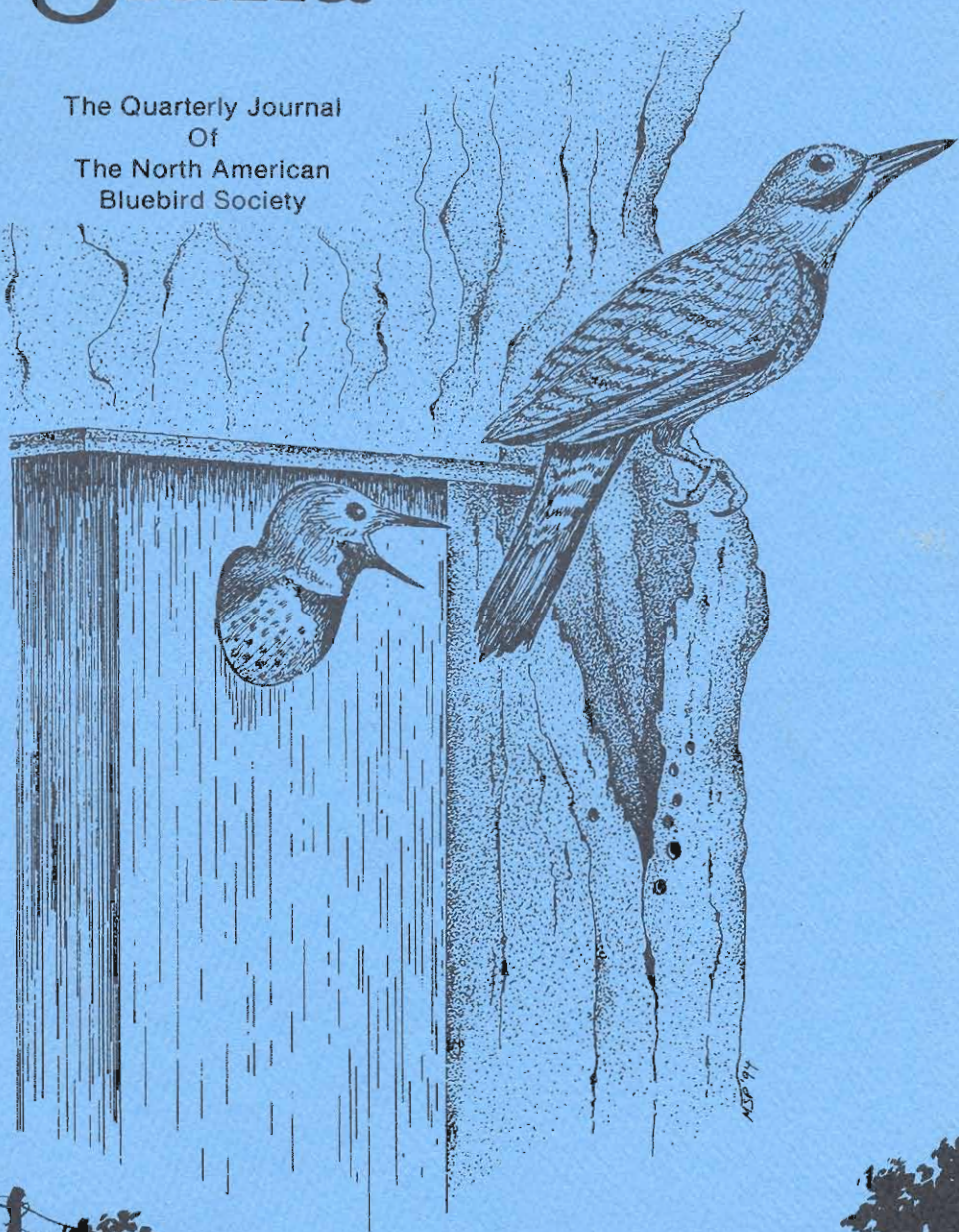


# *Sialia*

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The Quarterly Journal  
Of  
The North American  
Bluebird Society



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*Sialia* means bluebirds. Hence the title of this journal. Technically, *sialia* is the Latinized, neuter plural version of the Greek word *sialia*, a noun meaning a "kind of bird." Since the Eastern Bluebird was the first bluebird classified by Carolus Linnaeus (1707-1778), he gave it the species name *sialis*, though he placed it in the genus *Motacilla* which is now reserved for the wagtails. It was William Swainson (1789-1855), who, in 1827, decided that the bluebirds needed a genus of their own within the thrush family (*Turdidae*). He selected the generic name *Sialia* which he simply adapted from the species name *sialis* which Linnaeus had used. Therefore, the scientific name for the Eastern Bluebird is *Sialia sialis* (pronounced see-ahl'-ee-ah see'-ahl-iss). Similarly, the Western Bluebird and Mountain Bluebird, the two other species within the genus, were named *Sialia mexicana* and *Sialia currucoides* (coo-roo-coy-dees) respectively. All three bluebird species are native only to the North American continent, although each inhabits different regions generally separated by the Rocky Mountains and by altitudinal preferences.

While the adult birds all show differing plumages, the young of all three species look remarkably alike, prominently displaying spotted breasts and large white eye rings. This similarity in plumage was the principal reason the Society chose the juvenal bluebird for its logo. Since bluebirds almost always choose to raise their young in small enclosed cavities, a young bluebird sitting near a nesting box seemed to symbolize our mission. The hope of any species resides in its young. Because of bluebird nesting preferences, the survival of their young may depend on the nesting box, especially since natural cavities, for a variety of reasons, are disappearing rapidly. The theme of bluebird young nurtured in man-made structures will be a recurring one in our art and literature. We hope that this theme will remind all about the plight of the bluebird, and will stimulate action which will allow this beautiful creature to prosper.

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# Sialia

The Quarterly Journal  
About Bluebirds

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## EDITOR

Joanne K. Solem

## CONTRIBUTING EDITOR

Lawrence Zeleny

## ART EDITOR

M. Suzanne Probst

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## COVER

Art Editor M. Suzanne Probst has drawn an adult male Northern Flicker who has fed a nestling and is preparing to depart.

*Sialia* welcomes original articles, art and photographs for publication. Although this journal is named for the bluebird, material relating to all native cavity nesting species will be considered. Manuscripts should be typed neatly and double-spaced. All material submitted is subject to editing or rewriting. Submit the original manuscript plus a duplicate copy if you wish to proof the material before publication. If the article has been submitted elsewhere (or previously published) that fact must be stated at the time of submission. All manuscripts will be acknowledged. Black and white glossy photographs are preferred. Print the subject, names of individuals pictured, photographer and return address on the back of each photograph. Art is welcome and should be in black pen-and-ink. We do not assume responsibility for manuscripts, photographs or art submitted. The editor's address is 10617 Graeloch Road, Laurel, Maryland 20723.

# Presidential Points

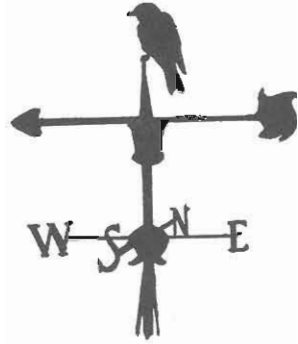
Charlotte Jernigan

We continue to broaden our understanding of what it takes to make a better natural world, yet the road that we travel is still one of peril and tremendous loss of entire ecosystems. Both wildlife and humans ultimately suffer for mistakes made; however, I see a bit of a silver lining in efforts made in programs geared toward youth to develop an awareness in them that leads to responsible behavior concerning the world around us all.

The junior naturalist programs that are offered to youngsters can go a long way toward enhancing what has been learned at home with family and friends and can, eventually, be a positive boost to any area that's fortunate enough to later have these dedicated, willing young people in the community. I would urge all of our membership to actively support nature programs near their homes and to encourage participation of "young and old."

This past summer I attended a picnic which was sponsored by the Nature Center of Sequoyah State Park in northeast Oklahoma. Its purpose was not only to express appreciation to youngsters and parents for many hours of time and talent, but also to inspire other guests and to expose them to results that make a difference for all of us. As a young naturalist put on a long, heavy leather glove, we shared his pride. He was going to exhibit a magnificent, but injured, Great Horned Owl that was being rehabilitated and he shared many facts with us.

The Great Horned Owl is a bird of much prowess and has earned a reputation for fierceness. It has a very acute sense of hearing which can detect faint sounds more than 100 yards away. Its vision is so keen that it can monitor prey far off in the distance. It needs very little light, and its swiveling head enables it to sight prey in almost any direction without moving its body. The shapes of the wings and feathers reduce flight noise;



most prey are killed instantly when the sharp talons are sunk into the body. Taking whatever is available may mean a bird, a rabbit, or a rattlesnake, and this three pound wonder is efficient in its attempts.

This owl has been found to be quite adaptable, which is a fact in its favor. It apparently has not had problems due to the effects of pesticides and loss of habitat, and can be quite versatile in the selection of a site for raising its one brood a year. In addition to such places as old raptor nests, tree cavities, caves, crevices, stumps, and hollow logs on the ground, it will also occasionally use a nest box. They are so very protective of their nests that intruders risk the chance of being viciously attacked by their razor-sharp talons. Observers have learned to wear hard hats and other protective gear to avoid deep gashes from their ferocious strikes.

If you have a child with you the next time you see a Great Horned up close, be sure to point out that those tufts of feathers on top of its head are not its ears, and maybe you'll open up a new world for an aspiring naturalist.

Paul Wilson, a teacher at Owasso High School in western Oklahoma, is one of 40 teachers nationwide to receive a 1994 Tapestry grant sponsored by Toyota and the National Science Teachers Association. The \$5,000. grant will be used by his students to build 25 nesting boxes for Barn Owls in the western part of the state. The Tapestry program is designed to help teachers create and implement innovative science projects in

(Continued on page 26)

# Nesting Activity on a Box-Paired Trail

Daniel P. Palahniuk and Eugene B. Bakko

## Abstract

A paired nest box trail was monitored in the summer of 1993 to study the nesting activity and fledging success of the Eastern Bluebird (*Sialia sialis*), Tree Swallow (*Tachycineta bicolor*) and House Wren (*Troglodytes aedon*). Each pair of nest boxes consisted of one Peterson and one Kentucky slot box. House Wrens utilized the most boxes followed by Tree Swallows and Eastern Bluebirds. Tree Swallows were the most successful at fledging young while Eastern Bluebirds were the least successful. All species showed a preference for one of the two box styles.

House Wrens were the most aggressive in attempting to nest beside an active nest box. Tree Swallows had no apparent impact on established nests when nesting at an occupied nest box pair. House Wrens often had negative impacts on the nests of Tree Swallows and other House Wrens when occupying neighboring boxes of a box pair. House Wren/Tree Swallow box pairing could be beneficial, as Eastern Bluebirds never attempted to nest beside an active nest box and showed a strong preference for a vacant neighboring box.

## Introduction

As efforts to replenish the waning Eastern Bluebird populations in North America increase, research on different styles of nest boxes and methods of arranging them in a given area has also increased. The need for such research is catalyzed by persistent competition for nesting cavities between Eastern Bluebirds and introduced species, such as European Starlings (*Sturnis vulgaris*) and House Sparrows (*Passer domesticus*), as well as native species, such as House Wrens and Tree Swallows (Stokes and Stokes 1991).

In an effort to learn more about the relationships of cavity nesting birds, nesting activity was monitored for the three species of birds which nested along this trail (Eastern Bluebirds, House Wrens and Tree Swallows). The data obtained from daily trail monitoring, such as box use, clutch size and number of young fledged, offer insights into nest box preference, fledging success, and the dynamics of inter- and intraspecific competition for nest sites along a box-paired trail.

## Materials and Methods

### Trail Description

A trail of 42 nest boxes was erected in early spring 1993 on land surrounding the St. Olaf College campus in Northfield, Minnesota, located in Rice County. The trail consisted of 21 pairs of boxes, each pair containing one Peterson style nest box (Scriven 1989) and one Kentucky slot nest box (Davis 1992; Tuttle 1990) spaced 23 feet (7 m) apart. The pairs were spaced at 330 feet (100 m) intervals. All nest boxes were located in waist-high grasses in restored natural areas; most were near forests or wetlands.

### Trail Monitoring

Trail monitoring began in early spring and was performed once a day on an average of six days per week. It entailed the recording of the species nesting, the number of eggs or hatchlings, and the fledging success. Boxes were kept clean of unfinished nests (no development in three days) and abandoned nests to keep the maximum number of boxes free for use. Occupied (active) boxes were left

undisturbed (aside from the daily checking) regardless of the nesting species. Boxes containing nestlings which were 12 days old or more were not checked until fledging occurred to prevent startled hatchlings from jumping out of the box (Scriven 1989). Noel's "coon guards" were placed on boxes containing bluebird nests to prevent predation (Noel 1991).

Trail data were analyzed to find the style of box most heavily utilized, or preferred, by each species. Fledging success was calculated with respect to both number of nests and number of nestlings fledged. The effect of weather, usurpation and predation on the overall nesting success was examined. To gain further information on the effect of box pairing on interspecific competition among House Wrens, Tree Swallows and Eastern Bluebirds, we looked at the attempts each species made to nest at a box pair when one of the boxes already contained an active nest, the success of such attempts, and the impact of the attempt on the established nest.

## Results

Nest box use, requiring that at least one egg be laid but independent of further nesting success, was greatest for House Wrens, which utilized 25 nest boxes, followed by 11 for Tree Swallows and 9 for Eastern Bluebirds. Peterson nest boxes were preferred by Eastern Bluebirds (100%) and Tree Swallows (91%) over Kentucky nest boxes. House Wrens showed the greatest tolerance for both styles, but ultimately used the Kentucky box in 68% of successful nestings (Table 1).

Tree Swallows and House Wrens showed higher fledging success than Eastern Bluebirds. Tree Swallow and House Wren nests, 74% and 72% respectively, fledged at least one young compared to 56% for Eastern Bluebird nests. Similar results were observed when comparing the percentage of eggs that were successfully fledged for the three species: Tree Swallows fledged 71% of all eggs laid, followed by 66% for House

Wrens, and 47% for Eastern Bluebirds (Table 1).

House Wrens were the most active in attempting to nest in a box in which the other box of the pair already contained an established nest (Table 2). If the established nest was that of another House Wren, then complete success for both the established nest and the attempted nest was never observed. Three such attempts were successful for the intruding House Wrens, but resulted in the demise of the established nest in the juxtaposed box. Twice the established nest survived but the attempted nesting failed. The greatest success at box pair sharing was observed when House Wrens attempted to nest at a box pair with an established Tree Swallow nest. Of six such attempts, four resulted in mutual nesting success. The other two attempts were unsuccessful for the House Wrens, while one of these also led to the destruction of the established Tree Swallow nest.

Tree Swallows made three attempts to nest beside an active nest box. One attempt was made to nest beside an Eastern Bluebird nest, the only pairing attempt on the trail involving Eastern Bluebirds. The Tree Swallows deposited some nesting material in the vacant neighboring box and physically attacked the foraging male Eastern Bluebird, but eventually abandoned the attempt, apparently doing no serious harm to the Eastern Bluebirds. The two attempts made by the Tree Swallows to nest beside a House Wren nest had no negative impacts on the House Wren nests. In one attempt, the Tree Swallows were promptly driven away by the House Wrens. In the other, peaceful cohabitation persisted until two days after the House Wrens fledged, at which point the Tree Swallow nest was usurped by House Wrens, possibly those which had occupied the other box.

Eastern Bluebirds were never known to attempt a nesting at an occupied box pair throughout the course of the nesting season.

## Discussion

The Minneapolis Chapter of the Audubon Society (Bluebird Recovery Program) recorded that in 1993, out of 8,231 nest boxes across Minnesota, 66% of the Eastern Bluebird eggs laid were fledged. Rice County reported 1,044 nest boxes with a 51% fledging success (Vetter 1993). Since the low success of the St. Olaf trail was similar to that of Rice County, the atypically cool, wet spring was the first reason given for the low success rate as early broods often die due to periods of cold weather (Zeleny 1986). Out of the five Eastern Bluebird nests established in May, only 37% of the eggs fledged, hinting that the cause may have been the cool temperatures. In actuality, only one nest was lost due to this cause; the others were due to predation and midsummer abandonment.

Despite the fact that up to 85% of nests may contain blowflies (Roberts 1981), the larvae of which are detrimental to healthy nestling development, we found no evidence of blowfly parasitism in the boxes containing Eastern Bluebirds.

No Eastern Bluebirds were lost to predation once Noel's coon guards were fastened to the outside of active Eastern Bluebird boxes.

House Wrens' competition and consequent destruction of Eastern Bluebird eggs and young is often a problem on trails (Zeleny 1985). None of our Eastern Bluebird nests, however, were suspected of being usurped by House Wrens. The five known usurpations, consisting of the destruction and takeover of an active nest, involved House Wrens usurping three other House Wren nests and two Tree Swallow nests. The avoidance of this problem may be due to the late arrival of House Wrens compared to that of the Eastern Bluebird (only three of 25 House Wren nests were established in May compared to five of nine Eastern Bluebird nests). Eastern Bluebird nests built later in the season are at a higher risk of House Wren destruction than those built in the spring (Zeleny 1985).

The Tree Swallow season is more similar to that of the Eastern Bluebird, but interspecific competition between Tree Swallows and Eastern Bluebirds along a paired trail has been found to have little negative consequence to either species (Tuttle 1991). Only once did Tree Swallows attempt to nest beside Eastern Bluebirds; despite the aerial battles between the two species, the Eastern Bluebirds persevered.

The results from the nest box pairing can be interpreted to yield both encouraging and discouraging information for the Eastern Bluebird. The House Wren's aggression, in its attempts to nest at occupied box pairs and its tendency to actively destroy the established nest, coupled with its preference for the Kentucky slot box, paint a bleak picture for the Peterson box-nesting Eastern Bluebird if Peterson and Kentucky boxes are paired along a trail.

Eastern Bluebirds appeared to be very choosy about nest sites on the St. Olaf trail. They nested only in Peterson boxes that had not held a previous nest earlier in the season and whose neighbor box was vacant. The "choosy" nature of the Eastern Bluebirds may serve to hinder their willingness to accept other available nest boxes when competition is greater.

One positive trend was the mutual success of House Wrens and Tree Swallows sharing a pair of houses. Five out of eight attempts at box pair sharing resulted in mutual fledging success. This could potentially free up more box pairs for Eastern Bluebird occupation. ■

## Acknowledgments

The authors wish to thank Dawna Wright for her help in establishing the trail and in trail monitoring, Greg Menning for his assistance in constructing nest boxes, and the Howard Hughes Medical Institute for funding.

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Table 1. Nesting Results and Fledging Success

	Species		
	Eastern Bluebird	House Wren	Tree Swallow
Peterson boxes	9	8	10
Slot boxes	0	17	1
Boxes fledged	5	18	8
Eggs	38	137	56
Fledged	18	90	40

Table 2. Attempts to Nest Beside an Occupied Box

		species attempting to nest beside an established nest box		
		Eastern Bluebird	House Wren	Tree Swallow
species with an established nest box	Bluebird	none	none	NU = 1
	Wren	none	NU = 2, IS = 3	NU = 1, NS = 1
	Swallow	none	NU = 1, NS = 4, IU = 1	none

NU = attempted nest is unsuccessful; no impact on established nest

NS = attempted nest is successful; no impact on established nest

IU = attempted nest is unsuccessful; negative impact on established nest

IS = attempted nest is successful; negative impact on established nest

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# Northern Flickers Nest Successfully in a Nest Box in Michigan

Allen Bower

During the spring of 1988, a pair of Northern Flickers (*Colaptes auratus*) excavated a nesting cavity in a dead limb of a box elder (*Acer negundo*) in my yard. Although a half dozen European Starlings (*Sturnus vulgaris*) watched the excavation, I assumed the larger flickers could handle the starlings, but I was wrong. The starlings worked together to steal the cavity, then fought among themselves until the winning pair claimed the excavation. The flickers hung round for a few days, but I was too slow in eliminating the starlings so the flickers left.

In the spring of 1990 the flickers began excavating in the same limb just below the 1988 cavity. Again the tree was filled with starlings waiting for the flickers to finish. This time I began eliminating the starlings (which are not a protected species) with a .22 rifle. The flickers continued to work, eventually completing a cavity 18 inches (45.7 cm) deep with an entrance 3 1/4 in. (8.3 cm) high by 2 1/4 in. (5.7 cm) wide. This time they guarded the cavity continuously by remaining inside it. They were successful in raising a brood. I watched two of the nestlings leave the nesting cavity. Fledging took place over a period of four days.

The flickers returned in 1991 and attempted to revamp their 1990 cavity. They managed to poke a hole through the side of the cavity and left because there was no place on the limb for another excavation. I determined to be ready with a suitable box the following spring.

After reading extensively about flickers, I designed and built a nest box based on measurements from the 1990 cavity. I figured the best place for the box would be on the top of the stub where the old cavity remained, at a height of about 18 feet (5.5 m). I packed the box to the roof with planer shavings. Because the flicker pair shares excavation as a part of their

mating behavior, the shavings serve as a substitute for more solid wood for the birds to remove. When the box is filled with shavings, the hole is stuffed so there is no problem with House Sparrows (*Passer domesticus*) and starlings. Twice starlings did take over the box from the flickers, both times when the level of shavings had dropped by about half. The third starling I shot (with a pellet gun) fell back into the box, although I did not realize it until later. As a result, the flickers did not nest.

A flicker box must be checked regularly. If shavings are packed above the level of the entrance hole, there is no problem with pest species. If the level of the shavings drops, it is possible for starlings to usurp the cavity. If you must resort to shooting pest species (providing it is legal where you live), then check the box regularly to be sure a dead bird has not dropped inside. If flickers do not return after ridding the box of usurpers, refill it with shavings. In 1992 when the flickers did not return, I found a dead starling and, after removing it, cleaned the rest of the shavings out of the box.

An eastern fox squirrel (*Sciurus niger*) used the flicker box for shelter during the winter of 1992-1993. On 12 April 1993 I cleaned the squirrel's nest out and refilled the box to the roof with cedar chips which I had purchased. On 13 April a male flicker drummed and called from the top of the box. When the female arrived, she showed more interest in the dead limb supporting the box. On 27 April the pair was in the vicinity of the box again; the following day they began excavating a hole in the limb beneath the box. Unfortunately, the limb was not large enough for a new cavity. On 29 April I called a friend, Don Smith, to help me move a log from the woods. I hung it below the nest box for the flickers to

excavate. Although they checked it during the first week of May, they made no attempt to excavate it.

On 3 May the flickers cleaned some wood chips out of the nest box. On 8 May a Tufted Titmouse (*Parus bicolor*) went into the box twice and carried wood chips out once.

On 10 May both the male and female flicker were seen at the box, but when the male attempted to enter the entrance hole it was too narrow for him. On 12 May I climbed to the flicker box and, with an electric drill, widened the hole from 2 1/4 in. to 2 1/2 in. (6.4 cm).

On 16 May starlings took over the box. I shot one bird that day and two more the following one. A starling fell back into the box so I climbed up and removed it. The wood chip level was down to within an inch of the floor and the flickers were not guarding the box well. I thought some additional chips might encourage a stronger attachment to the box so I refilled it halfway with my remaining wood chips. These added chips did not seem to make a difference.

By 27 May, my wife, Nina, and I had not seen the female flicker for four or five days and became concerned. When the male left the nest box, I got the ladder and opened the top of the box. There were eight flicker eggs at the bottom. Before I could get the ladder down, I heard a flicker call; it was the female.

On 6 June I checked the box to see if any more eggs had been laid. The eight eggs had just hatched and the egg shells were still around the pile of nestlings. On 15 June (nine days after hatching), I again checked the box. By now the nestlings covered the bottom of the box. The noise they made sounded like the buzzing of a hive of bees.

Nina and I spent time watching the parents feed the young. They fed them in a head-down position; the adults' tails were visible at the entrance. This is a good reason for positioning the box so the front slants forward slightly. This slant also helps the nestlings climb to the entrance to be fed when they are a bit

older. They began climbing to the entrance on 18 June, 12 days after hatching.

On 25 June we left for a few days and did not return until the late afternoon of 29 June. I thought the flickers should have started fledging on 28 June, which I think they did. On 30 June, 24 days after hatching, two young left the box, the first at 12:39 p.m. and the second at 1:16 p.m. On 1 July, 25 days after hatching, the last nestling fledged between 8:30 and 10:00 a.m.

The fledglings were spaced in trees around the neighborhood where the parents still fed them. Four were near my home, the others farther away.

In early July I took the nest box down. About three inches of wood chips remained in the bottom of the box. There were also about three inches of black bird dropping at the front of the box and about an inch at the back (remember the box had about a 15 degree slant). The fecal matter was filled with nuggets and had a strong ammonia smell. I suggest taking the box down and cleaning it with a scrub brush soon after fledging takes place before flies breed.

In talking with the Michigan Department of Natural Resources Game Wildlife Division, the Michigan Audubon Society, the Kalamazoo Nature Center, and the Michigan Nestbox Worker Program, no one had ever heard of flickers nesting in a nest box in Michigan before.

In 1994 the box was put up the evening of 18 April. The following morning the pair, which had been around for a week, had a good start at removing shavings. Two females fought over the box for a day and a half. It appears that males fight other males, and females take on other females. Starlings took over the box three times before any flicker eggs were laid. The flickers laid nine eggs of which six hatched and fledged. Scott Smith banded the nestlings.

When attempting to attract flickers to a nest box, it is necessary to remember two things: 1) flickers are unlikely to be successful unless you are willing to



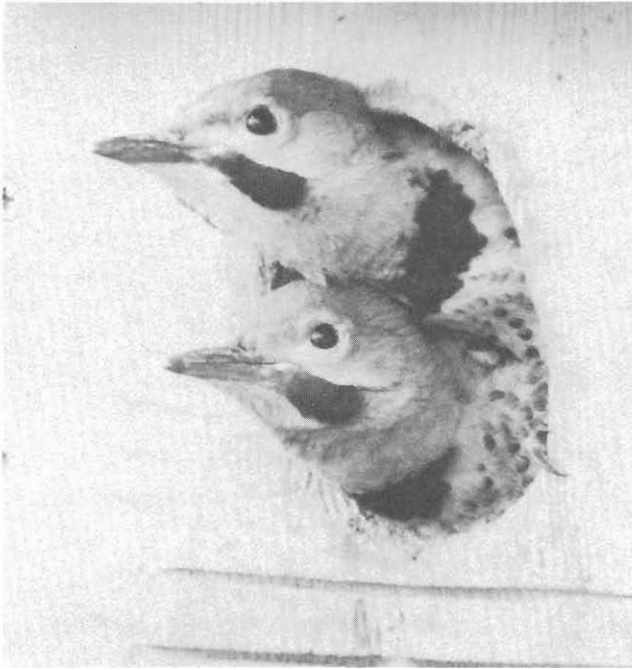
Photograph by Don Smith

Male Northern Flicker at entrance to nest box preparing to feed nestlings.

control European Starlings and House Sparrows, and 2) flicker boxes should never be erected unless you are willing to check them regularly just as you do bluebird boxes. One way to reduce the starling population in your area is to construct a nest box with an opening that they can enter easily. Equip it with a Huber or any in-box trap. Erect this box 25 to 30 feet from the flicker box. Check it daily to be sure no native bird species has been trapped. A friend uses a butterfly net attached to a long handle when he traps starlings. When a starling

enters the cavity (or box), he runs up and puts the net over the hole. As the bird exits it flies into the net. There are different ways of controlling starlings (which are the most likely species to usurp a flicker cavity). The *method* of control is not important, but it *is* necessary to be vigilant in removing these pests or it is useless to erect a flicker box.

The flicker box was constructed of 2 inch lumber, 24 in. (61.0 cm) long (my next box will be 30 in.). I'll let the flickers decide the depth they want by the amount of shavings they remove. The sides were



Photograph by Don Smith

Two large nesting Northern Flickers poke their heads out of the entrance of the flicker box.



Photograph by Don Smith

Scott Smith, Tecumseh, Michigan, bands the nestling flickers from Allen Bower's box.

cut out of 2 x 8 and the front, back, and top out of a 2 x 10 which made a 6 1/4 in. x 7 1/4 in. (15.9 x 18.4 cm) floor. I cut a 2 x 4 at a 45 degree angle and inserted the corners that were removed into the bottom corners of the box making it more rounded, similar to a natural cavity. Kerfs (saw cuts) were made around the inside of the box, 1/2-3/4 in. (1.3-1.9 cm) between cuts. My reasoning was that six to eight young birds could not easily all rest in the bottom of the nest at the same time, especially when they became larger. I also added kerfs under the entrance hole on the outside.

My hunch proved to be true. Twelve to 15 days after hatching, I think the nestlings stop secreting fecal sacs and start climbing to the entrance to be fed. I believe that from that time on the young cling to the sides of the box until they fledge. The droppings accumulate on the wood shavings.

The entrance size was based on that of the old cavity. Originally, it was an oval 3 1/4 in. high by 2 1/4 in. wide. I had to widen it to 2 1/2 in. to accommodate the male for whom it had been too narrow.

The floor is made from 2 in. lumber with 3/8 in. (0.95 cm) cut off the corners for drainage. I like the idea of slanting the box forward about 15 degrees.

Although I used cedar wood chips to pack the box to the roof, I think they were a little coarse. Sawdust from a table saw

is too fine and will pack too tightly. I recommend planer or chain saw shavings.

Tree bark on three sides of the box would probably make it more desirable to the flickers, but I believe it would also make it easier for a raccoon to predate. If you live in raccoon country, put the box on a metal pole 6 to 10 feet (1.8-9.9 m) high. A tilt-down pole would eliminate the need for a ladder. Protect the box with a predator guard on the mounting pole. Try to place the box so that it is shaded at least during the heat of the day. If the box gets direct sun, lower the sides 3/8 in. to 1/2 in. for ventilation. If the box is entirely shaded, no additional ventilation is needed.

A friend took some photographs which were interesting. They showed that the eyelids of the adults closed when they were feeding their young. These photographs also revealed white spots on each side of the back of the beak and on the tip of the beak which show up well in dim light making it easier for the adults to feed nestlings in the darkness at the bottom of the cavity. ■

*If you desire additional information about the box, mounting pole, or starting control, correspond with the author whose address appears below. Be sure to include a stamped, self-addressed envelope.*

213 N. Main St.  
Britton, MI 49229

## EIGHTEENTH ANNUAL MEETING OF THE NORTH AMERICAN BLUEBIRD SOCIETY

The Eighteenth Annual Meeting of the North American Bluebird Society will be held in Jackson, Michigan, March 3-5, 1995. It is planned to coincide with the annual bluebird festival held in that location.

*The sponsor of the meeting will be the Dahlem Environmental Education Center.*

Questions relating to accommodations only, contact: Holiday Inn, Jackson; 2000 Holiday Inn Dr.; Jackson, MI 49202; Tel. (517) 783-2681. All other inquiries to Tom Hodgson: 7117 S. Jackson Rd.; Jackson, MI 49201.

## Female Eastern Bluebird Attacks European Starling



Tony Perrone of Antioch, Tennessee, in this dramatic photograph captured the female Eastern Bluebird (upper left) in his yard attacking a European Starling. With talons displayed and bill pointed in the right direction, it is obvious that not all bluebirds are passive.

This incident occurred early in the spring of 1994, shortly after the female chose the nest box shown. The starling pictured initially dove at the box and attempted to enter it, whereupon the bluebird became aggressive. Tony centered his camera on the box as the two birds fought. The female bluebird successfully defended the box and several times thereafter, sometimes with the help of her mate. Northern Flickers and Blue Jays were also ushered from the vicinity of the box. The bluebirds raised two broods fledging four from the first brood and three from the second.

# Bluebird Exchange

*This feature extracts items from the newsletters of bluebird organizations and the periodic reports of groups with bluebird or cavity nester projects. Please be sure this editor or NABS is on your mailing list. We want to include your material!*

## **IOWA**--Wings, Summer 1994

Johnson County moved into first place in percent of filers contributing to the Iowa "Chickadee Checkoff" for 1992 (4.87% of returns). Total checkoff contributions for the state for 1992 were only \$195,541; preliminary reports for the 1993 tax year indicate that it may be the lowest ever. There is a push to obtain permanent funding for the Nongame Program, however.

Jim Walters in "Nest Box News" tries to characterize the kind of breeding season bluebirds had in Iowa. He concludes it's a "medium" year because not all parts of the state have identical conditions. He does point out that in Johnson County many nest boxes may be in the wrong location. As habitats change, bluebirders must be alert to the necessity of moving boxes.

Barbara Boyle in "Sherman Tower Update" notes that the tower (used by Althea Sherman for Chimney Swift research) is resting in a barn with two potential sites for the tower being explored. The State Historical Society of Iowa has included the microfilming of the entire Sherman collection in their 1994 budget.

An article reprinted from *Nature Society News* by Don Wilkins entitled "Chemicals in Bird Boxes" attacks the use of FlyAway®, pyrethrums, and any other pesticides in bluebird boxes. He points out that the enclosed aspect of a box magnifies toxicity and, though nestlings may not be killed, damage to the nervous system may occur or less than healthy birds may fledge.

--Johnson County Songbird Project

## **KANSAS**--Summer 1994 Nesting Report, Clinton State Park

A total of 58 nest boxes mounted on metal posts and protected by predator guards were erected by 1 March on U.S. Corps of Engineers grounds and in Clinton State Park, west of Lawrence. Boxes were monitored every 10 days from 1 March to 25 August.

Ideal weather conditions enabled bluebirds to start nesting early and produce well. In the seventeenth year of this project, the total number of bluebirds fledged was 291, a new record. The previous high was 224 set in 1992. An additional 11 boxes on the West Campus of the University of Kansas fledged 15 bluebirds, 19 chickadees, and 61 House Wrens. Wes Seyler and L. Martin Jones, who oversee this project, continue to present slide programs to various groups.

--Clinton State Park Bluebird Project

## **MAINE**--Downeast Bluebird, Summer 1994

The annual meeting of the Bluebird Association of Maine (BAM) was held on 25 June. A lack of interest in organizational responsibilities led to a redefinition of some offices. Volunteers are desired. Bluebird activities and trails are being organized on a statewide basis with 10 listed along with the name of a contact person and current activities.

BAM is undertaking an effort to standardize an annual statewide count of bluebirds. The reporting form will appear in the fall newsletter. Among the more usual questions monitors have come to expect on such summaries will be something new. An accompanying map shows the biophysical regions of the state. Those completing the summary are asked to identify the regions in which nestings occurred.

--Bluebird Association of Maine

## **MINNESOTA**--Bluebird News, July 1994

Will bluebirders go online? Mark Ross, of Germantown, Maryland, thinks it would be fun

to start a computer bulletin board discussion group on one of the services like CompuServe or a private bulletin board. The information superhighway beckons to bluebirders.

Lyme disease continues to be a potential problem for outdoor people (including bluebirders) particularly on the east and west coasts and in the upper Midwest. Tests involving 10,000 volunteers are in progress. There is optimism that a vaccine could be available for human use as early as 1996 according to the American Medical Association.

*—Bluebird Recovery Program*

#### **NEBRASKA**—*Bluebirds Across Nebraska Newsletter, Summer 1994*

Bluebirds Across Nebraska (BAN) is planning its first annual conference for Saturday, 1 April 1995 at Mahoney State Park.

Steve Eno announced the presentation of BAN's first Honorary Lifetime Membership to Doreen Scriven of Minneapolis, Minnesota for her support and encouragement in establishing the Nebraska organization.

BAN's research committee initiated a small comparison test of three styles of bluebird nest boxes. The study of Peterson, NABS, and PVC boxes will run for three years.

BAN raised \$518.00 by selling two donated James Krom prints. The organization received fine publicity on 9 April 1994 when Paul Kaufman was invited to participate in the "Let's Get Growing" radio program on station KLIN. He answered questions from listeners and talked about BAN for two hours.

Paul and Karla Kaufman provide a strong testimonial for Permanone® or Duranan® (Coulston Labs), two names for a product that is sprayed on clothes (not skin) to prevent ticks and chiggers from bothering you. Use DEET on skin.

Mary Zimmerman in "Make Your Observations Count!" addressed the importance of good record keeping. Although there are many ways of identifying boxes, the important thing is consistency. Record observations after each visit or valuable data may be lost.

Joyce Schiermann reported that the Darryl Rivers Memorial Trail had a pair of nesting bluebirds this first year. The pair fledged five in the first brood and laid a second clutch of four. Many Tree Swallows have also fledged from this trail.

*—Bluebirds Across Nebraska*

#### **NEW JERSEY**—*Nestbox Record Program, 1993 Report*

For the sixth consecutive year the New Jersey Nestbox Record Program (NRP) continued to show significant gains. Although the number of nest boxes reported increased just 3%, bluebird occupancy grew by 10%. This translates into 32% more bluebirds fledged. Ninety-five cooperators maintain 1,109 bluebird boxes and 940 cavities for other species such as Wood Ducks, American Kestrels, Northern Flickers, etc. These latter boxes are part of what is called the Expanded Nestbox Record Program (ENRP). The most significant species benefiting from cavity placement is the Wood Duck. The 510 boxes produced 816 young. Tree Swallows fledged 1,270. From 492 clutches, 1,566 bluebirds fledged. They nested in 13 of New Jersey's 21 counties.

The Endangered and Nongame Species Program plans to host statewide workshops in January of 1995. The Endangered and Nongame Species Program has been funded, in part, by a state checkoff on the income tax form. Another source of funding has been added with the opportunity to purchase "Conserve Wildlife" auto license plates. They feature an adult Red-headed Woodpecker and cost \$50.00; of that amount 80% of the one-time cost is a tax deductible donation to the program.

This mailing contained an apology for the tardiness of the 1993 report.

*—New Jersey Nestbox Record Program*

#### **NEW YORK**—*Bluebird News, Summer '94*

Ray Arendt provided a summary of the spring meeting which was held at the Rogers Environmental Education Center in Sherburne, New York.



Awards chairperson Fran Hanes presented a Bluebird Conservation Award to Paul Wilson in recognition of his many years of dedication to bluebird conservation. Vince and Ginny Schneible were also recognized with awards for their efforts on behalf of bluebirds and their service to the society as corresponding and recording secretaries.

Kevin Coulton of Seneca Falls, who heads the Route 20 Research Trail Project, provided a report on the project. The trail's first 150 boxes were erected in Schoharie County this spring. Kevin estimates that more than 4,000 nest boxes will be required to complete the trail. This may take five years to complete. A Route 20 logo was designed by Fred Bertram of Geneva. Kevin is pursuing corporate grants and public sponsorship for portions of the trail and individual boxes.

The guest speaker at the meeting, Pixie Senesac from the Cornell Laboratory of Ornithology, described the Lab's research activities relating to Eastern Bluebirds and Tree Swallows. The New York Cavity Nesters Network, under the direction of Dr. David Winkler of Cornell, is enlisting the support of cavity nesting bird enthusiasts.

Three articles in this issue are reprinted from other sources featuring the bluebird and House Wren problem. The editor solicits experiences of bluebirders in legally controlling this competition.

A \$1,000 grant by the New York State Bluebird Society has been awarded to help fund comprehensive banding programs during the spring and summer of 1994. The funding established a summer internship for a SUNY Cobleskill student to band birds on established trails, at private residences, and on the Route 20 trail in Schoharie County.

--New York State Bluebird Society

#### **OHIO--Bluebird Monitor, Autumn 1994**

Dean Sheldon titled his column "It's Not the Box that Counts." He describes 11 situations that could be premier bluebirding habitat no matter what style of box is used.

Dick Tuttle turns his attention to "The 1993-94 Roosting Season." Half of the year falls outside the breeding season. Since not all Ohio's bluebirds migrate south, it becomes important to examine factors which aid wintering bluebirds. Available fruits and berries are a prime necessity. Under extreme weather conditions two to ten or more birds may share nest boxes or natural cavities to conserve heat.

In the decade between 1984 and 1994 Dick has begun winterizing his boxes in late August or early September. At that time he plugs all ventilation slots with six inch lengths of felt weatherstripping; he also shuts all drain holes with one inch long wooden dowels. The entrance is the only remaining opening. During nest box cleaning the following spring, all plugs are removed to provide maximum ventilation during hot summer days. Take time to winterize boxes to ensure maximum winter survival of bluebirds and other native cavity nesters.

Wayne H. Davis details an observation of a three day old nestling found dead in a box. The tiny bluebird had apparently died while trying to swallow an adult black cricket which wedged in its gullet. This experience led Dr. Davis to query whether parent birds really *do* recognize the correct size of morsels to bring to tiny young.

--Ohio Bluebird Society

#### **OKLAHOMA--Watching Wildlife News, Summer 1994**

A Wildlife Conservation License Plate has been authorized to provide additional funding to the Nongame Wildlife Program. One design will be a Scissor-tailed Flycatcher; the other design has not been determined. The fee will be an additional \$25.00, which is tax deductible.

In 1993 active colonies of Red-cockaded Woodpeckers increased from 9 to 11 on the McCurtain County Wilderness Area. The woodpeckers are responding positively to hardwood treatments, cavity protection, inserts, and other recovery activities. A total of 52

(Continued on page 17)

# Albinism in Alabama Bluebirds

John Findlay, III

Albinism in Eastern Bluebirds (*Sialia sialis*) is apparently uncommon, if not downright rare, across the entire breeding range. In 1994, by extraordinary coincidence, a total of four partial to completely albinistic bluebirds were reported in Alabama. All were first brood fledglings. Each came from a different nest covering a distance of 200 miles.

My 1994 bluebird trail hatched its first albinistic bluebird. In its 18 year history more than 7,000 bluebirds have been fledged.

On 22 April 1994 Paulette Haywood, one of the Birmingham Audubon Society's enthusiastic helpers on my trail, excitedly called me on her car phone. She had retrieved a white bluebird after it had fledged from one of the nest boxes she was monitoring. Two normal siblings had also left the nest. When I went to the location, the parent birds were ignoring the white bird and were caring for the other fledglings. We photographed and checked the albinistic bird. It lacked pigmentation and was a chalky white. Because it did not have pink eyes, we determined it was a case of incomplete albinism. We returned it to the nest box hoping its parents would return. Upon checking the nest box the next day, it was gone. We hope it fledged successfully in spite of the odds against it. We never saw it again.

That first case of albinism in Alabama's bluebirding in 1994 was soon upstaged by reports from Dothan, Alabama (near the Florida panhandle). The Dothan albinistic bluebirds, three in all, did not come from the same nest. One, a partial albino, apparently was a temporary captive, but further information on it was not available. Another was killed by a bush-hog machine. A farmer using the equipment thought the young bluebird was a piece of white plastic. It was identified by Dr. Ted Bullard, a local veterinarian.

Danny Lewis, a reporter for the *Dothan*



Photograph by John Findlay, III.

An incompletely albinistic Eastern Bluebird fledged from a nest box on one of John Findlay, III's Birmingham, Alabama trails. It was a chalky white but did not have pink eyes.

*Eagle* and a member of the Alabama Ornithological Society, called me before writing a news story on Alabama's most interesting albino. It was removed from a nest box 29 April at the home of George and Cornelia Brooks. The Brookses said it was left behind by its parents after three normal nestlings fledged. It was taken to Dr. Ted Bullard for examination and identification. It was completely white, had no pigmentation, and had the conspicuous pink eyes that confirmed it as a complete albino. It was soon named "Albie" and became an immediate celebrity. It received a lot of press with a series of follow-up *Dothan Eagle* stories by Outdoor Editor, Doug Fuller. Albie made an appearance on the local television station and was studied by a special learning disabilities class at local Ashford Elementary School. During this time Cornelia Brooks nurtured and raised Albie with loving care.

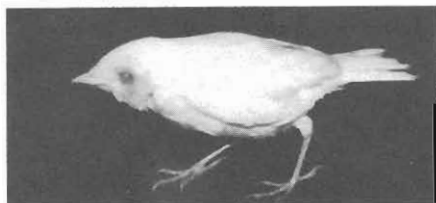
A controversy developed, however, between the state of Alabama (Department of Conservation and Natural Resources) and the federal authorities as to whether Albie should be returned to the wild or

kept in protective custody. Alabama had given the Brookses permission to keep Albie. Common sense and legality seemed to be in conflict. It has generated much correspondence and telephone calls at all levels. The news coverage continues.

My last call to Cornelia Brooks on 11 September 1994 revealed how well Albie was doing. The bird was well. It was now more than four months old and had finished molting. Mrs. Brooks said Albie flies around the sun room, perches on her shoulder, and sits in her lap. She continues to feed him Purina Hi-pro dog food as recommended by Dr. Bullard. "He is the sweetest bird," according to Mrs. Brooks. Albie is truly "the bluebird of happiness" for George and Cornelia Brooks.

In a number of books on bluebirds which I consulted, there is virtually no mention of this fascinating phenomenon of albinism. Only one article on albinism was found in *Sialia* (9(3):87) entitled "Albinistic Eastern Bluebird" by Rob Tucher of Sloatsburg, New York. This article described his observation of an Eastern Bluebird fledged the previous year from a nest box in Oakboro, North Carolina. He wrote, "Albinos seem to have less chance of survival because of other traits that accompany the albino genes--poor eyesight is the most common. They are also much more visible to predators and can be regarded as 'untouchables' by others of their kind."

Two reference books did present information on albinism. They are *The Audubon Society Encyclopedia of North*



Albie, a completely albinistic Eastern Bluebird, at the home of George and Cornelia Brooks, Dothan, Alabama. Hatched on 9 April 1994 with three normal siblings, it was left in the nest box after the other members of the brood fledged. As is often the case, feathers of the white bird were brittle. All tail feathers were shed at about six weeks, but with vitamins and supplements added to its diet the tail grew out again. Photograph by Danny Lewis, *Dothan Eagle*

*American Birds* by John K. Terres (Alfred A. Knopf, New York 1986), and *The Bird Watcher's Companion* by Christopher Leahy (Massachusetts Audubon Society). "Albinism," according to the first reference, "results from a genetic change that inhibits the formation of an enzyme (tyrosinase) responsible for the synthesis of a pigment (melanin)."

My first Eastern Bluebird albino was one that was on display at a NABS meeting in Wagoner, Oklahoma in October 1986. I understand it later died in a zoo.

Do any other NABS members have unreported experiences with albino bluebirds? ■

2749 Millbrook Rd.  
Birmingham, AL 35243

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(EXCHANGE--Continued from page 15)

inserts have been installed in active colonies to provide more potential woodpecker nest sites.

--Oklahoma Nongame Program

#### TENNESSEE--Letter

The second annual Stewart County Tennessee Earth Camp was judged a success. Sponsors (U.S. Fish and Wildlife Service, National Park Service, Agricultural Extension Service) and volunteer professional staff presented environmental education programs including material about bluebird conservation.

--Jim Wigginton, *Refuge Manager, Cross Creeks National Wildlife Refuge*

# Tests of the Peterson Box and Zuern's Tree Branch Box

Wayne H. Davis and Paul J. Kalisz

The unusual bluebird box developed by Richard Peterson has had wide use in Minnesota. Although it has been criticized for its easy access to starlings and other predators it has been very successful. In tests by Kevin Berner and his colleagues on small samples of several different styles of boxes run over several years, an apparent preference for the Peterson box by bluebirds has developed (Berner and Pleines 1993). We decided to test the Peterson box in Kentucky.

Frank Zuern (1993) has developed a horizontal box in which bluebirds nest beyond the reach of raccoons. We decided to test this box for use by bluebirds and for protection from raccoons.

## Methods

We built 50 each of Peterson boxes, horizontal boxes, and controls. Our controls had a 4 x 4 inch (10 x 10 cm) floor and were 5 inches (12.5 cm) deep, with a slot entrance 4 inches (10 cm) wide and 1 1/8 inch (29 mm) high.

In September 1993, we erected our boxes in the restricted area of the U.S. Army Ordnance Depot at Richmond, Kentucky. We put boxes on power poles, selected for optimal bluebird habitat, with at least two unused poles between sites to assure an adequate bluebird territory at each site. We alternated sites between a Zuern box and a Peterson box paired with a control. Peterson and control boxes were mounted side by side with the position of right or left reversed at alternate sites. Thus, 100 sites were established. We checked the boxes to clean out winter droppings and mouse nests in March. We monitored the boxes every two to three weeks from April through the first week of June.

## Results

*Peterson boxes.* Four sites were lost due to road closure, and one site was not used by birds. We eliminated two additional sites because eggs were laid in both boxes at one site, and at the other we found a dead bird in one box. This left an experimental sample size of 43.

Eastern Bluebirds (*Sialia sialis*) used 36 Peterson boxes and five slot boxes, and Tree Swallows (*Tachycineta bicolor*) used two Peterson boxes and no slot boxes. Based on an expected proportion of 50% use of each type of box,  $\chi^2$  tests resulted in a significant ( $P < 0.001$ ) preference for the Peterson box.

*Zuern's tree branch (horizontal) box.* Five sites were lost due to road closure and three boxes were not used by birds. Thus, our experimental sample size was 42. Bluebirds used 33 of these boxes, Tree Swallows used eight, and House Wrens (*Troglodytes aedon*) one. Thirty-four nests (26 bluebirds, seven swallows and the wren) were beyond the baffle where they were out of reach of raccoons. Eight nests (seven bluebirds and one swallow) were in the front. Thus 79% of the bluebirds nested beyond the baffle.

Raccoons visited at least 31 of our sites including 18 of the Zuern boxes. Raccoons destroyed all the nests visited in the Peterson and slot boxes, and all seven of the nests they visited in the Zuern boxes where the nests were in front of the baffle. In the boxes where nests were beyond the baffle, however, the raccoons were not able to destroy them. Several of the boxes had been thoroughly worked over by the raccoons, leaving mud and scratches on all parts of the boxes but no harm was done to the tenants.

There was a tendency by nearly all

bluebirds and swallows, using Zuern's boxes to build a carpet of grass from the entrance to the baffle. In two instances raccoons pulled part of this carpet into the entrance hole causing the bluebirds to abandon clutches. We recommend that anyone using the Zuern box for raccoon deterrence remove the carpet after the birds have laid their eggs.

When boxes were checked on 19 April two of the bluebird clutches in Peterson boxes had been pecked and were on the ground. Since there are no House Sparrows on our study area and House Wrens had not arrived we suspect that European Starlings (*Sturnus vulgaris*) may have been responsible. The entrance of the Peterson box readily admits starlings. Red-headed Woodpeckers (*Melanerpes erythrocephalus*) also showed interest in the Peterson boxes and might have destroyed the bluebird eggs.

Bluebirds preferred the Peterson box both to the slot box and to the horizontal

box. By 19 April, 78% of the Peterson-slot box sites that would eventually be used by bluebirds were already occupied, whereas only 36% of the horizontal boxes that would eventually be used by bluebirds were occupied. There was a tendency for the Zuern horizontal boxes to be used after the other sites were taken. Thus, the apparent preference of Tree Swallows for the horizontal box may not be real; the swallows arrived after most other sites had been taken by bluebirds. ■

#### Literature Cited

Berner, L.L. and V.A. Pleines. 1993. Field tests of several styles of bluebird nest boxes. *Sialia* 15(1):3-11.

Zuern, F. 1993. The tree branch nest box. *Wisconsin Bluebird* 8(2):1-6.

School of Biological Sciences, University of Kentucky, Lexington, KY 40506 (Davis) and Dept. of Forestry, University of Kentucky, Lexington, KY 40546 (Kalisz).

### BLUEBIRD BANQUET

- 1 Cup Peanut Butter
- 4 Cups Yellow Cornmeal
- 1 Cup Rendered Suet, melted
- 1 Cup Flour
- 1 Cup Zante' Currants (small raisins)
- 1 Cup Small Sunflower Chips
- 1 Cup Peanut Hearts

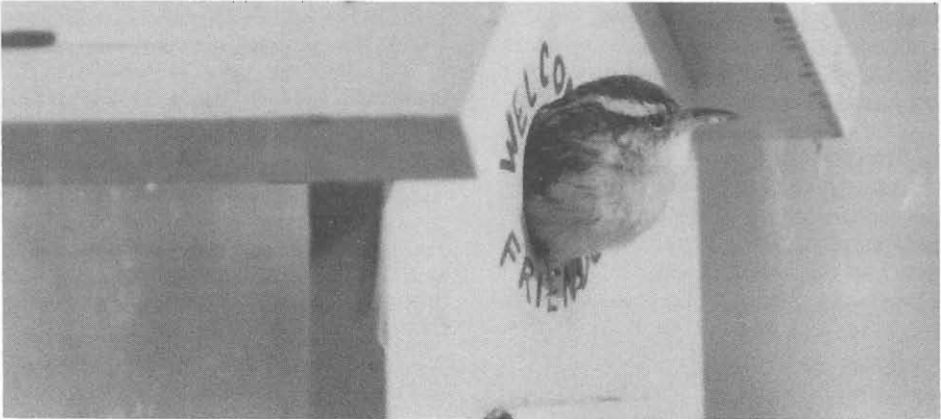


Mix well. Mixture should be granular, but will stick together. If too sticky, add more cornmeal. Offer to Bluebirds in open tray, platform, or Bluebird feeder.

Linda Janilla © 1992

## Winter Feeding

Marcy Hoepfner, Metamora, Illinois, uses feeders to attract bird visitors to her yard, as well as provide a helpful supplement to residents during severe winter weather. Her "bluebird cafe" contains a peanut butter mixture she makes which is especially appreciated by Carolina Wrens (below). A female Downy Woodpecker perches on the feeder (top, facing page). Attractive Rose-breasted Grosbeaks are not cavity nesters, but they are special visitors during migration. Their heavy bills are well-adapted to crack sunflower seeds in order to obtain the nutritious kernel inside.





## SHIRLEY ADAMS NAMED HISTORIAN

The North American Bluebird Society announces the appointment of Shirley Adams of Alton, Illinois as Historian. Previous Historian Jane Williams of Ware Neck, Virginia resigned for health reasons.

We thank Jane for her years of faithful and competent service in assembling scrapbooks of photographs, newspaper clippings, and other items pertinent to the history of this society and that of the bluebird movement. Each year the most recent scrapbooks are displayed at the annual meeting where they may be examined by anyone who so desires.

Shirley Adams looks forward to receiving items from bluebirders in all parts of the continent. If you see articles or photographs in local newspapers, newsletters, magazines, circulars, etc., that describe the activities of people engaged in bluebird or other cavity nester conservation, please forward the original or a readable copy identifying the source, including date of publication, to the following address: Shirley Adams, 3484 Torch Club Rd., Alton, IL 62002.

### **Revised NABS Slide Program Now Available**

Myrna Pearman, of Lacombe, Alberta, with help from board members and other bluebirders, has updated the popular NABS slide program. The revised program consists of 110 35 mm slides and sells for \$75.00 plus shipping and handling. If cassette tape narration is desired, add \$10.00. This new program is in response to the request of many bluebirders for increased material about the two western species. At this time, the revised program is not available for rent.

The original NABS slide program may still be rented for \$10.00. The rental fee includes cassette narration. This version has been seen by many thousands of people; it remains an excellent way to introduce novices (particularly in the eastern half of the country) to the importance, techniques, and joys of bluebird conservation. (The original program is no longer available for sale.)

## Bluebird Blues Festival

The second annual Bluebird Blues Festival was held on the grounds of Prince George's Community College, Largo, Maryland on 18 September 1994. This free blues music festival attracted 7,000 people to its three stages during a five hour period. Featured performers included Bobby Rush, the Holmes Brothers, Algia Mae Horton, the Larry Wise Band, Deanna Bogart, Warner Williams, and the Prodigal Sunz.

The symbol for the festival, a bluebird on a staff surrounded by musical notes, is the Prince George's County bird. The festival is related to ongoing research

about blues music at Prince George's Community College. It was initiated by the college and the Prince George's Arts Council. The Maryland-Capital Park and Planning Commission has become one of the presenters.

After its success the second year, the festival is likely to become an annual event.

*--Richard J. Dolesh*





# Tree Branch Bluebird Box Performance in 1994 Field Test

Frank A. Zuern

*For previous articles describing the Tree Branch box design, refer to Sialia 16(1):13-19 and 16(2):71,75.*

"I am well satisfied," writes John Holm of Gothenburg, Nebraska.

"This design is just what we have been looking for," states Don Kopff of Beaver Dam, Wisconsin.

"Bluebird populations will soar," predicts Stan DeDecker from Port Byron, Illinois.

"It exceeded my wildest expectations," declares Mick Maddox of Lee's Summit, Missouri.

"This nest box has bluebird mansion written all over it," says L.C. Siebenmorgen of Brookville, Florida.

What are these enthusiastic bluebirders talking about? They're referring to the Tree Branch Bluebird House (TBBH). These comments are representative of the returns received from the 1994 field test participants. This article will be limited to listing and analyzing the data from the surveys. Our mutual goal will be to continue to keep the TBBH a dynamic design.

In tabulating the data from the surveys a nesting was counted as successful only if a desirable cavity nester fledged at least one offspring. This is a rather strict criterion. Included in the reports were Eastern Bluebirds, Tree Swallows, House and Carolina Wrens, Black-capped Chickadees, and Great Crested Flycatchers. No reports were received on Mountain and Western Bluebirds, but I'm optimistic about test results for these two species in 1995. There are no data in the chart from any state bluebird organization.

The results of the 1994 field tests of the TBBH are summarized in Table 1. The 73 respondents to our questionnaire, from 16 states and the province of Ontario, monitored 322 TBBH units, of which 48 were not inhabited by any species. This is an occupancy rate of 85%. Eastern

Bluebirds, followed closely by Tree Swallows, accounted for 230 of the 244 nests producing known numbers of fledglings. A striking feature of the data is the very high fledging rate for all species with fledging information. Wrens took 16% of available boxes. Since all 56 TBBH nesting attempts by House Sparrows were repetitive and were destroyed, that number is listed only as information. Bluebirds had 10 successful double broods. There were 118 successful bluebird nestings out of 130 attempts.

Contributing to the high fledging rate is the very low rate of nest destruction by common predators. There were *no* reports of nest predation by cats, raccoons, opossums or, in the north, fishers. (For losses due to other causes please see Summary.)

Participant surveys were divided into two groups. Apart from the surprisingly favorable fledging rates, the most interesting result of the field tests between the two groups was the differential acceptance by bluebirds of the TBBH units.

Group I consisted of bluebirders who specifically tried new habitat. They developed new trails, and extended or filled in the gaps on existing trails. All 16 states and Ontario are included in this group which included 65 test sites totalling 272 TBBH units. The boxes were placed either as identical pairs or as a single unit. Farm buildings and urban areas were avoided by a distance of one mile in nearly all cases. Nest box sites were from one acre to 40 acres in size. The boxes were randomly dispersed. *All of the successful bluebird nestings for 1994 occurred in TBBH units monitored by this group.*

Table 1. Reported use of TBBH units during the 1994 nesting season.

Species	No. of Nests	Young Fledged	Young per Active Nest
Eastern Bluebird	118	444	3.8
Tree Swallow	112	527	4.7
Black-capped Chickadee	12	70	5.8
Great Crested Flycatcher	2	8	4.0
House and Carolina Wrens	53	-	-
House Sparrow	56 attempts		

The number of nests reported (297) exceeds the number of boxes used (274) as a result of multiple nesting.

Group I had a large geographical range with a high degree of habitat diversity. Within this group, trails of five to 46 TBBH units produced the highest percentages of fledged bluebirds. About 25% of the respondents in this group were novice bluebirders obtaining plans by direct mail.

Group II consisted of experienced bluebirders who integrated the 50 TBBH units on seven previously established trails in four states. All of these trails made a point of pairing a TBBH with an older style vertical and/or Peterson box. The surveys from this group were explicit about *comparing* in order to find out which design the bluebirds would choose. The 50 boxes were installed on trails that had from 10 to nearly 200 boxes. Based upon the surveys from this group, five trails were in prime bluebird habitat. A few TBBH units did get placed near farms or urban areas. Two trails reported serious sparrow and/or wren problems. Tree Swallows successfully nested in 40% of the boxes in Group II, showing a good fledging rate. One trail paired 10 TBBH units with 10 previously established Peterson boxes; the TBBH units had nine successful nestings: three of swallows and six of wrens. There was no predation. The most unusual event for Group II was that *they did not record a single successful bluebird nesting in any of the 50 TBBH units monitored.*

How to explain the lack of acceptance of the TBBH design by bluebirds of the second group? It seems likely that we are dealing here with both nest site fidelity and nest box imprinting. The literature is replete with examples of birds that continue to use deteriorating nest sites until they are almost unrecognizable. The nesting pair becomes comfortable with the habitat surrounding the nest site, and thus exhibits a territorial preference. Nest box imprinting is similar to any other kind of imprinting in that, at a critical point in early development, the configuration of the structure in which it lives makes it seem "right" for the nestling, who then subsequently, when a nester itself, chooses a nest box that conforms to this original image. (More discussion follows under Site Fidelity.)

Imprinting also influences a bird's choice of a familiar exterior shape within its chosen territory. What appears important, therefore, in the field tests of 1994, is that most of the TBBH units tested by Group II were paired with previously existing (and presumably used) structures. It would seem likely that by placing TBBH units in non-comparative situations, bluebirders would find the quickest way to take advantage of the demonstrated advantages (fledging rates, low predation) of the design.

Table 2. Comparison of the TBBH test results between Group I and II.

Survey Category	No. of Boxes	No. of Bluebird Nests	No. Young Fledged	No. Tree Swallow Nests
Group I	272	118	444	92
Group II	50	0	0	20

The surveys revealed two additional desirable cavity nesting species that utilized the TBBH. There were 13 Black-capped Chickadee nestings reported. One nest of six eggs was abandoned. The remaining 12 nests had 70 fledged young. There were two successful Great Crested Flycatcher nestings, one in Florida and one in Wisconsin. All nests for these two species were built behind the baffle (as were 90% of all bluebird nests and 75% of all Tree Swallow nests). If the predator baffle is omitted, chickadees invariably fill the entire nest box.

Several avian surprises surfaced from the surveys in Group I. Terry Glanzman of Mondovi, Wisconsin had premature fledging when he inspected a roof-opening TBBH. Four bluebird nestlings exploded out of the nest pocket (behind the baffle). Ron was amazed to watch them fly about 100 yards before landing! There was another report received of a very long first flight, but this was a normal fledging. These examples illustrate a strong feature of the design: it offers plenty of space inside for nestlings to exercise and strengthen flight muscles, which should aid fledgling survival.

### Site Fidelity and Imprinting

An example of site fidelity occurred at the Sullivan Nature Center, a few miles from my home. In the spring of 1993 I paired a TBBH(S-1) with a standard vertical box which I began to monitor in 1983. This older box had been abandoned by its owner, but it had been used by bluebirds for eight of the past 10 years. It is 80 yards to the forest edge and it is on a four foot post. I removed several House

Sparrow attempts from both boxes. By late June of 1993 a pair of bluebirds chose the familiar, previously used, vertical box. And TBBH (S-1) stood empty.

Since this older box had no workable access, I replaced it with a side-opening TBBH (S-2) in April of 1994. I kept the same height and orientation. Now I had a pair of Tree Branch nest boxes 25 feet apart. At this point I didn't have a clue as to the results of the experiment that was to unfold. This site is only one-quarter mile from a dairy farm, so I had the usual sparrow problem. But this time I had a new weapon--the Al Weikert sparrow trap!

Then on 6 July an inspection trip revealed a grassy nest with two bluish eggs behind the baffle. Based upon my careful observations of this bluebird pair's past behavior (skittish, wary, yet non-aggressive) I feel that at least one and perhaps both adults were from the pair that had nested in the old vertical box the previous year. We have shared an instance of specific site fidelity.

The first TBBH (S-1) had been ignored again, and the birds chose the TBBH (S-2) that had been substituted for the "old familiar" vertical box. All four eggs hatched and four bluebirds fledged. This unplanned experiment illustrates just how possibly misleading the current practice of comparing nest box styles can be. Fresh, deep claw marks indicated that this TBBH had been attacked during incubation. The attack failed.

The male bluebird exhibits a strong territorial imprinting. This past summer I observed a male that returned to a previously successful TBBH unit. He lingered for nearly two months trying to

attract a new female, as last year's mate never returned.

The following imprinting incident took place in a Wisconsin state park in 1990. We observed a pair of bluebirds for two days as they repeatedly investigated a series of rectangular shapes (8 in. x 14 in. x 1 in.). Each bird tried to "enter" the shapes, fluttering, perching, and calling. They had mistaken campsite markers for the familiar shapes of vertical nest boxes!

Pairing nest boxes for the purpose of comparison is a human strategy. When we study which design is most attractive to bluebirds, have we asked the right question? Perhaps we have been conditioned to think that the best way to determine the value of a nest box design is to compare box X to box Y. By emphasizing attractiveness to bluebirds, have we been looking at the wrong side of the equation? Instead of looking at which design is most often chosen by bluebirds, perhaps we need to examine the effectiveness of a design in hatching and fledging healthy offspring and to ask whether it repels certain predators.

### Summary

Neither group reported any successful predation by cats, opossums, raccoons, or fishers. No dead migrating swallows were found in any TBBH. Movement of maturing nestlings toward the front of the box was reported, but was not shown to be a factor in losses. Observations of the natural hollow tree branch nest sites revealed a similar pattern. Natural wariness seems to result in a nestling retreat when threatened.

Eastern Bluebird losses were one female and her four nestlings killed by

House Sparrows, one male dead in an empty box in early March in northern New York, six nests lost to snakes (probable), four nests of eggs and two nests of young abandoned, and two nests of eggs lost to wrens which pierced eggs. There were 10 lost swallow nestings that followed a similar pattern. This low nest cycle casualty rate is unusual given the extreme heat across most of the eastern United States in May and June of 1994. This is when over 95% of all TBBH nestings occurred. The low loss rate is due mainly to the adequate venting system used in the design which kept the interior temperature at a safe level. I observed 100% bluebird nestling mortality in several poorly vented standard vertical nest boxes during this same period. In an effort to condense data these losses were not shown in the tables.

Survey dates indicate that about 50% of the 322 TBBH units were installed after mid-April. Only one TBBH reported being protected by an anti-predator metal guard on the post.

My hope is that more data will be added in the 1995 nesting season. To that end, I thank everyone who contributed data and other information. I trust we can continue to cooperate in finding the safest and most productive nest box for desirable cavity nesters in any given region. ■

### Acknowledgments

I'm so grateful for the help of bluebirders in this test effort. A special thanks to Dr. John Kaspar, retired biology Professor, University of Wisconsin, Oshkosh for his assistance in organizing the 1994 TBBH data shown in Tables 1 and 2.

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Oshkosh, WI 54904

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(POINTS--Continued from page 2)

school.

*Executive Director Seriously Hurt in Automobile Accident.* Our always cheerful Executive Director, Mary Janetatos, was seriously hurt in an

automobile accident in mid-August. I am pleased to report that her progress at last appears to be "up-beat." Mary, we wish you God's speed every step of the way. We love you! ■

# Broken Necks and Bluebirds

Jerry H. Broman

I became a die-hard bluebirder three years ago after unexpectedly seeing my first pair of Eastern Bluebirds investigate a small bird box I had purchased which had been placed on a pole in my vegetable garden. A colleague introduced me to Dr. Zeleny's excellent book on the bluebird and I was hooked. For the past four years I have maintained a pair of standard boxes, including Zeleny and Peterson styles, in my suburban back yard in south-central Pennsylvania. The first spring we joyfully watched a pair of Eastern Bluebirds nest, hatch, and fledge five chicks. Since that time no young have fledged successfully despite continued and active nesting in these boxes by our resident bluebird population. Most problems have been related to takeover of nests and destruction of eggs by House Sparrows. One pair of bluebirds abandoned a nest for unknown reasons one day after hatching.

This year our nesting bluebirds were beset by other problems. As usual, bluebirds again nested and laid four eggs. Ten days into incubation, the male bluebird abandoned the female or met with a mishap. At any rate, he did not return. The female bluebird diligently incubated and hatched three of the four eggs. She actively fed the young for the first two days, then she, too, disappeared. After not seeing the female for two days, I opened the Zeleny box and found three dead chicks and one unhatched egg. The chicks were well-formed and the nest was not infested. Two days later,

while laying mulch near my raised vegetable garden, I found the carcass of the female. The body was slightly desiccated, but otherwise was in good shape. There was no external sign of trauma, though the head was slightly "floppy." The carcass and vegetable garden are 30 feet (9.14 m) from the nearest human dwelling.

As a pathologist, my curiosity and experience in autopsy pathology led me to perform my first limited ornithologic post-mortem examination consisting of the accompanying radiograph obtained using a standard laboratory x-ray machine. This radiograph clearly demonstrates unequivocal fracture/dislocation (arrow) of the cervical spine which resulted in the sudden and catastrophic death of this Eastern Bluebird and subsequently her nestlings. The upper cervical spine above the fracture has a slight curvature. The lower cervical spine is more in line with the rest of the body. The fractured ends overlie each other at a right angle. This x-ray also admirably shows the tubular structure of the long bones and the hollow structure of the calvarium or skull which is otherwise not fractured. The carcass and x-ray were subsequently turned over to our local licensed educational nature center.

Collisions with man-made structures, such as city high rises, according to some naturalists with whom I have spoken, cause the deaths of millions, if not hundreds of millions, of migratory birds in the United States every year. Young



Radiograph by Jerry H. Broman, M.D.

This radiograph (x-ray) of a female Eastern Bluebird by the author indicates the cause of death as a fracture of the cervical spine.

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Peregrine Falcons, artificially hacked in urban environments, have died flying into pane or mirrored glass of skyscrapers, apparently confusing it with open sky. Many thousands of migratory birds are killed along the Atlantic flyway each year flying into lighted high rises at night. In this case, however, the only man-made structures present in the immediate vicinity of the carcass were three inch-wide (2.54 cm) metal garden stakes holding up the chicken wire rabbit fencing. These stakes were about four feet (1.22 m) high and projected about six inches (15.24 cm)

above the top of the fencing. This case illustrates a potential hazard, common to other migratory birds, with which bluebirds, nesting in areas of human habitation, must also contend. ■

1913 Sturbridge Dr.  
Wyomissing, PA 19610

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### Memorial Gifts

Each year the spring issue of *Sialia* carries a list of memorial gifts which have been received by the North American Bluebird Society during the preceding year. Contributions can be made as general donations to the Society or can be specified for research, education, or gift memberships.

# Speakers' Bureau Report: Illinois

Ron Kingston

Illinois, the Prairie State and the Land of Lincoln, has ideal habitat for bluebirds on its gently rolling plains. Twenty speakers cover the state from the Chicago area to the lower tip where the Mississippi and Ohio rivers merge.

In the Chicago area, **Wayne Svoboda**, of Evanston, uses the NABS slide program and has given programs at nature centers and the Illinois Audubon, Ft. Dearborn Chapter. North of Evanston is **Kenneth Schar**, of Libertyville in Lake County. He uses a mixture of slides and has on display five different types of nest boxes. He enjoys maintaining bluebird displays at libraries and he places bluebird books in them for all to use. He attended the first Chicago area bluebird meeting in 1990. He passes out NABS brochures and nest box plans at the local county fair.

About 15 miles northwest of Libertyville is McHenry where **David Miller** gives bluebird programs in January and February of each year. He uses slides and hands out NABS and Illinois Cavity Nesters brochures. He also gives each person his "Miller" nest box plan which is a combination top and front-opening box. **Marilyn Campbell**, of Wayne in Du Page County, presents programs and always has an exhibit at the Illinois Audubon Society meeting.

Forty miles southwest of Chicago, **Rosa Campbell**, of Sheridan, runs the bluebird project at Camp Merry Brook. She does programs for her Girl Scouts and has them monitor the camp's bluebird trail. She says that the girls are from suburban areas and enjoy the bluebird experience. Rosa had bluebirds fledge from the box on the back of a stop sign at her house. **Joan Harmet** lives in Elizabeth which is up in the far northwest corner of Illinois. She uses slides and displays large photographs of a Blue Jay, Indigo Bunting, and Eastern Bluebird. She likes to give programs at homeowners' coffees and at nursing homes.

In the Quad Cities area, **Dick Williams**, of East Moline, really enjoys showing the slide program to church groups, garden clubs, women's clubs and the Illinois Veterinarians' meetings. He says, "It's an enjoyable program to present to anyone." **Charles Cooper**, of Henry in north-central Illinois, says, "I am over 80 years old and continue to give talks and answer questions." He says that the bluebird population has dramatically increased in his area the past two years.

**Eleanor Dunham**, of New Salem (located a few miles west of Griggsville--the Purple Martin Capital), says, "I try to have a display of houses, feeders, printed material, etc., and a bluebird house is given away at each meeting."

**Max Forbes** and **Tom Hayden**, of the St. Louis area, try to give presentations together. Max lives in Granite City and Tom in Collinsville. They state, "The seeds we planted in previous years have definitely paid off. We are constantly reminded by bluebird enthusiasts about the number of bluebirds we have today that weren't here 10 years ago." Just north of St. Louis and west of Alton is Godfrey where **Lloyd Wilson** presents slide programs to church groups, schools, and conferences for "The Mississippi River Wetlands." This is a group of more than 2,000 that meets annually. He also has had articles published in the state conservation magazine *Outdoor Highlights*.

**Rev. Harold Simpkins**, of Taylorville in central Illinois, displays assorted types of nest boxes; two boxes are always given away as door prizes. He gives programs at civic organizations and church groups.

**Marcy Hoepfner**, of Metamora near Peoria, is really spreading the word about bluebird conservation. She uses many boxes, traps, and examples of books to read at her exciting presentations. She says, "Bluebirders, go out and do a good job--for they're depending on your help." She puts many articles in newspapers and

has an annual bluebird informational potluck supper.

**Oscar McDaniel**, of Marion in southern Illinois, uses the NABS slide program and a few videos to present programs to senior citizens, garden clubs, women's clubs, and wildlife society students at Southern Illinois University. He describes to his audiences his involvement with the nesting program at the Cook Orchard National Wildlife Refuge.

The Division of Natural Heritage under the Illinois Department of Conservation is largely responsible for the statewide bluebird recovery program. Their workshops are designed to inform residents of the serious problems facing bluebirds. They include a slide

presentation, a discussion period, and a demonstration of how to assemble a nest box. They also give out the handouts "Help Bring Back Our Gems of Blue" and "Your Bluebird Diary." They recommend the booklet "Wood Projects for Illinois Wildlife." Biologists **Ed Anderson**, **Margaret Cole**, **Todd Fink**, **Bill McClain** and **Andy West** have had tremendous influence on bluebird conservation throughout the state.

Just as the sun rising over the prairie on the great seal of Illinois stands for the *PROGRESS* made since statehood and that which is anticipated for the future, the efforts of these many North American Bluebird Society speakers have also produced great *PROGRESS*. It ensures a bright future for the bluebirds in Illinois. ■



This color painting, "December Snow," by Judy Mizell was used on a Christmas card available from the North Carolina Bluebird Society. The card contains a few sentences describing the Eastern Bluebird along with the following information about the state organization: The North Carolina Bluebird Society is a non-profit organization committed to helping people learn about cavity nesting conservation. NCBS, P.O. Box 4191, Greensboro, NC 27404. ("December Snow" used with permission of the artist, Judy Mizell.)



# New England Trouble Shooter: *The Case of the White Eggs*

Lillian Lund Files

As a bluebird "trouble shooter" in the six state New England area, I feel like I keep pediatrician's hours during early spring. I receive many frantic calls--some as early as 6:00 a.m. and as late as 11:00 p.m. (Thank goodness I only require four hours sleep each night!) One gets the usual problem calls concerning raccoons, House Sparrows, bad weather, etc. Some folks are so upset they are on the verge of tears. They seem so grateful if you are able to solve their problems.

In going through my files recently, I came across a letter from a lady in Maine who called me about white bluebird eggs. We always hear that white bluebird eggs are a real surprise to most bluebirders. That proved to be true in this case.

A woman telephoned me early one morning in 1990 relating that she had a pair of bluebirds building a nest in one of her boxes just before she left the area for a week. When she returned, Tree Swallows had taken over as she found white eggs in the nest, so she threw the nest out (which is illegal). First, I asked her if the nest was lined with white feathers and had she seen the swallows around. When she replied, "no," I inquired if the bluebirds were still around, to which she answered, "yes." At this point I became suspicious and told her that I thought her white eggs were actually bluebird eggs which surprised her. Since she had torn the nest from the box just before calling me, I told her to put it back into the box right away.

The call had come in early spring. In August I received the following letter:

Maine  
August 11, 1990

Dear Ms. Files,

*You may remember me--I called you one day last spring frantic that I had torn a bluebird nest out of one of my boxes (I thought it was a swallow's nest, but discovered otherwise immediately afterwards.) You advised returning the nest to the box which I did. It was out no more than 20 minutes. Thought you might like to know the bluebirds raised a family successfully from this nest and didn't even seem to notice the disturbance. What a relief! I was so happy to have a Bluebird Trouble Shooter to turn to. Thanks for your good advice.*

Sincerely,  
P.C.

## Bluebird Trouble Shooters

*The following experienced bluebirders are contacts on a state, provincial, or regional level. They have agreed to answer questions, provide advice, and generally serve in a resource capacity. Although some may be banders or even rehabilitators, their listing here is mainly advisory. Be considerate of the timing of telephone calls. Do NOT expect them to make trips to your trail unless they volunteer to do so. Under those circumstances, an offer to defray travel expenses should be made.*

### United States

#### Alabama

John Findlay III  
2749 Millbrook Rd.  
Birmingham, AL 35243  
(205) 967-0955

#### California

Donald E. Yoder  
2021 Ptarmigan Dr., #1  
Walnut Creek, CA 94595  
(510) 937-5974

#### Connecticut

Art Gingert  
32 River Rd, Box 185  
West Cornwall, CT 06796  
(203) 672-0077

#### Georgia

Frances G. Sawyer  
5858 Silver Ridge Dr.  
Stone Mountain, GA 30087  
(404) 469-6672

#### Idaho

Al Larson  
3015 Silver St.  
Boise, ID 83703  
(208) 344-2919

#### Illinois

Marcy Hoepfner  
Rt. 1, Riggert Rd.  
Metamora, IL 61548  
(309) 367-2765

Lloyd Wilson  
735 Jackson Ln.  
Godfrey, IL 62035  
(618) 466-3596

#### Iowa

Rita E. Efta  
3589 Xavier Ave.  
Auburn, IA 51433  
(712) 688-2873

#### Maine

Wendy Howes  
P.O. Box 130  
Wilton, ME 04294  
(207) 645-4769

#### Maryland

Mary Janetatos, NABS  
Box 6295  
Silver Spring, MD 20916  
(301) 384-2798

#### Massachusetts

Lillian Files  
Scribner Hill  
Tyngsboro, MA 01879  
(508) 692-2520  
*(all New England states)*

#### Michigan

Tom Hodgson or  
Scott Friedhof  
Dahlem Env. Ed. Center  
7117 S. Jackson Rd.  
Jackson, MI 49201  
(517) 782-3453

#### Minnesota

Richard or Marlys Hjort  
9571 - 270th St., N.  
Chisago City, MN 55013  
(612) 257-2553

Dorene Scriven  
2044 Cedar Lake Parkway  
Minneapolis, MN 55416  
(612) 922-4586

### **Mississippi**

John T. Monroe, Jr.  
25 Leaf Lane  
Hattiesburg, MS 39402  
(601) 261-3911

### **Montana**

Art Aylesworth  
Box 794  
Ronan, MT 59864  
(406) 676-0300

Deni Hershberger  
E. 2023 Columbia  
Spokane, WA 99207  
(509) 482-0265

### **Nebraska**

Steve Eno  
Route 1, Box 130B  
Raymond, NE 68428  
(402) 783-3011

### **New Hampshire**

*See Massachusetts*

### **Nevada**

Donna Hagerman  
3650 Clover Way  
Reno, NV 89509  
(702) 826-2474

### **New York**

Sadie Dorber  
977 Underwood Rd.  
Vestal, NY 13850  
(607) 754-0444

Tom Meyer  
333 Bedford Center Rd.  
Bedford Hills, NY 10507  
(914) 234-7826

### **North Carolina**

Christine B. Ammons  
242 Nanney Town Rd.  
Union Mills, NC 28167  
(704) 287-3502

### **Ohio**

Doug LeVasseur  
20680 Township Rd., 120  
Senecaville, OH 43780  
(614) 685-5220

Dick Tuttle  
311 West Central Ave.  
Delaware, OH 43015  
(614) 363-6433

### **Oklahoma**

Charlotte Jernigan  
Route 2, Box 434-B  
Wagoner, OK 74467  
(918) 485-5974

### **Oregon**

Elsie K. Eltzroth  
6980 NW Cardinal Dr.  
Corvallis, OR 97330  
(503) 745-7806

Earl Gillis  
14125 NE Cullen Rd.  
Newberg, OR 97132  
(503) 538-3844

### **Pennsylvania**

Bob Bodine  
61 Gordons Dr.  
Media, PA 19063  
(610) 566-8355

Art L. Kennell  
2332 Bullfrog Rd.  
Fairfield, PA 17320  
(717) 642-6995

### **Rhode Island**

*See Massachusetts*

**Texas**

Keith Kridler  
1902 Ford Dr.  
Mt. Pleasant, TX 75455  
(903) 572-7529

**Vermont**

Steve Parren  
Vermont Fish & Wildlife  
103 S. Main St.  
Waterbury, VT 05676  
(802) 241-3700

*See also Massachusetts*

**Virginia**

Ron Kingston  
3690 Country Lane  
Charlottesville, VA 22901  
(804) 293-5173

**Washington**

Deni Hershberger  
(*See Montana*)

**Wisconsin**

Delbert D. Parkinson  
Box 207  
Phillips, WI 54555  
(715) 339-4804

**Canada****Alberta**

Myrna Pearman  
c/o Ellis Bird Farm  
Box 2980  
Lacombe, AB T0C 1S0  
(403) 346-2211

Duncan Mackintosh  
1831 - 20th Ave., South  
Lethbridge, AB T1K 1G3  
(403) 327-5466

**British Columbia**

Vern Johnson  
Route 3, S-50, C-75  
Oliver, BC V0H 1T0  
(604) 498-2121

Harold Pollock  
104-225 Belleview St.  
Victoria, BC V8V 4T9  
(604) 386-4449

**Manitoba**

Ann Smith  
3011 Park Ave.  
Brandon, MB R7B 2K3  
(204) 727-5102

**Ontario**

William Read  
2-165 Green Valley Dr.  
Kitchener, ON N2P 1K3

**Quebec**

Andre Dion  
2 Rue Sauve  
St. Placide, PQ J0V 2B0  
(514) 476-1963

**Saskatchewan**

Robert Ewart  
2818 Sinton Ave.  
Regina, SK S4S 1K3

**Yukon**

Yukon Renewable Resources  
Box 2703  
Whitehorse, YT Y1A 2C6

**Bermuda****Bermuda**

Tommy Outerbridge  
Box HS23  
Harrington Sound  
Bermuda HS BX

# For the Love of Feathers

Myrna Pearman

The spring 1993 (12(2):30-34) issue of *Living Bird* (quarterly journal of the Cornell Laboratory of Ornithology) contains a very fascinating article by Dr. David Winkler about Tree Swallows and their fondness for feathers.

Dr. Winkler, who has been studying Tree Swallows since 1985, often witnessed the great "feather fights" that swallows engage in during nest building. This promoted him to investigate why feathers are such a valuable commodity.

The first phase of his study involved counting the feathers found in swallow nests at different stages in the birds' breeding cycle, then comparing the number of feathers in each nest with reproductive success. He found that chicks in nests lined with more feathers fledged earlier. Superficially, this seemed to justify the swallows' fondness for feathers, since it appeared that they decreased the nestling's period of dependence on parental care in the nest. But there still was the possibility that the earlier fledging of those young was due to quality parenting; good parents would be more efficient at both gathering feathers and at gathering food for their brood.

To further test the role of feathers, Dr. Winkler and his colleagues reduced the number of feathers in selected nests. If the only reason that nests with more feathers have a shorter nestling phase is because they are attended by better parents, then reducing the number of feathers would produce no change in chick growth rates. Conversely, if the number of feathers did directly affect growth and rates and fledging periods, then reducing the number of feathers would slow down growth rates no matter how much food the parents brought in.

A control group and a removal group were set up. Both groups were as identical as possible to each other in all aspects of their breeding biologies, i.e., same number of yearly females, same

mean egg and clutch sizes, and equal numbers of early and late-nesting pairs.

Nests were visited each day beginning with the day after the last egg was laid. Feathers were counted in both nests, and removed in "removal" nests. Interestingly, it was observed that most swallows start placing feathers as soon as the bulk of the grass nest is complete. By the time the first egg is laid, a nest usually contains about five feathers. More feathers are added throughout the remainder of egg-laying and incubation, but relatively few are added after the chicks hatch.

Before the data were analyzed, all nests that had inattentive fathers (fathers that could not be captured in a nest because they did not bring food in to the young) were eliminated from the data base.

Nestling weight, wing length, and leg length of the chicks at 12 days of age in both groups were compared and the results were clear: chicks in the feather-removal group had significantly shorter wings and legs and weighed less than chicks in the control group. These observations show that feathers in the nest lining have a significant effect on chick development.

The next question Dr. Winkler attempted to answer was exactly why feathers had such a significant effect on chick growth. The most obvious answer was that they provide increased insulation. Feathers are inserted in the nest cup with their shafts pointed down and the broad vanes projected up and over the brood in the nest cup. In a well-feathered nest, the young are sheltered by a uniform canopy of feathers, reducing the rate of nest cooling considerably. By expending less energy to maintain their body heat, they devote more energy to growth.

Dr. Winkler's experiment showed that feather removal did not affect chick survival rates, although conditions during the year that the experiment was conducted were favorable. The presence

of a good feather lining in a nest does not necessarily mean that chicks in a well-feathered nest always have a better survival rate than birds that are raised without such a nest lining. A feather lining is important because it allows the chicks to grow faster, thus shortening the time that they are vulnerable to nest predators. It also helps them cope during inclement weather conditions, such as those experienced across the prairies in June 1993.

Cold, rainy weather is a fatal combination for all aerial insect-eating birds. Cold weather means that they burn excessive amounts of energy just to maintain their body temperatures. At this time of high energy demand, the insects they rely on for food cease flying. Faced with this double bind, parents are sometimes forced to abandon their young

and try to find food for themselves. The widespread mortality of Tree Swallows in Alberta during 1993 was a sobering example of just how difficult life can be for these birds. Next summer, when you're out on your bluebird trail, why not do what Charlie Ellis did for his Tree Swallows...pack a few feathers along and share them. Not only will you enjoy the excitement your gifts will bring, you will have the satisfaction of knowing that you are making life just a little easier for these energetic and entertaining birds. ■

c/o Ellis Bird Farm, Ltd.  
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Lacombe, Alberta  
Canada T0C 1S0

*This article first appeared in the newsletter of the Ellis Bird Farm, Ltd. 8(1):4. It is used with permission.*



Charlie Ellis loved to supply his beloved Tree Swallows with white feathers. This picture was taken by his sister, Winnie, in the mid-1960s.

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### **Beresford Proctor 1898-1994**

Beresford Proctor, of Mamaroneck, New York, was a veteran bluebirder. He built and gave away thousands of nest boxes over more than 15 years, maintained his own trail as long as his health permitted, and was the subject of articles in national publications as diverse as the *New York Times* and *USAir*. On 9 July 1988 at the Eleventh Annual Meeting of the North American Bluebird Society, he was recognized with an award for his contribution to bluebird conservation.

## Stay

Stay here little bluebird  
spend the winter with me.  
If you go down south,  
I'll miss you--can't you see?

I've enjoyed your presence  
more than you know.  
But I've got some pictures  
that I'm proud to show.

But really you might be  
more comfortable down there.  
And your beauty and charm  
maybe someone else can share.

The winters 'round here  
sometimes get cold.  
And the wind does blow  
likes never been told.

So if you must go away  
and leave me alone.  
I'll watch for your return  
when winter is gone.

--Dorothy Hall

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### (BOOSTERS--Continued from inside back cover)

John W. Skooglund  
Dr. & Mrs. Lester Stephens  
Pat A. Stevens  
Dick & Linda Taylor  
Richard F. Taylor  
Thomas A. Temple, Jr.  
Terra Studios  
Ruth C. Tevis  
Cheryl Smith Tolley  
Mary Trewartha  
Mrs. Garnett T. Tunstall, Sr.  
James & Kathleen Turner  
Barton J. Walrath  
Susan F.C. Weil  
Nancy L. Weiss, M.D.  
Robert H. Williams  
Woodbury Women's Club  
William Woodworth  
Jeannie Wright

#### Nestling

Raymond Arendt

W.J. Barton Family  
Dorothy Battle  
Dr. & Mrs. Michael Chietero  
Thomas Connaughton  
Alan & Janet Curry Family  
Daisy Hill Farm  
Mike Dalton  
Edward & Helen DePaoli  
Dr. Dennis Dukes  
Luette S. Eaton Family  
Mr. & Mrs. John H. Eddy  
T.J. Freeman Family  
GFWC Berwyn Woman's Club, Inc.  
George F. Gurda  
Tony & Sue Haight  
Linda G. Handling  
Mary B. Horne Family  
Danny & Gail Hulva Family  
Richard Kreipe & Mary Sue Jack  
Sandy Karling Family  
Dr. & Mrs. Gerald Kauffman  
Ms. Beverly A. Kimball Family  
Elfrieda Loewen

Thomas C. Matsko Family  
Carol J. McDaniel  
Donna S. McDowell Family  
William Frank McMakin Family  
Gloria Miller  
Sue Holly Newman Family  
Ohio Bluebird Society  
Sue Pairsh Family  
Mary Price  
Steven C. Rathjen  
Giselheid Regner Family  
Mr. & Mrs. Ken Richardson  
Lois M. Roberts, M.D.  
Carolyn Schwab  
R. David Shiels Family  
Nelly Sirtoro Family  
Chris J. Slabaugh, Sr. Family  
Mary Clark Stambaugh Family  
Mr. & Mrs. Donald Stokes  
F.S. Taylor  
Mr. & Mrs. Ralph L. Wetherell  
Stephen M. Winningham Family  
Phillip S. Berry & Jacqueline J. Zachem

# BLUEBIRD EXPRESS

*SIALIA welcomes the correspondence of its membership. Bluebird Express should become a forum for all who are interested in communicating their ideas and actions concerning bluebird conservation. We will attempt to publish a wide range of views in a responsible manner. Keep your letters coming!*



Dear Editor:

Here is a tip that may be helpful to someone else. Out of four early nestings in May, three were destroyed. We saw feathers on the ground in front of one box. We suspected raccoons of sticking their paws inside the entrance.

The one nest completing the nesting cycle successfully was located on an electric fence we use to confine our cattle. I now have seven boxes located on three-quarters of a mile of electric fence. None has been disturbed and we have had six hatchings since the middle of June (as of early August).

I am a retired United Methodist minister who used to hunt coyotes and wolves with greyhounds, also quail hunt with bird dogs. No more. I have fallen in love with bluebirds. At 75 years of age I have encouraged several Boy Scout troops to make and place bluebird houses around this community. The interest is increasing.

Herman Ging  
1717 Luker Lane  
Sapulpa, OK 74066

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Dear Editor:

As a followup to the story about bluebirds being trained last summer (1993) to eat mealworms from the plexiglas\*-sided bluebird feeder (15:138-139), eight bluebirds stayed all winter (1993-1994) instead of flying south, even though I didn't offer food for weeks. They

ate a peanut butter food mixture intended for the Downy Woodpeckers, Tufted Titmice, and chickadees. Knowing how quickly ice and frigid temperatures can hit the St. Louis area, I never left my house in the morning without making certain there was plenty of food in their feeder. Out of eight original birds that stayed, six were still accounted for in March 1994.

Concerning the feeder itself, I had to affix shiny duct tape on the inside where the wood ends meet the floor of the feeder because the mealworms were getting out by crawling up the wood ends. I also had to tape down one of the plexiglas\* sides because the larger woodpeckers had found they were able to lift the plexiglas\* enough to poke their beaks through and get the mealworms. To add insult to injury, many of the birds were crafty enough to peck holes through the tape and still get the worms!

Shirley Adams  
3484 Torch Club Rd.  
Alton, IL 62002

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Dear Ms. Jernigan, President:

Thank you for your letter of July 13, 1994 concerning the death of birds trapped in uncovered stacks on production equipment.

Last October, in response to a letter from the People for the Ethical Treatment of Animals (PETA), API forwarded to member companies information on the



death of birds and bats trapped in uncovered stacks of production equipment and on proposed recommendations to halt this phenomena. As a result of more recent correspondence from PETA, we will be sending additional information to our members regarding this matter, including a copy of your July 13 letter.

We thank you for bringing this matter to our attention so that we, in turn, can bring this information to the attention of our members.

Sincerely,  
Charles J. DiBona, President  
American Petroleum Institute  
1220 L Street, N.W.  
Washington, D.C. 20005

her nest. She hatched four which are nearly ready to fledge. The sparrows ignored the box.

To also assist the bluebirds, we placed two aluminum pie tins wired together loosely in a tree close to the bluebird box, about 10 feet away. This keeps the crows, starlings, and grackles away. We also put a one quart potting container weighted with rocks and dirt on the top of the bluebird box. In the pot we placed a cactus. The container is small enough so that the bluebirds can still land on the roof of the box but it keeps the other birds, especially starlings, away.

We hope other readers will experiment with these ideas. They seem to work for us.

Helen J. Williams  
13704 Turkey Foot Rd.  
North Potomac, MD 20878

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Dear Editor:

For several years we have observed and tried to combat starlings, House Sparrows, and other aggressive birds that harass our bluebirds. My mother recommended placing one or more garlic cloves in a bluebird box as she said it would cause the sparrows to avoid the nesting site. We decided to experiment with the idea and observed the following results:

*Box 1:* Placed 1 tablespoon of crushed garlic in oil purchased at a grocery store in nest box. Result: Both House Sparrows and bluebirds avoided the nest box.

*Box 2:* 1 clove of fresh garlic was placed in the box with the outer skin intact. The garlic bulb was broken into individual cloves and one was selected. Result: The House Sparrows left the nest site alone. The female bluebird placed her nest on top of the bulb and proceeded to hatch a family of five with three known survivors.

We promptly cleaned the box and did not replace any garlic. The sparrows occupied it the following day.

We cleaned another box that had a snake-proof guard and placed one garlic clove in it. Once again the bluebird inspected the box and promptly started

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Dear Editor:

Going north on Saturday, May 28, 1994, I heard on the radio that snow was falling in the Barrie-Orillia area. The bluebird results you read about in my reports are a direct effect of the bad weather we have been having ever since Mount Pinatubo erupted in June of 1992. I normally run 25% occupancy but ran only 16% in my best areas. The frost did so much damage that I am now at 8%.

These results are dismal. I have some insulated boxes made with a box inside a box, but no bluebirds used them this season.

Leo A. Smith  
55 Memorial Dr.  
Brantford, Ontario  
Canada N3R 5S2

*At the time of publication Executive Director Mary Janetatos was recovering from severe injuries sustained in an automobile accident. She hopes to resume "Bluebird Tales" in the next issue.*

North American Bluebird Society, Inc.  
 Statement of Cash Receipts and Disbursements  
 November 1, 1993 through October 31, 1994

Cash Balance November 1, 1993 \$2,204.69

Add:

Cash Received

Sale of <i>Sialie</i> magazine	23,292.00	
Sale of boxes, books, stationery, etc.	31,383.18	
Contributions	37,808.31	
Membership Dues	25,476.56	
Sales tax collected	293.80	
Transferred from savings account	2,000.00	
Uncashed checks	920.48	
		121,174.33
	<b>Total</b>	<b>123,379.02</b>

Less:

Cash Disbursements

Sialie magazine	21,789.24	
Boxes, books, stationery, etc.	23,734.03	
Educational material	7,482.64	
Membership fulfillment	16,213.50	
Research	8,963.71	
Salaries	12,209.91	
Expense accounts	1,730.99	
Office supplies	665.46	
Sales tax remitted	274.30	
Rent	6,000.00	
Federal withholding tax	615.00	
State withholding tax	882.67	
FICA	2,924.50	
Unemployment tax	270.07	
Bank charges	286.42	
Charitable organization tax	110.00	
		104,152.44
Cash Balance October 31, 1994		19,226.58

Assets:

Checking account (Citizens Bank & Trust)	19,226.58	
Savings account (Maryland National Bank)	1,658.01	
Value of Inventory 10-31-94	20,310.78	
Investments-Dean Witter Reynolds (Market Value 9-30-94)	22,953.25	
Net worth		64,148.62

Respectfully submitted,

*Delos C. Dupree*

Delos C. Dupree, Treasurer NABS

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**Wildlife Plant Use**

*We welcome all reports of plant use by wildlife. Please be specific. Include such information as the name of the plant (botanical name, if possible) and the approximate time of the year when the observations were made. Send your reports to Karen Blackburn, 185 Mica Hill Road, Durham, CT 06422.*

**Art Credits**

Jon E. Boone 2, 38  
Suzanne Pennell 22

# BLUEBIRD BOOSTERS

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Clark W. Hart  
Katrina Renouf  
Mrs. Irene S. Frantz  
John H. Rogers  
Barbara L. Matlock  
Lawrence Zeleny  
Dr. Eugene Majerowicz  
Lillian Lund Files  
Stan Bleszinski  
Laura Nielsen  
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Gerald Edward Martin  
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Elizabeth Crispin  
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Randy & Laura Jertberg Family

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Bella Vista Bluebird Society  
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Rosemary Z. Rittler  
Marvin & Mary Rubin  
Wilson-Hebron Ford Ruritan  
John S. Schier  
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Shreveport Bird Study Group  
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Craig Andresen  
Augusta Bird Club  
Brenda Baldwin  
Ted & Carol Barnett  
Nancy Baron  
H.J. Blair  
Judy Bland  
Beaver Dam Senior Center  
George Boos  
Robert J. Brown  
Edward R. Bucklin  
Joe H. Capley  
Eclesia J. Cestone  
Chemical Bank  
Walter Cly  
Mary L. Contakos

Adrienne Ryder Cook  
G.R. Cook  
W.A. Crow  
Kristine Crutch  
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M. Falchi  
Susan A. Fisher Family  
Jacqueling S. Fonticella  
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Dee & Odell Friar  
Linda R. Gilchrist  
The Ross Grange  
Gail Hall  
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Gerald L. Hartley  
David W. Heidenreich  
Dana L. Heisey  
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Doug & Gretchen C. Scott  
William E. Sefler  
Betty Shaul  
Dean E. Sheldon  
(Continued on page 37)

Founded in 1978, THE NORTH AMERICAN BLUEBIRD SOCIETY is an incorporated non-profit organization determined to increase the populations of the three species of bluebirds on this continent. Inasmuch as the populations of these birds have diminished due to the maladroit actions of human beings, as well as natural disasters, the primary objective of the Society is to educate all who will listen about the importance of preserving these singular creatures in their native environment.

Toward this end, the Society will work, within the bounds of effective conservation, to study those obstacles impeding bluebird recovery; to publish results of those studies; to promote ideas and actions which might reduce the effect of those obstacles; and to obtain a more complete knowledge about bluebird ecology, in the hope of learning more about the ecology of humankind.

**Membership: Student (under 21) \$10.00; Senior (over 60) \$10.00; Regular \$15; Family \$25; Sustaining \$30; Supporting \$50; Contributing \$100; Corporate \$100; Donor \$250; Life \$500. Add \$2.00 per year for Canada and Mexico and \$3.00 per year for other countries (surface mail). U.S. funds only, please. Amounts over \$6.00 are tax deductible.**

**Address:  
North American Bluebird Society  
Box 6295  
Silver Spring, MD 20916-6295**

