

Tired of losing in the court of public opinion? In *Golfdom*'s court, golf actually gets a fair trial.

> BY ANTHONY PIOPPI, John Walsh and Anthony Williams

ILLUSTRATION BY DAN ANDREASEN

TRIA



IT HAPPENED AGAIN just last month.

In an article about golf courses in *Fast Company*, the editors couldn't resist the easy target, describing golf as "water-guzzling" and "pesticide-laden" in a headline. The irony is, if readers got past the headline, they would have discovered that the article was mostly about the positive things that courses are doing for the environment these days.

It's almost comical how golf is unfairly chastised. It's like the old professional wrestling shtick: As soon as the referee turns his back, that's when the good guy gets hit with the folding chair.

But in our world, it's not the wrestler who's getting smacked with the chair; it's us.

This month, *Golfdom* challenges the court of public opinion with our best defense professionally trained golf course experts. We asked superintendents to respond to some of the industry's most common accusations. We might not have access to a slick lawyer, but our experts — *Golfdom*'s readers — know a thing or two about defending themselves.



OPENING ARGUMENT

Your honor, making the opening argument on behalf of the turf industry is the president of the Georgia GCSA as well as the 2011 Environmental Communicator of the Year, **Anthony L. Williams**, Certified Golf Course Superintendent, Certified Grounds Manager, and the director of grounds at the Stone Mountain (Ga.) Golf Club.

ENVIRONMENTAL stewardship is the oldest tradition in golf.

The first superintendent, Old Tom Morris, was famous for his golf course designs and maintenance practices that allowed for the game of golf to be played in concert with the natural lay of the land. Those organic beginnings in Scotland have sustained a deep and ongoing environmental heritage that is embraced by the modern golf course manager now more than ever.

Despite golf's roots in stewardship, some people still cling to a stereotype that emerged several decades ago. Some golf properties were seen as wasters of water and liberal applicators of all types of chemicals. The general perception was one bad apple does spoil the whole bunch, forever.

That dated and biased view of golf has left an impression that even the latest science and hard facts have a hard time changing. It is all too common to hear the generalization "Golf courses use chemicals, and superintendents don't care about the environment."

But something I've learned: Those same people are willing to visit a golf course or watch a presentation to learn more about the facts. When presented with the facts, they often respond, "I never knew that golf course superintendents were so well trained and produced such amazing environmental programs."

Superintendents are breaking new ground in areas such as water quality and conservation, habitat management, integrated pest/plant management, advocacy and sustainability, communicating that information to a diverse group of stakeholders. Exact information on water and chemical use at the local course is now as common as the presence of tees and greens.

The best evidence of superintendents' commitment to keeping Mother Nature happy can be found in their active membership and influence in many environmental organizations. Audubon International has helped improve and certify environmental stewardship on golf courses for over 20 years. Through the Audubon Cooperative Sanctuary Program for Golf Courses, hundreds of member clubs have developed long-term sustainable environmental practices and embarked on a variety of environmental case studies aimed at proving the value of their environmental programs.

The GCSAA has no problem proving and showcasing the great environmental work done by its more than 19,000 members. It sponsors the latest in continuing education aimed at environmental stewardship. The GCSAA's Environmental Management Program offers six specializations



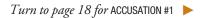
in different aspects of stewardship.

The Environmental Institute for Golf (EIFG) is the philanthropic sister organization of the GCSAA. It's committed to making golf more compatible with nature. One of the most valuable services supported by the EIFG is the Edge, an online archive of some of the best environmental case studies relating to golf courses (www.eifg.org).

DESPITE GOLF'S ROOTS IN STEWARDSHIP, SOME PEOPLE STILL CLING TO A STEREO-TYPE THAT EMERGED SEVERAL DECADES AGO.

When it comes to environmental stewardship, modern superintendents are part student, part seasoned professional. Their education comes from some of the latest university research and a comprehensive curriculum in studies ranging from agronomy, economics and of course, stewardship. Superintendents see a bigger ecosystem that is inter-connected through millions of smaller parts, and they know that each action impacts the whole system. They see daily how their courses clean air and water, trap carbon, provide habitat, create jobs, conduct research and, yes, even allow the game of golf to be played.

Superintendents view their profession as a calling, not just a job. They remember the past, work for today and plan for the future. That's why, when people are willing to listen, they learn that superintendents are advocates not only for the game of golf, but also for the precious land on which it is played. ■





Local wildlife hates the golf course.

THE DEFENSE CALLS TO THE STAND Stan George, CGCS, Prairie Dunes Country Club, Hutchinson, Kan.

ACCUSATION #1

REBUTTAL

WHEN A PERSON claims that wildlife hates a golf course, there's a good chance that person has never set foot on a tee, green or fairway.

In fact, it would be impossible to find a golf course where wildlife not only survives, but also thrives, sometimes to the chagrin of the superintendent and members. How many tens of thousands of dollars have been spent attempting to get a flock of Canada Geese to move to a location other than the middle of a fairway?

In urban areas, golf courses often provide the only habitat for various creatures that crawl, walk, fly and swim. It would be hard to disprove, for instance, that there is more wildlife at the 36-hole Pelham/Split Rock Golf Courses than in the rest of New York City's Bronx, which is dominated by pavement and cement.

The real questions might be, however, how much does wildlife like golf courses, and is there a way to measure that? In one instance, both questions were answered.

A golf course versus a state park

In the early 1990s, two graduate biology students from Tabor College in Hillsboro, Kan., performed one such study at Prairie Dunes Country Club. They measured the number of species and amount found on the 400acre Prairie Dunes property located in Hutchinson, Kan., as compared to the nearby 1,100-acre Sand Hills State Park.

"It was very, very similar," said longtime Prairie Dunes superintendent Stan George of the conclusions. "The numbers and species were the same as the 1,100 acres of pristine prairie."

The result surprised many, includ-

ing George, especially considering Sand Hills State Park is almost three times the size of the golf course. Also, with a golf course, a swimming pool, tennis courts and dining options, Prairie Dunes is a hub of activity.

"You would have thought there was too much traffic, but it had little effect," George said.

He was pleased with what the researchers unearthed.

"It was gratifying and interesting, as well," George said.

Maintaining the prairie

Prairie Dunes and Sand Hills both have an abundance of raccoons, skunks, deer, voles and birds. And although bobcats are rarely seen there, their tracks are frequently spotted.

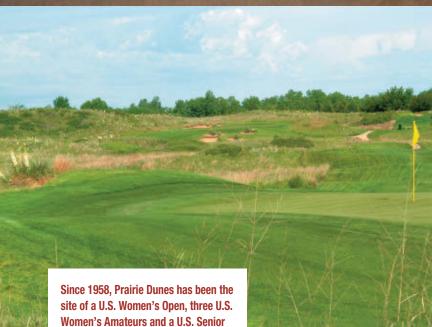
Part of the success in keeping wildlife on the Prairie Dunes property can be attributed to the fact that the golf holes are routed around a large central area of grass-covered dunes.

"We have a corridor within the golf course where wildlife doesn't just pass through, but stays," George said.

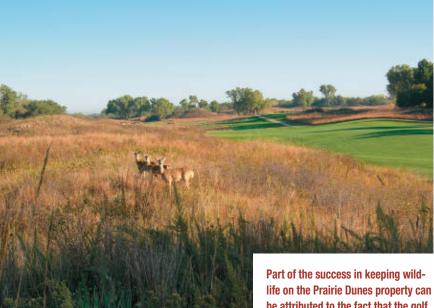
He added that open space does not necessarily mean wildlife finds it a suitable place to reside. George's home, not too far from Prairie Dunes, abuts 80 acres of untouched land, yet he does not see nearly the amount of wildlife in his "back yard" as what he sees living on the course.

Since 1958, the club has been the

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Open, among many other tournaments.



site of a U.S. Women's Open, three U.S. Women's Amateurs, a Curtis Cup, a U.S. Mid-Amateur, a U.S. Men's Senior Amateur, a U.S. Senior Open and five Trans-Miss Men's Amateurs. It also has hosted the Big 12 Conference Championship nine times, most recently this year.

One reason, if not the reason, Prairie Dunes is a favorite locale for wildlife is the battle against in-

be attributed to the fact that the golf holes are routed around a large central area of grass-covered dunes.

vasive woody species that George has been waging there since arriving at the course nearly 20 years ago. Cedar, dogwoods and cottonwoods are three of his most aggressive and threatening foes. Ornamentals, such as Virginia Creepers, have made their way from homes in the area onto the golf course.

George said that once man settled on the prairie and established

population centers, prairie fires were extinguished and no longer burned unfettered, resulting in an altered landscape. The elimination of the fires led, in part, to much of the prairie changing from grass to trees, not just on the golf course but throughout the region.

"You take away fire and the woodys win," George said.

Through a pattern of mowing, spraying and burning, George has converted much of the dunes area back into grasslands. With controlled fire, George said, trees such as immature dogwoods are damaged, if not killed. Also, fire "gets rid of the heavy mat of old growth and undergrowth," he added, pointing out that the charcoal and ash act as fertilizer for the grasses.

One surprising outcome of the removal of the heavy, low-lying living and dead vegetation was the arrival of more birds, especially predators like hawks that could more easily prey on food sources such as voles and mice.

Longtime Prairie Dunes assistant Jim Campbell is the one responsible, George says, for devising the plan that, if followed, will, "tip the scale to grasses."

According to George, one full season of mowing, burning and spraying will be enough for the grasses to establish dominance.

Asked to respond to the accusation that wildlife doesn't like golf courses in light of the research at Prairie Dunes, George had a succinct response.

"It wouldn't hold up in court," he said.

— Anthony Pioppi

Turn to page 20 for ACCUSATION #2

Golf courses are careless with water use.

Turf on Trial

THE DEFENSE CALLS TO THE STAND

Jim Brown, CGCS, Newport Dunes Golf Club on Mustang Island in Port Aransas, Texas transports it back to the reservoir tank.

The system, new to the golf industry, came out of Florida, where people were using it to feed wells. Newport Dunes, which doesn't sit near an aquifer, has a water table between its clay and sand levels. The pipes, set 40 feet apart, are set at the top of where the water table is. Drainage from the greens also feeds into the pipes, collecting in the reservoir.

"We're putting back 150,000 gallons a day," Brown says.

Precision irrigation

Working toward greater efficiency, Brown set standard daily irrigation practices 20 percent below daily evapotranspiration

(ET). He started at 5 percent and worked his way toward 25 percent. But he saw desiccation of the plant, so he is settling at 20. For example, if the weather station records daily ET of 0.25, Brown will apply 0.20 inches of water per station on that given day's irrigation cycle.

Because certain areas of the course have features, soil conditions or exposure to excessive wind and solar radiation, the standard had to be adjusted to provide adequate soil moisture for the plant. Brown's crew adjusts station percentages to achieve consistent moisture content, which is different throughout the course:

greens – daily average of 10 percent volume of water content (v/wc); **tees** – daily average of 18 percent v/wc; and

"I was surprised by what I learned with this new system and a different approach," Jim Brown says. "If I can save an additional 10 percent more water, it's a substantial savings." Pictured here is the No. 12 fairway at Newport Dunes GC.



REBUTTAL

EVERYTHING'S BIGGER in Texas, including droughts.

"This is the biggest drought Texas has ever seen," says Jim Brown, CGCS, of Newport Dunes Golf Club on Mustang Island in Port Aransas. "Water is keen on the public's mind."

It's also keen on Brown's mind, and with a 5-year-old irrigation system, he's able to water the Arnold Palmer signature course, which is managed by KemperSports, precisely. The precision has helped lower Brown's water bill from \$150,000 annually during grow-in to \$115,000 (the electrical portion of that is between \$42,000 and \$48,000).

"The golf course industry is so far ahead of residential and commercial providers and users when it comes to efficient water use, yet they're picking on their biggest supporters," he says.

At the source

Newport Dunes, which is Audubon certified, has three irrigation sources that feed into an 800,000-gallon concrete reservoir. The first is an effluent supply from a wastewater plant that provides between 350,000 and 800,000 gallons per day. The second is a freshwater lake that can provide as much as 500,000 gallons a day.

The third is a horizontal reclamation system providing between 50,000 and 150,000 gallons a day. The system captures water that moves past the root zone into a series of pipes located throughout the property and then mechanically **fairways** – daily average of 24 percent v/wc.

To establish moisture parameters, Brown takes daily water content readings, visually observes the plant's response to various moisture contents and verifies course conditions remain firm.

The club achieved water efficiency initially through a joint participation with the USGA. The two paired up to evaluate how accurately remote sensor technology measures moisture and salt content. The program allows Brown

to monitor the 3- and 6-inch soil profiles in real time. Because of limited capital improvement funds, Brown couldn't put the entire course on the program and sensor technology, so he purchased a handheld moisture probe that provides data in v/wc. The crew records daily greens and tees measurements.

On the fairways, Brown has compiled maps identifying features such as mounds and low spots and records the

TOTAL WATER SAVINGS INITIALLY EQUALED 200,000 GALLONS A DAY AND NOW TREND TOWARD 230,000 GALLONS A DAY DURING THE PRIME GROWING MONTHS.

data every other day. From the collection of data and run time adjustments, he's been able to stay within 10 percent of the moisture content parameters. Brown's water usage stays close to 20 percent less than daily ET. Since initiating the program, total water usage was reduced 20 percent initially and is 23 percent of estimated use from ET.

Total water savings initially equaled 200,000 gallons a day and now trend toward 230,000 gallons a day during the prime growing months (May

through October). The daily water savings account for a seasonal reduction of 24 million gallons. Using the sensor during winter has reduced consumption by 12 million more gallons, for a total annual water savings of 36 million gallons.

— John Walsh

Turn to page 22 for ACCUSATION #3

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Turf on Trial

ACCUSATION #3

Golf courses live by their own set of environmental rules.

ACCUSATION #1

THE DEFENSE CALLS TO THE STAND Chris Tritabaugh, Golf Course Superintendent, Northland Country Club, Duluth, Minn.

REBUTTAL

CHRIS TRITABAUGH is in his fifth year as superintendent at Northland Country Club, a Donald Ross layout nationally regarded as a top-100 classic golf course and in the top five of Minnesota golf courses.

Tritabaugh says that in his five years at the course, the entity that polices his use of pesticides, the Minnesota Department of Agriculture, has never visited to check on his spraying records or to see if those who apply the chemicals are licensed (they are).

But if the MDA did visit, it'd like what it saw.

At Northland, inquiring minds would discover that Tritabaugh has drastically reduced the amount of pesticides he uses, especially on the fairways, where he has not made an application in three years. The cool northern Minnesota nights help keep disease pressure low, yet Tritabaugh still pushes the envelope by not applying pesticides. "I want to see how far we can go," Tritabaugh said, "and I've taken it right to the edge."

Tritabaugh also notes that at most golf courses, the person making the decision about the use of chemicals is formally educated in the field.

Tritabaugh said that if the MDA monitored golf courses more frequently it would probably help the image of the industry and add credence to that fact that superintendents are stewards of the environment and that courses do not have the perceived detrimental impact.

"It could maybe, maybe, put to rest the misunderstandings about golf courses," he said. "We could say, rather than take a look at our records, here is what the MDA audits show."

Minnesota only regulates "restricted-use" chemicals, and the definition is less stringent than other states. Many of the pesticides that golf courses apply do not fall under the "restricted use" definition. For the past few years Tritabaugh had not been putting down chemicals that fell under that umbrella. (This year an ant problem has forced his hand to add one such pesticide.)

That doesn't mean Tritabaugh or any other superintendent can purchase restricted-use pesticides at will. In order for a person to buy them, a proper permit has to be presented.

Tritabaugh said the MDA may not visit golf courses regularly because they have other priorities.

"They have so much effort they have to put into agriculture, they look at us as a small part of what they regulate," Tritabaugh said.

According to the MDA, in 2007, the most recent year for which there are records, Minnesota had 19,267,018 acres of harvested cropland. The Minnesota Golf Association said that there are just shy of 600 golf courses in the state, including ninehole facilities.



ONE 200-ACRE FARM FIELD RECEIVES CHEMICAL INPUTS OVER THE ENTIRE AREA, WHILE A 200-ACRE GOLF COURSE MIGHT BE APPLYING CHEMICALS TO NO MORE THAN 40 ACRES.

By comparison, one 200acre farm field receives chemical inputs over the entire area, while a 200-acre golf course might be applying chemicals to no more than 40 acres. Many farms in Minnesota are hundreds of acres in size.

So while it might be true that in some places big brother doesn't come knocking on the gates of private country clubs often, that doesn't mean what goes on behind those gates is unscrupulous. In fact, if more people knew what was going on at places like Northland CC, they'd see that expert turf managers are handling the land they are entrusted with as carefully and respectfully as possible.

> — Anthony Pioppi Turn to page 24 for ACCUSATION #4



At Northland Country Club in Duluth, Minn., superintendent Chris Tritabaugh hasn't made an application of pesticides to his fairways in three years. "I want to see how far we can go," he says.



AFTER

JOIN THE CLUBS!

BEFORE

^{CC} SonicSolutions is a major component of our pond management strategy. For the past several years our irrigation pond has stayed algae free. Using SonicSolutions has helped us obtain certification status with the Audubon Cooperative Sanctuary Program.²⁹ *Matt Ceplo, Superintendent, Rockland Country Club, Sparkill, NY*

- ^{CC} Within a week or two after start up, the algae in the pond died. Since then, the pond has remained algae free. It is now the cleanest of our six ponds without the use of any chemical algaecides! ³⁹ Michael J. Rohwer, Superintendent, Shadowridge Country Club, Vista, CA
- ^{CC}I installed the SonicSolutions units when my ponds already had algae in them. I was completely surprised how quickly they killed the algae and helped to significantly lower my chlorophyll levels! ³⁹ Gonzalo Vargas, Coco Beach Golf Resort, Rio Grande, Puerto Rico
- ^{CC}We are extremely happy with our SonicSolutions devices. Our algae problem was quite extreme and the results were both immediate and long lasting.²²

Bob Gibson, Snow Creek Golf Course, Mammoth Lakes, CA

^{CC} SonicSolutions was not only the most environmentally friendly way to rid our pond of algae, it was also the most cost-effective too.²⁹ *Phillip J. White, Crofton Country Club, Crofton, MD*

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ACCUSATION #4

Golf courses are rife with harmful pesticides.

THE DEFENSE CALLS TO THE STAND

Kyle Sweet, CGCS, The Sanctuary Golf Club on Sanibel Island in Florida and Greg Lyman, GCSAA's director, environmental programs of slow- and quick-release products throughout the year, regulating soluble nitrogen rates to no more than halfpound rates. From January to August of 2011, nitrogen amounts for tees, fairways and greens were 3 pounds of nitrogen per 1,000 square feet.

"We have sandy soils, bad water, heavy shade and limited air movement, and we're still using less nitrogen to provide an improved playing surface," Sweet says.

Bye bye pests

Using pesticides in a wildlife refuge is controversial. But Sanctuary can use a limited amount of insecticides to combat pests such as mole crickets. To keep

the mole cricket population down, Sweet slit-applies Chipco Choice (fipronil) on tees and fairways each spring. He uses Top Choice on greens for residual control and treats roughs with Orthene (acephate) in active mole cricket areas.

"I don't think the mole crickets like our soil as much as others because it's filled with seashells." Sweet says.

Worms, however, love Sanctuary's soil so much they have become the club's nemesis. Sanctuary's wooded milieu provides a haven for tropical sod webworm and armyworm adults, which in summer can create generations

of larvae. Although Sanctuary has the OK to use Orthene, Conserve and B. thuringiensis for worm



At the Sanctuary Golf Club superintendent Kyle Sweet (left) and IPM manager Jason Craft have found success with a program that not only meets the course's needs, but also satisfies the needs of the surrounding wildlife refuge.

REBUTTAL

THE SANCTUARY Golf Club on Sanibel Island, Fla., is surrounded by one of the most visited national wildlife refuges in the country. The private club strikes a balance between a world-class Audubon Cooperative Sanctuary golf course and Mother Nature. Maintenance expectations are high even though the neighboring J.N. "Ding" Darling National Wildlife Refuge dictates what chemical products are applied on the course.

"When there's a new product we want to use, the refuge says 'yeah' or 'nay," says Kyle Sweet, CGCS.

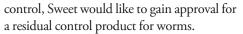
As superintendent, Sweet is faced with a dual challenge: maintaining the health of the refuge's habitat while complying with Sanibel's golf course fertilizer and lake management recommendations.

It's all about the grass

Six years ago, Sanctuary Golf Club was battling a nasty cocktail of salty irrigation water, residual salts in island soils, and damaging salt spray during high winds. Consequently, the club converted from bermudagrass to paspalum. Now, Sanctuary features seashore paspalum everywhere.

"Where we are, you're going to have salt problems no matter what," Sweet says. "We average just less than 40 inches of rain a year, which is typically much less than the mainland. More salts and less rain led us to paspalum."

Since switching to paspalum, Sweet has cut nitrogen use in half for tees and fairways and reduced the nitrogen needed for greens by 70 percent. He uses a combination



Nematodes also pose a problem for Sweet, who says he has gone so far as to remove soil and replace it with high quality topsoil to abolish his nematode problem. "Solid tine aerification and topdressing with topsoil into nematode affected areas also has worked pretty well," Sweet says. Although he admits, "We don't have a good solution for nematodes at this time."

Overblown argument

The effort that Sweet has to go through to overcome pests may be a special case, but Greg Lyman, GCSAA's director of environmental programs, says fundamentally superintendents are careful with pesticides.

"The position that pesticides are overused or misused? It's overblown," he says. "(Pesticides) are part of the control process, but superintendents are well versed in the use of many other techniques to grow a healthy turf plant."

There's also a financial reason to be smart with pesticides.

"The products are expensive," Lyman says. "It doesn't make sense to use them illogically."

— John Walsh



CLOSING ARGUMENT

By Anthony L. Williams, CGCS, CGM



TIMES ARE TOUGH. Some industries that lack the environmental foundations that exist within the golf industry may feel it necessary to ignore environmental responsibilities and cut parts of the business without evaluating the total impact of those cuts or seeking other options.

Not golf.

There is no room for thoughtless cuts and a lack of planning or vision in the successful golf course operation.

Golf is a business. But it's a business deeply tied to land. Protecting the land — and therefore the environment — is the first objective of a golf operation. When times are tough financially and cuts are mandated, golf courses make decisions based on property-specific data gathered from their programs, ensuring that the operation protects its natural resources but sustains itself with financial prudence. It's the cornerstone of achieving true sustainability within a golf operation, or any business, for that matter.

Golf is connected to the ecosystem that the course is built upon and the temptation to damage the larger asset to gain a short-term profit is just that, a temptation. The golf course superintendent sees the larger "green" picture. A superintendent knows the links between ecomonic strength and environmental responsibility. With years of experience, property knowledge and ongoing case studies, golf course operations are able to be financially responsive without harming the environment.

The evidence clearly points to the exceptional environmental stewardship that exists on golf courses. Plants and wildlife are flourishing with expanded nest box and naturalization programs.

Everyone benefits from the cleaner air and water generated by these profitable green businesses otherwise known as golf courses. Now is the time to validate and vindicate the golf industry and its environmental story.

So let go of your preconceived notions of golf courses and their effect on the environment. Open your mind to the new age of golf course maintenance. Visit a course and take a close look. I'm willing to bet you'll like what you see.

And we'd be honored if you'd give us that chance.