NORTH AMERICAN BLUEBIRD SOCIETY

Bluebird

Winter 2005
Vol. 27, No. 1

Mate guarding is a techinque used by some bird species, including House Wrens (above) and bluebirds, to ensure that their genes are the ones passed along in the babies they raise. See page 16 for discussion.

From the President

By Steve Garr

I am proud to let members know there are more positive changes in the near future at NABS. Members are now getting an additional notice when their memberships are about to expire. We value your membership, and you are our voice to recruit new members. If you know someone interested in bluebirds, encourage them to join NABS. You might even consider getting them a gift membership. It's a great way to help NABS.

The NABS board worked diligently together in October to give NABS members the opportunity to become more involved. The final decision is up to the members, though. Those that attend the next NABS convention will vote on changes in the bylaws that will give members the opportunity to vote by proxy.

Present voting only allows current members that attend the convention to vote, which usually represents less than 10 percent of the membership. If this is approved all members will have the chance to vote for officers, board members, and changes in the bylaws. You can find out more about the changes in this issue of Bluebird. The NABS board was unanimous in wanting to get these changes made.

Board member Bob Benson is chairing the nominating committee. If you are interested in helping NABS, please contact Bob. He is emphasizing his search for board members from the Rockies and the West Coast so the breeding areas of Mountain Bluebird and Western Bluebird would be represented. If you have the desire and ideas to help NABS, send Bob an email at countrybirdworks@aol.com.

Our executive director, Lisa Bulick, continues to do an excellent job managing the office and implementing the changes that will build our membership. Many of you got a chance to meet and talk with her in New York while she was at the NABS booth. I hope those attending the convention in North Carolina will stop by the NABS booth and meet Lisa. I look forward to meeting each of you at the convention also.

Register your trail, enter data

At mid-October, 2004, there were 55 bluebird trails registered with the Transcontinental Bluebird Trail (TBT). Was yours one of them? Your trail data is important to NABS and is one of the benefits of NABS membership.It takes a typical member about five minutes to enter year end trail data into the TBT. Please consider sharing your trail data with NABS. Simply go to www.tbt.nabluebirdsociety.org. You will need your NABS membership number and TBT password. If you haven't logged into the TBT and changed your password, it is set to the default password of NABS. If you have any questions please contact tbt@nabluebirdsociety.org. *—Jim McLochlin, NABS Director, TBT Chairperson, and NABS Web Site Chairperson.*

NABS bylaw changes to be voted on at North Carolina convention

Changes in the NABS bylaws will be voted on at the NABS annual meeting in North Carolina on May 21, 2005. The changes were presented to the board at its Oct. 16, 2004 meeting. The board vote was unanimous in approval of these changes.

Listed below is both the wording of the present bylaw and the proposed changes.

A 'yes' vote at the convention will change the bylaws to the proposed wording.

Article XI Officers

3. Duties of Officers

D. The 2nd Vice President for community relations shall serve as a liaison between NABS and the community where the office is located. Duties shall include promoting NABS activities locally, and securing volunteer participation when needed.

Suggested change

[This will become section 3 article E.]

The 2nd Vice President will serve as a liaison between NABS and its members to coordinate NABS activities such as public relations, and NABS participation at public events such as fairs, tradeshows, etc., ... and in securing volunteer participation when needed.

Under Section 3, Duties of Officers

[This is a new item. It will become "C" and all other letters will be shifted accordingly]

c. Upon permanent vacancy in the office of President, the first Vice President shall be become President.

Article VIII Elections

[Current]

2. Voting shall be by those Society members in attendance. A simple majority shall elect. Voting may be by voice, a show of hands or by ballot.

Amendment to read:

2. Voting shall be by those Society members in attendance and by absentee vote. A simple majority shall elect. Voting may be by voice, show of hands or by ballot.

[#3 now reads]

3. Nothing herein shall prevent nomination from the floor at which time the elections are to be held. Consent of the nominee must have been previously obtained.

Amendment to read:

3. Nominations will not be accepted from the floor, except in the event of a vacancy on the ballot. In addition to name submitted by the nominating committee, names may also be submitted for the ballot by letter to the nominating committee at least 90 days in advance of the election. Consent of the nominee must have been previously obtained.

Deadline Jan. 31 for Spring issue

The deadline for the Winter 2005 issue of *Bluebird* will be Oct. 31, 2005. Earlier submissions always are appreciated. The editor prefers to receive material by e-mail (no attachments, please) at two-jays@.att.net. Postal address is Jim Williams, 345 Ferndale Road N, Wayzata, MN 55391. Include a self-addressed stamped envelope if you wish return of manuscripts or photographs. Letters to the editor are welcome. Letters may be edited for length and content.

Bluebird

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Questions should be directed to the NABS headquarters address/telephone number shown above.
The NABS web site offers answers to many questions.

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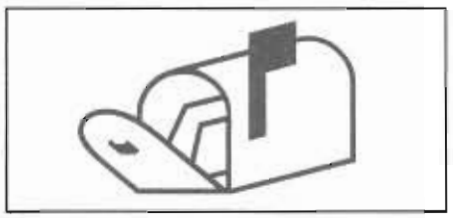
Letters to the editor and articles in this magazine express the opinions and positions of the authors. Letters may be edited for length and content. Articles published do not necessarily represent the opinions and positions of the officers, directors, or employees of the North American Bluebird Society.

For advertising information, contact the executive director.



Don't promote non-native plants

To the editor,

I ordered a copy of the NABS Educational Packet (undated) and was disappointed that a number of invasive plants (Multiflora rose, Japanese Honeysuckle, Common Privet, Japanese Barberry, and White Mulberry, with an asterisk noting they were non-native) were included in Table One under the topic "Wildlife Plantings."

NABS should be promoting environmentally responsible conservation approaches, and should encourage people to avoid these plants, and to work to eradicate them if they are on their property.

Yes, bluebirds may eat fruits from invasive plants. One of the reasons invasive populations have exploded is precisely because birds eat the fruit and then disperse the seeds when they defecate. These alien plants can cause serious ecological harm, taking over whole habitats and choking out native species.

Bluebird enthusiasts should go with native plants whenever possible -- they are more likely to thrive, anyway.

— Bet Zimmerman, Woodstock Valley, Connecticut

Dear Editor,

I recently found myself rapping (gently of course) on the side of my mailbox before opening. When I realized what I was doing I decided that I was perhaps monitoring too many bluebird boxes.

— Randy Downing, Galena, Illinois

Nominations for NABS awards should be submitted by Feb. 28

The North American Bluebird Society annually makes awards for outstanding contributions to bluebird conservation. Awards will be presented at the NABS convention in May in North Carolina; nominations must be received no later than Feb. 28, 2005.

If you wish to nominate an individual, a group, or someone involved in research for an award, please contact NABS awards chairman David Cook at 664 S. 14th St., San Jose, CA 95112, e-mail justdave50@earthlink.net, or by telephone at 408/275-1492. Include your telephone number or e-mail address, please.

For individual awards, consider the ways in which nominee has publicized or aided bluebird/cavity-nester conservation. Examples might include speaking before groups; working with young people; obtaining publicity in newspapers, radio, or television; working at nature centers, workshops, or fairs; inventing or improving trap or box designs; designing and producing publications; plantings, etc.

For nomination of a group, consider workshops offered, number of boxes maintained by group members, increase in bluebird production, methods of recruiting monitors, successful fledglings, etc. Programs must have been in place for a minimum of five years.

For research awards, briefly summarize research completed (and in progress) involving bluebirds/cavity nesters, and include bibliographic citations of articles published about bluebirds or other North American cavity nesters (copies of articles or abstracts are desirable).

Scientific articles now available on searchable internet site

Bluebirders who wish to examine scientific papers on bluebirds or other bird species now have free access to research published in some of the leading ornithological journals. The information can be found on the internet at http://elibrary.unm.edu/sora.

This is an ongoing project of SORA, the Searchable Ornithological Archive. SORA is an open access electronic journal archive, the product of a collaboration between the American Ornithologists Union, the Cooper Ornithological Society, the Association of Field Ornithologists, the Wilson Ornithological Society and the University of New Mexico libraries and IT department. The site includes the following titles: *The Auk* (1884-1999), *The Condor* (1899-2000), *The Journal of Field Ornithology* (1930-1999), *The Wilson Bulletin* (1889-1999), *Pacific Coast Avifauna* (1900-1974) and *Studies in Avian Biology* (1978-1999). *The North American Bird Bander* will also be available in the near future.

The SORA project is an outgrowth of the Cooper Ornithological Society's efforts to produce an electronic archive of *The Condor*. The project was financed solely by the individual societies, and the University of New Mexico Centennial Science Library and IT department invested the time and resources to develop the databases and website.

Come to North Carolina in May for NABS annual get-together

NABS 2005 convention will be May 19-22 in beautiful Asheville, North Carolina. Host organization is the North Carolina Bluebird Society.

The event begins Thursday, May 19, with four free workshops, and continues Friday, Saturday, and Sunday with speakers, field trips, tours, two dinners, and merchandise displays. The dinners are Friday and Saturday evenings.

The NABS annual meeting and election will be Saturday morning. Author Scott Shalaway will speak at that session and again at the Saturday evening banquet. Awards will be presented following the banquet.

Here is Thursday's workshop lineup:

• **Photographer Gene Stafford** from Colfax, North Carolina, will share pictures of the landscape in rural North Carolina.

• **George Stilphen of Winston-Salem** will speak about the activities of "Keep America Beautiful, a national nonprofit public education organization dedicated since 1953 to engaging individuals to take great responsibility for improving their local community environments.

• **Bill Hilton, Jr.** will speak on bird banding. His Hilton Pond Center for Piedmont Natural History has been in operation as a conservation, educational, and scientific research site for more than 22 years. Hilton has banded more than 45,000 birds of 123 species on the 11-acre tract, making it one of the most active banding stations in the southeastern United States.

Because of this work, in 2003 the center was designated an "Important Bird Area" by the National Audubon Society and Bird Life International.

• **Simon Thompson of Ventures Birding, Inc.,** will talk about his birding travels throughout the world. He has lived in Lebanon, Kenya, Yemen, and Ghana, where his interest in birds and natural history began. He has led many birding trips all over the world.

Saturday's program, following the annual meeting and election, will feature:

• **Scott Shalaway,** author of the book *Building a Backyard Bird Habitat.* Dr. Shalaway earned his Ph.D. from Michigan State University and taught for nine years at Oklahoma State University. He writes a weekly nature column and hosts a radio talk show. He will speak on the natural history of cavity-nesting birds. That evening, he will discuss the cost of raising bluebirds, a light-hearted, but practical view on bluebird conservation.

• **Douglas LeVasseur,** Ohio bluebirder and former president of NABS, will talk about "The Joys of Bluebirds." He has a video of a bluebird that comes through his window to enjoy breakfast on the kitchen table. He shares his early attempts with nest boxes and the mistakes that he made in their placement.

• **Connie Toops**, author of the book Bluebirds Forever. Her book is filled with bluebird history, including their decline and subsequent resurgence (thanks to bluebird enthusiasts). Connie will talk about bluebird courtship, raising young, favorite foods, and migration. She will answer your questions following her presentation.

The program Saturday afternoon will offer two hands-on workshops. **Claire Bryant,** an author and designer of cross-stitch patterns, will present the first. The cards she brings will feature bluebirds produced by cut-and-paste or stamp-and-color. The tote bags ($3 charge) will have pockets and involve painting a line-drawing bluebird.

The second workshop will teach participants how to prepare a press release. This will be of interest to newsletter editors.

Plans are being made for a Birding Walk on Sunday at 8 am. It will be a wonderful way to finish the NABS 2005 meeting.

One of the reasons Asheville was selected for the NABS 2005 meeting is the presence of the Biltmore House, mountain home of the Vanderbilts. People come from all over the world to tour the "largest private home in the United States." The gardens and park surrounding it are magnificent and the view from the back terrace of the Biltmore is to be enjoyed again and again. Join us in Asheville and enjoy a beautiful place and an event-filled meeting.

Bluebirds and golf courses: Studies show this habitat can be used successfully

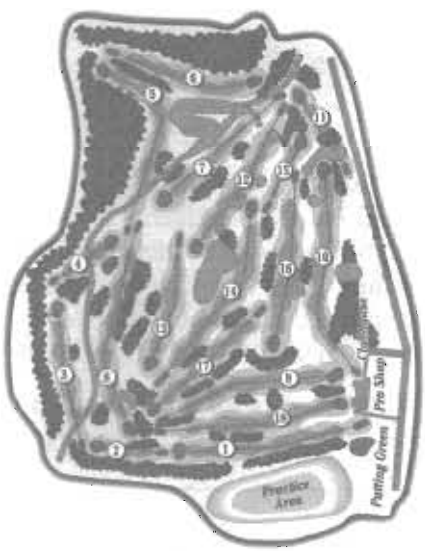
By Jim Williams

Golf courses appear to offer attractive habitat for Eastern Bluebirds. They provide expanses of grass both long and short, with trees and water. All that might be lacking are nesting cavities, and many of us provide those by nest-box placement.

Are golf courses as good for bluebirds as they appear to be? What about pesticides and other turf-care chemicals commonly used there? What about the routine presence of people? Habitat fragmentation? The opportunities for predation?

Are golf courses sources for bluebird populations, producing a surplus of birds, or sinks, where conditions provide breeding opportunities but ultimately serve to reduce the population?

Two recent scientific studies, one in Virginia, the other in North Carolina, address these questions. The answer in both cases was essentially the same: The golf courses studied proved acceptable as good habitat for nesting bluebirds. This opinion is



based on examination of several factors, including physical condition of birds hatched.

"Putting nest boxes on golf courses is a good thing to do," said Dr. Mark Stanback, author of one of the studies. "I was surprised at how well Eastern Bluebirds did on golf courses, considering the environment there."

The second study found that bluebirds raised in golf course locations showed little sign of stress from the problems one might expect to find in such habitat. Indeed, the bluebirds studied in this effort showed less sign of such stress, according to the particular tests used, than bluebirds from other habitat types used for comparison.

"Our data indicates that Eastern Bluebirds are productive on golf courses. We found that bluebirds may actually fledge offspring of higher quality there," said the authors, Josh LeClerc, a recently finished Master's student at the College of William and Mary, Judy Che and John Swaddle, students there, and Dr. Daniel Cristol, associate professor of biology at the school.

WILLIAM AND MARY STUDY

This study monitored 410 nest boxes on nine golf courses and 10 non-golf sites in and around Williamsburg, Virginia. The study covered the 2003 breeding season.

The bluebird study grew from a larger study of almost 100 Virginia golf courses made to determine if any bird species in need of conservation help nested there. (The answer was no.)

"The golf courses we studied have

little value for bird species that are in trouble," Dr. Cristol said in a telephone interview. "But, Eastern Bluebirds as a nesting bird are more often found on golf courses here than on other land types that offer appropriate habitat. That's because people put nesting boxes on golf courses."

Dr. Cristol's study compared adult bluebird reproductive success and nestling condition in birds breeding on and off golf courses. The supposition as the study began was that golf courses provide poor bird habitat because of pesticide pollution and other factors.

The researchers hypothesized that the same factors that caused developmental stress for young birds would cause adult bluebirds on golf courses to initiate clutches later, lay smaller clutches, have lower hatching success and, overall, experience lower productivity than birds from non-golf sites.

Contrary to those predictions, the study found that nest boxes on golf courses had slightly more eggs laid in them and produced more fledglings per nest than boxes in other habitats. Because nest failures were somewhat more frequent on golf courses, the overall productivity of golf courses and other habitats was about the same. The research team did not find any evidence that adult bluebirds breeding on golf courses either initiated their nests significantly later in the season or laid smaller clutches.

One finding that surprised Dr. Cristol and his fellow researchers was the low degree of fluctuating asymmetry observed.

What is fluctuating asymmetry? Certain parts of the body of a bluebird, or your body, for that matter, develop as symmetrical pairs. You can expect your eyes and ears to be the same size

and shape. Likewise, your leg bones should be symmetrical.

If they are not, it is most likely not a problem with the DNA, the genetic information that guides development. It is likely, instead, that some outside agent has influenced body development.

Pesticides used on a golf course could be such an agent. If a female bluebird ingested pesticide just before or during the egg-laying period, that chemical could affect the fetus, altering symmetry in the hatched bird.

What Dr. Cristol and his team did was measure the left and right tarsus (leg bones) of bluebirds 10 to 12 days old. "We chose that body part," he said, 'because it has stopped growing by day 10, and we can conveniently measure it."

...the study found that nest boxes on golf courses had slightly more eggs laid in them and produced more fledglings per nest than boxes in other habitats

"Surprisingly," Dr. Cristol wrote in the paper describing the study, "nestling bluebirds raised on golf courses exhibited less fluctuating asymmetry of their tarsus bones" than did birds nesting elsewhere and used for test comparison.

"We cannot yet explain why golf course nestlings were more symmetrical," Dr. Cristol wrote, "but we can conclude that 1) the pesticides used on these golf courses did not impose a significant stress on bluebirds, or 2) bluebirds are avoiding exposure to these pesticides, or 3) golf courses are high-quality bluebird habitats for other reasons which outweigh any effects of pesticides (for instance, greater food availability or less competition with other cavity-nesting species).

"The increased productivity appears to be driven by a relative increase in number of active nests per nest box on golf courses," Dr. Cristol wrote. "Specifically, golf course boxes were less likely to be unoccupied and more likely to contain two active clutches per season than non-golf nest boxes."

Although bluebirds laid relatively more eggs and fledged more young per nest box on golf courses, survivorship of individual nests was not significantly different between golf and non-golf sites, Dr. Cristol wrote. Rates of mortality during laying and incubation tended to be higher on golf courses. But even with these losses, bluebird parents ultimately raised the same number of young birds from the golf-course boxes.

The study did not determine the kinds or amounts of pesticides used on the

golf courses involved. But, both herbicides and insecticides were used, Dr. Cristol said. The researchers collected unhatched eggs and dead birds (when they were found) so that pesticide analysis could be done if the study results had indicated a significant problem. Such analysis was deemed not necessary, Dr. Cristol said.

"Based on our study," he said, "I tentatively can recommend golf courses as suitable habitat for Eastern Bluebirds, with the understanding that conditions vary from course to course. If other habitat in the area of the course is suitable or better than the golf course, it might be best to place the nesting boxes off the course.

"The biggest worry would be high insecticide use on the course. Most important is the relationship between the bluebird monitor and the golf-course superintendent," he said. The bluebird monitor should try to become knowledgeable about chemical use on the golf course under consideration.

THE STANBACK STUDY

Dr. Mark Stanback teaches in the department of biology at Davidson College in Davidson, North Carolina. His study involved 402 nest boxes monitored for six years, from 1999 through the 2004 breeding season. One hundred and fifty of the boxes were located at non-golf sites of varying size (hayfields, old fields, pastures, and gas- and power-line rights of way. The remaining boxes were placed on seven golf courses, 36 per course. All of the boxes, golf and non-golf alike, were located within a 12-mile diameter circle. The study used data from over 3,000 nesting attempts.

The study was designed to address what Dr. Stanback calls "a growing concern by the public at large over the use of fertilizers, herbicides, and pesticides in both agricultural and non-agricultural environments."

Interestingly, golf course males appeared to be in better condition than non-golf males, though the effect sizes were very small.

In this study, Dr. Stanback used the Eastern Bluebird as an environmental indicator. Bluebirds nesting on golf course fairways primarily feed their young insects collected on managed turf. Because of this, he said, analysis of reproductive success of these birds versus those nesting in more traditional habitats (hayfields, old fields, pastures) could be especially instructive.

The question addressed was: Is there a negative association between reproductive success and the golf course environment?

Dr. Stanback said that three properties characterized the golf courses used in his study: extremely short grass, high chemical input, and near-constant human activity. "Our non-golf sites varied substantially," he said," but were similar in that they all lacked these three features.

At no site were nest boxes positioned closer than 110 yards (100 m) from one another, he said. Over the course of the study an increasing number of golf and non-golf boxes were provided with predator guards. Weekly visits were made to all nest boxes from early March through early August each year.

To gather information for the study, both adult and nestling bluebirds were weighed and the length of a portion of one wing was measured. The second index of the condition of the birds was measurement of body symmetry. Dr. Stanback and his associate on the project, Megan Seifert of Davidson College, used tail-feather measurements for this determinant. The left and right outer tail feathers were plucked from adult birds and measured.

For breeding females, the Stanback study found no significant effect of either habitat (golf vs. non-golf) or month of capture on body condition as determined by weight or wing measurement. For breeding males, habitat and month of capture had significant effects on those measurements.

"Interestingly, golf course males appeared to be in better condition than non-golf males," Dr. Stanback wrote in his report, notingl that the differences were small. Body symmetry did not differ between golf and non-golf females.

"Both habitat and year had significant effects on the onset of breeding. The

habitat effect was not large: bluebirds living on golf courses initiated spring nests about one day later than those living in non-golf habitats," he wrote.

Habitat and year also had significant effects on the time interval between spring and summer nests. This interval averaged 3.5 days longer on golf courses than in non-golf habitat.

Clutch sizes were very close to the same for golf and non-golf sites. Brood size was not influenced by location of the nest, year, nor nesting date.

"We found reproductive parameters to be slightly ... poorer on golf courses," said Dr. Stanback in a telephone interview. His report had this to say in that regard: "We cannot claim that the high chemical inputs associated with golf courses have no direct effect on bluebird reproduction. It is likely that toxins, regular disturbance, and, most importantly, low food availability combine to make golf course environments less favorable for bluebird reproduction than non-golf habitats.

"But from a practical standpoint, there was very little difference," he said in the interview. "I would tell people, go ahead and do it, put nest boxes on golf courses. "There is high-quality habitat and low-quality habitat everywhere. The non-golf habitat we chose also showed variations. If golf courses really are bad for bluebirds, they would not nest there.

"Our more intriguing finding is that the differences are so minor. Perhaps we should change our perspective; instead of asking why golf course bluebirds are doing so poorly, maybe we should ask why they are doing so well.

"At one level, we have to trust the birds," he said. "If they are successfully breeding and producing young, you can't say the habitat is bad." (He added that another study shows that predator guards are a good idea for nest boxes in those locations.)

Dr. Stanback found that he was welcomed on golf courses. "Golf-course personnel seemed to like to have the boxes there," he said. "I began using golf courses simply because they offered good habitat. This study came after I began that relationship. The course managers have been helpful and generous." Dr. Stanback added that he kept box placement subtle and, for the most part, out of sight of golfers. He did not want to be intrusive or wear out his welcome.

"Birds will continue to play a critical role in our understanding of the environmental effects of urbanization," he wrote in his paper. "As natural habitats become more scarce, wildlife will continue to be forced into human-altered habitats such as golf courses. Some species will thrive in these managed environments; others will not.

"Our goal should be to make these habitats as livable as possible for as many species as possible while retaining their recreational value for humans. Such reconciliation ecology will not be the solution for every environmental problem, but for birds on golf courses, it is a step that we can't afford not to make," Dr. Stanback wrote.

(Scientific papers have been prepared from both of these studies. Those papers are under review for publication in an upcoming issue of The Wildlife Society Bulletin. They will part of a special set of articles dealing with golf courses and birds. We thank Drs. Cristol and Stanback for sharing their research, and for their cooperation in preparation of this article. Dr. Daniel A. Cristol can be reached at the College of William & Mary, Williamsburg, VA 23187-8795, email dacris@wm.edu. Dr. Mark Stanback can be reached at PO Box 7040, Davidson College, Davidson, NC 28035, email mastanback@davidson.edu.

Insect availability

Dr. Stanback's study also gathered information on the availability of insects on the golf courses included in the project. "Our insect sampling in 2004 showed golf course sites to have dramatically fewer (insects) than did our non-golf habitat. On golf courses, the mean number of insects more than one millimeter in length (collected in a given sample) was 4.06. In non-golf habitat, the mean number of insects (collected in a similar sample) was 24.03," he wrote. He called this six-fold difference in the number of insects found in the two habitat types to be highly significant.

NORTH CAROLINA BLUEBIRD SOCIETY HOST OF

NABS 2005

May 19-22, 2005
Great Smokies
Holiday Inn
SunSpree Resort
Becomes the
Crowne Plaza in
April 2005

The North American Bluebird Society's 28th Annual Convention

Carolina Blue

Asheville, NC Home of the Biltmore Estate

The richness of Asheville, North Carolina spreads out from Vance Square over the treetops and into the mountains that surround it. The presence of the Biltmore Estate, advertised as the largest private home in the United States, draws people from all over the world. Its use as a backdrop in the Peter Sellers' movie "Being There" makes you want to know more about how George Vanderbilt was able to create this stately home high in these North Carolina Mountains. His hiring of Richard Morris Hunt to design a 16th century chateaux and Frederick Law Olmsted to lay out the gardens and surrounding park is only part of the story.

Mr. Vanderbilt had the foresight to hire Gifford Pinchot and then Dr. Carl A. Schenck to oversee the reforestation of land that had been over farmed. This was the foundation of the 6,500 acre Pisgah National Forest and its history can be explored at the "Cradle of Forestry" facility. This is the birthplace of forestry conservation in the United States.

The North Carolina Arboretum covers 426 acres in the Pisgah National Forest and has five themed gardens reflecting Southern Appalachian heritage. The Folk Art Center up on the Blue Ridge Parkway exhibits and sells handcrafted items produced locally by descendants of the original settlers of this area including what is now the Great Smokey Mountains National Park. The 2004 Visitor Guide to Asheville says that "Thomas Wolfe's writing style was born in these mountains and his boyhood in Asheville formed the basis for his masterpiece, *Look Homeward Angels*. Others have found their muse here. Novelist F. Scott Fitzgerald, short-story writer O. Henry and poet Carl Sandburg all have Asheville ties."

Contact the Visitors' Center : www.exploreasheville.com or call 1-800-257-1300 for more information.

Biltmore House in the Spring!

Carolina Blue by Dempsey Essick

SPECIAL POINTS OF INTEREST:

- *Carolina Blue is a painting by Dempsey Essick and the color of the sky in the Carolinas.*
- *Springtime in the mountains of North Carolina is a delight of weather, birds and flowers.*
- *The Biltmore Estate has its own bluebird trail which was originally maintained by a North Carolina Bluebird Society member. It is now maintained by the Biltmore staff.*
- *NABS 2005 is an incredible opportunity to visit this small city with a positive attitude and altitude.*
- *Fill your registration form out today and start anticipating the fun of Carolina Blue and NABS 2005*

NABS 2005 Schedule
Asheville, North Carolina - May 19-22, 2005

Registration - Desk in Convention Entrance
Thursday - 10 am to 8 pm
Friday ~ 8 am to 9 pm
Saturday - 8 am to 9 am

Exhibit Area - Crowne Plaza Biltmore Foyer (between Registration and Pool)
Thursday - 10 am to 9 pm
Friday - 8 am to 9 pm
Saturday - 8 am to 5 pm

Silent Auction Items - Viewing and Bidding - Dogwood Room
Thursday - 10 am to 9 pm
Friday - 8 am to 9 pm
Saturday - 8 am to 5 pm

Thursday - 8 am to noon - NABS Board Meeting - Mitchell Room
1 pm to 1:45 pm - Photography Workshop, Gene Stafford, Photographer
2 pm to 2:45 pm - Keep America Beautiful - George Stilphen
3 pm to 3:45 pm - Ventures, Inc., Bird Watching Tours - Simon Thompson
4 pm to 4:45 pm - Bird Banding, Bill Hilton, Jr.
7 pm - Presentation: Welcome to the Biltmore - Speaker Bill Alexander - Mitchell Room

Friday - Field Trips

A. Biltmore House & Folk Art Center - Leaves at 8:30 am. Return no later than 3 pm.
B. Biltmore House & NC Arboretum - Leaves at 8:30 am. Return no later than 3 pm.
C. North Carolina Mountain Tour - Leaves at 8 am. Return between 3 and 4 pm.
(Lunch may be purchased at the Biltmore House. Box lunch included in NC Tour)

Friday - Dinner - 6 pm Cash bar (Dinner and bar will be on the patio weather permitting)
7 - 9 pm - Old fashion pig pickin' complete with' Bluegrass music and cloggers

Saturday - Mitchell & Mt. Roan Rooms

8:00 am	Welcome by President of the North American Bluebird Society
	Singing of Bluebird Medley - Kay Hindsley
8:15 am	NABS General Meeting, Elections & Announcements of NABS Awards
09:00 - 09:45 am	Scott Shalaway, Columnist and Author
09:45 - 10:00 am	Break
10:00 - 10:45 am	Douglas LeVasseur, Past President of NABS & Bluebird Expert
11 :00 - 11 :45 am	Connie Toops, Photographer and Author
11:45 ~ Noon	Information on NABS 2006, Texas Bluebird Society
Noon --1:00 pm	Lunch in Pilot and Pisgah Rooms
1 :00 pm	To be announced
2:00 - 4:00 pm	Workshop - Make Bluebird Cards and/or a Bluebird Tote Bag, Claire
Bryant,	Author and Master Craftsman. Nominal charge for tote bag ($3).
	Asheville Historic Trolley Tour ($13.00) Learn about Asheville's History.
4:00 - 5:00 pm	Workshop - Press Release preparation for newsletters & newspapers
6 to 7 pm	No Host Bar
7 pm	Banquet in Mt. Roan and Mitchell Rooms
	Speaker-Scott Shalaway
	Awards, Silent Auction and Evening Entertainment

Golf is available during your stay. The cost is $31.00 and you can sign up in the Pro Shop.

Sunday - Morning Birding Trip (to be organized)

NORTH AMERICAN BLUEBIRD SOCIETY ANNUAL MEETING-NABS 2005

Airport Information- The **Asheville Airport** is about 30 minutes from the hotel. Please fill in the airport information on the registration form. The **Airport Ground Transportation** (828-681-0051) has quoted a cost of $22 per person each way. However, if we have your registration at least a month in advance, they will give us a group rate. However, we will not know that group rate until we have given them the number of people and the flight times.

The **New Blue Bird Taxi Company** (828-258-8331) charges $30 and will take up to 4 people for that $30. They also have a van that will take 7 people and that is $30 plus $5 extra for every person over 4.

Please fill in the airport information on the registration form and we will work at finding you the best and least expensive transportation to the hotel.

Flying and renting a car can be done from the airports at **Greenville, SC,** (1 hour) and **Charlotte, NC,** (2 hours).

Camping Information-There are many R.V. Parks in the Asheville area. Bear Creek RV Park and Campground is the closest. Their number for registration is 800-833-0798. Their number for general information is 828-253-0798.

Early Sunday Morning Birding-A trip to view the local birds will be arranged for Sunday morning, May 22, 2005.

Sponsorship

Just as bluebird monitors help the cavity nesters that inhabit their nest boxes, so do sponsors help the participants of NABS 2005. It is their contributions that pay for the speakers and entertainers that make each NABS meeting special. The dedication to the resurgence of the bluebird population and its role in the conservation of the natural world is supported by the bluebirders and they, in turn, by these generous sponsors.

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NABS 2005 Registration Form

All people registered by February 15, 2005
will be entered in drawing for a Dempsey Essick
(www.dempseyessick.com) framed print
"King of the Field" (10 1/2" by 16")

	# of people	Cost	Total
Conference Registration (includes Saturday's lunch)	_____	**$35**	_____
Friday Field Trips: Select one.			
A. Biltmore House & Folk Art Center	_____	**$45**	_____
B. Biltmore & North Carolina Arboretum	_____	**$45**	_____
C. NC Mountain Tour (lunch included)	_____	**$45**	_____
Meals:			
Friday Evening Barbeque	_____	**$30**	_____
Saturday Evening Banquet	_____	**$30**	_____

Vendors - $25.00 per table charge for sales' tables, including electricity. _____# tables Fee _____

Display tables (no sales) and nonprofit organizations are free of charge. _____# tables

Total Enclosed _____

I will need transportation from the Asheville Airport _____My flight number is ___ **I (we) will arrive on** _____(date) at _____(time) There will be ___in our party.
This is my (our) first NABS Convention. Yes _____ No _____

****

To help with planning, check your interest in these workshops. Sunday Morning: Local Birding Trip _____
Thursday: Photography _____ Bird Banding ____ Keep America Beautiful _____Ventures Birding_____
Saturday: Tote Bag ($3) ___ Card Making ___ Press Release ___ Asheville Historic Trolley ($13)_____

****

Name (s) _____ Phone _____

Home Address _____

City/State (prov.)/Zip _____

Email Address _____

Complete this form and return with full payment to:

Helen Munro, 22 Bobolink Rd., Jackson Springs, NC 27281

Checks should be made payable to **North Carolina Bluebird Society or NCBS.**

List of attendees will be available to participants in NABS 2005.

Check here _____ if you do not want to be listed.

****

Host Hotel - HOLIDAY INN, SunSpree Resort (phone - 828-254-3211 or 1-800-733-3211) Advise them that you are with NABS 2005. The discounted room rate is $89.00 per night which will be held until April 19, 2005. Rooms have either two double beds or one king size and a sofa bed. (Web Site: www.sunspree. com).
Additional Asheville information including other hotels and attractions can be obtained from the Asheville Visitors Bureau, 151 Haywood St., Asheville, NC 28801. (1-800-257-1300) (www.exploreasheville.com)

Federal legislation could help control House Sparrows and European Starlings

By Dorene H. Scriven

There are two identical bills before Congress that could lead to significant help on our bluebird trails — help to lessen the population of House Sparrows, which are both usurpers and predators. By clarifying and extending the language in the Neotropical Migratory Bird Conservation Act, the bills would give additional power to state governments to make it illegal to release House Sparrows, European Starlings and other introduced exotic species.

Innumerable rehabilitators and rehabilitating centers, as well as humane societies, across the U.S. spend money and countless volunteer hours to rehabilitate House Sparrows and European Starlings *and* release them. Some large rehab centers treat and release over 500 House Sparrows a year!

The bills not only reauthorize the Neotropical Migratory Bird Conservation Act (due to expire in 2006) and increase the funding level, but also expand and clarify that Act to ensure that legal protection under the Act is *not* extended to invasive species. The current Act is confusing to many people, and has been misinterpreted.

Invasive species such as House Sparrows and starlings are key factors in the decline of many migratory bird species. Bluebirders are well aware of the problems they cause — intense competition for boxes as well as outright killing of bluebirds and other native cavity nesters.

H.R.4114 and S.2547 would restore the Migratory Bird Act Treaty so that it applies to *native* bird species only. Many environmental organizations — National Audubon, The Nature Conservancy, National Wildlife Federation, Ducks Unlimited, Izaak Walton League, etc. — support these bills.

Law change would impact those wildlife rehabilitation facilities that presently treat and release House Sparrows (above) and European Starlings.

Please act now! Call or write your two senators and representative. Urge them to take up and pass H.R. 4114 and S.2547 this year.

If these laws pass, state wildlife agencies may be able to add to state statutes and rules pertaining to unregulated exotic species, to include prohibiting release, without having to have new laws passed by their legislatures.

For more information about these bills, check this website: http://www.capitolconnect.com/audubon/summary.asp?subject=332

(Dorene Scriven is a former NABS board member who has been active for many years in the Bluebird Recovery Program in Minnesota. She can be reached by email at BBRP@att.net

Mate guarding: Male birds work hard to ensure they are raising their own babies

By Alice M. Z. Brylawski

Although the majority of bird species are socially monogamous, extrapair mating has been found in many species. Extrapair mating is the result of a triangle that contains a female, her social mate, with whom she builds a nest, copulates, and cares for offspring, and one or more extrapair males, with whom she only copulates.

Extrapair mating provides clear benefits for a male; by siring young that will be cared for by another male (the female's social mate), the extrapair male gains the benefit of having produced more offspring without having to put forth effort to care for them.

Potential benefits for the female are less direct, since copulating with an extrapair male provides her offspring with nothing but genes. However, if the extrapair male she copulates with is superior to her mate, then any offspring that are sired by that male may inherit the superior trait, which could enhance their survival or reproductive success.

Thus the female has the potential for producing superior offspring, which could, in turn, have better reproductive success, and produce more offspring. (Thus, the female improves her chances of having her genetic line continue.)

Because females may mate with extrapair males, males have evolved mechanisms to protect their paternity. In birds, the most common paternity guard is mate guarding, in which a male follows his mate closely throughout her fertile period to prevent or reduce opportunities for mating with extrapair males.

While the social mate benefits from mate guarding (protecting his paternity), extrapair males benefit by circumventing those paternity guards. Additionally, the female may benefit from circumventing her mate's paternity guard, as she may gain indirect genetic benefits.

Our study examined the effectiveness of mate guarding in House Wrens by detaining males for a time during the female's fertile period, thus preventing them from guarding. By determining extrapair paternity in the broods of control and experimental males, we were able to examine how the behavior of the female and extrapair male intruders affected paternity.

We studied a population of House Wrens at the University of Wisconsin-Milwaukee Field Station, Saukville, Wisconsin, from May through August 2001 and 2002. Wrens nested in boxes placed along forest edge habitat; approximately 130 boxes were available for nesting.

Males arrive early to mid-May, establish territories, and start nest

This male House Wren will guard his mate to prevent other male wrens from mating with her. He seeks to preserve the genetic heritage of the young birds he helps raise, to protect his paternity. (House Wren photos by Jim Williams)

construction by placing sticks in one or more suitable cavities. Females start arriving approximately two weeks later, and complete the nest by adding additional sticks and lining the nest with grass. The lining of the nest is an indication that the female is fertile, and the first egg is usually laid within a few days.

Experimental males were placed in a birdcage hung in its territory, and left there for 45 minutes while observers noted the behavior of the female, the male in the cage, and any extrapair males. After 45 minutes, the male was released from the cage, and behavioral observations continued for an additional 45 minutes.

Control males were placed in the cage, immediately released, and observed for 45 minutes. Observers recorded the number of male songs, the number and duration of extrapair male intrusions onto the territory, and the number and duration of female extraterritorial forays.

The detention period was chosen to mimic as closely as possible natural variation in guarding, in which a male attempts to guard his mate but may not be able to do so continuously.

We determined paternity by extracting DNA from the blood samples. Extrapair paternity was found in 47 percent of experimental broods and 11 percent of control broods, with more extrapair nestlings in experimental broods (14 percent) than in control broods (2 percent). In addition, the longer the duration of extrapair male intrusion, the higher the proportion of extrapair young in a brood.

The number of intrusions by extrapair males was relatively low. In most cases, the intruding male and the female flew out of sight into the bushes, where they could potentially copulate. In addition, the male that had intruded while the experimental male was detained intruded again after he had been released. The intruding male was chased away by the territory holder.

Male House Wrens that were prevented from guarding their mates had more extrapair young in their broods, and extrapair males only intruded successfully onto the territories of experimental males.

This suggests that mate guarding in House Wrens works. The driving mechanism in this contest is gene survival.

***Acknowledgements**: Thanks to Linda Whittingham and Peter Dunn for their advice and support throughout this project. Betsy Abroe, Bryce Bry-*

lawski, and Nicole Poirier provided assistance with fieldwork. Funding was provided by a Sigma Xi Grant-in-Aid of Research, the Wisconsin Society for Ornithology, the UWM Ruth Walker Fund, the National Science Foundation, and a UWM Graduate School Fellowship.

*For further details on this study, please see Brylawski and Whittingham (*Animal Behaviour, *in press). This article was edited for length for use here.*

(Alice M. Z. Brylawski is Instructional Center Supervisor at Thomas Nelson Community College in Hampton, Virginia.)

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House Wren

Bluebirds are believed to practice mate guarding

Males of all three bluebird species are believed to guard their mates.

Mate guarding is inferred from research done by Dr. Patricia Gowaty in 1989. She found that male Eastern Bluebirds stayed closer to fertile than non-fertile females. "Males also attended fertile females longer and followed them more often than they did non-fertile females," according to the Birds of North America (BNA) monograph on Eastern Bluebirds (Gowaty and Plissner, 1998).

That text continues:

"In South Carolina, males guard(ed) females more strongly in multi-cavity territories than in single-cavity territories ... In South Carolina, males guard(ed) females who (had) the most, not least, extra-pair young in their nests, suggesting that males do not guard females with (unlikely) probabilities of mating with other males.

"Females who are off territories most during fertile periods have significantly more young from extra-pair sires than females who remain on their territories more often.

"Males may use cues in female behavior, such as how often she is off territory, to guide guarding decisions.

"Male tendency to be aggressive to other males is greater when female is fertile..."

Males were found to "guard mates more strongly when females must forage more often off their territories for more sparsely distributed food."

Research found that 19 percent of Western Bluebird nestlings in a California study were sired by males outside the primary pair, and that 45 percent of all broods studied contained young sired by more than one male.

In one study, males of mated pairs of Western Bluebirds were removed and the activities of the females of the pair were observed. In 53 percent of the cases, intrusions by new males occurred with 10 minutes of the (temporary) removal of the mated male. Most of the intruding males came from adjacent territories.

Mountain Bluebirds males are said to closely guard their mates from pair formation until after hatching. The male sees to it that the pair forages together. The male also accompanies the female when she gathers nesting material, even though the male does not help with nest construction.

The literature on this behavior states that the male benefits by guarding the paternity of the chicks, while the female benefits by the protection offered by the closely attentive male.

Another study found that male members of a mated pair of Mountain Bluebirds attacked other males intruding into the pair's territory, and that females of the mated pair also attacked intruding females.

What percentage of Eastern Bluebird hatchlings are the result of extra-pair mating? Research quoted in the BNA account says that extra-pair copulations produced 20 percent of nestlings in studies in Ontario and South Carolina. From 25 to 30 percent of the broods studied were sired by more than one male.

Studies show that extra-pair paternity is more likely when a given neighborhood is more densely populated by nesters. Other research shows:

• Fertile females leaving their territories most often have higher rates of extra-pair young.

• Broods on territories of old male bluebirds are less likely to have young sired by other males when compared to broods of younger male birds.

• Older female birds are more likely to have multiple mates than are younger females.

• Pairs together longer are less likely to have extra-pair young in their broods. Research showed that pairs together for the first time had 37.6 percent extra-pair young, compared with 21.1 percent for pairs mating for the second or greater time.

(Information for this article came from monographs in the Birds of North America series: No. 381, Eastern Bluebird, Patricia A. Gowaty and Jonathan H. Plissner; No. 510, Western Bluebird, Judith A. Guinan, Patricia A. Gowaty, and Elsie K. Eltzroth; and No. 222, Mountain Bluebird, Harry W. Power and Micheal P. Lombardo. The BNA series was edited by A. Poole and F. Gill, and published by The Birds of North America, Inc., Philadelphia, Pennsylvania.)

CORRECTION

In the Fall 2004 issue of *Bluebird*, in a photo caption on page 21, we incorrectly identified Christopher Eberly, who presented an informative bluebird to NABS on behalf of the Partners In Flight program. We apologize for the error.

New program for businesses

By Steve Garr, president, NABS

Over the years NABS has benefited from Business Memberships. The business members have seen their donation help NABS conservation and research programs.

Now, we are looking to strengthen that bond between the business member and NABS. Both Corporate and Small Business Members will have the opportunity to see instant results in partnership with NABS. New and existing business members will have news releases sent to their local newspapers announcing their conservation partnership with NABS. This will increase the awareness about bluebirds.

Businesses also can be locations in their communities where people can find information on bluebirds and NABS Membership.

We encourage the business to write or stamp their name on the NABS Membership Form. For each such membership submitted, the business receives $2 off the next yearly membership. This will provide NABS with locations throughout North America where people can learn about bluebirds and have the opportunity to join NABS.

For the business, the news release alone can offer as much value as the cost of its membership.

NABS members can now approach friends that have a business and encourage that owner to join NABS not just as a donation but as a way of helping promote their business. The end result is that more people learn about and get involved with bluebirds.

For more information contact Lisa at the NABS office (330/359-5511) or Pauline Tom with the NABS Membership Committee (512/268-5678).

Feeding nestlings: Which bird gets the food?

The young birds control their own destiny, according to a recent study of Tree Swallows

The four eggs in the nest box have hatched, the naked baby birds seemingly intent on only one thing — food. Their beaks gape wide each time one of the parent birds arrives at the nest. All four babies are begging for food.

Do the parents know which young bird was fed most recently and which should get food now? If so, how is this determined? Food resources, parental energy, and time all are limited. What factors go into this important decision, or is it nothing but random chance?

Three ornithologists recently studied how Tree Swallows allocate food to their nestlings. For this bird species, the young birds control their own destiny. They provide the cues to which the parent birds respond.

The question of how often and how much a young bird in a nest of several birds gets fed is more complex than you might imagine. In the bird world, all young birds need not be considered equal.

Parent birds can be expected to invest more of their time and energy in the young birds most likely to survive to adulthood and reproduce. The parent bird wants to ensure that its genes are passed along to succeeding generations.

Baby birds offer cues that help parent birds make the feeding decisions. The intensity of begging is one such cue. Position in the nest is another; in a nest box, young birds nearest the entrance are most likely to be fed. Nestling size is also a cue; the larger nestling can be considered most likely to survive, therefore the best investment for the parent.

A parent bird might also want to consider the sex of the young bird, if either sons or daughters are more likely to successfully reproduce as adults. And in bird species where females mate with more than one male, the resident male might want to favor his own offspring over those of an intruder.

Young birds, on the other hand, might be able to manipulate their parents by changing their begging intensity and thus gain more feeding attention from the adults. There is no guarantee to the parents, however, that the bird begging more intently is more likely to survive to adulthood. A small nestling might beg quite loudly but because of its size have less chance at survival.

The study we discuss here examined all of those possibilities. The study was conducted by Linda A. Whittingham and Peter O. Dunn of the University of Wisconsin at Milwaukee and Ethan D. Clotfelter of Amherst College in Massachusetts. The paper discussing this project was published in the journal *Animal Behaviour* in 2003.

Tree Swallow is a good species for this study, the authors wrote, because (1) both parents feed the young, (2) the broods hatch asynchronously (over a period of time), creating size differences among brood members, (3) male nestlings are larger than female nestlings, (4) male parents are more likely to feed the larger nestlings, and (5) most broods have mixed paternity.

The study used Tree Swallows nesting in 85 nest boxes near Saukville, Wisconsin. It was conducted over two seasons, 1997 and 1998. Nest boxes were checked daily. Young birds were marked for identification. DNA analysis was done to determine

parentage and sex of the baby birds. Video cameras were used to record nestling begging and parental feeding decisions.

"Overall, nestlings that begged first were more likely to be fed than were their nest-mates," the authors wrote. "The first nestling to beg was fed on 65 percent of visits." In addition, the study found that male parents were more likely to feed the first nestling to beg than were female parents at the same nest.

A second factor was proximity to the nest-box entrance. "Nestlings closer to the box entrance were more likely to be fed than were their nest-mates," according to the study authors. In the most common brood size of five, the closest nestling to the entrance hole was fed on 44 percent of visits ..." This is common behavior in cavity-nesting species, the authors said, because the position of the parent bird at its arrival at the nest is predictable. Nestlings thus can compete to be closest to the nest entrance.

Did the nestlings then compete with one another for best position in the nest when the parent appeared in the box entry? No, they did not. Instead, the study showed, "nestlings usually changed position within the nest cup upon ejection of a fecal sac at the end of a parental visit or during the absence of the parents between feeding visits." Those young birds that had not been fed most recently jockeyed for best position for the next food offering.

How about those cues not under nestling control, size and sex? Heavier nestlings were not found to be more likely to receive a greater proportion of feeds. Heavier nestlings were not found to beg first or be more aggressive in positioning themselves close to the nest-box entrance.

Did paternity influence the feeding actions of the male? Again, the answer

When the time comes for this pair of Tree Swallows to begin feeding hatchlings, the actions of the young birds themselves will guide the adults as they choose which bird to feed next. Young birds have been found to change position in the nest between feedings, giving each of them a more or less equal opportunity at being fed.

is no. While slightly over half of the young in this study were not fathered by the resident male at that particular nest, the male bird did not provide more food for his offspring.

Neither parent favored young birds by sex, according to the study.

"At most nests food was distributed equitably between members of the brood," said the study authors. At seven nests, however, distribution of food between nestlings was not uniform.

At six of these seven broods, at least one nestling died between nesting day 14 and fledging. In each case, the dead nestling was the smallest in the brood and usually the one that had received the smallest number of total feedings during videotape observations. "Interestingly," said the authors, "the dead nestling was usually not the last to hatch."

In summary, Tree Swallow parents in this study were more likely to feed nestlings that begged first and were closer to the nest entrance when the parent returned with food, factors controlled by the young birds themselves. Feeding by parents did not appear to be influenced by nestling size, sex, or paternity.

(Linda A. Whittingham and Peter O. Dunn, Department of Biological Sciences, P.O. Box 413, University of Wisconsin-Milwaukee, Milwaukee, WI 53201, e-mail: whitting@uwm.edu). Ethan D. Clotfelter, Biology Department, Amherst College, Amherst, MA 01022.

Bluebird News Shore to Shore

Richard B. Fischer, a resident of **New York,** writes to tell us of wintertime adventures, when he and his wife visit a son in Texas, to spend time with family and escape the cold weather. One of the projects Dr. Fischer has enjoyed is building and placing bluebird nest boxes in a park in Nacogdoches, Texas. Grandsons helped with the project last winter when five boxes were put up. Dr. Fischer plans to repeat the effort this winter. He and his wife live in Ithaca, where he has 109 nest boxes under his watchful eye. Dr. Fischer is a professor emeritus in ornithology at Cornell University.

Kenneth Johnson of Wilbraham, Massachusetts, also is involved with nest-box placement. He is a golfer, and gets double use from his country club by putting boxes alongside the fairways on which he plays. Mr. Johnson, 83, is known as the birdman on the course. He has 40 boxes in place.

In Montana last nesting season, **Rod Spencer of Great Falls** found a nest box with four chickadee eggs and four bluebird eggs. A chickadee was sitting on the eggs. The four chickadee eggs proved sterile, but the bluebird eggs hatched, the young birds raised successfully by their tiny surrogate mother. We thank *Bluebird Tales,* newsletter of **Mountain Bluebird Trails,** for this note.

Bluebirds Across Nebraska, which has been spectacularly successful in restoring bluebirds to the Nebraska countryside, is about to take on a second conservation project: Wood Ducks. BAN members will be building and placing nest boxes for these birds. Grant funding from the Nebraska Environmental Trust will cover material costs.

Loren Hughes built a back-to-back nesting box last year, and mounted it at the local golf course. This past season, he had Tree Swallows nesting on one side, Eastern Bluebirds on the other. Loren, president of the East Central Illinois Bluebird Society, used his own design for a slot-type box. You can find his plans for the box at website www.audubonomaha.org/bbbox/nestboxs/hughes.htm. The box design has NABS approval.

This nesting box is hanging from a simple wire hook bent to shape by Bob Walshaw of Coweta, Oklahoma. Bob writes to say that this method of presenting boxes to birds is now his choice whenever suitable tree limbs are available. He reports that this trick works especially well on golf courses where post-mounted boxes can get in the way of mowers. He calls the hook-held boxes virtually predator proof, telling us that in several hundred nestings of bluebirds, titmice, and chickadees, he has lost only one nest to predation; a snake apparently came down the wire in one instance. The hook is a 36-inch piece of three-sixteenth-inch metal appropriately shaped. The box is held by an eye screwed into its top.

BLUEBIRDING SUPPLIES FROM NABS HEADQUARTERS

ITEM #	DESCRIPTION	AUTHOR/SOURCE	COST	QTY	TOTAL
B-1	*The Bluebird Monitor's Guide*	*Griggs, Kridler, Berger*	$14.00		
B-2	*Bluebird Trails – A Guide to Success*	*Dorene Scriven*	$12.00		
B-3	*The Bluebird Book*	*Don & Lillian Stokes*	$12.00		
B-4	*Enjoying Bluebirds More*	*Julie Zickefoose*	$4.00		
B-5	*Mountain Bluebird Trail Monitoring Guide*	*Myrna Pearman*	$4.00		
V-1	*Bluebird Basics Video*	*Don & Lillian Stokes*	$12.00		
EP1	*Educational Poster & Pocket Field Guide*	*NABS*	$7.00		
PFG1	*Pocket Field Guide*	*NABS*	$1.50		
EP2	*Education Packet*	*NABS*	$6.00		
SP1	*NABS Bluebird Slide Program*	*NABS –80 slides & script*	$55.00		
T1	*Universal Sparrow Trap*	*Floyd Van Ert*	$11.00		
TBT1	*TBT Trails Signs for Nest Boxes*	*NABS*	$2.00		
				TOTAL ORDER	
				OH Residents ONLY add 5% Sales Tax	

Shipping Information

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City		**State**		**ZIP**	
Phone		**Email**			
Card Type		**Number**		**Expiration Date**	

Make check payable to: North American Bluebird Society. Mail your order and check to: North American Bluebird Society, P.O. Box 244, Wilmot, OH 44689-0244. Credit card orders can be mailed, or faxed to: 330 359-5455. You may also place credit card orders by phone Tues - Fri, 10AM - 5PM, 888 235-1331. Ohio Residents add 5% Sales Tax. **All prices include free shipping**. We only ship within the USA.

OTHER SOURCES OF BLUEBIRD RELATED ITEMS

In order to make bluebird nest boxes and related items available to NABS members at the lowest possible cost, we have listed the names of reliable suppliers who sell quality goods at reasonable prices. A portion of the profits from these items is donated to NABS. Please Contact these suppliers directly; **do not send these orders to NABS**. *These companies do not take credit cards. Visit our website www.nabluebirdsociety.org for photos of items listed here.*

Nest Boxes, Nest Box Kits, Bluebird Feeder – from Ahlgren Construction Inc.

PRODUCT	DESCRIPTION	COST	SHIPPING	SHIP EA ADD
Peterson Nest Box – Kit Form	Solid Cedar with Hardiboard Sides	$10.00	$8.00	$2.00
Peterson Nest Box Assembled	Solid Cedar with Hardiboard Sides	$12.00	$8.00	$2.00
NABS Style Box – Kit Form	Solid Cedar, side opening, bottom hinged	$10.00	$8.00	$2.00
NABS Style Box – Assembled	Solid Cedar, side opening, bottom hinged	$12.00	$8.00	$2.00
Noel Predator Guard	Wire Cat/Coon Guard	$2.00	$6.00	$0.25
Noel Guard for Peterson Boxes	Wire Cat/Coon Guard w/ Adaptor	$3.00	$6.00	$0.25
Jail Style Mealworm Feeder	Solid Cedar with Dowels	$12.00	$7.00	$2.00

Send check or money order to: **Ahlgren Construction Inc**, 12989 Otchipwe Ave. N., Stillwater, MN 55082. Cannot ship to a post office box, must have a street address. Cannot ship outside USA. MN residents add 6.5% sales tax. To receive these special prices, put "NABS DISCOUNT" on your order.

Gilbertson PVC and Gilwood Boxes

PRODUCT	DESCRIPTION	COST	SHIPPING	SHIP EA ADD
Gilbertson PVC Nest Box	PVC Box, Cedar Roof	$12.00	$7.00	$3.00
Gilwood Nest Box - Assembled	Cedar, sealed w/ caulk	$12.00	$8.00	$3.00

Send check or money order to: **Steve Gilbertson**, 35900 Dove St., Aitken, MN 56431. Cannot ship to a post office box, must have a street address. Cannot ship outside USA. MN residents - add 6.5% sales tax. To receive these special prices, put "NABS DISCOUNT" on your order.

Cedar Valley Ground Sparrow Trap

PRODUCT	DESCRIPTION	COST	SHIPPING
Repeating Sparrow Trap	Large Wood and Wire Trap	$45.00	$10.00

Send check or money order to: **Afton Cedar Works**, 3364 Pennington Ave. S., Afton, MN 55001. Cannot ship to a post office box. Orders must include phone number –required by Fed Ex. Cannot ship outside USA. MN residents - add 6.5% sales tax. To receive this special price, put "NABS DISCOUNT" on your order.

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