WGCSA FALL BUSINESS MEETING

By Dustin Riley, *Golf Course Superintendent, Oconomowoc Golf Club*

The Wisconsin Golf Course Superintendents Association held its annual fall business meeting on Tuesday, November 18, 2003 at the American Club in Kohler. Most association members correlate the fall business meeting with the presentation of the upcoming year's operating budget, the scholarship and research contributions and the new officer elections. However, many other topics were addressed.

Mike Lyons, treasurer, reported on his GCSAA delegate meeting. He presented information concerning the ongoing issues associated with GCSAA affiliation and the formation of the resource group researching the potential move of the GCSAA headquarters.

David Brandenburg, president, provided a brief description of the new membership information. The new renewal forms will improve the membership process while easing the annual membership directory production.

Dustin Riley presented the 2004 golf and arrangements schedule. Several specific dates are yet to be determined. Unfortunately, the 2004 spring business meeting will not coincide with the spring USGA seminars, as in 2003. The 2004 golf and arrangements schedule follows:

March Spring Business Meeting
April 26, Monday, Hawks View Golf Club, Lake Geneva
May Super/Pro to be announced
June 21, Monday, Oconomowoc Golf Club, Oconomowoc
July 12, Monday, Rolling Meadows Golf Course, Fond du Lac
September, The Legend at Brandybrook, Wales (Superintendent Tournament)
October 12, North Hills CC, Menomonie Falls (Superintendent/Guest)
October WGCSA Dinner Dance
November Turf Symposium

Brian Zimmerman, education chair, presented the current registered numbers for the upcoming GCSAA seminars set for early December. Brian also discussed the ongoing attempts to consolidate events and education for the future. The acquisition of "education" and "service" points for the new GCSAA PDI system can be confusing. However, efforts are being made to assist all GCSAA/WGCSA members with the understanding of acquiring and registering their points.

Jeff Millies, publicity chair, reported that the establishment of a WGCSA website is in its infant stage. The address WGCSA.com has been secured. Jeff also reported on the series of city and county meetings attempting phosphorus fertilizer bans. Unfortunately, there has been greater support of the ban from local community attendees. Professional turf managers are encouraged to attend and assist the education of committee members proposing any fertility bans.

The 2004 budget was presents by treasurer Lyons. In discussion, vice president Davison requested membership input regarding the rising costs of the annual hospitality room held at the GCSAA International Conference and Show. Discussions presented several ideas, including researching the potential of vendor contributions toward the costs of the hospitality room.

VP Davison also announced his researching efforts to potential involvement of the WGCSA with the 2004 PGA Championship at Whistling Straits.

The officers and directors for 2004 were approved as follows:

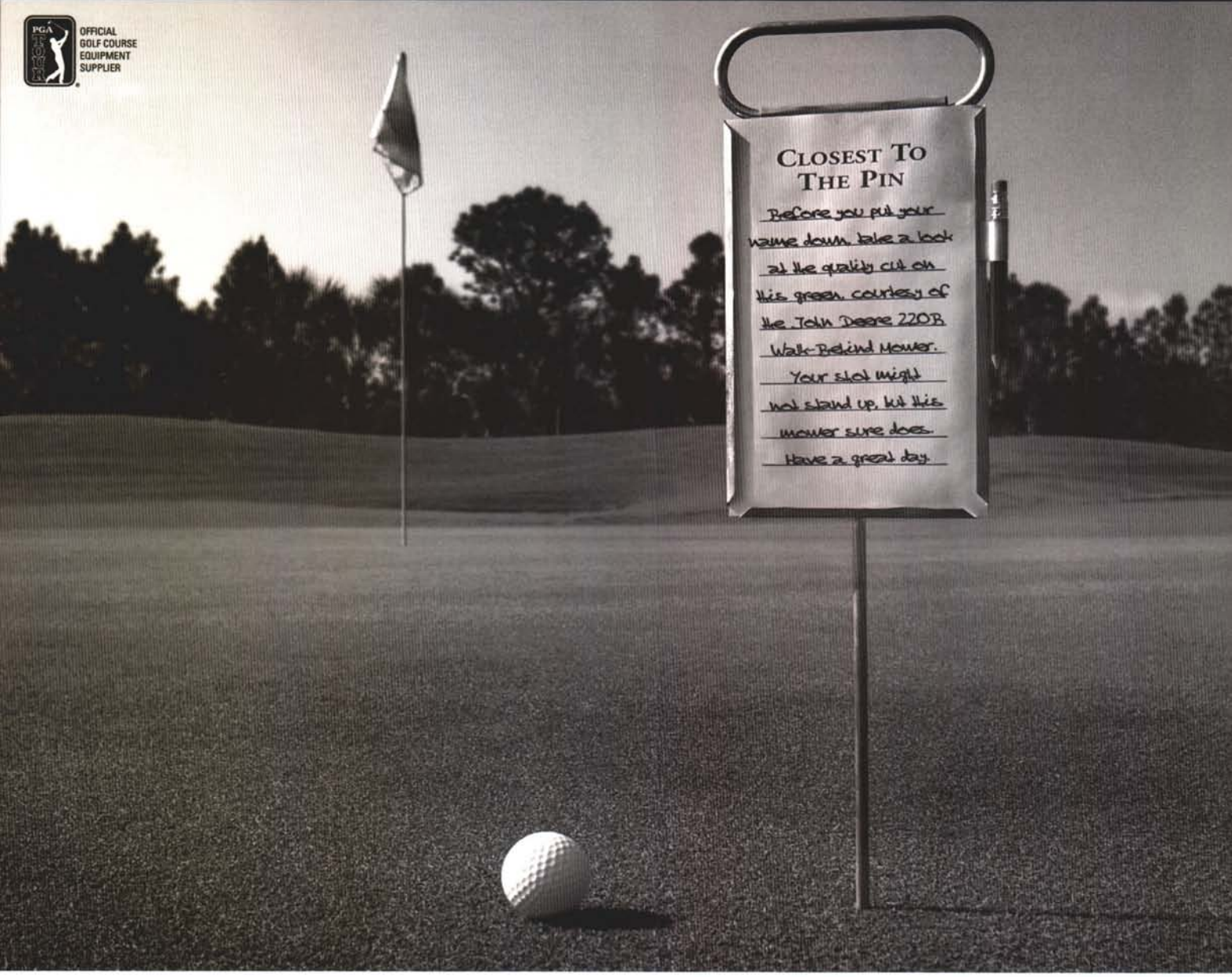
President Marc Davison
Director 2 yr, Jeff Millies
Vice President Mike Lyons
Director 2 yr, Patrick Sisk
Treasurer Dustin Riley
Director 1 yr, David Van Auken
Secretary Brian Zimmerman
Director 1 yr, Eric Jasin

Unfortunately, Brian Ferrie and Jack Tripp will no longer be able to perform their duties as WGCSA representatives and will be stepping down from the board of directors. Their efforts and dedication will be missed. Welcome to all newly elected directors.

In closing, Monroe Miller notified the attendees that Dr. John Steir, UW-Madison, has been granted tenure. Congratulations Dr. Steir. The WGCSA is looking forward to many more productive years of turf research, community interaction and education, turf industry guidance and the continued development of quality turfgrass students.

The fall business meeting has continued to present and inform the WGCSA membership of the association financial health and direction. All input from the membership is welcomed and encouraged.

OFFICIAL GOLF COURSE EQUIPMENT SUPPLIER



Maybe they don't understand what it means to cut a green to the width of a quarter. But you certainly do. And no walk-behind greens mower does it better than our B Series Walk-Behinds. From adjustable handlebars to efficient grass catching, our B Series walks are without peers in their category. We also have large mufflers for lower sound levels. Bedknife-to-reel knobs allow for easy adjusting. And a forward mounting pivot point to minimize operator effect on the cutting plane. To see them in action on your greens, call your local John Deere Golf & Turf Distributor.

JOHN DEERE GOLF & TURF
ONE SOURCE™

JOHN DEERE

www.JohnDeere.com

J.W. TURF INC.
306 Washington Street
Horicon, WI 53032
920-485-2859
Toll Free Parts: 877-746-0614

GT03M604

What Species? What Makes the Difference?

By Dr. R. Chris Williamson, *Department of Entomology, University of Wisconsin-Madison*

Accurate identification can make the difference between success and failure of an insecticide treatment! The more you know and understand about the biology of a pest, the greater the probability of a desirable outcome. This is especially true for the numerous white grub species that invade turf.

There are over ten species of white grubs that attack turfgrass. Fortunately (or unfortunately) there are only three "known" (two Northern masked chafer adults have been collected in Madison, Wisconsin in the summer of 2003) species in Wisconsin: 1) Black turfgrass ataenius (BTA); 2) Japanese beetle; and 3) May/June beetle. While there are some similarities in the biology (life cycle, behavior, and ecology) of these white grubs, there are also some vast differences as well. For example, the life cycle of the aforementioned three white grubs is quite different. BTA typically has two generations per year; however in Wisconsin, one generation seems to be the standard. Japanese beetle has only one generation per year. And, May/June beetles that occur in Wisconsin (*Phyllophaga* spp.) typically have a three-year life cycle.

Control strategies for these grub species varies. That is not to say that the insecticides to be used for their control should be different, but the timing of insecticide treatment varies based on the target grub species. For example, because May/June beetles have a three-year life cycle, they spend much of their life (approximately 75%) in the larval stage. May/June beetle adult females lay their eggs beginning in May soon after adult

BREATHE NEW LIFE INTO YOUR TIRED TURF EQUIPMENT.

KOHLER® Repower Kits get your equipment performing like the day you bought it – maybe even better.

KOHLER REPOWER KITS:

- ***Are cost effective.***
- ***Deliver advanced engine performance.***
- ***Provide worldwide customer support.***
- ***Offer unconditional Kohler Quality.***
- ***Are easy to install.***

With Kohler Repower Kits, your equipment isn't rebuilt... It's reborn.

For more information, call today.

KOHLER engines

BORN TO RUN™

Seek the innovation.™ Demand the power.™

www.kohlerengines.com 1-800-544-2444

emergence and continue through June and even into July. After an approximate gestation period of four weeks, the eggs hatch, and the relatively small (1st instar larvae) grubs begin feeding on and destroying the roots of the turf. Within several weeks (approximately 5-8 weeks) the young larvae develop into increasing larger 2nd instar grub. The grubs typically remain in the 2nd instar larval stage through the winter. The following spring as temperatures become conducive (i.e., > 50°F), larvae resume feeding and grubs develop into 3rd instar larvae by late-June. Thereafter, 3rd instar larvae continue to feed and destroy the roots of turfgrass until the first measurable frost whereby they prepare to overwinter in the soil. The subsequent spring, the 3rd instar larvae resume feeding as temperatures again become conducive. By early-July the grubs reach larval maturity, soon thereafter they pupate (transform into an adult) within 4-6 weeks. Although fully developed, the adults do not emerge from the soil; they remain in the soil until the following spring whereby they emerge in May and June (hence the name; May/June beetle).

Regardless of the white grub species, larger, more physiologically developed grubs (i.e., 2nd and 3rd instar larvae) are considerably more difficult to control than smaller (i.e., 1st instar larvae) grubs. Subsequently, accurate timing of preventative white grub insecticides such as imidacloprid (Merit®) or halofenozide (Mach 2®) are more effective than curative or corrective insecticides such as carbaryl or trichlorofon (Dylox®). For this reason, understanding the biology of a pest is the key to effective and successful management.

Identification of the different white grubs is possible by examining the arrangement of hairs and spines on the **raster** area on the underside of the terminal (end) abdominal segment of the grub. These **rastral patterns** can be easily distinguished using a small 10X hand lens. The arrangement of hairs on May/June beetle grubs are arranged in two distinct parallel lines (Figure 1). Japanese beetle grubs are characterized by a pattern of rastral hairs arranged in a "V" shape, whereas the BTA is distinguished by its small size and "pad-like" structures on the end of the abdomen (Figure 1).

The bottom line is that you must accurately identify the pest species in order to implement appropriate control strategy(s) that will maximum effective control of the target pest.

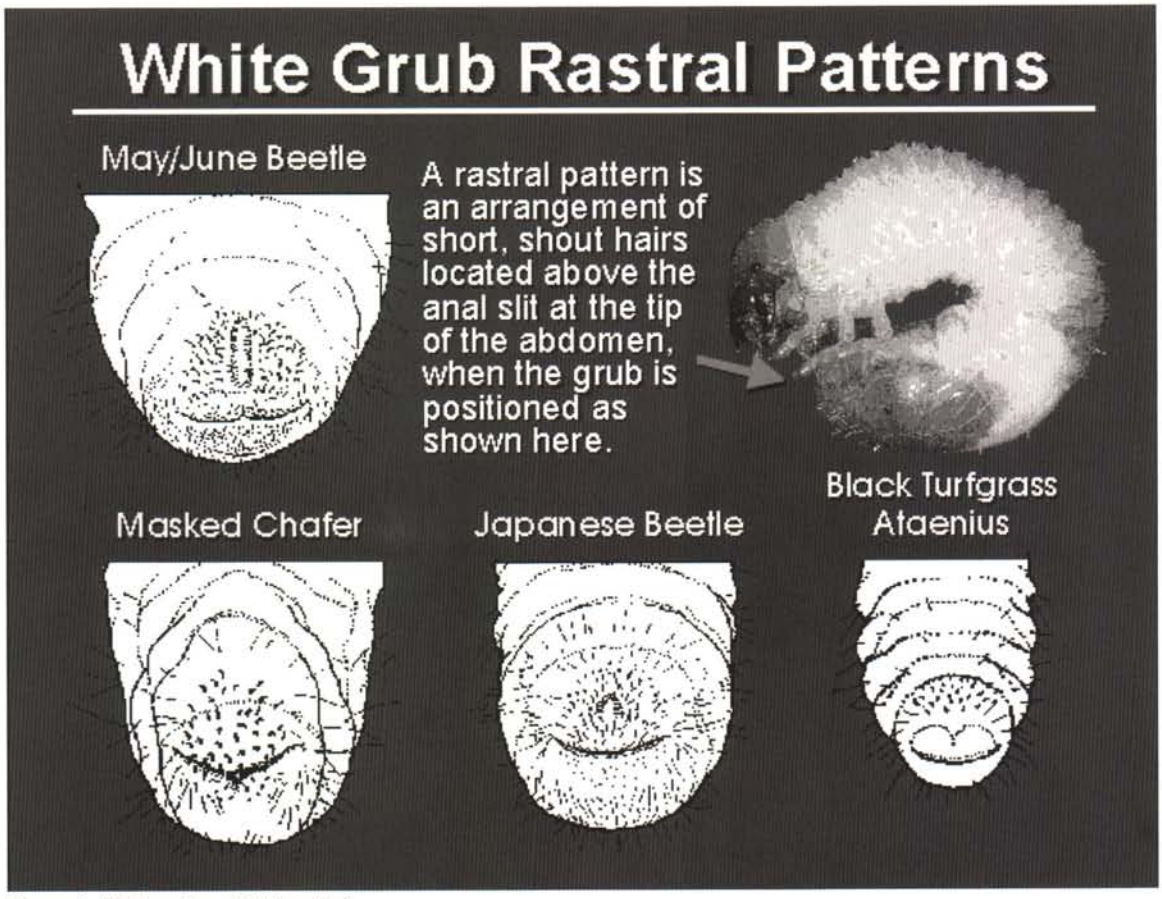


Figure 1 (University of Nebraska)

Eastern Bluebirds at University Ridge Golf Course - 1997 and 2003

By Gary Gaard, *Department of Plant Pathology, University of Wisconsin-Madison*

Summary. For the same acreage of property the number of fledged bluebirds was four in 1997 and 106 in 2003. A model with the elements of time, nest cavity and environment is used to give explanation for the increase in bluebird production. For successful attraction of nesting bluebirds you must provide the three elements of the model.

Inter-species competition for nest cavities is discussed.

No mealworms were fed, but the end result of diet supplement is discussed.

Introduction

The University of Wisconsin O.J. Noer Turfgrass Research and Education Facility is certified as a wildlife sanctuary.[1] A portion of the certification process was establishment of a bluebird trail on the Noer farm, an adjoining County Park and adjoining University Ridge Golf Course. The three properties are roughly one square mile, but one-half of the area has no bluebird nest boxes because that area is either cropland or not conveniently accessible for monitoring. Records/observations for the three properties are combined as my "Ridge Trail."

After the Noer Facility was certified as a wildlife sanctuary, bluebirds became my weekend hobby. Reference will be made in this article to personal experiences and results from some of my other bluebird trails.

The bluebird trail on University Ridge Golf Course has proven to be an excellent choice for a location to "monitor and increase the production of the Eastern Bluebird and other cavity nesting birds."[2] The Ridge adjoins the western outskirts of Madison so predation by raccoon and cat is high. Competition for nest boxes with other cavity nesting birds is extremely high - residents in the neighborhood provide many birdhouses and populations of wren, tree swallow and English sparrow are high. Birdseed feeders in the neighborhood favor the English sparrow. Golf course grass mowers scare up insects to provide a daily insect supply for tree swallows. At University Ridge, black flies from the Wisconsin River take blood meals from bluebird nestlings. My first observation of June Nest Box Mortality took place here.[3] Golfers and staff are often near bluebird occupied nest boxes, perhaps causing some nest lost when the bluebird hen is kept off her eggs. Golfers and staff see bluebirds and other wildlife and report problems and/or observations. On two occasions we suspected pesticide poisoning but laboratory test for an insecticide (from a nearby hay field) were negative - nestling bluebirds in both instances died from black fly bites. On one occasion two nest boxes were intentionally knocked over, presumably by a golfer driving a golf cart. As a University employee I have access to libraries, and have asked questions of College of Agricultural and Life Science experts.

Elsewhere in Dane and Iowa County I monitor an additional 100 nest boxes. Some are on four other golf courses, and others are in locations that are less urban. Compared to golf courses, rural areas fledge more bluebirds and have fewer nest failures. Rural area bluebird trails consistently fledge more bluebirds per nest box than golf course bluebird trails. Near Mt Horeb, rural Dane County, single nest boxes in three separate farm lawns each fledged three broods of Eastern Bluebird in 2003.

Monitoring a bluebird trail from a golf cart is fast, one hour at lunch to monitor all the houses on University Ridge. You can easily carry any tools and equipment. Often golfers ask what you're doing so you have opportunities to sell bluebirding and environmental awareness.

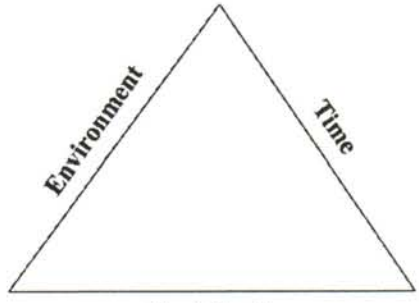
Results

In 1997 a total of four bluebirds fledged in 42 Hill Lake nest boxes placed in late May on my Ridge Trail. Hill Lakes have a large volume, very deep nest cavity. The construction pattern I used had 2"X4" predator guards at the entrance hole, a 1 1/2" round entrance hole and no predator protection pole. Many of the nest boxes were, in retrospect, poorly placed.

In 2003 106 bluebirds fledged on my Ridge Trail from 27 permanently placed small volume, shallow nest cavity Peterson, flyGuard, experimental design, or Gilwood houses. All nest boxes had predator protection poles, large or oval entrance holes and most houses were in locations where bluebirds had fledged in previous years.

A MODEL FOR PRODUCING MORE BLUEBIRDS

Bluebird Triangle



If a bluebird pair is going to nest, they must have all three components of the triangle.

If a bluebird pair is going to nest, they must have all three components of the triangle.

Nest Cavity

Since 1997 seven nest box designs have been used at my Ridge Trail. One Hill Lake remains as a demonstration of bad placement of a nest box that bluebirds do not prefer - for seven years only tree swallows have nested in this box and most nestlings have been victims of June Nest Box Mortality. Currently on the University Ridge Golf Course there are 15 Peterson's, two flyGuard and four experimental (I'm trying to design a house that Easterns will use but tree swallows won't); on the turf research farm there are three Gilwoods, and at the county park there are two flyGuard. Nest boxes have been placed/removed from approximately 100 locations since 1997. University Ridge is the only location that I have Peterson nest boxes. For me, the Peterson is too bulky, air vents allow the exophilic blackfly to take blood meals from incubating bluebird hens and from nestlings, and the Peterson has more English sparrow nests than nest boxes with restricted space above the entrance hole.

If a pair of bluebirds is in the right ENVIRONMENT at the right TIME, they will build a nest in just about anything including mailboxes, clothesline posts, tin cans, plastic pipes, knot holes, etc. Rather, I look for these features in nest box design: predator proof, easy to monitor and clean, small volume nest cavity, large entrance hole, no vent holes, adult bluebirds can feed/remove fecal sack without entering the nest box, and restricted space above the entrance hole to deter the English sparrow. Bluebirds will, ENVIRONMENT and TIME equal, choose one box over another. [4]

My opinion is that cavity nesters easily locate all nest cavities in a large territory, perhaps miles. They then nest in the one they most prefer. At one time I would "non-seasonal pair" nest boxes if, for example, a Chickadee claimed a nest box in an area where a pair of bluebirds were hanging around. This is a lot of work, so now I assume the bluebird will find another nest cavity in the vicinity.

Keep a nest box available in the garage. Bluebirds will often nest immediately if the spare nest box from the garage is placed in an area where a pair of bluebirds is observed.

Time

Mature male Eastern Bluebirds return to southern Wisconsin early in March and they're looking for a nest site and a mate. By mid-April most will have selected a nest box and found a mate. This early nesting period is the best time to attract a breeding pair - your nest box should be positioned and cleaned of last year's nests. Black cap chickadees will also build their one nest per year in late April/early May. Both chickadees and bluebirds are fairly successful at defending their respective nest at this time.

Late May and early June tree swallows begin to build their one nest per year and mid-June bluebirds begin their second nest. Wrens also begin to nest late in May, but their nesting season is longer than the tree swallow. Wrens and bluebirds area the season's latest nesters with their final fledging is early September.

The English sparrow is a season-long nester.

Environment

The Eastern bluebird's choice of where to build a nest is something I just don't understand. They will nest in one area consecutive years, but a second area that looks identical to me will host another cavity-nesting species for consecutive years. I think several considerations determine their choice, these being habitat, inter-species competition for nest boxes, and nearby food supply.

The literature describes bluebird habitat as "short

grass prairie." At University Ridge I have had more bluebirds nesting in "woods edge" than "short grass prairie." Greens number one to nine are located in an area of short grass prairie, formerly cropland, and fledged 15 bluebirds in 2003. Greens number eleven to eighteen are located in an area of forest edge, fairways are cut through the woods, and fledged 45 bluebirds in 2003. Woods, with widely spaced trees and brush removed, is an excellent location for a bluebird nest box. Many "woods edge" nest boxes are positioned where squirrels could jump to the box, but I have not lost any bluebird nests to squirrels.

There are eight locations at University Ridge (irrigation pond, driving range, stone creek on #2 fairway, #1 tee, #16 fairway, #15 fairway, #14 green, #10 green) that fledge two broods of Eastern bluebirds each year. My experience is these locations are most of the time but not always, protected from prevailing west wind. The nest box is shaded in the afternoon sunny in the morning. Conversely there are several nest box locations where the bluebirds don't nest, but each year tree swallows do nest. In 2004 I'm going to remove nest boxes from all golf course locations that have never had a bluebird nest. Non-bluebird-producing nest boxes were removed from both the turf research farm and the county park in 2002; five remaining nest boxes fledged 29 bluebirds in 2003.

Inter-species competition is the most complex part of the environment. With more monitoring experience, I now think it may be the most important factor in determining if bluebirds nest in an area. Usually a cavity nester can keep a nest box once they have nested. However, there is a "pecking order" for Wisconsin cavity nesters. The chickadee is at the bottom, as bluebirds will build a nest on top of a chickadee nest. Next comes the bluebird that can be evicted, sometimes killed, by both the English sparrow and the wren. Chickadees and (first nest) bluebirds nest early in the season and thus avoid some of the nest box competition.

There is a dilemma with the second bluebird nest-competition for a nest box with tree swallows. I have witnessed a group of the social swallow drive a bluebird from a nest box; then the dominant tree swallow claims the site. Some folks still practice season-long house pairing to provide a "box for the bluebird and a box for the tree swallow." These folks persist in seasonal pairing even though Joe O'Halloran of BRAW has proven with data that increasing tree swallow populations decreases bluebird production. I don't view tree swallows and bluebirds as "good buddies" just because they both use the same habitat/nest boxes. Rather, the bird that claims and defends a nest box is going to have descendents. The less aggressive bird, usually the bluebird, has to find another nest cavity or not raise a brood.

These two anecdotal stories demonstrate why there are low numbers of bluebirds where inter-species competition is high. Huegel School in Madison has habitat for one or two bluebird pairs annually. Since 1997 one pair has nested one time and wrens picked holes in the eggs. Tumbledown Golf Course west of Madison has habitat that should fledge 30 bluebirds per year; since year 2000 bluebirds fledged has averaged less than 10 per year. Both locations are surrounded by upscale neighborhoods with many wren houses, bird feeders, season-paired bluebird houses, and English sparrow-inhabited purple martin houses.

Destroying wren/chickadee/tree swallow nests is illegal (with penalties if reported!) and results are only short-term and only local. If the goal is bluebirds only, manage your bluebird trail to produce bluebirds and remove as much as possible nest sites and food supplies for other birds competing for the bluebird nest box.

Nest box spacing should give the competitive advantage to bluebirds. Putting up too many boxes favors competitor cavity nesters. More houses = fewer bluebirds, as populations of the more aggressive wren, tree swallow and English sparrow will be higher. These

species will compete for the nest site at the detriment of the bluebird. My experience is that nest box spacing should be approximately five acres per house. A good measure of a properly spaced nest box is bluebirds fledged per box per year - if the number is less that four, houses are too close together.

I remove nests as soon as the young fledge. A bluebird will build a second nest on top of the first so be careful what you remove. It's rare that a bluebird will use a nest box used by a wren, as twigs in a wren nest are difficult for the bluebird to remove. A bluebird nest is seldom built on top of a tree swallow nest, and I think the reason is the presence of bird mites in swallow nests.

Leave the nest box up all winter? Absolutely! Bluebirds will spend the night until they migrate around Thanksgiving, and other native birds will seek protection from inclement weather through the winter. Bluebirds that have visited nest boxes in the fall theoretically return to the area to nest in the spring.

Another feature of environment is the bluebird's ability to find an insect diet. I suspect they're looking for a food supply near the nest box. They can better defend their nest if they spend less time traveling/searching for food. Bluebirds fed mealworms travel/search less for insect diet. Thus they are more likely to nest, and they are better able to defend their nest. By feeding mealworms you can alter the environment to nests 50 feet apart but with unaltered environment, spacing should be on average 300 yards or more. Native fruit/berry shrubs seem to be easily found by the bluebird.

Recommendations

NEST BOX

Use a design that bluebirds prefer. Data and field experience should verify nest box preference.

Keep a record of nest box production. An obtainable goal is an average fledge of four bluebirds per nest box. Expect an average fledge of more than 1.5 broods of native cavity nester (chickadee, bluebird, wren, and tree swallow) per box per season.

TIME

Maintain your nest box so it is ready for nesting if a pair of bluebirds move to the area. Leave the nest box positioned 365 days per year.

ENVIRONMENT

If the goal is more bluebirds, manage to reduce inter-species competition.

Trial and error is needed to determine if a bluebird nest box is in a habitat that will attract a breeding pair of bluebirds. If for two years no bluebirds nest in the selected location, move the house to a new location.

Place one nest box per several acres.

Feeding mealworms gives the bluebird a competitive advantage over other cavity-nesters.

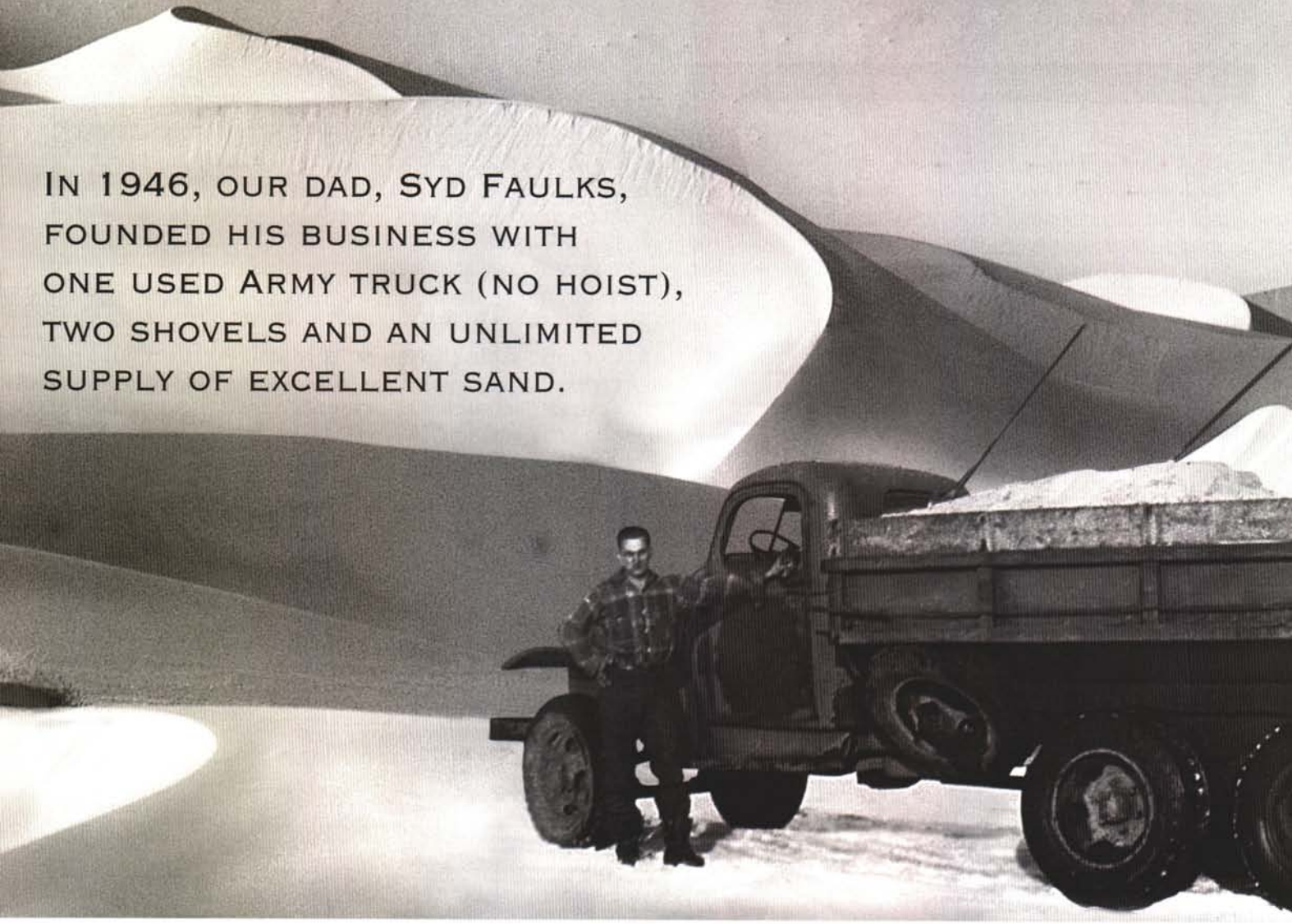
Open woods are a good location for a bluebird nest box.

Place nest boxes at a location protected from prevailing wind, for example on the east edge of a hill, woods, or fencerow. Locations that receive morning sun, then afternoon shade, are more frequently chosen as nest sites by the Eastern Bluebird.

1. **Cooney, Bob. Birds & Birdies, Wildlife and recreation coexist at the University's golf course. Science Report**, College of Agricultural & Life Sciences, 2000-2001, page 16
2. **Anon. Purpose and Mission statement**, Bluebird Restoration Association Wisconsin (BRAW).
3. **Gaard, Gary. Eliminating Black Fly Feeding on Nestling Bluebirds**, Wisconsin Bluebird, summer 2003, Vol. 18 page 1.
4. **Ibid**. figure 1.

Thank you, Joe O'Halloran for review of this article, for advice, and for suggestions.

Editor's Note: *This article apperared in the Vol. 18, No. 4 issue of Wisconsin Bluebird with permission from editor Don Bragg and author Gary Gaard.*



AND THINGS ONLY PROCEEDED TO GET BETTER –

TOPDRESSING SANDS,
PERFORMANCE DRIVEN CONSTRUCTION MIXES,
BUNKER SANDS AND GREEN SAND,
YOUR DEDICATED TURF SPECIALISTS

SAND & SOLUTIONS
WAUPACA
A DIVISION OF FAULKS BROS. CONSTRUCTION, INC.

GOLF COURSE SANDS FOR
YESTERDAY, TODAY AND TOMORROW . . . PHONE 715-258-8566

WITH OVER 40 TRUCKS DEDICATED TO DELIVER WHEN AND WHERE YOU NEED IT.