

# The Tennessee Bluebird

## Welcome To The Tennessee Bluebird Society Quarterly Newsletter

An Affiliate of the North American Bluebird Society



Photo By: Donna Ferguson Dudley

After last years cold and ice storm in Western Tennessee, I think all of us were breathing a sigh of relief this year once we got through January 2015. However, from the Cumberland East late February brought two ice storms and two snow storms that produced 9 inches of snow

We have three very good articles on birds in the winter and we greatly appreciate the

contributions by: Vickie Henderson, Bob Peak and H. Dawn Wilkins and Linda K Husmann.

In my article I show how one person can make a difference.

Happy Birding!!!!

*Chuck James*

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“Attracting bluebirds is a challenging hobby. Since the number of natural cavities has dwindled and competition from other birds, bluebirds depend on humans



to survive and thrive.”

Join the Tennessee Bluebird Society today, find an application on our website: [www.tnbluebirdsociety.org](http://www.tnbluebirdsociety.org)

LETTER FROM OUR PRESIDENT FARRELL ROE

## Educating Our Youth



As I was growing up our family used wildlife as a source of food. I remember going hunting with my dad and older brothers. As I grew older I used wild game, mostly birds, as targets. I didn't know anything about birds, they were there and were easy targets. The Eastern

Bluebird was not a part of my vocabulary. First the sling-shot then the BB gun and then a 22 rifle. It mattered not what kind of bird to me.

My first real appreciation for the "Bluebird" was at the ripe old age of 22. As a telephone employee I was privilege to be a part of the community service organization of "Telephone Pioneers". They knew, at that time, of the plight of the Eastern Bluebird. Asked to help build and place nest boxes I began to realize the fact that they were in trouble as a species. And I have been helping with nest boxes since. I got educated by my friends and associates. I have had the pleasure, since, to teach youth about the need to know about , not only the Bluebird, but about all wild life and our responsibility to them.

Our mission includes educational programs and workshops to educate youth and adults too.

Noted, is the fact that I was educated by one of my fellow workers, a friend, to this very important conservation fact. At that time, the Bluebird was in trouble due to our method of farming and living **(our culture). We can change this culture.**

As a Tennessee Bluebird Society members, we have a chance to get to know new friends, socialize with them and share knowledge as we work together. I extend to you an invitation to come on any committee; Publicity, Education, Data collection, Funding, Membership, Newsletter, Recognition, Programs, even create one of your own. Let us know of your interest at the Email address [tnsialia@gmail.com](mailto:tnsialia@gmail.com)

Please note, are TBS Board meets quarterly and have an annual convention. Join us in conversation and social opportunities. By the way, the Telephone Pioneers have asked me to be a member or their statewide Conservation an Environment Committee. I accepted their invitation and will extend to the Pioneers an invitation to help with our Tennessee Bluebird Society's mission. Thanks for being a part of The Tennessee Bluebird Society and invite your friends to join us.

*Farrell Roe*

### TENNESSEE BLUEBIRD SOCIETY MISSION STATEMENT

*The Tennessee Bluebird Society, Inc. (TBS) was formed in 2013 for the purpose of supporting the recovery and perpetuation of the Eastern Bluebird (Sialia sialis) and other native cavity nesting birds in Tennessee.*

*The Tennessee Bluebird Society is dedicated to: Promoting Bluebird and other native nesting bird conservation. Develop public awareness, educational programs and workshops. Encourage and aid in the development of nest box trails and collecting data for research. Also, to provide social opportunities for members to share information and experiences relating to bluebirds, birding, conservation and related topics.*

## ICE AND BLUEBIRDS -- A SPECIAL MATTER

By Vickie Henderson

Eastern Bluebirds are one of the most popular and enjoyable birds to have around your home. They don't mind being near people and



their activities, and, like many other birds, they recognize you when you're providing food. Bluebirds that are familiar with you will even fly toward you when you are filling their mealworm feeder.

Our nesting Eastern Bluebirds in Tennessee are non-migratory and remain here year-around. They are joined by birds from neighboring states and young bluebirds from neighboring territories to form small wintering flocks that aid winter survival. These flock members help each other find food, spot predators and provide warmth when they roost together in a sheltered cavity, such as a nest box, when the

temperature drops below 20 F degrees.

Bluebirds are not your typical feeder birds, however. Their natural winter diet consists of spiders, berries and fruits. If these foods are available they can maintain fat reserves that sustain them during the extreme cold. T. David Pitts, in his book, *Studying Eastern Bluebirds, A Biologist's Report and Reflections*, also says the following: "As a result of their high rate of metabolism, bluebirds can quickly use the fat they store. If extremely cold temperatures linger for several days, many bluebirds may die since they normally store only enough fat to protect themselves for a day or so, and they may not be able to find enough food to replace the fat that has been used."



A male Eastern Bluebird feeding on the berries of the burning bush.

Pitts also conducted extensive studies in northwest Tennessee that revealed that bluebirds do not digest the seeds that are in the fruits they eat. These seeds pass through their system undigested and provide no nutritional benefit. Herein lies the challenge. A non-seed eating bird that primarily recognizes insects, spiders and berries as food. How do you feed them when winter gets rough? And even more challenging, how do you feed them when larger, territorial birds are chasing them away from the berry sources?

I had this challenge over the past week, when freezing rain and sleet coated everything with ice and temperatures plummeted to single digits with wind-chills below zero. Suet crumbs froze, mealworms froze and larger birds, such as American



Robins and Mockingbirds became aggressive, chasing smaller birds, like bluebirds and Hermit Thrushes away from the (Cont. Page 4)

## ICE AND BLUEBIRDS (CONT.)

berry bushes. In fact, one robin was so territorial he chased bluebirds away from both the holly and the neighboring burning bush.

One male bluebird was familiar with the mealworm feeder guard and could navigate through it and eat suet and mealworms offered there, protected from larger birds. The other bluebirds that came with him did not know how to navigate the guard. With feathers fluffed against the cold and mealworms frozen motionless, there was little hope they would learn about the guard in sub-freezing conditions.

pellets, small home-made suet crumbs and freeze-dried mealworms and hung it near the bluebird feeder. When the male bluebird came to the feeder, his companions soon discovered the added food source and were also able to eat from it. In their absence, I noticed the Hermit Thrush landing on the dinner bell also to eat suet.



to prevent mockingbird dominance. If a group of robins or cedar waxwings flies in and takes over the holly berry supply, a protective mockingbird will likely take over the sumac next. Planting shrubs spaced far apart in different areas will give the bluebirds an alternative choice for feeding.

*A special thanks to Vickie Henderson for allowing us to reprint from her blog sharing her beautiful photo's and good information about the bluebirds winter diet.*

*You can follow Vickie Henderson*

*[vickiehenderson.blogspot.com](http://vickiehenderson.blogspot.com)*



After consulting friends, **Billie Cantwell** and **Liz Cutrone at Knoxville's Wildbirds Unlimited**, I adjusted a Dinner Bell feeder to exclude larger birds by lowering the dome cover to a few inches above the tray, filled the tray with smooth "butter bark" suet

Additional good advice--spread your suet feeders out so if a larger bird claims one feeder, there is an alternate area for the smaller birds to visit. In the spring you can also consider planting Sumac near the borders of your yard. In Pitts' studies in northwest Tennessee, two native species, smooth sumac and winged sumac, were the most favored fruit of bluebirds, composing 50-90% of their winter diet even when a variety of other fruits were available.

Pitts advises to plant more than one sumac spaced apart in different areas of the yard

## **VOLUNTEERS NEEDED**

The Tennessee Bluebird Society is in need of volunteers. We have grown much faster then we expected in the past 14 months. It's a good problem but need your involvement. We are looking for volunteers in the following areas.

- \* County Coordinators
- \* Board Members
- \* Nest Box Trail Work
- \* Data Collection
- \* Newsletter Editor
- \* Research Data

### **Email:**

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## Significant Die-Off of Bluebirds at Land Between the Lakes in 2014

By: Bob Peak

During the 2014 nesting season, Eastern Bluebirds (*Sialia sialis*) at Land Between the Lakes National Recreation Area (LBLNRA) experienced a significant decrease in the number of nesting attempts and bluebird fledglings. Land Between the Lakes, also known as LBL, is a 170,000-acre National Recreation Area located in western Kentucky and Tennessee (Trigg County and Lyon County, Kentucky; Stewart County, Tennessee).

For the past 25 years, volunteers Bob and Judy Peak have monitored and managed the bluebird nest boxes on these federal lands (currently 170 boxes), as well as a 60-box bluebird trail at nearby Lake Barkley State Resort Park (LBSRP) in Trigg County, Kentucky. The Peaks refer to their volunteer effort as Project SOS (Save Our Sialia). During their tenure, Bob and Judy have recorded over 30,000 bluebird fledglings on these public lands, and in recent years, the annual bluebird fledgling totals for these properties have been averaging around 1,800 baby bluebirds per year. In 2014, the number dropped more than 35% to 1,160 fledglings for the combined areas, and adult bluebirds made only 218 nesting

attempts in the boxes at LBLNRA. This was the lowest number of nesting attempts in the LBLNRA since 1999. [Note: An "attempt" is defined as a bird building a nest and laying at least one egg.] Many of the nest boxes had only one or two nesting attempts, but perhaps most importantly, thirty-three nest boxes had *no* nesting attempts by *any*



species in 2014.

Contrastingly, in 2013, there were only *four* boxes that had no attempts by any species. [Note: In addition to bluebirds, six other cavity-nesting avian species have nested in the boxes in past years.] In 2014, there were 110 unhatched bluebird eggs (11.5% of the total) and 13 dead bluebird nestlings (1.4% of the total)

discovered in the LBLNRA boxes. Thankfully, both of these numbers were well below the average of previous years.

Why did this drastic decrease in nesting attempts and bluebird fledglings occur? After reviewing the data and all of the evidence, the most plausible explanation is simply that far fewer adult bluebirds survived the winter months than in previous years, and the 2014 breeding population was therefore reduced substantially. Typically, the Peaks find only one or two winter-killed bluebirds when the nest boxes are monitored at the beginning of the nesting season. After the January, 2009 Ice Storm, the volunteers feared a massive bluebird die-off, but surprisingly only four dead adult bluebirds were found in all of the boxes. However, in March, 2014, Bob and Judy discovered an unprecedented total of 68 dead adult bluebirds in the nest boxes of their combined bluebird trails (31 at LBLNRA and 37 at LBSRP). (Note: One additional winter-killed bluebird at LBLNRA was not discovered until May 19 because active bluebird nests covered the carcass in March and April.)

Naturally, the discovery of such a large number of dead birds provokes the question---how was the winter of 2013-14 different than previous winters? The consensus among avian biologists and other wildlife authorities seems to be that the frequency and duration of the ice storms in southwestern Kentucky and northwestern Tennessee posed special problems for birds and other wildlife during that winter.

The Paducah Office of the National Oceanic and Atmospheric Administration provided the following data and descriptions of the 2013-14 ice storms in the Kentucky portion of the LBLNRA:

Ice Event 1: Dec. 5-6: 1/4 to 1/2 inch of icing, along with some sleet and snow

Ice Event 2: Dec. 8: Around 1/4 inch of icing

Ice Event 3: Feb. 2-3: Up to 1/4 inch of icing, along with up to 2 inches of sleet and snow

Ice Event 4: Feb. 4-5: 1/4 to 1/2 inch of icing

Ice Event 5: Mar. 2-3: Up to 1/4 inch of icing, along with several inches of sleet and snow

Each ice event affected a bluebird's ability to secure food, but the events in February and March were perhaps the most devastating because it was a time of year

when the birds' fat reserves had dwindled and food sources were very scarce. (Statistically, more bluebirds perish in February than any other month.) Additionally, very cold temperatures following the ice events in February and March prolonged the ice/snow coverage of many bluebird foods-of-last-resort (e.g., sumac seeds), and the birds simply could not secure food and generate enough body heat to survive---even after congregating in nest boxes. (In one instance, the volunteers found 11 dead bluebirds in a single nest box.)

After the dead adult birds were collected by the volunteers in March, the 68 specimens were given to Dr. David Pitts for analysis. Dr. Pitts is a recently retired University of Tennessee-Martin biology professor and an Eastern Bluebird authority. Dr. Pitts' examination revealed the fact that there were 24 females and 44 males in the sample. (Note: As previously mentioned, one of the deceased birds was mixed in the base of nest material in March and was discovered after Dr. Pitts had completed his examination of the other specimens.) Of the 24 females he examined, 14 were second-year birds (hatched in the spring/summer of 2013) and ten were after-second-year birds (hatched *before* the spring/

summer of 2013). The male bluebirds consisted of 24 second-year birds and 20 after-second-year individuals. (Note: Dr. Pitts was able to determine the age of the birds by examining the tenth primary covert feather of each bluebird, a technique he discovered and subsequently published in 1985. Also, as a clarification, regardless of its actual hatch date, avian biologists consider a bird to be a second-year bird on January 1 of the year after it hatched.) So, in its entirety, 56% of the deceased birds in the sample were second-year birds and 44% were after-second-year bluebirds. [In a comparable sample, of the 90 bluebirds Dr. Pitts had live-trapped and examined during the previous six winters, 53% were second-year birds and 47% were after-second-year. He also determined there were 41 females (46%) and 49 males (54%) in his sample.] Surprisingly then, based on these combined data, age apparently had no significant effect on winter mortality. Stated another way, one might expect younger birds to die at a much higher rate than the older, more experienced birds, but Dr. Pitts found the data in the combined groups did not seem to confirm this conjecture.



However, as Dr. Pitts indicated in his communication with the authors of this report, sex ratio for the LBLNRA sample was a different story. As he pointed out, unless we have evidence to the contrary, we might assume the sex ratio for the deceased birds would be 50:50. But, the actual numbers in the LBLNRA/LBSRP sample were 35% females and 65% males, clearly indicating male bluebirds experienced a higher rate of winter mortality than did females. Why is this the case? There appears to be no single definitive answer to the question, but it's possible the male bluebirds had already bonded to a nesting territory in late February/early March and were therefore less likely to migrate to more hospitable environs at that critical point in time. Oftentimes, breeding success for bluebirds requires risk---especially for the birds in the middle and northern latitudes that are trying to be first at claiming a high-quality nesting site. In the Winter of 2013-14, the risk was simply too great for many bluebirds in western Kentucky and Tennessee.

From its inception, the goal of Project SOS has been to maintain a core population of bluebirds to counterbalance severe seasonal conditions, particularly winter conditions

comparable to the winters of 1977 and 1978, which proved to be devastating for bluebirds and many other songbirds. The Winter of 2013-14---and the nesting season following it---seems to demonstrate that a core population of bluebirds does exist in the areas monitored by the Peaks. Going forward, the Peaks are hopeful the western Kentucky/Tennessee bluebird population on these public lands will experience a rebound effect in a much shorter time frame than it did many decades ago, and they will remain dedicated to helping all of the cavity-nesting birds along their bluebird trails.

Dr. BIRDSONG - Q & A



**Q:** Where do the bluebirds go in the winter?

**A:** In the southern United States they do not migrate (technically speaking). Most of the bluebirds you see in your yard are usually not far away in the winter. As the weather changes, so does their diet, from insect eaters to berries and fruits of plants. Consequently they spend more of their time in more wooded areas and brushy fields. They are also trying to survive extremes in the weather. So they seek shelter in natural cavities and

sometimes in nest boxes as well. They stay together in small flocks usually made up of relatives. In flocks they can find food easier and more eyes help see predators. They are also establishing pair bonds for the coming Spring. When we experience a spring-like day in the winter months, it's not unusual to see them more frequently, especially around nest boxes.

**Q:** When do Bluebirds begin nest box hunting?

**A:** Very early on. Many are what we call "sight faithful". If they have had success raising broods in a particular location, they will return year after year, if they survive the winter months. Of course, new birds show up (usually males) every year to challenge the resident male. Many of their fights seem quite brutal to us, but rarely is any serious harm done to either bird. Mostly bruised egos. The females do the choosing of the nest sight, as we all know. So if her old mate is out done by a new suiter, she may or may not use the same nest box as before. One way to help resolve these conflicts is do mount more nest boxes. Provided you have the space, of course.

Have a question Email us at: [tnsialia@gmail.com](mailto:tnsialia@gmail.com)

## MAKING A DIFFERENCE

by: Chuck James

**M**arshall and Donna Dudley have been a members of the Tennessee Bluebird Society for



more than one year. Not long ago we spoke by phone with Marshall about his plans to create a nest box trail in the subdivision where they live and he had a few questions. When he told me this was his first attempt at creating a trail, I wanted to know more about him and his wife Donna interest in Bluebirds.

A few weeks ago I sat down with Marshall and Donna at their beautiful lakeside home to hear their journey and how they fell in love with Bluebirds.

Donna and Marshall met at the University of Tennessee Martin back in 1967, they have a daughter and son and 5 grandchildren. He further his education at UT Knoxville, with a major in nuclear instrumentation design. After a short time with

NICD he went to Nuclear Chicago (Searle Analytic) in Des Plaines, IL in 1970. This is where the story gets very weird. I also worked for Nuclear Chicago at the same time and was at the headquarters then in sales. The



product Marshall designed was a Mark III liquid scintillation counter. That was my favorite product to sell. Now we meet 40 years later.

In the late 70's Marshall and Donna moved back to the



Knoxville area where he worked for Tennelec, in Oak Ridge. In 1992 he became self employed and founded King Cart Services an internet shopping cart service.

In 2014 they moved to the lake to be closer to their son who lives two doors down from them. While they lived in Concord Hills Marshall, put up a nest box and attracted a pair of Bluebirds, but unfortunately their was a terrible hail storm that killed the pair. Last year when they moved to the lake his son attracted bluebirds but Marshall had no luck. So he decided to go big and create a trail in their subdivision. Marshall asked for permission from the

homeowners association, they never got back to him so he went forward with his plans. Marshall said, "If I was going to get to watch Bluebirds I would have to put up multiple boxes spaced properly. Also, we really love the Bluebirds."

Marshall's trail is made up of 9 nest boxes, he decided after researching the internet to go with a oval hole box. The thought is



that house sparrows house like the round holes but not the oval holes. We will follow Marshall's nesting patterns this spring and summer to see what species of birds he attracts. It will be interesting.

There have been some studies that



demonstrate that oval boxes have two times the number of Bluebird broods to round holes. Also, that the average bluebirds that fledge are higher with an oval box. When I had an opportunity to look at how he put his nest box pole together, I thought it was very clever and want to share with you his plans.

Marshall takes 1/2" thin wall conduit 54" tall and slides over the rebar. He then takes a coupler he found at Home Depot and found



screws at Ace Hardware to secure the conduit so it doesn't swivel. This is a very good idea.



In the Dudley household Marshall is not the only clever and talented person. Donna, is a great baker and photographer. I speak from experience when I visited she put a plate of homemade



cookies in front of me. I could have stayed all day.

Donna has been sharing some of



her photo's with us on Facebook.

Donna has been interested in bird photography since 2011. She uses a Cannon SX30 in a 4:3 format and a JVC Everio HD video camera 16:9 format for video and snapshots.

All of us wish Marshall and Donna the best as they pursue their hobbies.



The Dudley's are an example of what a couple can do, to help the Bluebirds survive. Perhaps, you could get a nest box trail together in your neighborhood.



On Saturday, February 28, 2015 Chuck James and Stan Colburn were invited to speak at Wild Birds Unlimited in Knoxville, TN.

Over 50 people signed up and attended the event.



Chuck spoke for 15 minutes on the plight of the bluebird and how the Tennessee Bluebird Society is trying to educate the public on the importance of proper nest box management.

After a short 15 minute presentation, Chuck showed (2) 15 minute DVD's. The first gives



background on the proper way to set-up a bluebird nest box, trail and monitoring.

The second DVD, is an in nest cam, that shows the complete cycle from making the nest, laying the eggs, hatching, feeding and fledging.

If you have a group interested in a bluebird presentation please Email us at; [tnsialia@gmail.com](mailto:tnsialia@gmail.com). we will be happy to talk to you.

## What are wintering Yellow-bellied Sapsuckers eating?

By H Dawn Wilkins and Linda K Husman

### Yellow-bellied

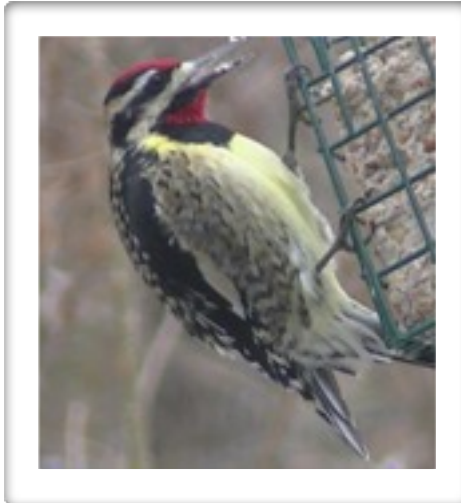
Sapsuckers are one of four species of sapsuckers residing in North America. They are unique among the woodpeckers because they excavate sap wells into the tissue beneath the bark of the tree that is responsible for transporting sugar-containing sap. This tissue is called phloem tissue. During the summer months sap runs freely from the wells and serves as a food source for breeding sapsuckers. This sap is also consumed by a large number of other organisms such as flying squirrels, bees, wasps, hummingbirds, and even other woodpeckers. During the winter when the trees are dormant, there is little sap found in the phloem tissue, yet even without sap flow, Yellow-bellied Sapsuckers spend over half of their time excavating and foraging at sap wells. This suggests that they are obtaining calories from this activity.

Phloem tissue has been found in the digestive track of sapsuckers suggesting that they ingest

this cellulose rich tissue.

Cellulose is a molecule found in plants that can be a great source of energy if you have

Photo By: Donna Ferguson Dudley



the capability to digest it. Vertebrates, including sapsuckers, do not produce the enzymes necessary for this activity, however, in some species, there are organisms such as bacteria, fungi, and protists, growing in the digestive track that can break down cellulose. Our hypothesis is that Yellow-bellied Sapsuckers are gaining nutrition by ingesting phloem tissue which is then broken down by symbiotic bacteria.

To investigate this question, we first had to find a way to quickly distinguish

cellulose degrading bacteria from other bacteria present in the gut. To do this we use a method that consists of

growing the bacteria on a minimal media (a media in which cellulose is the only food source). The plates are then flooded with a red dye (Congo Red Dye) which binds to any cellulose present in the media. If the cellulose has been broken down, then a zone of clearing (absence of red dye) appears around the colony.

During spring migration (2008), a Yellow-bellied Sapsucker flew into the library on the campus of the University of Tennessee at Martin. One of the library's staff immediately brought the bird to the biology building to see if anybody wanted the specimen. This was a tremendous opportunity. With such a fresh specimen, we were able to take a sterile swab and, for the first time, culture the bacteria present in the digestive track of a Yellow-bellied Sapsucker. Upon growing the bacteria on the selective media we were able to isolate cellulose degrading

While we still have much to do as we characterize the bacterial community in the digestive tract of Yellow-bellied Sapsuckers, we can say that preliminary results indicate that there are some bacteria in their gut that can break down cellulose. It is unclear what proportion of a sapsucker's daily energetic needs are met by this partnership and it is likely that cellulose is only a part of their winter diet which would also include insects and fruits among other things. This is the first time a mutualistic relationship with cellulose degrading bacteria has been described in a species of woodpecker.



*Dr. H. Dawn Wilkins is the Scientific Advisor to the Tennessee Bluebird Society*

*H. Dawn Wilkins and Linda K. Husmann are Professors in the Department of Biological Sciences at the University of Tennessee at*

*Martin, Martin, Tennessee.*

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