BLUEBIRD

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Deborah Freeman/ flickr.com

Contents

Cover photo: A very handsome male Lucy's Warbler, a cavity nester of the American Southwest. This image is courtesy of Jeremy Hayes who generously granted permission for its use to accompany the Lucy's Warbler article by the Tucson Audubon Society (the article starts on page 26). See more of Jeremy's beautiful photos at https://www.flickr.com/photos/jhayesvw/

Table of Contents photo: Northern Pygmy-Owl by Deborah Freeman (https://flickr.com/photos/island_deborah/)

BLUEBIRD

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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

Summer Message to Our Affiliate Organizations

Mike DeBruhl

The nesting season is well underway, and hopefully, we will not need to wear our masks much longer. Regardless, our feathered friends have certainly continued with their daily hectic lives as we interact with them on the trails even more … just "normal" for them, eh?

One of our goals for the 2021 season (and beyond) continues to be our emphasis on communication with and among Affiliates. I am encouraged to see (and receive) newsletters, data reports, questions, and comments from some of you. It is very gratifying to learn of your Affiliate and individual member activates, educational events, and general information. **PLEASE KEEP IT COMING!** And as you read this issue of *Bluebird*, let me further enjoin you to **share those experiences throughout NABS** by submitting articles to our editor for publication. I know there are wonderful things happening across our 61 Affiliates that will be of interest to your fellow Affiliates and their members.

While each of our organizations are NABS Affiliate Members, **I encourage you to invite your members to become individual members of NABS**. Our membership sustains us and our programs and we need that avenue to generate continued interest and gather new ideas. Please publicize your affiliation with NABS and mention us in your publications / communications.

Many thanks again to those who provided comments pertaining to our data gathering and standardization project. Special thanks for sharing your insights and any frustrations about current collection and reporting. We will continue our efforts to standardize and simplify data collection / reporting across NABS, with special emphasis on training monitors. This initiative is not meant to replace any time-honored process you may have, but only to enhance / develop ways to further streamline data collection and reporting.

More info to follow on this and other happenings—keep an eye on your Affiliate inbox!! Please continue to stay safe and well … and, as always, keep up the good work … **See you on the trails!!**

- Mike

Mike DeBruhl, 1st Vice President for Affiliate Relations

From the President
Bernie Daniel

Greetings to all. As I write "official" summer is still over a month away, but as usual, we are wondering what the weather will be like. That is what bluebirders do. Will the summer temperatures be unseasonably cool, with even cooler nights, like our spring has been? We all have a certain kind of summer weather that we prefer. Farmers want moderate temperatures and timely rain, but at least some urban people seem not to mind an entire summer of hot-dry weather. Those of us reading this journal often think of summer in terms of what is good for our bluebirds and our trail. But understanding how to represent a summer season in terms of what is best for bluebirds is not necessarily simple. There are several elements of the weather that must come together to make a summer an exceptional one for raising bluebirds. Certainly, the summer temperatures are one of those important factors affecting birds trying to hatch eggs and feed nestlings in a nestbox. I thought that topic might bear some consideration.

So, for starters what can we expect, temperature-wise, this summer? Well, if I knew for sure I probably would be in big demand and would not have time to write this column! This year it has been suggested that we are at a crossroads for summer weather in North America. Our summer will start with drought in large parts of the West as well as a fading La Niña period. The term, La Niña season, is used whenever the westerly winds in the South Pacific Ocean are stronger than normal. These winds blow warm water away from the west coast of South America farther west toward Asia. This action allows the colder subsurface waters to rise off the coast of South America which, in turn, cools the southern Pacific. It is those colder ocean temperatures that influence weather patterns all over the world! For example, these colder waters ramp up tropical cyclone activity leading to the hurricanes and tropical storms that form in the Caribbean Ocean and of course these sometimes end up making landfall on the US Southeast! Seems complicated, eh?

But if we do not live on the Atlantic or Gulf Coasts, why is this important to "our" bluebirds? The answer is that some meteorologists have proposed that there is also a link between the end of La Niña and the repeating patterns of warm and dry summer weather across North America. This school of thought predicts a significantly warmer and drier summer in the West, especially in the Northwest. Oddly enough for some reason predictions for the eastern half of the continent are more for average summer temperatures. Personally, I am a tad skeptical about this idea because if you look to recorded weather history, you find that only 4 of the last 15 North American summers which followed a La Niña year were exceptionally hot. Granted they were among the four hottest summers recorded but the other 11 summers following a La Niña were **not** so remarkably hot? So, even if that theory is correct, it seems that our odds for an extremely hot, dry summer are modest—at about 1 chance in 4?

So broad-scale predictions about how hot the summer will be are interesting—but are they useful? I am doubtful. I overheard someone grumble last week that predictions on the climate are no better than the Farmer's Almanac or looking at the "fur" on the caterpillars? Not sure I would go that far but I also think that once you get into the specifics you realize that many of climate change theories are indeed still unproven theories! But on a more practical note, this whole topic has made me wonder just what kind of measures of summer weather (specifically summer heat) are most important for estimating the effect of temperature on bluebird productivity? In the simplest sense we know that bluebirds seem to do best with moderate temperatures and precipitation because such conditions usually lead to a rich abundance of insects and high nestling survival.

Dwelling more on this question, we could ask what measures of temperature are most useful? What measures of heat/temperature should we use to "rank" a summer as good or bad for bluebirds?

Climate Central (CC), is a 501(c)(3) nonprofit organization (just like NABS) whose stated mission is to review studies and articles on climate and then issue "policy neutral analysis" on them so citizens can make informed decisions. Recently, CC released an analysis of a study from the NOAA Climate Prediction Center which showed that the "average" summer temperatures in the US have increased about two degrees over the last 50 years. This study notes that in the 1970s period the average US summer temperatures were 71°F while today they are about 73°F.

These days we are bombarded almost daily by reports on "rising average temperatures" like this. But what does the fact that the "average daily temperature" has risen 2°F mean for bluebirding? I think knowing that the **average** daily summer temperature is now 73°F in contrast to 71°F is probably **not** particularly useful information for bluebirders. I say this because just giving an **average** daily temperature means that

the analysis has "spread" the increased heat out over the entire summer season. What do I mean? Well, we know that here in the northern hemisphere our summer season runs from the June Solstice to the September Equinox. The exact days vary a little but usually summer starts around June 20th and ends around September 22nd—i.e., a period of about 94 days (93½ actually!).

So, in my opinion, knowing the "average temperature" is not highly informative because you could get there many ways? One way to arrive at the warmer 73°F **average** would be a summer with 94 consecutive days of 73°F temperatures. How great would that be? But another way to get a 73°F average would be a summer with 47 days of 55°F temperatures and then 47 days of 91°F—both scenarios would produce the same 73°F average temperature! Certainly, bluebirds (or humans) would not see those two summer temperature patterns as being equally comfortable! But both do lead to a 73°F average! And, of course, those are only two examples—there would be thousands of possible ways to arrive at the 73°F "average temperature" right? So, knowing the **average** daily summer temperature has increased slightly over the last half century is not information we can readily interpret for its effects on bluebirds?

I suggest that a more useful measure for presentation of summer temperatures and for ranking summers vis-à-vis their effects on bluebirds might be to ask: "How many days over 90°F were there?" This is information we might be more readily able to use. We know that extremely hot days present problems and effect the survival of bluebirds and their nestlings. For example, on days over 90°F, the even higher temperatures inside a nestbox can affect the viability of the eggs or the survival of nestlings. So, instead of knowing how the average summer temperatures are changing, I think bluebirders could better use information on how the **average number of hot days** each summer is changing?

Unfortunately, the number of hot days (for example days over 90°F) is seldom reported—except perhaps for places like Phoenix, Arizona. So, we might well

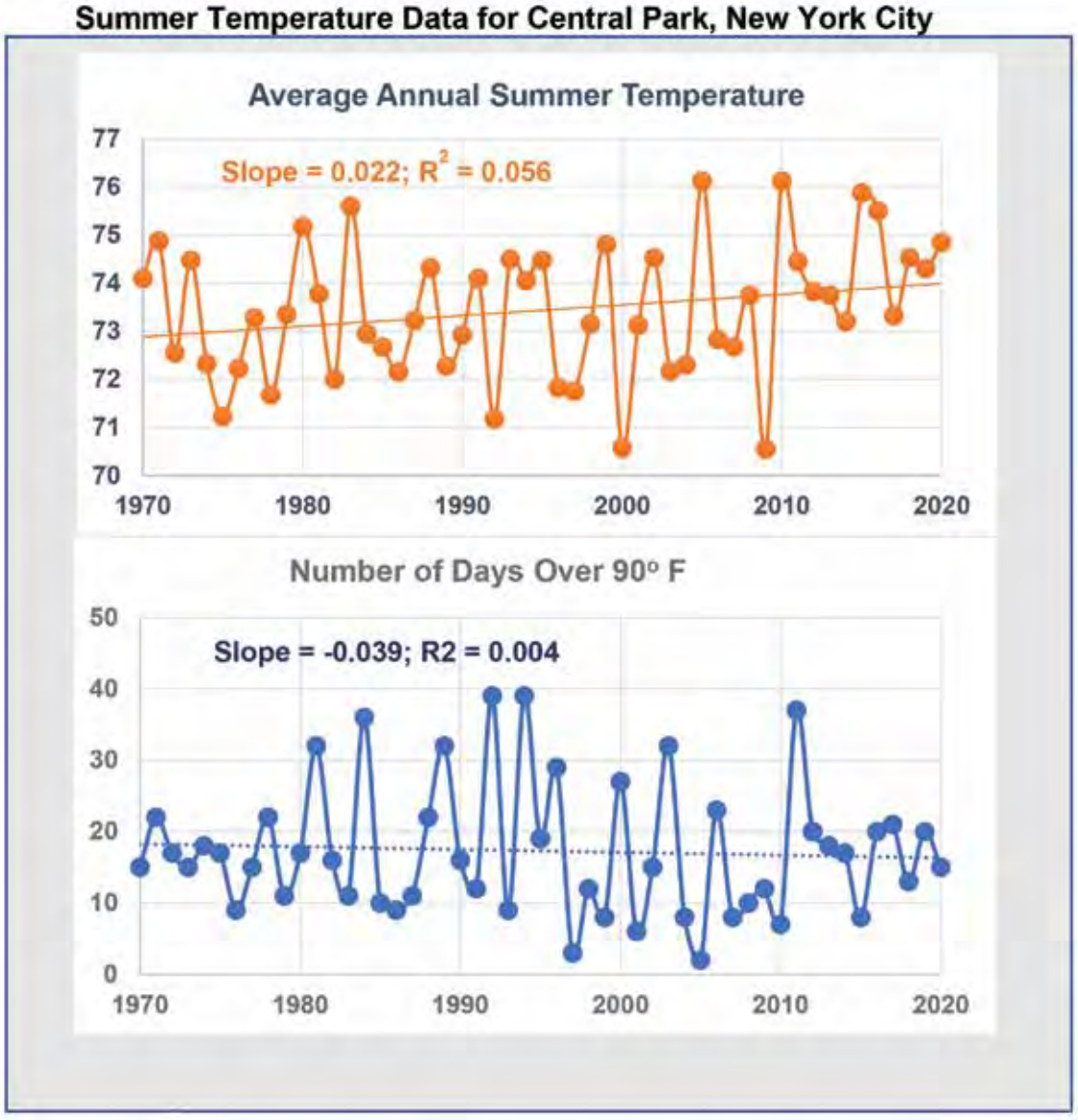


Figure 1. The upper panel shows the average daily summer temperature for Central Park, NYC (that is, the average over the June to September period for the 50 years between 1970 and 2020) and the lower panel plots the number of days over 90°F during each summer for the same time period. The dotted lines are the computed least squares trend lines. (For your information, the slope and regression coefficient are shown for each plot.)

ask, what is the relationship between the average daily temperature and the average number of hot days in a summer? Clearly, they could be related but the particulars of that relationship might vary, perhaps significantly? To examine that relationship, one needs the two sets of data for each location you want to examine. As luck would have it, I was able to easily find data for both average daily summer temperatures and the number of days over 90°F for Central Park in New York City! This is because Central Park has had a meteorological station recording weather data since 1869—just after the Civil War!

As a result, I was able to download the data needed to generate the chart shown above. This chart shows how both the average daily summer temperature and the number of summer days over 90°F varied in Central Park over that same half century mentioned earlier in the NOAA study i.e., 1970 to 2020. Of course, Central Park is only one location, and the results could be different in other places, but I think that it is still worth looking at?

Looking at the upper panel of the chart (orange dots) we can see that Central Park, like the rest of the US, experienced a small increase in the average summer daily temperatures over the period. Using the trend line for Central Park we can see a trend for a slight increase of approximately one degree (i.e., about 73°F to 74°F) for average summer temperatures.

But looking at the lower panel (blue dots) of the chart we see that the average number of hot summer days (i.e., those that were over 90°F) has **decreased**, albeit only slightly. So based on the trend line in the 1970s Central Park was experiencing an average of 19 summer days over 90 but in the 2020 period that had dropped to about 16 days. So, in fact, even though there has been a slight increase in average temperature the summer weather may have slightly **improved** for any bluebirds using nestboxes located in Central Park, NYC? Granted these changes are small, possibly insignificant. But at the same time, the mere fact that we have experienced small increases in average summer temperatures may not mean that it has had a significant impact on our bluebirding success?

To reiterate, this little example needs to be seen in perspective. First, it is just one example, and it is based on an exceedingly small part of North America—Central Park. However, in the last few years I have seen similar assessments made on larger areas of the US and many of these areas seemed to show similar patterns. That is while the average summer temperatures have been increasing slightly, the number of "hot" days (usually defined as those over 90°F or over 100°F) have decreased. That is a pattern like in the chart shown here for Central Park.

To be sure, as noted earlier, in some areas in North America, like central Arizona, the number of hot days is increasing. But I suppose my main point here is that the entire continent does not seem to be following that same pattern? Data on the numbers of hot days in most areas are readily available but they are not often presented in discussions of summer temperature trends. In my opinion, that is unfortunate because it could be informative when trying to assess the impacts of changing temperatures on bluebirds and other wildlife as well.

In any case, the only "take-home lesson" I wish to convey with this essay is that while it might be true that the average daily summer temperatures have increased over the last half century this **does not necessarily mean** that it has been a bad thing for bluebirds. In fact, a case in point, we might recall the article I wrote in the 2020 Spring issue of this journal. That article summarized some results of the "Audubon Survival by Degrees" climate model which was developed to project the impacts of increasing average temperatures on the amount of habitat of various bird species. For the Eastern Bluebird (EABL), the Audubon model predicts that an average increase of 2.7–5.4°F (1.5–3.0°C) will be beneficial. This is because EABL are projected to gain more suitable habitat (e.g., in terms of total area) in the northern part of the continent than they would lose in the southern regions.

Finally, we should mention that a change in average daily summer temperature may have other implications and affect other aspects of the ecological system that cavity-nesting species may depend on, e.g., insect supplies. But perhaps a corollary to that would be that because some aspect of the temperature (or other aspects of the climate) change (either increase or decrease) does not mean *a priori* that the impact will be negative (or positive) on our ability to raise bluebirds!

Finally, while I have been to New York City many times in my life it happens that I have never more than driven past Central Park! Does anyone know if there are individuals with a bluebird trails in Central Park? If so, it might be interesting to hear from them now!

– Bernie

From the Managing Editor

Scott W. Gillihan

Many thanks to the NABS members who contacted us since the Spring issue (see the lengthy "Letters to *Bluebird*" segment starting on the next page). President Bernie Daniel had called for more responses to *Bluebird* articles and a more vigorous exchange of ideas among members, and we are off to a great start. Keep those cards and letters (and emails) comin'!

For suggesting or helping me acquire materials for this issue, I thank Valerie Kenyon Gaffney (Virginia Bluebird Society), Martha Moran (New York State Bluebird Society), Bernnie Visalli (New Jersey Bluebird Society), 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.

Letters to *Bluebird*

To *Bluebird*:
The Spring 2021 issue of *Bluebird* seemed exceptional, with plenty of interesting reading and very colorful photography. I would like to applaud NABS on their position regarding the problem of free-ranging domestic and feral cats. It is indeed an important issue that needs to be taken seriously.

This past winter I was surprised to find that three of my five bluebird nestboxes contained evidence of roosting bluebirds; most years I find little, if any, signs of roosting. Our weather here did not seem much colder than other winters. Unfortunately, one box also contained a dead female bluebird.

As I type this (April 14), I was pleased to open one of my boxes last evening to find the first bluebird egg of the spring. This is eight days later than last year. Hope everyone else has a successful season with their blue-feathered friends!

Seth Hummel
Middletown, Indiana

Dear *Bluebird*:
I thoroughly enjoyed Luca Antinozzi's article in the Spring issue of *Bluebird*. His comments about confronting the suburban landscape and all its challenges was very perceptive. The few remaining strips of "natural" areas he found are most important in maintaining ecological diversity as echoed in Douglas Tallamy's books. As long as these areas are maintained as native and kept free of invasive plant species, they are the key to fostering a balanced ecosystem, producing insects and their larvae to feed our declining bird populations.

Luca's writing showed wisdom beyond his years. His insightful understanding of the issues provide us with much hope because with his generation rests the future of the planet.

Ray Pinter
West Bend, Wisconsin

Hello *Bluebird*!
A few years ago, a good friend had done research on the declining numbers of Eastern Bluebirds. He asked me to create a bluebird trail, in order to help reestablish these amazing and beautiful creatures in Western North Carolina.

We built 30 of the bluebird preferred houses. We then placed the houses all around a 250 acre farm. The farm is located in the Foothills of Western North Carolina, and is abundant with woodlands, pastures and fields, and lots of streams, ponds, and a large lake. Another thing in annoying abundance were the flying insects!

Last year, I was able to obtain a closely estimated count of fledglings from 18 of the 23 houses we put up. It was well over 75, and some produced three broods! We were thrilled! We plan to erect the remaining seven houses once a couple of construction projects are concluded. I have thoroughly enjoyed learning all I have about the Eastern Bluebirds, and intend on learning more as I follow "our" birds in the years to come.

An Eastern Bluebird enthusiast,
Gary Byas
Old Fort, North Carolina

Dear *Bluebird*:
I was extremely pleased to see the book review on Doug Tallamy's book *Nature's Best Hope* in the Spring 2021 journal. We need to and we must remind our readers that in addition to the appropriate style of nestbox "our" birds need food to feed themselves and their babies, i.e., caterpillars and other insects… available where we have those boxes! Please keep spreading the word! Thank you.

Fay Tyler
Louisa, Virginia

To *Bluebird*:
Our family was ushered into the world of feral cats when a wild long-haired feline decided our garage was a perfect spot to deliver her four kittens. They were an adorable lot—as most kittens are. After some puzzling over what to do next we decided to adopt them and have vowed to do right by them ever since. We were able to catch the three female kittens and had them fixed at a nearby spay and neuter clinic. The male, who was more skittish and thus untrappable (despite our mackerel bait), has since disappeared.

The mother cat hung about for a few months and seeing they were in good hands, has now gone off to new adventures in the wild.

With the weather turning colder (Rouses Point is on the Canadian border) we decided that our adopted family needed protection and so built a wooden enclosure that includes a double entrance/exit door. Later we invested in a heating pad—a low-wattage setup that is activated by the weight of a cat. Early learning experiences showed how much skunks and raccoons like the cat food we had on the menu. This led to taking the food inside before nightfall.

Over the course of time—it is now nine years hence—we have had numerous feline guests come to our garage to partake of gourmet meals. Some of these were neighbor cats who preferred our brand of cat food. One cat visitor who we named Scrappy was a real hisser who had seen some hard times and let his displeasure be loudly known to all.

Scrappy settled into our place and was a permanent guest for about two years, never leaving our garage and yard area. After a couple months of residence, he watched as I set and tested the trap in our garage with the mackerel bait. Five minutes after I went into the house he was caught and hungrily devouring the fish. I took him to a mobile veterinary clinic where he was treated for ear mites and fleas and had some bad teeth removed. After being neutered and having his rabies injection he was more docile and did less hissing. This was a big win for him and any cat or human in his vicinity.

There is continued controversy over how best to address the over population of homeless cats. Trap-Neuter-Release programs throughout the US, like those in San Francisco (bay area), San Jose (large municipal animal shelter), Atlantic City (boardwalk area), Chicago (Cook County), and Orange County Florida, have been successful in reducing or humanely stabilizing the number of free-roaming cats, while decreasing the numbers of cats killed by animal control. Research performed in London showed that spaying and neutering of cats had no negative effects on the social structure of the colony, or on individual cats. Cats spent more time in groups, showed fewer aggressive behaviors toward one another, and fought less.

Removal from the landscape and subsequent euthanasia of cats is not the remedy to the overpopulation problem. This dip in population will be but temporary as new cats will move in from neighboring areas—using the same resources of shelter, food, and water that sustained the original population. This "Vacuum Effect" occurs across many species, including foxes, mice, coyotes, voles, possums, and badgers.

Our home now has a new visitor—a skinny, scared, and scruffy black cat that arrived in our backyard a few weeks ago. Too afraid to approach other cats, he is living under our deck and we are feeding him and wishing him well. Soon we will attempt to trap him and see to his neutering and medical needs. By doing this it is our hope and desire that he will thrive physically and will interact more with the other cats we are fostering. Doing a kindness to a fellow creature is not a waste of time and resources.

Jim Engelbrecht
Rouses Point, New York

Letter to the editor:
My name is Bob Franz, former President of the Southern California Bluebird Club (SCBC). We are reviewing Western Bluebird (WEBL) nestbox plans in order to determine that our WEBL plans conform to best standards as dictated by NABS. For references I used the NABS Factsheet and NABS 2020 Bluebird Nestbox plans. I have some questions:

- Entry Access – The NABS Factsheet offers, "It is imperative that all nestboxes can be opened—side, front, or roof opening is a matter of personal preference." The NABS 2020 Bluebird Nestbox plans show a side-opener.
- Can I conclude that a side-opener is preferred over a front-opener? If so, can you cite the reasons why the side opening is preferred?
- Preference between entry hole vs slot?
- Roof Overhang – The NABS Factsheet plans recommends 2″ and that 3″ to 5″ is better. Although the NABS 2020 plans show that the overhang will be 3″—despite the note on page 3 that states, "The roof will overhang the front 6″–6½"..."—is this a misprint? While doing this research, someone in the SCBC felt that the longer the overhang is the less chance that adults/nestlings inside the nestbox can see a hawk overhead before they exit. I guess this makes sense—do you remember the "view hawk" aspect being discussed at NABS in deciding amount of roof overhang?
- Bottom Recess – From the NABS 2020 Plans: "It is best to recess the bottom 3/4". Is the purpose

of this recess to enable a better grip on the side panel when gaining access?
- Corner drainage holes in floor – We have never included them and never have had any wet nests due to water penetration. Are these really necessary, if the nestbox is constructed correctly—with no cracks or open seams?

Thanks for your help,
Bob Franz

NABS Reply

Hi Bob,
I will take a quick stab at your questions as you are in the progress of building and also forward your question on to the NABS Nestbox Committee for a more definitive assessment.

I would say overall that there are not necessarily any exact (or "correct") answers to all of your questions. NABS offers guidelines, not what I would call mandates for example. Likewise, North America is a big continent and the landscape/habitat/weather/predators/problems on the trail vary greatly—so some regions will interpret our guidelines differently. Likewise, I find that "bluebirding philosophy" has a strong regional flavor or variation to it.

I would say the picture does not indicate NABS preference. Rather, I would say go with the recommendation that the opened side is a matter of "personal preference" as we state (personally, I like side-opening boxes myself).

No, again on preference between hole and slot—either opening used properly should work fine IMHO. Many experienced bluebirders believe that the slot box discourages House Sparrows. Personally, I cannot confirm that but the person (as far as I know) who first came up with the idea—the late Wayne Davis (Professor of Biological Sciences, University of Kentucky)—was a brilliant man and a keen bluebird researcher.

The hole size "debate" has gone on for a long time—ever since Larry Zeleny and Art Aylesworth had the long-running discussion many years ago about 1½" hole versus 1⁹⁄₁₆" holes for the two western species.

The Mountain Bluebird is a slight bit larger than the other two species. From what I read and seen reported the WEBL and EABL (Eastern Bluebird) are almost exactly the same size? In fact, all three species CAN use a 1½" hole but Aylesworth's argument was that the western birds PREFERRED the slightly larger hole. IMHO, that is probably true, and the slightly larger hole should probably be used everywhere? I bet EABL "prefer" it too—we should probably interview a bluebird some time? That said the 1½" hole will work everywhere too. In fact, years ago Western Bluebirds did use the smaller hole.

Looking quickly at the plans it appears the description of the overhang is misrepresented but should still be on the order of 4½ inches? Looks like the one set of edits we made to the plans in late 2019 did not get fully incorporated. Things were kind of chaotic back then as we all know. NABS believes that the plans make a nice box if you have a table saw to cut it out. These plans call for a 10" × 12" board for the roof. Personally, when I build them, I like to make the roof 12" × 12". Since 1 × 12 stock cedar is expensive and/or hard to find sometimes I just use two pieces of 1" × 6" × 12" board and glue them together with Titebond III (blue cap)—don't use the original Titebond I (red cap). Titebond III is waterproof and if, after gluing the joint, you paint the roof it will last for many years outdoors. Another thing that I note is that the drawing (my rather crude attempt at showing a 3D representation) is misleading. I show the roof as being centered from to back. In the "real world" I build them with perhaps a 1" overhang on the back and up to 5½" overhang on the front.

Also, since we are on the topic, I always like to use some kind of quality, 30-year silicone window sealant on all the joints—I buy the paintable kind. Then I cover the entire box—save the hole side (in this case the front)—with two generous coats of a quality white exterior latex paint. A box like that should last a long time—especially if you can manage a fresh coat of paint every 5–6 years? Also, the white color helps keep the box cool in the summer sun. Alternatively, you can glue all the joints with Titebond III before you set the deck screws (or nails). I like to set the screws while the glue is still not dry (within 5-10 minutes) so you do not have the glue and the screws "fighting" with each other.

But whatever on the plans, for sure I think the longer overhang is best. I don't think that I would worry much about the hawk question—that is a rare event and who is to say that the shorter overhang would actually provide advanced warning or make a difference? Isn't that mostly speculation? For sure the longer overhang has many other advantages though.

I believe that the bottom recess is mostly to prevent water wick-up. I feel our guideline may show a little

bit of overkill in that regard. In my opinion, ¼" recess is perfectly adequate? But we'll see what the Nestbox Committee says on that.

Again, this is a hard question to give a one-size-fits-all answer to. If the box takes in water via the hole (because there is not enough roof overhang), or via the vent holes (again because of inadequate side overhang or where they are located), or if the roof is cracked—then yes for sure you want to have drain holes. If the nestbox is tight and well-designed and it keeps rainwater out then I'd say no, you don't need to bother with them. Personally I like to have the drain holes on the bottom of the box in any case because I think they help facilitate air exchange and thus ventilation in the nestbox and help cool it.

I hope these comments are helpful!

Bernie Daniel
President, NABS

Dear NABS,
In the Spring 2021 edition, there was mention on page 2 of a new book coming out geared towards 9 to 12 year olds. Is this available yet? I would love a hard copy. I started a nestbox trail and after-school bird club on the elementary school campus where I teach a few years back, and in the last two years we have had active Western Bluebird nests, so exciting!! I'd love to find more educational materials for the older students to go deeper with their learning and involvement in helping to monitor the boxes with me.

Many thanks for all you are doing to support North American Bluebirds!!

Sincerely,
Joan Loney

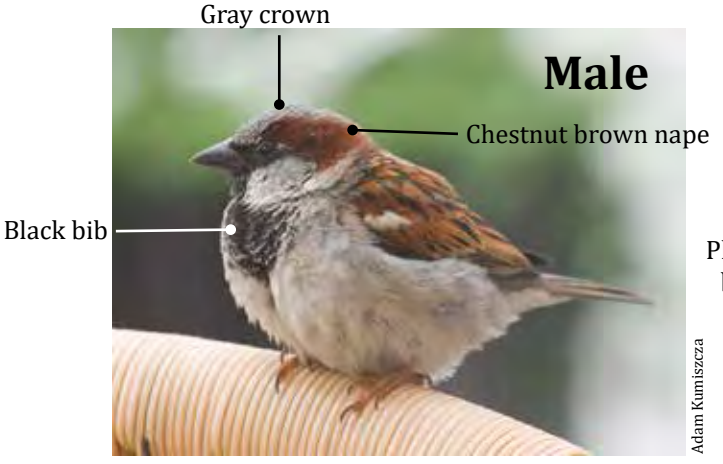
NABS Reply

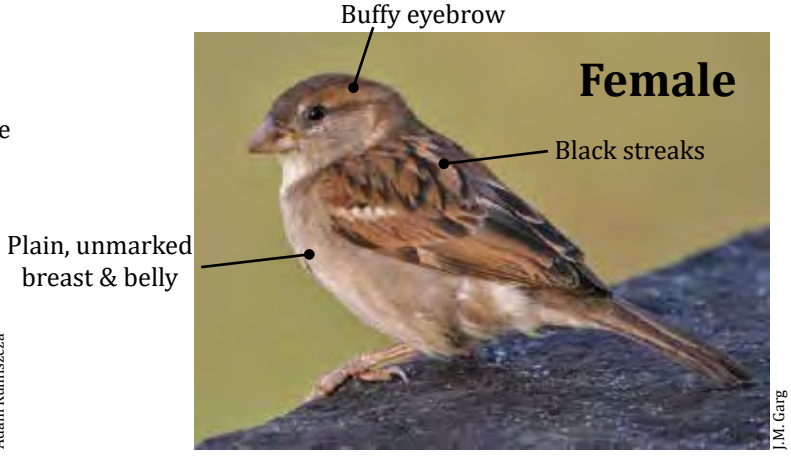
Hi Joan,
Thanks for contacting NABS. We are excited about our upcoming new book! As you note, it is being designed for young children and teenagers to encourage them to learn about and become involved with all three species of bluebirds. This new publication is currently undergoing technical review. We hope to have it online by the end of 2021. We are thinking that the work will exist in electronic format for a few years (before printing hard copies) to allow users to comment and/or suggest corrections/additions before printing hard copies. We figure input from other bluebirders, teachers, and parents could help us make the book even more useful.

NABS

Sparrows 101

Recently, in an online discussion, a novice bluebirder expressed concern about the "sparrows" on her property and the harm they might cause to her bluebirds. However, it was clear from her comments that she was not referring to House Sparrows, but to one of the other 35 or so bird species in North America that have "sparrow" as part of their name. Just to clarify, the species that evicts bluebirds from nestboxes, destroys bluebird eggs, and injures or kills bluebird nestlings or adults is the **House Sparrow**. This is an invasive species from the Old World that is the bane of bluebirders. The pictures below should help you identify this pest (these images are from the NABS fact sheet on House Sparrow Control, available on our website).





NABS Notices

Notice to NABS Members of the Annual Meeting

Tuesday, September 21, 2021 at 8:00 pm Eastern Daylight Saving Time

In compliance with Article XIX of the NABS Bylaws (Adopted September 4, 2018) members are hereby notified of the Board's intention to hold the NABS Annual Meeting. The Annual Meeting will be held via teleconference call (this notice is also on the NABS website: www.nabluebirdsociety.org).

The NABS Board invites all current members to participate in the meeting via teleconference call on Tuesday, September 21, 2021 at 8:00 pm Eastern Standard Daylight Saving time.

The meeting will be called to order by NABS President Bernie Daniel and will proceed to the first order of business which will be the announcement of the results of the annual election and then certification of those results by voice vote of the Board members on the call. Though unlikely to occur, a "roll call" vote will be used if necessary. (Note the results of the annual election are determined from a tally of those ballots (inserted in this issue of ***Bluebird***) which have been returned to NABS signed and postmarked before the close of the voting period August 15, 2021.)

The second item of business will be a presentation of the NABS Financial Statement by NABS Treasurer Jim Engelbrecht. The financial statement is also published in this issue of ***Bluebird*** and on the NABS website.

If any questions have been submitted to the Board before the meeting date Bernie will try to answer them. The Annual Meeting will then be adjourned.

How do I join in the Annual Meeting?

To join the Annual Meeting teleconference call dial in to **712-770-4124**—this will start a recording which will prompt you to enter the conference call code which is **525322#** (you must include the pound key) and you will be logged into the call. Because there may be many members calling in, it is suggested you begin to log in at around 7:50 pm (EST daylight saving time). The call will start at 8:00 pm sharp but you can still call in after the meeting has started as there is no lock out.

Members may submit questions via mail, email, or telephone (text/talk) by **September 11, 2021** to Bernie (president@nabluebirdsociety.org) 513-266-4381, or to Kathy (NABS Secretary) (secretary@nabluebirdsociety.org), or to any other NABS Board member.

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.

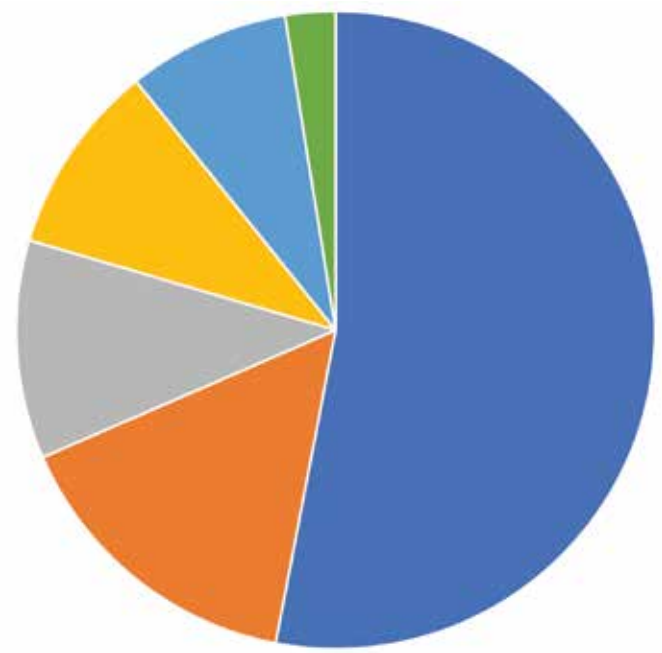
Thank you for supporting the conservation of bluebirds and other native cavity nesters!

NABS Finances

North American Bluebird Society Statement of Financial Position as of April 30, 2021

ASSETS	
General Operating	
Union Savings Bank	$51,847
PayPal	$2,595
Community Bank	$17,838
Fidelity Investments	$68,403
Total Operations	$140,683
Zeleny	
Union Savings Bank	$22,688
Fidelity Investments	$181,541
Total Zeleny	$204,229
TOTAL ASSETS	**$344,912**
LIABILITIES & EQUITY	
Permanently Restricted Assets	$100,000
Temporarily Restricted Assets	$104,229
Unrestricted Net Assets	$125,210
Net Income	$15,473
TOTAL LIABILITIES & EQUITY	**$344,912**

2020 NABS Spending Total $58,430



Message from the Treasurer

NABS endeavors to make our financial position readily available to our membership and the general public. We do this by publishing our year-end 990 reports on our website and providing the above update in our Summer *Bluebird* journal. The Financial Statements shown above will be discussed at our annual meeting on Tuesday, **September 21, 2021 at 8:00 pm Eastern Daylight Saving Time**.

Notice to Members: NABS Director's Election 2021

Per our by-laws NABS holds a yearly election of Board members. Our election runs from June 15th to August 15th and ballots can be submitted during that time.

Who can vote? Members in good standing as of May 15, 2021 shall be eligible to vote in the Annual Election (NABS by-laws Article XVIII.4).

How to vote? There are the two self-addressed (not franked) postcards inserted in your Summer (this) copy of *Bluebird*. It you have an individual membership you are entitled to one vote (mail in one ballot). If you have a "family" membership you are allowed to mail in both ballots. **To be counted your ballot must be signed and dated.**

The Director nominations closed on May 1, 2021 and the following slate was submitted by the Nominations Chair and was approved by the Board of Directors. To comply with NABS by-laws, the following slate was posted on the NABS website (by June 15, 2021) and is printed in the Summer 2021 issue of Bluebird.

Short "bluebird" biographies of the eight candidates (alphabetical order) are included below:

Class of 2024 running for a 3-year term:

Jane Brockway lives with her husband in Mineral County located on the western border of Montana. She started bluebirding in 1998 after purchasing a ranch complete with ponderosa pine and fine Western Bluebird habitat. Jane has continued her bluebird journey and she is a now master bander with Mountain Bluebird Trails (MBT), a NABS Affiliate. She also weekly monitors an 80-nestbox trail that is spread over 20 miles. Jane also serves as the editor of the MBT's newsletter and has been a Director of the organization for over 10 years; she is also a NABS Director. Jane is an avid bluebird photographer.

Bernie Daniel is a retired environmental research scientist who lives in Symmes Township in southwestern Ohio. Bernie is a life member and has been working in one capacity or another with NABS since about 2001. He has served NABS as a member of the Board, Editor, and President. Bernie is a life member and past president of the Ohio Bluebird Society. He has been bluebirding (off and on!) since 1953 and currently is looking for a new location to set up a trail. In a career of 40 years he published some 140 peer-reviewed research papers in environmental science and has participated in the North American Breeding Bird Survey since 1999. He enjoys the study of bird song and "birding by ear."

Cathy Hindman lives in Manassas, Virginia, monitoring three trails and serving as co-coordinator of trails for Prince William County for the Virginia Bluebird Society. She enjoyed identifying backyard birds with a field guide in childhood and was introduced to bluebird conservation in Bermuda when her husband was stationed there with the US Navy from 1987 to 1990. Cathy has monitored nest boxes for over 20 years and served as president of the Virginia Bluebird Society for four years. A lifelong learner, she never tires of opening a nestbox and discovering a new life.

Allen Jackson is a resident of the state of New Jersey and is retired from the US Fish and Wildlife Service. He is a co-founder and current president of the New Jersey Bluebird Society, a NABS Affiliate. Allen has erected over 600 bluebird boxes on some 50 bluebird trails and he monitors his own 70-box trail. He has authored numerous articles on proper trail management for martins and bluebirds, with a special focus on House Sparrow control. He is a frequent speaker on nestbox trail management and has received numerous awards including 2002 Purple Martin Landlord of the Year. Allen is a master bander for Purple Martins and Eastern Bluebirds and is a current NABS Director.

John Schuster lives with his wife, Katarina, at their vineyard property in Cotati, California. A former employee of the California Department of Forestry, Ecology Corps, he served as a firefighter for both California and the US Forest Service. John also works on many and varied conservation projects throughout the state of California. In 2000, he established Wild Wings Company after personally witnessing the success that beneficial cavity-nesting birds like Barn Owls had on reducing pestilence in his, and other, vineyard operations in his area. He is a Director and lifetime member of NABS, serving on the Education and the Nestbox Committees.

Bet Zimmerman Smith worked in environmental protection for three decades. She now volunteers for several open space and conservation organizations. She maintains an educational website about small cavity-nester conservation at www.Sialis.org. Bet is also a regular contributor of articles to the NABS Journal, *Bluebird*, is a NABS Director, and serves on the NABS Grants, Education, Nestbox, and Website Committees. She and her husband Patrick manage about 100 nestboxes in northeastern Connecticut.

Class of 2025 running for a 2-year term:

Mary Mason is a retired Graduate Gemologist whose specialty was gem and mineral identification. She is a wife and mother and enjoys traveling, gardening, and being with her long-time husband John and their little chihuahua, named Susie Q. She makes her home in Linden, Michigan, and has been involved with Eastern Bluebirds and Tree Swallows for close to 30 years. She is a County Coordinator for the Michigan Bluebird Society and manages their Facebook page. Mary has trained monitors at Nature Centers, helped set up and renovate bluebird trails, and gives bluebird presentations and courses called Bluebirds 101. Her bluebird mentors include Maynard Sumner, Kurt Hagemeister, and Bet Zimmerman Smith.

Class of 2026 running for a 1-year term:

Ralph Tanner was born and raised in Georgia and, aside from 2 years living in Costa Rica and Colombia, that state is still home. He is a professor at Savannah College of Art and Design in Atlanta where he teaches "English as a Second Language." Ralph has been involved with cavity-nesting birds most of his life, starting at the age of 13. These days he monitors nearly 200 nestboxes for a variety of native birds including bluebirds, Purple Martins, Wood Ducks, Prothonotary Warblers, Great-crested Flycatchers, and Carolina Chickadees, among others. His trails are located on the family farm in central Georgia and near his home in Atlanta. Birds, especially native cavity-nesting ones, are his passion and he would like to expand his efforts toward cavity nesting birds as part of the NABS board.

NABS by-laws are found at:

www.nabluebirdsociety.org/Board/boardofdirectors.htm

Two Clutches of White Bluebird Eggs

Jim Widzinski

Last year (2020) we encountered something we have never seen in the many years we have been monitoring. In the same year and in the same nestbox, we found two different clutches of ALL white Eastern Bluebird eggs. And in both cases, all bluebirds successfully hatched and fledged.

Dad and daughter were monitoring the bluebird trail at the Loudoun Golf and Country Club, Purcellville, Virginia.

Taken by Ally Widzinski on April 21

Taken by Jim Widzinski on June 30

Notice of the 2022 NABS Grants Program

NABS, Inc. is a nonprofit education, conservation, and research organization and our mission is to promote the recovery of bluebirds and other native cavity nesting bird species of North America. Accordingly, NABS offers annual competitive grants in support of that mission.

The NABS By-Laws mandate: 1) a Zeleny Fund wherein monies are put aside and are to be used only for the support of grants and, 2) that the Society can award grants in three areas: research, conservation, and education. **A more comprehensive description of the NABS grants, including Requests for Proposals (RFP), and guidance for application is given on the NABS web site (http://www.nabluebirdsociety.org/grants/).** All three types of grants will be offered in 2022.

Larry Zeleny Research Grants

Research Grants are competitive and applications are invited via a Request for Proposals (RFP). RFPs are published on the NABS website as noted above. Research grants must be submitted by COB October 31, 2021 and awardees will be notified of their selection by February 1, 2022. Two kinds of research grants are recognized: 1) basic research grants, which examine some aspect of bluebird (or other native cavity-nesting species) biology, ecology, or life cycle (e.g., a study of nestbox parasites on chick health), or 2) applied research grants (e.g., finding more effective ways of defeating nestbox predators. The NABS Grants Committee evaluates the proposals and recommends those for funding.

John Kujanik Education Grants

Support for ideas pertaining to the development of books, fact sheets, pamphlets, DVDs or other video products, or other kinds of media that can serve the purpose of educating bluebirders and/or the public about bluebirds and bluebirding (as well as other native cavity-nesting species) can be submitted to NABS for consideration as an education grant. Education grants can be submitted at any time and will be evaluated by the NABS Education Committee, which will recommend funding to the Board of Directors (subject to funds available).

Art Aylesworth Conservation Grants

Proposals that deal with broader scale issues related to bluebird recovery might be candidates for a NABS conservation grant. For example, NABS recently participated in the funding of a three-year project to reintroduce Western Bluebirds to an area of North America where they had been extirpated. Such projects might be considered for a NABS conservation grant. Conservation grants can be submitted at any time and will be evaluated by an *ad hoc* committee, which will recommend funding to the Board of Directors (subject to funds available).

Bluebird Restoration Association of Wisconsin Celebrates 35th Anniversary

Steve Sample and Ryan Brady

Early efforts by Wisconsin Department of Natural Resources (DNR) staff and the continued work by the citizen scientists of the Bluebird Restoration Association of Wisconsin (BRAW) have helped restore and monitor populations of Eastern Bluebirds. Thanks to this collaborative work, Eastern Bluebirds' flash of color and *cheer cheerful charmer* song are common signs of spring in Wisconsin.

The number of nesting pairs of bluebirds in Wisconsin fell to only 600 pairs by the 1980s. The DNR and a group of Wisconsinites officially established BRAW in 1986, with volunteers taking over operational control of BRAW that same year. The group celebrates its 35th anniversary this year, with 750 members monitoring almost 7,000 nestboxes. BRAW members record about 20,000 bluebirds and 14,000 other cavity nesters annually, such as Tree Swallows, Black-capped Chickadees, and House Wrens, all fledging from their monitored nestboxes.

Over the last 35 years, BRAW members' observations, combined with research sponsored by the Cornell Lab of Ornithology and NABS, have improved the design and management of nestboxes. Wisconsin members have quickly adopted these advances and added some of their own. For example, we now have a better understanding of where to locate nestboxes to meet bluebirds' needs for insect-producing forage areas as well as safety for fledglings. Another important aspect of locating nestboxes is avoiding nonnative species and reducing their impact on nesting success. Nestbox entrance holes are now only 1.5 inches in diameter, which eliminates competition from European Starlings.

Bluebirds nest throughout Wisconsin but are most common in the southern two-thirds of the state.

If you happen to live in Wisconsin, BRAW is seeking more volunteers to help monitor existing boxes or start a new bluebird trail. To volunteer, learn more about bluebirds or how to help them in your backyard and beyond, visit the BRAW webpage at https://www.braw.org/.

Steve Sample is President of BRAW. Ryan Brady is a Wisconsin DNR Conservation Biologist.

NABS Grants Instructions 2022

Guidelines for the North American Bluebird Society (NABS) grants programs, including competitive research grants as well as education and conservation grants, are detailed below. Submission deadlines are given below and depend on the kind of grant being submitted. To apply please submit up to a ten (10) page (maximum) proposal package described below via email. Award notifications will also be via email to the address listed for the P.I. Questions about these instructions can be addressed to: bdaniel@cinci.rr.com.

1. Cover letter/email (this item need not be included in the 10-page proposal limit).
2. Grant proposal (arranged with the following sections):
  a. Project Title.
  b. Principal Investigator Information: Name, phone, email, mailing address, and affiliation (student applicants please include your faculty advisor or institute official).
  c. Introduction: Background, supporting information, and justification for the proposal.
  d. Project Description: The hypothesis or question(s) which the project addresses. It is especially important to explain how this project/research addresses the NABS mission.
  e. Research Protocol:
    i. The cavity-nesting bird species of interest.
    ii. Methods (e.g., study design, quality assurance, power, and methods of analysis).
    iii. The study location(s).
    iv. Permits (assurance that required permits at state or federal levels are in place).
    v. Timeline (start/finish for field/lab work, analysis, and final report dates anticipated).
    vi. Literature Cited.
    vii. Detailed budget: Include the amount requested from NABS and other sources.
3. Letters of Support (two for student applications, one for faculty applications).
4. Curriculum vitae (for the principal investigator).

IMPORTANT ADDITIONAL NOTES:
Research grant proposals must be submitted by COB October 31st (current year) and awards will be announced by early February of the next year. Education and conservation grants can be submitted at any time. All grants should be submitted via email to: bdaniel@cinci.rr.com

All items should ideally be combined into a single Adobe (.pdf) document. A single MS Word (.doc or .docx) document is acceptable (note that Word software will save as .pdf). The PI's last name should appear in a header at the top right corner of each page, and each page should be numbered bottom center.

Please note, applications are restricted to a maximum length of 10 pages, including letters of recommendation (which can be short and pithy!).

Projects to build, maintain, or upgrade a bluebird trail are not eligible for NABS research grants unless they are being established for research purposes. In addition, assurances must be given that any such trails constructed will be adopted by a trail monitor, taken down, or inactivated after the research project has been completed.

Grant recipients are expected to submit a report to NABS summarizing the project results within 90–120 days after the completion of the project.

Details about NABS's mission and other facts about our Society are given on our website: http://www.nabluebirdsociety.org/

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**

Snakes and Baffles

Ralph Tanner

Predator guards on nestbox poles are an essential part of being a successful bluebird—and any other native bird—host. Erecting a nestbox comes with the responsibility to protect it from predators. For most bird species, predation accounts for around 80% of nest failure (Mullin and Cooper 1998). Although there are several ground predators that can depredate bird nests, such as domestic cats, squirrels, rats, and weasels, the two most significant predators are raccoons and rat snakes.

Raccoons are one of the most frequent predators of bird nests, ranging throughout most of North America, through Central America to Panama. Therefore, from a geographical distribution perspective, raccoons are more widespread and are a potential predator in more locations.

Overall, the most significant predator of birds and their nests is snakes. Out of approximately 126 snake species in North America, north of the Mexican border (taxonomy changes, so this number fluctuates), 12 species in six genera (rat snakes, corn snakes, fox snakes, Great Plains rat snakes, racers, coach whips, common king snakes, prairie king snakes, milk snakes, gopher snakes, common garter snakes, and plains garter snakes) have been documented depredating bird nests, regardless of the nest location. Of those 12, three are frequent nest predators: rat snakes, corn snakes, and fox snakes (DeGregorio et al. 2014). Corn snakes and fox snakes have limited geographic ranges and frequently depredate bird nests within their respective ranges. Rat snakes have the widest distribution and most frequently depredate nestboxes and are, in many areas, the most significant predator of bird nests (Weatherhead et al. 2010). Current taxonomy recognizes four species (along with color variants) of rat snake, and they have wide distribution in North America.

Gray rat snake, *Pantherophis spiloides*, in PVC nestbox.

Eastern rat snake, *Pantherophis alleghaniensis*, climbing square metal pole. *Photo by Lauren-Zeller Grimes*

Rat snakes locate their prey both by smell and by sight. They, like all snakes, have a specialized vomeronasal organ, or Jacobson's organ, in the tissue just above the roof of their mouths that is extremely sensitive to scent molecules. Flicking their tongues, they pick up these molecules and transfer them to the Jacobson's organ. Rat snakes also locate their prey through sight, detecting visual cues. In studies, they moved their heads in the direction of bird flight, and they use sight to determine which tree/structure to climb to reach active bird nests (Mullin and Cooper 1998). Their prey can be as little as 5 feet off the ground in a bluebird nestbox to 30 or more feet up a tree in an open-cup bird nest or a cavity. Rat snakes will often locate and observe a bird nest during the day and then wait until night to raid the nest (DeGregorio et al. 2015). Once they find a food source, like a nestbox, they will often return to the same spot, even returning to empty nests that they previously depredated (Miller 2002). Rat snakes hunt both day and night and snake predation increases as the nesting cycle progresses, with the highest rate occurring in the last few days of the nestling period, due to greater activity at the nest site attracting their attention (Stake et al. 2005).

Rat snakes are expert climbers, employing their specialized physiology in their search for prey. If a surface is rough, their belly scales "grab" the surface, holding themselves in place as they climb forward. They use any nubs or projections to press against in a type of movement called lateral undulation. This is

how they appear to climb nearly straight up a tree or brick siding on a house or wall.

To climb small-diameter poles, they coil around it and slowly constrict themselves upward while maintaining pressure on the pole to keep from sliding down, a movement style called concertina locomotion (Jayne 1988). This is how particularly large rat snakes can often bypass a baffle that is too short—even when it is located higher up the pole—by constricting the pole below to reach up and around the baffle to continue their ascent.

What type of guards can one use to eliminate or minimize rat snake predation on nestboxes? According to a 2017 study by Cornell Lab of Ornithology, the two most effective predator guards are conical baffles and cylinder baffles (Bailey and Bonter 2017).

Cone baffles are easily made from metal sheeting/aluminum with a diameter of at least 30 inches and should be stationary. However, a large rat snake could potentially bypass the cone by reaching around it, especially if there are seams and/or screws that a snake could "grab" onto.

Cylinder baffles are the most common and most effective predator guard for both rat snakes and raccoons. The "Kingston baffle," named after its creator, Ron Kingston, has been a staple of nestbox protection for decades. The traditional design is a 2-foot section of metal stove or duct pipe that is 8 inches in diameter and hung below the nestbox. Any length of pipe can be used, from 2 to 5 feet. A pipe baffle that is 2 feet long and 10 inches in diameter will stop most rat snakes. The top of the guard can be pipe cap, a metal can, or ¼-inch hardware cloth. Larger rat snakes can often bypass an 8-inch, 2-foot baffle, so a 4–5 foot section of pipe is best in areas with high concentrations of rat snakes. Six-inch diameter pipe that is 4–5 feet in length is also effective.

For years, many Purple Martin landlords have used 8 inch diameter duct pipe in 5-foot sections at the base of their poles, wrapped all the way around. This provides a slick surface that is sufficient to stop even the largest of rat snakes (Rogillio 1996).

Six-inch diameter PVC in 4–5 foot sections can be used instead of metal (Jackson 2020). Another option is to slide the PVC over the pole, tamped into the ground an inch or two, with the open top of the PVC capped or covered. The slick PVC prevents snakes from climbing.

Which baffle is best? It depends on your region and pole. If you are located outside the range of rat snakes, a baffle of at least 8–10 inches by 24 inches in length will usually be sufficient, as raccoons will likely be your main climbing predator. In the Southeast, rat snakes are the most frequent nestbox predator, so it may be best to use longer cylinder baffles of 4–5 feet. No matter what, it is important to

A 10-inch diameter, 24-inch long cylinder baffle. *Photo by Mary Mason*

A 4-inch diameter, 4-foot long PVC pipe baffle. *Photo by Allen Jackson*

Stovepipe baffle with aluminum can for top. *Photo by Jeff Hansen*

An 8-inch duct pipe baffle installed below nestbox. *Photo courtesy of Woolwine House Bluebird Trail*

A 6-inch, 5-foot duct pipe baffle

have something slick that the snake cannot "grab." Check out the NABS predator control fact sheet for how to make your own baffle, modifying it as needed.

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The Downy Woodpecker

John Burroughs

Downy came and dwelt with me,
Taught me hermit lore;
Drilled his cell in oaken tree
Near my cabin door.

Architect of his own home
In the forest dim,
Carving its inverted dome
In a dozy limb.

Carved it deep and shaped it true
With his little bill;
Took no thought about the view,
Whether dale or hill.

Shook the chips upon the ground,
Careless who might see.
Hark! his hatchet's muffled sound
Hewing in the tree.

Round his door as compass-mark,
True and smooth his wall;
Just a shadow on the bark
Points you to his hall.

Downy leads a hermit life
All the winter through;
Free his days from jar and strife,
And his cares are few.

Waking up the frozen woods,
Shaking down the snows;
Many trees of many moods
Echo to his blows.

When the storms of winter rage,
Be it night or day,
Then I know my little page
Sleeps the time away.

Downy's stores are in the trees,
Egg and ant and grub;
Juicy tidbits, rich as cheese,
Hid in stump and stub.

Rat-tat-tat his chisel goes,
Cutting out his prey;
Every boring insect knows
When he comes its way.

Always rapping at their doors,
Never welcome he;
All his kind, they vote, are bores,
Whom they dread to see.

Why does Downy live alone
In his snug retreat?
Has he found that near the bone
Is the sweetest meat?

Birdie craved another fate
When the spring had come;
Advertised him for a mate
On his dry-limb drum.

Drummed her up and drew her near,
In the April morn,
Till she owned him for her dear
In his state forlorn.

Now he shirks all family cares,
This I must confess;
Quite absorbed in self affairs
In the season's stress.

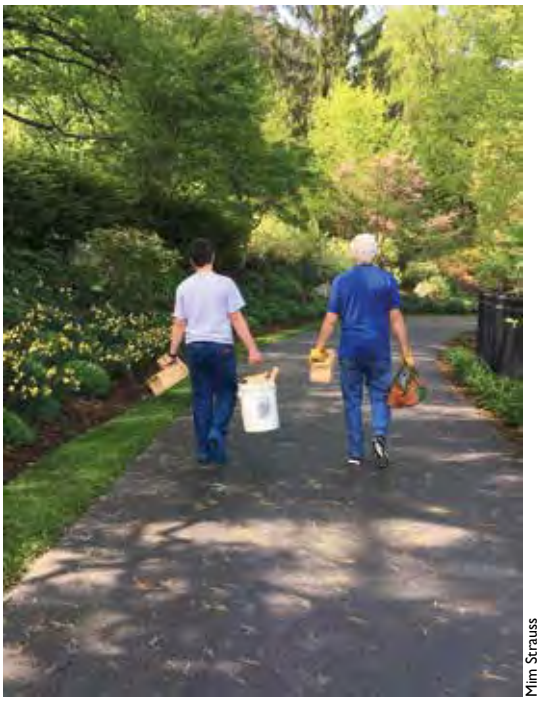
We are neighbors well agreed
Of a common lot;
Peace and love our only creed
In this charmèd spot.

Richard Griffin / Flickr CC

The Bright Future of Bluebirding

Deb Smith

The Bluebird Society of Pennsylvania (BSP) would like to introduce Jay Smullen, a fine 15-year-old young man and BSP Junior Member who has been taken "under the wing" of Dauphin County Coordinator Bill Strauss. They currently monitor a 28-nestbox bluebird trail at Hershey Gardens (a 23-acre botanical garden and arboretum) where they undertook a revitalization project in 2019 that resulted in replacing all nestboxes with new BSP models. By late spring of 2019 many of the volunteers and staff began to notice and applaud the hard work of the Smullen–Strauss team. The interest level of this new trail permeated the grounds each day that Jay and Bill applied their "skillful transformative work." Almost 100 hours of labor between Jay and Bill made this "new" HG Bluebird Trail a reality. Jay Smullen will continue to monitor the trail in 2021 with the help of staff. What a "win–win" project for everyone!!



Mim Strauss

Jay is also (amazingly!) monitoring more Dauphin County bluebird trails. Two of them are in West Hanover Township: Lenker Park trail has eight boxes, Skyline Park trail has 12 boxes; four boxes (with more to be added) on a 100-acre farm in the Piketown area; and a new trail at Pheasant Hills in Susquehanna Township. His transportation is provided by his parents, his grandmother, and his mentor, Bill Strauss. Jay builds his own new, and also the replacement, nestboxes for these trails. He helps out friends and neighbors by building boxes and installing them for those who enjoy watching "The Blues" in their backyards.

Mim Strauss

In January 2019, Jay worked the Bluebird Society of Pennsylvania's booth at the Pennsylvania Farm Show on three separate days, and continues to grow in knowledge and understanding of the Eastern Bluebird.

In addition, Jay is an active member of his church and its youth group; he is a scout in Boy Scout Troop 27 in West Hanover Township and is actively working toward completing his Eagle Scout Award. He also plays the piano and does yard work for friends and family.

Jay and his father, Marcel, were awarded BSP's 2017 Blue Feather Award (presented at the State Conference in State College, Pennsylvania, on 8 April 2017) to honor them for their hard work and dedication to bluebird conservation. Congratulations to this father and son team!

Great job, Jay/family, and thank you for caring for our beautiful and special feathered friends. We look forward to all your future endeavors.

This article originally appeared on the Bluebird Society of Pennsylvania Facebook page. It is reprinted here with permission.

Premature Fledging

Bet Zimmerman Smith

What is premature fledging?

Premature fledging is when a baby bird leaves a nest under their own power, accidentally, and earlier than expected. Premature fledgers that are unable to fly are much more susceptible to predation and bad weather. If they survive on the ground (e.g., by hiding in a shrub or tall grass), the parents will care for them until they can fly up into a tree. (Bluebird parents feed their young for about a month after fledging, until they are independent.)

Fledging dates for for Eastern Bluebirds is usually 17–18 days, Mountain Bluebirds 17–22 days, and Western Bluebirds 18–24 days, plus or minus.

How to avoid premature fledging

To avoid premature fledging, typically monitors should:

- **Stop checking a bluebird nestbox 12–13 days** (remember unlucky "13") after bluebirds hatch. This is one key reason why it's important to keep good records, so you are able to calculate the age of nestlings. If you're not exactly sure about dates, you should generally stop opening boxes when nestlings are fully feathered. Note that some species like House Wrens and chickadees are quite prone to premature fledging when disturbed late in the nesting cycle.
    - **NOTE:** If you suspect problems (parents not observed feeding or removing fecal sacs, or seem very agitated, unexpected delay in fledging, horrifically unusual weather, etc.) it might make sense to carefully check inside the box even though it is after day 13.
- **Monitor carefully.** Nestings MAY stay put if experienced monitors are careful, the nestlings are used to checks, the box is opened slowly and quietly, and the check is brief.
- **Top-opening box.** Premature fledging from a top-opening box is less likely, especially if the entrance is covered while checking. Top-opening boxes can be harder to clean out, and are harder for short people to monitor. BUT you can make your boxes open multiple ways—e.g., top and side or front, and use the top for later checks.

I photographed in a (top-opening) Gilbertson box from egg to empty nest every day up through a late fledging, and never had any fledging attempts or even an indication of agitation on the part of the nestlings. It may be because they became accustomed to regular checks.

- **Use a mirror.** You may be able to see inside **without opening the box**, or only opening it a crack, using a mechanic's inspection mirror and a flashlight.
- **Use a boroscope camera.** These days you can buy an inexpensive scope with a light that attaches to a smartphone. You stick the lighted end, which is equipped with a lens, into the nestbox entrance and can view the contents on your phone. Be aware that a boroscope resembles a snake, which may alarm an adult (e.g., I've had a chickadee adult brooding eggs do a snake display when I inserted the scope into the nestbox hole).
- **Put a cloth or sock in the entrance hole before opening the box**, check the contents, and then **withdraw the cloth after closing it**.

What to do if bluebirds fledge prematurely

If they start to exit while you are monitoring, do NOT slam the door as they are exiting—you could seriously injure or even kill them if they get caught in the closing door!

Mary Anne Morgan / https://flickr.com/photos/maryannemorgan

If bluebird babies do fly or jump out and you can try to catch them—e.g., by throwing a T-shirt or a towel on top of them—pick them up gently and place them off the ground on a tree branch or in a protective shrub. The parents will find them and care for them.

If you try to return them to the box, it can be VERY difficult to get them to *stay* inside. You can try stuffing a sock/paper towel in the hole for about 15 minutes until they settle down, or putting a 1" hole restrictor over the hole until they are really ready to go. This prevents them from jumping out again, but allows the parents to continue feeding by dipping their heads in the hole. However, the parents will not be able to remove fecal sacs to keep the nest clean. **Be SURE to remove the hole restrictor in time to enable appropriate fledging.**

Why birds might fledge prematurely

Bluebirds might fledge too early for a variety of reasons, including:

- Box disturbed late in the nesting cycle (by monitors, activity near box, etc.).
- Predators—e.g., snakes, raccoons, cats, large predatory birds, House Sparrows. Parents will become very agitated, which might encourage young to leave the nestbox.
- Nest infested with mites or lots and lots of blowflies.
- Dead baby in nest. (I have no evidence that this can prompt premature fledging, but have seen it occur when there was a corpse in the nest, especially if it was not dried out and was covered with maggots.)

An Amazing Story from the Nestbox Survey

Ken Hollander

I only have one box, but the bluebird pair had three broods. The first one had five eggs and four fledged. The second brood had six eggs, first one laid on May 31 and sixth egg on June 5. Of these, five fledged. In the third brood, there were four eggs, the first of which was laid on July 24. Three fledged on August 6. Of note, in this third brood, the father abandoned the female after the eggs were laid.

There was a robin who was nesting nearby and it became territorial, also gobbling up all the mealworms I was placing outside for the bluebirds. I believe the male bluebird abandoned for that reason, but I can't be sure. I did what I could to chase the robin away, and moved the mealworm feeder about constantly. At one point, the female bluebird, doing everything on her own (feeding, removing fecal sacs, etc.) brought a baby snake to the nest and when I checked the box a bit later, I noticed that one of the bluebird chicks had the dead snake sticking two-thirds out of its beak. I was concerned that it would choke, so I carefully pulled the baby snake out of the chick's mouth. It was fine and fledged!

This article originally appeared in Bluebird News, *the newsletter of the New York State Bluebird Society. It is reprinted here with permission.*

Membership Renewal

Is this your last Journal? Please check your mailing label for membership expiration date.
If renewing through PayPal, remember you can use either your credit card or your PayPal account.

Tree Swallows: Guests on the Trail

Story & Photos by Kelly Gough

When I volunteered to take over management of the Virginia Bluebird Society trail at the Benedictine Monastery in Bristow, I had no idea how much pleasure it would give me. I believe I had only seen a bluebird twice in my life, and now I would get to see them almost daily on a large, beautiful piece of property featuring a monastery, grotto, labyrinth, and a Master Gardener Teaching Garden! This preserved patch of Earth has been lovingly cared for by the Sisters for over 125 years. It is a haven from modern development with open grasslands, many mature trees, and an astonishing variety of wildlife. After two and a half years on the job however, I find I have become fascinated with a less assuming bird that makes use of our bluebird nesting boxes: the Tree Swallow.

I recently read that as many as 70% of Tree Swallows show site fidelity, returning to their previous breeding territory. Female Tree Swallows return to nest within 5.2 miles from the very spot where they were hatched—male Tree Swallows even nearer at a mere 1.5 miles. It's amazing to think how, despite the thousands of miles of their annual migration from their wintering grounds along the southern coast of the US, Mexico, and Central America, that they can even find that exact small patch of land again.

Nesting is a long process, and our future Mother Swallow orchestrates its path. Construction will not even begin for several weeks following the swallows' return. After a long and tiring journey back north, I

A mated pair of Tree Swallows.

can only imagine how much rest and replenishment they need to physically prepare for raising and defending a family. Arriving back in their breeding territory around the end of March to mid-April, they are often at the mercy of the weather. A prolonged cold or wet spell at the start of spring can spell disaster, affecting their ability to find adequate food.

Much consideration goes into inspecting a prospective nestbox before deciding it is acceptable for use. As they scout the neighborhood for just the right home, you'll see the Tree Swallows acrobatically swooping through the skies, the sun bouncing off their surprisingly iridescent feathers. They look like they are playing, but in fact these birds are rarely at rest. Most daily activities are done on the wing whether that be grabbing a snack or bathing. Much of what looks like wind surfing to us is in fact life-sustaining activity. Flying insects are the swallows' main food source and they are gracefully plucked straight out of

Mother Tree Swallow building a nest.

The base of the nest is primarily grasses.

Feathers provide insulation and camouflage.

the sky. No ground foraging here.

With strength regained, it is time to start building the nest and Mom trusts no one but herself to create the perfect nursery for her future chicks. Grass, and occasionally pine needles, which are abundant on the trail, are carefully chosen over the next two to four weeks. Construction is tediously slow. Mom may bring just one piece of material to the nestbox at a time, weaving it into a solid, almost-flat foundation. Once the foundation is complete feathers will be added to finish off the nest. Whether the feathers are for Mom's roosting comfort, warmth, or camouflaging the eggs, they are both functional and luxurious. Who would ever want to leave such a cozy feather bed? Imagine being born into such comfortable surroundings.

Our Mother Tree Swallow will lay between four and seven eggs over a seven- to ten-day period. Five eggs tends to be the average clutch size on our Monastery trail, though I have seen as few as three in a bad year and as many as six in a good one. The eggs are all white and slightly pointed on one end. I have heard that occasionally a Tree Swallow will lay pale pink eggs—that would be neat to see! Mom begins to incubate once the next-to-last egg is laid. She can delay the start of incubation if her nesting grounds experience an early-spring recurrence of winter weather. Though Dad may occasionally roost, this is also something Mom tends to do herself.

Monitoring the boxes after egg laying can expose a volunteer to aggressive behavior from the fiercely protective parents. Personally, I have never heard of a monitor being injured. There are distinct signs

Tree Swallows may remain in their box during monitoring.

that will tell you if a parent is roosting, or if they are perhaps out hunting for a meal. These signs can forewarn you of what to expect when approaching the box. Where there are no swallows sitting on top of the nestbox or flying nearby, I have learned this indicates the parents are not at home. If one of them spies me near the box, it will send up the alarm and both parents will soon be dive-bombing me! I am careful to make no sudden movements. They have never struck me—I am sure it would hurt them more than it would hurt me—they are just warning me. By moving quickly, I could cause an unintended collision. I do a brief inspection of the box, shut it, and back away slowly.

Other times, I arrive to see Dad sitting right on top of the nesting box. He is faithfully standing guard,

Five-day-old chicks disguised by feathers.

Mom remains on chicks during monitoring.

Fifteen-day-old chicks, growing fast.



Tree Swallows fiercely guard and protect their nests.

ready to protect Mom from any threat or interruption. In these cases, Dad will take flight as I open the box. He will not be aggressive, but he will fly very close and very slowly keeping an eye on my activity. Sure enough, Mom is there and does not budge from her roosting duty. Satisfied that all is well, I close the box and leave. Dad resumes his position on top of the box watching for any signs of danger. Only very rarely can I check the box unmolested. Tree Swallows are very attentive parents. Where swallow-occupied nestboxes are in close proximity to each other, neighboring parents rush to help defend each other's boxes creating quite an adventure for the monitor as two pair or more of swallows dive-bomb, generating enough wind turbulence to stir your hair.

About two weeks later our babies will arrive, all viable eggs hatching within one or two days of each other. Over the next three weeks both our new parents will be busy bringing insects to their young ones and removing fecal sacs. At around 14 days after hatching, the parents stop removing the fecal sacs and our luxurious nursery quickly becomes a sticky mess. The chicks will be seen poking their heads out of the nest entrance, almost as if they are seeking a breath of fresh air. What a way to encourage the kids to leave home!

As the time of fledging arrives you may be lucky to witness a Tree Swallow version of a neighborhood block party. To entice the fledglings to leave the nest the parents, along with other community adults and juvenile Tree Swallows, will assemble in the air around the nestbox—almost as if to say, "Look how much fun you can have if you only come outside." While our parents may be doting and protective, they also practice tough love. Once their first chick fledges, they will stop delivering food to the nestbox. You want breakfast or not, kid? Time to get out of bed!

Our parents may repeat this process with a second brood if conditions are favorable. Once child rearing is complete, the family will disperse within a few-mile radius of the nestbox until their long southerly flight begins in July or August.

The One That Got Away

Deb Smith

This spring Cathy Bullock contacted the Bluebird Society of Pennsylvania about her concerns for an Eastern Bluebird nest she was monitoring. "Early this morning 4 of the 5 baby bluebirds left the nest. I haven't noticed any adult birds at the nest since then. Will they come back to feed the last baby until it decides to leave the nest?? I'm worried sick about this little one." She later wrote: "I couldn't stand waiting on this bird any longer. I looked in at it again. It was trying to get away but couldn't. Poor little thing. Its feet were all tangled in the nest. I loosened his feet and it took off!! Now I just hope the momma finds it. Fingers crossed!!" If you look closely at the photo Cathy took, you'll see what appears to be FISHING LINE in the nest. This is a prime example of the need to monitor nestboxes. Thank you so much for rescuing the bluebird baby, Cathy. Wonderful job!

New Design of Nestbox to Accommodate Lucy's Warblers

Olya Phillips

There has been a long-held belief that Lucy's Warblers will not use nestboxes. While other cavity-nesting birds are being aided with human-made nestboxes, we posed a question, why not Lucy's Warblers? They are a secondary cavity–nester meaning they cannot excavate their own nest holes, which leaves them to rely on abandoned woodpecker holes and naturally occurring ones. So when Tucson Audubon began to receive reports of Lucy's Warblers using unconventional nesting locations, we knew that there was more to the story. Thus we began our multi-year study and what better place to do it than Tucson, Arizona, as it's right in the heart of the Lucy's Warbler breeding range.

We examined the photographs and dimensions of the artificial cavities that were used by Lucy's Warblers: a metal pipe, decorative bird houses, a roof shingle opening, and more. We also studied their natural nests in mesquite tree branch splits and curling bark. Lucy's Warblers favor mesquite trees for their breeding and foraging needs. They were even once called Mesquite Warblers. In the natural nests one thing stood out the most: two points of exit. Thus we came up with 8 different nestbox designs varying in internal volume and overall style. One of these designs was what we now call a Triangle nestbox, mimicking the two-exit system of a natural nest we may find in the wild. We then chose 3 locations around Southeast Arizona which are favored by Lucy's Warblers to install our experimental setups.

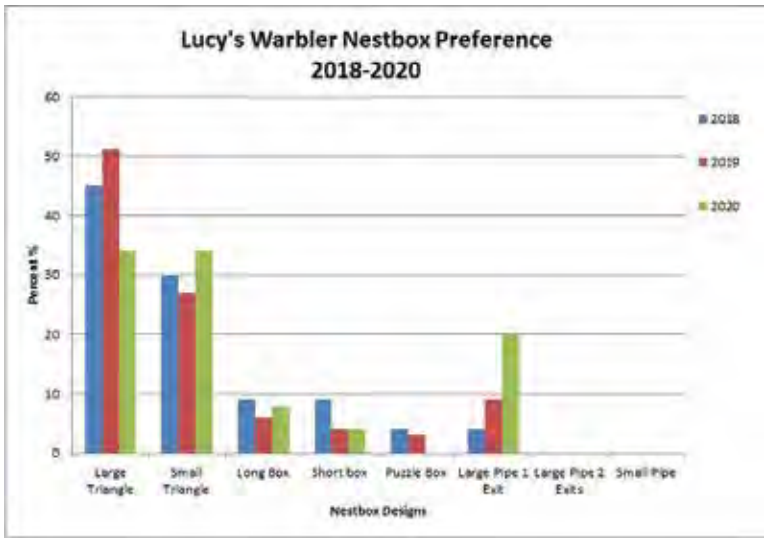
A natural Lucy's Warbler nest. Photo by Mark Hengesbaugh.

Array of experimental nestbox designs waiting for Lucy's Warblers to pick their favorite.

We installed 12 boxes per point at 60 total points with varying order to make sure that Lucy's Warblers are going for a specific design and not their placement on a tree. A team of Tucson Audubon volunteers and staff monitored these nestboxes weekly to determine use. A clear preference began to emerge as we collated the results. A triangle nestbox of either smaller or bigger of the two dimensions offered was selected 73% of the time (see graph on facing page).

We were also able to document reuse of nests for second broods as well as simultaneous nesting just inches away from each other. Lucy's Warblers are not communal nesters so this finding is quite unusual. In scientific literature, their linear breeding territories are described as 98 feet long in good closed-canopy habitat. This further supports our theory that these birds are a cavity-limited species and given plenty of food to sustain multiple families, they will utilize suitable nestboxes in close proximity.

Lucy's Warbler feeding nestlings in triangle nestbox. Photos by Paula Redinger.



With the preferred design figured out, we can now use it in various conservation projects centered on Lucy's Warblers. One of our goals is to bring more of them into the urban areas. Many Arizona homes have mesquite trees in their yards, but they are so neatly manicured or too young to provide a natural cavity. While those trees provide sufficient foraging opportunities, they do not offer good nesting sites, often forcing Lucy's Warblers to move to a better location that can provide both. With the addition of a nestbox, we can offer a safe and productive place for Lucy's Warblers to nest. In order to track our efforts we encourage people who buy a Lucy's Warbler nestbox to register it on our website. We now have over 480 registered nestbox owners all over their breeding range in Arizona, New Mexico, and Colorado.

We are currently studying a preference for height and direction of their nests. By forming a better understanding about their nesting preferences we can provide best practices for the general public and any future conservation projects centered on Lucy's Warblers.

A special thank you to NABS for funding our current project where we study this shy species even closer by using live-feed and trail cameras to document nesting stage timing, nest predation, and nest parasitism.

Olya Phillips is the Community Science Coordinator at Tucson Audubon Society; more information about this project, including plans for making your own triangle nestbox, can be found at https://tucsonaudubon.org.

Photo Gallery

Richard Griffin captured this fine image of a Northern Flicker (red-shafted race) in Oregon. You can tell this is a male red-shafted by the red "moustache"—a male yellow-shafted would have a black moustache. More of Richard's photos are at https://www.flickr.com/photos/birdman_of_beaverton/

Warren Mabey Jr. was eye to eye with this Eastern Bluebird on her nest. This nestbox is one of five that Warren monitors on 55 acres of good habitat: open pasture land with a stream, bordered by forest, in Salem County, New Jersey.

Gary Byas of North Carolina was greeted by these hungry Eastern Bluebird chicks this spring. You'll have to wait until Mom gets back from grocery shopping, kids!

There are surprisingly few really green birds in North America, especially in comparison with the bird populations of Central and South America. Our Violet-green Swallow is one of the few. Photo by Jacob W. Frank, Rocky Mountain National Park, Colorado.

Here's a Wood Duck hen resting with one of her ducklings (there may be more huddled under her for protection). Photo by Wade Tregaskis (https://flickr.com/photos/wadetregaskis/).

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!

Bluebird Roofing claims to be the best commercial and residential roofing company in Mt. Juliet, Tennessee. They definitely have the best logo! https://www.bluebirdroofing.com/

For a limited time this spring, Krispy Kreme offered a series of mini-doughnuts including a glazed doughnut dipped in blue icing and decorated to look like a bluebird. Sadly, the offer ended in early April. Maybe next year!
Image from Krispy Kreme.

The Bluebird Boutique is a small shop in Alpena Junction, Michigan, carrying women's clothing. Fantastic logo! Find out more at https://www.facebook.com/TheBluebirdBoutiqueAlpena/

BluesNews

Rocky Flies Again

Remember that Saw-whet Owl that was found in the Rockefeller Center Christmas tree last year? "Rocky" (short for Rockefeller) was apparently trapped in the tree when it was cut down in upstate New York, then went for a 170-mile ride to the Rockefeller Center where she was found by workers setting up the tree. After having gone three days without food or water, Rocky received care at a rehab center and was released to the wild when she was strong enough to go. For her troubles, Rocky became a national celebrity, the subject of a children's book, and was immortalized as a bobblehead. In addition, Frontier Airlines, which features images of wildlife (including an Eastern Bluebird!) on the tails of their aircraft, honored Rocky by placing her portrait on the tail of an Airbus A320neo aircraft. Watch for her the next time you fly!

Frontier Airlines

How Many Birds in the World?

Researchers at the University of New South Wales used multiple data sources (including the Cornell Lab of Ornithology's eBird data) to estimate the total number of birds worldwide. They calculated that the world's roughly 10,000 bird species accounted for roughly 50 *billion* individual birds—about six birds for each human. Only four species belonged to the billion-bird club: species with an estimated global population of over a billion. Unfortunately, the House Sparrow is first on the list (1.6 billion birds), with the European Starling (1.3 billion), Ring-billed Gull (1.2 billion), and Barn Swallow (1.1 billion) rounding out the list. For comparison, the conservation group Partners in Flight estimates the Eastern Bluebird population at 23 million.

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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