

AUDUBON

in Action

After 10 years, superintendents see advantages in getting with the program



Editor's Note: Audubon International's Cooperative Sanctuary Program for Golf Courses celebrates its 10th anniversary this year. Golfdom talked with superintendents — some newcomers to the program, and some who've been with it almost from the beginning — to hear how Audubon has affected the way they manage their golf courses.

VANCE MUCH
Superintendent at Semiahmoo Golf & CC,
Blaine, Wash.

Audubon Member: 1993

Water conservation resonates well with residents of Blaine, Wash., a town that considers itself on the cutting edge of environmental protection. So it's no surprise that Vance Much does all he can to foster a good relationship between his golf course and the environment.

"I watch my water use carefully," Much says. "We've let much of our golf course revert to a natural state, particularly in the roughs. The city wants me to do this, and I want to do it."

Since Much documents his environmental practices in detail to retain his certification from Audubon International every two years, environmental inspections from tough state regulators are a breeze. Much says the positive re-

sponse from his members convinced him to stay with the program over the last eight years.

"Golf courses have had a bad rap for polluting the environment for a long time," Much says. "The people who work for Audubon International have gone a long way toward changing that perception in the media and among the general public. For that change alone, their efforts should be applauded."

Much says he also has a personal reason for maintaining the program: his two daughters.

"All human beings share the planet, and we have a responsibility to those who come after us," Much says. "I want my daughters to have a planet to grow up on, and it's my job to do what I can to make sure that happens."

PETER LEUZINGER
Superintendent at The Ivanhoe Club,
Ivanhoe, Ill.

Audubon Member: 1995
(also helped St. Charles (Ill.) CC achieve certification in 1993)

Peter Leuzinger says he supported Audubon International's environmental efforts from the beginning — and he has the credentials to back his claim. In 1993, Leuzinger oversaw the entrance of St. Charles CC in St. Charles, Ill., into the program — the first mainland United States course to join.

"I got involved with Audubon International because I was tired of being accused of doing things to hurt the environment," Luezinger says.



Vance Much says Audubon International gives superintendents a framework for responsible environmental stewardship.

TIMELINE FOR THE AUDUBON COOPERATIVE SANCTUARY FOR GOLF COURSES

1991
 The Audubon Cooperative Sanctuary Program for Golf Courses is created in cooperation with the USGA.

1993
 The Audubon Signature Program is created to serve properties under development.

1995
 Seminars on *Wildlife Management and Habitat Conservation* and *Natural Resource Management on Golf Courses* are offered through GCSAA.

1996
 Audubon International publishes *A Guide to Environmental Stewardship for Golf Courses* in conjunction with the USGA.



Black bears are some of the wildlife that visit The Legacy Club at Alaqua Lakes in Orlando.

“The Cooperative Sanctuary program gave us a framework from which we could defend ourselves.”

Leuzinger says his work at The Ivanhoe Club included building birdhouses for the bluebird population, which had plummeted to near zero. Thanks to Leuzinger’s decision to build bird boxes, 40 to 60 bluebirds return to the course annually during the spring and summer.

His renewed environmental work also rejuvenated his career, Leuzinger says. Before he got involved with Audubon International, the stress of being a superintendent took its toll. The daily grind of fighting golfer ignorance and negotiating club politics left him weary. Instead of waking up every morning thrilled to

go to work, Leuzinger says he’d started to look upon being a superintendent as just another job.

But the idea of actively protecting the environment appealed to him. It reawakened his latent interest in photography, and Leuzinger snaps pictures of the wildlife on the course almost compulsively.

“When you find something that sparks your interest and makes you want to come to work every day, you must seize the opportunity,” Leuzinger says. “Most superintendents are environmentalists at heart, and this program gives them guidelines on how to do it effectively. I’m shocked that more golf courses aren’t involved.”

JOHN KOPACK
Superintendent, The Legacy Club at Alaqua Lakes, Orlando
Audubon Member: 2000

John Kopack loves the community involvement portion of his Audubon Cooperative Sanctuary Program the most. But it’s the kids he’s mentored in the fifth-grade ecology club at Heathrow Elementary School in suburban Orlando that have a special place in his heart.

He loves watching the kids’ eyes light up when he explains to them about the wildlife that lives on his course. He loves the enthusiasm they have for protecting the environment, which includes, under Kopack’s direction, the creation of a but-

terfly garden at the school. He enjoys linking them with outdoor activities, and he hopes they practice environmentalism in the future.

“Kids don’t spend a lot of time outdoors anymore,” Kopack says. “They plop down in front of the TV. In some cases, the program our course oversees is the only connection they have to the natural world.”

The Legacy Club hosts field trips for the kids to show them the enhancements the maintenance staff has made to the course: natural corridors for animals to migrate through, acres of lakes to provide homes for waterfowl and an integrated

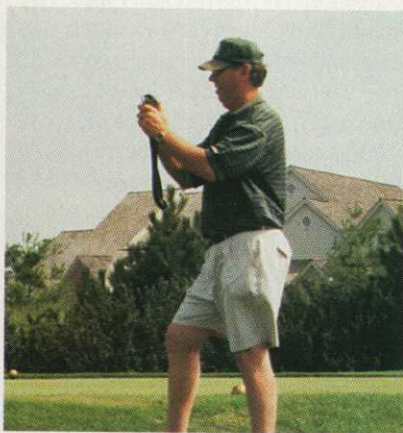


John Kopack met with Nancy Richardson, his Audubon International monitor, at the GCSAA show in February.

pest management program that helps reduce chemical application. Its program has raised the profile of the course in the community by word of mouth.

“These kids tell their parents about us, the parents tell their friends and pretty soon you’ve got a buzz going about your efforts,” Kopack says. “The Audubon guidelines are easy to follow and the positive publicity you get in return is fabulous.”

Continued on page 37



Peter Leuzinger photographs the fairway to document his environmental efforts for his Audubon International annual audit.

1997
 Audubon International hosts Birdwatching Ryder Cup in conjunction with the European Golf Association Ecology Unit.

1999
 Audubon International begins working with the Club Managers Association of America toward developing an Environmental Performance Audit for clubs.

2001
 Audubon International wins a 2001 Environmental Quality Award from the Environmental Protection Agency, Region 2.

Dodson's Devotion

Despite recently celebrating the 10-year anniversary of Audubon International's Cooperative Sanctuary Program for Golf Courses, Ron Dodson still wonders what his legacy to the golf industry will be.

About 2,500 golf courses worldwide have joined the program and follow six environmental awareness principles drafted by Dodson when he founded it in 1991. Dodson also reports that nearly 20 courses now under construction have enrolled in the Audubon Signature Program, designed to help golf course developers adhere to Dodson's six principles during construction rather than waiting to implement the program afterward.

He's even been hired recently to advise Eufaula, Ala., on how the city could extend the environmental practices from its municipal golf course (a Sanctuary member) to the entire city. But Dodson still wonders: Is what he's done enough?

"We have 2,500 golf courses participating in the Cooperative Sanctuary Program," Dodson says with a wistful sigh. "But there are 17,000 golf courses in the United States. I look at those numbers and I don't know whether to be happy about the numbers we've achieved or disheartened by the number of courses we haven't convinced to join us. We'd like to have them all!"



Dodson (right) knew from talking to superintendents that they didn't intend to ruin the environment.



AUDUBON INTERNATIONAL

Ron Dodson, founder of Audubon International, combined his love of nature with his love of golf to create the Cooperative Sanctuary Program for Golf Courses.

The idea for the Cooperative Sanctuary Program sprang from Dodson's devotion to two of his college passions: golf and biology. In the mid-1980s, Dodson heard golf courses criticized by environmental groups as anti-environmental entities that systematically poisoned the ground and the water and destroyed wildlife habitats. Dodson wanted to find a way to marry environmental stewardship and golf.

"It's true that golf courses 25 years ago didn't pay as much attention to the effect they had on the environment as much as they should have," Dodson says. "Back then, few people paid attention to the environment, unlike today, when it's a hot-button political issue. But I believed most superintendents were environmentalists at heart, and I wanted to help them fight the incorrect image with which they were saddled by the public."

At first, superintendents were skeptical of Dodson's efforts, since they learned in the late 1980s and early 1990s to fear anyone from an environmental organization.

"It took a while for superintendents to understand I was there to help them, not harm them," Dodson says. "I had to convince superintendents that I wasn't pushing a radical program that would cost them their jobs. Once they understood that our program didn't prevent them from keeping their courses per-

forming at high levels, it became an easier sell."

And sell he did. Dodson, the sole employee of the original program, crisscrossed the country in 1991 with the help of the U.S. Golf Association, which initially agreed to fund the program for one year.

"I did everything," Dodson says. "I sold memberships, reviewed the application materials, wrote out action plans and talked to as many groups as I could about our plan. I didn't want to hire anyone because I wasn't sure I'd have funding after that first year."

At the end of 1991, Dodson had signed 150 members. He went to the USGA and told them he couldn't do it alone anymore. The USGA agreed and presented Dodson with a pledge of \$100,000 per year for three years. They've funded it at that level ever since.

Dodson now has 18 employees, and most are connected with the golf program. (Audubon International also sponsors a backyard environmental program to help homeowners manager their lawns environmentally. It also sponsors school and business programs.)

But Dodson himself hasn't slowed. He says he still works 20-hour days in support of the program he loves. Next year, though, he jokes that he plans on slowing down to 19-hour days.

"The golf industry is at a pivotal point in its development as it relates to the environment," Dodson says. "It's gotten its act together, and now it's time for superintendents to become environmental leaders in their communities."

— Frank H. Andorka Jr., Managing Editor

Continued from page 35

TIM DOUBRAVA
Superintendent at Poxabogue GC,
Wainscott, N.Y.
Audubon Member: 2001

Tim Doubrava says before he came to Poxabogue GC, the previous owners sorely neglected the track. Instead of creating sensible environmental programs, they followed a program sure to cause nightmares for environmentalists everywhere: They sprayed pesticides in blanket applications, cut down trees that interfered with play and mowed all the turf in sight. It was the ultimate in managed turf, but it was bereft of character and interest for the golfer.

When the new owners hired Doubrava three years ago to oversee the course's transformation, he decided to join the Audubon Cooperative Sanctuary program. In the two years he's prepared for certification, the wildlife population skyrocketed — to the delight of golfers.



Tim Doubrava says superintendents are obligated to protect the environment.

"We see all sorts of wildlife, from pheasants to foxes to deer," Doubrava says. "The course even looks better now that we've allowed parts of it to return to its natural shape. The rough areas now shape the course for the golfer rather than being mowed at the same monotonous height, and the trees give a more interesting visual picture than we had before."

As an assistant, Doubrava oversaw the Audubon International at his previous

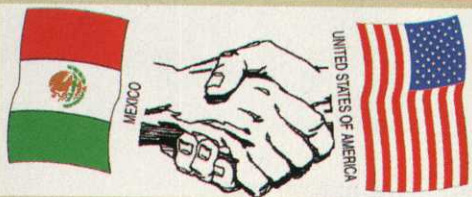
course, Atlantic GC, in Bridgehampton, N.Y. When he moved to Poxabogue, he saw the potential to implement a similar program. But Doubrava says he couldn't have implemented his ambitious program, which included building 25 bird boxes, letting much of the out-of-play areas revert to a more natural state and severely limiting chemical applications, without the backing of the course's new owners.

"They made it easy on me," Doubrava says. "I took them a list of the criteria that Audubon International has, and they told me to do whatever it took to meet those requirements."

His work has made him popular with his members.

"As soon as you start telling the story of your environmental awareness to the public, they will embrace it," Doubrava says. "Audubon International has helped make it OK to be a golf course and be environmentally sensitive, too." ■

TEMPORARY / SEASONAL LABOR VISAS



We now recruit
from the
United Kingdom

**SIGN UP
BEFORE
FALL 2001
FOR
APPROVAL BY
SPRING 2002***

Toll Free (888) 623 7285

Foley Enterprises

*Austin (512) 282 3237
Fax (512) 282 0958*

***Duration of permits is based on eligibility and subject to governmental processing delays**



Letting *Nature* Take Its *Course*

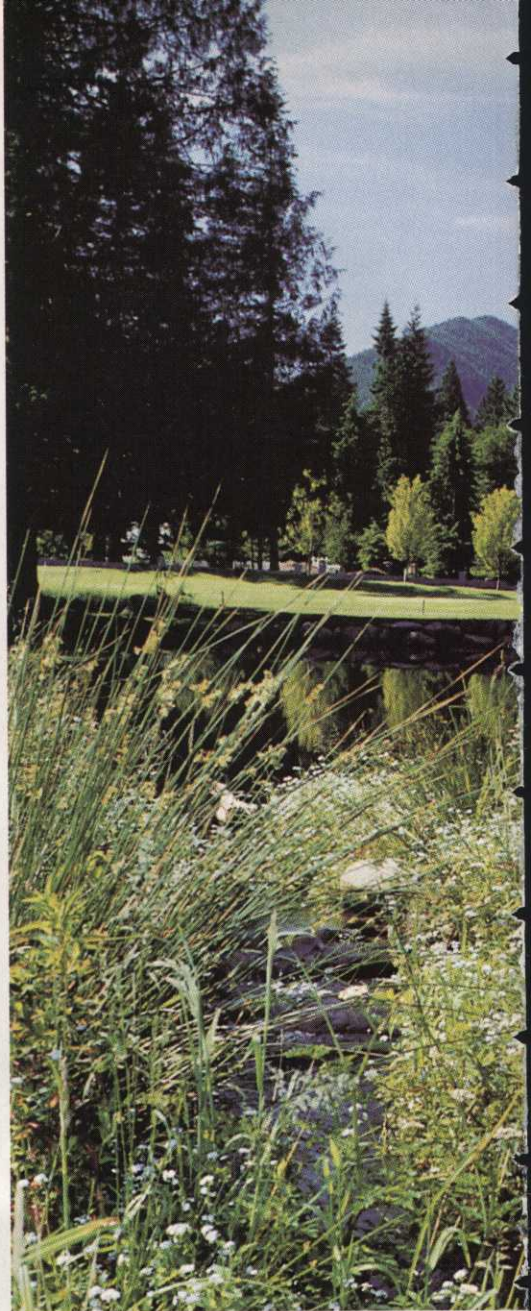
Two Oregon superintendents are
as dedicated to preserving wildlife
as they are to providing standout greens

**BY LARRY AYLWARD,
EDITOR**

You could say northwest Oregon superintendents Cliff Beckmann and Tony Lasher have heeded the call of the wild.

Beckmann, superintendent of Westin Salishan Lodge & Golf Resort in Glenden Beach, and Lasher, certified superintendent of The Resort at the Mountain in Welches, are proud to say they're naturalists when it comes to golf course maintenance.

That's no surprise considering their location, where environmentalism is a way of life and not a romantic inkling. Beckmann and Lasher are as dedicated to preserving wildlife on their courses as they are to providing standout greens.



The natural look

How would you feel if Sierra Club members picked *your* golf course for a visit? Bet you would be shaking in your work boots.

Tony Lasher admits he was nervous when members of the environmental group contacted him last summer to arrange a visit to The Resort at the Mountain, located near the pristine Mt. Hood National Forest. But the environmentally conscious Lasher, figuring he had nothing to hide, welcomed the visitors to his 27-hole course.

"The group's members are outspoken, and I was a little antsy about having them visit," Lasher says. "But I looked at it as an opportunity to show them what we're doing."

Sierra Club members favor golf courses



RICK SCHAEFER

◀ **Tony Lasher, certified superintendent at The Resort at the Mountain, peers over the course's Wee Burn, a stream that provides habitat for coho salmon and steelhead trout.**

to keep to add to the course's rustic look. Other superintendents might remove the trees for aesthetic reasons.

Of course, Lasher told the members about the course's Wee Burn Restoration Project to restore and improve fish habitat on the course. The course teamed with several environmental groups and the U.S. Fish & Wildlife Service on the eight-year project, completed last year.

The Wee Burn, Scottish for small stream, is a tributary of the Salmon River, designated in Oregon as a wild and scenic river by the Department of the Interior. The Wee Burn provides excellent habitat for coho salmon and steelhead trout.

But when the first nine holes of the course were built in the late 1920s, the Salmon River was channeled to prevent flooding. The preventive measure altered the stream's natural meander and blocked channels the fish used for spawning. The Wee Burn was not a suitable habitat for fish.

When Ed Hopper purchased The Resort at the Mountain in 1989, the Wee Burn restoration was high on his to-do list. Hopper hired Lasher in 1992 to over-

see the renovation. Lasher directed several elements of the project, including locating the stream's original pattern and rechanneling it. He also oversaw the construction of a fish ladder to aid the fish in their migration to spawning areas.

New fish access was also provided to one-third of a mile of the stream and to two acres of ponds that were previously inaccessible. Course workers planted thousands of native trees and shrubs to provide fish with protection and food sources.

After the tour, Lasher says a Sierra Club member from North Carolina asked him why more superintendents in the Tar Heel state weren't practicing environmentalism with the same fervor that Lasher does. It was a tough question that made Lasher contemplate the different demands superintendents face, depending on where their courses are located.

Lasher told the member there are superintendents all over the country who are doing sound environmental things. Lasher encouraged him to visit courses in his state.

Continued on page 40

▼ **Stumps and brush are kept in place around pond edges at The Resort to provide havens for water wildlife.**

about as much as People for the Ethical Treatment of Animals members fancy McDonald's. When Lasher took the group's members on the course, he overheard a man sarcastically say, "I can't believe I'm walking on a golf course fairway."

During the tour, a pack of deer scurried across the course. A club member remarked that she was surprised to see wildlife on a golf course.

But when they listened to Lasher explain his environmental policies, the club members realized they can't label *all* golf courses as environmental detriments. Lasher told them about his integrated pest management program and that he hasn't made a blanket herbicide application in many years. He showed them decayed trees damaged by beavers that he opted



Letting Nature Take

Continued from page 39

Lasher also explained to the member that many superintendents, including in North Carolina, are under pressure to have their courses in top shape. Golfers at The Resort don't mind patches of clover or dandelions on rough because they know Lasher and his crew practice IPM to keep chemical use to a minimum. But it might be a different story at another North Carolina facility, where golfers won't tolerate weeds.

"I'm lucky," Lasher says. "I'm in an area where I don't have that kind of pressure."

It bothers Lasher that old-school thinkers still believe golf is a culprit when it comes to environmentalism.

"But it feels good to be proactive," he says. "Some people think we're doing dastardly deeds here, but when we tell them and show them what we're doing, they do a 180."

Walkin', talkin' about nature

Cliff Beckmann never thought he'd lead nature walks in addition to tending turf when he chose golf course maintenance as a career. But that has been part of his gig as superintendent at Salishan for about three years.

The breathtaking scenery surrounding the golf course, located on a pastoral stretch near the Pacific Ocean, lends it-

▼ **Undisturbed sand dunes and their vegetation are an important of the terrain at Salishan.**



LARRY AYLMWARD

self to a nature walk. That's why the course, fully certified as an Audubon Cooperative Sanctuary by Audubon International in 1994, cleared six miles of trails to offer guests a chance to see the habitat and its inhabitants — from bald eagles to beavers — up close. The 31-year-old Beckmann, who has been at Salishan for about five years, says the nature walks provide him an excellent opportunity to interact with the resort's guests.

"It's a great chance for the superintendent to tell people what we're doing to preserve the environment and to portray a positive image of the course," Beckmann says. "I don't think enough superintendents do that."

Beckmann conducts about four na-

▲ **Superintendent Cliff Beckmann stands at a trail leading to the Pacific Ocean. It's one of the trails on the Salishan property that Beckmann uses for his nature walks.**

ture walks a month, each lasting about two hours. Some of the environmental programs he touts include:

■ Returning areas of the course formerly in play to their natural state. When Beckmann came to Salishan almost five years ago, the resort maintained 82 of the property's 142 acres. Beckmann helped reduce it to 68 acres.

■ Conducting regular water quality testing of a creek on the course to ensure pesticides and fertilizers are not contaminating it. The creek runs into a nearby bay, which is a wildlife refuge. "We don't allow any fertilizer applications within 20 feet of waterways," Beckmann says.

■ Practicing an integrated pest management program that Beckmann has continually redefined. Beckmann and his staff of 17 use organic fertilizer on greens, and they administer only one herbicide application a year — a spot treatment.

Frequent rain in the Northwest — up to 80 inches a year — requires fungicide applications are more frequent to combat fusarium patch, which poses a problem from September through May. "Last year,

Continued on page 42



Letting Nature Take

Continued from page 40

we made eight fungicide applications on greens, and three were spot treatments," Beckmann says.

■ Trying to solve problems naturally. For instance, when Beckmann joined Salishan the course had a severe crow infestation problem. Crows are infamous for damaging turf to catch insects, such as



▲ This area was formerly maintained turf that was in play at Salishan. Several areas on the course have been returned to their natural state.

crane flies. To combat the growing crow population, Beckmann introduced three owls on the property. "Owls are natural predators of crows," he says, noting the crow population dwindled from several hundred to less than 50 in about four years.

■ Creating homes for wildlife. A few years ago, Beckmann and his crew created a pond on the par-3 sixth hole out of a ditch dug to gain soil used for mounding on other holes.

"When the ditch was dug, it was left barren," Beckmann says. "So we created a water feature that attracts a lot of wildlife. We improved the course's look and helped the environment at the same time."

Beckmann also allows most dead trees to stand on the course because they make homes for birds, including woodpeckers.

■ Maintaining a solid relationship with state agencies, including the Department of Fish and Wildlife. "[The agency] understands what we're trying to do — achieve a balance between maintaining a golf course and keeping it natural," Beckmann says.

In conjunction with the nature walks, Beckmann also compiled a book, *Your Tour Guide to the Plants of Salishan*, for guests to use on self-guided jaunts around the resort.

Beckmann says his biggest challenge is to improve the course aesthetically — but not at the expense of letting nature take its course.

"We have to fit in with the environment," Beckmann says. "That's why people come here — for the natural beauty." ■

**NOW
AVAILABLE**

F I V E

GREAT REASONS WHY
YOU SHOULD CONSIDER
BULL'S EYE Bermuda
FOR YOUR NEXT
PROJECT.

- Virtually No Seedheads
- Good Shade Tolerance
- Deep Blue-Green Color
- Medium-Wide Blade For Texture Contrast
- Can Be Mowed With Rotary or Reel



BULL'S-EYE
Bermuda

WEST COAST
TURF

Life is Short. Sod It!

www.westcoastturf.com 760/360-5464 800/447-1840 FAX: 760/360-5616



KEEP TABS ON YOUR Controller

BY FRANK H. ANDORKA JR.,
MANAGING EDITOR

You startle awake at 3 a.m., bathed in a cold sweat. You throw on a pair of sweat pants, stumble to your half-ton pickup and peel out of your driveway, headed straight to your course.

As you reach the street next to the third fairway, you notice beautiful plumes of water from your irrigation system glistening in the moonlight. Your heart rate slows and you breathe a sigh of relief. Your irrigation controller turned your system on properly after all. It was just a nightmare. All is right with the world.

With golfers pushing superintendents to keep courses in near-perfect condition, proper irrigation is vital. But superintendents have too many other responsibilities to spend their waking hours monitoring their irrigation systems. So the dependability and efficiency of their irrigation controllers play an enormous role in helping superintendents relax.

"Over the next 10 years, there will be less usable water available for any use, let alone for golf course irrigation," says Brian Vinchesi, president of Irrigation Consulting in Pepperell, Mass. "For all the focus on reduced water use, that's not nearly as important as using water more efficiently. Effective controllers go a long way to making that a reality."

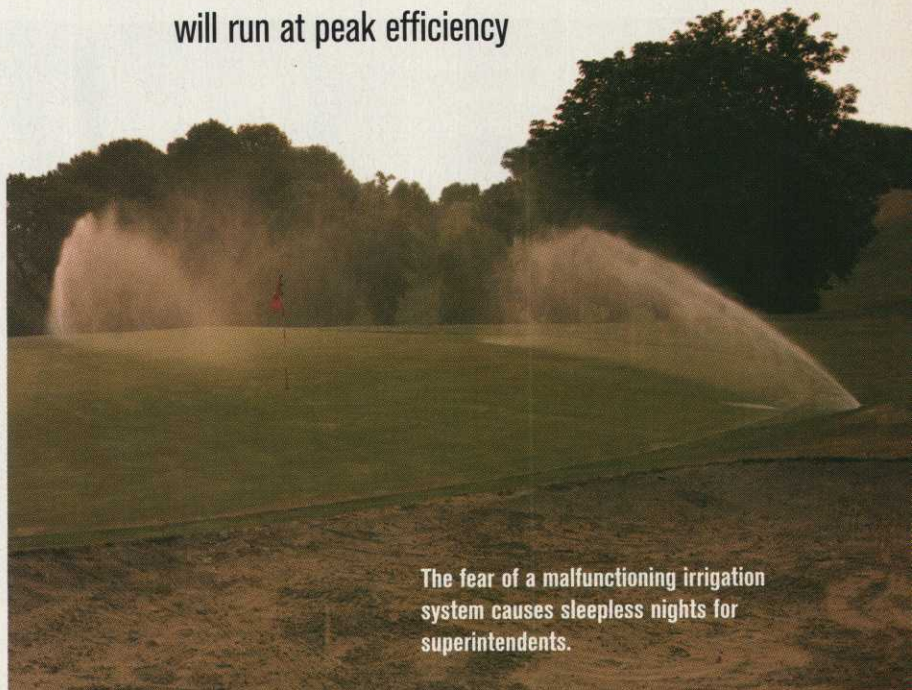
Here's what experts say you can do to make sure your irrigation controllers won't keep you up at night:

Budget for an irrigation audit to find out how much water your course actually needs.

Jim Barrett, president of James Barrett Associates in Montclair, N.J., says you need to find out how much water you're actually using be-

Continued on page 46

Proper monitoring ensures
that your irrigation system
will run at peak efficiency



The fear of a malfunctioning irrigation system causes sleepless nights for superintendents.

The Future Holds Hand-Held Controllers

Irrigation consultants believe hand-held controllers, particularly those run through personal digital assistants (PDAs), are the wave of the future — at least at the high end of the market.

"In five years, hand-held controllers will become the standard," says Jim Barrett, president of James Barrett Associates in Montclair, N.J. "I know irrigation companies are researching how to create the proper software."

Instead of being tied to desktop computers, superintendents can monitor their pump stations and irrigation heads from fairways, their homes or even their trucks, Barrett says. "Hand-held controllers will be hugely powerful tools," he says.

PDAs offer the most flexibility when it comes to controlling irrigation systems remotely, says Brian Vinchesi, president of Irrigation Consulting in Pepperell, Mass. A PDA can cull information from weather stations, Global Positioning System maps and other information that traditional controllers can't process.

"The PDA will process information from disparate sources without you having to compile it yourself beforehand," Vinchesi says. "You'll be able to put water where you want it, when you want it, without having to stop doing other jobs that you need to get done."
— Frank H. Andorka Jr., Managing Editor

MIKE KLEMM

Keep Tabs On Your Controller

Continued from page 45

fore you can determine whether your controller is operating efficiently.

"It takes time and money to do an audit, but it's worth it in the long run," Barrett says. "You'll often find you're using too much water."

An audit calculates how much water a course should use based on evapotranspiration rates, weather patterns, percolation rates and turf types, Barrett says. Then it measures the amount of water a course ac-

tually puts down and compares the two. "The answer isn't always black and white, but an audit will help determine whether you're way off base," Barrett says.

Inspect sprinkler heads on a regular basis to ensure they run for the correct amount of time.

Precision watering depends on controllers to calculate accurately the time a sprinkler head runs, Vinchesi says. But some superintendents assume if they program specific times into their controllers, their

irrigation systems will run that amount of time. If your controller isn't working, you're making a mistake with your assumption, Vinchesi says.

"You may set it for 10 minutes and it may run for 12 minutes instead," he adds. "If that's what your system is doing, then you're obviously wasting water."

Vinchesi says superintendents should also make sure that when their controllers turn the system on, it doesn't skip heads or fail to turn on at the proper time. Both scenarios indicate a faulty controller, he says.

Study the feedback your controller gives you.

You know reams of paperwork pile up on your desk daily. But even if you don't read another report, pay close attention to the printout detailing your irrigation system's output, says Dan Benner, founder and principal of Hydro Environmental in Marietta, Ga.

"You need to get daily diagnostic information from the field about the operation of your irrigation system," Benner says. "If there's a huge disparity from one day to the next, there's a problem. Read the reports and keep tabs on vast fluctuations."

If your current controller doesn't allow for such two-way communication, Benner suggests upgrading to one that does.

Monitor the water pressure throughout the system.

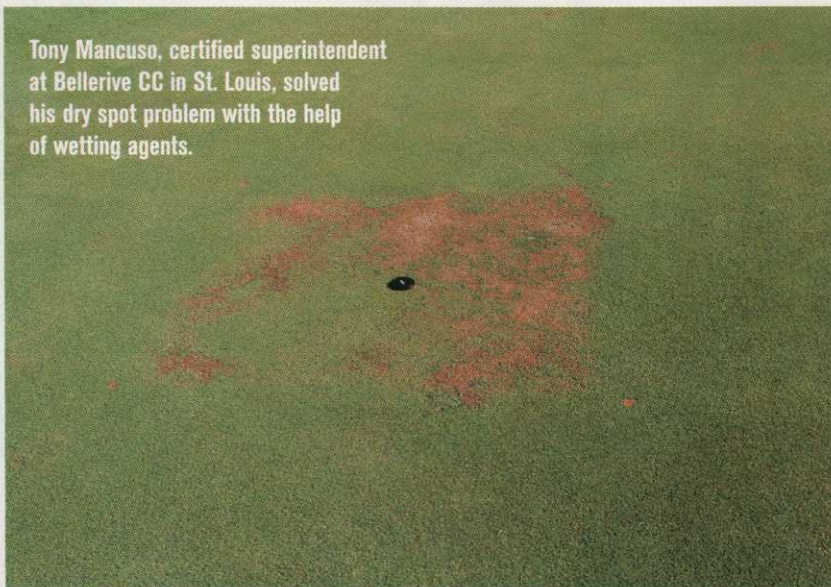
Proper pressure management is often overlooked as having an effect on irrigation efficiency, but it's vital to know how much pressure your system produces, Vinchesi says.

"A lack of pressure will make your irrigation system work harder with fewer results," he adds. "Run regular checks to make sure the proper amount of water is being pumped."

Although few systems currently allow it, Benner says he looks forward to the day when irrigation systems and pump stations can be run by the same controller.

"Pump stations have traditionally run independently from the irrigation system, and that's not the best way to manage efficiency," Benner says. "Unfortunately, irrigation companies aren't to the point where

Tony Mancuso, certified superintendent at Bellerive CC in St. Louis, solved his dry spot problem with the help of wetting agents.



Wetting Agents Help Superintendents Conserve Water

Here's another vote of confidence for wetting agents. Tony Mancuso, certified superintendent at Bellerive CC in St. Louis, couldn't figure out what to do with the localized dry spot he often found on his greens. At first, he irrigated them. In areas where his greens rest on clay soil, however, the water pooled rather than penetrated. Mancuso often overwatered to ensure enough water reached the roots.

Overwatering, however, created moss and algae problems. But when Mancuso allowed the greens time to recover from the oversaturation, the dry spots cropped up again. He needed a way out of the predicament, which Mancuso found in wetting agents.

"We're always battling localized dry spot in this area of the country," Mancuso says. "If you treat the problem traditionally, you can create more problems than you

solve. Wetting agents can help immensely."

Wetting agents allow water to move more freely through the soil. They also help the soil retain water for longer periods, even when the surface of the soil dries out. For Mancuso, that means using less water.

"You have to know your soil and what problems you're dealing with," Mancuso says. "Wetting agents aren't a magic bullet for all dry soil problems, but they can help if you understand your soil profile."

Since he started using wetting agents on the greens, Mancuso says he has cut the amount of time he runs his overhead irrigation system in half. He only turns his irrigation system on the greens every three or four days. With minimal hand watering between applications, Mancuso says his greens are in good shape. — FA.

they would share the information to bring that to fruition."

But having an efficient controller isn't solely about saving water, Benner says.

"If your irrigation system is operating properly, it won't use as much energy," he adds. "You also won't be doing as much labor-intensive hand-watering. That's an additional savings on energy and labor."

Not to mention the energy you'll save by getting a good night's sleep. ■

For more information, try these irrigation-related sites:

CONSULTANTS:

■ www.asic.org

The American Society of Irrigation Consultants (925-516-1124)

■ www.irrigation.org

The Irrigation Association (703-536-7080)

COMPANIES:

■ www.flowtronex.net

Flowtronex International (800-786-7480)

■ www.rainaid.com

Century Rain Aid (800-347-4272)

■ www.rainbird.com

Rain Bird Irrigation (626-963-9311)

■ www.syncroflo.com

SyncroFlo (770-447-4443)

■ www.toro.com

The Toro Co. (800-664-4740)

■ www.signaturecontrols.com

Signature Control Systems (949-580-3640)

WETTING AGENTS:

■ www.aquatrols.com

Aquatrols (800-257-7797)

■ www.planthealthcare.com

Plant Health Care (800-421-9051)

■ www.clearychemical.com

Cleary Chemical (800-524-1662)

■ rootsinc.com

Roots (800-342-6173)

■ www.precisionlab.com

Precision Laboratories (800-323-6280)

■ www.lesco.com

Lesco (800-321-5325)

■ AquaAid (800-394-1551)

■ Montco/Surfside (215-836-4992)

FINE GRADE
endoROOTS™
granular

3 - 3 - 4

FINE GRADE endoROOTS™ is dryROOTS™ with 180,000 spores and propagules of EndoMycorrhiza (EAM). It is effective on turfgrasses, flowers, and many trees and ornamentals. Mycorrhizae help plant uptake of nutrients and water, and provide resistance against disease and stress. There are eight species of EndoMycorrhiza in this product:

Glomus mosseae	
Glomus intraradices	
Glomus clarum	
Glomus monosporus	
Glomus deserticola	
Glomus brasilianum	
Gigaspora margarita	
Glomus aggregatum	

Guaranteed analysis	
Total Nitrogen (N)	3.0%
0.5% Water Soluble Nitrogen (N)	
2.5% Water Insoluble Nitrogen (N)	
Available Phosphate (P ₂ O ₅)	3.0%
Soluble Phosph (K ₂ O)	4.0%
Calcium (Ca)	9.0%
Magnesium (Mg)	0.8%
0.8% Water Soluble Magnesium (Mg)	
Sulfur (S)	1.5%
1.5% Combined Sulfur (S)	
Iron (Fe)	1.0%

Derived from: composted poultry manure, ferrous sulfate, and potassium sulfate.

Non-plant food ingredients: help meal, humus, vitamins, amino-acids, and EndoMycorrhiza spores.

Net weight 50 lbs. (22.6 kg)

Applications

Fertilization	Apply 7 lbs./1,000 sq. ft. Work material in thoroughly.
Divot mixes	Add 25 lbs./cubic yard to sand divot mix.
Sod/seeding new seeding	As a soil prep, use 10 lbs./1,000 sq. ft. applied to soil surface before sod installation or seeding.
New construction renoovation	Add 15 lbs. to 1 cubic yard.

Spreader settings

FINE GRADE endoROOTS™ can be mixed with fertilizers and soil amendments. In hot weather (above 85°F), lightly water in.

Settings for 7lbs./1,000 sq. ft.	
Cyclone	4.9
Earthway	12
Prizaloom	J
Lesco	F
Scott's RX7	J
Scott's RBA	I
Spiller	4.9
Vycon (4 mph)	36

Notice
Buyer assumes all responsibility for safety and use not in accordance with directions. Read entire label carefully.

Caution
KEEP OUT OF REACH OF CHILDREN.

roots inc. 3120 Weatherford Road • Independence • MO • 64055 • tel: 800 342-6173 • www.rootsinc.com



Mycorrhiza for Turf

roots inc. tel: 800 342-6173 • www.rootsinc.com



The Lowdown on Low-impact Pesticides

They're environmentally friendly,
but they add dollars to the budget

BY PETER BLAIS

Times have changed in the chemical business. Just ask Kyle Miller, a market development specialist with BASF.

"Ten years ago, you would have never seen a sign on the first tee reading: 'Pesticides are applied routinely on this golf course.'



If you have any questions, call the superintendent," Miller says. "But superintendents today are learning to be much more up front about such things to head off potential problems."

One of the main ways superintendents are demonstrating more environmental awareness is the use of low-impact pesticides. These environmentally friendly products include a variety of recently developed fungicides, herbicides and insecticides that provide preventive and curative activities while requiring low use rates and extended application intervals.

The EPA is a driving force behind the development of low-impact pesticides. It eliminated the use of certain products like Diazinon, which was banned several years ago on golf courses and sod farms because of concerns over bird kills, according to Rick Brandenburg, professor and turf entomologist at North Carolina State University. The federal agency also severely limited the use of other traditional course chemicals, like Dursban, reducing maximum use rates

of the insecticide from 4 pounds per acre to 1 pound per acre.

"That virtually eliminated its use for soil-insect pests like grubs and mole crickets," Brandenburg says. "The 1-pound rate isn't high enough to be effective. You can still use it for things like cutworms, but [the ruling] took it out of the use pattern for many soil pests."

To replace these and other traditional products, many of which controlled a broad spectrum of pests and required wide applications, manufacturers have developed more pest-specific products requiring lower application rates in more limited areas.

For example, Bayer's Merit works well against white grubs and mole crickets, Brandenburg says. "But you can't use it against cutworms or army worms," he adds.

MACH 2, developed by Rohmid, is effective against grubs and will kill some caterpillars. "But it won't get mole crickets," Brandenburg notes.

There has been a shift in thinking, Brandenburg notes.

"In obtaining a more favorable environmental profile, we give up a little in terms of broad-spectrum application," he says. "That means a superintendent may need a larger product inventory because there's no such thing as one product that gets them all."

Kevin Downing, director of grounds at Willoughby GC in Stuart, Fla., says a larger in-

An obvious goal of low-impact pesticides is to make them less of a threat to humans and wildlife.

ventory translates into higher costs.

"You have more items to take care of specific problems," he adds. "We have one herbicide we would like to combine with two or three others and make a single application. But the directions say you can't combine it with anything else. You can't tank mix it with anything because the mode of action of the chemical is different. So that means more labor and man-hours per application than you would use with a broad-spectrum herbicide."

Reduced-risk registration

To get a product registered as reduced-risk, a manufacturer must prove it's safer than the product it's replacing, says Mike Daly, brand manager of the Turf and Ornamental Division with Bayer Professional Care.

"If you can demonstrate that you have such a product, EPA will shepherd it through the process on an accelerated schedule," Daly says. "You can get a label

much quicker with a reduced-risk pesticide."

Bayer's Compass fungicide took roughly a year to register, Daly says. It was developed from a substance mushrooms produce that inhibits other fungi from invading the area where the mushrooms grow. It's specific to fungi and doesn't affect mammals. The use rate is low — 0.15 ounces per 1,000 square feet.

"In some cases that represented a 95-percent reduction in pesticide load compared to the older contact fungicides it replaced in the marketplace," Daly says. "So the total amount of product placed in the environment was greatly reduced, and it was developed from substances that don't have a direct effect on mammals. That's reduced risk."

The high cost of bringing low-impact chemicals to market, however, has increased the final bills to golf courses.

"New products are going up in price largely because of the cost of obtaining

EPA registration," says David Ross, technical manager with Syngenta's Turf and Ornamental Division. "It generally costs \$50 million to \$60 million to get a new product registered."

Adds Miller, "Bringing a new product to market is more expensive than ever because it must have reduced environmental impact and yet give good control."

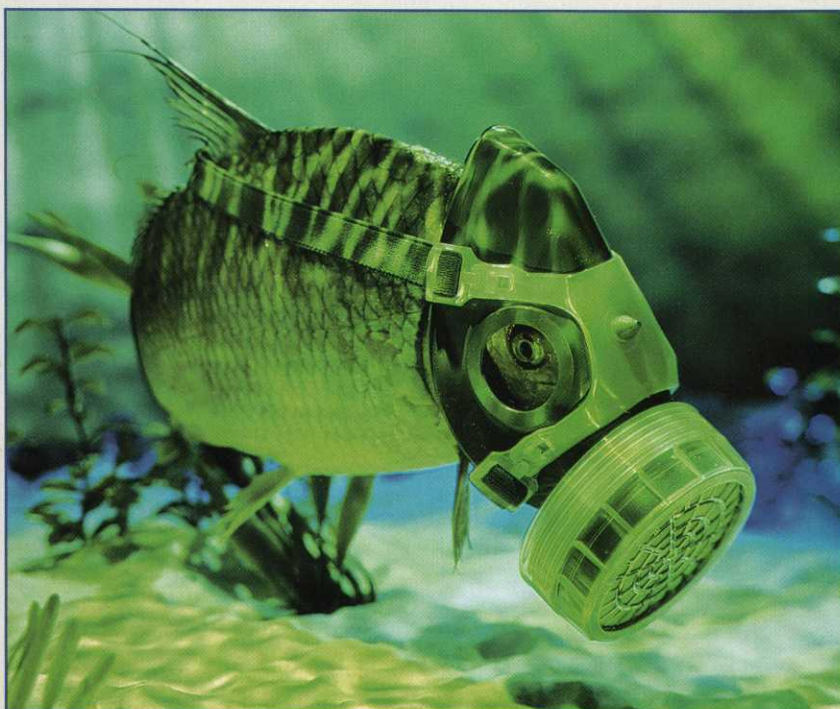
That higher price tag can ultimately affect whether a course decides to go forward with a given treatment.

Downing mentions a particular insecticide that controls only mole crickets and costs \$325 per acre to apply. Another nematocide he'd like to use costs \$400 per acre.

"At \$400 per acre, how many acres can you do without jacking the green fees up to \$150," he asks. "You can't do it, so you don't do it." ■

Blais is a free-lance writer from North Yarmouth, Maine.

MIKE KLEMM



Maybe It's Time to Look into an Aeration System

No one should have to live with poor water quality. Being the industry leader for over 50 years, Otterbine offers a variety of surface spray and



sub-surface aeration systems that effectively circulate water and transfer oxygen. And with independent testing conducted by the University of Minnesota, you can rest assured that Otterbine systems will surpass all industry standards and your expectations. The result? Beautiful, healthy waterways—on the surface, as well as below where it counts!



1-800-AER8TER

610-965-6018 • www.otterbine.com

Product leasing available.

Tips

→ Creating a Naturalized Golf Course

Courses Can Become Habitats for a Variety of Plants, Wildlife

By Arthur Milberger

Landscape naturalization is an old concept that is receiving renewed attention, particularly as it relates to golf course management.

In the 1990s, a decade of heightened environmental awareness, the industry made advances in promoting environmental issues and reform. Some golf course design and maintenance professionals responded by naturalizing courses. Since then, naturalization has become more widespread.

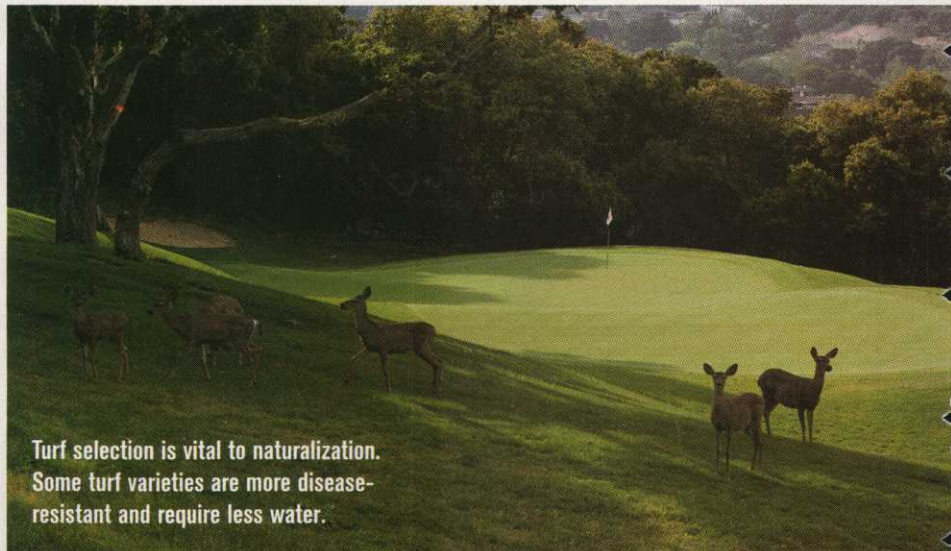
By carefully selecting and maintaining turfgrass, trees and other vegetation, course staffs have created natural habitats



on their courses for a breadth of flora and fauna. In time, these elements of a naturalized course become fairly self-sustaining — without interfering with golf. Besides being good for play and wildlife management, golfers often find this type of course to be an interesting and attractive alternative to the traditional course. Further, industry professionals appreciate it as an opportunity to reduce maintenance requirements.

“Since naturalization, golfer response to our course has been overwhelmingly positive,” says Dan Dinelli, superintendent of North Shore CC in Glenview, Ill. “We like that the course is more self-sufficient than it was before.”

A golf course has qualities that make it a prime setting for naturalization. Properly designed, it can be a sanctuary for bird species and an area of prairie or wetland preservation. Entire food chains can exist on and near it — from microor-



Turf selection is vital to naturalization. Some turf varieties are more disease-resistant and require less water.

ganisms and insects to amphibians, reptiles and mammals.

“Diverse wildlife is vital to a naturalized course,” says Mike Sandburg, superintendent of Lakeside CC, a naturalized course in downtown Houston. “Our course is home to opossums and armadillos, and birds such as great blue herons, peregrine falcons and Egyptian geese. We’ve found that golfers take greater pleasure in the course’s unique natural beauty and relaxing scenery.”

In addition to environmental benefits, a naturalized golf course offers financial benefits. Because a naturalized course attempts to preserve a region’s natural landscape, a superintendent can save money by reducing plant and turfgrass maintenance, as well as fertilizer use.

“Our course has reduced pesticide and labor requirements, making it cheaper to maintain,” says Mark Egan, superintendent of the naturalized course at Hyannisport Club in Hyannis Port, Mass.

Charting the course

Here are tips to develop a naturalized course. They are founded on common goals: to establish diverse plant and animal life and to let nature run your course as much as possible.

■ **Select plants that thrive in the area and are compatible with the soil type and exposure.**

Choose a variety of plants, since diverse vegetation is crucial to any naturalized course.

■ **Carefully research turfgrass to determine which will work best for your course.**

There are many sources of information, including sod producers, local universities with programs in turfgrass research, area extension services and other superintendents. In consulting these resources, consider the course’s geographic region, its climate and the course areas targeted for sodding. Be sure to inquire extensively as to each variety’s drought and insect resistances, as well as fertilizer and mowing requirements.

At Lakeside CC, common bermudagrass in fairways and roughs was replaced with a hybrid 419 bermudagrass, which developed more rapidly and grew denser and greener than the common bermudagrass. The new turf provides more durable and instant coverage. It permitted golf play sooner and allowed Lakeside workers to focus more closely on naturalization practices instead of tending to the turf during its grow-in stage.

For out-of-play areas at Lakeside, course managers decided on buffalograss sod.

"Buffalograss is nature's turf of choice for our area," Sandburg says. "Between 150 and 200 years ago, this variety grew rampant across the Southern plains without any human assistance. It makes sense to use it on our naturalized course."

Buffalograss, with less need for fertilizer and pesticide, needs little maintenance and has a high drought tolerance.

Fescues are the grass of choice for the out-of-play areas at Hyannisport Club, Egan says.

"Our course is located on the saline Atlantic flyway of Cape Cod," Egan adds. "Because of their high tolerance for sea salts, fescues have thrived here."

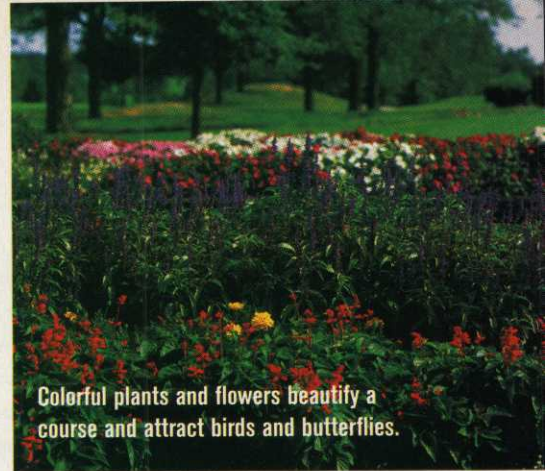
Designers of the Lakeside course replaced Tifdwarf on the greens with a newer Tifdwarf variety that grows more slowly, minimizing the disruption of habitats that frequent mowing can cause. It also means less maintenance.

An L93/Crenshaw blend was installed

on the greens at Carolina National GC in Bolivia, N.C. "This variety is lower growing, more disease resistant and more water thrifty than other varieties used on greens, which makes it a low-maintenance grass that's well-suited for naturalization," says Matthew Mays, the course's environmental specialist.

In some cases, a naturalized course will "decide" for itself what grasses work best. At Lakeside, Sandburg says workers planted zoysiagrass on bunker faces, thinking it would reduce mowing and maintenance requirements. But Houston's high humidity promoted disease in the susceptible zoysiagrass over time and weakened it. Eventually, the hybrid 419 Bermudagrass overtook the bunker faces because it has stronger resistance to the diseases common to that region, Sandburg says.

■ **In addition to selecting appropriate plant materials, take steps to attract wildlife.** Colorful plants and flowers should draw na-



Colorful plants and flowers beautify a course and attract birds and butterflies.

tive birds and butterflies. Mounted and monitored nest boxes will also bring birds to the area, and brush piles offer appealing shelter to larger animals.

"The unique ecosystems located at Hyannisport, coupled with our efforts to promote wildlife, have drawn various animals to the course, including rabbits, foxes and osprey," Egan says.

In some cases, wildlife residing on a naturalized course will contribute to the course's maintenance. "The wood ducks and mallards we released onto the course help keep our ponds clean by feeding on excess floating vegetation," Dinelli says.

Continued on page 64

ADVERTISER INDEX

104	Aadvanced Water Mgmt Inc	4
121	Agrotain Intl	51
106	BASF	5
115	BASF	33
108	Earthworks	9
110	Floratine Products	13
116	Foley Enterprises	37
105	Growth Products	4
119	J.R. Simplot	43
125	North American Green	53
117	Nutramax Labs	41
118	Otterbine Barebo	55
107	Precision Labs	7
122	Profile Products	11
102	Prosource One	CV3
124	Roots	47
127	Securall Cabinets	63
120	Standard Golf Co	44
101	Syngenta	CV2-1
113	Textron	21
114	Textron	24
126	Textron	56
103	Tee 2 Green	CV4
128	Top Pro	(reg)61
111/112	United Horticultural Supply	17-18
109	Versa-Lok Retaining Wall System	59
123	West Coast	42

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

WHERE DO YOU STORE YOUR PESTICIDES?



SECURALL offers a complete line of safety storage buildings specifically designed for storing your turf chemicals safely and securely. All buildings are designed to help you comply with prevailing EPA and OSHA codes. Constructed of 12 or 16 gauge galvanized steel. Standard buildings come with many features or choose from several options.

Features

- High Security Lock
- Fiberglass Insulated Walls
- Fluorescent Interior Lights
- Corrosion Resistant Enamel Finish
- Steel Shelves With Raised Edges
- GFCI Protected Electrical Wiring

Options

- Heating / cooling / ventilation
- Dry chemical fire extinguisher
- Fiberglass floor grating
- Liquid level detectors
- Water sprinkler system
- Ramps

SECURALL®

5122 North State Road 39 LaPorte, IN 46350
1-888-326-7890 FAX: 1-888-324-3780
Email: securallsales@csinet.net
www.securallproducts.com

Tips

Continued from page 63

"There used to be a massive nutria [a water-dwelling rodent] population that was destroying our lake banks, but the presence of natural predators like coyotes has solved that problem," Sandburg says. "Likewise, purple marlins and bats have almost eliminated our troubling mosquito season."

■ **Don't forget to use the resources that nature provides.** Retain indigenous vegetation that will enhance the course, and minimize disturbance to pre-existing earth and water formations. Such formations may be useful in shaping the course. During construction, minimize wildlife disruption.

Making the process simpler

Golf and environmental organizations are taking steps to encourage the naturalization practice, and research and technology are making the process simpler.

Since 1991, Audubon International, a non-profit environmental organization, has worked in cooperation with the U.S. Golf Association to promote the Audubon Cooperative Sanctuary Program for golf courses. The program shows superintendents how to include environmental solutions in their management practices, and has helped more than 2,300 courses further their benefits to local environments without detracting from the advancement of golf.

Another major step in promoting naturalization has been creation of the "Environmental Principles for Golf Courses in the United States." A collection of organizations, including the USGA, the GCSAA, the National Wildlife Federation and the EPA, developed this set of voluntary guidelines for environmentally aware golf course creation, maintenance and operation.

Recent advancements in mapping and imaging technology allow designers to preserve a course's natural ecosystem. Modern satellite remote-sensing technology creates precise relief images of an area. A designer uses these models to plan a course that fits the site's topography, preserves waterways and minimizes disruption of habitats.

Turfgrass development also is making progress. The USGA Green Section funds the Turfgrass and Environmental Research Program, which is the world's largest private turfgrass research effort. The project promotes development of new turfgrass varieties with improved properties, such as higher water retention, reduced pesticide requirements and more efficient fertilizer use.

Independent turfgrass breeders, too, are working to cultivate grasses that are better suited for applications such as naturalization. "For example, breeders are contributing by developing grasses with endophytes, which have natural insect-controlling properties," Dinelli says. ■

Arthur Milberger is a sod producer with Turfgrass America and a board member of Turfgrass Producers International in Rolling Meadows, Ill. He can be reached at arthur@milberger.com.

The Company Line

■ PRODUCTS & SERVICES



▲ Surfactant

A new omni-directional surfactant with enhanced kelp, Aqua-MAXXT, is available from **Aqua-Aid**. The surfactant is developed to put down water, wetting agent and growth stimulant in one application. It's formulated from a highly stable enhanced kelp extract. When combined with a wetting agent, it produces maximum root growth and root density in minimum time, the company says.

For more information, contact 800-394-1551, www.aqua-maxx.com or

CIRCLE NO. 200

Aerator

Aquamaster Fountains and Aerators

offers a floating surface aerator, capable of creating a random boil or bubble effect on the water's surface. This low-profile aerator is easily installed and works efficiently with any depth. It's available from one to five horsepower with a three-year motor warranty.

For more information, contact 800-693-3144,

www.aquamasterfountains.com or

CIRCLE NO. 201

Perennial ryegrass

Ampac Seed Co. introduces Amazing Perennial Ryegrass as part of its Turf Perfect ideal turf line. The variety is notably darker than other ryegrasses, according to the company. Bred from Rutgers University, Amazing scored statistically equal to the highest rating in over 18 categories including genetic color, winter color, athletic field quality, home lawn quality, leaf texture, traffic tolerance, leaf spot, dollar spot and melting out.

For more information, contact 877-778-7880,

www.ampacseed.com/amazing or

CIRCLE NO. 202

Algaecide/fungicide

TerraCyte from BioSafe Systems

will soon be registered as a broad spectrum algaecide/fungicide. It is an environmentally friendly granular that can be added directly to soils and turf areas for the prevention and control of moss, algae, slime, molds and their spores. Its peroxygen chemistry allows for the oxidation and prevention of these pathogens.

For more information, contact 888-273-3088 or

CIRCLE NO. 203

Overseeding attachments

Milona Turf Products

introduces Jobsaver overseeding attachments to fit the Cushman/Ryan GA30 and John Deere 800. Jobsaver attachments prepare an ideal seedbed without affecting the putting surface, the company says.

For more information, contact 800-456-4351,

www.milona.com or

CIRCLE NO. 204