application of 1 lb. N/1,000 sq. ft.).

And don't forget the value of a soil test in determining the needs of other nutrients and lime. Soil test results may indicate sufficient levels of some nutrients, such as phosphorus and potassium, which

eliminates the need to purchase fertilizers containing those nutrients. The savings can be applied to additional nitrogen fertilizers or allocated to other maintenance practices. Even under a tight budget there is



*Treating a hillside with a plant growth regulator on campus at University of Virginia to reduce mowing requirements during the pandemic and limited staffing.*

*Photo by Jesse Pritchard*



*High school field that was managed only with infrequent mowing.*

*Photo provided by Michael Goatley, Jr., Ph.D.*



no money better spent than to test the soil in order to make informed decisions in product applications.

### **SITE-SPECIFIC MANAGEMENT MAKES MORE SENSE THAN EVER.**

This is one of the oldest and best budget-saving strategies in all phases of turfgrass management. Distinguish high-priority areas from low-priority areas. Focus management on the areas that warrant the attention because of their specialized purpose or their intensity of use. Logically, it's an emphasis on repairing and restoring the heaviest trafficked areas, and only providing minimal maintenance on most other areas. Prioritizing fields can help determine where time, supplies and maintenance should be allocated. For example, game and main practice fields require the most time and money to maintain at a high level. The classic example long preached in football field management is to emphasize turfgrass recovery between the hashes and the 30s in the spring — even when they are being used for spring sports. Applying seed between football hash marks only will reduce seed requirements by 66%. Other high-traffic areas include goal boxes on soccer fields and positional areas on baseball and softball outfields. Focus on infields and lips on grassed baseball and softball facilities. Keep skin areas functional, but not in game-ready condition.

Maintenance frequency and material allocation can be reduced on low-priority fields and other areas. While practices such as mowing and fertility may occur over the entire field, overseeding, aeration, and sometimes topdressing can be applied to areas of greatest need. Focusing on the areas of dire need will stretch limited dollars for the most good.

Aerification (soil cultivation) provides some of the greatest benefits — reduced compaction, air exchange, water and nutrient infiltration, and

opportunities for deeper root development. Some budgets simply aren't going to allow for broad-scale scheduled aeration events in 2020, even if performed "in house," and a primary reason is the cost of the tines themselves. The same limitations might apply to scheduled pesticide or fertilizer applications if you don't already have your pesticides on hand. Adjust the areas that you are managing to those that absolutely need the attention, and return to the other areas as budgets allow.

**ANTICIPATE A SURGE IN MANAGED TURFGRASS USE AS SOCIAL DISTANCING REQUIREMENTS ARE LIFTED.** It is already happening and will only continue to grow as people are very weary of shelter-in-place and can't wait to get outdoors in social settings. The use demands on sports fields will soon grow exponentially as the phases of re-opening the country progress. When revenues are to be generated by the use of the fields, the pressure to make up for lost time to generate revenue will be immense. College sports field and parks and recreation supervisors already have coaches and supervisors anxious to get fields open for camps; these are often the largest money-making events of the year, and, for some, a primary means of supplementing their salaries or funding their leagues. This will be a challenge to forecast and address, but plan for this as best you can for your anticipated budget and labor situations. Being an effective communicator in regulating field use is going to be critical to protect fields under such heavy traffic demands. Control usage the best you can.

Develop a plan for field use and have serious discussions with your administration, owners, supervisors, and clientele about responsible turfgrass use patterns. Sports field managers have been anxiously waiting for their fields to be used, and during a year in which your

fields have had virtually no traffic to this point, heavy use when they are open might yet be the biggest challenge one will face in 2020. Remember that the most effective argument you can have in protecting the quality of your fields is maintaining a safe playing surface.

**TAKE ADVANTAGE OF THE CHALLENGES.** Everyone who has been at this for any length of time agrees that managing natural grass fields is the easy part. One of our biggest daily challenges in our personal and professional lives is quite simply successful communication. Although it's never easy, there is great opportunity for us to use these challenging periods as a time to educate our clientele and bosses about just how amazing a natural turfgrass system is, the expertise required to manage such a system, and how it is so easy to take turfgrasses for granted. You might as well get some credit for what you do now, because very soon the skill and art of turfgrass management will once again be an afterthought as we return to more normal times. Many facilities required signs to communicate social distancing protocols during the pandemic. Continue to utilize and expand your use of on-site signs at your facility, and take advantage of "virtual communication" by utilizing social media platforms to instruct the public about your/their facilities. You get few opportunities where the public is paying attention to your communication efforts, and you now have that chance for a short window.

Best wishes in your return to whatever normal becomes in sports field management for 2020! **SFM**

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# STMA Town Hall Meetings

STMA has been hosting interactive Town Hall meetings via Zoom to share how sports field managers are setting their fields up for success in the future. These sessions offer brief presentations from the panelists, and the moderator poses questions for the audience. The goal is to share information and learn in real time how everyone is adapting to this changing environment. All categories of sports field professionals are welcome to join.

## Watch previous Town Hall meetings:

**Parks and Recreation and K-12** – Panelists: Abby McNeal, CSFM, Jody Gill, CSFM, Jimmy Simpson, CSFM; Moderator: Ryan DeMay

**Zoom out for video**

**Baseball/Professional** – Panelists: Matt Parrott, Charlotte Knights (N.C.), Steve Lord, CSFM, Cincinnati Reds (Ohio), Andy Ommen, McLean County PONY Baseball (Ill.); Moderator: Keith Winter, Fort Wayne Tincaps (Ind.)

**Zoom out for video**

**Agronomics** – Panelists: Dr. Grady Miller (North Carolina State University), Pam Sherratt (The Ohio State University), Dr. John Sorochoan (University of Tennessee – Knoxville), Dr. Chase Straw (Texas A&M University); Moderator: Ryan DeMay (Columbus Recreation and Parks Dept., Ohio)

**Zoom out for video**

**College and University** – Panelists: Jason Smith (University of Florida), Chris May (Georgia Tech), Thomas Goynes (Penn State University), Chris Webb, CSFM (Christopher Newport University); Moderator: Zachary Willard (Auburn University)

**Zoom out for video**

**Professional/Rectangle Sports** – Panelists: Dan Shemesh (New York Red Bulls), Nick Fedewa (Jacksonville Jaguars), Sun Roesslein, CSFM (North Area Athletic Complex); Moderator: Jeff Salmond, CSFM (United Turf and Track)

**Zoom out for video**

Check back soon at <https://www.stma.org/knowledge-center/route-to-recovery-2/> to register for STMA's next Town Hall meeting.

Also, be sure to register as a New Visitor. It is free and provides access to all of STMA's educational resources.