

alluvial deposits. They're mainly comprised of silty clay loam with some silty clay. They're well drained, and the subsoil is slightly permeable.

Benfield, Clime and Tully series soils are classified as hydrologic soil group C, which account for 68 percent of the watershed. Alluvial lands and Ivan soils are classified as B (11 percent), and Breaks and Dwight as D (21 percent). Because of their textures (erodibility factor $K=0.37$) and locations in the watershed, Alluvial lands, Benfield and Tully are the most erosion-prone soils in the watershed.

As part of the Flint Hills rangeland in northeastern Kansas, the Little Kitten Creek watershed had a pasture cover land use before construction of the typical mixture of tall grasses and woods with around 89 percent grasslands, 11 percent woodlands and negligible residential lands. Construction of the golf course started in July 1998. By early 1999, alteration of land cover had attained its peak when about 20 percent of the total native cover was removed. By April 2000, the course was completed and disturbed lands were covered with grasses.

Climates in northeast Kansas are controlled by the movement of frontal air masses over the open inland plains topography. Seasonal temperature and precipitation extremes are common. During the summer, temperatures can reach 100 F or higher. Winter months are characterized by influxes of cold, dry polar air with temperatures as low as -4 F. About 70 percent of the average annual precipitation of 34 inches falls during the warm growing season, April through September. Only 10 percent of the average annual precipitation falls as rain during the relatively dry months of December through February.

MATERIAL AND METHODS

To monitor the environmental impacts before construction (pasture cover), during construction and during early operation of the golf course, three stream gauging stations were set up in the watershed. Two stations, N16 (north of hole 16) and N14 (north of hole 14), were located on the north side of the area to monitor the quality of water entering the golf course property. South Little Kitten was located at the



ISCO 3700 portable samplers (top photo) and a sampling station.

south boundary of the golf course to monitor the quality of water leaving the golf course property.

ISCO 3700 portable samplers were set up at each of the three stations to collect water samples during runoff events (top photo above). Liquid detectors actuated the samplers at the beginning of a runoff event, and the samplers collected grab samples at a predetermined time interval of one or two hours (bottom photo above). Field sampling conditions didn't allow inclusion of sample replicates as part of the study. Collecting runoff samples from almost all storms would produce higher constituent concentrations than a sampling method that collected samples every three months, for example. Thus, these sampling methods would capture the periods with the highest concentrations.

Raw samples were stored in a freezer for future laboratory tests. Laboratory analyses were conducted at the soil testing lab in the department of agronomy at Kansas State University. Water samples were analyzed for total nitrogen, total phosphorus, $\text{NH}_4\text{-N}$, $\text{NO}_3\text{-N}$, ortho-P, total suspended solids and total dissolved solids. Field parameters measured at the time of sampling included specific conductivity, hydrogen-ion activity (pH), water temperature and dissolved oxygen concentration. Results discussed in the following section focus on total nitrogen and total phosphorus.

Background water quality monitoring (pasture cover stage) was conducted before the start of golf course construction in July 1998. Water quality at this period was used as a baseline to evaluate the impact of construction and early operation of Colbert Hills Golf Course. Water quality monitoring also was conducted during the construction period, from August 1998 (when construction work officially started) to April 2000 (when the golf course officially opened for play). Monitoring of water quality during early operation of the golf course was conducted from May 2000 through October 2006.

WATER QUALITY PASTURE COVER

The water quality of unpolluted water bodies is dependent on the local geological, biological and climatological conditions. These conditions control the mineral quality, ion balances, and biological cycles of the water body. To preserve the quality of the aquatic environment, the natural balances should be maintained. Background quality knowledge is necessary to assess human impacts.

Construction. The loss of land's natural coverage promotes rapid and significant erosion of soil surface, thus enhancing the loss of nutrients in runoff during and after rainfall events. Change in land use can highly increase the concentration of nutrients, such as nitrogen and phosphorus, in the natural streams.

Early operation. It was hypothesized that stabilization of the nutrient concentration in natural streams would be a slow process. Thus, monitoring of the early operation period was important to determine how long it would take

the watershed streams to recover back to native stage-like conditions.

Watershed conditions changed during the three different stages of management the land experienced from 1998 to 2006. The area had pasture cover until 1998. There was a dramatic effect on the stability of the soil structure when the natural soil cover was removed. The high potential for runoff and contaminant transport to surface waters, upon the occurrence of rain events, is significantly higher under such conditions.

Once golf course turf has been established, the potential of surface water contamination through soil erosion and runoff decreases significantly. However, the application of fertilizer could represent a source of increasing nutrient transport to surrounding streams.

RESULTS

Water quality changes in Little Kitten watershed are affected by total nitrogen and total phospho-

rus. Mean values and standard deviations were used to describe the trend of total nitrogen and total phosphorus changes through the three different studied stages. Weather conditions (dry years versus wet seasons) increased the variability of the data collected. However, the mean values were obtained using all collected data points for the correspondent watershed stage. Standard deviations represent the variability of the data.

TOTAL NITROGEN

On average, 1.3 mg/L of total nitrogen was in Little Kitten Creek as it entered the golf course property during the eight years of study. The averaged value didn't vary significantly during the 1998 to 2006 early operation period. During the pasture cover stage, the total nitrogen concentration in the surface water entering and exiting the watershed was similar and not different statistically. This information is important to demonstrate that beyond the boundaries of

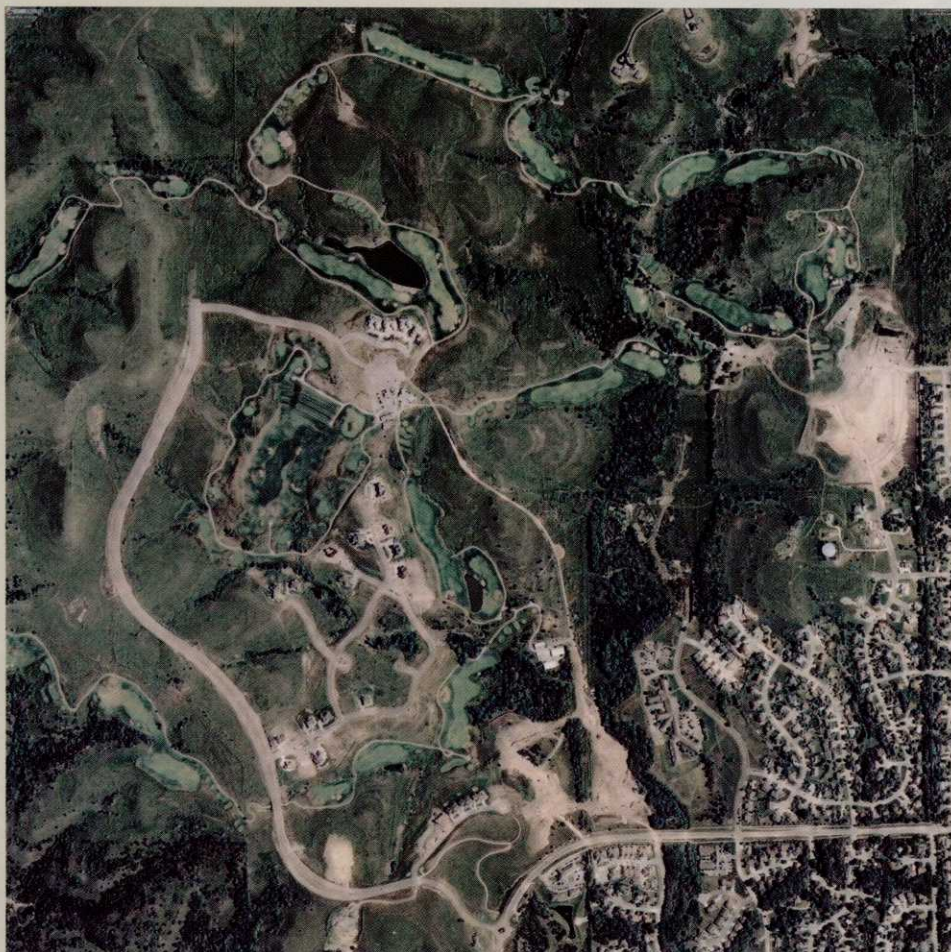
Little Kitten Creek watershed there was no significant change in soil management that affected the incoming total nitrogen. However, the outflow data showed a different response than the total nitrogen concentration in the inflow.

Once the construction stage started, the measured total nitrogen concentration increased significantly in the surface water because of runoff, especially when heavy rainfall events occurred. An average of 4.0 mg/L total nitrogen was determined during the years of construction. The total nitrogen measured values exhibited significant variation. Importance of this result is that the concentration of total nitrogen in the stream during construction is sensitive to soil management and weather condition.

The average concentration of total nitrogen in the outflow during the early operation stage (May 2000 through October 2006) was observed to be smaller than that observed during the construction stage. An average concentration of 2.4 mg/L total nitrogen was determined. The standard deviation indicated the variation magnitude of the total nitrogen concentrations in the surface water decreased once soil vegetation cover was reestablished. During the first six years of the golf course operation, a reduction of the total nitrogen concentration was observed. However, the early operation total nitrogen concentration was about double that of the pasture cover total nitrogen value. Establishment of turfgrass required fertilization, which was a potential source of total nitrogen in the watershed.

TOTAL PHOSPHORUS

The total phosphorus in the inflow didn't change significantly throughout this study. The inflow average total phosphorus values for the pasture cover, construction and early operation stages were 0.49, 0.26 and 0.30 mg/L, respectively. During the pasture cover stage, an average value of 0.45 mg/L total phosphorus exited the watershed. Removal of soil vegetation cover increased the average value to 0.87 mg/L total phosphorus. Increase of total phosphorus concentration in surface water was because of erosion and runoff enhanced rain events, and lack of surface vegetation during the construction period.



An aerial photo of Little Kitten Creek watershed and Colbert Hills Golf Course area after construction.

Similar to what was observed for total nitrogen, the concentration of total phosphorus in the water decreased during the early stage operation. Vegetation reestablished on the surface was the main cause of the reduction of total phosphorus concentrations in the surface water. The recovery of the surface cover reduced erosion of soil particles and reduced transport of nutrients to surface water streams.

Concentrations of total nitrogen and total phosphorus were found significantly greater during golf course construction than during the pasture stage. The increase of eroded soils carried particle-bound nitrogen and phosphorus to the stream. Inflow and outflow total-nitrogen-

to-total-phosphorus ratios of the averages, at the three studied stages, were always lower than 8, which indicated limiting nitrogen availability in the streams.

The study of nitrogen and phosphorus in surface water is extremely important because excessive amounts of both nutrients in natural streams lead to eutrophication problems in lakes and water bodies. This study indicates that, if course management is operated adequately, the surface water quality in a golf course-dominated watershed can be returned back to its original conditions. **GCI**

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water resources engineering in the department of civil engineering at Kansas State University in Manhattan. Yunsheng Su, Ph.D., P.E., D.WRE., is an engineer for the Watershed Protection District in the county of Ventura, Calif. Travis Heier is a project engineer for HDR in Forsyth, Mo. Jamie Klein is a project manager at Terracon Consultants in Columbia, Mo. Jeff Holste is a project intern engineer at JR Engineering in Colorado Springs. Monica Paloma, Ph.D., is an assistant professor in the civil engineering department at Cal Poly University in Pomona, Calif.

Credit: USGA Turfgrass and Environmental Research Online 7(18):1-9.

IMPACT ON THE BUSINESS

Manage your image with proactive research

By Dean Baker, CGCS, and Buckley Brockmann, assistant superintendent, Kinston Country Club

Kinston (N.C.) Country Club is an 18-hole, traditional-style golf course – established in 1924 – that has undergone expansion, renovation and layout changes throughout the years. In 1999, the 130-acre course became a Certified Audubon Cooperative Sanctuary.

While the club was seeking certification, there was a focus in the news and state legislature about pollutants in the nearby Neuse River. The club's staff was concerned about a possible negative image as a pollution source because the club is in the Neuse River basin and uses fertilizers.

Audubon certification was a step in the right direction for the club's image as an environmental steward, but certification didn't provide documentation that would support the course's maintenance practices that protect and ensure water quality. That was about to change.

In 1998, the golf course maintenance staff implemented a proactive water monitoring practice to monitor surface water surrounding the course. Along two edges of the golf course, city storm drain water and surface water combine and flow through a drainage ditch almost 10 feet wide and 8 feet deep. On an average day, there's about a foot of water in the ditch. During a heavy rain, water may rise to 6 feet. Ultimately, this water drains into a creek that drains into the Neuse River.

The maintenance staff collected water samples at two sites – a point where the water enters the course at the start of the drainage ditch and a point where the water exits the course before entering the creek. All samples were sent

to North Carolina State University for analysis. Early test results showed the water leaving the course seemed to contain lower concentrations of nitrogen compared to the water entering the course. Therefore, the disciplined and methodical collection of the water samples appeared to be worthwhile; however, the water monitoring program didn't provide long-term data to prove the golf course was filtering water in the ditch.

Fortunately, the crop science department at N.C. State also was concerned about water quality and, specifically, the effects of nitrate leaching – the movement of nitrates through the soil. Many forms of nitrogen are present on a golf course, and depending on the circumstances, some may be considered a water pollutant. A form of nitrogen that receives the primary attention for environmental impacts is nitrate. High levels of nitrate may have environmental impacts such as promoting algae growth. Research had been done about the effects of nitrate leaching in soils that included cool-season turfgrasses, but little research had been done in an environment that supported mostly warm-season varieties of turfgrass.

N.C. State scientists intended to conduct research on nitrate leaching in soils associated with warm-season turfgrass. They wanted an active, real-world environment in which to conduct research. One of two golf courses they chose was Kinston Country Club because of the water quality monitoring already started by the club's staff.

First, N.C. State researchers installed devices called lysimeters around the course to measure the soil's nutrient levels near grass root zones. They also drilled shallow wells to measure levels

in the groundwater. Additionally, the research team and Kinston's staff continued to sample the surface water surrounding the course. The idea was that the water moving through and under the golf course's grounds would be contributing to the water in the ditch and Neuse River.

N.C. State scientists found the water leaving the golf course contained lower nitrate levels than the water entering the course. The reduction of nitrate levels was partly because of the groundwater seeping into the ditch from the golf course and diluting the surface water in the ditch. Also, vegetation left to grow taller, thicker and in a more natural state along the edges of the ditch served as a riparian buffer strip and helped to filter runoff from rain and irrigation.

These natural areas and buffer strips created during the Audubon certification process helped the environment by creating a habitat and removing pollutants before they reached the groundwater and surface water. Having the findings of a well-recognized and highly respected university show the course wasn't hurting the environment was invaluable.

Ultimately, the proactive approach Kinston staff took helped change local public opinion of the golf course. A little extra work brought N.C. State to the club and added some legitimacy to the club's claim that it wasn't polluting, but actually helping to improve water quality.

On top of that, some important research took place, and Kinston staff established a great working relationship with N.C. State. It feels good to know that our efforts helped change the perception of our profession and contributed to meaningful research. **GCI**

BY MARISA PALMIERI

Into the wild

Todd Voss shares his approach for controlling nuisance wildlife at Double Eagle Golf Course

Situated on land that abuts a 4,630-acre state park, Double Eagle Golf Course – with 450 acres of its own – is in a position to have more than enough animals here and there, says golf course superintendent Todd Voss.

Voss has been at the 18-hole private club in Galena, Ohio, since it opened 1991. He started as an assistant and then took the reins as superintendent in 1996.

In central Ohio, where Double Eagle is located, geese, deer, rabbits and small animals, such as raccoons and skunks, top the list of wildlife concerns. The most severe wildlife-

control situation Voss handled was almost a decade ago when skunks infiltrated the facility and folded up the grass like carpet, he says.

Because skunks eat insects, many golf courses have this problem in the fall, when skunks hunt for grubs.

Voss hired licensed professional trappers, who had to prove the pests were causing damage and obtain permits before eradicating the skunks. This service, which is offered by professional trappers and some traditional pest control companies, starts at about \$100 per pest. Voss said the trappers removed about 50 animals from Double Eagle.

Though it was a pricey service and the turf damage occurred only on the out-of-play areas near the clubhouse, it had the potential to develop into a bigger problem for the members and guests staying at the club's overnight cottages.

"The last thing you want is a guest to run into a skunk at night," Voss says.

GEESE BUSTERS

Other wildlife aren't as threatening to guests but can wreak havoc on a golf course. When it comes to turf, geese are enemy No. 1, Voss says. Geese cause all kinds of problems, includ-

Double Eagle Golf Course deals with all kinds of wildlife, thanks to its location next to a 4,630-acre state park. Photo: Todd Voss



ing turf damage caused by nipping, aesthetic concerns associated with droppings and slippery walkways.

Voss has a two-pronged strategy to control geese, which strike the hardest in the spring. First is his pair of Golden Retrievers, Bunker and Nittany (Voss is a Penn State grad).

"I'm lucky enough to live on property, so I can get them any time there's a problem," he says of the two dogs, who are Voss's pets first and the course's geese chasers second.

His second tool to combat geese is a gun similar to a starter's pistol that launches "crackers," which scare off problem birds when they explode about 100 feet down range.

Again, living on the course is an asset, Voss says, joking that firing crackers is his full-time job in the spring. He points out this method wouldn't work for facilities surrounded by homes, which Double Eagle isn't.

OH DEER

Deer are another animal that primarily damage out-of-play areas, feasting on ornamental shrubs and trees during the winter and perennial and annual gardens in the spring. Though the turf doesn't sustain much deer damage aside from occasional footprints, deer are a problem for Voss because he maintains the facility's landscaped areas, too. Out of an operating budget in the \$500,000 to \$1-million range, Voss spends about \$5,200 on landscaping each year.

"Deer are definitely one of our challenges because we have so many and because they eat everything," he says.

Throughout the years, Voss has learned to deter deer by maintenance practices, careful plant selection and applying repellents.

Because leaves, stems and buds of woody plants are a staple for deer, Voss makes sure all trees are trimmed up to 5 feet.

"Anything that's low to the ground gets munched on quite a bit," Voss says.

He's right. Deer consume between 2 and 4 percent of their body weight in dry matter daily, according to the nonprofit Internet Center for Wildlife Damage Management. Bucks consume the greatest amount in the spring – as much as 6.4 pounds of dry food per day. Does' greatest daily food consumption occurs in early fall, just before breeding season.

Starting in November, when Double Eagle closes every year, the lack of people on the course and reduced maintenance activities al-

low free access for the deer, Voss says.

By the time spring rolls around, Voss is selective when it comes to the annuals he plants in the flower beds. And perennial selection now is much different from when the course opened almost two decades ago.

"We stay away from tiger lilies," Voss says. "Forget hydrangeas and tulips."

Rabbits, too, eat many of the same flowers as deer. Voss has learned to plant later than he used to and to select annuals that don't bloom until May. Impatiens and snapdragons are two annuals that remain on his list, after ruling out many others throughout the years.

In addition to avoiding deer-attracting plant material, Voss protects Double Eagle's landscaped areas with winter applications of a repellent product called Liquid Fence Deer & Rabbit Repellent.

"It's one of the only products I've tried aside from some of the cayenne pepper products, but if you keep it sprayed on, the deer stay off," Voss says.

His staff makes about seven or eight applications – in backpack sprayers – during the winter.

"It takes a good four hours to spray everything," Voss says, noting the staff covers all the shrubs and beds in the areas around the clubhouse, guest cottages and the main entrance.

In addition to what Voss describes as a slight rotten egg smell (the product is made of about 25 percent putrescent egg solids), the downside is reapplication is necessary after it rains and every several weeks.

"I go through a lot of it, but I'm smart enough to buy it during the auction at the Ohio Turfgrass Conference and Show every year," he says, estimating he acquires the product at about 50 percent off.

The product is listed around \$125 per gallon of concentrate on Liquid Fence's Web site.

"Every year I get about 10 gallons, and that's enough to last me for the year," Voss says.

Voss, like most superintendents, does what he can to rid a facility of nuisance wildlife while maintaining the natural beauty of a course – one of the reasons so many people are attracted to the game of golf.

"The bottom line is, as suburbia keeps growing, homes and courses are on what used to be woodlands, so there are going to be animals," he says. "It's just finding that balance. We're in the same boat as everyone else." GCI

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WATCH AND LEARN

Many golf course superintendents are entering the “off season” and seeking opportunities for continuing education. As you assess the options for local, state or national technical conferences and gather information to keep current on topics that impact your operation, don’t overlook the opportunity to volunteer at a professional golf event in your region during 2009.

You may ask, “Why should I take time away from my golf course in mid-season to help someone else?” Consider the following:

1. By attending a professional event, you’ll be able to experience the massive effort required, involving extra equipment, personnel, course closings, enhanced staffing, additional financing, tournament budgets and posttournament cleanup regimes. This is an opportunity to document the scope necessary to accomplish certain high-maintenance tasks through pictures, videos, daily notes and idea exchanges. After several days of volunteering, you’ll be able to bring this information back to club committees and present a logical debate about why your course can or can’t provide similar conditioning levels based on budget, staffing and equipment realities.

2. Not everyone can volunteer for the Masters or U.S. Open Championship. However, you’ll see and learn as much, if not more, by attending a PGA Tour, LPGA Tour or Nationwide Tour event in your region. The preparation is as thorough with upgraded conditioning demands and similar daily tournament set-up procedures. You may be able to spend time talking with the host golf course superintendent during down times between preparation segments.

3. Beyond personal education, your goal should be to gather information to improve operations, course conditioning, labor delegation, equipment maintenance, practice area preparation and fostering relationships with club committees and outside contractors. Arrive at the golf course each day with a multipoint outline of questions

for the host mechanic, irrigation technician, spray technician, associate golf course superintendents and on-course operation personnel or vendors. Don’t hesitate to ask why, who, how or where. Asking pertinent questions will garner great ideas, tips and options that may improve your operation, budgets, spray and fertility programs, irrigation philosophy and turfgrass cultural practices. Watch and listen to those who have been through previous tournament experiences.

... don’t overlook the opportunity to **volunteer** at a professional golf event in your region during 2009.

4. Every golf course has Rules of Golf issues and questions that go unanswered, such as proper golf course marking of water hazards, out-of-bounds issues, abnormal ground conditions, penalty strokes and other weird situations that may be debated within the grill room. Observing Rules of Golf experts in the field may provide answers or opinions that can resolve an ongoing concern at your facility. The best time to approach on-course officials is during practice rounds.

5. Volunteering at tournaments is an opportunity for your staff. For assistants and interns, this should be viewed as a means to meet, greet and network with more experienced professionals. If you’re sending staff to an event, do so with a specific assignment to gather information that will assist your operation or their self-improvement. Emphasize that just sitting in and listening to the “mature” golf course superintendent will provide valuable educational opportunities, future connections and enhance the “we” and team concepts of coordinating your operation for a major event.

6. Planning and organizing is the most difficult task for any host club and superintendent. Though not on the scale of a major championship or PGA Tour competition, your club’s annual invitational event will be enhanced by witnessing what’s involved. Golf course setup, fairway contouring, hole locations, bunker preparation, primary rough heights, equipment placement and maintenance logistics are all areas worthy of observation. Take pictures or video to document the maintenance plan of the host superintendent and, inevitably, your own event will benefit.

7. You can learn from the host facility before the event. If it’s close to your facility and the host superintendent is changing or rebuilding a certain feature of his golf course, such as teeing grounds, sand bunkers, drainage, tree removal or putting greens expansion or regrassing, make a point to visit during various stages to record and observe what’s happening. This experience will be valuable if your golf course is contemplating on-course changes.

8. Usually the sponsoring organization, be it the USGA, LPGA or PGA Tour, will have a field representative visit periodically to monitor the progression of the course changes or to review course agronomic conditioning. This is another opportunity to ask questions, take pictures and learn firsthand the current technology for accomplishing these projects.

If you use your tournament volunteer experience to your advantage, it may enhance the reputation you have within your own club. Additionally, you’ll be able to accept greater career challenges, improve your job security, develop quality training methods for staff and use your own time more wisely.

By experiencing golf course preparation at a higher level, you’ll be prepared to communicate what’s involved to prepare a golf course for the world’s best players and how it can enhance your own golf course to your membership. Through professional documentation, indicate the thoroughness of your operation for your member’s daily enjoyment. **GCI**

Terry Buchen, CGCS, MG, is president of Golf Agronomy International. He's a 38-year, life member of the GCSAA. He can be reached at terrybuchen@earthlink.net.

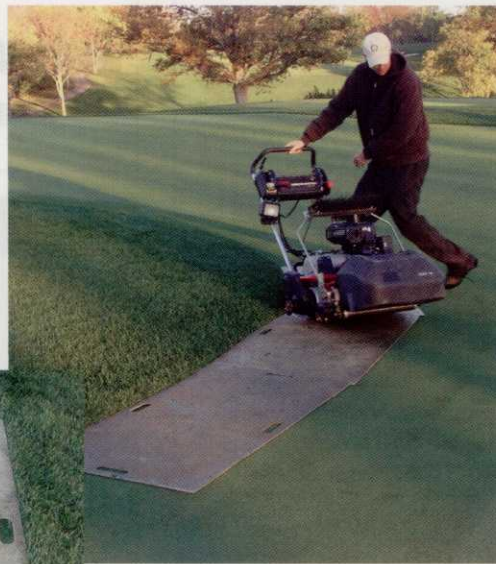


Collar protection

The Muirfield Village Golf Club in Dublin, Ohio, home of the Memorial Tournament on the PGA Tour, prides itself on near-perfect turfgrass and playing conditions. Paul B. Latshaw, MSM, CGCS, director of grounds operations, and Jake Gargas, golf course superintendent, thought of a unique way to help keep the collars in excellent condition.

When operators are cutting grass with the Toro Greensmaster Flex 18 walk-behind greensmowers, they turn the mowers on the collars, which are covered with three portable pieces of HDPE plastic sheets placed end to end to protect the collar from wear and tear.

The 1/4-inch-thick plastic sheets are 60 inches long by 30 inches wide. There are four "handles" that are cut out with an electric jigsaw for the operator to move them easily from one end to the other as the greens are mowed. The plastic sheets, which cost less than \$50 each, are available from a kitchen countertop store. The time it took to cut out the four handles is about 15 minutes each.



Travels With Terry

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares helpful ideas relating to maintenance equipment from the golf course superintendents he visits – as well as a few ideas of his own – with timely photos and captions that explore the changing world of golf course management.

Trailer modifications

Donnie Adkins, president of Daniels, W.Va.-based Aspen Corp.'s golf division, his brother Ronnie, vice president, and Lenzie Bennett, shop foreman, modified a Pronovost model 5103S three-sided dump trailer for more efficient use on fairway and rough turf. Their modification to the trailer, which has a 10,000-pound capacity, included:

- Adding larger, special-order turf tires and wheels;
- Modifying the tandem axle beams to double their strength;
- Adding 4-inch lift kits to raise the dump body from rubbing on the larger tires; and
- Lowering the trailer hitch about 8 inches to compensate for the trailer body being about 12 inches higher than before.

The 4-inch lift kit, tandem axle strengthening and trailer hitch were prefabricated in-house using scrap and new metal at their shop.

Adkins and Bennett have a patent pending on their modification ideas.

The total cost for the parts, supplies and labor was about \$5,000. **GCI**



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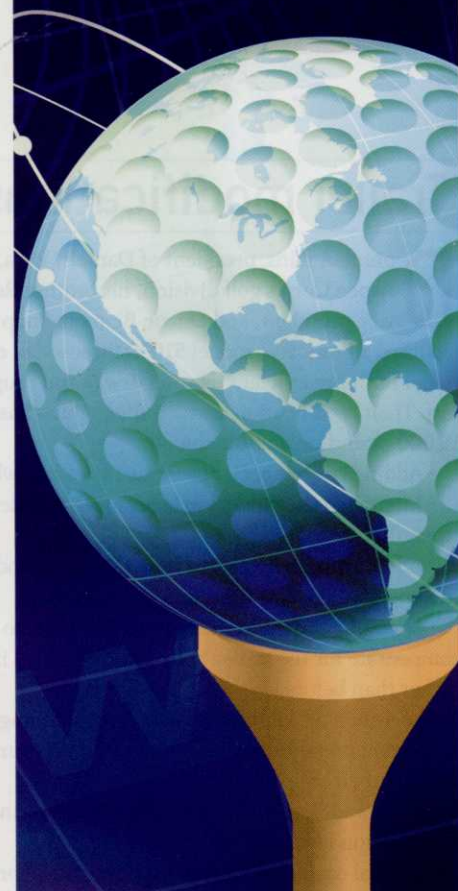
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SUPERINTENDENT PROFILE

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tion and a down economy hurt them as well as the rest of us. We do so much that benefits the community economically. We have a wonderful caddy program, for example. That's a huge contribution to the community. I hope we get the ear of the politicians, and the golf industry can continue to thrive.

How do you balance your environmental reputation with the real world?

We often want to fantasize about being "organic," but for now it's a bit of a pipe dream. Some green things work, some don't. To go completely organic, managing a highly manicured monoculture such as turf, in a disease-prone area like Chicago isn't realistic. Snake oils and witches' brews are way too common. We've tried most of them, and it's discouraging. But, at least you learn what doesn't work. With some, their effectiveness relies on integration with other inputs and cultural practices supporting the holistic approach. But there are no silver bullets.

Your name comes up a lot when companies talk about who's testing their products.

When someone approaches me to test something, I ask who's already done the university research. We're not researchers, we conduct on-site evaluations. That's a different standard. We've learned to be cautious because we've learned the hard way about how people position what we do and say. Now, whenever I want to do



Dinelli implemented North Shore Country Club's first wildflower garden in 1981.

a formal study, I try to pull in local researchers to be part of it. People like Derek Settle, Ph.D., at Chicago District Golf Association, Tom Voigt, Ph.D., and Bruce Branham, Ph.D., at University of Illinois and other professionals. It gives us a much higher comfort level.

How do you want to be remembered?

As someone who was approachable, helpful and hopefully open-minded but driven by science.

Final thoughts?

Despite everything, the environmental move-

ment is alive and well. Water, climate change and energy will drive much public concern. As a society, we've been lulled to sleep for the past few years. It's like the energy crisis. We had an early warning in the 1970s and then kind of forgot when gas got cheap again. This is chapter two of the environmental movement, and golf will occupy some people's concerns. Our job is to get them to listen to science. It needs to be part of every superintendent's job. Short-term solutions are out. We need to think long term and about the big picture if we're going to sustain the great business we're in. **GCI**



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CHICKEN LITTLE MENTALITY

My Blackberry – yes, I’ve finally given in and become one of those information-crazed, PDA-toting dweebs – buzzed incessantly the night of November 4 and the morning of November 5.

As people from throughout the golf industry responded to the outcome of the presidential election, the messages, texts and e-mails ranged from “I’m moving to Canada!” to “I can’t believe we’ve become a socialist nation!” to “It’s the end of the world as we know it.” But, the main theme was, “This is going to be terrible for the golf business.”

I was tempted to reply, “Oh my, the sky is falling!” and hit “send all” on my cursed communication device to all of the Chicken Littles out there.

But, I resisted that temptation because, like many of you, this isn’t my first rodeo. I’ve been through this before, and we’ll probably go through it again.

My friends – as John McCain is overly fond of saying – let me tell you one thing about the outcome of the 2008 presidential election that I well and truly know for sure: The sky isn’t falling on the golf industry.

First, let me be clear: The sky is most definitely sagging over American business in general. It isn’t going to be pretty for anybody for a few years. But it’s largely understood that no president is bigger than a global economic cycle. Basically, we’re all in the same boat for a while no matter who’s the captain.

I don’t think the Obama administration will be better for small to mid-sized businesses, such as golf courses. There’s no question for-profit operators will see tax increases of some kind or at least a rollback of Bush’s tax cuts. But I don’t believe we’re any more likely than anyone else to be on the White House’s hit list for more regulation or special disfavor. It’s not as if golf – like the insurance or petroleum industries – actively opposed his candidacy through political action committees or other institutional efforts. Hell, even if we wanted to try something like that, we’re just

not organized enough to do it.

The bottom line is that this new administration, most assuredly, has bigger fish to fry than us. Also, remember the industry brouhaha that accompanied Bill Clinton’s election in 1992? His liberal agenda supposedly included putting Al Gore in charge of the EPA and letting him eliminate pesticides and tightly regulate “resource wasters,” such as golf. Gee, you know what? That didn’t happen. Instead, golf grew dramatically, and we made inroads with the government and began to carve out a reputation as relatively good environmental citizens.

... no president is bigger than a global economic cycle. Basically, we’re all in the same boat for a while no matter who’s the captain.



My sense is that, like Clinton, Obama may be more of a centrist when it comes to business and the environment. I hope I’m right. The real risk comes from Congress, but that’s another column for another time.

The other thing that’s happened since 1992 is that we’ve made significant improvements in our environmental performance. Most of the chemistry used now is superior, less toxic and much less mobile or persistent. Water management technology

and “smart” genetically improved turf-grasses also have advanced tremendously. We’ve fixed almost all of the gaping holes in our eco-friendly story, and that will serve us well.

Recently, I interviewed the chief of EPA’s nonpointsource pollution division regarding its concerns about the green industry. Pesticides and fertilizers barely figured in the conversation. Their main problem with lawns is they tend to be part of nonpermeable developments. In short, rainfall hits them, runs off in massive quantities and erodes streams and watersheds without having a chance to recharge groundwater. Guess what golf courses tend to do really well? Act as big-ass recharge basins for groundwater.

And, to give credit where it’s due, the GCSAA has done a pretty fair job of staying in front of the EPA and other regulators with environmentally positive messages. When the time comes for the administration to start pointing out good guys and bad guys, I’m pretty sure we’ll make the “nice” list instead of the “naughty” list.

Finally, the allied golf community has, at long last, gotten off its collective keister and started promoting the remarkable economic impact of our industry on Capitol Hill. The PGA Tour, PGA of America, GCSAA and other organizations seemed to have a good first round earlier this year with the National Golf Day concept.

And, despite other reservations I have about Tour commissioner Tim Finchem, he’s the defacto leader of this effort, and you can’t deny he knows his way around the Beltway. After all, that’s where he got his start before landing in the commish job.

So, it may be a bit dreary and overcast right now, but the sky remains plenty high above our heads. But remember, Chicken Little got bonked on the head by an acorn or two in that old kid’s story. I fully expect acorns from local and state governments will continue to drop unexpectedly on our noggins from time to time. The risk to us is that we worry so much about the danger from the sky, we forget about those acorns that could still knock us silly if we’re not paying attention. **GCI**