

Bluebird

Journal of the North American Bluebird Society

Summer 2001, Vol. 23, No. 3



Cavity entrance orientation study ... 10

Birdscope 1 data reveals surprises ... 15

Bill sweeping: What does it mean? ... 19



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From the President

Doug LeVasseur

I recently reviewed the comments on 250 nest box reports sent to the Ohio Bluebird Society. It is not at all difficult to conclude that the most disturbing, traumatic, and discouraging event for a bluebird to live through is the murderous attack of a House Sparrow on a favorite nest box.

You can hear distress in the statement: "Do you have anything to get rid of the sparrows? We need help!"

Today so much excellent bluebirding information is readily available that folks new to bluebirding seldom enter into this conservation effort not knowing something of the House Sparrow threat. Still, I have often heard first-year bluebirders say such things as, "My bluebirds are different, you should see them gang up on those House Sparrows."

Veteran bluebirders know that the bluebird-House Sparrow contest is a mismatch. It always was and always will be. Only intervention can tip the scales to favor the bluebirds.

Twenty some years ago, I had a difficult time coming to terms with what it meant to "rid my trail of House Sparrows" or what the term "eradication" really meant.

Eradication in its gentlest form consists of weeding the garden. Some plants die so others can thrive. Then there are household eradication. People today seem to be less and less tolerant of household insects and spiders, and heaven forbid a bat or mouse should enter the house. Farmers who refuse to deal with infestations of certain insects and rodents find themselves in the poor house.

But no one has to tell me that it is a big step from weeding your garden to eradicating House Sparrows from

your bluebird trail!

Why? Well, for most of us the House Sparrow has not been on our life-long villain list. At worst, we viewed it as a useless, prolific but rather harmless species. But when he wiped out our favorite bluebird family, all that SUDDENLY changed.

Then there is the course the ridding process must take. If we could find the sparrow dead in our trap as we do a mouse that would make things easier. However, all traps must capture birds alive so that protected native species can be released unharmed. That leaves the ridding process to you who now have the bird in your hand.

I am not ashamed to admit that 20 years ago, the first time around, I opened my hand. It is well to remember that the House Sparrow is an introduced species, not protected by wildlife laws in the U.S. or Canada. Species that have existed together for tens of thousands of years arrive at a natural balance. When a non-native species is introduced into the system, be it the Brown Snake to Guam, kudzu to Alabama, or the House Sparrow to North America the balance can be severely upset.

The introduction of a single species can endanger not just one other species but many species, often the entire biodiversity of the ecosystem. Many believe that when humans introduce a foreign element into a balanced system, be it a chemical such as DDT, habitat alteration, or a foreign species, humans then have an obligation to protect the species their actions have endangered.

Continued on next page

NABS enhances web site

Trail Management, Data Collection portion improved

Thanks to helpful suggestions from many of you, NABS has enhanced its Trail Management and Data Collection web site to help in the management of your nest box or bluebird trail, as well as to improve the quality of information collected through this web site.

Preliminary results already have been published in the Spring 2001 issue of *Bluebird* and will soon be posted on the TBT Research page of the NABS web site. Special thanks to Ken Avery for his programming

— President

Continued from previous page

Remember too that there are passive means of sparrow control. Nest boxes, even entire trails, can be placed in habitat where no sparrows live. All productive large trails rely on such control. John Lapin, from Poland, Ohio, fledged 836 bluebirds from a 292-box trail last season. He did trap many House Sparrows. But to think he battled sparrows in each and every box is ludicrous.

We would all be well advised to practice passive sparrow control on at least part of our trail if at all possible. We should all remember that decisions dealing with the House Sparrow dilemma are often personal ones. There are no easy answers or hard and fast rules.

People's philosophies may change over time as they exchange information with other bluebirders, continue to educate themselves about sparrow problems and experience their own management successes and failures. But all positions on this difficult matter should be respected.

expertise and Dr. Bernie Daniel and Dr. Steve Pelikan for offering advice on the scientific analysis aspects of this on-going research.

The main NABS web site is found at www.nabluebirdsociety.org. The Trail Management web site can be accessed from the bottom of this home page.

NABS is continuing its efforts in collecting your important information on-line via the NABS web site. Your information contributions are very valuable, and we encourage all members, whether they have one box or a 100-box trail to enter their data.

When you sign on to the NABS web site, you will be offered an enhanced menu of options for entering your data, viewing your data, and modifying previously submitted data/trail or box registration. For instructions on web site use, see the Summer 2000 issue of *Bluebird* for the pull-out instruction booklet, or read the instructions on the web site.

Among the many features are:

- Printable Record-keeping Forms provided for your use in keeping records on your nest boxes based on the forms used on this web site.
 - No Activity/Sparrow Control Report to report nest boxes without any activity, or without reportable activity due to House Sparrow control.
 - Trail Summary Report to allow trail managers to report information about their trail that is not included elsewhere in the database.
 - Glossary for terms clarification.
 - Problem Report covering such things as bluebird fatalities resulting from cat predation to infertile eggs.
- NABS has a new drop-down list for easy notation.

• Speed Form designed to allow experienced Trail Management web site users to enter Nest-box Descriptions and Summaries in groups of 10, rather than individually.

Your participation has been very valuable in gathering important data that will have implications for better managing bluebird conservation efforts and understanding bluebird and other native, cavity-nesting species ecology.

Bluebird

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

NABS NEWS

Your membership makes the NABS mission possible

NABS needs your help to offset rising costs

As your bluebirds brighten your summer, please help NABS continue to be a continent-wide resource for bluebird conservation.

The cost of doing business today is increasing, and NABS is experiencing its share of paper, postage, and operation cost increases. A major source of NABS income is directly from you, NABS members. Like other non-profit organizations, NABS is constantly looking for ways to cover its rising costs.

Please help us by renewing at the next membership level higher. If you are a senior member (\$10), consider renewing as a regular member (\$15).

If you are a regular member, consider renewing as a sustaining member (\$30). If you are a three-year regular (\$42), join for three years at full regular membership rates (3 x \$15 = \$45). If your membership is for two or more people, perhaps as a husband and wife, please renew at the family rate (\$25).

You can also help NABS save money by renewing your membership before your expiration date, noted on the mailing label of *Bluebird*.

On behalf of NABS, thank you for your support of NABS, and for your continuing commitment to bluebird conservation.

Memorial gifts support NABS nation-wide work

NABS is always saddened when a member and bluebirder passes away. However, it is often befitting, generous, and appreciated by NABS when family members and friends of these dedicated bluebirders opt to suggest memorial donations to NABS.

NABS strives to carry on the work inspired by these tireless ambassadors for the bluebirds.

If such a situation does arise,

please notify NABS so that the organization can properly and fully acknowledge the memorial contributions and notify the deceased family that such donations were made in the memory of a member from the bluebirding community.

For any memorial donation, all NABS would need to know is to whom and to what address the memorial acknowledgment be sent.

Nominations sought for 2002 board election

Our membership numbers continue to grow as more bluebird groups become established across North America and more bluebirders join the North American Bluebird Society. As a member, you have an opportunity to serve on the NABS board of directors.

Four new directors will be elected at the June 2002 convention in Penticon, British Columbia. The NABS nominating committee is looking for persons wishing to be considered as candidates for these positions.

You certainly may nominate yourself, or you can recruit a bluebirder you know.

Here are some guidelines for board member recruitment. Areas of experience listed below are not requirements, but are welcome as helpful to specific board operations. The enthusiasm, dedication, and knowledge gained while working with bluebirds will provide valuable support to the board.

Expectations for new board members:

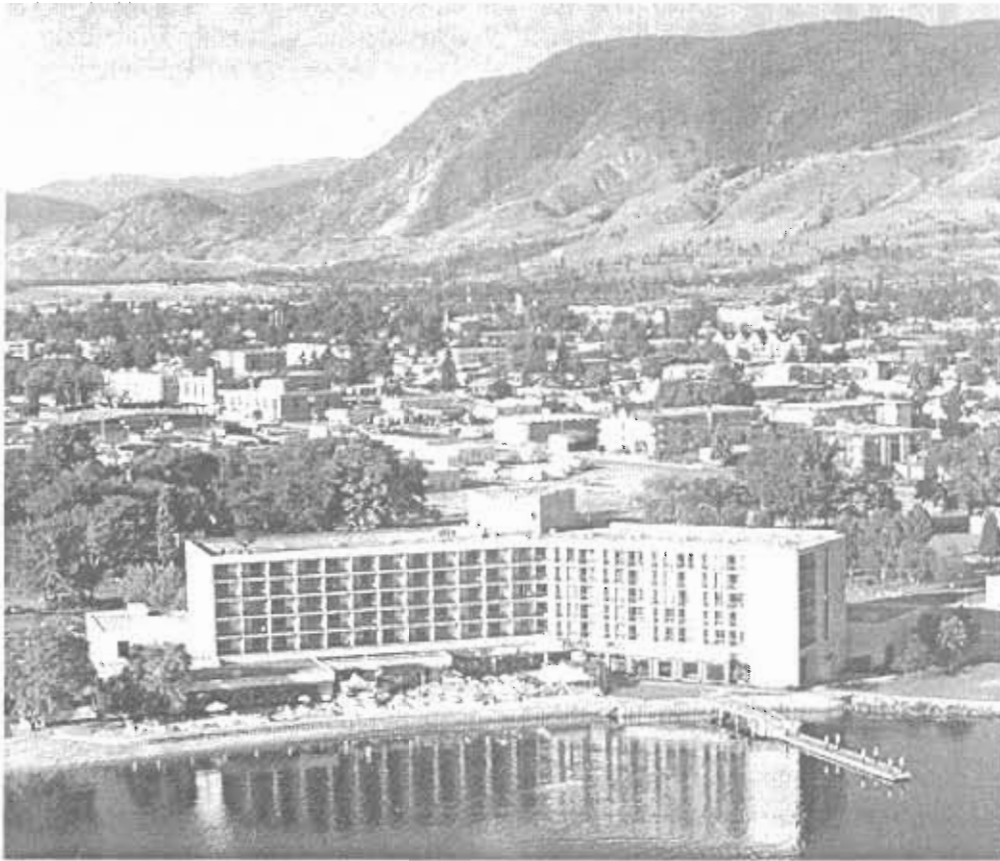
- Attend new board member orientation (June 13, 2002).
 - Attend minimum of four of six board meetings during the three-year term.
 - Serve on one or more projects or committees.
 - Access to e-mail recommended.
- Experience or interests:
- Active (or board service) in other

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COVER PHOTOGRAPH
Eastern Bluebird fledgling photograph by
Dennis Malueg, Fremont, Wisconsin.

NABS NEWS



The Penticton Lakeside Resort and Conference Centre on the shore of Okanagan Lake in Penticton, British Columbia, will be the site of NABS' 2002 convention. This will be the 25th anniversary convention for NABS. Dates are June 13-15, 2002. Hosting the event will be members of the Southern Interior Bluebird Trail Society. Registration forms will be available in an upcoming issue of *Bluebird*. Or you can call Terry Tellier at 250/493-4634 or e-mail Terry at terry_tellier@telus.net for registration information or other convention details. The map (below) shows the location of Penticton Lakeside Resort and Conference Centre in relationship to major cities in the Pacific Northwest.

– NABS nominations

Continued from previous page

organizations in advocacy, birding industry, communications/media, education, financial planning, fund raising, law, or science (methodology/statistics).

NABS has a reimbursement policy to offer assistance with board travel expenses.

Send nominee's resume by Oct. 1, 2001, to:
Mary Ellen Vetter, NABS Nominating Committee
7715 York Lane N., Brooklyn Park, MN 55443

Ms. Vetter's phone/fax number is 763/561-1761; her e-mail address is mevetter@mninter.net.

Nominating committee members are David Eastman, New Hampshire; David Magness, Maryland; Dean Sheldon, Jr., Ohio; Mary Ellen Vetter, Minnesota; and Steve Eno, Nebraska.



Bluebird News from Shore to Shore

Carol McDaniel, NABS vice-president for community relations, and a major factor in bluebird work in Wisconsin, was featured in the cover photograph of the March-April 2001 issue of the magazine *Country Woman*. An article in the magazine discussed bluebirds and Ms. McDaniel's efforts for both NABS and the **Bluebird Recovery Association of Wisconsin (BRAW)**.

BRAW and its programs were featured on another magazine cover. The April 2001 issue of **Wisconsin Natural Resources** magazine carried a male Eastern Bluebird on its cover with four pages of text and photos inside. The article discussed BRAW's contributions to bluebird recovery in Wisconsin.

One male and two female Eastern Bluebirds raised seven young together last season in a single nest box beside a cranberry bog in Carver, Massachusetts. **Joanne Mason** reports that the two females incubated nine eggs in that one box at the same time. Eight of the eggs hatched, and seven birds fledged. "It was pretty exciting for me to witness," she said. *The Birds of North America* monograph on Eastern Bluebirds (No. 381) says this occurs rarely. Authors **Patricia Adair Gowaty** and **Jonathan H. Plissner** cited nesting records from South Carolina, 1977 to 1991, in which the phenomenon, called polygyny, was recorded five times in 4,299 nesting attempts.

Coincidentally, the **Bluebird News** (Minnesota) for February 2001 reported a Kansas City-area nest box with 10 eggs, two female Eastern Bluebirds coming and going, and one male on guard. Seven chicks fledged. The report came from **Dr. Charles**

Neath, who tended the box with **Dr. John Anderson**. The box then contained a second nest of five eggs under the care of just one hen.

The book *Woodworking for Wildlife*, a popular guide to construction of nest boxes and bird feeders, is now available online. The web address is www.conservation.state.mo.us/nathis/woodwork/. The book was written by **Carrol Henderson**, supervisor of the nongame wildlife division of the Minnesota Department of Natural Resources. Plans for boxes or platforms used by almost 40 species of birds are in the book, along with a basic plan for a one-board nest box, a nest-box buyer's guide, and suggestions for control of nest box pests, like House Sparrows.

Another internet resource offers a construction plan for a European Starling trap. Go to <http://forum.purplemartin.org/newpage4.htm> for details on a repeating trap designed by **Glenn Davis**.

Robert Walshaw wrote from Oklahoma in early April that he expected this year to be very different from last year when it came to numbers of birds fledged from his trail of 83 nest boxes. "Many bluebirds winter over in this area of northeast Oklahoma," he wrote, "and a number of them starved during a two-week period when the ground and trees were covered with ice." He said nesting there was two weeks behind the usual schedule.

An original painting by noted wildlife artist **John Salsnek** of Penticton, British Columbia, has been donated by the artist for the silent auction to be held at the 2002 NABS convention in that city. This was reported in *The Nestbox*, newsletter of

the **Southern Interior Bluebird Trail Society (SIBTS)**, our host next summer when we gather for our annual get-together. The newsletter was filled with articles about the work being done to prepare for the event.

And how is bluebirding in Penticton? Ask local bluebirder **Jack Link**. In the nest box summary of the 2000 season, Mr. Link reported problems with both bears and rattlesnakes. Other reports indicated his problems were unusual, however.

Overall, the SIBTS reported 5,125 nest boxes in use in 2000, with these fledge numbers: 1,580 Western Bluebirds; 6,538 Mountain Bluebirds; 5,682 Tree Swallows; 420 House Wrens.

Three members of the **Bluebird Recovery Program** of the **Audubon Chapter of Minneapolis** — **Keith Radel**, **Bill Thompson**, and **Mary Ellen Vetter** — attended the **Minnesota Turf and Grounds Foundation** conference this winter. The event attracts many golf course superintendents. The three promoted appropriate plantings for wildlife, including bluebirds.

John Rogers offered two tips for locating your Eastern Bluebird nest boxes. He wrote in the Spring issue of *Bluebird News*, published by the **New York State Bluebird Society**. Put a bluebird box in or near a gravel pit, and you'll get bluebirds, he said. The reason is less vegetation in sandy areas, hence better foraging for insects. And, he said, put a nest box by a stand of sumac, and you'll get bluebirds. The reason this time is the availability in early spring of sumac

Continued on next page

— Bluebird News

Continued from previous page

berries, not an optimal food but looking good when the birds return for the new season.

Fred Robinson this fall will become the next president of the **Prescott (Oregon) Bluebird Recovery Project**. He will take the place of **Pat Johnston**, who has served as president of the group for the past three years.

The Prescott Bluebird Recovery Project (PBRP) has received a \$2,000 grant that will allow it to begin analysis of the banding data it has been gathering since 1995. The grant came from the **Oregon Wildlife Heritage Foundation**, according to an article in the PBRP newsletter.

Its mission accomplished, the **Bluebird Association of Maine** is disbanding. The organization says it has succeeded in raising awareness about Eastern Bluebird conservation in Maine, and that the birds are doing well. This plus lack of willing hands to continue organization administrative duties led to the decision to go out of business, according to an article in *Downeast Bluebird*, the group's newsletter. For a job well done for bluebirds, we say thank you.

The California Bluebird Recovery Program reports continued increase in fledged birds from the nest boxes maintained by those of its members reporting for the 2000 season. The number of birds reported as fledged has increased from 5,077 in 1996 to 15,705 last year. Western Bluebirds led the list with 6,927 fledged. Wood Ducks were second at 3,951. Fourteen species were on the list.

Of particular interest was the report from **Steve Simmons** in Merced County, California — 402 large boxes: 3,303 Barn Owls, Wood Ducks, and screech-owls fledged!

NatureScape Alberta suitable for everyone

NatureScape Alberta is a new book co-authored by NABS board member Myrna Pearman. Readers might find the name restrictive, but working with Ted Pike, Ms. Pearman has crafted a guide to "creating and caring for wildlife at home" suitable for almost anyone in North America.

Wire-bound so it sits open easily on your table as you make plans for next spring, its well-designed pages a full 8.5x11 inches, the book discusses why and how — plant variety, hummingbird gardens, water gardens, lakes and waterways, amphibians, reptiles, butterflies, beetles, spiders,

mammals, and, of course, birds. It talks about helping sick and injured wildlife, and gives tips on co-existing with all the wonderful creatures its pages help you attract.

The basic principles of each chapter reach into yards far beyond the borders of Alberta. If you want nature in your yard, and more of it, this book would be a good addition to your library. It can be ordered through the Federation of Alberta Naturalists, Box 1472, Edmonton, Alberta, Canada, T5J 2N5. The price is US\$24.95 plus \$4 postage.

— Jim Williams

Correction

The name of Dr. Steve Pelikan was inadvertently omitted from the end of a story on page 5 of the Spring 2001 issue of *Bluebird*. The story discussed collection of nest-box data via the internet. Dr. Pelikan contributed to the effort with analysis of collected data.

“Bird watching is old enough to have stood the test of time, young enough to live within the age of exploration. By some, it is regarded as a mild paralysis of the central nervous system, which can be cured only by rising at dawn and sitting in a bog. Others regard it as a harmless occupation of children, into which maiden aunts may sometimes relapse. The truth is that it is anything you care to make it.”

— Joseph J. Hickey, in *A Guide to Bird Watching*, Oxford, 1943

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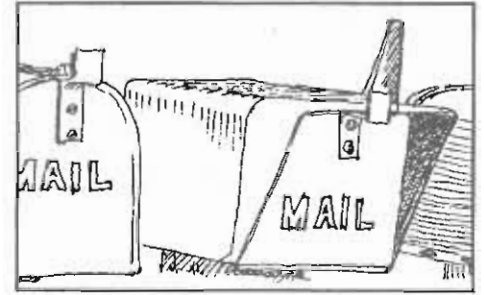
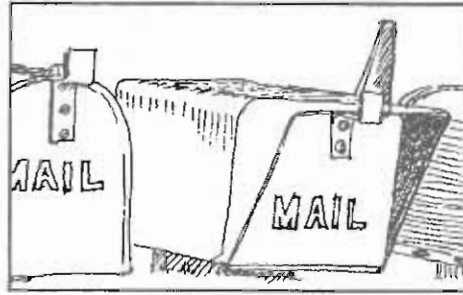
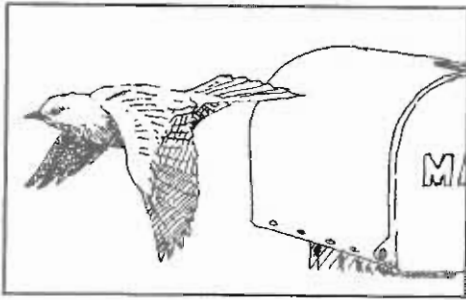
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Nest box article causes confusion

To the Editor,

In the spring 2001 issue of the *Bluebird* (Vol. 23, No. 2), you ran an article, "A Comparison of Nest Boxes," written by Kevin Berner, discussing his tests with three different boxes with very large holes. Nowhere did it tell us readers where Mr. Berner lives or where his tests took place.

I take objection, mainly, to the appearance of endorsement this article seems to give to boxes for bluebirds that have holes larger than the recommended 1 and 1/2 inches for Eastern Bluebirds, and 1 and 9/16 inches for both the Western and Mountain Bluebirds. Any hole size over those measurements would easily allow starlings to enter the box of a bluebird, and that is ADDING another predator to the list of predators that any bluebird already has.

Children would rather play ball in the street because it is a flat, solid surface, but we, as responsible adults, don't allow it, as we know that it is an unsafe location. As trail monitors, we know there are starlings out there that overwhelm all cavity nesters, so we put up boxes with holes of a size to exclude them. These bluebirds may "prefer" boxes with larger holes and easier, quicker access to the cavity, as kids might choose a street for their ball game, but we have learned better, and I contend that it is unconscionable of us to offer these boxes to bluebirds when we know starlings are

in the area.

Lawrence Zeleny would not have put up with such tests. He knew from his own tests what would happen. Let me quote from his book, *The Bluebird*, written back in 1975. On page 53, he discusses:

"The Entrance to the Nesting Box ... The size of the entrance hole is by far the most critical dimension of the bluebird nesting box. The diameter of the hole should not be greater than 1-1/2 inches nor smaller than 1-7/16 inches. All species of bluebirds can readily enter any hole within this very limited range, but starlings are effectively excluded. Entrance holes 1-5/8 inches and ... as large as 1-3/4 inches in diameter have sometimes been recommended; but since they will admit starlings entrance holes that large should never be used in areas where starlings are present."

Just one look at the Oval-Holed, the Troyer, and the Gilwood box designs makes it obvious that these boxes will raise starlings. So I ask, why does NABS appear to be endorsing these boxes by running an article like this without some sort of a disclaimer about starlings? It does nothing except confuse your readers. Me among them.

— Barbara Chambers, Vice President for Education, Virginia Bluebird Society

— Julie Kutruff, President, VBS

The importance of involvement

Dear Editor,

I was reading *Bluebird* the other day (Spring 2001), and I noted the positive message Doug LeVasseur was promoting. When we as a group, or as an individual get involved as a monitor, builder, or an organizer in bluebirding, there can only be positive results.

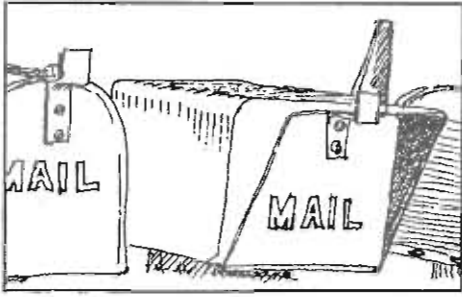
Some of us are fairly new at bluebirding, and this great activity has spruced up our lives and given us a new perspective on all of the valuable things that are around us.

There were many interesting and organized people who had the vision some 25 or more years ago to do something positive to help bluebirds and other cavity nesters. Their contributions to the North American Bluebird Society and its present day activities will forever be remembered.

I am a member of the Southern Interior Bluebird Trail Society in British Columbia. I recently came across a couple of stories about the importance of individuals getting involved in their community and organizing bluebird restoration programs, and how these folks were recognized.

The first was from the Federation of British Columbia Naturalist newspaper for the fall of 2000. The article told of Karen McLaren of the

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Kamloops Naturalist Club who received one of five Club Service Awards presented annually by the Federation of British Columbia Naturalists. Karen's hard work and involvement in the bluebird recovery program in the Kamloops area were the main reason for the award.

The next article was from the Penticton Herald newspaper, Feb. 3, 2001, about an award presented to Peter Mayfield of Vernon, British Columbia, by the Vernon Chamber of Commerce. Mayfield has built hundreds of bluebird boxes for the area, and the bluebirds are coming back.

We will be looking forward to seeing you at the 25th Anniversary North American Bluebird Society convention in Penticton, British Columbia, June 13 to 16, 2002.

— *Greg Tellier, co-chair NABS 2002 Convention, 873 Main St., Penticton, BC V2A 5E3, 250/493-4634.*



Circle of Compassion

Bluebird stewardship offers opportunity

I believe the real test of who we are lies in our ability to expand our circle of compassion. To view the world from another's eyes promotes our "response-ability" to the increasing magnitude of blows the earth receives. Stewarding a bluebird trail has been an effortless expansion of my own circle of compassion. I cannot pretend that I actually slip into that tiny cobalt body and see with his eyes. But I do know this — I am connected to him. And having connected with him, I connect with her, and them, and the insects they eat, the trees where they perch, and the grasses with which she nests, and the snake that threatens them. And that is the way of expanding compassion, awakening to the pain and pleasure of the world, and allowing the truth to rush in. All of it.

For several years now as my awareness has increased, so has my despair at the accelerated pace of environmental destruction. It can be lonely and numbing. My saving grace is our bluebird trail. We can literally put our hands on it, work it, make it mean something. For naysayers, I can only recite the story of the woman walking along the beach, tossing stranded starfish back into the sea. A man looks at the millions of starfish on the beach, and asks what difference it could possibly make. And she says, looking at the starfish in her hand, "It makes a difference to this one." My friends and I make a difference to our bluebird trail and its 15 generations of children. It is their hope I hug closely to my heart.

— *Allison McCormick, from the 2000 Nesting Report of the Island Lake Recreation Area, Brighton, Michigan.*

Kentucky Study

Cavity-entrance orientation and nest-site selection is discussed

By Wayne H. Davis, Paul J. Kalisz, and Janet Powell

Primary cavity nesters tend to favor a particular direction for their nest opening. A woodpecker excavating a nesting cavity has a clear choice of direction for the entrance. Among the several species studied nearly all show a general tendency to choose a particular direction (Conner, 1975; Dennis, 1969; Korol and Hutto, 1984; Reller, 1972).

Secondary cavity nesters have less choice, complicating studies on their choice of natural cavities and orientation of entrance opening. Variables such as entrance and cavity size, competition from other birds, wasps, ants, etc., for use of cavities can restrict their choice, providing bias to any study of entrance orientation involving natural cavities.

Rendell and Robinson (1994) reviewed the literature on cavity entrance orientation in secondary cavity nesters. Of the 16 citations, only one (Lumsden, 1986) involved experimental nest boxes. In the studies of natural cavities, most found no selection of direction. In his study of the Eastern Bluebird (*Sialia sialis*), Pinkowski (1976) found no directional preference.

Eastern Bluebirds begin nesting in the early spring and often have young to feed during cold rainy weather. The people involved in the various state and national bluebird recovery programs recognize this threat to the success of the first nesting (e. g., Zeleny, 1993; Berner and Moore,

1997), and are concerned with optimizing nestling survival. Conversely, during later nestings (bluebirds raise two, three and even four broods in a season [Kruger, 1991]) heat becomes a stress factor, and bluebird enthusiasts strive for ways to limit this mortality (Davis and Roca, 1995).

To minimize problems from wrens, snakes and squirrels, bluebird enthusiasts place nest boxes out in the open. Although bluebirds favor such sites, the boxes are exposed to the full force of the weather.

We hypothesized that bluebirds would prefer a box facing southwest to get the maximum effect of the afternoon sun for the first nesting, and facing northeast for later nestings during hot weather. We picked May 20 as an arbitrary separation date between cool spring and hot summer weather. Therefore, we designed an experiment with two boxes at each site, giving the birds a choice.

METHODS

We built standard nest boxes with horizontal slot entrances, mounting the boxes just under five feet high on metal conduit over a piece of rebar. These boxes had flat roofs extending 2.5 inches beyond the entrance. We faced one box southwest and the other northeast, and mounted a piece of hardboard 12x18 inches between them to provide shade for the northeast-facing box. In October, 1995, we established 50 stations at the Bluegrass Army Ordnance Depot near Richmond, Kentucky, and in Octo-

ber, 1997, we established 26 stations at the Central Kentucky Wildlife Area (CKWA) near Berea.

Each station was in an open field at least 54 yards from trees, with the site chosen so that the boxes were about equidistant from trees. We checked all boxes in March, and monitored them weekly from the first of April through July. We recorded a box as used when it contained a nest and one or more eggs. After young fledged, we cleaned out both boxes to await the next nesting. When a nesting is successful the same individuals usually return to the site for the next nesting (Gowaty and Plissner, 1997).

RESULTS

At the army depot in 1995 bluebirds used 28 northeast-facing boxes and 24 southwest-facing ones, a difference not significant. However, by May 20 bluebirds had used 26 northeast boxes and 16 southwest ones. Thereafter, they used only two northeast and eight southwest ones. Thus, the pattern was the reverse of what we had expected.

At the CKWA by May 20, 1997, bluebirds had used 12 northeast-facing boxes and three southwest-facing ones. Only two new nestings occurred after May 20; at both the bluebirds chose the southwest. In a repeat of this study in 1999, bluebirds used 15 northeast and six southwest before May 20, and nine of each thereafter.

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Kentucky Study

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Combined data from each of the three studies show bluebirds choosing 55 northeast and 33 southwest before May 20. A statistical test shows this difference significant. After May 20, bluebirds chose 11 northeast and 19 southwest. This difference is not significant. Thus, bluebirds showed a preference for the northeast-facing boxes during the early season.

DISCUSSION

The prevailing winds in central Kentucky are from the southwest; our cold spring rains generally come from that direction. Apparently, the bluebirds tend to choose nest sites to avoid such weather, and it seems that this factor may be more important than the warming of the afternoon sun.

Choice of entrance orientation with respect to prevailing winds has been shown in other birds. Cactus Wrens (Ricklefs and Hainsworth, 1969) and Verdins (Austin, 1976) build nests with the entrance facing away from the prevailing winds during the cool season and into the wind during the hot season. Conner (1975) noted that woodpeckers' cavity entrances tended to face northeast whereas the prevailing winds were from the southwest.

Bluebirds might have an inherent tendency to choose a northeast-facing box in springtime. A more likely explanation, however, is that they react to local weather at the time. When bluebirds arrive on their nesting grounds they check out the various nest sites available. They may

put nesting material in one or more sites and then hang around for a week or more before choosing a site and beginning the serious work of nest building. During this period, a cold rain coming from the southwest could well affect their choice.

So, what direction should you face your boxes? It doesn't matter; bluebirds will use any of them. There may be other factors more important than compass direction, such as facing them away from livestock [or] toward a good perch. If there is no other factor though, you should face them away from the prevailing winds.

We thank Kelly Helton for help with the field work.

— Wayne H. Davis 130 Jesselin Dr.
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and Janet Powell, Department of
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CavNet conversations confirm Eastern Bluebirds aren't picky about direction

The question of nesting success in Eastern Bluebirds with respect to nest-box orientation was raised recently on CavNet, an e-mail exchange network devoted to cavity-nesting bird species.

"I have read that bluebirds prefer east-facing boxes," wrote Tina Phillips of the Birdhouse Network at the Cornell Lab of Ornithology. "Does anyone know of any published studies documenting an orientation preference?" she asked.

Two responses provided information similar to that offered by Dr. Davis in his orientation article on previous pages.

"This pertains to natural cavities and not nest boxes, but is relevant," wrote David Arsenault, a wildlife biologist in Carson City, Nevada.

"In New Mexico, most Western Bluebirds (in a particular study) nested in cavities facing south and east. This was significantly different from the orientation of unused (i.e. available) nest cavity entrances (Arsenault 1999). Further, most Acorn Woodpecker cavities faced west or east, and most Northern Flicker and Flammulated Owl cavities faced north and east.

"However, none of these entrance orientation distributions were significantly different from a uniform distribution, similar to results reported for several cavity-nesting birds (Belthoff and Ritchison 1990, Goad and Mannan 1987, Li and Martin 1991, McCallum and Gehlbach 1988).

"These studies suggest that other nest-site or microhabitat variables are more important than cavity orientation in nest-site selection by cavity-

nesting birds.

"Some studies have found significant directional orientation of cavities and suggest this may be due to cavity microclimate (Dobkin et al. 1995, Hooge et al. 1999, Rendell and Robertson 1994). Hooge et al. (1999) found that of cavities facing in the four cardinal directions, east facing cavities were the warmest.

"In New Mexico, Western Bluebirds used north-facing cavities less and east-facing cavities more than expected based on the orientation of unused cavities. This may be due to thermal advantages (Arsenault 1999). Therefore, you may expect the same for Eastern Bluebirds.

"Tree condition and habitat features may affect cavity microclimate," as well, Mr. Arsenault wrote. "Different species may select different nest entrance orientation. Hooge et al. (1999) found that cavities in live limbs were warmer and experienced lower overall variance in temperature than cavities in dead limbs.

"Nest boxes may be similar to dead limbs in their temperature regulation. Temperature may be more of a concern in open habitats or in desert areas with greater temperature fluctuations compared to forested and closed habitats where ambient tem-

perature may not fluctuate as much.

"Furthermore, nocturnal species may want a cavity that stays cooler during the day, and diurnal species cavities that stay warmer at night. Secondary cavity-nesters are also limited by the direction of cavity entrances excavated by primary cavity excavators (that may preferentially excavate in certain directions) or by how someone put up nest boxes!"

Al Larson, a NABS member from Boise, Idaho, offered a similar observation. "I have

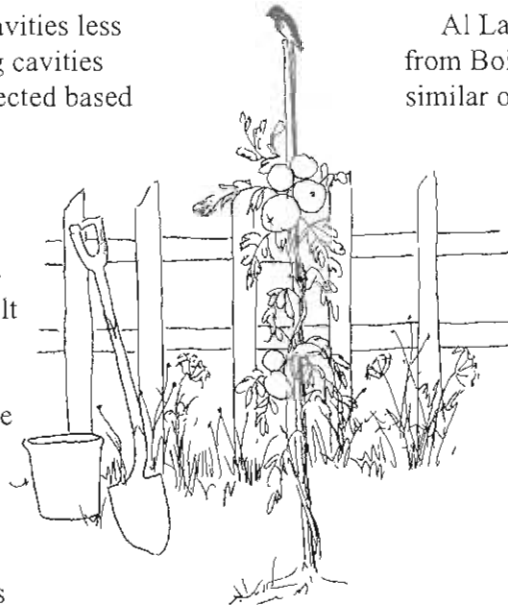
been monitoring bluebird trails since 1978," he wrote. "I started out with a modest 25 nest boxes, and now monitor close to 300 nest boxes. Most of the inhabitants are Mountain Bluebirds; a few are Western Bluebirds. I place the boxes about 65 inches above the ground on available

fence posts and tree trunks.

"My first choice of direction is facing east to catch the early rays of the sun for morning warmth and shade from the hot afternoon sun. Second choice is to face the box away from prevailing winds and storms. Third choice is to face the box away from roads and trails to avoid vandalizing.

"I use all of these options. Bluebirds will use nest boxes regardless of how they are placed.

Continued on next page



– Decay rates of nesting material

Continued from previous page

contained remnants of old material (e.g. moss and hair), it was classified as an old nest. If the cavity contained new material (e.g. fresh pieces of moss), it was classified as a new nest (the timing of the cavity inspections coincided with the nest-building phase of earliest breeding species in the study area).

When a cavity contained no nest material and the bottom was covered with decayed material and rotten wood, or occasionally with a single fragment of leaf or piece of moss, it was classified as containing no nest.

Because the type of nest material could have influenced the rate of nest disappearance, I divided nests into two categories: (1) "tit" nests, which were constructed mostly of moss, wool, hair, or feathers, and (2) "flycatcher" nests, which were composed mostly of dry leaves and other plant material.

Results and Discussion

No trace of the previous year's nest was visible in two-thirds of the cavities, nor did cavities with new nests (about 20 percent) contain remains from the previous year's nest. As a rule, new nests were in the initial stages of construction, so any remains of old material would have been apparent.

I found remnants of old nest material in only six percent of the cavities that originally had contained "tit" nests and in 20 percent of those that had contained "flycatcher" nests.

"Tit" nests vanished significantly more frequently from one year to the next than did "flycatcher" nests; consequently, dry leaves appeared to be more resistant to loss than did moss or substances of animal origin.

Causes of the disappearance of

nest material are unknown. Nest material could have been removed by a non-human animal, or it could have decomposed in situ. In cavities that contained new nests, the remains could have been removed by the birds themselves; I commonly observed tits remove debris from nest cavities.

Nest boxes in the managed part of the Bialowieza Forest often contained nearly intact nests from the previous season. It is difficult to envisage why old material would be selectively removed from natural cavities but not from nest boxes.

Therefore, I propose the alternative explanation that conditions in the cavities themselves (i.e., a favorable microclimate and a rich assemblage of decomposing organisms) result in high decay rates of old nest material.

Apart from cavities that were used for breeding in two consecutive years, numerous suitable but unused cavities were available in the study area. Consequently, birds that were prospecting for new nest sites would have found traces of old material in cavities less frequently than the present data indicate, perhaps in less than one of 10 cavities.

Rates of disappearance of old material were similar in all study plots, and did not vary substantially among years. Given that the species concerned accounted for more than 80 percent by number of all secondary cavity nesters in the Bialowieza Forest, my results are likely to be representative for the situation in this primeval forest.

However, it is not known whether the rapid disappearance of old material is typical of most natural cavities, or whether it is only a local phenomenon. Nevertheless, my data indicate that contrary to the suggestions of Perrins (1979) and Moller (1989), it

is the accumulation of old nest material, rather than the removal of such material, that distinguishes nest boxes from natural cavities.

The removal of old nests from boxes can reduce the load of ectoparasites whose survival depends on nest material (Rendell and Verbeek 1996). Whether parasite numbers would decline if nest material disappeared from decay is unknown. Clearly, additional information is needed on the relationship between parasite loads and the presence of old nest material in natural cavities.

Acknowledgments

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Nest-box data reveal surprises

By Tina Phillips

The Birdhouse Network (TBN), a citizen-science project that studies cavity-nesting birds, is pleased to report preliminary results from 1999 data collected by TBN nest-box monitors. TBN participants took part in any of four studies examining different aspects of the breeding biology of cavity-nesting birds. The studies look at variation in clutch size, nest-site selection and ectoparasites, feather use in nest construction by swallows, and calcium intake.

This report summarizes results from all but the last-mentioned study. Data compiled from 1999 reflect 5,565 nest boxes and 5,912 nest attempts as reported by TBN partici-

pants. Unless otherwise noted, the summaries pertain to the 10 most-reported species. A more complete summary of results can be found on the web site at <<http://birds.cornell.edu/birdhouse>>.

Clutch-size study

As part of the clutch-size study, participants count the number of eggs laid inside each nest box. For the most common species, mean clutch sizes ranged from 4.32 eggs for Eastern Bluebirds to 6.12 eggs for Black-capped Chickadees. Carolina Chickadees showed the highest average number of fledglings (3.66 per box), followed closely by Western Bluebirds (3.65/box) and Mountain Bluebirds (3.63/box); the lowest average number

of fledglings was reported from Eastern Bluebirds, averaging 2.94 fledglings per box.

Eastern Bluebirds, a species capable of nesting more than once per season, also had the longest breeding season with earliest and latest clutch initiation dates spanning 149 days. On the other hand, the time span between earliest and latest first-egg dates for Carolina Chickadees was only 54 days.

Excluding House Sparrows, the remaining top-10-reported species fledged at least one young in at least half of their nest attempts. In addition, Mountain, Western, and Eastern bluebirds, along with Carolina Chickadees and Ash-throated Flycatchers, had one or more young fledge in 70 percent of their nest attempts. The House Sparrow fledged young in only seven percent of its nest attempts, presumably due to human intervention.

In addition to counting the number of eggs laid, participants report the number of unhatched eggs in each clutch. Last year, nest-box monitors reported unusually high numbers of nests with at least one unhatched egg. In 1999, seven of the 10 most-common cavity-nesting birds (excluding House Sparrows) had at least one unhatched egg in more than 20 percent of their nests.

According to André Dhondt, a principal investigator of The Birdhouse Network, this is an unusually high number and a possible cause for concern. Among bluebirds, unhatched or infertile eggs occur in approximately 10 to 15 percent of nests. It's

— decay rates of nest material

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(This article previously was published in The Auk, April 2000, journal of the American Ornithologists' Union. It is used with permission of The Auk and the author. It has been edited slightly for use here. The author can be reached at Department of Avian Ecology, Wroclaw University, Sienkiewicza 21, 50 335 Wroclaw, Poland.)

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— Cornell study data reveal surprises

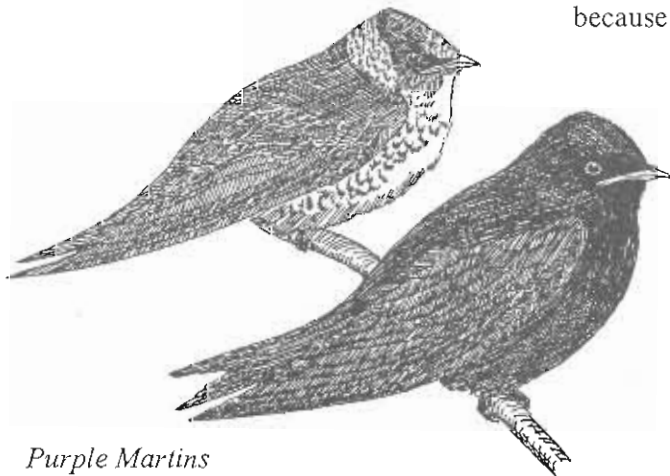
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surprising that TBN participants reported unhatched eggs in more than 25 percent of their nest boxes for all three bluebird species. Mountain Bluebirds showed the highest percentage of boxes with one or more unhatched eggs (28.7 percent), whereas House Wren nests with one or more unhatched eggs totaled 17.38 percent.

Typically, eggs don't hatch because one parent is infertile, the eggs are poorly incubated, or the shell is weak and doesn't allow the embryo to develop properly. Most often, inadequate incubation occurs because of inclement weather, disturbances to the nest, or because the female is young and has had little incubation experience.

As nest-box monitors, there is nothing we can do about infertile parents. We can, however, monitor boxes sparingly (once or twice weekly), avoid early morning checks (especially during incubation), and always avoid checking boxes in bad weather. These precautions will minimize disturbances to a nesting pair (especially an incubating female).

Low hatching rates because of



Purple Martins

weak shells may indicate environmental hazards such as acid rain — precipitation polluted by sulfur dioxide and nitrogen oxide. The primary culprits in sulfur and nitrogen emissions are cars and power plants burning fossil fuels such as coal and oil.

Many factors can affect a habitat's ability to combat acid rain. Most notable is the amount of calcium and limestone in soil, which act as acid neutralizers. Acid rain has more impact on soils that lack calcium and limestone, stripping away essential plant nutrients. The acidic precipitation also causes toxic elements such as aluminum to become more soluble, and thus easier for plants to absorb.

Insects feeding on plants (especially spruce trees) ingest unhealthy levels of aluminum and decreased amounts of calcium, and birds feeding on the insects ingest toxic chemicals while receiving fewer of the essential nutrients they need. Scientists believe that high aluminum levels and low calcium levels interfere with a bird's ability to produce healthy eggshells.

Areas such as the Adirondack Mountains of New York, the Appalachians, the Green Mountains of Vermont, and the Canadian Shield are most vulnerable to acid rain because of their high elevations, small watersheds, and naturally acidic soils.

Another surprise revealed by the clutch-size study is that Tree Swallows have taken a back seat to Eastern Bluebirds as the species most commonly reported by Birdhouse Network participants. Since 1997, the number

of Tree Swallows reported has decreased by 17 percent, while the number of Eastern Bluebirds increased by five percent

This change could be due to various factors, including a change in Tree Swallow and Eastern Bluebird populations, an increase in the number of participants actively attracting bluebirds to specific habitats, or a change in the geographic distribution of Birdhouse Network participants. No evidence suggests that Tree Swallow populations are declining or that the distribution of TBN participants changed greatly, so the cause may be a predisposition by some participants to attract or report bluebirds over Tree Swallows.

Feather study

The Feather Study looks at the use of feathers in nest construction by swallows. During nest building, the majority of nests (61 percent) contained zero to five feathers. Within three days of clutch completion and within three days of end of incubation, many nests (55 percent and 47 percent, respectively) contained between six and 20 feathers.

According to David Winkler, a co-principal investigator for The Birdhouse Network, Tree Swallows line their nests with feathers because feathers help to reduce the cooling rates of nests, "allowing nestlings to spend less energy maintaining body heat and more energy on growth. If nestlings develop quicker, they have a better chance of survival outside the nest."

This is especially true during cold, wet conditions when Tree Swallows metabolic requirements are high but the flying insects they feed on are

Continued on next page

— Surprises

Continued from previous page

stationary and therefore harder to capture.

The data collected in 1999 are consistent with feather-use trends reported in 1997 and 1998.

Nest-site selection

The Nest-site selection study examines the effects of blowfly parasitism on cavity-nesting birds using nest boxes. Data from this study showed evidence of blow-fly parasitism in 23 percent of boxes. Blowfly larvae were present in 35 percent of nests and pupal cases in 55 percent of nests, while 10 percent of boxes showed some other evidence of blowfly infestation.

Dozens of nest-box monitors have sent their used nests to Terry Whitworth, a researcher collaborating with TBN, for further examination. In his estimation, larval populations exceeding 10 actively feeding larvae per nestling cause nestlings to become anemic and more susceptible to starvation, hypothermia, and other parasites, such as mites, fleas, and lice.

Whitworth found that 53 percent of the nests he received were infested with blowflies, and of these infested nests, 24 percent had enough blowflies to cause anemia in chicks.

Grass stem tells story

Anytime you suspect a nest of baby birds has been abandoned in one of your boxes, wedge a piece of grass stem in the entrance hole so that on the next trip an adult makes into the box it would knock the grass out of the hole. If that happens, you know that the adult birds have been there.

Remember that baby birds can go all night without food without starving to death. Especially in high heat or during cold spells, it is harder for adult birds to find insects that might be hiding from the heat or not moving due to cold. In these instances, the young birds act like they are starving when they are really in no danger.

This is why I like to check on yard

boxes everyday up until they fledge. A quick walk-by and peek in the entrance hole during the day will not cause the young birds to prematurely fledge. (I would not reach into a box and try to touch them after day 14, however.)

A friend of mine carried a few pine needles in his shirt pocket, and placed a broken piece in an entrance hole every time he checked a box that contained eggs. On the next (daily) trip to the box, he would know without feeling the eggs if a bird had entered the nest.

— Keith Kridler, Mt. Pleasant, Texas

Causes of unhatched eggs to be studied; help sought

The Birdhouse Network (TBN) would like to determine whether some bird species are more susceptible to acid rain than others, and whether acid rain causes the high number of unhatched eggs that are reported to TBN.

Are birds in one region, such as the Adirondacks, more likely to be affected by acid rain than birds in the Rocky Mountains?

How large a role does diet play in determining the fertility of eggs? Could the high number of unhatched eggs be part of a natural cycle helping to keep populations in check?

To continue to study this phenomenon and to investigate the underlying causes, The Birdhouse Network needs data from all over North America. For information about how you can help, call TBN at 1-800-234-BIRD.



Do you need to renew your NABS membership? The best way to keep current with news in the bluebird world is to read every issue of *Bluebird*. Each issue has information important to your efforts to attract and fledge bluebirds.

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— Surprises

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Join The Birdhouse Network

If you are not signed up for The Birdhouse Network but would like to add to our growing database of nest boxes, please join The Birdhouse Network — one box is all you need. We look forward to your participation and continued dedication to our native cavity-nesting birds.

Collecting data on this large scale is especially important for monitoring less-common birds such as the Violet-green Swallow, Wood Duck, Purple Martini, and Bewick's Wren, all of which are under-represented in our database.

To join The Birdhouse Network, call 800/243-BIRD. The yearly participation fee is \$15, or \$12 for members of the Cornell Lab of Ornithology.

1988 Yellowstone fires' effects on birds studied

Scientists are paying close attention to Yellowstone National Park, studying the changes created by the massive fires there in 1988 when 739,000 of the park's 2.2 million acres burned. The affect of fire upon nesting birds is one result being watched.

The New York Times recently printed an article, written by Jim Robbins, discussing this work.

"Before 1988, Yellowstone was about 70 percent old growth or mature forest," the article said, "and the fires burned off about a third of that. The removal of so much canopy shuffled the deck of forest ecosystems below."

The shuffle created winners and losers among the creatures living in the forest.

"Nesting birds, including those who make their homes in the cavities of trees, flourish immediately and in the first few decades after a fire," Mr. Robbins said. "Boring beetles and other insects feast on dead trees, then become the feast as woodpeckers, Mountain Bluebirds, and Tree Swallows swarm to the burned areas.

"These and other nesting birds will thrive until the canopy begins to close again," Robbins said. One Yellowstone fire study in the 1960s showed that 29 years after a fire, there were 72 breeding pairs of nesting Mountain Bluebirds and Tree Swallows per 100 acres. Fifty-seven years after the fire these species were gone. The habitat change meant the birds looked elsewhere for their requisite nesting cavities.

Answers to frequently asked questions

Q: Do nesting boxes have to be cleaned, or will the birds take care of that?

A: It is good practice to remove nests and any other material from nesting boxes as soon as the young birds have flown or if the nest has been abandoned for any other reason. Thorough cleaning of the box at this

time may be done, but is not essential. Bluebirds will not use a nest a second time. If an old nest is not removed the birds will build over the old nest, raising the level to a point where the nest will be more vulnerable to predators. Bluebirds often will remove loose material from the box before building a nest, but they will be unable to remove an intact old nest.

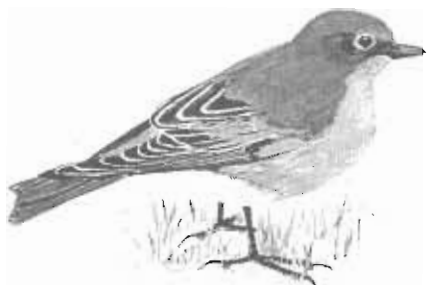
Q: Could I help provide nesting sites for bluebirds if I bored some 1.5-inch holes in hollow apple tree limbs?

A: Yes, if the cavities thus provided are of suitable depth and provide sufficient floor space for the

nests. Ideally, the floor of the cavity should be from six to eight inches below the entrance and should have an area of from 16 to 25 square inches. However, bluebirds often accept cavities that vary considerable from those measurements.

Q: Can I attract bluebirds to my yard without putting up a box?

A: Probably not during the nesting season. But in late summer, fall, and winter, bluebirds are attracted to areas where they are wild or ornamental trees, shrubs, or vines that bear berries or other small fruits. Your local nurseryman should be able to help you choose varieties best suited to your locality.



White-breasted Nuthatch bill sweeping observed, considered

By Carol Ghebelian

A White-breasted Nuthatch building a nest in a bluebird house provided us with several fascinating days of observation in March. The events we watched took place on a tree outside our kitchen window at our home in Indian Head, Maryland.

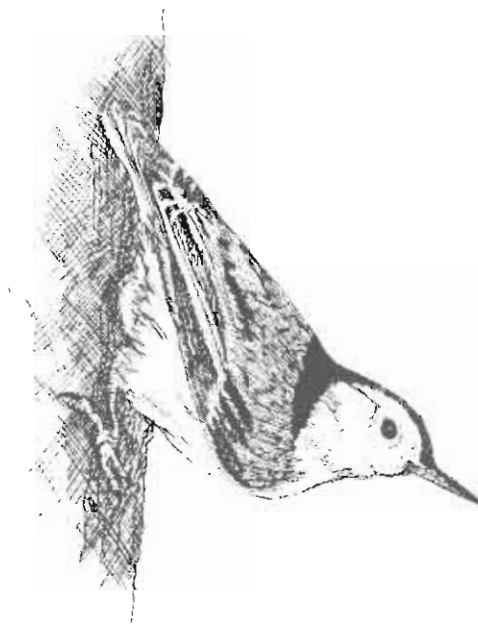
First, there was great noisy drumming as the bird enlarged the predator guard around the 1.5-inch entrance hole. This surprised me; I thought a squirrel had been gnawing on it. I could not believe this bird had this power.

This went on for several days, only for the bird to find that there was the original entrance hole inside the guard. It needed work, too! I couldn't figure out why the bird needed to enlarge the hole, since she (only female White-breasted Nut-hatches prepare the nest) was able to easily fit into original entrance.

Then, she showed me why — she began the nest build by pulling bark from the host chestnut oak tree, but the pieces were too large to fit into the hole. There must have been much frustration as she tried again and again, dropped, pulled another piece, tried again, stripped other trees for bark, etc.

She finally learned to either get smaller pieces or try to fit in the hole sideways by perching nuthatch-like on top of the box and working the bark in. Clever, I thought!

This was fascinating enough, but then began the "bill sweeping!" It was exactly as described in the Stokes (*A Guide to Bird Behavior, Volume II*), and briefly in the Peterson nest field guide. The nuthatch took an



insect and wiped with it all around the top of the box and on the tree trunk around the box. She found a new insect and repeated this for some time. This continued for two days, mostly in the afternoon, both nest building and bill sweeping.

I have read that both sexes do this, but I never could establish that the male helped; he usually watched all activity from afar.

Books say bill sweeping is done to deter squirrels that could usurp the nest, which is usually built in a tree cavity. Baicich/Harrison in their book *Nests, Eggs, and Nestlings of North American Birds* say that Red-breasted Nuthatches may smear resin around the entrance hole to their cavity nests, but mentions nothing for White-breasted Nuthatch. Peterson mentions only bill sweeping for the White-breasted Nuthatch.

(Ms. Ghebelian has been a NABS member for years. She originally posted this story on BirdChat, a national bird listserv. It is used here with her permission.)

Editor's note: In the *Birds of North America* (BNA) series, monograph 54, White-breasted Nuthatch, authors V. V. Pravosudov and T. C. Grubb Jr. discuss two forms of nest defense behavior, one of them bill-sweeping. "A nuthatch usually performs bill-sweeping with an object," they say, "such as a crushed insect ... It may be performed both outside and inside the nest for many minutes at a time. The behavior may employ the chemical defense secretions of insects to help keep tree squirrels from entering the nest cavity. Kilham (Kilham, L., *Auk* 85: 477-492) described a case when a pair of nuthatches breeding in his aviary also used beetles to sweep the nest site. The beetles used were identified as *Meloe angusticollis*, a species that, when handled, exudes a copious, oily, vesicant fluid from coxal joints. Likewise, strong-smelling material is occasionally used in nest construction, e.g., nicotine-laden filters from cigarette butts made up the bulk of the lining of one active nest inspected by J. Zickefoose (pers. comm.)." Red-breasted Nuthatches excavate nesting cavities in conifers. Pitch collecting on the freshly scarred wood sometimes acts as a deterrent to predation, according to the BNA account for that species.

DOWNY WOODPECKER

Mate: Quality of male, territory considered

By James S. Kellam

In many migrant songbirds, males usually arrive a few days ahead of females to set up and defend territories. Females then arrive and base their choice of mate on both the quality of the male and the quality of his territory.

Often, there are fewer females in a population of birds than males, and this heightens the competition among males for mates (or territories) and the ability of females to choose a higher quality mate (or territory).

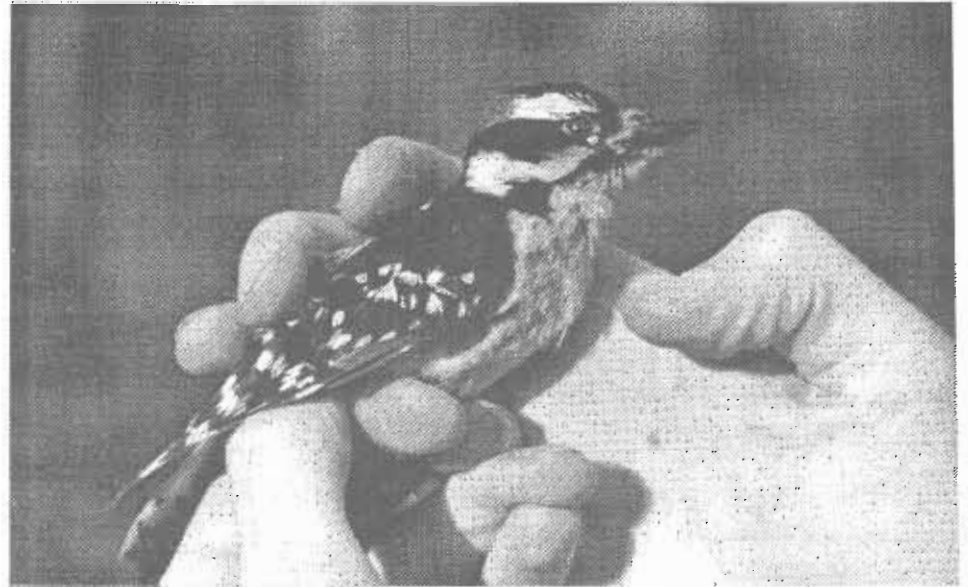
In many songbirds, females are thought to invest more energy and resources in producing and caring for the young than males, so many researchers concentrate on female choice and male-male mating competitions.

But some birds are different. I study the year-round male-female interactions of Downy Woodpeckers. My doctoral dissertation research involves documenting the costs involved in pair bond maintenance, which is the continuing relationship between former or future mates characterized by close spatial proximity and a variety of behavioral exchanges.

Costs of maintaining a relationship are thought to involve a reduction in foraging efficiency (the number of calories eaten during a period of time), either through intersexual competition or by a change in the amount of time used for foraging.

I monitor the behavior and physiology of about 20 individuals every year by catching them regularly, attaching tiny radio transmitters to their backs, and following them around on a daily basis.

Female choice of mate and male-male competition are present in Downy Woodpeckers, but they are not neces-



Downy Woodpecker photograph by Bryan Wee. © 2000 by J. Keelam

sarily the predominate sexual roles. In all woodpecker species, contrary to most songbirds, males develop full brood patches and incubate and brood the nest overnight. Males also invest significantly in excavating the nest cavity, incubating and brooding during the day, feeding the nestlings and fledglings, and nest sanitation.

Male and female investment in reproduction (in terms of energy and resource use) is therefore about equal, and because of this, males have just as much reason to be picky when selecting a mate as females do. If females happen to outnumber males, which is the case in the population I study, then females will actually be more aggressive towards each other than males.

In other species, it is hard to determine how much choice of mate is based on an individual's characteristics and how much choice is based on the quality of the territory that the individual occupies. But in Downy Woodpeckers, I think the decision process is based far more on individual quality than terri-

tory quality. I have several reasons for thinking this.

First, because male and female Downy Woodpeckers participate equally in parental care, they both have a substantial interest in their partner's individual qualities. Second, there is little evidence that Downy Woodpeckers defend territories in the first place. While individual birds do stay put in a particular area (called a home range) from late summer through early spring there is significant spatial overlap in home ranges used by males, and in ranges used by females.

Individuals of the same sex seem to tolerate each other quite well, particularly if their respective mates are foraging elsewhere. During the breeding period, some researchers have found that Downies will defend small territories around their nests, but I once found a pair of successful nests placed only 33 yards (30m) apart. These findings argue against consistent territorial de-

Continued on next page

DOWNY WOODPECKER

Continued from previous page

fense by males or females at any time of year. Because males and females may stray into an area occupied by a neighbor with little consequence, mate choice must not be heavily based on habitat quality.

Finally, the conflicts observed between Downies of the same sex during the early breeding season are usually prolonged over many days, and sometimes involve more than two birds of each sex.

In contrast, territorial conflicts in other species are more often characterized by brief aggressive encounters, solved (at least temporarily) by one bird leaving the disputed area. Also, territorial disputes are usually between pairs with adjoining territories. In Downies, I have seen conflicts where the participants are from more distant locations within my study site.

These conflicts are very exciting to watch. In spring 2000, I monitored the largest and longest conflict I've seen during my four-year study. The prolonged conflict involved a total of five females and two males over 13 days.

On the first day, two older females, RC and OP (named for their leg band colors) fought aggressively in the presence of male RL. Both OP and RC had lost their mates over the winter, so it was no surprise that they would both be looking for a new mate, but RL was already mated with a third older female, PP.

The conflict between the females included an exchange of calls, drums, displacements, head-waving, and chases. Displacements are common in many species, and involve one individual forcing another from its perch. Head-waving is also observed in other bird species; it involves the rhythmic side-to-side movements of the head

and/or torso. Two opposing individuals are usually engaging in head-waving at the same time, each bout lasting from 10 to 60 seconds. Between bouts, both birds appear to rest or preen for several seconds or minutes before displaying again.

As days passed, female OP dropped out of the conflict, and male RL stayed away too, but a couple other females and males took their place to interact with RC female. Females LW and PP both showed up for a day or two, even though they were both closely associated with an established mate.

For instance, PP and RL male had had at least two nests together in previous years. The fact that both pair members were present during parts of the conflict suggests that they were both assessing the other birds for their potential to be a better mate than the status quo. Since PP and RL continued to maintain a cohesive relationship after the conflict, they apparently decided independently that maintaining their current pair bond was the best option they had.

I think this is quite common among already-paired woodpeckers; in other species, prior experience with each other can result in higher reproductive success for the individuals involved, compared to inexperienced pairs.

Loss of a mate forces birds to form

a new pair bond, and for this they must actively pursue mates that seem to be of high quality. Though OP soon left the conflict and started mate searching elsewhere, an unbanded female and female RC chased and displayed to each other daily for the duration of the conflict. RC apparently won in the end, because the unbanded male that frequently followed the females' chases eventually mated with RC later in the spring, and the unbanded female settled down elsewhere.

These behaviors illustrate a number of points relating to mate choice and pair bond maintenance. Overwinter mortality will always cause there to be birds without a mate. These unpaired birds will compete with each other, either through direct conflict or through territorial or dominance interactions.

In addition, even when the former mate has survived, and even when the pair members have the opportunity to interact throughout the year, a bird is always on the lookout for potential mates of higher quality.

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“A thing is right when it tends to preserve the beauty, health and integrity of the biotic community. It is wrong when it tends otherwise.”

— Aldo Leopold, 1887-1948.

Nest boxes for woodpeckers

Use of low-mounted boxes suggests a larger problem

By Keith Kridler

Why do woodpeckers damage low-mounted nest boxes when they normally use cavities very high in trees?

Because there is a shortage of cavities in the area of your nest boxes or there is a shortage of trees rotted to the point where the woodpeckers can hollow them out. Or, perhaps there is an over abundance of European Starlings, or larger woodpeckers are driving smaller ones off a territory as soon as a cavity is prepared.

I have watched starlings sit for weeks as a pair of Red-bellied Woodpeckers hollowed out a limb in a tree in my yard, and then drive off the woodpeckers.

If these birds are attacking low-mounted nest boxes, then they could be desperate for either a nesting or roosting cavity. The two are different, roosting cavities usually just big and deep enough to hold a single bird, and constructed in the fall.

To check for starling problems,

build and install a couple of woodpecker houses on telescoping poles that go up about 10 feet. You can mount them on trees, if you use a safe ladder.

Use a 1.75-inch hole for mid-sized woodpeckers. If you have flickers, those birds will enlarge it themselves. Put a handful of wood chips or very coarse sawdust (even pine bark mulch works well) in the box instead of fine sawdust or shavings. Sawdust and shavings from a planer will get wet and moldy, turning just plain nasty by fall! If starlings find this box, you have a problem area! Consider a trap-and-remove program for starlings.

Make the woodpecker boxes from slab lumber if possible, and try to use pieces that are two inches thick because the woodpeckers will strip the inside walls for making chips. Make the box from soft wood, if possible.

Check for local one-man band sawmills in your area. They often will cut your logs for about 25 cents a

board foot, or will give away slabs or even No. 3 knotty lumber for your nest boxes. Cut around the knots and you have No. 1 premium for your project!

If we lose our woodpeckers, we will have a huge problem for secondary cavity nesters, like bluebirds!

You can protect the entrance hole on your nest boxes with a guard of some kind, to prevent enlargement, but then, very often, the squirrels and woodpeckers will enlarge a ventilation hole or vent slot to try to fulfill their drive to raise a family.

If you were trapped in blizzard conditions, would you break into a vacant heated house to save your children or grandchildren? Cavity nesters face a blizzard everyday in the form of chain saws, imported pests, urban sprawl, natural disasters, and more.

(Keith Kridler writes from his home in Texas. This article originally appeared on the Bluebird-L e-mail network.)

Making charitable gifts to NABS

You can make charitable gifts of stocks, bonds, mutual fund shares, and even life insurance to the North American Bluebird Society. Call Bob Martin, NABS treasurer, to discuss, confidentially, how you can proceed with this type of planned giving. Mr. Martin is at First Union Securities, 375 North Front St., Suite 100, Columbus, OH 43215. Call him at 800/225-2419 or 614/241-2165. (First Union

Securities does not provide tax or legal advice. Be sure to consult with your own tax and legal advisors before taking any action that would have tax consequences.)

Many employers offer matching gifts programs for their employees, thus doubling the financial contribution made to NABS. Consider checking with your employer to see if such a program exists.

North American Bluebird Society

Affiliate Organizations

The North American Bluebird Society serves as a clearinghouse for ideas, research, management, and education on behalf of bluebirds and other native cavity-nesting species. NABS invites all state, provincial, and regional bluebird organizations to become NABS affiliates in "a confederation of equals all working together toward a common goal ... a partnership in international bluebird conservation." No cost is associated with affiliating with NABS

Alberta

Calgary Area Bluebird Trail Monitors
c/o Don Stiles
20 Lake Wapta Rise SE
Calgary, Alberta T2J 2M9

Ellis Bird Farm, Ltd.
Box 5090, LaCombe, Alberta T4L 1W7

Mountain Bluebird Trails
Conservation Society
c/o Bob Harrison, Sec/Treas
1725 Lakeside Road S
Lethbridge, Alberta T1K 3G9

British Columbia

Southern Interior Bluebird Trail Society
P.O. Box 494, Oliver, BC V0H 1T0 Canada

Manitoba

The Friends of the Bluebirds
3011 Park Ave
Brandon, Manitoba, Canada R7B 2K3

Ontario

Ontario Eastern Bluebird Society
2-165 Green Valley Drive
Kitchener, Ontario, Canada N2P 1K3

Arkansas

Bella Vista Bluebird Society
c/o Jim Janssen, president
27 Britten Circle, Bella Vista, AR 72714

California

California Bluebird Recovery Program
2021 Ptarmigan Drive, #1
Walnut Creek, CA 94595

Colorado

Colorado Bluebird Project, c/o Bob Priester
6060 N. Broadway, Denver, CO 80216

Georgia

Bluebirds Over Georgia
5858 Silver Ridge Dr.
Stone Mountain, GA 30087

Idaho

Our Bluebird Ranch
152 N. 200 E., Blackfoot, ID 83221

Illinois

Jo Daviess County, Illinois,
Bluebird Recovery Program
15 Cedar Run Trail, Galena, IL 61036

Illinois Audubon Society
Illinois Bluebird Project
c/o Loren Hughes,
1234 Tucker Beach Rd, Paris, IL 61944

Indiana

Indiana Bluebird Society
P.O. Box 356, Leesburg, IN 46538

Brown County Bluebird Society
P.O. Box 660, Nashville, IN 47448

Iowa

Johnson County Songbird Project
1033 E. Washington, Iowa City, IA 52240

Bluebirds of Iowa Restoration
c/o Jaelyn Hill
2946 Ubbew Ave., Ellsworth, IA 50075

Kentucky

Kentucky Bluebird Society
P.O. Box 3425, Paducah, KY 42002

Massachusetts

Massachusetts Bluebird Association
Haley Priest, 89 Pulpit Hill Road
Amherst, MA 01002

Minnesota

Bluebird Recovery Program of Minnesota
Audubon Chapter of Minneapolis
P.O. Box 3801, Minneapolis, MN 55403

Mississippi

Mississippi Bluebirds
c/o Tena Taylor, 192 County Road 457
Calhoun City, MS 38916

Montana

Mountain Bluebird Trails
P.O. Box 794, Ronan, MT 59864

Nebraska

Bluebirds Across Nebraska
P.O. Box 67157, Lincoln, NE 68506

New York

New York State Bluebird Society (NYSBS)
c/o James Kunz, 454 Ashley Road
Maine, NY 13802

Schoharie County Bluebird Society
c/o Kevin Berner
State University of New York
Cobleskill, NY 12043

North Carolina

North Carolina Bluebird Society
P.O. Box 4191, Greensboro, NC 27404

Rutherford County Bluebird Club
P.O. Box 247, Ellenboro, NC 28040

Ohio

Ohio Bluebird Society
c/o Doug LeVasseur
20680 Township Road, No. 120
Seneca, OH 43780

Oklahoma

Oklahoma Bluebird Society
c/o Marion Liles
5656 S. 161 W. Ave.
Sand Springs, OK 74063

Oregon

Prescott Bluebird Recovery Project
P.O. Box 1469, Sherwood, OR 97140
503-245-8449
e-mail: email@prescottbluebird.com
web site: www.prescottbluebird.com

Audubon Society of Corvallis
P.O. Box 148, Corvallis, OR 97339

Pennsylvania

Bluebird Society of Pennsylvania
P.O. Box 267, Enola, PA 17025

Purple Martin Conservation Assoc
Edinboro University of Pennsylvania
Edinboro, PA 16444

Tennessee

Benton County Bluebird Society of Tennessee
c/o Dan McCue
155 Post Oak Ave., Camden, TN 38320

Tennessee Bluebird Trails
P.O. Box 190, Mt Juliet, TN 37121
tnbluebirdtrails@msn.com

Virginia

The Virginia Bluebird Society
c/o Julie A. Kutruff / Anne Little
3403 Carly Lane, Woodbridge, VA 22192

Washington

Cascade Bluebird and Purple Martin Society
3015 Squaticum Parkway, Suite 250
Bellingham, WA 98225

Wisconsin

Bluebird Restoration Association of Wis.
Rt. 1, Box 137 Akron Avenue
Plainfield, WI 54966

Lafayette County Bluebird Society
14953 Highway 23, Darlington, WI 53530

