

Pat Blum embraces the "Environmental Superman" label he's earned. He might not have X-ray vision, but he can see through the challenges of making golf courses ecologically sustainable.

# Plan

Zeh reciprocated by using Blum as a sounding board as she tweaked the program. He helped simplify the application and documentation process, and he created areas on his golf course to test new initiatives, such as just how close a buffer area could get to a playing area.

"When we think about new requirements or new projects that we want to put in place, they have to run through the Colonial Acres model," Zeh says. "Having people like Pat to give us a golf course perspective is vital to keeping us honest."

The Audubon Cooperative Sanctuary Program certifies golf course management in environmental planning, wildlife and habitat management, chemical-use reduction and safety, water conservation, water quality management, and outreach and education.

Blum blitzed through the six-stage certification in 10 months, the fastest of any golf course at that time. He built a new pond to capture water runoff from a new housing development; reduced synthetic chemical use in half; established habitats for the Eastern Bluebird; created corridors for native deer, wild turkey and rabbits; and he reduced mowing from 22 acres to 14 acres by installing natural areas — all in less than a year.

Fast-forward five years, and now Zeh was on her way to Colonial Acres with the EPA in tow to show off the Audubon's poster child, just the 136th golf course to be fully Audubon-certified at the time. About 648 have gone through the certification process to date.

The Environmental Protection Agency was courting small businesses for its Performance Track Program, an ongoing resource conservation initiative that thus far had been adopted primarily by large corporations. The EPA caught wind of Colonial Acres after New York state awarded Blum a pollution prevention award. Now they wanted to lay eyes on the improbable anti-polluter.

After Blum's hour-long tour with the EPA, they asked him to apply for the Performance Track evaluation on the spot. It was uncharted territory, but Blum was intrigued. Despite his vigilance, he knew Colonial Acres could do more, and he had already documented many of his programs by going through the Audubon certification. Now he had a reason to take it one step further.

Make that three steps further. The rigorous EPA Performance Track requires companies to establish reduction goals for pollution, waste and energy consumption in an ongoing, sustainable program. The results must be measured, recorded and managed through a formal environmental management system. Members are expected to submit an annual performance report, which demonstrates compliance certification, progress on environmental commitments and dedication to community outreach.

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"Pesticides need to be used, but they don't need to be used full-tilt all the time."

— PAT BLUM —

## The Man with the Environmental Plan

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Blum passed the initial certification last year, becoming the first turf manager to persist through the three-year process.

Blum also helped the EPA rework the Performance Track to be more intuitive for small businesses and turf managers so other golf courses could follow his lead. But thus far, no other golf courses have applied. The Performance Track has about 450 members nationwide. Not all of them have earned certification after a three-year review of goals as Blum has.

Colonial Acres now is engaged in the second stage of the Performance Track initiative. The facility is scheduled to reduce energy use measured in kilowatt hours and further reduce fungicide pounds per yield use. The course will be evaluated in 2010.

Needless to say, the process doesn't come, well, naturally. It's a mountain of work. But Blum did more than just earn the accreditation for reducing water, labor, mowing, energy, fuel and pesticides. He excelled, just as he did in the Audubon program. In the process of being accredited, the EPA recognized Blum for extraordinary efforts in outreach in 2006. Colonial Acres shared the honor with Johnson & Johnson's World Headquarters, Rockwell Collins' Headquarters, and the U.S. Department of Energy and DynMcDermott Petroleum Operations' Strategic Petroleum Reserve.

That's kind of like having Cooks Illus-

### Audubon Actualities

Since it began collecting data in 2002, the Audubon Cooperative Sanctuary Program reports:

- 82 percent of member courses have reduced pesticide use.
- 75 percent of members reduced pesticide costs.
- 92 percent use pesticides with lower toxicity levels.
- Average number of acres devoted to wildlife rose from 45 acres to 67 acres.
- The average course saves 1.9 million gallons of irrigation water per year.
- Almost 100 percent of member courses say turf quality has increased or remained the same.

*Source: Audubon International, based on self-reporting from superintendents.*

trated showcase your mom's meatball recipe alongside creations by Olive Garden Chef Paolo Lafata. Johnson & Johnson has more than 122,000 employees and revenues that exceed \$50 billion. Colonial Acres has one full-time employee and four part-time employees with revenues of about \$150,000 and a maintenance budget of about \$16,000.

It proves that small businesses can make big progress without big budgets — or labor for that matter. Blum has been an army of one for years. He mows, aerates, edges, rakes and grooms Colonial Acres by himself with a budget that wouldn't cover most herbicide programs. Only recently he received one part-time maintenance worker after Colonial Acres was purchased by Open Spaces Institute, which leases the course back to the city for \$1 a year.

Subsequently, Blum solely propelled his 33.5-acre facility into conservation stardom. He applies synthetic fungicides just 12 times a year; the rest of his maintenance involves cultural practices and a steady stream of biological and organic turf inputs. He still has 15 bags of synthetics lying around from when he took the helm 13 years ago.

"Pesticides need to be used, but they don't need to be used full-tilt all the time," he says. "We use about 70 percent biologicals and organics versus about 30 percent synthetic

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Motivators one and two: Blum hopes Samantha and Zachary will become environmental superheroes in their own right.

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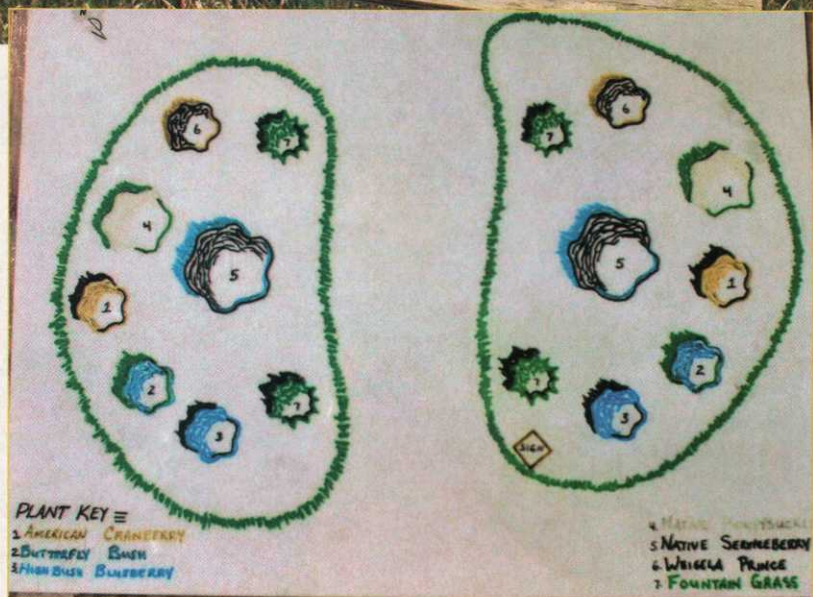
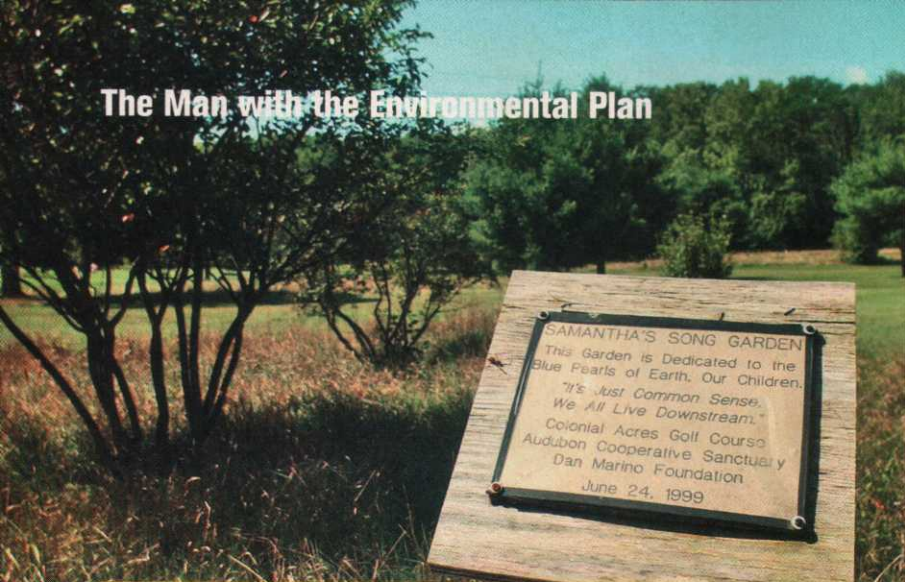
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## The Man with the Environmental Plan



Colonial Acres features signs (top) and plant keys for its natural areas so golfers can connect with their surroundings. "I see at least two people a week who stop to read them," Blum says.

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chemicals, and most of that is on the greens." A slew of people have noticed his ecological ingenuity through the years, but not by accident. Blum aggressively courts recognition.

In 2000, he won New York State Governor's Pollution Prevention Award for reducing his mowing and synthetic chemical use. Administrators thought his application was a joke.

"From what I was told, when they originally received the application, there was laughter in the room," Zeh says. "Then they started reading, and they were impressed. Then they read some more, and they were amazed."

Blum says it's his proudest honor, and the recognition, along with some prodding by the pollution prevention division, led to the EPA and involvement in the Performance Track.

He was also the 2002 Golf Digest/Golf Course Superintendents Association of America Environmental Leaders in Golf

Award overall winner. Colonial Acres is the only nine-hole course to earn the honor.

He also earned the GCSAA 2006 Excellence in Government Relations Award for his successes with EPA and New York state.

"Pat recognizes the importance of going after these other awards and gaining recognition for the environmental projects that are capable of being done on golf courses and putting them in the limelight," Zeh says. "That's why he's done so much for the golf industry."

He continues to help golf raise its status in the green community by working with GCSAA to create an environmental management system model that other golf courses can adopt.

"We are looking at environmental management systems (EMS) as a nifty tool for golf courses; it's a regimented and systematic approach to taking environmental considerations into business decisions," says Greg Lyman, GCSAA director of environmental programs. "Pat has demonstrated that this EMS can work on one of the most basic and true golf course systems out there."

Despite his achievements, Blum hasn't received a raise in years. He missed all three of his family's vacations this summer. His phone isn't ringing with job offers, board positions or endorsement deals, and very few colleagues have courted his opinion. It doesn't seem like anyone cares.

But he's not doing this to impress anyone. He does it for Samantha, his 11-year-old daughter, and Zachary, his 6-year-old son. Blum believes he owes his stewardship to succeeding generations to leave the world a better place than he found it.

"I can't cure cancer and I can't solve world hunger, but I can make a significant improvement to the environment with my job," he says. "I manage the turf for the 10 percent of people who come to play golf, but I manage the environmental impact for the 90 percent who never pick up a club."

It's not just lip service. He's the man with the environmental plan. And not just for his golf course. He's successfully helped steer Veeder Elementary School, where his children attend, through the Audubon Cooperative Sanctuary program.

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## The Man with the Environmental Plan

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Blum, who's well-versed in landscape installations, helped establish natural areas, develop an existing nature trail and establish bird habitats complete with nest boxes.

The school took his lead and tweaked its central courtyard, built a greenhouse and began a worm-composting program.

It has created a wave of interest around the school, and the message rings true with his daughter, too. After all, Samantha is the reason Blum first dove into stewardship. After being blessed with her in 1995, he started to think about the legacy he was leaving her, and he wasn't too proud of the chemicals he was dumping on the golf

**Colonial Acres welcomes 32 different species of birds, including the Eastern Bluebird, Great Blue Heron, Green Heron and the Pileated Woodpecker, the largest woodpecker in North America.**

course. He was scheduled to spray fungicides to stifle heavy disease pressure on the horizon when his wife, Terri, went into labor. The chemicals never got sprayed, and the hot, muggy weather never came as predicted. As he looked at his new family, he knew there was a reason for it.

When Samantha was told that the reason reporters come talk to her dad about his golf course is because he wants to leave her a better world, her response was decidedly mature for a middle-schooler.

"That's good because if he can make the world better for me, then I can make the world better for someone else," she says without hesitation.

Blum looks visibly stunned at her statement, and he's uncharacteristically without words as he and Zachary overlook the course. Altruism must run in the family.

But Blum won't stay quiet for long about golf's impact on the environment. He says some golf courses — especially those micro-managed for PGA Tour events — aren't doing the environment any favors.

"There's a lot of golf courses out there that pollute the environment," he says. "The conditions you see on TV cannot be achieved by doing things the environmental way."

Lyman says each golf course operates under unique conditions and varying golfer expectations, but the industry should be striving to bring more environmental rigor into decision-making processes.

"It would be unwise and illegitimate to say that we have achieved environmental success as an industry," Lyman says. "A practical approach is to assess where you are and strive to get better every day."

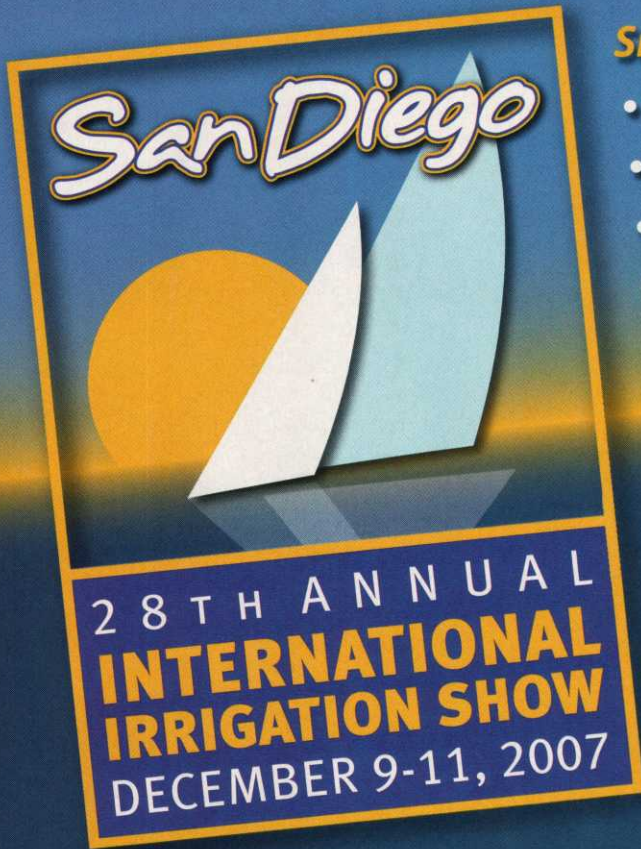
GCSAA is working on tools, such as the EMS, to help superintendents assess and measure environmental programs. Lyman says prioritizing environmental impact is crucial for the future of the game. Blum says it's crucial to ensure the longevity of humanity on Earth.

"We're accelerating the possibility of the death of the planet with our ignorance of synthetics by using them as a way of life (for turf maintenance)," Blum says. "We need to make a stand now, or there isn't going to be an environment for our kids to stand on." ■



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# TURFGRASS TRENDS

■ BLUEGRASS WEEVIL CONTROL

## Curative Programs for Bluegrass Weevil Larvae Require Patience

By Steven McDonald and Daniel Biehl

The Annual Bluegrass Weevil (ABW) is a pest of highly maintained, short-cut turfgrasses. Historically, this beetle in the weevil family has been a problem in the northeastern United States. However, during the past few years, the ABW has become a serious pest throughout the entire Mid-Atlantic region.

It was believed for years that the destructive ability of ABW [previously known as the *Hyperodes* weevil; *Listronotus maculicollis* (Dietz)] was restricted to annual bluegrass (*Poa annua* spp. *annua* L.), including the perennial subspecies *Poa annua* spp. *reptans* Hauskn., and that damage from the ABW was isolated to the Northeast. Recent research and field observations, however, have proved this theory incorrect and substantial damage has been observed in creeping bentgrass (*Agrostis stolonifera* L.) fairways and putting green collars in the Mid-Atlantic region. Most recently, ABW has been reported damaging annual bluegrass in Ohio.

The damage from ABW during the 2007 season has been widespread throughout the Northeastern and Mid-Atlantic regions. Personal observation and field reports of pyrethroid applications not providing acceptable levels of control are occurring and could be related to inconsistent spring weather and also higher than normal ABW populations.

Many research efforts have focused on the control of ABW adults using pyrethroid chemistry in the early spring, timed with the bloom of the forsythia and dogwood trees. There might be instances where this application was not timed correctly or the application failed to control the adults migrating from overwintering sites.

It is also possible that pyrethroid-resistant populations of

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PHOTO 1



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TABLE 1

### Activity of annual bluegrass weevil larvae and pupae as influenced by various insecticide applications.

Treatment	Rate	2 DAT		4 DAT		7 DAT		12 DAT	
Activity Rating (0-5)*									
Dylox 6.2G	131 lbs/A	1.3**	c	2.0	a	0.3	c	0.3	b
CrossCheckGC	43.56 fl oz/A	2.0	bc	2.5	a	1.6	ab	0.3	b
Dursban Pro	65.34 fl oz/A	3.5	a	2.3	a	1.3	abc	0.2	b
Provaunt 30WDG	12 oz/A	3.5	a	2.2	a	0.8	abc	0.0	b
Meridian 25WG	17 oz/A	2.8	ab	2.3	a	0.7	bc	0.2	b
Untreated	-	2.8	ab	2.3	a	2.0	a	1.3	a
P>F		0.04		0.97		0.03		0.04	

\* All of the life stages were rated on a 0 to 5 movement scale, where 0.0 = no movement after 10 seconds, 2.5 = insect moving slowly, deeper in profile and 5.0 = when the insect moved as soon as exposed.

\*\* Means in each column followed by different letters are significantly different ( $P \leq 0.05$ ) according to the Fischer's Protected least significant difference test.

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ABW have developed, which might complicate the spring-time application even further. This spring application theoretically provides control of adults before they have a chance to lay eggs and prior to the egg hatch. This is important since ABW larvae (following the egg laying period) are the life stage that damages turf. From personal experience and field observations, larvae can be extremely difficult to control. This may be because they are below the thatch. Applications targeting ABW larvae may take several days to affect the insect and cause a stop in their feeding.

To date, no research has been reported that examined the duration of ABW activity following an insecticide application in the Mid-Atlantic region. A superintendent routinely scouts before and after the application of plant protection materials and will assess the level of control in the days following.

An important purpose of this study was to investigate the quickest and most effective insecticide as well as gain information regarding control of ABW in the larvae stage following the signs of visible damage to a fairway. This information would be extremely valuable to superintendents who have observed ABW damage and also observe that the larvae are still active following an application targeting them.

## Material and methods

This trial was conducted in the approach of the fourth hole of the Centennial Course at Philadelphia Country Club in Gladwyne, Pa. The study area was maintained as a typical fairway (mowed at one-half inch, irrigated and chemically treated as needed). This portion of the fairway consisted of 70 percent annual bluegrass, 20 percent creeping bentgrass

and 10 percent perennial ryegrass (*Lolium perenne* L). The soil was a native clay-loam soil with a pH of 6.4. Thatch was measured as less than one-half inch thick.

All damage at this study site was observed only on the annual bluegrass. Individual plots were 2.5 feet by 5 feet, and treatments all were applied June 7, 2007. All liquid treatments were applied from a TeeJet 8004 flat fan nozzle calibrated to deliver 1 gallon of water per 1,000 square feet.

The granular treatment (Dylox 6.2G) was applied using a shaker bottle. The area was irrigated with 0.2 inches of water supplied from overhead irrigation immediately after application. Treatments were arranged in a randomized complete block with three replications. Insecticide treatments included: Dylox 6.2G (6.2 percent trichlorfon), CrossCheck GC (7.9 percent bifenthrin), Dursban Pro (chlorpyrifos), Provaunt (indoxacarb) and Meridian (thiamethoxam). All product application rates are shown in Table 1. The damage was observed six days before treatments were applied. However, turf damage was significantly worse two days prior to the applications.

All plots were visually rated on 0 to 10 scale for turf quality, with 7.5 being minimal acceptable level for a fairway and 10 being optimal quality, color and density. Due to our interest in the quickest knockdown, we took activity ratings at two (2 DAT), four (4 DAT) seven (7 DAT) and 12 (12 DAT) days after treatment. This was done by removing one 4.25-inch diameter plug from the center of the plots (new plug on each date). The plug was destructively pulled apart to count the number of ABW per plug and also assess live activity and movement of the ABW.

Four of five life stages of this insect were observed in the study and include: third instar larvae (10 percent), fifth instar larvae (60 percent), pupae (30 percent) and callow adult