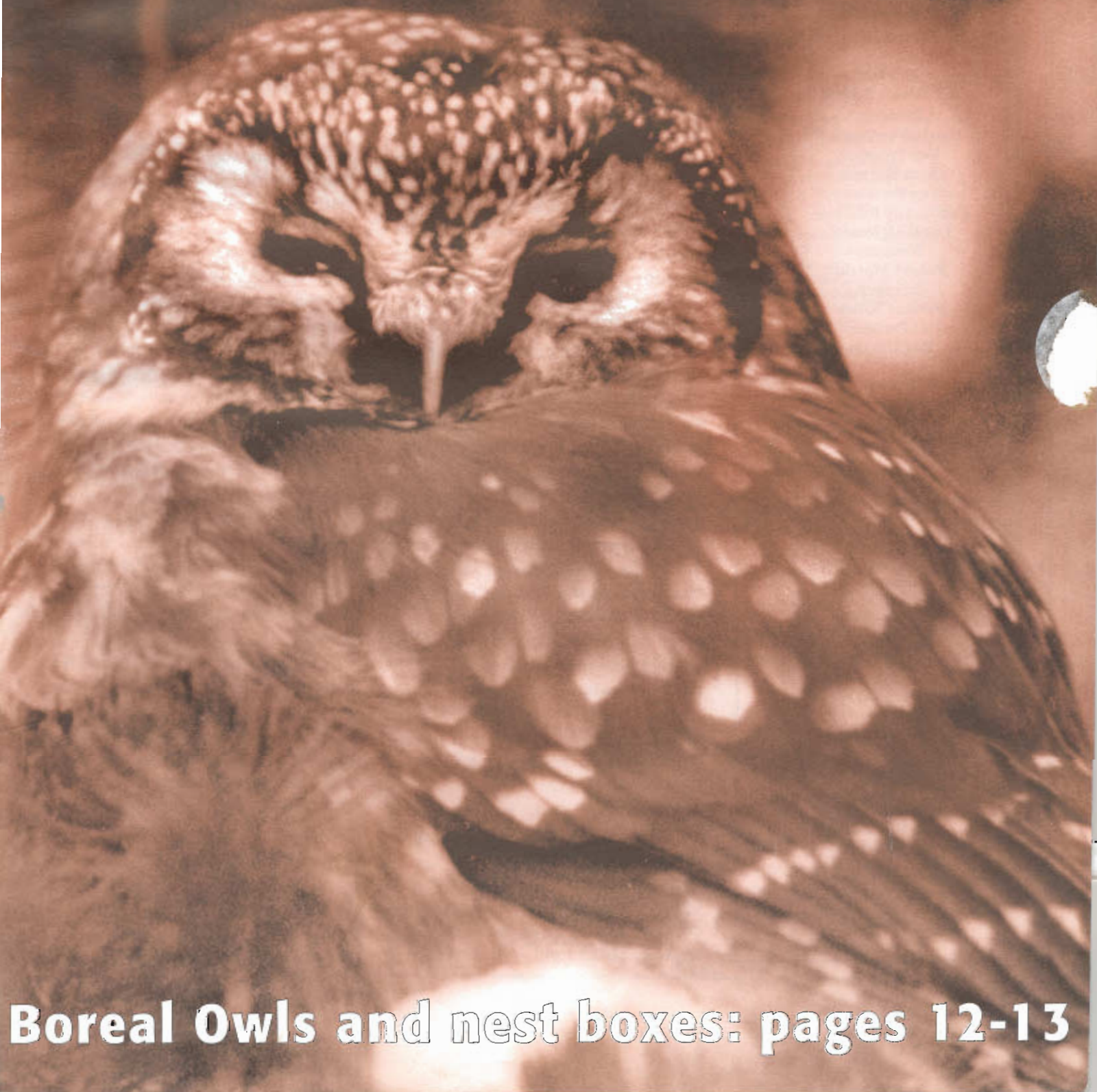


Bluebird

Journal of the North American Bluebird Society

Fall 2001

Vol. 23, No. 4



Boreal Owls and nest boxes: pages 12-13



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From the President

Doug LeVasseur

This past spring was one of the wettest on record in southeastern Ohio. If it wasn't raining on any one particular day, it had either just rained or was getting ready to rain. I was fine tuning an Andy Troyer sparrow and starling trap near an outbuilding one afternoon between showers when I noticed a pair of chickadees especially close and agitated.

They had to be nesting near by, and it wasn't long before I discovered the nest location, and what a terrible choice this pair of chickadees had made. Their nest was a natural cavity half way down a locust fence post that braced a corner post. This put the opening just 22 inches off the ground. And to make matters worse, the post had a jog in it where a limb had rotted out so the natural cavity was pointing straight up.

I contemplated intervening to aid these obviously inexperienced newlyweds but decided against it. So many bad choices had simply made intervention too complicated. Besides, for years my own faultless logic told me that any open-top nesting situation for any cavity nesting species was a recipe for disaster. This nesting of chickadees would just have to go down in history as a statistical causality doomed by the laws of natural selection.

For a time I was removing starlings from Andy's trap once or twice a day, so I took to carrying a flashlight with me to check on the progress of the chickadees. Each time I checked the post, I expected to find the final fatal failure.

I may as well skip right to the end of this story because you all probably correctly anticipate the ending anyway. That's right — in the end it

was I and my faultless logic that became the causality, for the chickadees thrived and fledged.

There is no doubt we have come a long way in developing sound management principles for all cavity-nesting species. But those fledging chickadees should serve as a reminder that there are still too many unanswered questions. When it comes to providing real help for cavity-nesting species, personal opinions and logic are very poor substitutes for real scientific research resulting in statistical significant conclusions.

NABS has been working for more than a year to develop a research and data collection system that will provide answers to many tough questions. Board member Ken Avery has contributed countless hours to develop a program capable of collecting information on many of the remaining cavity nesting problem situations. Early users of the program have helped Ken debug the program and make it user friendly.

This past year NABS was fortunate indeed to gain the help of Dr. Bernie Daniel, Dr. Steve Pelikan and Research Assistant Courtney Busemeyer to analyze the collected data.

Large pieces of a complex puzzle have neatly fallen into place over the past year and a half. What is left to make this entire endeavor a resounding success? One thing and one thing only: the full-scale participation of ALL of our membership in providing data to NABS from around the United States and across Canada.

You can make your contribution to this effort by going to the main

Continued on next page

– From the president

Continued from previous page

NABS web site, www.nabluebirdsociety.org, and then to Trans-Continental Bluebird Trail, Data Collection.

Minimal computer skills are required. I know this to be true because those are my skills and I was able to enter my personal trail information. You have done so much to help bluebirds in your own backyards and neighborhoods this past nesting season, and I thank you for that.

Now is the time to take an extra step to help bluebirds all across the continent by entering your personal trail information on the NABS web site. Do it today, please, for the bluebirds.

Correction

The telephone number to be used if you wish to join The Birdhouse Network run by the Cornell Laboratory of Ornithology was given incorrectly in the Summer 2001 issue of *Bluebird*. The correct number is 1-800-843-BIRD.

Cover photo

Minnesota birder, writer, and photographer Anthony X. Hertzell took the picture of the Boreal Owl at Carpenter Nature Center in St. Paul, Minnesota, in February, 1996. This species of owl makes infrequent visits as far south as central Minnesota. See our story about Boreal Owls and nest boxes.

\$100 membership includes data entry for nest boxes

NABS now includes with each \$100 Contributing-level membership the opportunity to have data for up to 50 nest box records entered in our research data base.

This entry service is being offered to assist individuals who DO NOT have access to a computer or the NABS web site, or who run out of time to enter their valuable nest box and nesting information on the Trail

Management and Data Collection web site.

A printed report will be sent to NABS members who take advantage of this opportunity; when data is entered, their trail or nest boxes are officially registered on the TBT.

Contact NABS for more information about this opportunity by calling 608/329-6403 or by e-mail at info@nabluebirdsociety.org.

Renew your membership at next level higher

Please help NABS continue to be a continent-wide resource for bluebird conservation. The cost of doing business today is increasing. NABS, too, has its share of paper, postage, and operational 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 also can help NABS save money by renewing your membership in advance of your expiration date, noted on the mailing label of *Bluebird*.

Bluebird

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Questions should be directed to the NABS headquarters address/telephone number shown above. 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. Articles published do not necessarily represent the opinions and positions of the officers, directors, or employees of the North American Bluebird Society.

NABS honors members efforts

Each year the North American Bluebird Society is honored to recognize organizations and individuals for their outstanding contributions to the field of bluebird conservation.

The 2001 North American Bluebird Society Award for Outstanding Contribution to the Field of Bluebird Conservation was presented to four persons in Columbus, Ohio, during the June NABS convention.

Here are highlights of the work done by these dedicated bluebirders to earn this special recognition.

Nathan Jennings Sunbury, Ohio

Nathan, 19, is a member of the board of trustees of the Ohio Bluebird Society, chairman of its education committee, and county coordinator for Delaware County, Ohio. He has been bluebirding for about seven years, with a bluebird trail of his own that numbers 95 boxes. He teaches a number of programs for area children, and is head volunteer of the bluebird program at the Sharon Wood Metro Park. He works with park naturalists to initiate or improve bluebird trails. Last year, he placed bluebird boxes in and around Sunbury Village.

Nathan was nominated by Richard Thoma, president of the Ohio Bluebird Society.

Jan and Dave Ahlgren Stillwater, Minnesota

The Ahlgrens have been affiliated with the Bluebird Recovery Program of Minnesota since 1980, and members of the board of that organization as well. They perhaps are best known for supplying nest-box kits at cost. Almost 70,000 Peterson-style boxes have been produced to date. This includes over 600 bluebird boxes every year for the Minnesota non-game wildlife program.

Dave presents about 25 bluebird workshops every year to schools,

nature centers and bird stores in Minnesota, Wisconsin, North Dakota and Iowa. Both Jan and Dave have been featured on television for their conservation work. Jan is a contributing editor of *Bluebird News*, the newsletter of the Minnesota Bluebird Recovery Program.

The Ahlgrens were nominated by Dorene Scriven of Minneapolis, Minnesota.

Tip Goza Lilburn, Georgia

Tip has been a charter member of Bluebirds Over Georgia, Inc., since it began in 1992, and a member of NABS as well. He has worked tirelessly to promote the Eastern Bluebird in Georgia. Tip has built and given away hundreds of nesting boxes. He has worked with school children, Boy and Girl Scouts, senior-citizen groups, garden clubs and other civic groups, teaching them about bluebirds and making bluebird boxes. He helps monitor the many nesting boxes he has placed at libraries, fire stations, tennis courts, parks, nursing homes and schools in the area.

Tip was nominated by Frances G. Sawyer, president of Bluebirds Over Georgia, Inc., Stone Mountain, Georgia.

Robert Niebuhr Great Falls, Montana

Bob, a member of Mountain Bluebird Trails for more than 10 years, became a founder of Montana Mountain Bluebird Trails when that group organized. He served as a NABS board member from 1998 to 2000. He was chair of the committee that organized the 1999 NABS convention in 1999 in Great Falls.

Bob is a member of the upper Missouri River Breaks Audubon Society. He has chaired several committees for the group, including the Cavity Nesting Committee.

He maintains, monitors, and makes all of the nest boxes for two trails with a total of 274 boxes. He has spoken about bluebirds to many groups throughout his state, and has written about bluebirds for *Sialia*, *Bluebird*, and Montana newspapers.

Bob was nominated by Erv Davis of Charlo, Montana.

Give a gift of Adopt-A-Box

You can help bluebirds and invite others to participate in an important conservation cause by purchasing and giving an Adopt-A-Box sponsorship for a nest box on the Transcontinental Bluebird Trail (TBT) as a gift this gift-giving season.

The \$35 sponsorship not only gives a bluebird family a home, but provides the gift recipient with the following:

- An Adopt-A-Box Certificate and information about bluebirding.
- A \$2-off coupon redeemable at participating Wild Birds Unlimited stores.
- Web-site page where you can follow trail and nesting activities.
- A nest-box report at the end of the nesting season.
- A one-year membership in the North American Bluebird Society which includes *Bluebird*, a quarterly journal featuring updates on TBT development, research reports, and informative articles.

CONVENTION 2002

June 13-16 in Penticton, British Columbia



Celebration of 25 years of conservation service to bluebirds and other North American cavity-nesting bird species will highlight the 2002 convention of the North American Bluebird Society. The convention will be June 13-16 in Penticton, British Columbia.

Members of the Southern Interior Bluebird Trail Society will host the event.

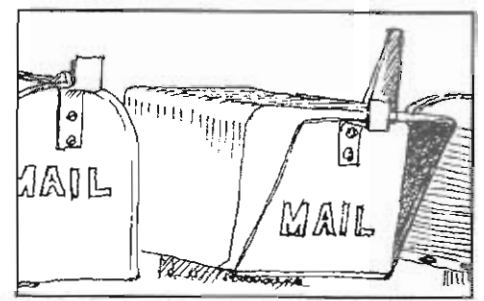
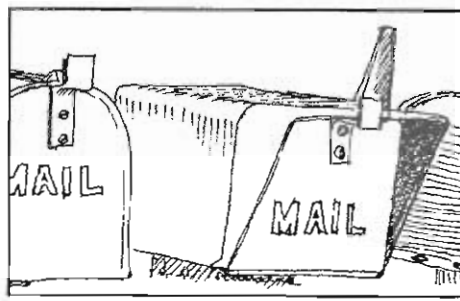
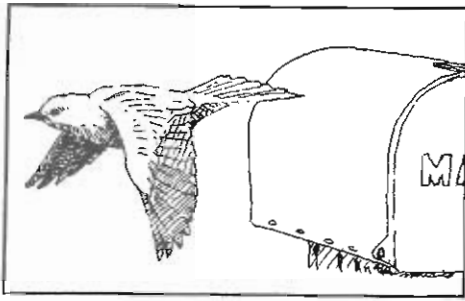
Penticton is in the Okanagan Valley, long favored as a vacation destination for its beautiful natural settings. The Penticton Lakeside Resort and Conference Centre on the shore of Okanagan Lake will be the convention site.

Field trips will take participants to marsh, desert, and high-country ecosystems. The area has many historic sites, over 30 wineries offering tours and tastings, and several golf courses.

Registration information and forms will be available in the Winter 2002 issue of *Bluebird*. If you wish those materials now, call Greg and Terry Tellier at 250/493-4634, e-mail terry_tellier@telus.net; Sherry Linn at 250/495-7891, e-mail goldstrm@vip.net; or write to NABS 2002, Box 494, Oliver, BC V0H 1T0 Canada; or NABS 2002, Box 734, Oroville, WA 98844.

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. The map at the right shows the location of Penticton Lakeside Resort and Conference Centre in relationship to major cities in the Pacific Northwest.





Steve Gilbertson responds to letter about hole sizes

Dear Editor,

I would like to respond to the letter from the vice-president for education and president of the Virginia Bluebird Society (*Bluebird*, Summer 2001). I've known NABS research chairman Prof. Kevin Berger for perhaps a dozen years. I think the high demand for him as a speaker and for his published research is indication of his ability and integrity. I do know where he lives and learns.

I talk to scores of people all over the country about bluebirds and related topics. Included are Steve Eno, past president and co-founder of Bluebirds Across Nebraska, Jim and Ann Auer, president and vice-president of the Indiana Bluebird Society, and Carrol Henderson, supervisor of the Minnesota Department of Natural Resources nongame division, author of several bird-related publications, and bluebirder for perhaps 20 years.

Not one of them has reported a European Starling nest attempt in small-diameter nesting boxes such as Troyer, Peterson, and Gilwood placed at a height of four to five feet.

Alberta bluebird researcher Myrna Pearman had four starling nest attempts in NABS boxes and one in a Peterson-style box with *oversized* 1-7/16-inch holes.

Troyer boxes with their 1-1/4-inch horizontal slot will not admit starlings — which, by the way, are not nest box predators but competitors.

I think Peterson boxes have created confusion and controversy since their beginning. The 1-3/8-inch

by 2-1/4-inch oval hole of these boxes will admit starlings. I've known this since 1990 in my own tests. Keith Kridler documented starlings nesting at an eight- to 10-foot height in 6x6 boxes fitted with the 1-3/8 by 2-1/4 inch oval entrance hole six inches from the floor.

I am not a proponent of Peterson boxes because of the needless weight, complexity, and sometimes pronounced nailing stub that, I think, contributes to improper mounting on trees, wooden posts, etc. If starling use was an additional issue, it would be added to my argument.

I developed the Gilwood box because some people like only wooden boxes. For me, the process of designing a trap or nest box involves trading less than what is gained. Regarding the Gilwood entrance, I traded away a hypothetical possibility of starling use for an entrance and box style preferred by bluebirds over all others.

It's early, but I am confident that starling use in Gilwood nest boxes will be nonexistent — if for no other reason than its adjustable entrance that can totally exclude starlings.

Here is more to think about. If a 1-9/16-inch round entrance excludes starlings, then 1-5/8 inches round must be tight fit. If this size opening is as preferred as the 1-3/8-inch oval, why expend needless effort to drill two holes and chisel between them? I'm only beginning to test this.

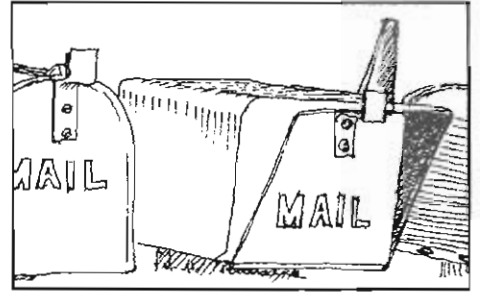
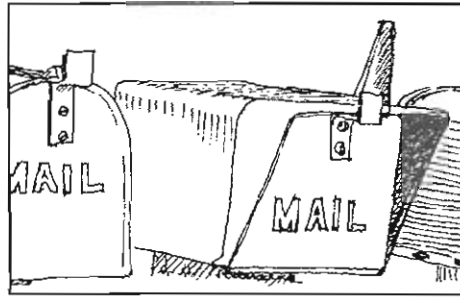
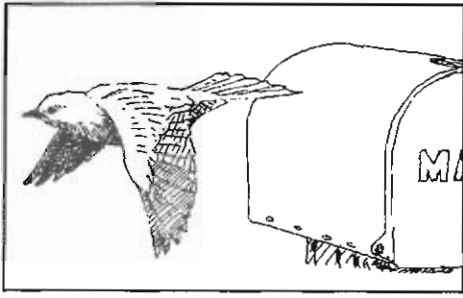
Most male bluebirds can enter a 1-3/8-inch round opening. Given that,

a 1-1/2 inch round would appear certainly adequate. Why go larger or non-round? One reason might be the desire for an edge. We humans understand that a nest box is either claimed or unclaimed. What we don't understand is that one's results — five babies or none — might bear directly on having some perceived advantage (an edge) to offset perhaps poor habitat, competitive environment, etc.

I have the greatest respect for pioneers like Larry Zeleny and Dick Peterson. They *didn't*, as we did, have the benefit of 20 years of other people's experiences to work from; there simply were not enough birds. They changed that so we can look smart.

I am glad to read that Barb Chambers and Julie Kutruff of the Virginia Bluebird Society (who wrote the letter) are confused. I now know that I am not alone, since I am confused about something most of the time! So many things can confound our best efforts, from weather and predators to outdated advice. I think children can play pretty safely on this city street. There seems to be no traffic. Still, I'd watch out for fly balls.

— Steve Gilbertson, Aitkin, Minnesota



More about nest hole confusion

Dear Editor,

I would like to respond to the letter "Nest box article causes confusion" that appeared in the Summer 2001 issue of *Bluebird*. I disagree that the boxes mentioned in Kevin Berner's article will raise starlings.

For seven years, Bluebirds Across Nebraska has gathered information from a detailed report form submitted by trail monitors in Nebraska and Western Iowa. The box style used is noted on the form along with any concerns or problems encountered throughout the season. Last year alone, over 500 report forms were turned in with data on 6,551 boxes.

The vast majority of the reports submitted show use of the Troyer box with a 1-1/4" slot; the Peterson and NABS boxes with a 1-3/8"x2-1/4" oval hole; the Gilbertson PVC box with a 1-9/16" hole; the Gilwood box with a wire-divided crescent hole.

In seven years, there has been only one reported starling nest and that was in a Peterson box (and the hole dimension in that box was never verified so it's possible that the hole size was larger than recommended).

The small inside dimensions of these boxes, along with entrances that starlings would have great difficulty entering, make the chance of these boxes being used by starlings an extreme rarity. Based upon BAN's experiences, I do not feel the use of these boxes pose a threat to bluebirds.

— Steve Eno, *Bluebirds Across Nebraska*

Starlings cannot enter 1-5/8 hole

Dear Editor,

This is in reply to the letter to editor, "Nest box article causes confusion," *Bluebird*, Summer 2001.

When I started building bluebird nest boxes in earnest about five years ago, the only size of drill bit available at the hardware store was 1-5/8 inch. Since then, I have built approximately 150 boxes, all with that size opening.

Furthermore, I have monitored at least 100 boxes a year since then, 124 this year. A starling made a nest in one box two years ago, where a woodpecker had greatly enlarged the opening. Therefore, I state that by monitoring 100 boxes over five years with only one starling nest that starlings cannot enter a 1-5/8 inch entrance hole.

After reading the letter, I acquired a live adult European Starling in breeding plumage and tried to push it through the opening or pull it through by the head. It was just far too thick in the body.

Starlings are the fourth most abundant bird in Illinois as recorded on Illinois 1995 Spring Bird Count; there is no shortage of local starlings. Maybe we have fatter and bigger

starlings than the rest of the country, but I suspect that whomever declared that starlings could easily enter a 1-5/8-inch round hole has not done their homework.

An untested theory if repeated often enough is accepted as fact. I was asked today by a farmer on whose farm I have 11 nest boxes if bluebirds migrate on the backs of larger birds just like hummingbirds do. This is widely believed, and has been repeated so often that it is accepted as fact.

— James O. Smith, Homer, Illinois

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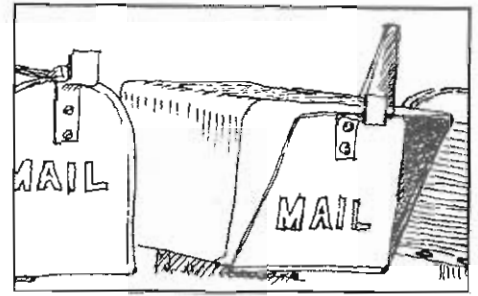
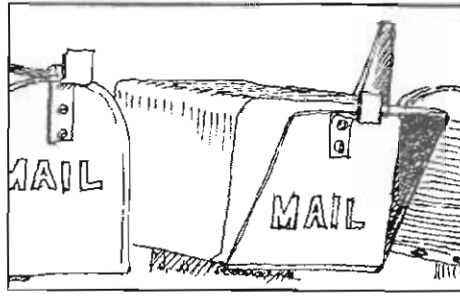
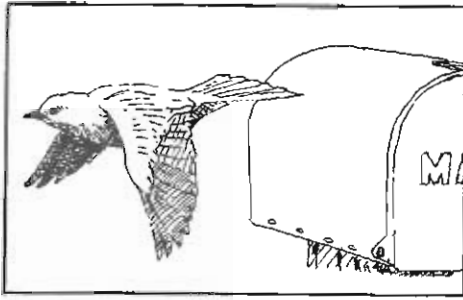
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Suggestions from California

Dear Editor,

As always, enjoyed the latest issue. I have a couple of comments.

I found the cavity-entrance orientation study on page 10 interesting. However, if they had used nest boxes with hooks on them, as we do here in the West, they could have eliminated one of the variables — the effect of the sun.

In southern California, we try to place all nest boxes in the shade, in particular for afternoon shade, and otherwise orient the entry hole away from the direction of early-year rains and/or sprinklers since many of our locations are on golf courses, parks, cemeteries and school yards.

On page 16, the statement "... avoid early morning checks (especially during incubation) ...", I have never heard this before and I have been a bluebird volunteer for five years. How hard a requirement is this? Because over 70 of the nest boxes I monitor are on golf courses, I try to start my rounds at sunup in order to minimize my interfering with golfers and to reduce the time it takes to make my rounds.

If the early morning check is not good for the birds, I certainly can change my monitoring time.

Keith Kridler mentioned mounting nest boxes on trees and using a safe ladder to gain access. Apparently he has never heard of nestboxes with a top-mounted hook, like we use in Southern California. To emplace these, we use a Purvis lifter, named after local bluebird guru Dick Purvis,

that is a swiveling box hung from a PVC yoke and placed in the end of an extendable pole, like those used for swimming pool cleaning.

— Bob Franz, Placentia, California

Suggestions for helping chicks

To the Editor:

I read with interest and enjoyment Tina Phillips's "Nest-box data reveal surprises" article in *Bluebird*, Summer 2001.

She notes that blow-fly parasitism is a significant problem. I've been helping bluebirds and other box monitors for over 30 years and have discovered that the number of blow-fly larvae in the nest is a factor of weather and time of year.

In my area, the first nesting in mid-April normally will have no problems with the larvae. The second and any third nesting have almost 100 percent chance for the parasite if the summer weather is warm.

I have found that intervention is helpful to the chicks.

As soon as I find larvae, I remove the chicks and the contaminated nest, delouse the chicks, build another nest with dry grasses or straw, and then replace the babies. I always have dry material ready on my rounds.

My practice has never harmed the babies, and the new nest gives them about a week of pest-free living and a better chance to fledge. The timing of

larva here is such that I've never had to rebuild twice for the same chicks.

I hope this is helpful information.

— Michelle Harwood, Berkshire County Bluebird Coordinator, P.O. Box 1000, Gt. Barrington, MA 01230

House Sparrows

Dear Editor,

I would like to commend Doug LeVasseur for his excellent letter in the Summer 2001 issue on the House Sparrow problem. I take a very hard line on this, even to the point of asking people not to put up bluebird houses unless they are willing to trap and eliminate House Sparrows, as otherwise they are just erecting death traps for bluebirds and other small cavity nesters.

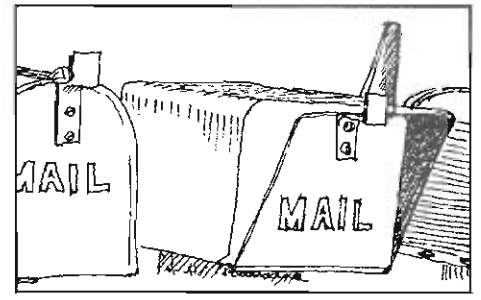
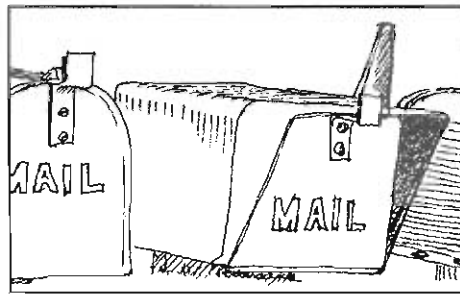
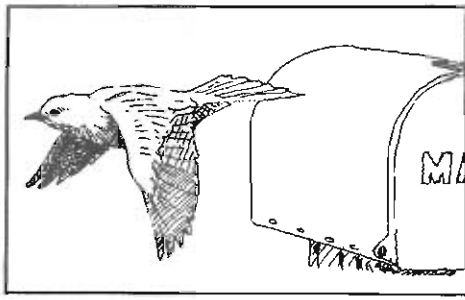
This may not be the case in other areas, but here the House Sparrow's habits and territory mimic that of the Eastern Bluebird even in rural areas, and it is impossible to have a successful trail without trapping and eliminating sparrows.

Since February, I have had eight traps in weekly use on my 83-box trail; monitoring in early July, I still had four new House Sparrow nests!

Regarding the best direction for mounting bluebird houses: Going on seven years and several thousand nestings, I find that direction is less important than facing the box toward the best feeding areas. That is where the birds will be coming and going from most often.

Keep up the good work!

— Bob Walshaw, Coweta, Oklahoma



Nest box building materials, facing direction discussed

To the Editor,

Blue Styrofoam sandwiched between a PVC sheet and thin plywood probably would be an excellent material for nest boxes. Blue Styrofoam is normally a closed-cell foam designed for use underground or underwater. It should not absorb water and thus losing its R-value or resistance to heat transfer. Since it is closed cell, very few manufacturing gasses should be released.

Several issues of *Bluebird* (and before it *Sialia*) have had letters or articles questioning the use of PVC material for nest boxes. Questions were raised about loss of birds due to

heat or excess heat in these boxes as compared to 3/4-inch wood boxes.

I have had good success with Schedule 40 PVC boxes here in east Texas (since 1976). Very detailed heat tests done by Robert Patterson in the early 1980s (published in *Sialia*) showed that even without ventilation holes, boxes made from Schedule 40 PVC were as good or better at repelling heat than nearly any other type box tested.

I measured sewer and drain pipe (this is what Steve Gilbertson uses) at various dealers, and then Schedule 40 pipe. Sewer and drain pipe is under 1/16 inch in thickness, while Schedule 40 is around 1/4 inch, or four times thicker. Comparing sewer and drain PVC to Schedule 40 is like comparing an 1/8-inch thick wood box to a 3/4-inch thick wood box. For areas with high heat in summer, the PVC boxes should be made from Schedule 40 material and left white.

The recent heat test presented in *Bluebird* (PVC vs. wood vs. aluminum) only tests the boxes to midday. Harry Krueger's heat tests of various boxes monitored at 30-minute intervals in eastern Texas showed that even the Peterson box with a roof thickness of 2-1/4 inch and a back thickness of 1-1/2 inch, when the entrance faced square into the rising sun, actually reached the highest temperature (during late summer) at 6 p.m. (when a tree line gave shade to the test boxes).

The Peterson nest box heat gain was about double at 6 p.m. what it

was at noon! (Heat gain is the inside box temperature over a controlled ambient air thermometer located in full shade.) Due to the design of the Peterson box, with no overhang at the rear of the box and the steep angle of the roof, the sun can strike the entire length of the back board (and if the box is slightly turned can also heat up an entire side) from about 2 p.m. until dark.

If you use this box, you should test with a high/low thermometer to see if facing west or another direction might not actually be cooler than the "face all boxes east" rule of thumb. I have used only the Peterson box as an example of what sunshine on the side of any nest box can do to inside temperatures because it has the thickest roof and back in commercially made nest boxes available over the counter.

The best wood nest boxes (lowest heat gain) in the 3/4-inch thick wood division in the 1980s heat tests were hexagon- and octagon- shaped boxes. This is probably because they had less square inches of flat wall to absorb the sun's late afternoon rays. The angles would help bounce off the rays rather than absorbing them.

— Keith Kridler Mt. Pleasant, Texas



NABS members' data analyzed

First research report shows several findings

By Courtney Busemeyer

This is the first of what NABS hopes will be regular research briefs drawn from data contributed by NABS members across the continent. NABS has established, in conjunction with the launch of the Transcontinental Bluebird Trail, an innovative Trail Management and Data Collection web site to explore pressing questions about bluebird biology and conservation management.

Eventually, this project will enable bluebirders continent-wide to improve the effectiveness of their bluebird trails or fledging rates from nest boxes. Members who reported data during the 2000 nesting season are to be complimented, and I encourage everyone to contribute to this effort.

I am excited to be a part of this ongoing project, playing the role of data-analyst. What I present here is a summary of some of the preliminary findings for the 2000 nesting season, taken from over 4,000 records submitted by NABS members. For this study, the three different species of bluebirds were classified as a whole.

I studied the effects of different box designs, the pairing of boxes, and the use of predator controls. It has been useful to view nesting success as the result of two independent processes: First, the attraction of bluebirds to a particular box, and second, by whether or not these boxes fledged bluebird young.

I looked at which box design was best at attracting bluebirds and which was most successful in fledging young. The NABS box and the Slot Box are best at attracting bluebirds, the difference between them not significant (see graph). For fledging, all box designs appear to be quite similar.

In interpreting these results it is im-

portant to remember that the effects of geography, predator control, and many other factors have not been included; these results are just continent-wide averages.

The data shows that different box designs are used with significantly different frequencies in different parts of the country. For example, data participants from the West Coast, Mountain West, Great Plains, and Eastern parts of the continent report at least 75 percent NABS boxes, which does not allow sufficient statistical representation for the remaining boxes in those regions.

The NABS box represents over 65 percent of all boxes reported in this data. On the other end, the Open Top and Tree Branch boxes each represent approximately one percent of the total data collected.

Again working with overall averages, I examined the effects of using predator controls. I did not distinguish between different types of controls, but simply studied the presence of any type of control. (This seems reasonable since trail managers presumably select the best, or most cost-effective, control method for their individual situation).

The results here were quite surprising. The use of predator control seems to slightly decrease the chance that a box attracts bluebirds. If, however, it does attract them, predator control significantly increases the chance that the box will fledge young. Therefore, there appears to be some advantage to discouraging predators (see graph).

The pairing of boxes, a trail management strategy used to reduce the competition from other species for the box, has been of great interest to bluebirders. Using continent-wide data, there appears to be no advantage to the

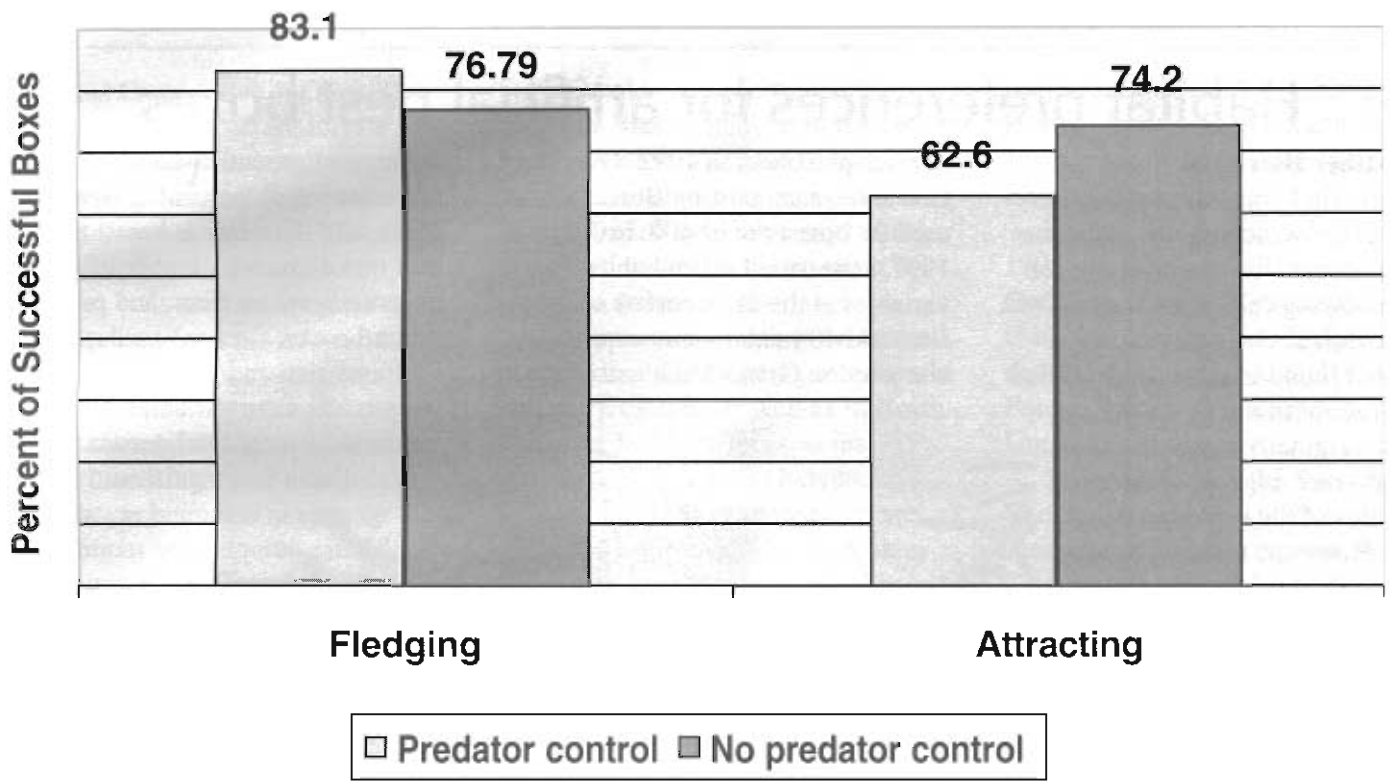
pairing of boxes, either for attracting bluebirds or for fledging young. It seems likely that these conclusions will change from region to region around the continent, but we do not yet have enough data for analysis. I encourage you to continue setting up paired boxes and reporting your results as these conclusions are tentative.

All of these values and conclusions are a result of different scientifically valid statistical analyses. The Statistical Analysis System (SAS) program allowed me to do several Chi-Square tests, Z-tests and Frequency tests, as well as other, more detailed analyses still in progress. The p-values that were calculated were approximately .0001 for all data reported thus far, which confirms the significance of the data tables that I am testing. Z-tests were used to test whether or not the difference in proportions is significant or not. All data reported has been supported by these tests.

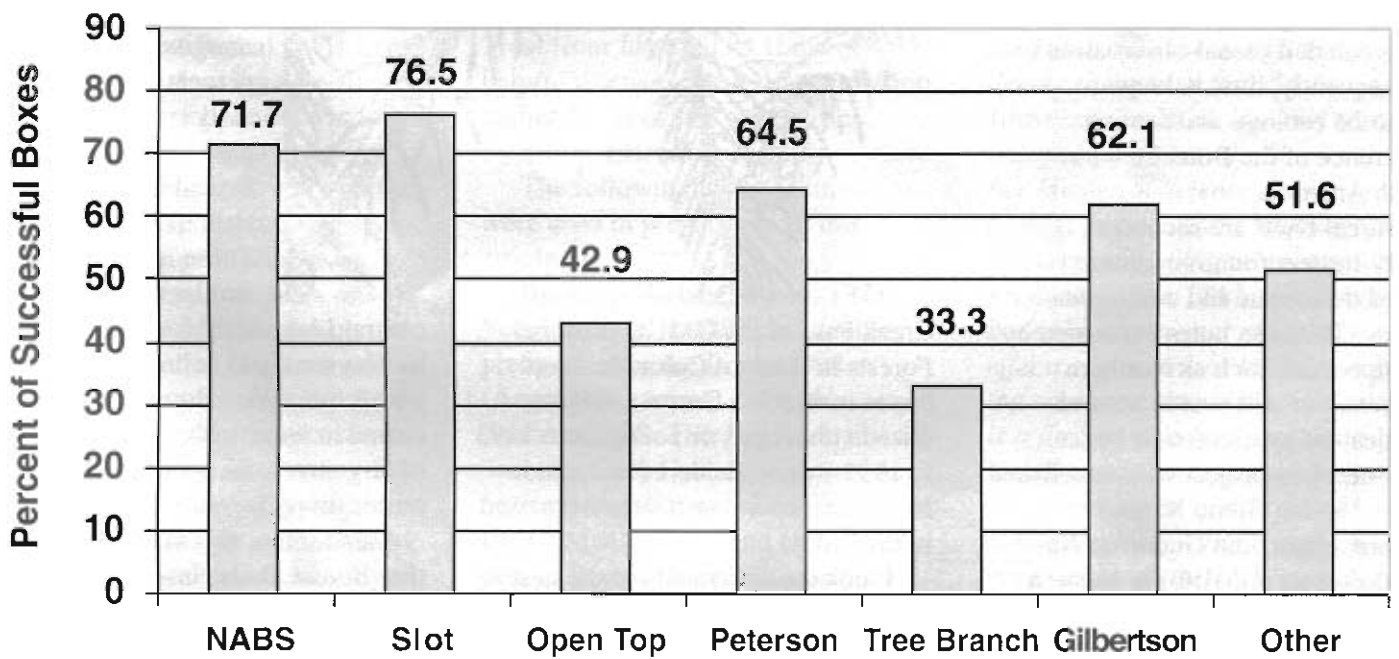
In conclusion, I again commend those bluebirders who contributed data. Your accurate observations are crucial to future studies of bluebirds and other native cavity nesters. It is essential that you continue to stay involved with your trails and monitor your boxes as closely as possible. I would also like to encourage those that are not reporting their data to please do so. This will improve the quality of data, and make additional analyses possible.

(Ms. Busemeyer, an undergraduate at the University of Cincinnati studying mathematics, is a recipient of the Women in Science and Engineering Undergraduate Research Award.)

Effects of Predator Control on Box Success



Effect of Box Type on Attracting Bluebirds



BOREAL OWLS

Habitat preferences for artificial nest boxes

By Heather Bateman

If you find yourself cross-country skiing or snowshoeing through dense woods at dusk this winter, listen for the winnowing call of the Boreal Owl.

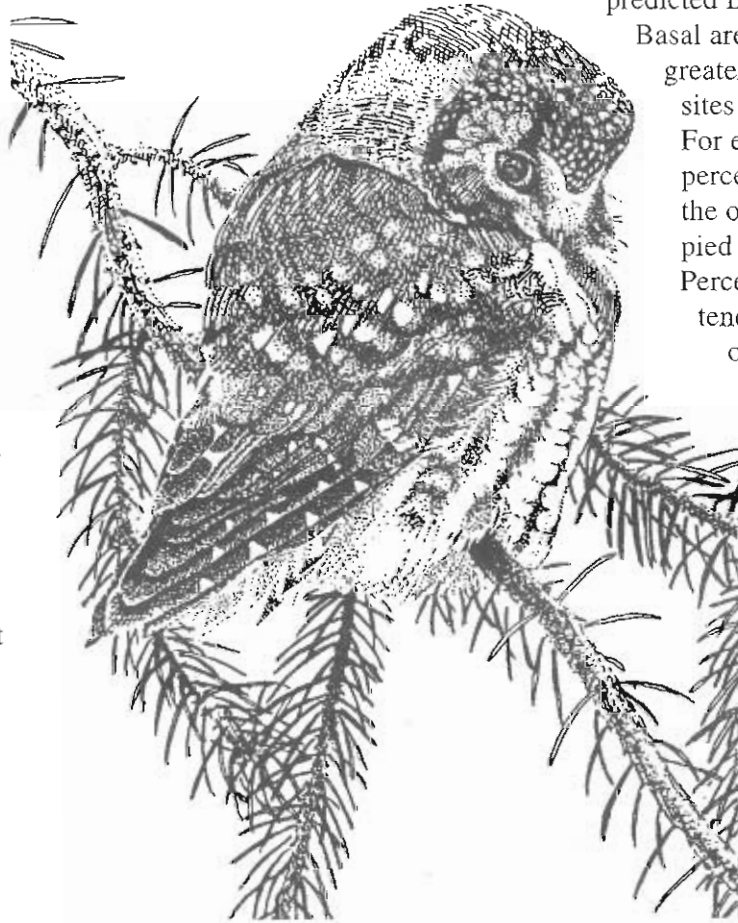
The Boreal Owl (*Aegolius funereus*) found in the eastern United States (northern tier of states) and Canada originally was thought to be only a rare migrant in the mountains of the western United States. However, residency and breeding status have now been documented in Washington, Oregon, and in the Rocky Mountains of Idaho, Montana, Wyoming, Colorado, and northern New Mexico, in addition to Minnesota in the midwest.

Stahlecker and Ducan (1996) suggest that Boreal Owls have been present in Colorado and New Mexico for centuries, possibly since the Pleistocene. It is the remoteness of these owls in snow-packed forests and the male calling during February nights that has precluded casual observation. Consequently, little is known about the ecology and nesting preference of the Boreal Owl in North America.

Boreal Owls are secondary cavity-nesters found in mature mixed deciduous and coniferous forests. They use holes excavated by woodpeckers, such as Northern Flickers, but will nest in natural cavities and artificial nest boxes.

A nest box project was established in 1993 in the Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG) in western Colorado. Artificial nest boxes were placed in Engelmann spruce / sub-alpine fir forest by U.S. Forest

Service personnel in 1992. Over the next five years, nesting Boreal Owls used 28 boxes out of 400. In June 1997, I measured seven habitat variables at the 28 occupied nest-box sites and 40 random unoccupied nest-box sites on Grand Mesa and Owl



Creek Pass of the GMUG National Forests in western Colorado. Nest boxes in which a Boreal Owl produced either eggs or young from 1993 to 1997 were considered occupied. No natural cavity nest sites were used in this study.

I took measurements of the nest tree and the nearest eight trees surrounding it. Habitat variables were stand basal area (a measurement of

the area of ground covered by large-diameter trees), percent of overstory cover, tree diameter at breast height, nest tree diameter, number of snags, distance between trees, and percent of ground cover.

Basal area and percent of overstory cover were variables which best predicted Boreal Owl occupancy.

Basal area was significantly greater in occupied nest-box sites compared to random sites. For example, for every 10 percent increase in basal area the odds of a site being occupied increases by nine percent. Percent overstory cover was tending to be greater in occupied sites compared to random sites.

Although these data do not include all forest structural characteristics of Boreal Owl nesting habitat, significantly greater basal area and marginally greater percent overstory cover associated with occupied sites suggest that Boreal Owls select nest sites in mature forests. These results are similar to findings in

central Idaho and Montana reported by Hayward and colleagues (1993) which found that Boreal Owls occurred in areas with increased density of large trees, an open understory and multicanopy layers.

In addition, this same study found that Boreal Owls chose to nest in artificial boxes in forests with more complex stands, rather than stands of a more uniform, single canopy nature.

BOREAL OWLS

As Boreal Owls search for nest sites, they may frequent mature forests containing large-diameter trees and snags, which increase their probability of finding a nest cavity. Therefore, if adequate forest habitat is not available, owls will not frequent the area searching for a place to nest.

Boreal Owl young have been banded since the beginning of the project. None of the adult owls using the nest boxes have had bands. It is not known whether the young are dispersing or being lost to predation. Some Boreal Owl nests failed due to suspected Pine Martin predation on the nest boxes. Only two out of 28 nest boxes were occupied twice from 1993 to 1997.

With regard to predation, a long-term study in Norway by Sonerud (1985) found that pine martin predation on Boreal Owl nests increased as the nesting cavity got older. Clutches had a higher probability of being preyed upon in boxes where the previous clutch failed due to predation. Many predators are able to recall successful sites. Perhaps to escape predator memory, Boreal Owls have survived by not showing nest-site fidelity, especially if a nest was lost to predation.

Because Boreal Owls may prefer new nesting sites, nest boxes (especially those predated) need to be periodically (every five years or so) relocated to reduce predation on nesting owls. Boreal Owls, as well as primary cavity nesters like Northern Flickers, are linked to the structure and dynamics of the forests they live in; therefore distribution and abundance may be strongly influenced by forest management practices (Hayward 1997).

The Boreal Owl has been designated as a sensitive species by four U.

S. National Forest regions and the Superior National Forest in Canada. More research is needed to identify habitat critical to the success of the Boreal Owl. Based upon my results and other studies, it is important to maintain mature forests.

There remains much to be learned about Boreal Owl nesting selection in western Colorado as well as in North America, and how this species responds to changes in habitat. Suggestions for future research are addressing questions on small mammal (prey) abundance, predator densities, and possible nest-site competitor species. These answers could provide information to help maintain Boreal Owls in the GMUG National Forests and other western States.

Acknowledgments

Thanks are due to GMUG wildlife biologist Tom Holland, and the U.S. Forest Service for allowing me to conduct this research. I thank Joe and Kenna Rae Bateman who helped with fieldwork. I also thank Drs. Nancy Huntly, Margaret Ptacek, and Charles Trost from Idaho State University for helpful discussions and comments on earlier drafts of this manuscript.

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(Ms. Bateman is from western Colorado originally, and spent much time as a child in the forests where she did the owl research. She graduated with a Bachelor of Science degree in ecology from Idaho State University in 1998. Her owl research was part of that study. She received her Master of Science degree in biology from Eastern Washington University in 2000, where she was a graduate fellow [TA]. Her thesis was based on a two-year study on the effects of prescribed burns on wintering cavity-nesting birds. She currently is a project manager for Inland Northwest Land Trust, a non-profit, non-government conservation organization working with private landowners through conservation easements to preserve the natural resources of their land in perpetuity.)

Three-toed and Black-backed Woodpeckers

Mysterious birds of the northern boreal forest

By Dr. Louis Imbeau and Antoine Nappi

Late fall, 1974: Several birders in the northeastern United States discover irruptive Black-backed Woodpeckers. In December, sightings were reported as far south as New Jersey and Pennsylvania. The 1974-1975 southern irruption of this species, as well as a small number of Three-toed Woodpeckers, was the most important since an invasion spreading from 1956 to 1966.

For most birders, such invasions are their only chance to see these little-known and secretive bird species generally confined to northern, remote coniferous forests. If you were lucky enough to locate one of these irruptive individuals recently, possibly hundreds of miles away from its breeding range, you may have wondered why it had moved so far, or what its nesting habitat might look like. What kind of insects is it actively looking for? What about the current status of these two species: are they declining? A few years ago, with the same questions in mind, we decided to study these mysterious birds in one part of their breeding habitat: virgin coniferous forests of northern Quebec, Canada.

Three-toed Woodpeckers

In northern Quebec, boreal forests are largely dominated by black spruce. In natural conditions, recurrent fires caused by lightning main-

tain a diversified forest mosaic of stands of trees having different ages. More than 40 percent of the forests are older than 100 years, considered overmature in economic terms. Nevertheless, spruce forests become suitable breeding habitat for Three-toed Woodpeckers only when they reach this critical age.

Indeed, such forests show unique characteristics essential for this woodpecker species. First of all, at these northern latitudes only older trees reach a diameter adequate for excavation of a breeding or roosting cavity. More importantly, only such forests show an abundance of snags in various deterioration stages. These

snags are important food sources for the woodpeckers. When a senescent tree dies, it is rapidly colonized by various wood-feeding insects, just under its bark. The more numerous insects usually are the bark beetles, very small coleoptera, a few millimeters long, for which adults and larvae abound only within two or three years following the death of a tree.

The Three-toed Woodpecker is a true specialist in exposing such insects: with a few pecks of its small bill, it can flake off the bark and feed on the tiny but numerous larvae. Some studies have shown that more than 85 percent of the insects eaten by these birds are such small coleoptera! If you ever have the chance to watch a Three-toed Woodpecker forage, pay attention to this technique. You will be amazed at the speed with which one individual bird can flake bark off

numerous snags!

During the breeding period, one pair of Three-toed Woodpeckers usually must defend a territory of at least 250 acres (one square kilometer) of old coniferous forest in order to find enough recently-dead trees containing the insects required to feed the nestlings. Accordingly, population density of such a bird species is quite low, even in good breeding habitat.

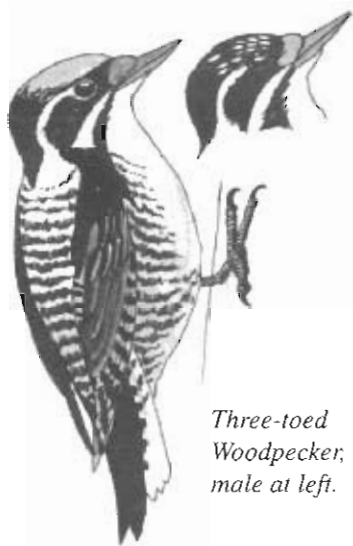
Black-backed Woodpecker

Although the Black-backed Woodpecker is also found in low numbers in old spruce forests, its abundance is about 10 times greater in recent burns. In Quebec, its density may reach as much as 15 pairs per 250 acres (1sq. km) in such habitat.

In northern boreal forests, fire is a natural disturbance which affects large areas each year. Recent burns attract numerous adult wood-boring beetles, which lay their eggs under the bark of recently killed trees. The emerging larvae will feed on the wood located under the bark of trees, and during the next two years they will dig tunnels several centimeters within the wood.

When fires occur early in the summer, before the main egg-laying period of these insects, they can reach incredible numbers. These larvae, much larger than bark beetle larvae, represent the main food for Black-backed Woodpeckers. To extract them, this species is able to excavate within the wood with a bill longer and much stronger than that of the Three-toed Woodpecker. Anyone who had the chance to handle these two species, in a banding station, for example, has noticed the difference!

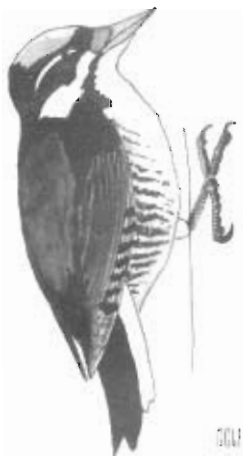
The scarcity of bark beetles in intensively burned trees, as well as the inability of the Three-toed Woodpeckers to excavate to reach wood-



Three-toed Woodpecker, male at left.

boring larvae (especially in the case of the smallest eastern Three-toed subspecies that we studied), explain the rarity of this species within burns.

However, in periphery of a forest fire, some trees are killed without being intensively burned. Such trees are more suitable for bark beetles. This is probably the best place to find Three-toed Woodpeckers within a burn.



Black-backed Woodpecker

Two or three years following a forest fire, the number of wood-boring larvae is considerably reduced as they complete their life cycle and emerge as adults, actively looking for new recently dead trees. The food resource of Black-backed Woodpeckers is therefore ephemeral, and they must find another suitable area when an old burn is depleted of insects.

In the southern parts of the eastern boreal forest dominated by Balsam Fir, Spruce Budworm epidemics are often more important than fires as a disturbing agent. Some recent southern invasions of Black-backed Woodpeckers seem to be well correlated with the end of such epidemics. Three-toed Woodpeckers, more strictly associated to northern old-spruce forests where the snag resource is more constant, do not show a pattern of irruptions as prominent as that of the Black-backed.

Commercial forestry

Among all forest birds found in the boreal zone, the Three-toed and Black-backed woodpeckers are probably the most negatively affected by the northern expansion of the logging industry. These species are mostly found in overmature or recently disturbed stands, have rela-

tively large home-ranges, and are dependent on snags for foraging as well as for nesting.

Leaving old snags in clearcuts (even if they are crucial for other cavity-nesting birds) does not provide suitable foraging sites for these two species: a constant recruitment of recently dead trees must be provided, such as in old forests or in the shifting mosaic created by forest fires. Through the use of short logging rotations, approximately 470 square miles (300,000 ha) of mature coniferous forests are cut each year in Québec alone. Moreover, special plans are conceived for rapid salvage-logging of recently burned areas as well as for stands killed by insect epidemics.

These management strategies may become a serious threat to both Three-toed and Black-backed woodpeckers in all Canadian provinces. In Finland, a similar logging scenario has resulted in an 85 percent decline in its Three-toed Woodpecker population in the last 50 years. Perhaps with such an important predicted decline in North America, large winter irruptions of these northern species south of their breeding range will soon become a thing of the past.

(Louis Imbeau conducted a Ph.D. in forestry at Laval University, Québec. His thesis subject was about the long-term impacts of forestry on bird populations of the boreal forest, most specifically on the Three-toed Woodpecker. He can be reached at louisimbeau@hotmail.com. Antoine Nappi recently completed a M.Sc. thesis in biology at the Université du Québec à Montréal, Québec. His main interest is on the importance of recently-burned forests for the Black-backed Woodpecker. He can be reached at antoine.nappi@internet.uqam.ca.)

Martin nestlings deaths discussed

A question on the Wisconsin Birding Network about why Purple Martin nestlings die before fledging produced this response from Richard Nikolai, an Appleton, Wisconsin, man knowledgeable about the species:

Purple Martin young may die from many causes. These range from parents not actively feeding their young, especially second-year adults, to falling from the cavity. Another scenario is that fleas, mites, blowflies and other invertebrates within the nest cause irritation, prompting the young to prematurely flee the cavity and die on the ground of starvation.

An off-shoot of that is the stress of being irritated by insect infestations, making young birds more prone to disease and yet other invertebrates that can sap energy. Predators drawn to the colony by noisy young birds may also be taking adults. The young starve if no adult bird is feeding them.

Young birds are not all treated the same when being fed. It depends on the adults' devotion. Second-year birds usually are not good parents. Their first year of reproducing is a learning experience. They lay smaller clutches and fledge smaller broods.

This year we have had cool wet weather. That means fewer insects for the young per day, especially if it rained all day. Martins cannot tolerate more than three days of cool weather (50-degree range) with few insects. Few second-year birds can cope with that stress, and they take care of themselves first. The older birds general feed less young and toss the weak young out right away.

It is mother nature trying to save what is healthy now and worrying about reproduction in another year. All martins need to do is reproduce themselves once every two to three years to maintain a viable population.

Carpenter ants favorite Pileated Woodpecker food

By Rick Bonar

Like many birds, Pileated Woodpeckers spend much of their active time finding food. But how do they find enough food to carry them through a harsh winter? Under these conditions, how does a bird get enough to eat when it has to chop a cord of wood before breakfast?

Ok, I'm exaggerating about the cord of wood, but these big woodpeckers have to make the wood chips fly before they can get at their favorite winter food — carpenter ants. Big woodpeckers eat big ants, and there are lots of ants.

A carpenter colony in the base of a snag or wounded living tree can have up to 15,000 ants. So, dinner's in the freezer, but first you have to know which trees have the dinner, and which trees have none. It's no easy task when the mercury dips below -22°F (-30°C) and there are only eight hours of daylight per day. In these conditions, Pileated Woodpeckers can't afford to spend a lot of time searching for those few trees that hide ant colonies.

For my Ph.D. research on Pileated Woodpecker habitat ecology, my assistants and I spent more than 1,600 hours watching 32 radio-tagged birds in the foothills of central Alberta just east of Jasper National Park. Before I started the study, I wondered if perhaps some birds wouldn't be able to survive the winters because of harsh weather or starvation. Or, perhaps some might have to abandon their territories and move south to find food. I was wrong on both counts.

My first insight into the mystery came on a brilliant fall afternoon

while I followed a male bird named Saint. He must have been enjoying the weather too, because he let me get so close that I didn't need binoculars to see what he was doing.

He flew from tree base to tree base, seldom spending much time at each tree. But he was obviously looking for food, and he wasn't searching at random. Many birds use search images to help them find food — they concentrate their search where they have been successful at finding food before.

Saint was ignoring healthy trees. He flew to the base of dead trees or living trees that had some visible damage. Often, they also had old Pileated excavations. Once there, he

peered and poked, and sometimes he rapidly flicked his tongue on the bark, making a soft rattle that I could hear when I was very close. Woodpeckers don't have a good sense of smell, so they find food mainly by sight and hearing. The tongue rattling probably helps them locate hollows inside the tree, and it might stimulate insect movement that the bird can then see or hear.

When Saint found a carpenter ant colony, he stayed a few minutes, slurping up ants still active near the surface. He often made a quick excavation into the tree to access the tunnels made by the ants. Then he left.

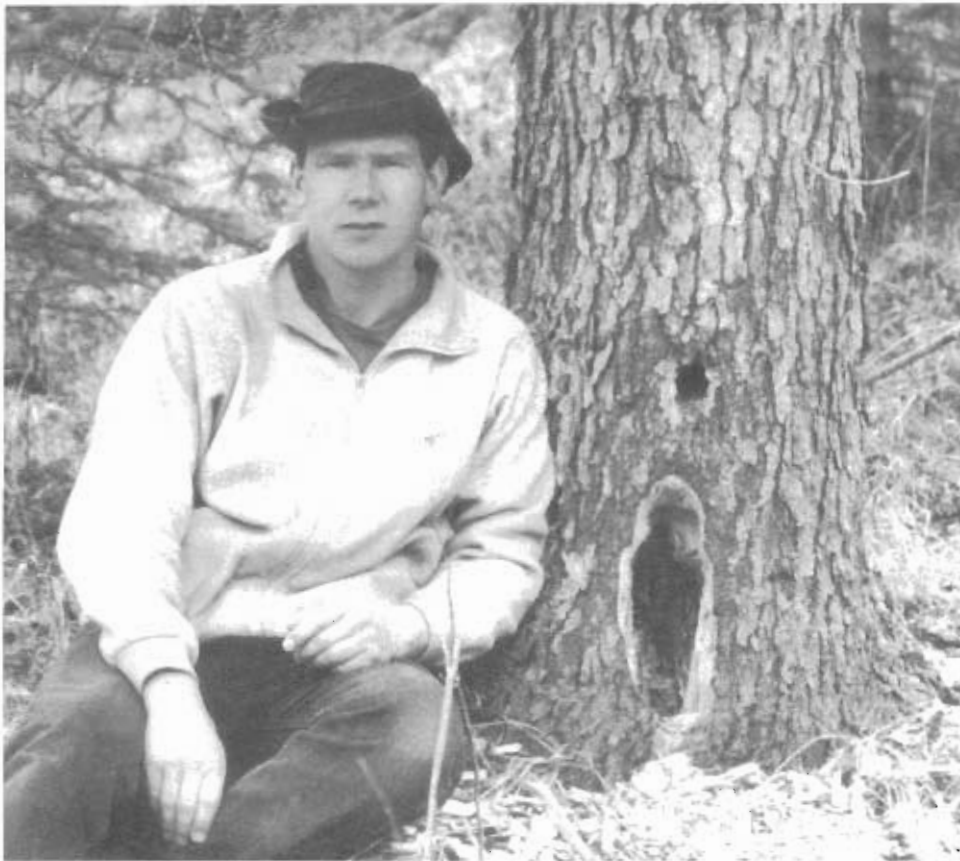
Over the space of a few hours he visited eight trees with ant colonies.

Five of these trees had old excavations, perhaps made by Saint or his mate in the past. At the time, I was so excited by the visual cues that Saint was using to find ant colonies that I missed the meaning of what he was doing.

The foraging pattern changed dramatically when winter set in. Our

Carpenter ants are large creatures found in dead or dying trees, often in colonies of as many as 15,000 individuals. Pileated Woodpeckers spent many pre-winter hours locating such colonies to be used as winter food. Photo by Rick Bonar.





This cavity was excavated by a Pileated Woodpecker searching for insects. Carpenter ant colonies were the food of choice for the birds in this study. Wayne Besse sits beside the tree to give perspective to the cavity. Photo by Rick Bonar.

radio-tagged birds did almost no searching. They flew directly to trees with ant colonies and started making the chips fly. And most of the trees they used, more than 83 percent, had recent or old Pileated excavations.

As winter progressed, the birds started returning to the same trees over and over again. That is when I realized what Saint had been doing in the fall. He was locating ant colonies and storing locations for use in the winter! Bird after bird followed the same pattern. They knew exactly where their winter food supply was long before they needed it.

Then, all they had to do was make a trip to the freezer and open the door. Excavating was still hard work, but the birds knew there was a full freezer to reward their effort. Mystery solved — find the food and then remember where it is.

We can add Pileated Woodpeckers

to the long list of birds and other wildlife that have remarkable abilities to relocate food resources. Perhaps this behavior might even offer some insight as to why Pileated Woodpeckers defend their territories in the winter. If you know where your winter food supply is, and only other Pileateds would be able to steal it, it makes sense to defend what's yours.

Pileated Woodpeckers don't have much body fat or warm feathers, but they have developed a surefire way to get the food needed to prosper in bone-chilling winters.

(Rick Bonar is chief biologist at Weldwood of Canada Ltd., Hinton Division, 760 Switzer Drive, Hinton, AB, T7V 1V7, 780/865 8193, e-mail rick_bonar@weldwood.com. His graduate thesis on Pileated Woodpecker habitat ecology in the Alberta foothills can be found on the Foothills Model Forest at www.fmf.ab.ca.)

Data, directory available on web

Thanks to members who have taken the time to enter seasonal nest-box data on the NABS web site, as well as to all members who continue their bluebird conservation efforts.

Each and every box can make a difference in understanding of the native cavity nesters using boxes.

The deadline each year to have your nesting information included in the current nesting season research analysis is Oct. 1. You can, however, still enter information about your nest boxes for the 2001 nesting season even after this deadline; it will be considered in next year's analysis. Members still can enter the 2000 nesting season, since data analysis will be cumulative.

Information and instructions on how to use this innovative resource can be obtained by downloading from www.nabluebirdsociety.org by clicking on the links at the bottom of the NABS home page or by ordering (\$2.50/each) the Summer 2000 issue of *Bluebird*.

The NABS-initiated Transcontinental Bluebird Trail (TBT) is a network of bluebird trails stretching across the U.S. and Canada. A Bluebird Trail Directory and map — using information submitted by NABS members — lists the privately managed trails (trails managed by NABS members) and Adopt-A-Box-sponsored trails (fund-raising trails monitored by certain NABS affiliates).

The trail directory is linked via www.nabluebirdsociety.org.

The state of Ohio has the highest density of bluebird trails registered on the continent, while Montana holds the current record for the highest number of fledglings (all native species) during the 2000 season.

Thanks to Wild Birds Unlimited for financially supporting the launch of the ground-breaking TBT program.

Woodpeckers' drumming studied

By Dr. William James Davis

It is common knowledge that woodpeckers respond to one another's drumming. Does this demonstrate that individuals recognize specific drumming patterns as belonging to the same species?

According to a recent California study, this is a distinct possibility. In this study, the drumming bouts of 11 species were compared after collecting over 3,000 field recordings. The emphasis of the research was to determine if there were noticeable differences in drumming patterns across species by comparing the length (seconds) of individual drums, the number of beats in a drum, the cadence (beats/second), and spacing of beats within a drum.

The researchers discovered that the drumming of species occupying the same geographical area differ by how drum beats were spaced within a bout.

For example, the cadence of Downy Woodpecker drumming was found to be slower than that of Hairy Woodpeckers occupying the same habitat. In other words, the drum beats of the Downy Woodpecker were more widely spaced than the beats of the Hairy Woodpecker.

Not all woodpeckers, however, are so easily identifiable. The research-

ers, for example, had trouble distinguishing the drums of Northern Flickers from the drums of several other woodpeckers, partly because the drum cadence of flickers varied across habitats — e.g., flickers in coniferous forests drummed faster than flickers in oak woodlands.

Does such variability also confuse flickers drumming to one another? Probably not, because this species often emits what are called long calls during bouts of drumming. Long calls are not only species-specific, but can be heard over long distance.

The authors proposed that long calls may have evolved to reduce the occurrence of species mis-identification by flickers.

California sapsuckers (Red-breasted and Williamson's) also were found to produce distinctive drumming patterns. In contrast to the uniformly spaced drum beats of most other woodpeckers, the drum cadence of sapsuckers is typically irregular. Why should sapsuckers modulate their drumming? Part of the reason may be linked to the fact that sapsuckers occupy a variety of habitats over the course of a year.

This being the case, sapsuckers frequently come into contact with new species of woodpeckers. The authors proposed that modulated

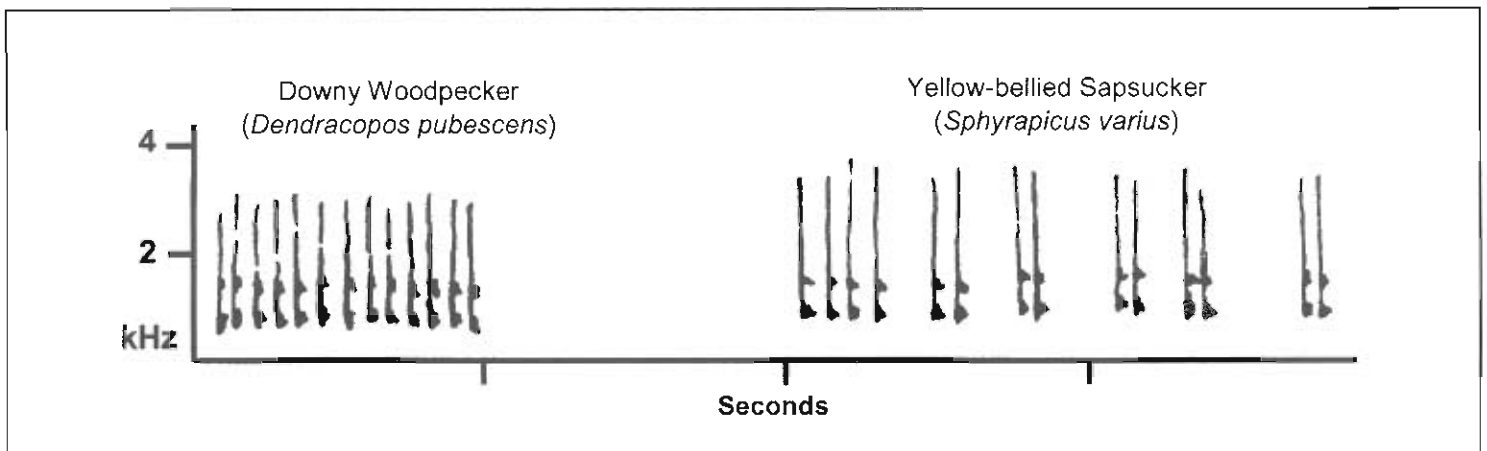
drumming helps sapsuckers to unambiguously identify themselves when they move to a different location; at least in California, the varied drum beat of a sapsucker is near impossible to confuse with the drum pattern of other species.

Drumming in most woodpeckers is used to proclaim a territory and, presumably, the most serious disputes over property rights will be between conspecifics. In this context, it is salient that drumming — at least for those species that reside in the same area — encode species identity.

This logic should apply to either sex that defends a territory by drumming. In line with the species recognition explanation, the California study failed to find a difference in drumming cadence between males and females (for Nuttall's, White-headed, Hairy, Downy, and Northern Flickers; the number of observations on the remaining six species were insufficient to analyze).

In conclusion, it would seem that drumming in woodpeckers is a highly stereotypic behavior exhibited by both sexes. Still, this fact does not exclude the possibility that woodpeckers can individually recognize one another by how, when and where they drum.

Continued on next page



First Lyme Disease, now Erlichiosis

This emerging disease can kill if left untreated

The deer tick, known for carrying the organism that infects one with Lyme disease, also transmits two other diseases, both far less common than Lyme. One of them is erlichiosis. I contracted that disease early this summer.

My infection came from the bite of a deer tick I did not see. There was no tell-tale circular rash, often a sign of Lyme infection. The symptoms of the disease arrived with great suddenness. In the space of five minutes I went from feeling fine to feeling awful. My head hurt. I was sweating

— *Drumming*

Continued from previous page

It is well known that individuals select specific signal posts from which they tap-out their territorial proclamation. This being the case, there is ample opportunity for mates and neighbors to acoustically exchange information unrelated to territoriality.

The next time you witness a woodpecker drumming, it would be worthwhile to record the sex and location of the drummer, as well as the date. Furthermore, when you encounter woodpeckers counter-drumming, try to determine which birds are participating. Do mates counter-drum as often as rivals?

There is still much to learn about the significance of drumming by woodpeckers.

(Dr. Davis is editor of the Interpretive Birding Bulletin. This article was published in the May-June 2000 issue of that journal, and is used with permission. For subscription information, contact Dr. Davis at 1800 11th Ave. SE, St. Cloud, MN 56304.)

heavily even though I felt chilled. My fever eventually got to 102 degrees.

I felt this way for 60 hours before taking myself to a hospital emergency room. The key for me was a headache that even Tylenol 3 would not touch.

My doctor examined me and ran a blood sample through a series of tests. An hour after I had sat down on the examining table I was told to check into the hospital and get in bed. Could I go home and get a toothbrush and book? No, the doctor said: "Go upstairs and get into bed."

They hooked me to an IV a few minutes later and pumped antibiotic into me twice in the next 36 hours. I also was given oral medication, Doxycycline, also recommended for Lyme treatment. I continued to take the oral medication for the next 10 days. I felt normal after about a week.

Erlichiosis attacks the liver, the spleen, the bone marrow, and the lymph system. It is fatal in about five percent of cases, most fatalities among people who are over 60 years of age. Prompt treatment is important. Later in the summer, a woman in the northern part of our county died of erlichiosis. She was first thought to have food poisoning, then the flu. She delayed medical help for two weeks, went into a coma, and died. She was in her 70s.

The Lyme vaccine does not prevent erlichiosis. In fact, my blood

test produced a false positive reading for Lyme because I have had the vaccine. There is no vaccine for erlichiosis. You can contract the disease more than once.

The usual precautions about ticks apply, of course. And because the tick nymph can transmit the disease, and because it is so small as to be almost invisible, I now scrub down with a soapy washcloth when returning home from visits to habitat where ticks might be encountered.

Also, I will seek prompt examination if that never-ending headache returns.

— *Jim Williams, Burnett County, Wisconsin*

Memorial gifts help to support Work of NABS

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.

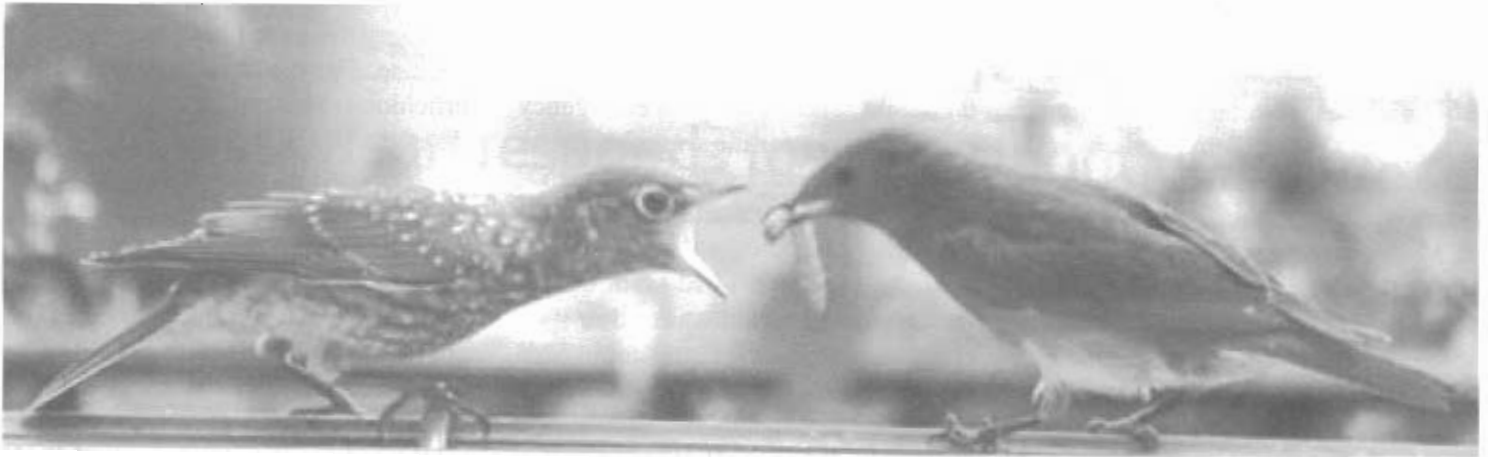
NABS strives to carry on the work inspired by these tireless ambassadors for the bluebirds.

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.



Bluebird News from Shore to Shore



The story here is as obvious as the young Eastern Bluebird is hungry. The photo was taken by Sylvia Sturges of Ridgefield, Connecticut. The female bluebird was feeding mealworms provided by Ms. Sturges.

Larry Coulter, a member of **Project Bluebird in Tennessee**, found a European Starling egg in one of his bluebird nest boxes this spring. Leaving it in place, he soon found a starling nestling, hatched by the resident bluebird. How and why the egg was there are the questions. The box was slot style of Mr. Coulter's design, with a 1-1/4-inch opening.

Ten golf course superintendents in **Minnesota** have ordered bluebird nest boxes for their courses, thanks to the organizing skills of **Jack Hauser**, a member of the **Bluebird Recovery Program in Minneapolis**. This followed a BBRP announcement of the opportunity in the state superintendents' association newsletter. Mr. Hauser is working with the superintendents to ensure proper placement and monitoring.

Also in **Minnesota**, bluebirders **Duane Jackels** and **Bill Nepper** have installed nest boxes at the cloistered Hermitage of St. Mary, a savannah area with a herd of 100 buffalo. Nuns from the Hermitage will monitor the boxes. This note comes from the BBRP's *Bluebird News*.

How many bluebirds are there in

your state? Bluebirders in Ohio have an estimated answer, thanks to **Dr. Bernie Daniels**. In an article in the *Bluebird Monitor*, newsletter of the **Ohio Bluebird Society**, Dr. Daniels explains the process he used to come up with an estimate of 161,000 Eastern Bluebirds for the state. He says the number most likely is low. Given a change in one variable, the number could double, he said.

The **Indiana Bluebird Society** gave its annual bluebird of the year award to **Lum** and **Meriam Bourne** of **Westerville, Ohio**. The Bournes maintain trails in two Indiana counties, driving 370 miles each week to monitor boxes. This report was in the *Indiana Bluebird Flyer*.

Ervin Davis, president of the **Mountain Bluebird Trails** group in **Montana**, watched two female Western Bluebirds battle for 15 minutes for the favors of a male of the same species. Mr. Davis said he had seen males fight before, but never females. This story appeared in *Bluebird Tales*, the club's newsletter.

In **Louisiana**, a check of Wood Duck boxes found 30 duck eggs in one box, and joint use of another —

12 Wood Duck eggs in one corner and five Eastern Bluebird eggs in another. Two other duck boxes contained bluebird nests, one box with two. Six boxes put up for woodpeckers had bluebird nests as well. This was reported in the **Northshore Bird Club** newsletter and sent to us by **Grant Pichon** of **Slidell, Louisiana**.

Finally, from **Montana** comes a story of a woman accused of shooting and killing her domestic partner in early June. It was an accident, she said. She really meant to shoot some bluebirds that she said were tearing up swallow nests. She was to undergo a mental examination, the report said. Thanks to **Bob Niebuhr** for that interesting piece of news.

New web address

The bluebird web site maintained by Jim McLochlin of Omaha, Neb., has a new address. You can find it at <http://audubon-omaha.org/bbobox.htm>. E-mail address for Mr. McLochlin is bluebirdbox@home.com.

Birds are Wisconsin tornado victims, too

By Jim Williams

We live in northwestern Wisconsin, our wooded property about 400 feet north of the major path of destruction left by a June 18 tornado that ravaged a long strip of our county. Our place took a glancing blow; others lost everything.

Not to minimize in any way others' heartbreaking losses, I would like to share some of my observations of the storm's impact on birds.

When I was helping with the Wisconsin breeding bird atlas project four years ago, I was assigned an area east of us. It contained what came to be a favorite birding place. I called it the Farm Ponds.

There are about 320 acres of long-grass pasture here. A herd of perhaps 80 cows gently worked the land. There are two small ponds in one corner, and there were three open groves of mature oak trees; it was the best place in the county to find Red-headed Woodpeckers.

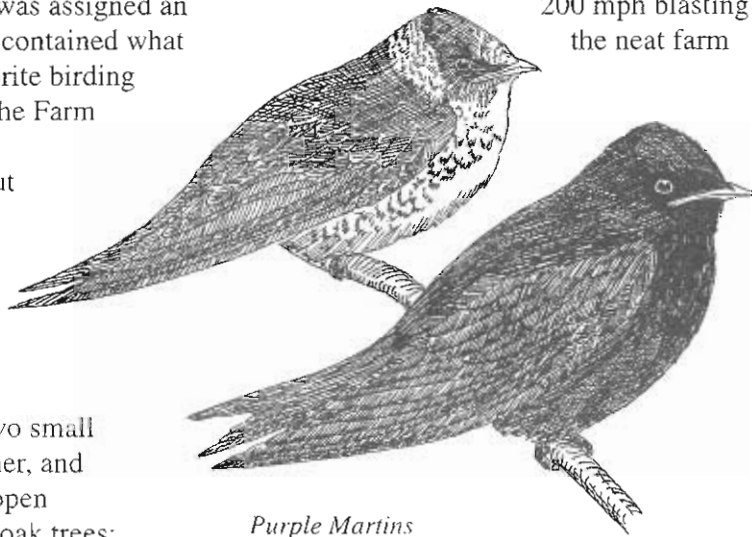
Canada Geese nested here, and Mallards. Other ducks used the ponds during migration. The grassland was filled with meadowlarks, various sparrows, including Grasshopper Sparrow, and Brewer's Blackbird. I found a pair of Loggerhead Shrikes there this spring.

Near the ponds stood a small hobby farm, an old farmhouse and barn that belonged to the parents of a woman who now came with her husband on weekends to enjoy the country. They obviously liked birds. They left the barn to two species of swallows, Barn and Cliff. They put up houses for Eastern Bluebirds and

Tree Swallows, attracting pairs of each. They had the only reliable Purple Martin colony for miles around.

The tornado came east through the middle of the county, much of the time riding about 20 feet over the ground, snapping every tree it hit at that height. Much of the town of Siren and over 60,000 acres of woodland were destroyed.

The storm dropped to ground level just before it got to the Farm Ponds, winds of more than 200 mph blasting the neat farm



Purple Martins

house and barn to shreds of wood the length of pencils. Instead of dozens of Canada Geese and goslings and the Mallard families, this debris was floating on the nearest pond when the road was reopened and I saw it three days after the storm.

There was no sign of nest boxes, of course. The pasture groves were broken and ripped. Birds aware of bad weather will seek shelter, hunkering down in heavy grass or other cover, tucking themselves into thickets or the protection of evergreens. Cavity nesters might take cover in nesting or roosting holes.

I have no idea of what the birds at the Farm Ponds did when the tornado roared onto that land. Whatever it

was, I suspect it did nothing to save them. Most of them probably were blown away with everything else, including 40 head of cattle. A few dead birds were found, the cows were not. Volunteers who came to help pick up debris found dead martins and Barn Swallows, according to the landowners.

The day I visited, two Tree Swallows circled high above the pond. They were the only birds I saw. Three weeks later, I found three Tree Swallows, one Barn Swallow, and a scattered flock of Common Grackles.

The landowners plan to rebuild the house. I have visited with them about replacing their nest boxes (NABS board member David Magness generously sent a large carton of nest boxes for them). They want their birds back. Since the barn will not be rebuilt, they were puzzling over how to provide suitable nesting opportunities for the Barn and Cliff swallows, and, since the martin house is gone — well, they'll work on all that come spring.

On our land, when the blow-down timber is removed (some snags will be left for use by woodpeckers), we will have a small woodland glen. The entrance of sunlight will create a different habitat. The birds we see and hear also will have a new mix. We look forward to that. It happened this spring when heavy rains came and never went away. Standing water in forest low spots brought Mallards and Wood Ducks. Common Yellowthroats, a species of warbler, and Yellow Warblers found the wet grassy edges of these new ponds attractive. We had not had those birds as residents before.

We wanted the rains to stop. We wish the tornado had never come, but the weather has its way with us. It takes with this hand, and gives with that one.

Mystery solved

Strange nest builder finally is identified

I have never checked my bluebird trail without, at some point, caving in to a view of one of nature's own dramas. The scenes are played out every nesting season, but there's no such thing as buying a season ticket and being informed that each show will begin promptly at a given time. I know we miss most of the performances.

But on March 9 of this year, the curtain of box 11-12 on the Trans-Continental Bluebird Trail in Sequoyah State Park in Oklahoma was about to open.

I had never seen a nest like that before, and there was no bird around to give us a clue. The bottom of the box was covered with over a half inch or more of pecan shells, and the beautiful tall nest was all green moss with pecan shells distributed throughout. The lining of the cup was soft and furry.

On March 22, Bob Jackson, an Oklahoma Bluebird Society member who helps me with the trail, checked it with me. He carefully investigated the lining of the cup and found two small white eggs with brown splotches on them.

The occupant of the box suddenly appeared on a limb of the big pecan tree, and then we knew. After 21 years of wishing and hoping, it happened. A White-breasted Nuthatch had at last accepted a labor of love.

The rest of the story went like this:

March 26 — 6 eggs

April 2 — 6 eggs o.k.

April 9 — 6 eggs o.k.

April 10 — 4 babies and 2 eggs

April 23 — 6 babies

April 27 — 2 young birds flew from the box

Avoid describing bird behavior in human terms

Many of us have a tendency to interpret the behavior of birds in human terms or to assign human characteristics to birds. This is called anthropomorphism.

We observe birds doing something, then describe it and understand it as though we were doing that thing.

This is not a useful way to approach the need to understand animal behavior. A more rigorous examination of that behavior might produce a more insightful answer.

In order to avoid taking this unscientific shortcut to interpreting the behavior of our complex and mysterious bluebird neighbors, one might consider the following:

- Keep a journal. Write down the bird behavior and circumstances that you actually observe. Make no guesses to fill in voids. Avoid using adjectives and adverbs in your descriptions; they will taint your observations and qualifying them in a highly subjective, human light.

- Never hazard a guess as to what happened when you were not looking. Never guess about what caused a behavior or event. Cause and effect often are difficult to establish even under controlled scientific conditions.

- Examine your notes and ask yourself: How does the behavior observed relate to the successful evolution and survival of this species? Why does this behavior contribute to survival? Deal with the information you have without assigning human values.

(Our thanks for Don Helmeke who wrote on this subject for the Wood Duck Newsgram, July 2001.)

April 28 — 4 babies o.k.

April 30 — 2 babies in box

May 2 — 2 babies o.k.

May 3 — 2 babies o.k.

May — 4 fledged

The timing of the young birds leaving the box was different from bluebirds, chickadees, titmice, and wrens. It literally took a week for all of the nuthatches to be gone. I've

never had a nesting so strung out. I looked in a number of books for some answers, but there seems to be very little written about White-breasted Nuthatches.

But, they were welcome and we were blessed. And then bluebirds moved in.

— Charlotte Jernigan, Wagoner, Oklahoma

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.

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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 404, Oliver, BC V0H 1T0 Canada
goldstrm@vip.net

Manitoba

- The Friends of the Bluebirds
3011 Park Ave
Brandon, Manitoba, Canada R7B 2K3
smitha@brandonu.ca

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
cbrp@designlink.com

Colorado

- Colorado Bluebird Project, c/o Bob Priester
6060 N. Broadway, Denver, CO 80216
priesterpc@technologist.com

Georgia

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

- Our Bluebird Ranch
152 N. 200 E., Blackfoot, ID 83221
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- Jo Daviess County, Illinois,
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15 Cedar Rim Trail, Galena, IL 61036
jbow@galenalink.com
- Illinois Audubon Society
Illinois Bluebird Project
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suziq@comwares.net

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- Indiana Bluebird Society
P.O. Box 356, Leesburg, IN 46538
bluebird11@juno.com
- Brown County Bluebird Society
P.O. Box 660, Nashville, IN 47448
c/o Dan Sparks, dansparks_47448@yahoo.com

Iowa

- Johnson County Songbird Project
1033 E. Washington, Iowa City, IA 52240
- Bluebirds of Iowa Restoration
c/o Jaelyn Hill
2946 Uhben Ave., Ellsworth, IA 50075

Kentucky

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

Massachusetts

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

Minnesota

- Bluebird Recovery Program of Minnesota
Audubon Chapter of Minneapolis
P.O. Box 3801, Minneapolis, MN 55403
scriv001@tc.umn.edu

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
blubrdbob@prodigy.net

Nebraska

- Bluebirds Across Nebraska
P.O. Box 67157, Lincoln NE 68506
info@bbne.org

New Hampshire

- New Hampshire Bluebird Conspiracy
c/o Bruce Burdett
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bluebird@smnet.com

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

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- North Carolina Bluebird Society
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ncbs4ever@aol.com
- Rutherford County Bluebird Club
P.O. Box 247, Ellenboro, NC 28040

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- Ohio Bluebird Society
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email@prescottbluebird.com
www.prescottbluebird.com
- Audubon Society of Corvallis
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Tennessee

- Benton County Bluebird Society of Tennessee
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155 Post Oak Ave., Camden, TN 38320
dmccue@snet.net
- Tennessee Bluebird Trails
P.O. Box 190, Mt. Juliet, TN 37121
tblubbirdtrails@msn.com

Virginia

- The Virginia Bluebird Society
c/o Julie A. Kutruff / Anne Lutfe
3403 Carly Lane, Woodbridge, VA 22192
jkuatruff@aol.com

Washington

- Cascade Bluebird and Purple Martin Society
3015 Squallam Parkway, Suite 250
Bellevue, 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



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The North American Bluebird Society is a non-profit conservation, education, and research organization that promotes the recovery of bluebirds and other native cavity-nesting bird species.

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Bluebird welcomes stories, articles, and photographs from you. We also welcome your letters. Include your name and address on all communications. Stories and articles are best submitted via e-mail or typed (double-spaced, please). You must include a self-addressed stamped envelope if you wish manuscripts or photos to be returned to you.

Send submissions to: Jim Williams, c/o *Bluebird*, 5239 Cranberry Lane, Webster, WI 54893. Or, send e-mail to twojays@sirentel.net.



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