BLUEBIRD

JOURNAL OF THE NORTH AMERICAN BLUEBIRD SOCIETY

SPRING 2021
VOL. 43 NO. 2

Contents

Cover photo: It's always nice to see an Eastern Bluebird nesting in an actual tree cavity, as Nature intended. Photo taken in Naples, Florida, by Andy Morffew (https://www.andymorffew.com).

Table of Contents photo: This Prothonotary Warbler was at the Patoka River National Wildlife Refuge in Indiana a few springs ago. Photo by James Kawlewski/USFWS Midwest Region.

BLUEBIRD

Bluebird/Sialia (ISSN 0890-7021) is published quarterly by North American Bluebird Society, Inc., P.O. Box 7844, Bloomington, IN 47407

Printed by Sutherland Companies
Montezuma, IA

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Subscription is included with membership in NABS. Write for information about bulk quantities. Make checks and money orders payable to NABS in U.S. funds.

Issues are dated Winter, Spring, Summer, and Fall, and appear approximately on the 15th day of January, April, July, and October, respectively. Submissions are accepted continuously and published as space and editorial constraints allow.

General questions may be addressed to info@nabluebirdsociety.org or call **513-266-4381** between noon and 8 p.m. EST. Please leave a message if no answer, or send a text message any time. Visit us on Facebook at https://www.facebook.com/NorthAmericanBluebirdSociety/

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

www.nabluebirdsociety.org

Spring Message to Our Affiliate Organizations

Mike DeBruhl

Hopefully, Spring has arrived and your nesting season is underway. In South Carolina, we start ours a bit earlier—usually the last week of February. Like you, we welcome it, particularly with the pandemic restrictions. Being able to "Hit the Trails" is truly a breath of fresh air for us all!!

The 2021 season continues our emphasis of monitoring, collecting, and reporting complete and accurate nesting and fledging data from our trails. Accordingly, we are undertaking the challenge to explore creating "standardized" collection and reporting of trail data across NABS. I recently sent each affiliate a SCBS report example and asked for feedback about collection and reporting practices—particularly past experiences reporting data to Cornell NestWatch.

I received a few responses and chatted with several leaders about this project and hope to receive further input. While all agree data collection and reporting is very important, there is frustration about getting monitors to accurately collect it, and even more pertaining to reporting it to NestWatch. Examples / concerns include: **(1)** lack of standardized data and collection method, **(2)** difficulty in meeting all NestWatch reporting requirements, **(3)** little feedback about data submitted, and **(4)** the current process is far too tedious for most. **THANK YOU** to those responding and chatting.

NABS HEARS YOU—and we are working to **(a)** standardize data collected and reported, **(b)** greatly simplify reporting to NestWatch, **(c)** develop periodic data reports to affiliates, and **(d)** generally overhaul the entire process. This cannot happen all at once and we will be coordinating steps with Affiliates and Cornell staff to make it mutually beneficial to all parties. Can you imagine the amount of valuable research and general data that can be collected from the thousands of trails and nestboxes maintained by our 61 NABS Affiliates?

More info to follow on this—so keep an eye on your inbox !! Stay safe and well ….. Keep up the good work ….. See you on the trails !!

- Mike

Mike DeBruhl, 1st Vice President for Affiliate Relations

From the President
Bernie Daniel

Well before you realize it, here we are talking about the new nesting season! But not before one more icy blast from the north—snow included. A fiercer than normal ending to a very unusual and quixotic winter for us. The weather cycled between mild to cold with no pattern dominating. But then it turned genuinely cold. I think the coldest month this year will be February, not January as is usual? Initially I thought that this winter was probably not too bad for wintering wildlife—including bluebirds? But the conditions of the few last weeks have been seriously concerning. We had over a week with cold temperatures along with widespread snow and ice cover. Those cold conditions along with a shortage of water and food are often lethal for Eastern Bluebirds as well as Carolina Wrens. I will be listening closely the next few weeks as things start to moderate for those noisy little wrens. The wrens are even more sensitive to winter cold and snow cover than bluebirds. If the wrens make it through, then most likely the bluebirds did too! The cold snap is producing some unusual bluebird behavior here. Last week while backing out of my garage a bird in the tree line caught my attention—a blue flash? I stopped and upon closer inspection, yes, clearly a female bluebird! But as I continued to look, I noticed that it was just not one bird but a flock of at least 10 bluebirds. I live in a mostly developed suburban neighborhood north of Cincinnati—been in this same house for over 40 years. In those four decades I've seen bluebirds on my property only twice. This flock was searching new areas for food and water perhaps?

It has been that kind of year. Texas will likely have some bluebird losses this year due to the freakish blizzard and cold snap. The Texas storm was also hard on bluebirders as the dependence on wind power for electricity came up wanting. Similarly, there have been several Snowy Owl incursions in some of the eastern states this year. Likewise, this winter (2020–2021) has been identified as a "finch irruption" year! There have been many reports documenting large irruptions of Common Redpolls and other finches into southwestern Ontario and also into many northern US states. Finch irruptions can occur in response to cold weather as well as to shortages of food supplies in their usual northern boreal habitat. Finches depend on the annual crop of pinecones. A poor cone crop can result from weather, disease, parasites, forest fires, or drought in the northern boreal forests.

I would like to make our members aware of some exciting activities in the works for NABS this year. The NABS research grants committee reviewed this year's applications and I am pleased to announce that we have selected three excellent projects for funding. Elsewhere in this issue you will find a discussion of this year's research grant projects. I am pleased to note that all of them deal with issues like nutrition and migration—issues that are important to cavity-nesting birds. Each year we have been working to focus our research grants on topics and issues at are important to you—as bluebirders.

I'm sure that most of our members realize that the support for our research grants program comes from our Zeleny fund. In fact, under our By-Laws, grants are the only thing that we can use the Zeleny funds for. As many may already know, one of our Affiliates, the New York State Bluebird Society (NYSBS), has been partnering with NABS on the research grants program for a number of years. NYSBS adds the money that they set aside for grants to the NABS funds. This way with a larger pool of money we can do more. This year, I am pleased to announce that another Affiliate, the Maryland Bluebird Society, has joined the grants team. I would urge other Affiliates to look into this possibility because if we can assemble a large enough pool of funds we could release a request for proposals (RFP) wherein we dictate exactly what research we want performed. Then we could decide between competing proposals for who would be funded to do the research we had prioritized. We would be more firmly in the driver's seat for steering the direction of our research program!

Another project that is moving forward this year is the development of some fresh bluebird educational materials, this time designed for young people. In 2009, Myrna Pearman, former director of the Ellis Bird Farm (EBF) in Alberta, wrote a book entitled *Children's Bluebird Activity Book*. This book was funded by Mountain Bluebird Trails, Inc. (MBT). This was a groundbreaking and innovative idea and a credit to the forward thinking of former MBT president Bob Niebuhr. We are proud of this effort of course because both MBT and EBF are NABS Affiliates. The book has been available for many years as a free downloadable Adobe document from the MBT website. I mention this book because this year NABS will also produce a second bluebird educational book directed at youth. The newer book will also be written by Myrna, but it will be targeted for a different audience, namely students in the fifth to eighth grades (i.e., approximately 9- to 12-year-olds). We feel this is the age at which young people might be able to think about creating their own bluebird trail. So, the new

book will contain more information and offer more ways in which young people might learn about the challenges of bluebirding and trail management. The new effort will hopefully be available sometime in the second quarter of 2021 and will be available at first on the NABS website and then possibly on the website of NABS Affiliates as a free downloadable document. Limited numbers of this new document will be printed in hard copy as well. NABS believes that we must do all we can to make sure that we replace our current army of bluebirders with new hands and faces. I do not think that it would be incorrect to suggest that securing the next generation of bluebirders is the single most important activity we have in NABS. Without bluebirders we will not have adequate numbers of bluebirds and probably many other native cavity-nesting birds.

Another thing I believe that NABS would like to see is more responses from our members to the articles we publish in this journal. Here I mean not only "letters to the editor" about articles in the journal but also communications on any other topics related to bluebirds. These days we seem to be averaging less than one letter per issue of *Bluebird*? I can recall a time when there was a more vigorous communication tradition within the Society membership. It would be nice to see that pattern return and have several comments from our readers in each issue of *Bluebird*. I feel that all of us, and our bluebirds too, would benefit from a livelier exchange and more sharing of information with other members about the things that they are trying to do with bluebirds. What works best on a bluebird trail can sometimes be a moving target. New ideas come along that improve the art of bluebirding and we should use any means we can to share those successes with the rest of the Society—and to all bluebirders really! In my opinion, having a forum to share information is one of the main benefits that flows from having a Society in the first place! We can all learn from each other, and NABS (along with the Affiliates) can serve as an important means of communication and exchange of ideas across our bluebirding ranks. But to serve in this capacity we must first hear from you! By the way the NABS Facebook page is another ideal format for sharing ideas on bluebirds and bluebirding.

The list of topics that are particularly important for sharing ideas on include the things you are doing on your trail to defeat nestbox predators (raccoons, rat snakes, etc.), any successes in dealing with House Sparrows, or finding ways to cope with problem insects (blowflies, black flies, wasps, etc.). Likewise, many of our members now supply mealworms both during the nesting season and during the winter months. I think with the availability of mealworms the numbers of individuals now offering mealworms has increased significantly in the past decade or so. Now every year NABS gets many questions about the mealworms—when and how to offer them. The more information we have the better job we can do in helping others be successful with mealworm supplements. Just a reminder on that topic—Nature's Way (see advertisement in this journal) is a recognized supplier of quality mealworms and offers a discount to NABS members!

I would like to use part of my space to give a shout out to two of our NABS board members, Christine Boran and Mike DeBruhl, both of whom took the plunge and became life members of NABS! Quite a few of our Board have joined as life members. Thanks to both Christine and Mike!

A final topic. I think we would all agree that more than anything else NABS is a wild bird conservation organization. Accordingly, over the last few months a committee in NABS has been working on formulating an official position for the Society on feral and other outdoor cats. Many other organizations devoted to preservation of wild birds have already taken a formal stand on the matter. But this might be easier said than done? It is not surprising, given the close relationship between people and cats, that this topic engenders a range of opinions and/or perhaps a debate? That said we know that some aspects of the discussion are facts. For example, it is indisputable that the common house cat is not native species on this continent. Like House Sparrows, cats (*Felis catus*) were brought to North America by humans and, also like House Sparrows, outdoor cats are a threat, and cause harm, to native birds and other small wildlife. This is well documented.

In this issue you can read the proposed NABS statement on cats. Keep in mind our statement is almost entirely dealing with matter of "outdoor cats"—this includes wild (or feral) cats as well as household pets that are allowed outdoors access. The goal of the team that did the research and wrote the cat statement was to take a position that was not only protective of native wildlife (including bluebirds) but also supports scenarios that are better, i.e., protective, of cats and humans as well! It is well documented that cats that are permitted to live outdoors live, on average, shorter and "harder" lives than cats that are confined to the house. So, we invite the membership to look at this statement and tell us what you think should be done about feral and other out-of-doors cats.

— Bernie

From the Treasurer

Jim Engelbrecht

I will be leaving the NABS Board by the end of 2021 and am looking for an experienced QuickBooks user to become my replacement. This is an opportunity to work with dedicated bluebird enthusiasts for the benefit of the Eastern, Western, and Mountain Bluebirds of North America.

A 2020 Multi-User version of QuickBooks will be provided and any miscellaneous expenses for ink, paper, stamps, etc. will be reimbursed. NABS is a small volunteer organization; our only paid contractors being our *Bluebird* journal editor and Website editor….so there is no payroll to process. There are about 100 checks disbursed and about 50 deposits made annually.

NABS functions mainly by monthly teleconference calls which last approximately one hour. Monthly financial statements are sent ahead of these meetings and there is an annual 990-EZ report going to the IRS.

Please call or email me to obtain additional information about the duties and responsibilities of this position. Thanks for considering this opportunity to help the North American Bluebird Society.

Sincerely,
Jim Engelbrecht
Email: jime@twcny.rr.com
Phone: 518-297-3278

Correction

We committed an editorial error in the last issue of *Bluebird* (Winter 2020–2021). The names of Mary Janetatos and Marilyn Lou Guerra were switched in the caption to the photo accompanying Bet Zimmerman Smith's article, "Bluebirding Giants." The photo with a corrected version of the caption appears below. Our apologies to all.

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- Reverend Ray Prebis
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- Larry (Lawrence) Zeleny, Founder and Life Member (1904–1995)

Not pictured: Robert M. Patterson, President

Lots to Like on Facebook!

Great friends, great photos, great videos, and great information are all waiting for you on the NABS Facebook page. Stay connected with NABS members and other bluebird enthusiasts at **www.facebook.com/NorthAmericanBluebirdSociety**

From the Managing Editor

Scott W. Gillihan

Spring is a time of renewal and hope, of faith and fresh starts. Here's to a brighter year in 2021!

For suggesting or helping me acquire materials for this issue, I thank Pat Ready (Bluebird Restoration Association of Wisconsin), Jim Semelroth (California Bluebird Recovery Program) and the NABS officers and board members. My thanks also to all of the writers and photographers who contributed material. And thanks, too, to the sponsors, advertisers, and Affiliates, and the members of NABS, for supporting the conservation of bluebirds and other native cavity-nesting birds.

Please send any letters, photos, articles, or ideas to me at **NABSeditor@gmail.com** or 5405 Villa View Dr., Farmington, NM 87402.

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***Bluebird* Managing Editor**
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Letters to *Bluebird*

To *Bluebird*,
After shoveling a path to my mailbox through this morning's ever deepening snowfall, my day was brightened considerably when I opened the box to see the beautiful Western Bluebird in a newly budding tree on the cover of the winter edition of *Bluebird*. My spirits were elevated with hopeful thoughts of the coming spring on this cold January day (even while standing in a two foot snow drift).

Somehow I feel the PDF version of the magazine would be lacking in providing this rush of anticipation for the return of our favorite bird. Please never do away with the printed version of this magazine. We who dwell in the frozen north need its hopeful message to make it through the long winter.

Ray Pinter
West Bend, Wisconsin

Dear *Bluebird*:
I enjoy reading *Bluebird* and learning about the experiences and opinions of other people who are trying to provide safe nesting boxes for bluebirds and other native cavity nesting birds. However, now and then I find myself disappointed when I learn that some of our fellow bluebirders use bluebird nesting boxes that allow European Starlings and Brown-headed Cowbirds to enter the nestboxes.

It is well known that when starlings enter a nestbox used by bluebirds or other native cavity-nesting birds, the starlings kill incubating native birds and destroy their eggs or young. When female Brown-headed Cowbirds enter a nesting box used by native birds, they lay parasitic cowbird eggs in the nest, which, after hatching, either destroy or gravely weaken the nestlings of the native birds. In my opinion, those bad results can be easily avoided by the consistent use of round nestbox entrance holes that are one and one-half inches in diameter for Eastern Bluebirds, or round entrance holes that are one and nine-sixteenths inches in diameter for Mountain Bluebirds.

My nestboxes in central Virginia are used by Eastern Bluebirds, or by Tree Swallows or smaller native birds. My mentor for bluebird matters was and still is Ron Kingston of Charlottesville, Virginia, who is very knowledgeable and experienced in providing safe nestboxes for Eastern Bluebirds, and who has many years of experience with successful bluebird nestbox trails. Ron taught me to use only round entrance holes exactly one and one-half inches in diameter, and I have done that with good success for many years. So far as I can determine, round entrance holes of that size are readily and successfully used by Eastern Bluebirds and smaller native birds, but those entrance holes consistently exclude starlings and female cowbirds.

At times I hear that some persons believe that bluebirds "prefer" entrance holes of different shapes or larger sizes, or "slot entrances," etc. In my opinion, such alleged "preferences" are irrelevant. Eastern Bluebirds and other native birds readily use round entrance holes one and one-half inches in diameter. But the native birds have brains much smaller than our human brains, and they cannot foresee that larger entrance holes will admit starlings that will kill them and their young, and female cowbirds that will parasitize their nests. So we humans should make use of nestbox entrance holes that will serve the best interests of the survival of our native birds, regardless of their alleged "preferences" for larger holes or slot entrances that will endanger their lives and survival.

Lance D. Wood
Louisa County, Virginia

NABS 2021 Research Grants Program

Bernie Daniel, Grants Committee Chair

On behalf of the entire NABS Grants Committee and the Board I am proud to announce the awardees for the 2021 Zeleny Research Grants program. This year was an especially competitive year because we had many excellent, and thereby worthy, proposals. This year our selection process was so competitive that we had to use a two-round selection process. We asked some of the principal investigators to provide us with additional information before we made the awards. NABS is pleased to confirm that the New York State Bluebird Society (NYSBS) again joined the effort and again added their research funds to the pool, thus enhancing our ability to fund more quality projects. And this year another Affiliate, the Maryland Bluebird Society (MBS), also joined the effort and contributed funds to our effort. We are so grateful to both of these Affiliates and we invite others to join us. Perhaps we should start calling our program the Bluebird Research Grants program?

The three awardees for 2021 are listed below:

Project Title: "Nestling Development, Nutritional Resources, and Parental Care Behavior in Nest Box Breeding Birds"
Principal Investigator: Allison Cornell, PhD, Division of Mathematics and Natural Sciences, Pennsylvania State University Altoona, Altoona, PA 16601

This study will assess the effect of supplemental feeding on both nestling quality and parental care in two cavity nesting species occupying the same grassland habitat, but with different evolutionary histories: the Eastern Bluebird and the American Kestrel. The hope is that this research will improve our understanding of how limitations in nutritional resources in cavity breeding birds relate to nestling development, and how adult breeding birds allocate resources for parental care.

Project Title: "Diet Quality and the Microbiome as Drivers of Host Tolerance and Resistance to Nest Parasites in Eastern Bluebirds (*Sialia sialis*)"
Principal Investigator: Ashley Love, PhD, Department of Ecology and Evolutionary Biology; University of Connecticut, Storrs, CT 06269

The proposed research seeks to increase our understanding of how nutritional resources influence the natural immunity of nestlings and therefore affects parasite loads on the nestlings. It is assumed that macronutrient content and dietary shifts in gut microflora regulate host defense strategies against parasitism and these microflorae produce immune-modulatory metabolites which link diet quality to host traits which in turn influences host–parasite interactions.

Project Title: "Purple Martin First Flights"
Principal Investigator: Heather Williams, PhD, Department of Biological Sciences; State University of New York at Buffalo, Buffalo, NY 14260

This project will examine how events in the nestbox affect the success of birds beyond the nest, i.e., whether there is a "carry-over" effect from nesting to the post-fledging stage and the subsequent autumn migration. The hypothesis is that the level of parental care and nestling condition will affect post-fledge survival and migration departure date in Purple Martins. This is important as the post-fledging stage is thought to entail the highest mortality rate in a bird's lifecycle, and so research addressing this stage has not only an academic, but also may have a conservation value.

One swallow does not make a summer, but one skein of geese, cleaving the murk of a March thaw, is the spring.

- Aldo Leopold

Eggshell Consumption in Different Reproductive Stages and Broods of the Western Bluebird

Lara Tseng

Editor's note: *We published 13-year-old Lara Tseng's article about her journey to becoming a conservationist in the Summer 2020 issue of* Bluebird. *In this article, she presents the findings of the research project she outlined in that earlier article.*

For my 2020 research project, I decided to study Western Bluebirds (WEBL) nesting in boxes in Orange County, California, to determine if the breeding adults will consume sterilized, crushed eggshells as a source of calcium during the breeding season. It is generally understood that calcium is important to the breeding success of birds (Reynolds et al. 2004), and insufficient calcium can have adverse effects such as reduced eggshell thickness, clutch size, and egg volume (Johnson and Barclay 1996, Mänd et al. 2000). Prior studies have shown that many songbirds will consume crushed eggshells during the nesting season (Dhondt and Hochachka 2001), but I did not find the WEBL mentioned in the relevant literature. Since passerines do not store extra calcium in their medullary bones as some other birds do (Pahl et al. 1997, Prondvai and Stein 2014), and are known to consume calcium most heavily during the breeding season, it is reasonable to assume that the calcium is incorporated into their eggshells relatively quickly. Furthermore, because the normal diet of insectivorous birds does not include sufficient calcium for egg-laying (Graveland and Van Gijzen 1994), I hypothesized that (1) most eggshell consumption by WEBL would take place before and during egg-laying; and (2) more consumption would be seen during the first brood because the clutch size of first broods (4.94 eggs) is usually significantly larger than second brood clutches (4.06 eggs)(Guinan et al. 2020). Therefore, more eggs would require more calcium consumption for eggshell formation.

Allan Hack / www.flickr.com

In 2019 I had already collected nesting data for the Southern California Bluebird Club (SCBC) at a city park in Mission Viejo, California, so I presented my project to the club to request their support. About a dozen volunteers committed to collect data from 64 nestboxes in backyards, golf courses, and public parks. The SCBC generously granted me $500 to fund project costs. I would also like to acknowledge one of my long-time mentors, Gillian Martin, Director of CCI (Cavity Conservation Initiative) and co-leader of the SCBC, who has provided a wealth of knowledge about bluebird biology and cavity-nesting birds.

In my study, monitors provided sterilized chicken eggshells in a small removable container affixed to the top of each nestbox with Velcro. The container held 5 g of eggshell and was covered except for a small hole in the lid to allow the bluebirds to access the eggshells. Monitors checked the containers at weekly intervals using the same model of digital scale (capable of measuring to 0.01 g) to determine how much eggshell was consumed by the bluebird. Weekly checks also recorded the status of the nest so that eggshell consumption could be indexed in relation to stages of the breeding cycle.

While monitoring one of the four boxes from which I collected data, I observed a female pecking and swallowing eggshells. Three other monitors also observed this behavior by females. However, this was a difficult behavior to observe because monitoring

most boxes is a short process with the exception of backyard boxes.

I received data from 49 boxes, which collectively produced 56 clutches and fledged 196 young. I ran a statistical analysis on my project using MATLAB with the help of Ashley Peterson, a PhD candidate from the McHenry Lab at UCI. The analysis showed that brood sequence had little to no effect on consumption but that reproductive stage had a large effect on consumption. It also showed that there was high individual variation among consumption in different birds.

Statistical analysis and more detailed data analysis showed that reproductive stage had a greater effect on consumption than brood sequence. Contrary to my hypothesis that consumption would be greater in the first brood, there was little variance in consumption between broods. This might have been because bluebirds had less time to forage for calcium during the second brood because fledglings were still begging to be fed, and there were only about 5–14 days between first and second broods. There was variation, however, in the consumption of eggshells as determined by the weight of shells among bluebird boxes. This may be due to the experience of the pair in locating sources. Or it may be due to the locality of the nestbox, which may influence the availability of other calcium sources.

Pairs of bluebirds at 13 boxes consumed less than 1 g of eggshells, 11 consumed 1–2.5 g of eggshells, and 30 consumed more than 2.5 g in the entire period of data collection. This suggests that individuals may use different strategies for locating and consuming calcium. Further study with a larger sample size is needed to see which, if any, is a more successful strategy. My hypothesis that consumption would be greater before and during egg laying was partially supported. Greatest consumption was seen during nest building, egg laying, and incubation. Consumption during nest building was likely in preparation of egg laying. Birds consuming calcium during egg laying were likely replenishing their calcium supply since the last egg was laid, or preparing for the next. Consumption during incubation was likely consumption to recover from egg laying.

The time and effort required for this project was much greater than I anticipated. A lot of patience and perseverance was needed. The pandemic required me to find new ways of communicating with volunteers, and of ensuring quality data collection. I learned to put aside biases, and to objectively critique all aspects of my project. I have acquired new skills such as conducting statistical analysis, writing clearly and concisely, and citing publications. Additionally, I learned the importance of thorough and systematic literature reviews, providing citations to back up specific claims, and making sure assumptions are not stated as fact. My interest in the topic of songbird breeding biology was increased as a result of my research, and so was my appreciation of the complexity of the topic. Problems posed by mentors and reviewers were sometimes tough, but very beneficial in the long run. I feel I have grown as an aspiring scientist and conservationist, and I am grateful to have my project published.

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This article originally appeared in Bluebirds Fly!*, the newsletter of the California Bluebird Recovery Program. It is reprinted here with permission.*

Growing Membership via Engagement

Gene Kroupa

Let's face it, growing membership is not easy. Yet the Bluebird Restoration Association of Wisconsin (BRAW) increased new and recovered memberships significantly in 2020.

For years we had been experiencing a steady decline due to older members aging out and not renewing, plus a shortage of replacements to take their place. With some planning and targeted efforts by the board of directors, committee chairs, and county coordinators, we were able to turn that scenario around.

The key to our success was primarily increased engagement with both our current and potential members. Maybe some of our steps will work for your organization.

- Add skills to the team. For starters, we recruited five new folks to our board and committees. They brought needed skills in managing our membership list and social media, along with graphics design expertise and educational savvy. Plus they offered lots of enthusiasm and a can-do work ethic.
- Plan for actions. With the help of another relatively new board member with strategic planning and marketing experience for nonprofits, we prepared one-page plans to give us direction. At the same time, we updated our mission and vision statements to send a message to both our internal and external audiences of what BRAW is all about.
- Update the website. Our new volunteer webmaster brought creative life to our website (www.braw.org) and made the format fit mobile devices. While modernizing the site, he also added storytelling, newsletter issues, news items, data report, and other features of interest to members and prospects.
- Increase member recognition. While we had always recognized members at past annual conventions, we took it one step further by getting them some local press. We asked all award recipients to send us a digital photo of themselves with their plaque. Plus we had them fill out a short questionnaire that would provide background information and quotes for our use in preparing press releases for their local media (which they identified). Some newspapers and organization newsletters followed up with features and photos that also mentioned BRAW. Special coverage was given in the BRAW newsletter and on the website.
- Use events to promote BRAW. We were able to participate in a key event before the March shutdown due to Covid-19. At the PBS Garden & Landscape Expo, our VP put on two seminars that drew over 130 attendees. Also, our large booth was across the aisle from Wild Birds Unlimited in the commercial section and not tucked away with other nonprofits' booths. We offered a special event membership price which included receiving an online version of the newsletter. Not only did this exposure result in 38 new memberships, but it also directly led to a feature article with our VP in a *Milwaukee Journal Sentinel* garden special section.
- Make it worthwhile for folks to join. We have a member who enjoys building nestboxes and predator guards. He wanted help in distributing his abundant supply. Likewise, our treasurer kept reminding us about donated funds that were accumulating for trail support. So, we came up with a Trail Builder promotion to our members and anyone who might see it mentioned in the media or on the website. Any new member who joined at the regular $25

Rare image of Eastern Bluebird with an earthworm taken by Steve Lang, Madison, Wisconsin (earned second place in BRAW's 2020 Photo Contest).

level could choose to receive two to five free nestboxes with predator guards shipped at no charge. We picked up 37 new members and distributed 157 nestboxes. A Christmas gift promotion that offered a deluxe cedar nestbox with predator guard netted only nine new members but taught us a lot about how to run such a promotion.

- Ask for help in informing the public. It's hard to go it alone in informing the public about what BRAW does in order to attract new members. But we got some help from communicators' groups, agencies, and organizations. Our success rate has been good when we simply ask for their support in reaching key target groups. A major piece of information we distribute is nestbox data.
- Cooperate with other bird organizations. We renewed our commitment to working with other bird organizations, such as the Purple Martin Conservation Association, Wisconsin Chimney Swift Working Group, Wisconsin Bird Conservation Partnership, and Madison Audubon Society. Rather than competing, we see our groups as being complementary in achieving goals that benefit our feathered friends. We now have renewed liaisons established with these groups, as well as with the state Department of Natural Resources.
- Conduct a photo contest. Another way that we have engaged our members is by conducting a photo contest. Our president and a social media expert led the effort, which netted over 50 entries. Local Camera Company employees judged the contest. The top three winners received gifts, plus their photos were used on the front and back covers of our winter newsletter. The runners-up were included inside. BRAW is allowed to use the images for other purposes.
- Reconnect with non-renewed members. It's easy to give up on non-renewed members but we saw an opportunity. First, we did a mailing to non-renewals for 2017–2019 in January. We used first-class postage so that the Postal Service would return undeliverable letters. Surprisingly, we recaptured some of the oldest non-renewals, plus many of the more recent ones. Overall, we are now having about a 30% success with these quarterly appeals. Our membership form asks for an email address, so we can send out a pre-expiration notice prior to the actual end date. Likewise, we can alert our members to any special deals for new members they might help recruit. However, we have no plans to abandon our printed newsletter, which also carries notification of membership expiration.

We know that 2021 will present special challenges as BRAW tries to equal the membership engagement and recruiting successes experienced in 2020. But we will update our strategic and marketing plans, try to get more folks involved, and do our best for the blues.

Gene Kroupa is Secretary for the Bluebird Restoration Association of Wisconsin.

Carve a Comfort Bird

Comfort birds have been around for a while, but they've taken on new meaning during the pandemic. A comfort bird is a carved wooden bird that fits in the palm of your hand. The smooth finish and gentle curves can bring comfort to someone who holds it and rubs it. Carving the birds is a relaxing pastime, and the finished birds make wonderful gifts for friends who need a little comfort during trying times. And it doesn't take much imagination to see that they could be bluebirds!

Anyone with even rudimentary wood-working skills can make a comfort bird, but as with any kind of craft work, beginners build skills and improve with practice—don't expect your first bird to be perfect. Many examples of the birds can be found online. Kits are available from Amazon.com, and step-by-step instructions are available at no cost online. An excellent set of instructions was printed in the Holiday 2011 issue of *Woodcarving Illustrated*, shown at left (http://woodcarvingillustrated.com/wp-content/uploads/2014/09/Comfort_Birds_164328917.pdf).

Tips for Building Better Bluebird Boxes

Kurt Hagemeister

Those of us bluebirders who like to build nestboxes often have been known to "go overboard" with attention to detail. Although the birds don't care about a sloppy cut or gaps here and there, building a quality bird house will give you a highly functional house that you can also be proud of. After all, we want to put something up in the yard we can be proud of when discussing it with a guest or neighbor!

But what aspects of building a nestbox ARE significant, and how can we build them into our project? Based on our collective experience at the Michigan Bluebird Society, below are some of our "best practices" and tips for making quality nestboxes.

First though, you'll need a good nestbox plan before going out and buying wood and hardware. You will want to know what you need, to avoid buying too much (or the wrong material) and to cut down on waste. The Michigan Bluebird Society has some excellent, downloadable, easy-to-build design plans at: https://michiganbluebirds.org/nest-boxes/nestbox-plans

There, you can also find some good information on pole mounting options not covered in this article. Now you're ready to build!

1. Start with good wood. Western red cedar is the best type for outdoor use, as it is more rot resistant than most other soft woods. If available, cypress is excellent too. White pine will be cheaper, but will usually not hold up as long.

2. Pick boards that have as little "cupping" as possible (curving across the width of the piece) and have little or no warping along the length. This will greatly reduce gaps in the finished house that can let in moisture and cold air.

3. If possible, use a power saw with a guide to make straight cuts, as this will make the pieces of the box fit together better. Miter saws are very helpful here. Table saws are usually not necessary unless you have to do "rip cuts" (long cuts down the length of the board).

4. When drilling a round entrance hole, Forstner bits produce the smoothest holes. These are usually best used with a drill press, however. Spade bits will also work but may result in more splintering around the edges. To prevent this, start the hole cut from one side of the wood, turn the board over, and finish the hole from the other side. Finally, it's a very good practice to sand the entrance hole to eliminate rough spots that can damage bluebird feathers when entering the box.

5. When cutting multiple components of the same length, make sure to account for the thickness of the saw blade, and use a stop to cut each piece to exactly the same length.

6. HARDWARE: Wood screws should always be used rather than nails. Screws hold the wood pieces of the box together much better over time and can be removed if one piece needs replacing. Stainless steel deck screws are the best and will not cause staining of the wood via "bleeding" due to corrosion. However, they cost more than regular coated screws—which are your next best choice. It is strongly advisable to pre-drill holes to prevent splitting of the wood when driving in the screws.

7. Drainage gaps or holes in the floor of the box are not really necessary. There is always enough of a gap in the bottom of the box for small amounts of water to escape. Also, drainage holes in the bottom can often create an "ant highway" into the box.

8. To help your box stand up to the elements longer, staining the outside surfaces with an exterior stain is a good idea—especially the roof. Always use a water-based stain, and do not apply any stain inside the box.

9. Another tip for helping the house last longer is to make the roof out of PVC or some other composite material that doesn't rot. The roof is usually the first part of the box to go, as it receives the most weathering from sun and rain.

10. Try to leave a roof overhang in front of the entrance hole of at least 2 to 3 inches to reduce rain or snow from blowing into the box.

11. Another good feature is cutting a shallow (⅛-inch deep maximum) groove along the

underside of the roof front about an inch from the edge. The purpose of this groove is to prevent water from "creeping" along the wood surface from capillary action and entering the box. This can easily be done with a table saw or a sharp gouging tool and straight edge.

12. If you have surfaces where two wood edges meet that are exposed to rain, consider sealing those joints with waterproof caulk. This is most important where the roof joins the rest of the box.

13. Countersinking screw holes so that they are flush to the wood surface is a nice aesthetic feature.

Following these guidelines will result in a quality, safe home for the birds and will be something you'll be proud of, too!

Kurt Hagemeister is President and a co-founder of the Michigan Bluebird Society. He has been a bluebird landlord and nestbox builder for 23 years in the Ann Arbor, Michigan, area. In addition to authoring many articles about bluebirds and other cavity nesters, he is a frequent speaker on attracting bluebirds to groups all over the state. Contact him at khagemeister@michiganbluebirds.org

This article originally appeared in The Bluebird Flyer, *newsletter of the Michigan Bluebird Society. It is reprinted here with permission.*

Nestbox built by John Harville. Photo by Kurt Hagemeister.

There's a Bluebird Nest in My Mailbox!

Bet Zimmerman Smith

QUESTION:
Bluebirds are building a nest in my newspaper tube or mailbox. It's very inconvenient. What should I do?

ANSWER:
Your bluebirds are probably desperate for a place to raise their young. You can help them!

- Put up a proper nestbox (specifically designed for bluebirds) with a predator guard or baffle to protect the contents from predators.
- Place it as near as possible to the mailbox, with the hole facing east or south.
- Carefully move the nest into the box, preferably with the bluebirds watching you. If the birds already have an egg or young in the nest, they should accept the nestbox and proceed to raise their family.
- Cover your mailbox/newspaper tube with a door or screen to prevent it from being used for nesting in the future.

You can find plans for bluebird boxes, predator guards, and more on bluebirding on the NABS website (www.nabluebirdsociety.org) or on my website (www.Sialis.org).

NOTE: It is ILLEGAL to destroy the nest of a native bird, or to interfere with babies or adults. You ARE allowed to remove the nests of House (English) Sparrows and European Starlings, which are not native, and are not protected by federal law (for more information, see www.sialis.org/mbta.htm).

Western Bluebirds about ready to fledge from an abandoned mailbox in Montana. Photo by Michael Houlihan of Huson, Montana, courtesy of Jane Brockway.

Enterprise and Inactivity

Luca Antinozzi

I leaned in a few inches closer and found three residents, two blind sacks of pink skin not much bigger than my thumbnail and a wildly oversized sibling. This third resident seemed ready to challenge me for the comfortable seat it had mooching off its foster family. This was the last brood of the year and it was amazing that the two other chicks had even hatched considering the heat of recent weeks. I shut the lid and angrily jotted down "2x HF/1x BHCO/M-nest" in my journal, walking farther down the sunny suburban street.

I have been volunteering for local conservation projects for two years. I started birding around the same time, in the summer after my freshman year in high school. The first citizen-science conservation volunteer project I participated in was a bird-banding day at a local science museum organized for a program at my school. The first time I ever went birding was at a Georgia Department of Natural Resources summer camp, TALON, in June 2019. The first time I saw an Eastern Bluebird (and knew what it was) I was at a feeder at Harris Neck National Wildlife Refuge. The last time I saw an Eastern Bluebird it was perched on an Adirondack chair in my north Atlanta neighborhood.

The Eastern Bluebird itself became an important part of my life one year later in June 2020. I had spent the majority of previous few months in one of three places: my bedroom, my backyard, or on a masked jog in my neighborhood. When COVID-19 cases started to drop, and online classes ended I decided to reach out to my local Audubon chapter (now called Georgia Audubon) to see if they had any volunteer opportunities. As expected, most group events had been suspended but they had an odd project I could complete individually. A ~150 box bluebird trail in North Atlanta had been left largely unmaintained for several years. The man who installed the boxes, Ken Godwin, moved to Jacksonville and only made it to the boxes once, maybe twice, a year. I was thrilled, and happily accepted the project.

Two weeks later, I found myself utterly overwhelmed. I was 16, but because the governor had closed the Department of Driver Services I could not get my license, and thus, could not drive myself. So for the first brood of the summer, and most of the second, I sat on the project, not sure what to do next.

I made it out to the boxes for the first time in July, but I had to be driven there and it was a challenge to drive to each box, stop the car, find the box, get back in the car, and repeat… It was frankly unfun.

But the next time I went out I had my license and I had a buddy, Paige Parker, and I made the decision to walk between boxes. The boxes were very spread out, so we were walking and jogging through many miles of suburbs. And as we made our way box to box, we were able to see our own ecosystem from a different perspective.

This is the backyard ecosystem, a new and utterly unique habitat. An ecosystem that is built around the blueprint Americans made as they fled crowded cities and all their problems of pollution and crime. In this American exodus toward tidy lawns and picket fences we created a new slew of problems for biodiversity. As millions of families spread out and ripped out roots we permanently altered the ecosystems in which we now reside. Forests found themselves fractured by roads and fences, and in the following decades problems such as invasive species, habitat degradation, and pollution made their way to the tree-lined refuges of homeowning America.

John Brandauer / www.flickr.com

I frequently saw these problems on the trail, as I'm sure many of you have. The most obvious of these being the Brown-headed Cowbirds thriving on our lawns, but when I walked I saw firsthand some of the other problems these birds were facing, many of which we can't solve just by keeping on doing what we've been doing—

putting up more boxes, more feeders, and finding solutions to box predation. Although these are very important, I saw while walking how the opposite attitude can do just as much good in its own way.

A good number of the boxes on the trail are located along the edges of the undeveloped stretches of cleared land where there were large electrical transformers (I have no idea what these are actually called). These stretches of the trail are covered by tall grasses, and as I walked through I was surrounded by the sounds of insects and calling frogs; these stretches are no more than 100 yards wide, yet these little pockets of no-mow meadow contained a healthy ecosystem packed with the insects our bluebirds need to survive. It is amazing what power little acts of laziness have to help increase suburban biodiversity.

This project has taught me the power of initiative, hard work, passion, and science. It has also shown me firsthand the positive power of laziness. So maybe this year give your rakes, mowers, and pesticides a rest. Sit back, relax, and watch as nature does the work our bluebirds need for you.

Luca Antinozzi is a high school student in Chamblee, Georgia.

Book Review: Nature's Best Hope

Scott W. Gillihan

As I read this book, I marked passages that I thought would be important to mention in a book review. But by the time I finished the book, I had highlighted so much text that I cannot possibly include all of the salient points in a half-page review. You really need to read this book to glean its important information!

Douglas Tallamy is a professor at the University of Delaware and a popular speaker and author. He begins this, his latest book, by providing a wealth of background information on conservation, our relationship (or lack thereof) with the natural world, and the importance of nature to humans. Having laid that foundation, Tallamy proceeds to build a case for using native vegetation around our homes. He proposes the concept of a "Homegrown National Park" to provide critical habitat, which is good for native plants and animals, but also provides a healthy dose of nature, which is good for all of us, especially children.

Tallamy points out that, instead of native forest, most homes are surrounded by expansive turfgrass lawns bordered by plants introduced from other continents. Many of our native butterflies, bees, moths, etc., are tied to native plants and those insect populations are declining, in part because of a lack of native plants around our homes.

Most birds eat insects during at least some phase of their life cycle (nestlings, in particular, need the protein and fat provided by insects). Tallamy places a special emphasis on caterpillars, which are a critical food source for birds; "the eastern bluebird relies more on caterpillars than any other food source while feeding its young." A pair of bluebirds or other native songbirds requires *thousands* of caterpillars to raise a single brood, but caterpillars are often rare around homes with exotic vegetation—caterpillars need the native plant species to which they are adapted. Whenever possible, plant species that are native to your area—they'll require less water and other care, and they will provide food and habitat for insects. More bugs = more birds.

In spite of coming from a background in both wildlife biology and horticulture, and being acutely aware of the benefits of native plant species, I'm as guilty as anyone of taking the easy way out and planting nonnative species in my yard. This book has spurred me to take a hard look at these plantings (I'm looking at you, Russian sage)—I will be yanking them out and replacing them with native species.

I have not read Tallamy's earlier book, *Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens*, so I don't know how much the two overlap or complement each other. But I learned so much from *Nature's Best Hope* that I now have the earlier book on my reading list.

I highly recommend that you read this book and put its concepts into place—create your own Homegrown National Park!

Feral and Free-Ranging Domestic Cat Impacts to Wildlife of Concern to the North American Bluebird Society (NABS)

Background:

Domestic cats (*Felis catus*) are predators that humans introduced globally and have been listed among the 100 worst nonnative invasive species in the world (Loss et al. 2013). Although cats can make wonderful pets, feral, or un-owned cats, are one of the world's most harmful invasive species. Every year, cats kill billions of birds in the United States and are known to spread a variety of parasites and diseases. In regard to wildlife, cats are the number one source of direct, human-caused mortality for birds and small mammals. Cats also kill small reptiles and amphibians (e.g., lizards, frogs, and toads). Of the total wildlife deaths attributed to cats, studies show that feral cats or un-owned do the most harm and are responsible for about two-thirds of the bird kills and approximately 90% of the small mammals. The predation rate estimate for un-owned cats was higher primarily due to predation rates by this group averaging three times greater than rates for owned cats. Un-owned cats are defined to include farm/barn cats, strays that are fed by humans but not granted access to habitation, cats in subsidized colonies, and cats that are completely feral. Scientifically sound conservation and policy intervention is needed to reduce this impact (Loss et al. 2013).

Cats are a human-caused and direct source of mortality. Feral cats are a growing concern for communities and land managers nationwide. Advocates for feral cats often favor Trap, Neuter, Release (TNR) programs to address issues regarding overpopulation and disease exposures of feral or abandoned cats. These programs remain controversial, especially with wildlife advocates and managers, because they are not effective in reducing feral cat numbers. Overwhelmingly, the scientific literature indicates that TNR programs don't work. A January 28, 2014 letter to the U.S. Department of the Interior from the American Bird Conservancy (ABC) detailed the impacts of feral cat colonies to wildlife (Loss et al. 2013). This letter was written on behalf of 200 conservation organizations that are represented across North America. The letter discussed a study by the Smithsonian Institute and the U.S. Fish and Wildlife Service that documented extensive wildlife mortality from cat predation, risks to human health from rabies and toxoplasmosis, and the ineffectiveness of the TNR program. The peer-reviewed study by scientists found that an estimated 2.4 billion birds and 12.3 billion small mammals are killed by cats in the U.S. every year.

To further identify the magnitude of the issue, of 321 animals (mostly birds) that were injured by cats and brought to WildCare in 2019 (a nonprofit wildlife hospital in San Rafael, California), only 89 survived. The other 232 died despite WildCare's efforts to save them (https://www.nationalgeographic.com/animals/2020/09/caught-by-cats-birds/). This does not account for the numbers of wildlife killed by cats but not discovered.

Disease issues:

Feral cat colonies pose a threat to human health. According to the Centers for Disease Control and Prevention (CDC), cats are consistently the number one carrier of rabies among domestic animals and disproportionately pose a risk of human exposure to rabies because of the increased likelihood of human–cat interactions (Blanton et al. 2012, Roebling et al. 2013).

Toxoplasmosis also threatens the health and welfare of people and wildlife. This disease is caused by a parasitic protozoan that depends on cats to

complete its life cycle. Up to 74% of all cats will host the toxoplasmosis-causing parasite in their lifetime and shed hundreds of millions of infectious eggs (Tenter et al. 2000). In the U.S. over a million people are infected with toxoplasmosis each year. Any direct or indirect contact with cat feces risks human and wildlife health, including death. The disease is the most common cause of ocular inflammation and may result in blindness. Toxoplasmosis has historically been recognized as a risk for pregnant women and individuals with compromised immune systems, but new research is showing it causes problems in otherwise healthy populations as well. Potential results in pregnant women can be a miscarriage, a stillborn child, or a child born with signs of congenital toxoplasmosis (e.g., abnormal enlargement or smallness of the head) (www.cdc.gov/parasites/toxoplasmosis).

"The best way to manage infectious disease risks from cats—whether it be toxoplasmosis, rabies, or any other disease—is to keep cats safely contained indoors, on a leash, or in a catio (https://abcbirds.org/catio-solutions-cats/). Permitting cats, especially stray and feral cats, to roam the landscape increases risks to the whole community, human and animal alike" (Grant Sizemore, ABC's Director of Invasive Species Program).

Attempts to control feral cats by Trap, Neuter and Release:

TNR programs fail to reduce cat populations and cannot be relied upon as a management tool to remove cat colonies or protect people and wildlife. Multiple peer-reviewed studies, including the CDC's, have found that TNR programs do not adequately reduce feral cat populations or effectively mitigate health concerns (Castillo et al. 2003, Natoli et al. 2006, Roebling et al. 2013). TNR programs fail because they do not operate in an enclosed system and cannot spay or neuter a sufficient number of cats to affect cat numbers at the population level. Despite the good intentions of many involved in TNR programs, TNR has been found to be a waste of time, money, and resources. Cat colonies may actually lead to increased numbers of cats. The only sure way to simultaneously protect wildlife and people is to remove feral cats from the landscape (abcbirds.org/wp content/uploads. 2015).

Recommendations to address free-ranging and feral cats:

- Educating the public on the issues and potential solutions are key to helping communities understand the best approach to resolving the problems posed by outdoor cats.
- Support the American Bird Conservancy's "Cats Indoors" program (www.abcbirds.org/program/cats-indoors).
- Support removal of cat colonies in close proximity to shorelines, natural wetlands, undeveloped forested areas, areas managed for wildlife, parks, and other open space, or sensitive areas supporting concentrations of threatened or endangered species, migratory birds, or other native wildlife.
- Avoid outdoor feeding of stray or free-ranging cats. This attracts skunks, raccoons, foxes, and other species that can contract and/or spread rabies.
- Encourage microchipping of all cats. Microchipping facilitates cat registration, helps in identifying owners of lost cats, and aids in identifying cat owners or facilities not in compliance with regulations and/or accountable for death or injury to threatened and endangered species, migratory birds, or other native wildlife.
- Encourage the use of CatBibs on outdoor cats as an interim solution while transitioning cats to be indoors.
- Promote or encourage enforcement of "no animal abandonment" statutes and establish stricter penalties for violators. Work with animal welfare and conservation groups to provide a low-cost solution for pet owners who are no longer willing or able to care for their pets.
- Support efforts of volunteers or organizations that trap and neuter free-ranging cats, but also require that animals be adopted and kept indoors or allowed only in fenced-in areas or appropriately sized enclosures (also known as "catios").
- Where necessary, promote an annual census of all cats. A census conducted within a municipality will establish a baseline that helps evaluate programs to address free-ranging cats.
- Promote municipal licensing of all cats and prohibit free-ranging cats with leash laws similar to those in existence for dogs.

Summary:

BETTER FOR CATS, BETTER FOR HUMANS, BETTER FOR WILDLIFE

The best way to protect cats and birds is to keep cats safely contained. However, if you are in the process of

transitioning your outdoor cat to an indoor cat or just want to add an extra layer of wildlife protection while your cat is in the backyard enclosure, several devices can help reduce (but not eliminate) cat predation. Review the latest science at https://abcbirds.org/catio-solutions-cats.

Supporting the listed recommendations is a win–win–win situation:

- Indoor cats live a longer, healthier life because they are less subject to diseases, predation, poisoning, or death by vehicles.
- The threat of rabies and toxoplasmosis to people and pets is reduced.
- Wildlife predation can be significantly reduced.

The science is clear and the solutions are equally clear—to protect humans and wildlife, cats need to be kept contained. NABS supports keeping all cats indoors, or allowing them outside only if they are on a harness and leash. NABS does not support maintaining feral cat colonies.

The bottom line: **Domestic cats, whether pets or feral, should not be allowed to roam free.**

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Vehicle/Property Donation Program

If you have a car, truck, motorcycle, RV, boat, or even an airplane that you no longer need, NABS would like to receive it as a tax-deductible charitable donation.

To donate, simply call this toll-free number: **866-244-8464**. Our agents will have your vehicle, boat, RV, etc. picked up and taken to a facility where it will be evaluated by experts. A determination will be made regarding what should be done to maximize its selling price, thereby resulting in significantly higher value than it might otherwise generate so you will receive the maximum tax benefit allowable by U.S. law. For tax purposes you, the donor, will receive a formal Certificate of Donation complying with all State and Federal requirements for authenticating your donation to NABS, an IRS 501(c)(3) tax-exempt charity.

Thank you for supporting the conservation of bluebirds and other native cavity nesters!

Pixabay.com

The Case for Indoor Cats

Valerie Kenyon Gaffney

It was a lovely Monday morning in May 2007. Intending to pick up flowerpots left outside from the day before, I went into my backyard and absentmindedly failed to pull the sliding glass door behind me. In the blink of an eye, my beloved cat Emily was gone! For three weeks, Emily was both predator and prey. Eat, or be eaten? I was frantic and inconsolable. Eventually, Emily was found alive and well, brought home, and lived out the rest of her 22 years within the safe confines of my home. I know Emily lived a long and healthy life because she was, for all but those three weeks, strictly an indoor cat. Likewise, I believe the songbirds that grace my backyard were for the ensuing 13 years far safer for that same reason. We lived in peaceful coexistence.

Research published in *Science* in 2019 "shows bird populations have continued to plummet in the past five decades, dropping by nearly three billion across North America – an overall decline of 29 percent from 1970" (*Science* 4 October 2019: 336(6461):120–124).

I do not believe free-roaming cats—either house cats who go outside on occasion or feral cat colonies—are wholly to blame for this decline in bird populations. Research indicates the biggest cause of bird population decline is loss of habitat. So, what can we do about the loss of habitat? The Virginia Bluebird Society, along with many other conservation organizations, works diligently to address that problem. Indeed, second in our organization's stated goals: Establish and support a statewide network of bluebird trails.

But what about cats? According to Cornell University's website AllAboutBirds.org, "Cats are estimated to kill more than 2.4 billion birds annually in the U.S and are the #1 human-caused reason for the loss of birds, aside from habitat loss." Cats are natural predators. It's in their genes to hunt and not always because they're hungry, as evidenced by the occasional dead mouse brought up from your basement.

If you have a hard time accepting Cornell's estimates, the National Wildlife Federation suggests, "Of the 73 million pet cats in the U.S., an estimated 40 million roam outside unsupervised. Throw in feral cats and as many as 100 million cats are on the loose. These cats could easily be killing 100 million songbirds a year."

And what about the health of your cat? Again, from Allaboutbirds.org: "Outdoor cats can contract or transmit diseases and parasites including toxoplasmosis, rabies, feline leukemia, feline herpes, tapeworms and fleas. An outdoor cat lives less than half as long on average as an indoor cat." And as if that weren't danger enough, according to the Humane Society of the United States, "Millions of cats are killed by motor vehicles annually. In Washington, D.C. vehicles are the number one reason for injury, followed by fights with wild animals like raccoons. Even in 'safe' situations, cats may curl up in car engines, ingest poison or come in contact with cats that carry fatal diseases."

Bottom line, cats aren't safe in nature, and as long as cats are allowed to roam wild, birds aren't safe either.

I have a precious new cat, Eleanor Rigby. She's just four years old; a rescue off the streets of Woodbridge, Virginia. I fully expect her to live a very long and very happy life. She's welcome to stalk the birds from inside the kitchen windows. And the birds are always welcome entertainment for her and me as they safely visit our backyard feeders and bird bath. It's a win/win!

Eleanor Rigby watching birds from inside the house.
Photo by Valerie Kenyon Gaffney.

How about you? Will you protect the birds from death by cat, and protect your beloved cat from death by the dangers of the outdoors?

For additional reading: Cat Wars, by Peter P. Marra and Chris Santella, Princeton University Press, 2016.

Valerie Kenyon Gaffney is President of the Virginia Bluebird Society.

This article originally appeared in The Bird Box, *newsletter of the Virginia Bluebird Society. It is reprinted here with permission.*

God Sent a Bluebird

Diana Plant

After reading "Bluebird Poem Analysis" by Molly Wilsbacher on page 25 of the Winter 2020–2021 issue of *Bluebird*, I thought perhaps some readers may be interested in the story behind my poem, "God Sent a Bluebird." Many bluebirders, especially those from Ohio, may remember Bob Orthwein, an avid bluebirder and one of the first recipients of the Ohio Bluebird Society's "Blue Feather Award." When he passed away in 2000, his cousin, Ed Blackford, missed him immensely. But one day, soon after Bob's passing, a bluebird flew down a few feet from Ed and looked at him. Ed was especially touched by the incident, and relayed the encounter to my husband, Don, and me. Soon, this poem began taking shape in my head, so I wrote it and gave a copy to Ed. I hope it may give some comfort to others who are mourning the passing of a loved one.

God sent a little Bluebird
To tell us Bob is there,
And tell us he is happy,
And resting in God's care.

I know that there are Bluebirds
Out there beyond the blue,
Because my Mother saw some,
And I believe it's true.

Just days before her passing,
She saw a wondrous sight.
I think that she saw Heaven,
And I believe I'm right.

She sat there with her eyes closed,
A smile upon her face.
She looked content and happy,
A picture of God's grace.

I asked what she was doing,
Just wondering what she'd say.
She said she's watching Bluebirds,
And saw them dance and play.

She said they were so lovely,
A picture to behold.
And that began this story
That I was to unfold.

The story doesn't end there,
Oh, no, it just began.
And now I'd like to tell you
My feelings, if I can.

So, when the little Bluebird
Swooped down and looked at Ed,
I felt it brought a message
That I feel must be said.

I think that God was showing
In His mysterious way,
That Bluebirds are in Heaven,
And that they dance and play.

And since He just took Bob there,
He wanted us to know.
And so He sent the Bluebird
Just so that He could show--

He knows it isn't easy;
He knows our unbelief;
And so He sent the Bluebird
To help us through our grief,

And tell us not to worry,
That Bob will be alright,
And he is watching Bluebirds,
And smiling at the sight.

The Remarkable Process of Incubation

Lawrence Zeleny

Editor's note: *With the coming of spring and the many bird nests that accompany it, we thought it appropriate to reprint this informative article about incubation written by NABS's founder. A slightly different version of this article appeared in the Summer 1983 issue of* Sialia*, the predecessor of* Bluebird.

Incubation in the life of a bird is the approximate equivalent of pregnancy in the life of a mammal. Both the bird and the mammal provide warmth and protection for the fertilized egg and the embryo that develops from it. In the case of the mammal, food for the developing embryo is supplied by the blood stream of the mother and waste products are removed by the same route. With the bird sufficient food is stored in the egg to last the embryo until the time of hatching. Part of the waste products accumulate within the egg and part are given off in gaseous form through the slightly porous shell.

Some birds start incubating as soon as the first egg is laid but most species, including the three species of bluebirds, usually delay the start of incubation until the last egg of the clutch is laid. This latter system has a distinct advantage since all of the young are then usually hatched on the same day and are thus capable of competing with one another on equal terms for the food supplied by the parents.

Embryo growth and development in the egg take place only when the egg is kept warm. The normal incubation temperature for the eggs of most songbirds including bluebirds is about 95° F (35° C). Occasional cooling of the eggs for short periods during the incubation process does not appear to damage the embryos but may delay their development somewhat and thus increase the incubation period. Overheating of the eggs for even short periods may cause the death of the embryos. This may occur in nesting boxes on very hot sunny days if the boxes are made of material that is too thin or too dark in color, or if they are not adequately ventilated. The maximum temperature that can be tolerated by bluebird eggs is not known exactly but is probably in the neighborhood of 107° F. This temperature may be encountered inside some nesting boxes when the outside shade temperature is no more than about 87° F.

Kenny Griffin

In order to keep the eggs warm enough for proper incubation in most weather it is necessary that the eggs have close contact with the skin and blood stream of the incubating bird. Since feathers are poor conductors of heat the bird develops a "brood patch" by shedding feathers on an area of its belly shortly before the complete set of eggs has been laid. Brood patches develop on both sexes in those species in which both parent birds share in the task of incubation. In settling itself on the nest the brooding bird takes great pains to bring the eggs into close contact with the warm skin of the brood patch. One of the marvels of nature is that some penguins can successfully incubate their eggs during the Antarctic winter when the temperature may be as low as −70° F.

With many species of birds both parents help

with the incubation. In the case of a few species the male alone is responsible for the incubation. With the bluebird and many other species, however, incubation is performed almost exclusively by the female. The male bluebird sometimes sits on the eggs while the female is out of the box for brief periods, but it is doubtful that he contributes much to the incubation process since he does not have a brood patch. His responsibility during the incubation period is to defend his home against any possible unwanted guests and to support his mate's morale by singing to her and bringing her an occasional choice insect.

The female bluebird broods her eggs continuously all night during the incubation period, but during the day she will leave the nest for varying lengths of time while she exercises and searches for food. On cold days she usually returns to her nest within a few minutes to avoid any unnecessary chilling of the eggs, but on hot sunny days she seems to know that the eggs will stay warm for some time without her attention, so she may leave them for periods of an hour or more. Biologists tell us that this difference in brooding behavior on cold and warm days is due simply to instinctive reactions to differences in temperature.

During the incubation period bluebirds and most other birds will turn and rearrange their eggs in the nest rather frequently. This serves to maintain an even temperature among all the eggs in the nest; it also prevents embryonic membranes from adhering to the shells.

Bluebird eggs normally hatch after 13 or 14 days of incubation. From my own observations of the Eastern Bluebird, mostly in Maryland and Virginia, it seems that the incubation period for the first brood of the season is usually 14 days and for the second and third broods it is usually 13 days. The warmer weather during the periods when the later broods are raised probably results in a slightly shorter incubation period. In one instance a clutch of eggs on my bluebird trail hatched in 12 days during very warm weather. There are a number of authentic reports of bluebird incubation times in excess of 14 days, most of these occurring in the colder parts of the country. A most unusual instance was reported by B.C. Pinkowski in the Jan.-Feb. 1974 edition of Inland Bird Banding News. He made careful and frequent observations of an Eastern Bluebird's nest in Michigan in which the first of six eggs did not hatch until the 20th day of incubation, and the last egg hatched on the 21st day. During the incubation period the weather was unusually cold, often below freezing, and the female appeared to be somewhat negligent in her duty of keeping the eggs warm. The combination of these two unfavorable factors evidently seriously retarded the development of the embryos, yet all six of the eggs finally hatched.

As the incubation process proceeds eggs gradually lose weight through losses of water vapor and gaseous waste products which escape through the shells. One published report showed an average loss of 12.6% in the weight of 24 Eastern Bluebird eggs during the 13 day incubation period.

Shortly before hatching the maturing embryo develops a short but stout "egg-tooth" on the upper mandible of its bill. At the same time it develops a special set of remarkably strong muscles at the back of its neck. These muscles enable the young bird to wield its egg-tooth with sufficient force to break through the shell and to liberate itself gradually by tearing the shell apart. The egg-tooth and special hatching muscles are then no longer needed and soon disappear. The hatching process in the case of the bluebird requires several hours and sometimes the greater part of a day. The parent birds offer little or no help in the actual hatching process, but the mother bird carries away the empty shells and often eats part of them as a valuable calcium supplement to her diet. Thus the shells may in part be recycled to help build the shells for the next clutch of eggs.

What's Up with Capitalizing Bird Names?

Scott W. Gillihan

Readers of *Bluebird* may have noticed that the common names of birds in these pages are capitalized. Especially sharp readers may have noticed that bird names are capitalized only when the entire name is used: "Eastern Bluebird" vs. "bluebird," and "Downy Woodpeckers" vs. "woodpeckers." There is a logical explanation for how this works.

The American Ornithological Society (AOS; formerly the American Ornithologists' Union, or AOU) is one of the oldest professional societies for scientists who study birds. The AOS has long been recognized as the arbiter of "official" bird names—both the common names and the Latin scientific names—in the western hemisphere. Since AOS common names are established by a select group of specialists in bird classification and nomenclature who continuously monitor new developments in those fields and make naming adjustments as needed, many scientific publications consider the names bestowed by the AOS to be official proper names that should therefore be capitalized. By convention, shortened versions of common names (for example, just "nuthatch" or just "chickadee") are not capitalized.

This practice is not without its detractors. A 1983 commentary in the AOS flagship scientific journal, *The Auk* (Atkins 1983), took the society to task for elevating birds above other taxonomic groups by insisting on capitalizing bird names but not the names of any other group of organisms. (A rebuttal published the following year [Potter 1984] succinctly shot down the objections to capitalizing bird names.)

But the issue goes beyond the official names. The capitalization of bird names has some very practical benefits. For one, it facilitates finding bird names on a dense page of text—the capped names jump out when skimming. Also, capitalization helps one differentiate ambiguous names: If I write that I saw a "yellow warbler" today, does that mean I saw a warbler that happened to be the color yellow, or that I saw a bird of the species "Yellow Warbler"? The capitalized name makes clear that I saw the species by that name. Ditto for Gray Flycatcher, Little Gull, Solitary Sandpiper, or many others, including my personal favorite, the Happy Wren (an actual species found in Mexico).

Although most scientific publications about birds do capitalize the common names, scientific publications not focused exclusively on birds (such as *Ecology*, *Journal of Forestry*, and many, many others) do not. Non-scientific publications are divided. Our friends at *Bird Watcher's Digest* do not capitalize bird names. The Cornell Lab of Ornithology's *Living Bird* magazine does. *Birds and Blooms* does not. *Audubon* does. And so it goes.

Bluebird and its predecessor, *Sialia*, have always followed the AOU/AOS convention for capitalizing bird names. A short article in the Winter 1984 issue of *Sialia* by then-editor Joanne K. Solem explained:

> Some of our readers may have the impression that we capitalize bird names entirely by whim or that we follow some cryptic law known only to a few. We are following the convention established by the original editors in which the common name is capitalized when it is used in its entirety.

Note that the "rules" for capitalizing bird names in *Bluebird* do not extend to other species. Plant and animal names lack the sort of official naming body that birds enjoy via the AOS. As a result, we use quaking aspen, spring peeper, praying mantis, and so on—in other words, lowercase names. The exception is for proper names within a species' name, such as Douglas fir or Townsend's big-eared bat.

Interestingly, an attempt to convert scientific journals focused on fish to using capitals (Nelson et al. 2002) was soundly slapped down (Kendall 2002). Change does not come easily.

Literature Cited

Atkins, A. 1983. The capitalization of birds' names. Auk 100:1003–1004.

Kendall, R.L. 2002. Capital punishment: Capitalization of common names goes against current trends in English grammar. Fisheries 27:33–34.

Nelson, J.S., W.C. Starns, and M.L. Warren. 2002. A capital case for common names of species of fishes—a white crappie or a White Crappie. Fisheries 27:31–33.

Potter, E.F. 1984. On capitalization of vernacular names of species. Auk 101:895–896.

On Birding and Bluebirds

John Burroughs

Editor's note: *John Burroughs was one of the giants of American nature writing. His 23 volumes of essays and poems have inspired countless naturalists and the conservation movement itself. The following excerpt is from an introduction that he wrote for an early bird guide,* Bird Neighbors, *by Neltje Blanchan, published in 1897. Blanchan herself was quite well known as an author of books about birds and flowers;* Bird Neighbors *sold more than 250,000 copies, making Blanchan the best-selling woman nature writer of her time. Burroughs starts his essay with a discussion of birdwatching but wraps things up with some interesting (and timely for many of us now) observations on bluebirds. The "Audubon" he mentions in the first paragraph is undoubtedly* Birds of America, *a large-format collection of Audubon's paintings, and "Wilson" is no doubt Alexander Wilson's* American Ornithology, *a nine-volume work that would also be unwieldy.*

When I began the study of birds I had access to a copy of Audubon, which greatly stimulated my interest in the pursuit, but I did not have the opera glass, and I could not take Audubon with me on my walks, as the reader may this volume, and he will find these colored plates quite as helpful as those of Audubon or Wilson.

But you do not want to make out your bird the first time; the book or your friend must not make the problem too easy for you. You must go again and again, and see and hear your bird under varying conditions and get a good hold of several of its characteristic traits. Things easily learned are apt to be easily forgotten. Some ladies, beginning the study of birds, once wrote to me, asking if I would not please come and help them, and set them right about certain birds in dispute. I replied that that would be getting their knowledge too easily; that what I and any one else told them they would be very apt to forget, but that the things they found out themselves they would always remember. We must in a way earn what we have or keep. Only thus does it become *ours*, a real part of us.

Not very long afterward I had the pleasure of walking with one of the ladies, and I found her eye and ear quite as sharp as my own, and that she was in a fair way to conquer the bird kingdom without any outside help. She said that the groves and fields, through which she used to walk with only a languid interest, were now completely transformed to her and afforded her the keenest pleasure; a whole new world of interest had been disclosed to her; she felt as if she was constantly on the eve of some new discovery; the next turn in the path might reveal to her a new warbler or a new vireo. I remember the thrill she seemed to experience when I called her attention to a purple finch singing in the tree-tops in front of her house, a rare visitant she had not before heard. The thrill would of course have been greater had she identified the bird without my aid. One would rather bag one's own game, whether it be with a bullet or an eyebeam.

The experience of this lady is the experience of all in whom is kindled this bird enthusiasm. A new interest is added to life; one more resource against ennui and stagnation. If you have only a city yard with a few sickly trees in it, you will find great delight in noting the numerous stragglers from the great army of spring and autumn migrants that find their way there. If you live in the country, it is as if new eyes and new ears were given you, with a correspondingly increased capacity for rural enjoyment.

The birds link themselves to your memory of seasons and places, so that a song, a call, a gleam of color, set going a sequence of delightful reminiscences in your mind. When a solitary great Carolina wren came one August day and took up its abode near me and sang and called and warbled as I had heard it long before on the Potomac, how it brought the old days, the old scenes back again, and made me for the moment younger by all those years!

A few seasons ago I feared the tribe of bluebirds were on the verge of extinction from the enormous number of them that had perished from cold and hunger in the South in the winter of [1894]. For two summers not a blue wing, not a blue warble. I seemed to miss something kindred and precious from my environment—the visible embodiment of the tender sky and the wistful soil. What a loss, I said, to the coming generations of dwellers in the country—no bluebird in the spring! What will the farm-boy date from? But the fear was groundless: the birds are regaining their lost ground; broods of young blue-coats are again seen drifting from stake to stake or from mullen-stalk to mullen-stalk about the fields in summer, and our April air will doubtless again be warmed and thrilled by this lively harbinger of spring.

Photo Gallery

The Tree Swallow is a familiar bird to many bluebirders because of its fondness for bluebird nestboxes (although the National Audubon Society has estimated that nestboxes provide only 2% of all Tree Swallow nest sites). Photo by simardfrancois / Pixabay.

No, it's not a Tufted Titmouse with a bad toupee. It's a Black-crested Titmouse, photographed at Laguna Seca Ranch, Edinburg, Texas. Photo by Andy Morffew (https://www.andymorffew.com/).

The Golden-fronted Woodpecker of Texas and Oklahoma is closely related to the more widespread Red-bellied Woodpecker. This one seems intent on finding just the right sunflower seed. Photo by GeorgeB2 / Pixabay.

Black-capped Chickadees and Carolina Chickadees are very hard to tell apart, especially at this stage, so these could be of either species. Photo taken in Gaithersburg, Maryland, by Dave MacKenzie (https://www.flickr.com/photos/d-macphotos/).

These thirsty Eastern Bluebirds in Texas demonstrate the importance of providing clean water year-round. Photo by Wyscan (https://www.flickr.com/photos/wyscan/).

Bluebirds Everywhere

"**Bluebirds Everywhere**" is a feature that celebrates the widespread and creative uses of bluebird images and the word "bluebird" itself. We invite you to submit your own images and ideas—simply email them to **NABSeditor@gmail.com** or mail them to NABS Editor, 5405 Villa View Dr., Farmington, NM 87402. Let's see what bluebirds you can find!

Organizers of Colorado's Bluebird Music Festival are crossing their fingers that they can host a two-day, live, in-person concert in September 2021. No information on how they settled on the "Bluebird" name, but kudos to them for the beautiful and clever logo.

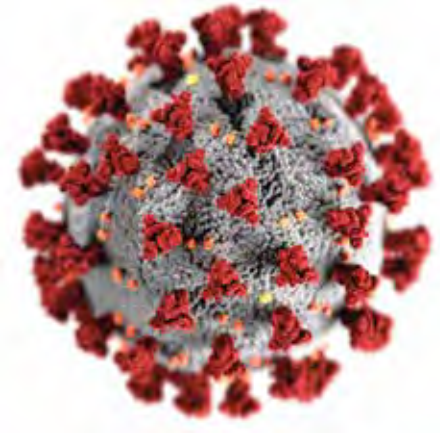
Bluebird Brasserie bills itself as "a Belgian inspired brewpub in the heart of Sherman Oaks [California]." Currently closed due to COVID-19 restrictions, images of the restaurant's delectable fare on their website (https://www.bluebirdbrasserie.com/) and Facebook page should inspire you to make a trip to Southern California just as soon as it's safe to do so.

BluesNews

No Challenges to This Election

Residents of the town of Hillsboro, Virginia, have selected the Eastern Bluebird as the official town bird. The effort was led by the town's Arts and Culture Advisory Group; the group's co-chair, Emilie Moskal, explained that "the bluebird evokes hope and happiness, something we all share and strive for here." To make sure the bluebirds know they're welcome, the town is planning to install a series of nestboxes along a trail at the edge of town.

Coronaviruses First ID'd in the 1960s...in *Birds*



According to an article in the magazine *The Scientist* (https://www.the-scientist.com/foundations/coronavirus-closeup-1964-67858), the class of viruses called coronavirus was first identified in sick poultry in the 1960s. Using electron microscopes, researchers noted that the pathogen was shaped like a sphere covered in a "crown" of lollipop-shaped spikes. After seeing this shape the researchers christened this new (to science) family of viruses *coronavirus*. The coronavirus responsible for the COVID-19 pandemic, known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is just one of many coronaviruses. The common cold is also caused by a coronavirus.

Research Review

A Summary of Recent Scientific Research on Bluebirds and Other Cavity Nesters

Scott W. Gillihan

All in the Family

Mixed broods are bird families that contain nestlings from two different species. This can happen when females from two species both claim a particular nest site and both lay eggs in the nest. When this happens among cavity-nesting birds, it is probably because nestboxes and natural cavities are in short supply so competition is intense.

Often in these competitions, one female emerges as the clear victor, and the other abandons whatever eggs she has laid, and perhaps wanders off to find another nest site with her mate. However, because different species have different incubation periods, nestling periods, and diet, these mixed broods often fail—or at least, the nestlings that are a different species than the adult female who won the competition often do not survive.

However, two recent examples of mixed broods had happy endings. A pair of Tufted Titmice in Arkansas drove away a pair of Eastern Bluebirds from a nestbox, but not until after the bluebird had laid four eggs. The titmouse added two of her own, and incubated all six. Eventually, three of the four bluebird eggs hatched along with the two titmice. The parents apparently took good care of all five nestlings, because they all fledged.

Another mixed brood developed in Illinois. A female Carolina Chickadee and a female Prothonotary Warbler both worked on a nest in a nestbox, and they each laid one egg per day until there were three eggs from each species in the nest. The chickadee laid another two eggs, and by this time seemed to have control of the nestbox—only the chickadee was incubating the eight eggs, and the warblers seemed to be building a nest in a nearby nestbox. In time, three chickadees and three warblers hatched. The chickadee adults fed all six, even feeding the three warblers (who had fledged first) in the area around the nestbox. Eventually, the three chickadees fledged, too. When last seen, the adults and their mixed family were moving together through the forest.

Shelby C. Moseley, Sara E. Harrod, and Virginie Rolland. 2020. Tufted Titmice (*Baeolophus bicolor*) rear a mixed brood to apparent fledging in northeastern Arkansas. Wilson Journal of Ornithology 132:197–202.

Jeffery P. Hoover. 2020. Carolina Chickadees (*Poecile carolinensis*) usurp a Prothonotary Warbler (*Protonotaria citrea*) nest and fledge a mixed-species brood. Wilson Journal of Ornithology 132:410–415.

Open Wide

Surprisingly little formal scientific study has been conducted on nestboxes. There certainly have been some limited studies—on size, orientation of the opening, materials, etc.—but less than might be expected.

Some researchers in Michigan wanted to tackle a simple, but important question: Does the size and shape of a nestbox entrance hole affect the ability of birds to deliver large food items to their nestlings? Their study species was the American Kestrel, which usually eats grasshoppers and other small invertebrate prey, but will also tackle lizards, birds and small mammals—some nearly as large as the kestrel itself.

Two nestbox designs were tested. The first had a conventional round opening, 8.75 cm (3.44 inches) in diameter. The second had a larger opening that was U-shaped, 7.62 cm (3 inches) wide and 12.07 cm (4.75 inches) tall. Motion-activated cameras were mounted on 14 nestboxes (8 with small entrances, 6 with large entrances) to collect short videos every time a kestrel arrived at or left a nestbox. After one nesting season


sunrisesoup/flickr.com

the researchers watched all the videos to identify the large prey items and whether a kestrel was able to fit the prey through the opening ("success") or if the prey was dropped to the ground ("failure").

As might be expected, the kestrels were more successful at delivering large prey to nestlings in the large-entrance box (only 1.6% failure) vs. the small-entrance box (8.9% failure). Slightly more nestlings fledged from the large-entrance boxes, although the difference was so close that it might not be meaningful.

Still, the larger entrances made it easier for kestrels to deliver large prey, and that's a good thing. But there's a tradeoff: entrances that are too large would make it easy for predators to get to the nestlings. How large is too large? Looks like an opportunity for another scientific study!

Logan B. Clark, Megan E. Shave, Melissa B. Hannay, and Catherine A. Lindell. 2020. Nest box entrance hole size influences prey delivery success by American Kestrels. Journal of Raptor Research 54:303–310.

Good News about House Sparrows

The House Sparrow is the bane of bluebirders' existence. Ever since it was introduced to North America from Europe in the 1800s, this species has terrorized bluebirds and other native cavity-nesting birds. The invader has spread across the continent and is now one of our most common birds with an estimated North American population of 93 million birds (compared to an estimated 21 million Eastern Bluebirds).

But there is good news: House Sparrow populations in North America are declining. Not everywhere—rural populations seem to be fairly stable, but urban/suburban populations are declining. Something similar is happening in Europe, where the species is quite popular. Intensive studies in Europe have pinned the decline on intensification of agriculture, loss of green spaces in cities, and a growing population of Eurasian Sparrowhawks.

Researchers in North America are uncertain of the causes behind our declining House Sparrow populations, although they suspect that the same forces driving down European populations are at play here: loss of green space in cities and growing populations of Sharp-shinned and Cooper's Hawks—especially winter populations of those species in more northern cities.

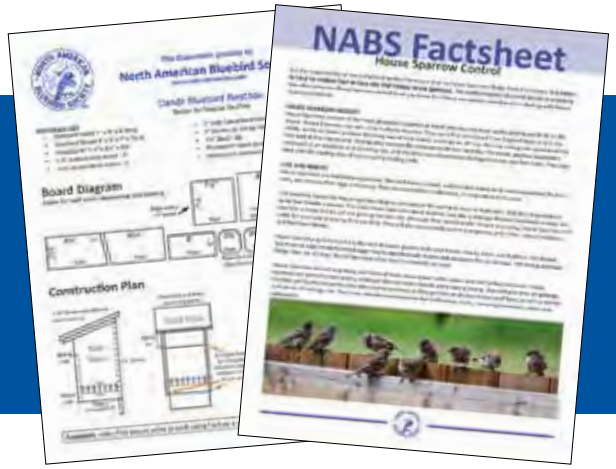
We'll probably never be rid of our invasive House Sparrows, but we can take some comfort in the knowledge that these bully birds' populations are being knocked back to lower levels.

Liam A. Berigan, Emma I. Greig, and David N. Bonter. 2020. Urban House Sparrow (*Passer domesticus*) populations decline in North America. Wilson Journal of Ornithology 132:248–258.

Have You Visited the NABS Website Lately?

The site is ***packed*** with helpful information: fact sheets, nestbox plans, back issues of *Sialia* / *Bluebird*, information about Board members, Affiliates, awards, contact information for bluebird emergencies, and more! Head over to:

http://www.nabluebirdsociety.org/



Affiliates of the North American Bluebird Society

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 working together in a partnership in international bluebird conservation. No cost is associated with affiliating with NABS. Your affiliated organization will be listed on the NABS website and in *Bluebird*. To find out more about becoming a NABS Affiliate please contact Mike DeBruhl at **cmdebruhl@atlanticbb.net**. If your organization is listed below, please review your listing to ensure it is current and send any changes to Mike. Thanks!

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