

## **Five Ways to Successfully Manage Natural Grass Year-After-Year**

***By: J. Michael Goatley, Ph.D.***

Ideally, a successful natural grass playing surface requires someone in the role of “sports field manager” to make and implement decisions that deliver safe, quality playing surfaces on a consistent basis.

However, there are many situations where the resources simply don’t allow for funding such a position. [Sports Turf Managers Association](#) (STMA) – the professional association for 2,600 men and women who manage sports fields worldwide – provides science-based management tips to trained and untrained sports field managers across the U.S.

The 2,600 member organization utilizes best practices from its allied partners, [The Foundation for Safer Athletic Fields](#), association partners and a national network of university and college-based turfgrass specialists.

STMA offers expertise in delivering exceptional playing surfaces while using environmentally-responsible management strategies.

Below are five ways to successfully manage natural grass year-after-year:

### **1. Determine what is required of the field based on the sport.**

Each sport has important playing characteristics and requires specific turfgrass and/or soil conditions as they would affect the sporting event. For example, consider the grass cutting height. If the field is used primarily for field hockey or soccer, it may require a lower cutting height to promote faster ball roll versus a football field, which may be maintained at a higher cutting height. Also, keep in mind that when one selects a lower growing, faster playing surface, there likely is going to be a need for more specialized mowing equipment and a significant increase in mowing frequency.

Assess the field’s crown (i.e. slope) and surface uniformity. The crown assists with surface drainage of water to prevent standing water and wet, muddy, unsafe playing conditions. Ensuring a smooth, uniform playing surface can eliminate low areas and divots in the field which could potentially collect water or present a tripping hazard to users.

### **2. Consider adjusting your natural grass management strategy according to players, use, and weather.**

All athletes deserve a safe field, but evaluate who is using the field and how it is being used. Is it a practice field, for youth recreation, or for sanctioned league play? Game fields typically top the priority list when it comes to maintenance and resource allocation, but all fields should be safe for use.

Excessive use is another factor in a field’s playing condition. Managing practices and the rotation of goal locations (soccer, lacrosse, field hockey) is an essential part of the field management strategy. These issues should be discussed with the coach and staff prior to the use of the field. In times of stress, worn areas are often the most likely to present issues. For example, during rainy conditions, worn areas can collect and hold water. During drought stress, these spaces can become, hard, compacted and uneven.

Keep an eye on the weather. Continuous play on a field experiencing stress from extended drought can cause irreversible damage to turfgrass plants and negatively affect soil conditions. Similarly, continuous play that is consistently wet creates ruts and muddy, slippery playing conditions. A single event on a field under moisture stress (either too little or too much water) can destroy an entire season’s worth of effort in maintenance.

### **3. Climate affects grass selection, required field maintenance activities, the need for supplemental irrigation, and field use scheduling.**

The varying seasons of sports will almost always lead to variability in field playing conditions depending on growing conditions for the grass. Turfgrasses are categorized as warm-season or cool-season depending on how well adapted they are to various climates. Each location's climate plays a large role in determining the type of grass, when and what field maintenance activities take place, irrigation needs and field use.

For example, a field located in New York will typically be planted with a cool-season grass. Field maintenance generally takes place April through November depending on snowfall. Irrigation is usually only needed during the hot summer months and surfaces are used in the spring, summer, and fall. By comparison, a field located in Florida will be planted with a warm-season grass. Field maintenance and irrigation may take place at anytime of year and typically fields are available for use almost year round.

#### **4. Assess soil conditions.**

The majority of sports are played on native soil (or subsoil) and they require regular chemical testing by a certified lab to determine pH and nutrient levels. Soil test results will provide the information needed to apply the correct amount of nutrients to achieve a healthy field. Implementing the correct maintenance practices – such as irrigation, fertilization, aerification, topdressing, verti-cutting, etc. – can deliver optimal growing conditions for the turfgrass of choice. There are private labs and local extension offices that can assist you in conducting a meaningful soil test and interpret the results. “Don’t guess – soil test!”

#### **5. Identify the equipment you need to deliver a safe, quality playing surface.**

Obviously, a mower is usually the first piece of equipment identified in natural grass field management. Evaluate your budget and the accessibility of other equipment – such as soil aeration equipment, spreaders and/or sprayers -- and the variety of hand tools required for the detail work. If an equipment purchase is not feasible, consider contracting out services, such as aeration. Other options include renting equipment or sharing with nearby facilities.

There are many benefits to the players, sporting activities and environment in playing sports on properly maintained natural grass fields. However, one point is very clear about managing natural grass fields: someone or some group has to take ownership of the management of the surface.

STMA is poised to be the resource that provides all levels of sports field managers the information required to deliver a safe, quality and great looking playing surface. For more information, visit [STMA.org](http://STMA.org).

#### **About J. Michael Goatley, Ph.D.**

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#### **About STMA**

STMA is the not-for-profit, professional association for men and women who manage sports fields worldwide. Since 1981, the association and its 34 local chapters have been providing education, information and sharing practical knowledge in the art and science of sports field management. Its more than 2,600 members oversee sports fields and facilities at schools, colleges and universities, parks and recreational facilities, and professional sports stadiums.

## Resource List

Qian, Yaling & Follett, Ronald. (2002). Assessing Soil Carbon Sequestration in Turfgrass Systems Using Long-Term Soil Testing Data. *Agron. J.* 94:930–935.

Sherratt, Pamela. The Benefits of Turf.

[http://buckeyeturf.osu.edu/index.php?option=com\\_content&view=article&id=1277:the-benefits-of-turf&catid=1:latest-news&Itemid=170](http://buckeyeturf.osu.edu/index.php?option=com_content&view=article&id=1277:the-benefits-of-turf&catid=1:latest-news&Itemid=170)

Project Evergreen - <http://projectevergreen.org/resources/environmental-benefits-of-green-space/>

Recommendation of the Expert Panel to Define Removal Rates for Urban Nutrient Management - [http://chesapeakestormwater.net/wp-content/uploads/dlm\\_uploads/2015/03/CBP-APPROVED-FINAL-UNM-EXPERT-PANEL-REPORT-032514\\_SHORT.pdf](http://chesapeakestormwater.net/wp-content/uploads/dlm_uploads/2015/03/CBP-APPROVED-FINAL-UNM-EXPERT-PANEL-REPORT-032514_SHORT.pdf)

Robinette, G.O. 1972. Plants, people, and environmental quality. U.S. Dept. Inter., National Park Service, and Am. Soc. of Land. Arch. Fndtn, Washington D.C.

Virginia Cooperative Extension: *The Value of Landscaping*; <http://www.ext.vt.edu/pubs/envirohort/426-721/426-721.html#TOC>

Environmental Protection Agency: "Greenscaping, The Easy Way to a Greener, Healthier Yard."; <http://www.epa.gov/oppfead1/Publications/catalog/greenscaping.pdf>

Wolf, K.L., Ph.D., University of Washington; <http://www.cfr.washington.edu/research.envmind/transportation.html>; Wolf, K. L. 2004, *rees, Parking and Green Law: Strategies for Sustainability*. Stone Mountain, GA: Georgia Forestry Commission, Urban and Community Forestry; [http://www.cfr.washington.edu/research.envmind/Roadside/Trees\\_Parking.pdf](http://www.cfr.washington.edu/research.envmind/Roadside/Trees_Parking.pdf)

Greenroofs - <http://www.greenroofs.com/aboutus.htm>

California Energy Commission; <http://www.consumerenergycenter.org/home/outside>

*GrowerTalks*; <http://growertalks.com/archive/articles/1384.asp>

Green, R.L. 2002. Turf protects the environment, benefits health. UCRTRAC Newsletter, December. <http://ucrturf.ucr.edu>

Pioneer Thinking; <http://www.pioneerthinking.com/landscape.html>

Virginia Cooperative Extension: *Nutrient Management*; <http://www.ext.vt.edu/pubs/turf/430-400/430-400.html>

University of Illinois at Urbana-Champaign: *A.D.D. Kids: "Go Out and Play!"*; <http://lhhl.uiuc.edu/adhd.htm>

*Cornell Chronicle*; <http://www.projectevergreen.com/pdf/Nature%20Benefits%20Children.pdf>

Environmental/social benefits of residential lawns and landscaping - <http://www.backyardnature.com/cgi-bin/qt/pl.h,content=383>

*Smart Money Magazine*, March 3, 2003 issue

*Money Magazine*;

[http://money.cnn.com/magazines/moneymag/moneymag\\_archive/2006/04/01/8373307/index.htm](http://money.cnn.com/magazines/moneymag/moneymag_archive/2006/04/01/8373307/index.htm)

Aspen Environmental Companies; <http://www.aspenenviro.com/benefits.html>

*Landscaping and House Values: An Empirical Investigation*, Francois Des Rosiers, et al, Laval University, Canada

Virginia Cooperative Extension; op cit

*Green Streets, Not Mean Streets*; Project EverGreen; op. cit.

University of Illinois at Urbana-Champaign: *Nice to See You: How Trees Build a Neighborhood*;  
<http://www.lhhl.uiuc.edu/communities.htm>

Charles A. Lewis: *The Role of Horticulture in Human Well-Being and Social Development*;  
<http://www.projectevergreen.com/resources/LowerCrimecopy.pdf>

University of Illinois at Urbana-Champaign: *The Power of Trees*;

<http://www.lhhl.uiuc.edu/media/thepoweroftrees.htm>

2010 NFL Players Playing Surfaces Opinion Survey, NFL Players Association.

Centers for Disease Control and Prevention - <http://www.cdc.gov/obesity/data/databases.html>