

the resort was up even though several greens had been badly vandalized and closed, and late summer rains allowed the turf at the municipal course to resume normal growth and appearance.

Oh ye of little faith. The turf doesn't have to be green and soft to survive or provide a playable surface.

Those doing the most complaining typically are at golf courses with circa-1970 irrigation technology while expecting Y2K conditioning. Forget about it. The margin for error with respect to turfgrass water management has become increasingly thin with ever-faster greens and lower heights of cut. Drought conditions quickly highlight the deficiencies in the watering system, and simply cranking up the run times to make up for poor distribution uniformity invariably results in soft, muddy spots where embedded lies, mud on the ball, and no roll are the norm - all in the midst of a drought. This inefficient use of water results in a blatant waste of our most precious resource.

If course operators and players truly are concerned about uniformity and consistency on the golf course, then the irrigation system is the place to start. Modern irrigation control capability, components, and design have greatly improved the ability of golf course superintendents to accurately meet the variable turf water demands. Improved control and coverage also will result in significantly reduced water use over the year. Oh, can't afford to replace your 29-year-old irrigation system? Buck up and find a way to finance replacement of the golf course's most valuable infrastructure item or quit whining and hit the ball. Golf was invented prior to irrigation and has survived most of its life without it. Many would argue it was a better game without it, too.

The USGA is committed to funding research that investigates turfgrass breeding and selection, and management practices that enable reduced water use. We will continue to seek out every alternative to reduce water use and be better stewards, but it

will be much easier if golfers come to support this endeavor. So, this is a plea to the American golfer. Firm and dry conditions promote better and more exciting golf. Brown is beautiful, too!

Listen closely - it's all about the water.

Matt Nelson is an agronomist in the USGA Green Section 5 Northwest Region. Reprinted with permission from: USGA Green Section Record, January-February 2003 issue.

Turf Management in a Certified Audubon Cooperative Sanctuary

By Bobby Wallace

At the Grand Harbor golf courses, we approach pest management with the concept of protecting the environment while keeping a top-grade playing surface for our golfers. We do not treat with preventive applications, only curative. Our policy is to spot-treat affected areas rather than apply to large portions of the course. We use the lowest curative rate and the least problematic chemicals for any particular pest.

BUFFER ZONES FOR LAKE EDGES

We have a protective buffer zone around lake edges where no pesticide spraying or fertilizer application is permitted. Primo, a growth retardant with no water soluble properties, is used to help keep a 5 foot no-mow area that not only achieves a transition zone with a natural look to our lake edges, but helps to absorb any chemicals that might possibly leach towards the water. In addition, we are installing littoral-zone plantings that will filter contaminants, and add wildlife cover, feeding and nesting areas for water birds and small animals such as otters.

FERTILIZATION

Our fertilization program concentrates on slow-release fertilizers and foliar feeding to maximize

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Agronomist/Turfgrass Specialist
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nutrient retention and drastically reduce the possibility of any leaching to any water source.

WATER-USE CONSERVATION

The Grand Harbor site was conceived with a large, scenic, interconnected storm-water lake system. This engineered retention services a high percentage of our irrigation water needs for both the golf courses and the residential areas of our development. We also receive re-use water from Indian River County which is the only supplemental water source besides the lake system for one 18-hole course. Overseeding has been reduced to “tees only” as winter ryegrass uses large amounts of water. We minimize our water use by monitoring soil moisture content and setting our irrigation program accordingly. There is also much hand watering of hot spots and use of wetting agents for mounds and other features which are historically troublesome.

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FERTILIZATION

We concentrate on slow-release fertilizers and foliar feeding to maximize nutrient retention and drastically reduce the possibility of leaching to any water source. We also monitor the weather and postpone product spread any time there is a probability of rain. We comply with the “Best Practices” standards in all formulations and applications.

- Bobby Wallace



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GCSAA Releases Results of First Golf Course Environmental Profile

***Editor's Note:** People and the press often make and repeat claims about how golf courses affect the environment, but previously a centralized and coordinated, easily accessible database has been lacking. There certainly have been peer-reviewed scientific research studies over the years that independently have shown that properly managed turfgrass is not a threat to the environment. This effort by the GCSAA's Environmental Institute for Golf is to capture the overall impact and practices of the entire industry.*

This is the first of four focused surveys addressing components and practices used on golf courses. It covers overall land-use characteristics and environmental stewardship to lay the groundwork for more specific surveys to follow on water, fertilizer and pesticide use.

The water and fertilizer surveys have been completed and are being tallied now for release later this year. The final survey of this first round of baseline data-gathering, pesticide use will be rolled out this month. There will be follow-up surveys at periodic intervals to measure how well golf courses are doing in making environmental improvements.

Here are the summary conclusions excerpted from the first survey on land use and environmental stewardship. It is very revealing and positive, but also sets the stage for more involvement and improvement:

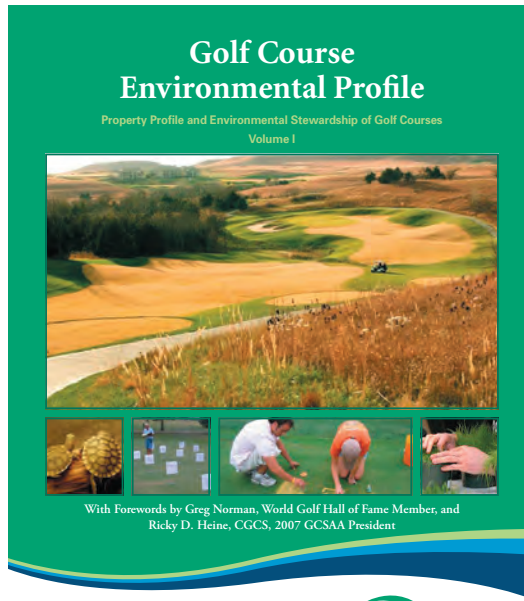
MAINTAINED TURFGRASS

- Contrary to popular belief, the entire golf course is not composed of high-maintenance turfgrass.
- The total acreage of an average 18-hole golf course is 150 acres. Of that total, 100 acres are maintained turfgrass. Fifty-eight acres, the rough and driving range, are not highly maintained areas.

- On most golf courses, the highly maintained turfgrass is dedicated to the three acres of greens and three acres of tees.
- Additionally, some golf courses have highly maintained turfgrass on the fairways, which comprise 30 acres of an average 18-hole golf course.

TURFGRASS SPECIES

- The grass species grown on each



The Environmental Institute for Golf is the philanthropic organization of the Golf Course Superintendents Association of America.

The first of four focused surveys addressing components and practices used on golf courses. Two more surveys are scheduled to be released this month

component of a golf course varies depending on the agronomic region of the country, supporting the principle of growing the best adapted turfgrass species for the particular geographic location.

- Cool-season grasses are grown on 66 percent of all maintained turfgrass acreage.
- Kentucky bluegrass is the most widely grown cool-season grass, found on 23 percent of all maintained

turfgrass acres.

- Warm-season grasses, mainly bermudagrass, are grown on 34 percent of all maintained turfgrass acreage.

NON-TURFGRASS ACREAGE

- The non-turfgrass landscape on golf courses is substantial and can make an important contribution to green space and wildlife habitats for local communities.
- Non-turfgrass landscape of an average 18-hole golf course is 50 acres, including 35 acres of elements such as forests, wetlands, ponds, streams or other specialized habitats.

• Facilities have the opportunity and the responsibility to maintain these areas in a sustainable manner to further enhance the environmental qualities of a golf facility.

ENVIRONMENTAL IMPROVEMENTS

- On average, over the last 10 years, an 18-hole golf course has made five environmental improvements.
- Approximately 29 percent of 18-hole golf courses are involved in a formal, voluntary environmental stewardship program.
- Facilities involved in formal, voluntary environmental programs have made an average of seven improvements to enhance the golf-course environment in that 10-year period.
- The data suggest that such programs are having a positive impact on the golf course environment.

This report provides a review of land use on golf courses. The results of this initial survey establish a baseline that can be compared to data from future surveys to identify change over time and highlight golf course land use to guide golf industry agronomic and environmental initiatives.

A copy of the complete first report on the GCSAA's Environmental Golf Course Environmental Profile can be found at: <http://www.eifg.org/programs/GCRPfullreport.pdf>

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– Current John Deere Customer

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– Current Toro Customer

"I like the adjustable reel speed. I plan on buying this mower."

– Current Toro/John Deere Customer

"Much better than our current walking greens mower. I like the simplicity of the reel and traction drives."

– Current John Deere Customer

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– Current Toro Customer

"I like the floating cutting unit and that the electric reels can run at 2,220 RPM. I plan on buying this mower."

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Lead Not Follow

By Heather Wood

While many golf course operators show concern about environmental issues, they could be doing more to show they're positive contributors. This was the message of members of the golf and resort industry team of the law firm Foley & Lardner LLP, which hosted a Webcast about environmental concerns in the golf industry recently.

While a large percentage of golf course superintendents are concerned about environmental issues that affect golf courses, few are active in the regulation process, they say.

In a recent Foley & Larnder study, 66 percent of superintendents who participated said they currently aren't implementing water-reduction programs, yet the issue of water resources ranked as the top issue facing golf courses today, followed closely by pesticide regulation.

Seventy percent of respondents were "concerned" or "very concerned" about the impact of increased pesticide regulation.

At the same time, only 10 percent of respondents considered themselves "actively involved" in regulatory issues affecting the industry. That number should be easy to increase, says Thomas Maurer, a partner.

"Thinking about environmental issues and trying to deal with them in a proactive way is a win-win situation," he says. "Not only

does it approve appearance and the golf experience, but you minimize environmental impacts, save money and it's to the workers' advantage. Hit low-hanging issues without waiting for the government to get involved."

Maurer and his colleagues detailed steps golf course operators can take on their own courses to record conditions and make improvements where necessary, making it more difficult for regulators to find fault with the industry.

BEST MANAGEMENT PRACTICES

Florida took a proactive step with environmental issues this past January. The state's Department of Environmental Protection published Best Management Practices for quality on Florida golf courses. Most of the practices can be used anywhere in the country, Maurer says. Best Management Practices should be created before the course is built, if possible.

"Monitoring the conditions of the course before you start is great," Maurer says. "You can see how it's doing before the course is built versus after."

The plan covers elements including drainage, play area design and naturalizing nonplay areas, wildlife management, water quality and maintenance facilities.

Other BMPs Maurer outlined include:

- Nutrition and fertilization: Make sure the turf-grasses have the essential

nutrients and analyze the fertilizer types used;

- Cultural practices: Monitor mowing and blend it with the right amount of aerification and other cultivation practices;

- Lake and aquatic plant management: Weigh the benefits of lakes (water hazards, aesthetics, irrigation, storm water treatment) with the negatives (sedimentation, nuisance vegetation, littoral zones)

- Pest management: Practice integrated pest management, keep up with the latest regulations, keep records of applications, handle and store pesticides properly; and

- Maintenance operations: Make a plan and monitor fueling, equipment washing and waste handling.

ENVIRONMENTAL DUE DILIGENCE

Completing an environmental assessment might be required, especially for courses that are up for sale, Maurer says. The process is based on the regulations that came from the Environmental Protection Agency's Standards and Practices for All Appropriate Inquiries, now known as All Appropriate Inquiry.

The Phase I Environmental Site Assessment is focused on potential contamination issues involved with pesticides or maintenance procedures. A new buyer would be responsible for cleaning up any problems if they ever come to light,

Maurer says. If it is determined that there potentially are contamination issues, the next step – Phase II – is to test the soil to determine if there really is a problem.

Also, document the course's water source and make sure the course has a permit to use it.

Another factor to consider is the buildings on site. If they're older, conduct tests to find out they contain asbestos or lead-based paint, Maurer says.

WATER USE

A golf course superintendent who leaves a job at a course in the Eastern United States to take a job at a course in a Western state will have to learn a new set of water usage rules. There are two different doctrines regarding water use, says Matt Riopelle, who was a summer associate. The Western states follow "prior appropriation" guidelines. A core component is the "beneficial use" rule.

"California says the use of potable water on a golf course is not beneficial if another source is available," Riopelle says.

The right to a water source is simply stated as "first in time, first in right," which means first come, first served. The story is different in the Eastern states, where water isn't as scarce. Riparian rights mean that land ownership results in rights to the water. The riparian right is regulated by requiring a reasonable use of water on the property.

An increasing number of courses are using reclaimed or recycled water in the East and the West, and that number will only grow as water becomes scarcer and more courses are being required by law to switch from potable water sources, says senior counsel Wayne Rosenbaum. California law requires that golf courses use recycled water if it's available.

Unlike potable water, most contracts for recycled water require a facility to take a given amount of water per day or month.

"In planning a golf course, you will need to talk to a water purveyor in terms of the quality of the water provided to decide on utilization and irrigation

timing," Rosenbaum says.

Superintendents will have to think about whether people will come in contact with the water to determine the quality needed, Rosenbaum says. They also should think about how turfgrass management techniques might have to change when the course transitions to recycled water. More frequent water and soil testing will need to be conducted.

Also, the irrigation system likely will need be retrofitted and more pumping systems might be needed. The system should be checked for clogged sprinkler heads, which is more likely to occur with reclaimed water.

To ensure water isn't leeching into the ground-

water supply, monitor the groundwater before and after incorporating recycled water.

FIFRA

Reviewing the components of the Federal Insecticide, Fungicide and Rodenticide Act can protect the course against penalties, which can include having pesticides confiscated, says associate Julie Solmer, who addressed issues related to pesticide management and residual pesticide contamination.

Check for state or local laws. Some states might have their own use rules in addition to FIFRA, Solmer says. In Florida, there's a state law governing irrigation systems that are used to

apply pesticides.

Minimum-risk pesticides, including castor oil, citronella, garlic, linseed oil and white pepper, are exempt.

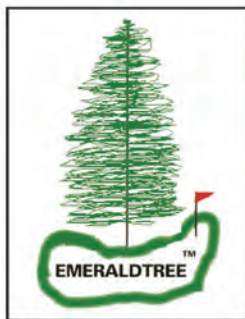
The pesticide must be used in a manner consistent with the label.

Pesticides can only be applied by or under direct supervision of a certified applicator.

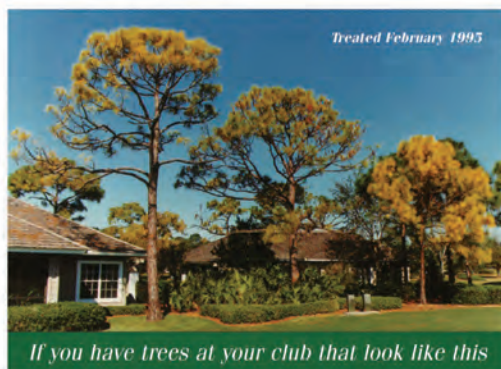
Commercial applicators shown to be in "knowing" violation of the law could face penalties of \$25,000 for each offense or one year in prison. Both the violator and the employer can be held criminally liable, Solmer says.

This article was reprinted with permission from Golf Course Industry Magazine.

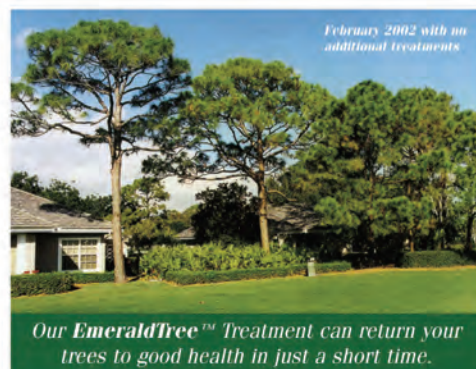
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PHOTO TO THE EDITOR



**Timing
is
Everything**

This photo shows exactly why they call the osprey a “fish hawk. Submitted by Joe Hubbard.

LETTER TO THE EDITOR

Proud of Friends' Professionalism

Joel,

Just wanted to drop you line after spending the last 18 months in and out of the Dominican Republic, and I had an opportunity to read the The Florida Green and see you are still at it.

What I like about the magazine is that there are many friends mentioned and that they are all doing great stuff for the business and the fact that your magazine recognizes their feats.

As you know I once was in the profession and have worked with the likes of Phinny, Matt Taylor, Bob Wagner, Jimbo Rawlings, Glen Klauk and countless others.

I just wanted to say how proud I am of the golf industry professionals that take our work to a higher level and constantly work

at making the golf course a better place for the environment and better conditions for all.

Stefan L. Masiak
SENIOR DESIGNER
FAZIO GOLF

Steve,

The rewarding part of my job is getting feedback from readers like yourself and from telling the stories of the people you mentioned and those countless others over the years. It was fun and educational working with you on the Disney Osprey Ridge project – omigosh – 16 years ago. They say time flies when you’re having fun, maybe that’s why it’s whizzing by.

Keep in touch and please share those positive environmental contributions of some of your new projects so we can all continue to learn how to do it better.

Joel

You, Me and Planet Earth



AS I SEE IT
By JIM WALKER

Save the whales, save the snails, save the trees, save the bees. In the 150 years since the Industrial Revolution, man has managed to all but destroy the environment in which he lives.

Never in the history of

our profession has there been more pressure to be prudent with our pesticide and fertilizer applications and Best Management Practices are the standard operating procedures.

Now, this is a very good thing, and don’t get the wrong idea about where I go from here.

But, sadly, I think it is too little too late. Let’s also remember that what golf puts on the ground is just 1 percent of the problem and homeowners, industry, farmers and Mother Nature herself are dumping the other 99 percent.

Industrial pollution and vehicle emissions have created holes in the ozone layer at the North and South Poles of our planet, and the ice packs are melting at an alarming rate.

Governments across the world are meeting, eating, and retreating to solve the problem.

We are telling South American countries to stop cutting down their forests, despite the fact we cut all of ours down 50 years ago. I’m on board, you shove off.

Oil is nearly \$100 a barrel and the USA and all the other major players in the world can’t get enough, and can’t burn it up fast enough in our vehicles, factories, and electric generating plants.

I say we are starting to see the beginning of the end. It may take a few hundred years, but the end of civilization as we know it is at hand.

Only the pompous, arrogance of man can come up with the mantra that we are now going to save the world. Well, I’ve got a

hot news flash for you. The planet isn't going anywhere; we are.

The human species is nothing more than a dead-end biological mutation destined for extinction by its own hand. It will be the first time in the history of our planet that the species at the top of the food chain did itself in.

And you know, it's probably about time for us to check out. All we care about are our SUVs, Bluetooth phones, laptops... our text-messaging, bottled-water-drinking, multi-tasking existence, feeding each other to the alligators and hoping they will eat us last.

We pay athletes millions of dollars a year to play

games for our enjoyment while we pay our teachers a wage just above the poverty level and the news media can only tell us about which celebrity is sleeping with whom, or the big wreck on the Interstate, or the innocent kid killed in a drive-by shooting. They cover hurricanes, tornadoes, earthquakes, and forest fires with timely precision, and remind us we have now spent almost \$500 billion on the war in Iraq.

In retrospect, you wonder why the planet let man evolve to the point that he has. The age-old question: Why are we here? One answer comes to mind – plastic! The earth wanted plastic and couldn't make it for itself. That's why we are

here — to make plastic?


Well, the earth is finished with us now. It has plastic and is probably sorry it does. The planet will shake us off like a bad case of fleas and begin to heal itself. I hope you don't think the planet perceives man as a threat to its existence. Man has been here 50,000 years and the planet two billion. Planet Earth is not afraid of us. Ask the people of the Gulf Coast if they felt like they were a threat to the planet the day Katrina came to visit.

In the meantime, golf course superintendents will give 100 percent effort to use in a prudent and safe manner their 1 percent of the earth's pesticides and fertilizers, and make

the world a safer place for the Haagen-Dazs-eating, Docker-wearing, and Volvo-driving environmentalists.

Doesn't it just amaze you that the industry which contributes so little to the earth's pollution problems has been singled out as one of the biggest offenders? Everywhere you go, and everyone you talk to says: "Those damn golf courses are ruining the world."

I guess it's easier to pick on the little guy and let the homeowners, industrialists and farmers go free to continue their evil, polluting ways. I just have one more thing to say: Google, Ipod, MP3, You Tube, Xbox, and GPS at the end of the day. This is Captain Jim. Over and out.



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GREEN SIDE UP BY JOEL JACKSON, CGCS

Ordinance 'Exemptions' Don't Mean 'Free Pass'

Golf courses have been very fortunate in the first round of local ordinances that have been passed this year. Beginning with Sanibel Island and Sarasota County – and other entities that have adopted similar versions of those two – golf courses are usually listed in a section titled “Exemptions.”

But don't stop reading there.

Because what “Exemption” means is that golf courses are exempt from the rules that have been put in place for fertilizing home lawns. They are not exempt however from adhering to some sort of nutrient-management guidelines. Those guidelines are contained in the Best Management Practices for Enhancing Water Quality on Florida Golf Courses (BMPs). The Golf BMP manual was published in January and has been sent to every golf course for which the FGCSA has an address. If you don't have one, give us a call.

There are specific limits on the amount of nitrogen and phosphorous that can be applied per application and per year, based on the north, central and southern climatic zones in Florida. These limits were based on Dr. Jerry Sartain's

research over the years at the University of Florida. His recommendations give a pretty good range of nutrient amounts, but of course each site has its specific needs. If special needs arise, you must document the soil and/or tissue test results that indicate you need to apply more than the amount allowable in the BMPs.

This means keeping accurate and complete sample records. If there is a fish kill or an algae bloom that gets someone's attention and the fertilizer police or local environmental protection agency comes knocking, you had better have your BMPs in order and not just gathering dust on the bookshelf.

The state and local governments are serious about addressing the possible impacts of nutrient leaching and runoff from fertilizer use. We can argue 'til the cows come home on whether the nutrients applied correctly to turfgrass ever leave the site in amounts that could do any harm to the environment. Non-point sources are hard to identify.

The N and P in your golf course ponds might be coming from the streets and storm drains in the

development surrounding your golf course. Or is it from your own fertilizer and fertigation operations? Do you observe reasonable setbacks from water bodies when spreading fertilizer or do you get as close to the lake as you can?

Check out the BMP sections that talk about applying fertilizer and about lake management. The city or county is holding you to those BMPs. They are not giving you a free pass to conduct business as fits your whim. They are no longer voluntary guidelines when they have been cited in a local law or ordinance.

I suggest you take a serious look at the checklist in the back of the BMP manual and begin to check off the things you are already doing and get a head start in figuring out your BMP scorecard and thinking about those practical, affordable things you can do, or verify that you are doing them already.

Folks, this issue isn't going away. Once the state fertilizer rule is written and adopted by the Legislature, many more cities and counties will likely enact that rule as their fertilizer ordinance. The goal of the Fertilizer Task Force is to have one consistent, statewide rule so businesses can operate efficiently across jurisdictional lines.

There will still be contentious times ahead as some of the early ordinances, while based primarily on science and BMPs, still have unscientific clauses like summertime “black-out” periods that say no fertilizer containing N and P can be

applied. No feeding during the growing season isn't logical from an agronomic point of view, but proponents equate rainfall with certain fertilizer runoff. Unfortunately, it may be up to a court to decide down the road.

Don't be surprised if, in the not-too-distant future, we are not asked to sign up or pledge to follow the BMPs as a matter of course to demonstrate environmental responsibility. Some industries like the Forestry Association have had BMPs for many years now and they do an annual survey to see how many people are abiding by their BMPs.

As I said, the environmental issue isn't going away and we must come up with a practical, rational and fair way to document the golf course industry's willing participation in efforts to manage our golf courses in a responsible way. We took more than two years to hammer out the Golf BMP Manual to create reasonable, science-based guidelines for golf course maintenance operations that would satisfy agronomic, economic and political requirements.

Now is the time for everyone to really start walking the talk. Effective BMPs are evolving guidelines based on the best and newest science available. If your course wants to stay in business and be competitive in this era of all things green and sustainable, remember the BMP Manual isn't a free pass, it's the How-To book of the future.