Oakfield Golf Club is located in Nova Scotia, along the east coast of Canada. Nova Scotia is known for its freshwater lakes and beautiful shorelines and with a total population of 940,000, the province is relatively undeveloped. Oakfield Golf and Country Club is fortunate to be surrounded by wooded areas and is adjacent to the province’s largest freshwater lake.

As managers of the property we attempt to integrate our management program with the abundant wildlife in the area. While making decisions as turf managers, the consideration of the environment and wildlife around us often factors into achieving our goals, whether it be pesticide applications or clipping disposal. Because golf is an outdoor game, and it requires a fair amount of space to play, there will always be a conflict between the flora and fauna and playability.

One of the conflicts that we struggle with on a seasonal basis is the persistance at which Canadian Geese frequent the property. These migratory birds nest along the pond edges of the golf course and remain there until the time comes to fly south. The birds mate for life and form broods that return to the same location to reproduce each year. The young birds, unable to fly, seek shelter in the long grass and open water at night from predators.

During the day the wide-open spaces of the course afford the geese the opportunity to see predators from a distance and the proximity of the ponds allow for easy escape. Add in the lush grass as a food supply and the shade of a willow to rest under, you have the perfect goose-producing environment.

Anyone who works a green space in Southern Canada or the Northern U.S. knows that Canada Geese can create several problems. We’ve seen turf turned over on the greens or tufts ripped out from their ever-present need for food. They track through the freshly raked sand and ruin the work of the bunker squad. The adults are fearless in their protection of the young, honking and hissing at any perceived threat in the area and in some cases, physically attacking grown men with their wings and beaks.

Aside from the intimidation tactics and the reduction in level of playing conditions, the most significant problem caused by the geese is more about what they leave behind. An average goose can produce 1 to 2 pounds of droppings per day. At last count the geese at Oakfield numbered in the eighties, all congregating around two green sites by the water. In one week that adds up to 560 pounds of droppings, left distributed – in oddly well uniformed spacing – on every type of playing surface on the golf course. Like any fecal matter the droppings do have the potential to cause a health issues in humans, more so in environments where contact with the droppings are more likely. Beaches, parks and golf courses are good examples of the types of outdoor spaces where transfer is quite possible and the droppings pose the greatest health risk. In addition to the bacterial issues, the droppings can become dense enough to actually become slippery, an important point when discussing pond edges and tees.

We approached the goose problem like we would with any pest on the golf course; from a cultural point of view. We spent some time gathering information from the Internet about the habits of the geese and how the golf course might look appealing from their point of view. We spoke with Canada Wildlife Service (CWS), a division of Environment Canada, which is the governing body in Canada responsible for gathering information pertaining to wildlife and maintaining wildlife regulations. It seemed as though there were as many schemes and gadgets to rid us of geese as there were geese.

A large portion of the suggestions involved a loud noise to startle the geese, these ranged from predatory sounds to simulated shotgun blasts. While these might work in a public park or beach, loud noises have a tendency to be frowned upon at the golf course.

At one point, I tried blowing a hockey whistle as hard as I could after wading into a group of geese on the 12th hole. They geese were not phased by the intrusion, only pausing briefly to raise their heads before returning to work. The failure was compounded by a golfer on the 13th tee playfully shouting "Offside!"
After much deliberation the “Goose Committee” decided on a three-stage defense and Operation Scarecrow was born.

Our first tactic would be to create a beach head by use of physical barriers at the most likely places of a water invasion. We purchased 600 feet of plastic snow fence that was four feet tall and cut it down to two feet. The fence was placed around the edge of the two ponds where we historically have the largest population of geese. The fence was as close to the edge of the pond as possible and the ground had thawed enough to hammer the stakes in.

The second stage would be to prevent an aerial attack. We purchased three eagle silhouettes and made other flags that were suggested to us from CWS. The eagle silhouettes were mounted on 18 foot pole with a swivel that gave the appearing of “flying”. The flags were made of black material – we used filter cloth – cut into strips 5 feet by 2 feet. Two T-bars are driven into the ground 2 feet apart and the strip of cloth is fastened to the poles using wire ties.

The remaining 3 feet of cloth is left to blow about in the wind. The idea is that from the air the flags look like predators to the geese and therefore not a safe place to land. Both the flags and eagle silhouettes were moved every two weeks so the geese would not get use to them being in the same position.

The final stage was to police the area and chase off any geese from behind the lines.

Everybody got involved. The maintenance staff, the marshals and the members, but the lion’s share was left to Abby, my golden retriever.

When the young were hatched and mobile we discovered we were fighting a losing battle. The snow fences were ineffectual at keeping the geese from getting on shore. They would either go around the end of the 1,200-foot fence; look for a hole underneath or in one case a parent would simply sit on the fence and allow the young to climb over. We used many man hours constantly repairing sections of the snow fence or adding stakes trying to improve the barrier. Once inside the barrier, the geese would of course have a hard time getting out, in effect, corralling them exactly where we didn’t want them. The flags and silhouettes did little to motivate the geese once the young were born.

The only aspect that worked was Abby chasing the geese off into the water. Unfortunately, Abby can only be at the course when I am so the geese became accustomed to my schedule, crowding on to the greens in the evenings.

As the geese grew bigger and began to practice flying, the fences did appear to disperse them about the golf course, but not enough to be effective.

After many man hours of chasing geese off the property and cleaning up droppings – filling up 5-gallon pails three or four times a day – we began to look at more permanent solutions. Under federal law, Canadian Geese are protected as migratory birds. Any alterations to their life cycle, from egg shaking to a cull must be approved and permitted by Canada Wildlife Services. Prior to taking such measures the applicant must have completed a “goose plan” – you must prove that you have attempted to get rid of the geese using alternative methods.

Within days of applying, CWS granted Oakfield a permit to cull the existing flocks on the property. As it turns out the goose population in Canada has increased tenfold in the last 15 years.

In July of 2010, the population was large enough that CWS initiated an early hunt to reduce the numbers before any crop damage could occur, hence the rapid response to our request.

The permit came with a list of regulated methods for dispatching the birds and how to dispose of the carcasses. A detailed report listing the numbers, dates and the manner in which the carcasses were disposed, must be submitted within two weeks of the termination of the permit.

Although our permit allowed us to cull 100 birds, we felt that slowly reducing the population, at a rate of three or four birds a week, would not only reduce the numbers, but also drive the rest from the property.

In the end we successfully removed 17 birds from the property, and reduced the population by roughly 20 percent.

We intend to apply for the permit next year and hopefully continue to keep the numbers at a manageable level. GCI

Adam Fletcher is assistant superintendent at Oakfield Golf and Country Club in Oakfield, Nova Scotia, Canada.
PRODUCT SPOTLIGHT

Air-induction nozzles contain an “inverted water balloon” with an air bubble inside a water droplet. That bubble actually helps with coverage by breaking the droplet apart better upon contact with the plant.

GETTING THE DRIFT

When it comes to being precise with an application, the right nozzle makes all the difference. By Kyle Brown

HOW DOES IT WORK?

The transformation of the nozzle to what they’re using today is huge. Today, you’re hitting the plants at different angles for better coverage. What we’ve seen is great drift control and very good coverage for the fungicides. The controlling factor is the nozzle: the finer the droplet, the more coverage.

A good compromise for that is the air-induction nozzle. The nozzle creates a kind of inverted water balloon, where water is the cover and air is on the inside. They’re still fairly large droplet sizes, but they’re able to splatter and cover the plant. Drift is a huge issue on golf courses: you don’t want to waste money when it drifts onto a non-target site, and golf courses are surrounded by communities. The air-induction helps keep it where it needs to go.

— Dr. Mike Agnew, Syngenta field technical manager

WHITSFORD COUNTRY CLUB

Kris Givens is a new convert to air-induction nozzles. As long as he’s been at the Whitsford Country Club in Exton, Pa., he’s used floodjet or raindrop nozzles to deliver his applications to the 30 acres of sprayable bentgrass fairways.

But recently he’s seen research that has pushed him to make a move.

“Last year I started looking at some of the research that had come out and seeing what other superintendents have been coming up with and I just thought, ‘Wow, those are some impressive numbers,’” says Givens. “Talking about the precision that these things have, getting the droplet to that size and getting even more coverage to hit the plant.”

Air-induction nozzles have been around for a while, but they’ve started to get more attention in the golf market because the technology promises good coverage with almost no drift. Being able to be more precise with fungicide and herbicide applications makes all the difference for a superintendent working with a limited budget and tools.

“The EPA is hitting hard on us,” says Givens. “They’re taking products away and not giving us replacements. Anytime I can lengthen the effectiveness of a product, I’m going to. They say it’s only two or three days, sure, but two or three days on an application, after a couple of applications it becomes six days or so in a month. After two months, that’s a whole application I’ve made up.”

Givens fights against anthracnose, summer patch and fairy ring, and uses mixes made to both combat those threats while providing for his turf. With the air-induction nozzles, he’s making the expensive chemical mixes more effective and specific in targeting around the course.

“I’m hopefully getting longevity out of those sprays,” says Givens.
PRODUCT SPOTLIGHT

“I want to get rid of that fungal pathogen and save some money with these chemicals. When I talk to other superintendents, they’re looking to be able to get a better handle on pathogens too. That’s really what’s driving me more than anything here. Once you make your selection of a chemical, that’s pretty easy now. But it’s all in how you apply it.”

On top of being more precise, the air-induction nozzle provides a little more solid coverage in the form of an air bubble inside the medium-coarse droplet, which bursts upon contact with the plant. Givens has been watching the research, but he prefers to see it in action on the course.

“It’s just math with the researchers, but it’s practicality with superintendents. You’ve got to be able to apply it in the field,” says Givens. “It’s such a science, which is what makes it fun and interesting. It’s getting that coverage with that droplet size with the precision to hit exactly the disease I’m dealing with.”

BENT CREEK COUNTRY CLUB

Superintendent Jim Loke attributes his habit to volunteer parts of his course to being a frustrated superintendent and scientist, waiting to see if new technology lives up to its promise for the golf course industry. It gave him the chance to see air-induction nozzles in action when Dr. Mike Agnew, Syngenta field technical manager, and others tested their effectiveness on the course.

“Anytime I’ve had an opportunity to share with the industry in some capacity, I’ve put my foot forward and volunteered for whatever research is necessary,” says Loke, of Bent Creek Country Club in Lititz, Pa. “About a year before the testing took place, Dr. George Hamilton did some spray pattern testing that really caught my eye. I didn’t realize how efficient some nozzles were and others weren’t for different jobs.”

Loke went with a fairway that had seen its fair share of battles with dollar spot for testing, looking for relationships between the type of nozzle used and the control of dollar spot.

“We’d had tremendous bouts with dollar spot on this fairway,” says Loke. “It’s a very large bentgrass fairway, and we sprayed the daylight out of it.”

They worked with TeeJet to run the tests, checking for changes between floodjet, raindrop and air-induction nozzles, according to Mark DelSantro, who was a territory rep for Syngenta at the time.

“The two objectives were really to look at drift and droplet size and how that affects the fungicide,” says DelSantro. “Covering the plant
in an effective way and reducing drift were really the goals here."

With different nozzles delivering the full range of droplet types, they were able to see which gave the best coverage for the dollar spot fungicide. The results showed that the nozzles he had been using might not be the best choice for the application.

"Many of us at the time were using raindrop nozzles for dollar spot control," says Loke. "Through this process, we discovered we were using the wrong nozzle. There are nozzles that have coarse droplets and nozzles that have fine droplets we had to find out which was the most effective nozzle for the chemical we were using."

Chemicals are generally listed for a specific size of droplet meant to provide the best coverage with the least amount of drift from air movement. In this test, the other nozzles worked well, but the air-induction nozzle worked best overall, says DelSantro.

"The air-induction was much better as far as droplet size," he says. "In its ability to handle all situations, it was the best based on the research. The other nozzles might’ve done a little better, but that x-factor had to do with the wind. The AI was first considering all the varying conditions that a superintendent has to spray in."

Because of the air bubble inside of the droplet, droplets from the air-induction nozzle gave a much more precise application, according to DelSantro. The best setup gives the superintendent multiple nozzles to choose from depending on the chemical to be applied and the situation, but the air-induction nozzle gives solid coverage when dealing with wind.

"A superintendent today probably has two or three nozzles available to them," he says.

"You rotate based on the environmental conditions and what you’re putting out. But drift is the biggest thing. If there’s any type of air movement, you’re going to want to use air-induction, which is going to get you good coverage and efficacy for the product."

For Loke, the drift means more than getting the product exactly where it’s needed: it also means that he keeps it from going where it shouldn’t.

“We’ve got a golf course surrounded by homes, so we have pets and children to worry about,” he says. “The air-induction is good for that environment, when you want to put something down very accurately. It’s good for cost-efficiency, too. When you’re putting down the exact chemical on your exact target, you’re saving money in the long term and being environmentally responsible, too.”

Above: Superintendents use nozzles like these TurboDrop DualFans to get precise coverage on the foliars from multiple angles. Below: Air-induction nozzles produce smaller droplets that handle drift well.

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(MORAGHAN continued from page 14)

LOVE THY MEMBERS. Treat every member the same. It’s probably okay to become friendly with your employers, even have off-course relationships with people you’ve worked for over many years.

However, always keep your eyes and ears open for signs that the end is near:
- An eerie silence befalls the golf course and the friendly associations stop.
- You’re no longer asked to attend board meetings, or your assistant is asked to join you.
- You sit alone in the grill-room.
- You begin hearing about minor issues regarding the course even from your most ardent supporters.
- Even your “friends” begin looking for second opinions.

SPECIAL PROJECTS. Arguably the greatest attribute of a superintendent is a never-say-die attitude. You should be trying to accomplish as much as possible with unrelenting enthusiasm.

However, be wary when the club, owner, or management group begins asking you to take on projects that don’t fall within your area of expertise, jobs like resurfacing the parking lot, re-wheeling the pool, re-fencing around the tennis courts, repairing the clubhouse roof, even undertaking significant tree removal. These tasks will take you away from the golf course, and if course conditions decline, so will your job security.

Tom Landry, the legendary former Dallas Cowboys coach, said to me that being a successful golf course superintendent and football coach is just like being a successful golf course superintendent. In both cases, “you are only as good as your last game.”

Want to get fired? Ignore what your membership is thinking about you. Instead, be smart and you’ll be the one deciding when that last day comes. GCI
PARTING SHOTS

Pat Jones is editorial director and publisher of Golf Course Industry. He can be reached at pjones@gie.net or 216-236-5854.

STEPHEN’S JOURNEY

Over the years, I’ve asked hundreds of superintendents why they stay in this crazy business. Oftentimes, the answer is, “I love to work outside in the sunshine.”

But, we all know the cloudless sky we yearn for is a double-edged sword: the sun gives joy and growth and life... but it can also take it away.

Last month, it took the life of Stephen Best, a Texas golf course superintendent who adored his job, his wife Cheryl and his two young children. He cared about his profession and served as president of the North Texas GCSA. He was a community leader who was named Rotarian of the Year in his hometown of Keller. He was a man of faith for whom church involvement was a rewarding commitment. For fun, he ran marathons.

But he couldn’t outrun skin cancer.

In 2007, Best had a cancerous mole removed from his back and thought he was “clean.” He decided not to do the semi-annual melanoma checks his doctor had suggested. He regretted that. The cancer metastasized and in February 2010 a tumor attacked his brain. He was in a coma for two weeks. When he woke up, his world had changed forever.

For an amazing year and a half, his family, friends, superintendent buddies, church and the team at Sky Creek Ranch GC pulled together around him. Our wonderful pals at the Wee One Foundation helped financially. The support was remarkable and the chemo and radiation worked for a while, but cancer is a ruthless, relentless bastard. He died October 16.

Stephen was not the first in our business to fall victim to skin cancer... but I wish to God he’d be the last.

Stephen was not the first in our business to fall victim to skin cancer...

It. Once you are diagnosed with a life-threatening illness, you will not be able to obtain it. Get it done.

• Make a will or set up a trust. Don’t leave the disposition of your assets to a court-appointed authority.

• Stay on top of your health. If it were not for my dedication to running, I would not be able to survive the rigors of my treatment.

• Get your annual physicals. I have skipped annual physicals in the past. Trust me, that attitude does not work. I want to know everything now so I have a better chance at survival.

• When you see a dermatologist make sure he’s a skin cancer specialist.

“Skin cancer, if detected early, is very treatable. I encourage you to take my poor choices (lack of proper skin care in my early career and follow-up) and my good choices (faith, fellowship, and family) to heart. I am on a mission to spread the awareness of skin cancer not only to all of you but to a lot more. I am hoping to someday have a foundation that is as big as some of the others out there. It has become personal to me and I hope you all take this seriously.”

The foundation he mentions above hasn’t been formalized yet, but his friend Brian Cloud, the GCSAA regional rep for the area, describes it this way: “Stephen and I talked about (it) before his death. We were going to work to install sunscreen stations in as many golf course break rooms as we possibly could. We were going to start in DFW, expand to Texas, and eventually work around the U.S. We were going to put his photo next to them with a brief review of his story. He loved the idea and we were going to move forward together once he was well enough. Needless to say, we were never able to get started. But, I am going to honor my friend and get it going in 2012. I may only get a few stations going in 2012 but will eventually get enough installed to make a difference and create some awareness.”

Why wait for Brian? If Stephen’s story touches you, get started on your “Stephen Station” now. His life may have ended, but his spirit can live on with every case of skin cancer we prevent. Please, do it today.

Lastly, Stephen’s entire article, “My Journey with Skin Cancer,” along with more info about skin cancer and a video I shot with Stan Zontek of the USGA Green Section about his cancer experiences can be found on our website. There is also a downloadable PDF called “Stephen Best’s Story” you can put near your new or existing sunscreen station. GCI
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