



- On the Road - Quarterly Bulletin

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Ready or Not?

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Editor's note - These comments are solely the author's and do not reflect the opinions of the NCGA or the SCGA. The paragraphs below are based on recent developments, personal observations and involvement within various water agencies and groups this past year.

Despite one of the wettest winters in California's history, water quality and supply are on the front burner with the setting on high, for a number of Californians. This subject has become a high priority with several state agencies as well as environmental advocacy groups. Ironically, a number of politicians have found time, energy and resources to devote to this ever-important and always controversial topic. So what does all of this mean and where do we go from here?

History Lesson

The golf industry began pursuing the water issue a couple of years ago when the NCGA lobbyist suggested we should start meeting on a regular basis to address this topic and other timely issues that pertain to golf. The group, which is now called the California Alliance for Golf, has developed a board of directors and is well on their way to becoming a unified voice for the golf industry. After the initial meeting, a small group of industry representatives with an interest in water began communicating to determine where the golf course industry has positioned itself in regards to their water usage and efficiency.

One idea pursued by the group was to submit a grant proposal to a state agency for possible funding regarding the implementation of an educational program. The grant application was entitled, "Improving California Golf Course Water Use Efficiency." It included the cooperation of four of the largest water districts in the state, including the Metropolitan Water District, Coachella



Valley Water District, East Bay Municipal Utility District and the Santa Clara Valley Water District. We had substantial financial commitments from the above agencies as well as the NCGA and the SCGA.

Unfortunately, in late May the group learned that our application was not selected for funding. There were 60 other groups

who applied for the same pool of funds. Based on the reviewers ranking, our proposal finished 54th out of the 61 total applicants. Indirectly, a message was sent from the state agency to the golf course community: we have not done enough to help ourselves warrant funding.

Meat and Potatoes - Part 1

The grant application had three steps: a voluntary self test, a series of field tests plus irrigation system recordkeeping, and an on-site review of the system.

STEP ONE: Course superintendents would first evaluate their own irrigation systems with a self-administered test. The test would provide the superintendent insight into the strengths and weaknesses of the current irrigation system and its day-to-day management of operations, scheduling and maintenance.

STEP TWO: The second step would validate the self-test findings. This is done by documenting various components of the irrigation system along with field testing. Field tests would involve determining distribution uniformity percentages, pump operating efficiencies, soil texture classification plus water infiltration rates.

Step two displaces current visual or intangible beliefs or biases concerning the irrigation system's performance with actual data concerning usage, efficiencies, etc. Obviously this would give the superintendent and/or club officials an easier and more precise strategy for making future financial decisions that pertain to system improvements.

STEP THREE: An advisory board would review the self-test results and the field data. A board representative would make a site visit to the golf course to spot check recordkeeping data, system and sprinkler maintenance, and irrigation scheduling determinations.

Depending upon the board's assessment and corrective actions taken, the golf course could be recognized as a California Certified Water-Efficient Golf Course (CCW-EGC) at the bronze, silver or gold level.

Take Home Message

Why should I volunteer to do more in my job than I currently do? Because approximately 80% of California's 912 golf courses are located in areas that are designated by the United States Department of the Interior to be substantially or highly likely areas for water supply conflicts by the year 2025.

- Because 12 million more people are going to live in California by the year 2025.
- Because the water supply and delivery system for 2/3 of the state's population is not going to expand or drastically improve in the near future.
- Because politicians are currently drafting legislation that will require documentation of water usage and conservation.
- Because a significant number of policy makers and certain segments of the environmental community think that turf is a huge

water waster and are in favor of removing turf altogether via turf buy-back programs.

All of these reasons are valid. However, the number one reason to implement the program is to keep your current allocation of water, and prove you are using it responsibly and efficiently. If we can't accurately measure the amount of water we use, then how can we honestly manage it? In starting now, we can firmly entrench our industry as an environmentally responsible example and the uncontested leaders in the clubhouse as it pertains to outdoor water use efficiency.

Looking for a Few Good Men and Women

The group has been mulling over the best way to get the word out about initiating this three step process. One option is to work with golf courses who are within the boundaries of the four water districts that initially agreed to support the grant application. Each district has expressed interest in seeing this program implemented even though we did not receive state funding. The other option is to start working directly with courses/superintendents who see the economic, agronomic and professional value in this program. Either way, we have to start now.

This program knows no geographic boundaries. Southern California golf courses are not only welcome but are strongly encouraged to be the first wave of volunteers as their irrigation seasons are longer and their water demands are larger than their counterparts in northern California. For those courses or superintendents who want to learn more about what is required and want to start the process of becoming a California Certified Water-Efficient Golf Course, please contact me as soon as possible at 831-622-8218 or via email at mike@ncga.org.

Water Education Foundation - A Diamond in the Rough

We've all done it by accident. Surfing the net and BOOM, there it is. Something that sounded too good to be true. Well this organization is all of that and a bag of chips. The Water Education Foundation may not be on the tip of your tongue, but it should be a resource you keep close to your vest as far as state water issues are concerned.

The Foundation's mission is to create a better understanding of water issues and help resolve water resource problems through educational programs. Their programs and tours are unbelievably balanced as they help individuals get both sides of the story, i.e. state regulators and the environmental community.

Perhaps the best part of their organization is the written material. To understand a complex issue like the Bay-Delta or the State Water Project requires some serious background reading. The WEF is the perfect place for a one-stop shop. Their materials can help even the greenest water neophyte get a basic understanding on the topic while giving the person a quick vocabulary lesson.

The WEF specializes in events they call Water Tours. Hosting five of these events each year, the WEF crams tons of stops and information into three action packed days. The tours allow individuals to see and hear some of the many state water authorities talk about localized issues in an informal yet candid environment.

I would encourage anyone to attend one or multiple tours in the near future. The tours are fun plus the networking that occurs is unmatched in my humble opinion. For more information about the Water Education Foundation, log onto their website at www.water-ed.org.

Meat and Potatoes - Part 2

Our distant cousins in the agriculture industry had a real eye-opening experience within the past two years - conditional waiver of waste discharge requirements for discharges from irrigated lands. The sticking point in the development of the waivers was the term discharge and who qualifies as a discharger? Any farmer or landowner that discharges water (irrigation return flow, tail-water and subsurface drainage) from irrigated lands to waters of the state is classified as a discharger. More good news is that storm water runoff is also included in the definition of discharge. Ask yourself these questions - what is the quality of the water that runs off our property (parking lots and maintenance shop included)? Do you think the water has picked up some type of residues or substances along the way?

Many farmers have banded together to form water quality coalition groups. Essentially, the groups help to defray the costs of monitoring runoff for pesticide residues, sediment, excess nutrients and other contaminants that constitute non-point source pollution. In the large scheme of things, the golf industry is at a proverbial fork in the road. Do we jump in and become proactive with self-monitoring or wait until we are contacted to comply with the existing regulations? Many of the talking heads in agriculture have routinely stated that working with growers on a voluntary basis is far more productive than those who comply kicking and screaming.

Monitoring system start-up costs for a 100 Acre farm are approximately \$7,000 - \$15,000, with yearly monitoring costing another \$6,000 and \$8,000 a year. If a person substituted the word superintendent with farmer/grower and golf course with farm, one can really start to see the urgency of the situation. Additionally, these regulations do not include other types of legislation that are on the horizon such as groundwater pumping and surface water diversion permits.

By starting now, our industry should combine water use efficiency information along with water quality monitoring data and report it within our own industry. This will be viewed by outsiders as responsible and progressive. It will also show that our industry has a measurable stake in future water policies.

Up to this point, has our industry had a place at the policy-making table when decisions such as the conditional waiver are being made? Nonetheless, the issues on water are right in front of us. Can the industry really afford to not be a part of the solution in the future?



Golf Course Water Survey – Part 2

Enclosed is the second edition of the California Golf Course Water Use Efficiency Survey. We last conducted this survey in the summer of 2003. The survey has been instrumental in identifying areas where improvements are needed and areas where efficient water conservation is practiced.

Golf courses are prime targets for water reduction legislation and possible testing for water quality parameters. In order to have accurate up-to-date information about how effective golf courses are in utilizing the precious resource of water, the survey should be filled out and returned as soon as possible.

The results from the new survey will be used to inform golf course industry supporters and legislation advocates of the industry's concern and commitment to continually improve water use efficiency. This survey needs to be completed and returned by **August 31st**. Please take a few moments to fill out the survey. All individual responses are confidential.

Assistant Superintendent Boot Camp – New Topics Every Year

Contrary to what some individuals might think, the material that is presented each year at the Boot Camp is new. A few topics may have been recycled, but there is a substantial amount of fresh information each and every year.

The dates for the fifth annual Assistant Superintendent Boot Camp have been set for October 16-18, 2005. The event will again be held at the Asilomar Conference Grounds in Pacific Grove, Calif. The cost of the Boot Camp is \$275. This includes two nights lodging, all meals (6) and a golf shirt. For those participants who want to play in a golf tournament at Poppy Hills after the conference, the fee is \$330.

Topics for this year's Boot Camp include the lost art of business etiquette, an episode of "How Did They Do That" – Seed Breeding (mature audiences only), a crash course in weed management, tales from a PGA Tour Agronomist, plus writing the advance copy of the Golf Course Maintenance Terminology Guide for Dummies, as well as several field trips.

CEU hours from DPR are pending. Class size is limited to the first 40 individuals. Credit card payment will now be accepted via online registration at www.ncga.org.

Irrigation Auditor Classes to be held at SLO

Learn how to perform field tests on golf course irrigation systems to determine efficiency, as well as how to combine plant water use, soils and local weather data to calculate accurate watering schedules for irrigation systems. This class deals directly with the issue of wise water use on the golf course. The class will be held at the Irrigation Training and Research Center on the campus of Cal-Poly San Luis Obispo. The dates for the class are Aug.31- Sept.1. Cost for the class is \$195.00 which includes

lunch and a class manual. Following the workshop, the Certified Golf Irrigation Auditor (CGIA) exam (optional) will be administered for an additional fee. Class attendance is required before taking the exam. The fee for the exam (an additional \$125) must be arranged through the Irrigation Association office in Virginia. The IA can be reached at 703-536-7080 or www.irrigation.org. ITRC can be reached at 805-756-2434 or online at www.itrc.org.

The day-and-one-half class requires a basic understanding of sprinkler system operation. Basic math skills are also required. Classes start at 8:00 a.m. each day. A calculator, pencil and notepad are recommended. Dress is golf casual and early arrival is suggested.



Quick Read

John James Audubon is a name that is frequently used in the environmental community. Smithsonian Magazine did a nice piece on him and his life in the December 2004 issue. You'll admire his dedication to family, skills as an outdoorsman and his entrepreneurial spirit.

www.smithsonianmag.com/smithsonian/issues04/dec04/audubon.html

“The real question is whether or not golf courses are a net positive for the environment, and by and large they are not.”

Eric Antebi, spokesman for the Sierra Club

The Pathologist's Corner

By Frank P. Wong
Extension Plant Pathologist
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Fairy Ring and LDS Control: Fungicides, Water and Surfactants

This last spring, Dr. Larry Stowell was looking at one of our chronically localized dry spot (LDS) affected bentgrass research plots at UCR and he said "Wow, this is an awesome fairy ring site!" I gave Larry one of those Gary Coleman 'whatchoo talkin' about Willis?'¹ looks and said "Fairy ring? This is LDS!" Indeed, the digestion of thatch and organic matter in the soil by the same fungi that cause fairy ring can often be a cause of hydrophobic soils and LDS [Figure 1]². It was like one of those days where you find a \$20-bill in an old coat that you haven't worn since last year - we had a bona fide fairy ring site at UCR I didn't even know about....



Fig 1
Fungi typically associated with fairy ring can also be the cause of LDS

Three questions often come up with regard to fairy ring control, (1) what fungicide? (2) what application volume? and (3) should I add a surfactant? With our newly discovered LDS/fairy ring site - we tried to answer some of these. Briefly, we used a number of fungicides labeled for fairy ring control, applied at 2 or 4 gallons per 1000 square feet, and plus or minus a surfactant. In this case, we used 6 oz of Revolution³. Curative applications made on April 29th and May 23rd.

Results were straight forward: (1) the higher application volume provided more control of fairy ring and (2) the use of a surfactant appeared to increase fungicide effectiveness. [Table 1, Figure 2]. Another thing to note - it took nearly two months to see results from the fungicide applications.

Hmmm....I guess this ain't necessarily rocket science, but it does illustrate why fairy ring control can be very difficult at times. First, the fungicides really do need to

get into the thatch layer and or root zone to hit their targets. Using surfactants or high application volumes to push them into the target zone can dramatically increase fungicide effectiveness. Second, if LDS or fairy ring is already present, it takes time and likely multiple fungicide applications before it will go away - the fungicides need to kill the fungi, the soil needs time to break down the hydrophobic materials the fungus was making and the turf needs time to recover to a 'normal' state.



Fig 2a
Creeping bentgrass plots used in study (A) untreated check (B) plot treated fungicide + surfactant

I hope this helps explain partially why fungicidal control of fairy ring can be really spotty. Other than that - things are jumping in the lab - the summer is bringing a lot of diseases and we aren't even halfway done yet.

Until next time - good luck with your disease management programs and keep an eye out for those diseases!

Treatment and rate per 1000 sq ft	Spray Volume (gal)	% LDS		
		29-Apr	3-May	20-Jun
Untreated control		31.7	30.8	40.0
Heritage 50WG 0.4 oz	2	36.7	35.0	25.8
Heritage 50WG 0.4 oz + Revolution 6.0 fl oz	2	28.3	23.3	2.5
Heritage 50WG 0.4 oz	4	35.0	26.7	18.3
Heritage 50WG 0.4 oz + Revolution 6.0 fl oz	4	33.3	31.7	5.8
Prostar 70WP 4.5 oz	2	31.7	29.2	15.0
Prostar 70WP 4.5 oz + Revolution 6.0 fl oz	2	28.3	28.3	3.3
Prostar 70WP 4.5 oz	4	33.3	27.5	9.2
Prostar 70WP 4.5 oz + Revolution 6.0 fl oz	4	31.7	33.3	2.5
Revolution 6.0 fl oz	2	32.5	28.4	12.1

* Just for the purposes of this article, only data from Heritage and Prostar are shown.

Footnotes

¹ for those "unfamiliar" with Gary Coleman, please see: <http://www.sitcomsonline.com/differentstrokes.html>

² LDS can also be caused by factors such as water deficit, excess thatch, organic material layering, compaction and water quality

³ Revolution was chosen just to simplify the experiment - there are a range of surfactants, some better than others