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💐 Bobca

Sports

FIELD SCIENCE

and is hardly worth doing on expansive, high-clay content soils. Subsurface compaction seriously diminishes soil hydraulic conductivity and is one of the main causes of black layer in sports turf.

A 1

that are high enough to be damaging to turfgrass soils.

Sodium is the one salt in irrigation water that is most damaging to soil structure. There is no physical or chemical way to remove

Fertilizer and pesticide applications can be helpful if the products are applied judiciously. However if over applied, these products can damage turfgrass roots and destroy beneficial microorganism populations. Try to manage your soil to encourage a robust population of beneficial microorganisms. Turfgrass is primarily a bacteriadominant ecosystem that can effectively combat turfgrass fungal

on water					
SAR/Salinity Hazard of irrigation water					
-20 20-40					
and EC (dS/m) is:					
in the distant					
2.9 >5.0					
2.9 5.0					
1.3 2.9					
1.3 <2.9					

these sodium ions from water. Therefore, their threat to soil structure must be combated after they have entered the soil matrix. Soils with a measurable amount of clay in them are most at risk from sodium absorption onto clay micelle cation exchange sites. When large numbers of monovalent sodium (Na+) cations adsorb onto these sites the physiattraction cal

between micelles

pathogens if the bacteria populations are high enough. There are also strains of beneficial fungi, including micorhyzzae, in turfgrass soil systems. Populations of these beneficial organisms can be increased by an annual topdressing of a good quality compost.

is exacerbated. This results in a phenomenon called clay dispersion, which is not good.

As seen in Table 1, for extremely low salinity irrigation water, even low SAR water should be avoided. High salinity water (EC1.50-3.00) with SARs above 4 needs to be carefully managed. It

is recommended that once a year the soils should be subject to testing in order to assess possible sodium problems.

The higher the salinity, the higher the SAR index in order to cause infiltration problems. On the other hand the lower the salinity, the greater the risk of infiltration problems independent of the SAR value.

Rainfall can reduce the soil salinity and consequently

Irrigation water woes

A sports turf manager has practically no control over the quality of his irrigation water. If the irrigation water source is from a holding pond, fine particulates of clay and silt commonly find their way into the growing medium and plug pore spaces, even on a high sand rootzone field. Many sports fields are irrigated with treated effluent water that is very high in sodium and other salts. Even potable water in many states has levels of salts



increase the SAR index and reduce water penetration into soils (see Figure 1).

Reversing clay dispersion and causing the clay micelles to repel each other will result in flocculation. Flocculation will result in the reestablishment of soil pore spaces, which in turn, will improve soil hydraulic conductivity. Flocculation will allow water, air, and roots to find their way deeper into the soil. A well flocculated soil needs no mechanical aerification and will eliminate the threat of black layer formation and other diseases. With air in the soil pore spaces aerobic bacteria will become dominant and the environment that would favor turfgrass fungal pathogens will no longer exist.

Flocculation happens after introduction of high levels of divalent calcium cations (Ca++) into the effected soil. Calcium sulfate and calcium chloride, to a greater degree, have been used to do so. Up until now science has not been able to provide sports turf managers with a product that will do all that has been described so far and then keep it that way for a long time. That has, perhaps, changed.

Research from Texas A&M ("Gypsum and Polyacrylamide Soil Amendments Used With High Sodium Wastewater") tested the idea that gypsum applied after disking versus a polyacrylamide (PAM) applied in solution can reduce soil crust formation and improve the

infiltration rate of water into soil irrigated with water high in salt and sodium. The results showed that the damaging effects of wastewater irrigation water can be effectively ameliorated using PAM and that it lasted many weeks after the last application of PAM. Gypsum was found to be not as effective as PAM and there was no longevity associated with gypsum.

Another research paper, "Aqueous Polymer Effects on Volumetric Swelling of Na-Montomorillonite (Clay)," was published by researchers at the University of North Carolina in 2005. This research analyzed the effectiveness of three types of products that might flocculate soils and stabilize them after flocculation: sodium carboxymethlycellulose (CMC), polyacrylamide (PAM), and polyethylene oxide (PEO) were tested as stabilization agents against Na-montmorillonite clay upon irrigation application.

Instruments were used to measure the volumetric swelling ratio (VSR), an expression of the clay volume at any time relative to the amount of water it has absorbed and not drained causing swelling. The results showed that PAM reduces the VSR by as much as 40%. Test results for CMC and PEO show that clay swelling is not significantly reduced. This result shows that creation and maintenance of soil pore spaces in clay soil can successfully be accomplished without tilling the soil. The study's conclusion is that PAM can be used as an effective soil stabilization agent for clay soils.

The US Department of Agriculture (USDA) has done extensive research on the use of PAM as an effective material for stabilizing soils in farming. USDA studies have shown that furrow irrigation, soil erosion, water infiltration into soil, and sprinkler irrigation have all been improved by the use of PAM.

Knowing how to properly groom and prepare a sports field for play is what builds a sports turf manager's reputation among his peers. Generally speaking, his employer expects him to know how to do that. What solidifies a sports turf manager's reputation in the mind of his employer is his problem-solving skills. If you can turn around a sports field in decline and make it a showplace again, your job will be secure and you will take great pleasure in such an accomplishment. It is hoped that science can deliver to you here a nugget of knowledge that you can put to use to salvage a problem field you might have or prevent a field from ever becoming a problem.

There are only a few non-agricultural sources of water soluble polyacrylamide, the type used in the research studies, at this time. They can be bought and shipped to you with good instructions on how to use them. One product is Soil Drain that can be reviewed at www.bettertopsoils.com or the product Remedi-Cal Plus at www. soillogic.com.

Bill Nolde, a former golf course superintendent, works as a sports turf consultant. He can be contacted at billnolde@sbcglobal.net.



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Get more out of your yolunteers

By Athanassios Strigas, PhD, MBA

oday the increasing needs of human labor in conjunction with the limited resources available drive many non-profit organiza-

tions to a dead end. These agencies have started recruiting more and more volunteer workers to complement or even enrich their services to the society.

Volunteer labor is extremely valuable because it provides its management team with the ability to (a) sustain existing services, (b) expand the quantity, quality and diversity of these services, and (c) keep the budget in its pre-specified limits.

For all these volunteers associated with

sport-related organizations, offering time, services and expertise help them increase their self-esteem levels, seek out new social relationships, develop a variety of professional skills, maintain an active lifestyle, and reduce depression levels. However one of the most notable benefits of volunteering has to do with social and community cohesion. Communities facing challenging problems rely heavily on volunteers to overcome needs and difficulties, improve their public image, and promote social harmony, understanding, and tolerance.

Volunteering "is any activity which involves spending time, unpaid, doing something which aims to benefit someone, individuals or groups, other than or in addition to close relatives or to benefit the environment including animals." This definition of volunteering currently includes three important concepts: a) the provision of a service to the community, b) freedom of choice to become involved, and c) non-payment of the service provided (except reimbursement expenses).

Volunteerism in US

According to the 2008 Bureau of Labor Statistics data, about 60.8 million (26.2%) of the civilian population, above the age of 16, volunteered for various organizations at least once during 2007. This volunteer labor force

Trends in volunteerism

Short-term or "Episodic" Commitments

Most new volunteers today seek assignments with a clear beginning, middle and end. One-time-only volunteering opportunities continue to expand. The good news in all this is that after people have gotten their feet wet in a successful volunteer effort, they often turn around and ask what they can do next. Volunteer program managers should start thinking of "retention" in terms of an ongoing sequence of short-term assignments.

Singles as a Target Audience

Connected to the popularity of one-day volunteer projects, there's a new awareness of an old fact: people who volunteer make friends with other volunteers who share their interests. In a world in which young people delay marriage and in which divorce hits half the couples in the U.S., it isn't surprising that volunteering is being adopted as part of the singles scene. An increasing number of programs are targeting single volunteers, either as their only participants or for specially-designated work shifts.

Welfare Reform

This is an issue with inconsistent effect on volunteer programs because each state handles it differently--as do a number of other countries around the world. As public assistance rolls are decreased by requiring able-bodied men and women to get a job or go to school, the question of where volunteering fits into the picture is raised. In many states, volunteering is a legallyapproved alternative to a paying job or training, allowing someone to keep welfare benefits if s/he logs a certain number of community service hours which are viewed as benefiting the public. However, in some states, the opposite reasoning applies: if someone is volunteering, then they can't be seriously looking for a paying job, so community service is disallowed.

spent a median of 52 hours on volunteer activities during the period from September 2006 to September 2007; multiplied by the estimated dollar value of a volunteer hour, currently \$17.55 showcases the tremendous financial impact volunteers have on the fabric of the U.S society.

People in the age bracket 35-44 (30.5%) were found to be the most likely to offer time and expertise in order to serve various social causes, among them the enhancement of various leisure services for sport and recreation agencies. They were closely followed by the 45-54 (30.1%) and the 55-64 (28.4%) year old age groups. The volunteer rate for teens showed the largest decline in 2007; as the report indicates the volunteer rate for females between16-19 years old declined from 28.8 to 26.6%, and the rate for males of that age group declined from 24.1 to 22.5%. Women in general volunteered at a higher rate than men across all major categories like age, educational level, etc.

The survey also reports that almost 45 % of volunteers were involved after being asked by someone in the organization, while 40 % were involved on their own initiative. The profile of the typical sport volunteer who offers services in sport and leisure-

Internet-based Distance Learning

The number and quality of Web sites, listservs and newsgroups offering resources for volunteer program leaders continue to grow. Several exciting uses of this electronic medium, including complete books are available at no charge online, increasing the use of audio, and the introduction of "streaming video" for distance learning options. Complete online courses in volunteer management are also available - with some institutions even giving academic credit - so now the challenge is to see how volunteer program managers can adapt the technology to train and update active volunteers.

Family Volunteering

While receiving much lip service over the years, most agencies have not yet found meaningful ways to put family units to work as volunteers. Interest in this idea is increasing as evidenced by new guidebooks, training materials, and conference presentations. To make the idea work, they have to recognize the many variations that the word "family" covers today. Intact nuclear families today are in the minority. However, volunteer programs can tap into grandparents raising grandchildren, divorced parents, and homes with adults who are each other's "significant other."



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related agencies is between 34-55 years old, with a higher education degree, a full-time job, and an annual income that exceeds \$60,000. That person most likely has participated in organized sport activities in the past, and was surrounded by people that volunteering time, services and expertise is an integral part of their every day life.

Strigas and Jackson developed a number of volunteerism studies on sport and recreation dealing with motivational issues. The



primary motives for volunteering were: (a) it was fun to volunteer services for recreational sport events, (b) I wanted to help make the event a success, (c) volunteering creates a

better society, (d) I wanted to put something back in my community, and (e) volunteering makes me feel better about myself. In 2001, I proposed motivational 9 model that broadened the existing knowledge regarding the motives of volunteer labor in sport and recreation events. That study advocated the existence of

five major motivational factors that explain volunteerism.

The first factor involved motives related to the individual's needs for social interac-

Continued on page 38

Recommendations

To reduce the consequences of the demotivation factors, management professionals in sport and recreation agencies need to develop a thorough understanding of what motivates volunteers to offer their time and expertise. These are some the strategies and methods managers can employ to boost recruitment and volunteer satisfaction:

Develop and articulate well-defined organizational goals & objectives

• Develop and share with prospective and existing volunteers a vision regarding individual and organizational success

• Match assignments with the specific skills and abilities each of the volunteers possess (as much as possible)

• Monitor and control the work load for each of the volunteers; increasing demands for help from the same volunteer may force that person to drop-out

Create opportunities for volunteer appreciation and recognition

Allocate resources for the development of written materials (manuals)

• Involve volunteers in the evaluation process and report to them on their performance

• Use relationship marketing to target potential volunteers on an individual basis

• Attract volunteers whose personal values relate to those of the leisure organization

In addition to the actions management professionals need to undertake in order to keep their volunteers motivated and involved, they should also deal with the following issues:

Address risk management issues in volunteer selection and recruitment. Too often non-profit organizations embrace volunteers and ail to take all necessary precautions for screening those volunteers. Applicable state and federal regulations pertaining to volunteer screening and selection should be investigated.

Address legal issues and risk factors in volunteer management. Volunteers can present great liability risks to sport and recreation agencies. These risks can come both from liability to the volunteers for incidents that may occur while they are volunteering or to a third party for an accident caused by a volunteer while they are volunteering. It is the management's responsibility to devise strategies for either minimizing or eliminating these risks.

Write volunteer position descriptions. Volunteer position descriptions are incredibly useful tools and are very critical in volunteer recruitment efforts. A clear, well-written position description is the basis for an equitable performance evaluation.

Initiate mutual performance reviews. Performance evaluation is not just an opportunity for volunteer coordinators to review a volunteer's performance but also an opportunity for the volunteer to evaluate the agency's volunteer management program. Mutual performance reviews should be the norm for every sport and recreation agency.



John Mascaro's Photo Quiz

This hot mound was not caused by an ultra-hot major league prospect; it was an attempt to dry the mound clay. Apparently after a heavy rainfall event the mound was found to be too wet to play ball. Instead of calling the game, some sort of flammable fuel was applied to the perimeter of the pitching mound and then it was ignited. The heat created by the fire was an attempt to quickly dry the mound's mix. This method is not a good idea because the heat produced by the fire is very short-lived and the heat also caused severe damage to the surrounding turf. The hazards of attempting this quick drying technique are pretty evident as well. Sports turf managers have many other drying methods at their disposal, including products like calcined clay, calcined diatomaceous earth, and polymer-coated materials. The burning mound method of drying is deeply discouraged. There are times in this business that you must accept the fact that you have been rained out.

Photograph submitted by an anonymous reader.

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 or email to john@turf-tec.com. If your photograph is selected, you will receive full credit. All photos submitted will become property of SportsTurf magazine and the Sports Turf Managers Association.



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tion and interpersonal relationships, as well as motives related to the individual's need to relax, chill out or look into various leisure choices (i.e. "I wanted to relieve the stress and the tension of everyday life," "I wanted to develop relationships with others," "I wanted to discover new interests.") to the individual's needs of self actualization, self-esteem, and achievement ("volunteering makes me feel better about myself," "I wanted to help make the event a success").

The fourth factor involved motives related to the desire of the volunteers to aid the leisure organization in the accomplishment Sports and recreation management professionals should develop an interest in factors that discourage potential or existing volunteers to: (a) get involved with the sport agency, (b) volunteer more hours, or (c) stay with the agency for longer periods of time. Along these lines, three questions need to be



The second factor involved motives that permitted volunteers "to carry out a rational calculus of expected utility gain," in exchange for their services; these rewards could be material goods or services (some with a monetary value), or even social status that could easily be translated into a "reward" that carried a material value (i.e. "I wanted to make new contacts that might help my business or career," "complimentary items played a very important role at my decision to volunteer").

The third factor involved motives related

of their stated ends, and contribute to the recreational sport event and the community ("I am genuinely concerned about the particular club I am serving," "I adhere to the organizational committee's specific goals").

Finally, the fifth factor assessed the extent to which volunteers were engaged in volunteering activities due to factors outside of their immediate control, like family traditions and decisions/actions by significant others. ("my friends/ family/ significant others are also volunteering," "I was asked by others to volunteer"). asked: (a) why people in the community do not volunteer services for the leisure organization, (b) why existing volunteers do not volunteer more hours, and (c) why existing volunteers choose to discontinue offering services, time or expertise.

Research has provided some indications and potential answers to the questions above; the most common answers are: (a) the volunteer had a poor previous experience with volunteering, (b) lack of time because family, work or other commitments, (c) the volunteer had developed a false understanding of



what was involved in her/his volunteer assignment, (d) perceived lack of skills and abilities on behalf of volunteers (or prospective volunteers), (e) disappointment of the way the leisure organization is functioning, (f) increased demands on volunteers from volunteer coordinators, (g) the leisure organization may do a poor job in recruiting volunteers and lack a specific volunteer marketing plan (e.g. the agency does not ask people to volunteer, does not adequately communicate to them its mission and vision for the future, etc.).

The growing use of volunteers in different facets of everyday life creates a compelling need for all these management professionals involved with leisure & sport agencies, to re-evaluate the existing knowledge regarding volunteer activity. Recruiting and retaining volunteers are primary marketing problems. Agencies could use this knowledge to design their marketing efforts in a way that could appeal persuasively to this free labor during recruitment time.

The whole procedure of evaluating motivational theories and incentives in addition to designing the marketing tools for recruitment and retention of volunteer labor requires a very careful approach and consideration. Recruitment and selection processes of volunteers can be proved a very expensive endeavor in most cases. Limited knowledge of current trends in volunteerism or ignorance of the real needs and motives of volunteers can be proved catastrophic for the expansion of volunteer human resources, the morale of the organization, or the execution of a special event.

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IRRIGATION & DRAINAGE

Get your irrigation start-up ready to go

t's that time of year again. As we bid farewell to gray winter days, plants are blooming and parks and fields are greening up. That also means it's time for spring irrigation system start-ups. You want to make sure

everything is in good working order before the season gets underway. A thorough start-up can help identify any issues with your irrigation system that could ultimately impede performance or system efficiency.

You'll want to methodically inspect the physical condition of system components as you proceed. As always, check the health of the plant material as well, and adjust accordingly as you go.

Here, then, is a detailed checklist to get you started.

• First, close the valve on the outgoing side of the backflow device. Before turning on any water to the system, all manual drain valves are returned to the "closed" position.

· Close all test connectors on the backflow device.

• Make sure the valve on the inlet side of the backflow is completely open.

• Partially open the water supply valve (system main water valve) slowly and allow the pipes to fill with water gradually. If these valves are opened too quickly, the sprinkler main lines can have high surge pressures, uncontrolled flow and water hammer.

- Once the water has filled the pipe, open the supply valve completely.
- · Partially open the valve on the outgoing side of the backflow.

• Walk around your property and shut off any zone valves that had been left open during the winter blow-out process.

• Open the last zone valve on your system, either from the controller or by using the manual bleed at the valve.

• Once water starts spraying out of your last zone, completely open the valve on the backflow.

• Once all the air has been pushed out of your system, shut off your zone valve.

• Turn on each zone, one at a time, and evaluate how your sprinklers are working. Walk through each station on the controller, checking for proper operation of each zone valve. Check for proper operating pressure (low pressure indicates a line break or missing sprinkler), proper rotation and adjustment of sprinkler heads, and adequate coverage.

• Adjust or replace the sprinklers as needed. Check and clean filters on poorly performing sprinklers. Adjust heads to grade as necessary.

• Install a new battery in your controller (wrap masking tape around the battery and write the date on the tape).

• Finally, reprogram your controller for automatic watering. Uncover and clean the system rain sensor, if applicable. Also, finish and clean any in-line filters for drip irrigation zones.

That should get your system underway, and ready to work at peak performance. \blacksquare

Hunter Industries, www.hunterindustries.com San Marcos, CA provided this checklist.