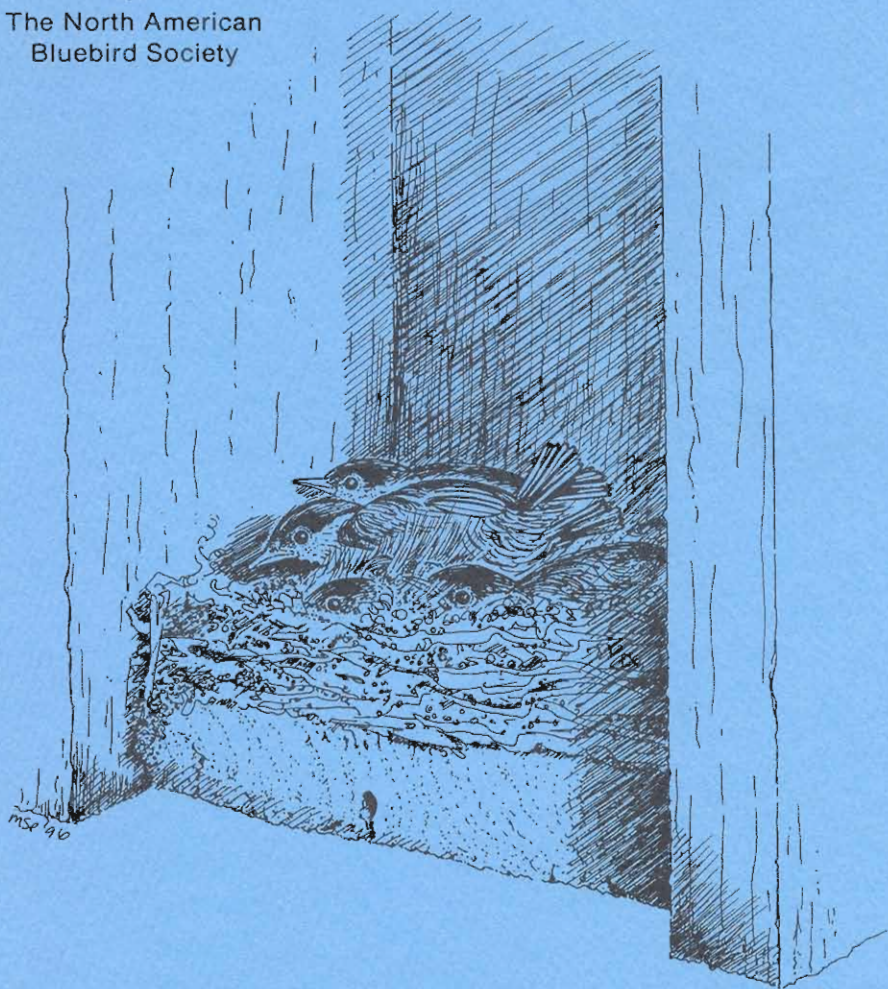


Sialia

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Summer 1996
Pages 81-120

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 *Motacilia* 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'-ah-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

Volume 18, Number 3
Summer 1996
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EDITOR
Joanne K. Solem

ART EDITOR
M. Suzanne Probst

COVER

Nesting Black-capped Chickadees are the subject of Art Editor M. Suzanne Probst's cover.

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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 Graeoch Road, Laurel, Maryland 20723.

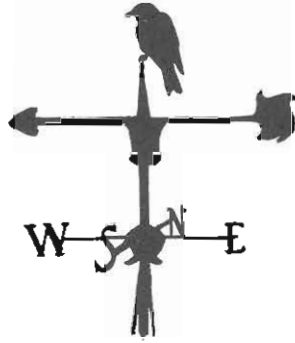
Presidential Points

Charlotte Jernigan

Birds are a very familiar part of our everyday lives. In spring, as the days grow longer and the foliage starts to thicken, we turn our attention from observing the winter feeding area to watching songbirds on or on their way to breeding areas. Going for a walk, enjoying nature, and being aware of birds' movements can quite often pay unexpected dividends.

One morning about six or seven years ago dedicated NABS member and wonderful neighbor, Carolyn Fessler, called to relate a special incident. As she passed by a wooded lot, she watched a Tufted Titmouse enter a long vertical cavity low on the trunk of an oak tree. Close observation revealed that she had discovered an active nest. We have watched each year since then; every year, without fail, titmice have nested in that cavity. In 1995 I watched European Starlings move up and down along the narrow opening, but they found no place wide enough to allow them to enter. What a relief! And what a feeling of tranquility to stand on the ground and look down to peer in, knowing that the site had served the titmice well and would no doubt continue to do so.

The Tufted Titmouse (*Parus bicolor*) is 6 1/2 inches long and is the largest of the North American titmice. It is quite common throughout the eastern deciduous woodlands. In fall and winter they are quite conspicuous as they flit along in the company of chickadees and nuthatches. Locating them in the spring, however, is a different story. Their nests are difficult to locate, and the birds are very protective of them. Titmice nest in natural or excavated cavities and also in man-made boxes. Moss, fur, leaves, and grass make a neat, firm nest that is often adorned with snakeskin. Their five to seven eggs are a creamy white with brown spots.



We occasionally are pleasantly surprised when titmice choose a box on our bluebird trail. The female incubating inside that box gives the impression that she's a tiger. The hissing noises that she sometimes makes are like hanging out a sign that says "do not disturb." This little gray bird that sports a crest of gray and a black forehead is dedicated to the task at hand and commands respect.

Members of NABS have a long tradition of bird conservation and enjoy sharing with others who have similar goals. I shall never forget an early evening when Carolyn and I were in her yard. A female bluebird landed on the top of a nearby box and stood watching around her. After a brief time the male arrived and swooped right into the box. Immediately the female popped in right behind him. The two of us stood with our mouths open. Carolyn exclaimed, "Well, Bill Bailey, won't you please come home!" We had a good laugh and the incident is one that I often recall with a chuckle. The day had ended. All was well.

Learning about the birds in your yard and then helping someone else to appreciate them widens the path that leads to more and better conservation. Lend a hand to habitat improvement and let your neighbors know why you are doing it. ■

Mortality of Banded Adult Eastern Bluebirds

T. David Pitts and Robert W. Snow

Federal regulation and coordination of bird banding in the United States and Canada began in 1920 (Pitts 1994). We retrieved from the Bird Banding Laboratory all available records that documented the death of Eastern Bluebirds (*Sialia sialis*) that had been banded during 1920-1990. We present here a summary of the dates of mortality, causes of death, and geographic locations of mortality. Additionally, we consider the effects of sex and age on mortality.

Methods

In response to our request for banding and recovery records, Danny Bystrak of the U.S. Fish and Wildlife Service's Bird Banding Laboratory provided us (in March 1993) with records of Eastern Bluebirds that had been banded during 1955-1990 and records of recoveries for the years 1920-1991. Banding records for the period 1920-1954 had not been computerized and were not available.

The North American Bird Banding manual (Canadian Wildlife Service and U.S. Fish and Wildlife Service 1991) defines the term "recovery" as a banded bird that is killed or found dead and then reported to the Bird Banding Laboratory. However, many biologists, including the writers of the Bird Banding manual, use the term "recovery" more generally to refer to either a banded bird that is found dead or a banded bird that is captured alive outside of the area where it had been banded. In fact, the Bird Band Recovery Report form from the Bird Banding Laboratory asks whether the bird was alive or dead at the time the band number was read. Many of the "recovery" records we obtained from the Bird Banding Laboratory actually describe the recapture of live birds that had been previously banded.

We entered each recovery record into

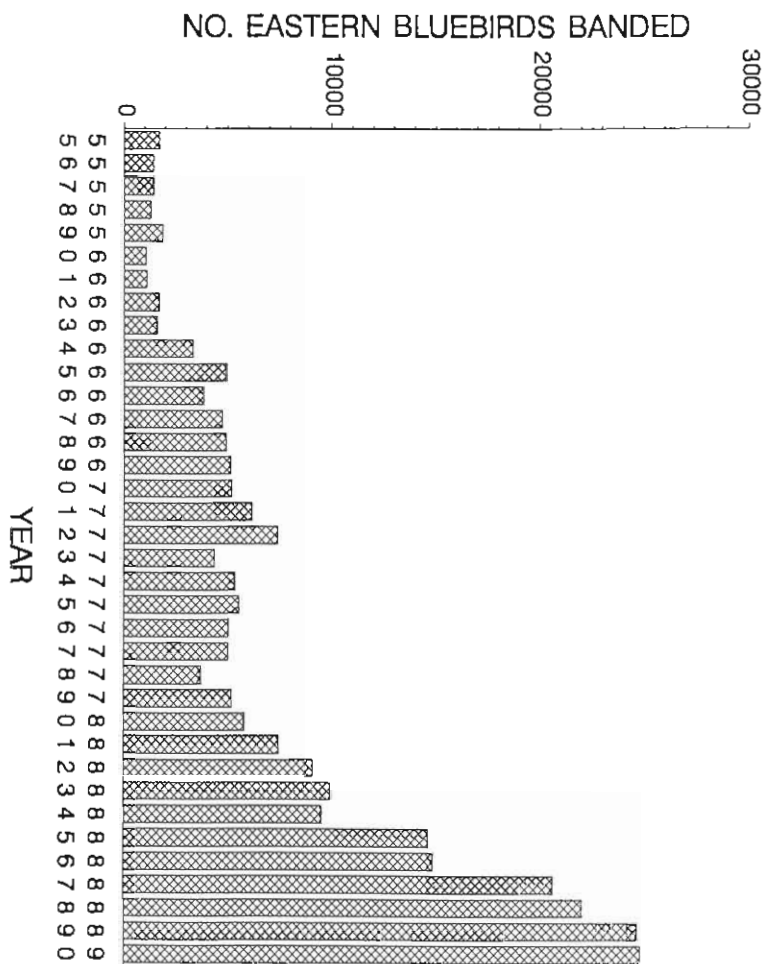
a database with files containing: Permit Number of the Bander, Age When Banded, Sex, Region Where Banded, Date Banded, Region of Recovery, Date Recovered, How Obtained, and Present Condition. By examining the "How Obtained" and "Present Condition" codes we determined whether or not a recovery record referred to a dead bird. We selected for our analysis only the records of adult birds that had died. We defined an "adult" as any bird that had lived at least 90 days. We calculated the age at which each bird died by subtracting the date it was banded from the date of its recovery. Since most bluebirds are banded as nestlings, the ages we calculated are probably accurate to within 2-4 weeks unless a bird was found long after its death. We did not determine how many of the birds recovered in a region had also been banded in that region.

Results and Discussion

We estimate that during 1920-1990 approximately 290,000 Eastern Bluebirds were banded. We arrived at this figure by combining the number of Eastern Bluebirds that Klimkiewicz *et al.* (1983) reported had been banded through 1981 (140,099) with the annual totals in the Bird Banding Laboratory files for 1982-1990 (150,037).

The Bird Banding Laboratory records indicate that 256,453 Eastern Bluebirds were banded in 1955-1990, with the smallest number, 1,062, being banded in 1960 and the largest number, 24,780, being banded in 1990 (Figure 1). A tabulation of the number of Eastern Bluebirds banded each year was not a major objective of this paper. We feel, however, that information about the number of bluebirds banded is important when attempting to understand variations in the number of banded bluebirds that have been recovered.

Figure 1. Number of Eastern Bluebirds banded each year, 1955-1990.



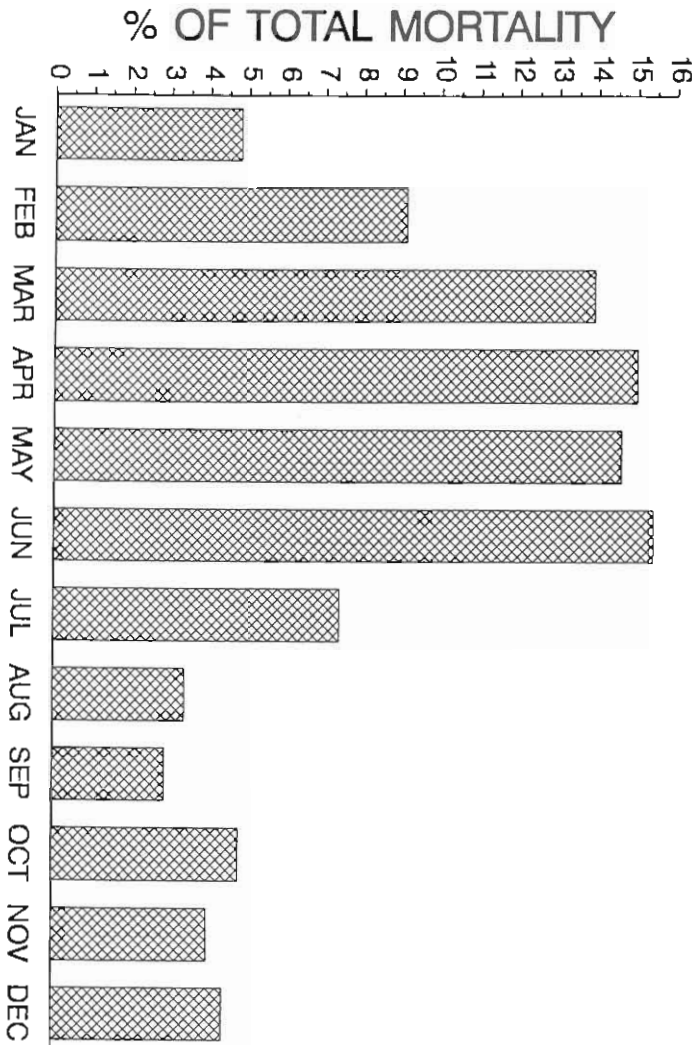
The probability of a banded bluebird being found dead or recaptured away from the area where it was banded is low. Klimkiewicz *et al.* (1983) noted that of the 140,099 Eastern Bluebirds that were banded prior to 1982, 1,618 (1.15%) had been recovered. The recovery rate for many other species is even lower. For example, the recovery rate for Blue-gray Gnatcatchers (*Poliophtila caerulea*) was 0.2%, and the recovery rate for Northern Parulas (*Parula americana*) was 0.06% (Klimkiewicz *et al.* 1983). The higher recovery rate for Eastern Bluebirds may be partially due to the facts that (1) they do not migrate into Central America or South America where the probability of

someone finding and reporting the band number of a dead bird is lower than in the United States, and (2) they sometimes die in nest boxes or other sites where they are likely to be found by humans.

Dates of deaths

We obtained from the Bird Banding Laboratory files a total of 1,931 records of recovered Eastern Bluebirds. We determined that 725 of these records represented dead birds. The monthly mortality totals are given in Figure 2, and the annual mortality totals are presented in Figure 3. Fifty-nine percent of the deaths occurred during the four months of March-June. Many deaths also occurred

Figure 2. Monthly mortality of Eastern Bluebirds based on band recoveries.



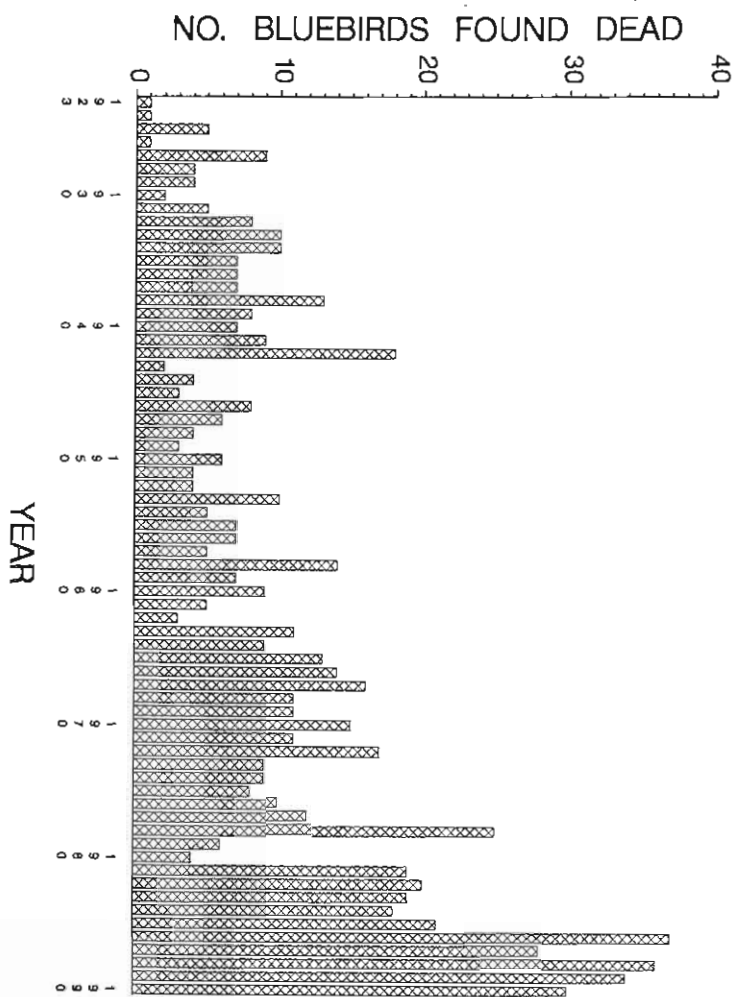
in February. Mortality is known to be high during this time of year (Pitts 1978; Sauer and Droege 1990), but this is also a time when more people inspect their nest boxes and are, therefore, more likely to find bluebirds that died while roosting or on an early nest. We believe that much of the mortality in February, March, and early April can be attributed to the stress of late winter and early spring weather.

We suspect that mortality is heavier in the late summer and early fall months than indicated in Figure 2. Many young-of-the-year are becoming independent of

their parents and, in some areas, are beginning their first migration at this time. Even though these young birds hatched earlier in the year, many of them are older than 90 days and are treated as adults in this paper. Much of the mortality at this time of year is not associated with nest boxes, and therefore, is less likely to be detected and reported.

The number of banded bluebirds found dead each year has varied greatly. The general trend, as shown in Figure 3, has been toward an increase in the number of recoveries each year. We think this

Figure 3. Number of banded Eastern Bluebirds found dead each year, 1923-1990.



trend is not due to an increased rate of mortality. Instead, we think this trend is to be expected as more bluebirds are now being banded (Figure 1) and more people are inspecting roost sites and nest boxes, thus increasing the probability of finding dead bluebirds. The number of recoveries per year has, however, not increased uniformly. For example, in 1978 high mortality was recorded, primarily as a result of the harsh winter weather. But in 1979 and 1980, mortality appeared to be much lower than expected. This is probably due to the fact that fewer bluebirds were alive during these two years. Some states had record low

populations during these two years (Pitts 1981). The same sequence of higher than expected mortality one year followed by lower than expected mortality the next year has previously occurred (e.g., 1942 and 1958). We believe that the alternating high and low annual mortality totals shown in Figure 3 reflect fluctuations in bluebird populations.

Cause of death

Based on the "How Obtained" and "Present Condition" codes in the band records, we were able to determine the probable cause of death for 354 individuals. Eight factors accounted for

293 (83%) of these deaths (Table 1). These factors were (1) shooting, (2) died on nest, (3) caught by cat, (4) found dead inside a building, (5) hit by automobile, (6) struck stationary object other than TV tower, (7) died due to injury, and (8) weather. Small numbers of bluebirds died from various other causes. For example, 5 died due to disease, 3 were captured by raptors, 3 were captured by dogs, 2 drowned, 2 were entangled in fishing gear, and 1 struck a TV tower.

We think the data shown in Table 1 do not accurately reflect the manner of death for the majority of Eastern Bluebirds. We believe that some factors caused more mortality than shown while other factors caused, proportionately, less mortality than indicated by Table 1. Our thinking was influenced by the fact that a specific cause of death was given for fewer than half of the dead bluebirds. Of the 725 banded Eastern Bluebirds whose death was reported, the cause of death was indicated for only 354 (49%). The other 371 deaths (51%) were simply recorded as "found dead." We suspect that predators, diseases, and parasites are responsible for many more deaths than Table 1 indicates. Winter weather was listed as the cause of death for only 14 (4%) of 354 birds. Severe weather in late winter and early spring is known to decimate bluebird populations, sometimes over large areas (Sauer and Droge 1990).

So why did the Bird Banding Laboratory have so few records of winter-killed banded Eastern Bluebirds?

Many of the birds whose cause of death was listed without explanation as "found dead" possibly died due to winter weather. This speculation is supported by examination of the month of death (Figure 2). Large numbers of bluebirds were reported as "found dead" in February and March. Early spring storms in April may also be responsible for many of the birds reported as "found dead on nest." Pitts (1981) estimated that the number of Eastern Bluebirds nesting in Tennessee declined by at least 70,000 individuals during the severe winters of 1977-1979. We believe it would be unrealistic to assume that four times that number died from shooting, which is what an examination of the data in Table 1 might suggest.

Another factor that has possibly biased the results summarized in Table 1 involves the reporting policies of the Bird Banding Laboratory. Each dead banded bird that is recovered is assigned a number code indicating how the bird was obtained. In many cases the selection of a proper code involves an interpretation of the circumstances and a subjective decision as to the cause of the bird's death. Consider a banded bluebird that is found dead in a nest box in March. Which of the following codes should be assigned?

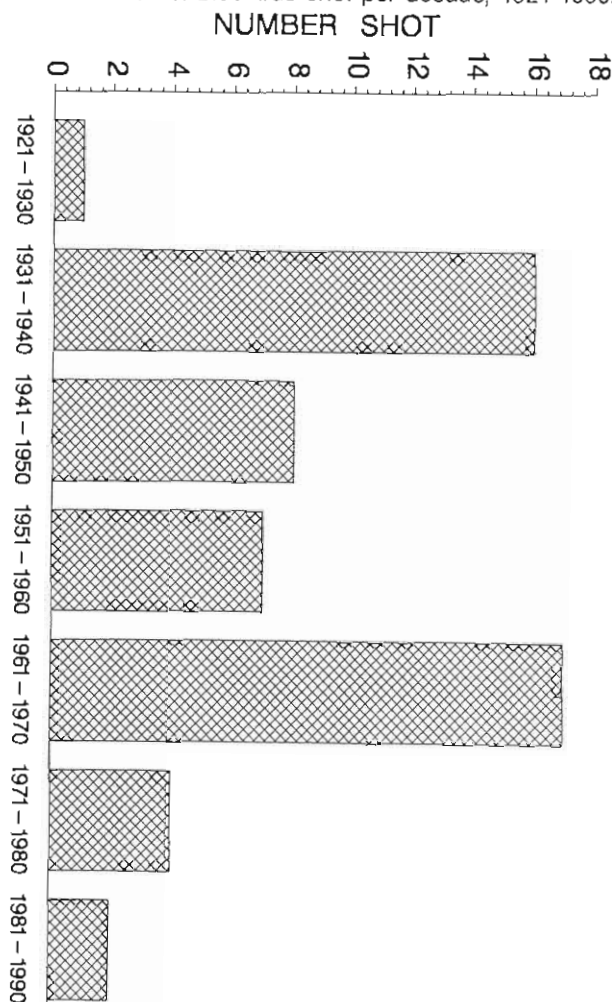
Table 1. Cause of death for 354 banded adult Eastern Bluebirds.

<u>CAUSE OF DEATH</u>	<u>NUMBER REPORTED</u>
Shot	55
Found dead in nest	51
Domestic cat	51
Found dead in building	50
Collision with automobile	42
Collision with stationary object	16
Weather (Oct. through Mar., only)	14
Injury	14
Miscellaneous (no more than 5 deaths due to any one cause)	61

Code 00-found dead; Code 02-found dead due to starvation; Code 15-found dead due to weather; Code 21-found dead in an enclosure; Code 50-found dead: band with skeleton only; or, Code 97-method of recovery not covered by other codes. Conceivably, any one of these six codes could be applied to this recovery. Since the cause of death is not obvious, most people would probably select the most general category, Code 00-found dead. The fact that this code is the first code on the list might cause it to be selected more frequently than some of the other codes, particularly if doubt exists as to which is the most appropriate code.

Based on Table 1, the major cause of death in adult Eastern Bluebirds is shooting. Many of these records are from the years 1931-1940 (Figure 4) when, even though the shooting of bluebirds may have been illegal, the regulations were not rigidly enforced in many areas, and most shooters were probably not reluctant to be truthful. (I am continually amazed at the number of students in my introductory ornithology classes who are not aware that the shooting of songbirds is illegal. Ignorance of the law in the 1930's is more understandable than a similar type of ignorance in the 1990's.) The Bird Banding Laboratory records

Figure 4. Number of banded Eastern Bluebirds shot per decade, 1921-1990.



show that the greatest number of Eastern Bluebirds was shot in the 1960's. If this decade is ignored, Figure 4 shows a steady decline in the number shot each decade. However, the decade of the 1960's cannot be ignored, so why the increase during these years? We at first suspected one person at one site might be responsible (e.g., a kid with a new air rifle). This theory was not supported by the data. When we determined the location where each of these bluebirds had been killed we found no concentration. Bluebirds were reported shot from 10 different locations with no more than 3 records from any one location. At this point we can only guess as to why so many bluebirds were shot in the 1960's. Perhaps the number of bluebirds being shot reflects the political and social unrest of that time. Possibly the small sample size biased the results and the peak seen in 1961-1970 is an artifact.

Unknown numbers of bluebirds are still shot, but the cause of death for those reported is listed under some non-incriminating code, such as "found dead,"

in order to avoid potential legal consequences. In the past, the general public was less familiar with bird bands and, out of curiosity, people frequently shot banded Eastern Bluebirds. Unfortunately, some bluebirds are still shot because they wear bands. On the study area of TDP a new resident shot a color banded bluebird in order to "...get a closer look at the weird color on its legs." The bird was reported, thankfully, by the shooter to the Bird Banding Laboratory; the cause of death was listed as "found dead."

Location of mortality

The recovery locations for 725 dead Eastern Bluebirds are summarized in Table 2. Tracing each of the individual birds from its banding location to the site of its death and analyzing the resulting patterns is beyond the scope of this paper. The numbers in Table 2 almost certainly do not correspond to the size of the Eastern Bluebird populations in an area. Neither do these data describe the actual amount of bluebird mortality occurring in each area. We believe, instead, that the results shown in Table 2

Table 2. Recovery locations of banded adult Eastern Bluebirds found dead.

<u>LOCATION</u>	<u>NO.</u>	<u>LOCATION</u>	<u>NO.</u>
Alberta	1	Mississippi	12
Manitoba	1	Connecticut	13
Dist. of Col.	1	South Carolina	14
Maine	1	Missouri	16
Vermont	3	Georgia	19
Oklahoma	3	Virginia	19
Quebec	3	North Carolina	26
New Hampshire	4	Alabama	28
Kentucky	4	Illinois	29
Florida	5	Massachusetts	29
Indiana	6	Arkansas	30
Ontario	6	New York	36
Kansas	7	Ohio	45
Bermuda	7	Michigan	46
West Virginia	7	Pennsylvania	47
Louisiana	10	Maryland	52
Texas	11	Wisconsin	56
Minnesota	12	Tennessee	92
New Jersey	12	-----	
Iowa	12	Total	725

more likely reflect the numbers of banders and their activities. For example, our home state, Tennessee, is the location of the largest number of recovered dead bluebirds. This is primarily due to the banders such as Mrs. Amelia Laskey who over a 40 year period handled thousands of Eastern Bluebirds.

Sex of recovered Eastern Bluebirds

The sex was recorded for 295 of the 725 recovered dead bluebirds; 162 were females and 133 were males. A chi-square test shows that these results are not significantly different from a 1:1 ratio ($X^2 = 2.85$, $df = 1$, $P > 0.10$). We cannot think of logical reasons why most causes of mortality (Table 1) would influence one sex more than the other. However, two mortality factors, "Found Dead in Nest" and "Killed by Domestic Cat" might result in the death of a higher percentage of females because females spend more time in the nest cavities than do males.

Of 51 bluebirds found dead in the nest, 8 were identified as females and 8 as males; the sex of the others was not recorded. While the sex ratio, of those birds whose sex was determined, is equal to 1:1, we would feel much more comfortable about this conclusion if a larger sample size were available.

Considering that each bird was handled at least twice, once when banded and once when found dead, why was the sex not determined on more of these birds? Most of the bluebirds found dead in the nest had been banded as nestlings during a previous nesting season. Since most nestlings are banded before their plumage has developed sufficiently to indicate sex, their banding records do not indicate their sex. Likewise, if an adult bird dies on the nest and then decays or is mutilated before being found, sex determination can be difficult.

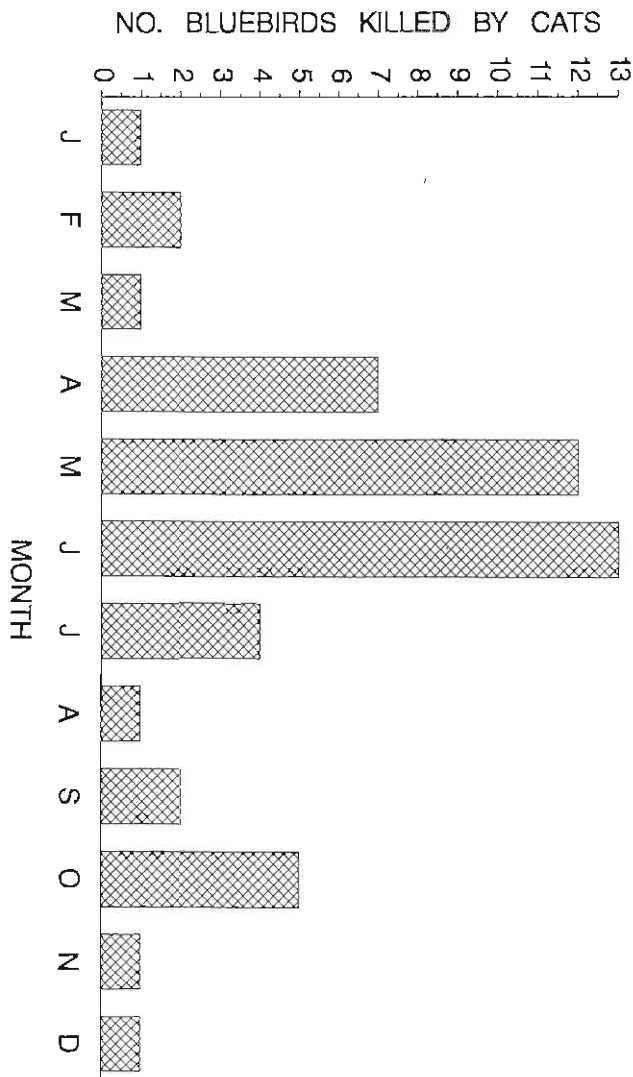
Of 51 Eastern Bluebirds killed by domestic cats, 19 were females and 5 were males; the sex of the other birds was not indicated. While this sample size is not much larger than that of bluebirds found dead in the nest (24 versus 16), the

trend seen here shows a significant difference in the number of males and females killed ($X^2 = 8.16$, $df = 1$, $P < 0.005$). Figure 5 shows that mortality due to domestic cats is highest during the nesting season. Considering that the female bluebirds, who construct each nest, lay eggs, and incubate the eggs, receive significant amounts of help from the male only when caring for nestlings, we are not surprised that more females are captured by domestic cats. (Domestic cats kill an unknown, but probably large, number of nestling bluebirds. However, since this paper deals only with adult mortality we have not explored the effects of cat predation on nestlings.)

Age of recovered Eastern Bluebirds

We were able to calculate an approximate age at the time of death for 516 Eastern Bluebirds. The youngest bird died at 91 days (please recall that we limited our analysis to birds that were at least 90 days old); the oldest individual died at 2836 days (7.76 years). We are excluding from consideration a record of an Eastern Bluebird that, according to the Bird Banding Laboratory records, lived at least 7834 days (21.4 years). We suspect, but have not been able to confirm, that this record contains an error. The mean age at death was 499 days (1.37 years). As summarized in Figure 6, slightly more than half of the bluebirds died before they were 1 year old. Fewer than 20% were over 2 years old at the time of their death. Although the age composition of local populations of Eastern Bluebirds may vary, we believe the data in Figure 6 approximate the actual age composition of Eastern Bluebirds in North America. We assume that mortality is proportional to the number of individuals in each age class. The argument could be made that the young birds have less experience than old birds and are more likely to die. While this is probably true for young birds that have recently fledged, we considered only individuals who were at least 90 days old. These birds may not have as much experience as their parents, but they have

Figure 5. Monthly variation in the number of banded Eastern Bluebirds killed by domestic cats.



the advantages of youth (e.g., good eyesight, rapid reflexes, and fewer parasites). The average lifespan of 134 females was 449 days (1.23 years); the average lifespan of 120 males was 474.75 days (1.30 years). A T-test indicates that no significant difference exists between the age at death for females versus males ($df = 119, 133; P = 0.51$).

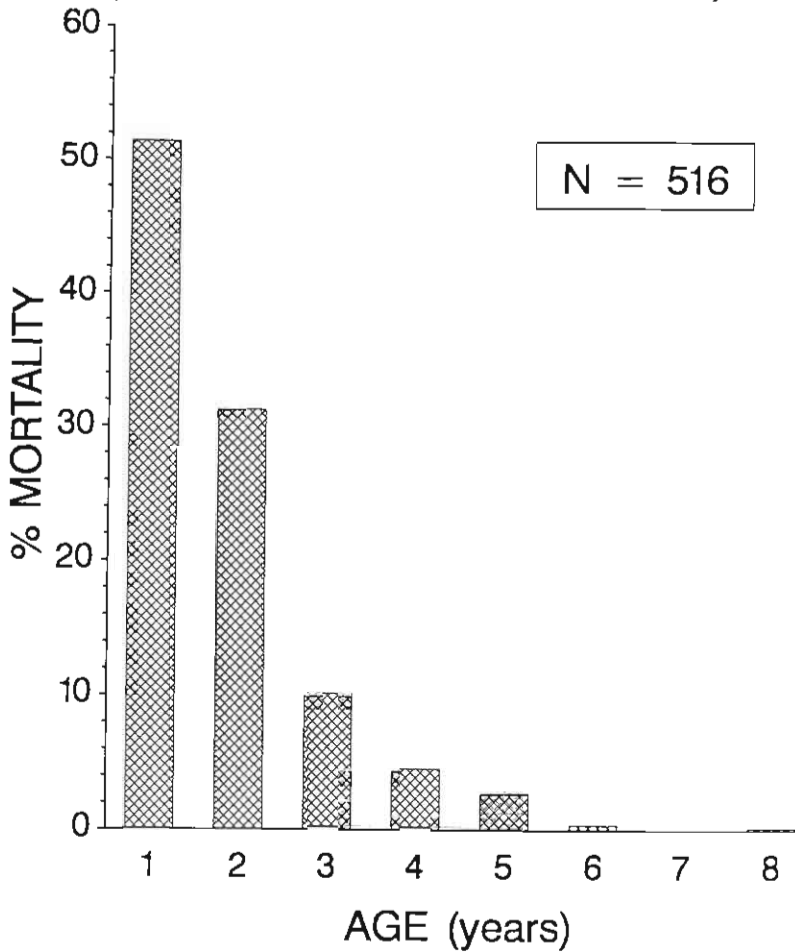
Summary

Of approximately 290,000 Eastern Bluebirds banded during 1920-1990, the

deaths of 725 adults (i.e., individuals at least 90 days old) are documented by Bird Banding Laboratory records.

1. Approximately 60% of these deaths occurred during the 4 months of March-June. We suggest that the monthly mortality figures we calculated may be biased because the deaths of many Eastern Bluebirds are associated with nest boxes during March-June, a time when the nest boxes are frequently inspected by people. Deaths of Eastern Bluebirds are probably less likely to be associated with nest boxes at other times of the year and,

Figure 6. Longevity of banded Eastern Bluebirds based on band recovery data.



consequently, are less likely to be detected by humans.

2. The number of banded Eastern Bluebirds reported dead each year has varied greatly and has generally reflected the severity of winter weather and the number of birds that had been banded the previous year.

3. The most frequently reported causes of death for Eastern Bluebirds are events (such as being shot, found dead in a nest box, and capture by a domestic cat) that are more likely to result in a detectable carcass than are deaths due to parasites, diseases, and predators. We believe the Bird Banding Laboratory data underestimate, by a large factor, deaths

due to many natural factors.

4. We suspect that the reported locations of deaths more likely reflect the activities of banders rather than actual numbers of Eastern Bluebirds that have died in an area.

5. Most causes of death in Eastern Bluebirds do not affect one sex more frequently than the other sex. Mortality due to domestic cats appears to be an exception to this generality; significantly more females have been reported as taken by cats.

6. The average age at death for adult Eastern Bluebirds was 1.4 years with no significant difference between females and males. Fewer than 20% of the banded

adult Eastern Bluebirds lived more than 2 years. ■

Acknowledgments

We thank the staff of the Bird Banding Laboratory for their assistance during the visit of RWS to the Lab. We especially thank Danny Bystrak for the retrieval of banding and recovery data. We also wish to acknowledge the help that T.D. Pitts, Jr. provided with computer file manipulations.

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REUEL AMBROSE BROYLES 1910-1996

The North American Bluebird Society has received the sad news of the passing of a pioneer bluebirder. Reuel Broyles, of Springfield, Missouri, died on 3 April 1996 of heart failure.

His home workshop often had shelves stacked high with box parts ready to be assembled. Over the years, Reuel had made 9,500 boxes to be given to people who promised to help our little blue thrush.

In 1983 he received the Society's award for outstanding contributions to bluebird conservation. We are grateful for his efforts and inspiration.

--Charlotte Jernigan

(BOOSTERS--Continued from inside back cover)

Nestling Bluebird

Ronald L. Allen
Jim & Ann Auer
R. Clay & Sandy Barr
Chris Brindle Family
Pam Calovini & Sarah Brooks
Mr. & Mrs. Barry Bryant
The Budd Family
Brenda J. Burnham
Mrs. Sara S. Capps
Cherry Brook Garden Club
Mr. & Mrs. Don R. Cockram
Richard & Nancy Cole Family
E Jean Crane
Michael D. Craver
Allison Croessmann Family
Chris Cuddeback
Donna & Michael DiPietra
George Elkins
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The Ray Fore Family
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1995 Nesting Box Report

Kevin L. Berner and Brian S. Smith

Introduction

This was the fifteenth year that NABS has conducted nest box surveys. The annual fledging rates vary widely each year due to weather conditions and inconsistencies in reporting. Most of the data contained in this report was submitted by individual NABS members or state/county bluebird organizations. Other data was taken from newsletters of bluebird groups that I am able to obtain. Annual fluctuations in the final data are often due as much to availability of large organization reports as they are to true changes in the actual fledging rates of the cavity nesters surveyed.

Bluebird fledging rates, as documented by this survey, were down markedly from 112,227 in 1994 to 56,079 (See Table 1). This was due to lower tallies found in the central and western regions. In 1994 over 44,000 bluebirds fledged in the west while this past year only 23,247 were reported. The central region also fell from over 50,000 to 36,283 bluebirds fledged. In the east bluebird production grew from 16,433 in 1994 to 19,881 last summer. In all regions 1995 bluebird productivity was the second highest we have ever documented.

This is only the second year for which we documented fledging rates for all species using bluebird boxes. For many of these species the sample sizes are too small to see strong population trends. Tree Swallows' production decreased from over 25,000 in 1994 to 21,580 this past summer and House Wrens decreased from over 5,200 in 1994 to 4,257 in 1995. For more complete information see last year's report (Berner and Smith 1995).

East

Bluebirds are often viewed as being less aggressive than many other birds. Paula Good of Suffolk, Virginia noted that after her female bluebird disappeared the male fed the young and successfully chased away Northern Mockingbirds, European Starlings, and House Sparrows. She had not observed such high levels of aggression in previous years.

Weather has always contributed to the loss of many bluebird clutches. Raymond Marr of the Audubon Society of Rhode Island lost 43 eggs to freezing weather conditions and 35 additional nestlings to prolonged periods of rain. In spite of these losses he produced 339 bluebirds from his 64 nest boxes. He also stated that his community had a wintering population of approximately 60 bluebirds.

Weather conditions in the northeast varied widely. Rich Wells of Springville, New York noted that perfect weather conditions last summer led to a record year on his trail. His 145 boxes produced

259 bluebirds, 391 Tree Swallows, and 7 Black-capped Chickadees.

Alice Saunders of Petersburg, Pennsylvania had raccoons raid 24 of her 57 nest boxes. After she put double wooden predator guards on her boxes this problem stopped. She also lost 15 clutches to snakes and 8 additional nests to wren predation. Overall 128 eggs and 65 young were lost to predators yet she still produced 50% more bluebirds than in 1994.

The 121 standard boxes monitored by Brian Siege of Sharpsville, Pennsylvania were repeatedly used by House Sparrows. He removed 17 nests with eggs and nearly three times that many nests before they had a chance to lay eggs. Willard Cash of Goldsboro, North Carolina also was beset by House Sparrows. He destroyed 88 adults during the nesting season. My experience is that the Gilbertson PVC box design (Gilbertson 1993) is avoided by sparrows far more than the other boxes that I have tested.

Bluebirders with House Sparrow problems may want to try switching to PVC boxes.

Sue Lancelli of Belchertown, Massachusetts lost two broods of approximately 10 day old chicks in nests heavily infested with blowfly larvae in PVC boxes. Another pair of bluebirds in a natural cavity successfully raised two broods. She wondered if the blowflies may be less of a problem in the natural cavity. It might also be that the natural cavity may maintain heat at night better than the PVC box during the period when the young are no longer being brooded by the female.

Don Ford of Avon Park, Florida had a very productive trail on the local Air Force range. His 100 standard boxes produced 554 bluebirds and 5 Carolina Wrens.

NABS charter member Thomas Mulvey of Pine Beach, New Jersey fledged and banded 158 bluebirds from 20 standard boxes in his 21st year of maintaining his trail on the Colliers Mill Wildlife Area.

Mark Oakley of Westfield, North Carolina fledged 485 bluebirds from 573 eggs in 86 boxes in both his home state and Virginia. His last brood left on 4 September, the latest date since he began monitoring the trail in 1988.

The Schoharie County (New York) Bluebird Society for which I summarize local results had a near record bluebird year fledging 1,942 bluebirds from 1,977 boxes. Society members also produced 2,864 Tree Swallows, 711 House Wrens, and 113 Black-capped Chickadees.

The North Carolina Bluebird Society reported fledging 5,254 bluebirds from 1,407 nest boxes. They noted that 84% of their eggs eventually produced fledged young.

Joe Sedlacek reported for the Broome County Nestbox Network in New York. His group fledged 249 bluebirds, 657 Tree Swallows, 138 House Wrens, 30 Black-capped Chickadees, and 4 White-breasted Nuthatches from 412 nest boxes. Joe recaptured an adult female bluebird originally banded by J.R. Morse near Dresden, Maine, approximately 425 miles away.

Mark Wallace of Laurel, Maryland reported for a large number of bluebirders primarily from Howard County. His group fledged 1,279 bluebirds, 443 House Wrens, 127 Tree Swallows, 53 Carolina Chickadees, 46 Tufted Titmice, and 10 Carolina Wrens from 827 boxes.

The school mascot for the Bettie W. Weaver Elementary school is the bluebird. Sandy Albert of Midlothian, Virginia noted that approximately 20 bluebirds and 6 Carolina Chickadees fledged on the school grounds.

Vivian Mills Pitzrick, an octogenarian from Belmont, New York had problems with deer mice taking over some of her 150 boxes in 1995. This was the first time since she began this trail in 1971 that she has had this problem. During that period she has fledged 2,152 bluebirds. I found on my trails that once I started mounting nearly all of my boxes on heavily greased pipes that mice rarely use my boxes at any time of year. Vivian has observed that House Sparrows are moving increasingly greater distances from homes and barns to use nest boxes.

Central

Edwin Edlund of Muskegon, Michigan reported a good start to the breeding season with 27 boxes used by bluebirds but, after the boxes were cleaned out and new nests built, only six were used for a second clutch of eggs. The weather was 95-100° F (35-38° C) for several weeks at the time of the second nestings. Although both adults remained at the boxes, no additional eggs were laid at most boxes.

Larry and Betty Jernigan of Kemp, Texas documented 38 bluebird nesting attempts in 14 boxes. They noted 113 eggs were lost or abandoned on these attempts. July and August was very hot in their area and this may have contributed to some of the losses. They fledged 53 bluebirds and 5 Carolina Chickadees.

Bob and Judy Peak of Henderson, Kentucky monitor a trail in Land Between the Lakes National Recreation Area in Kentucky and Tennessee. For the first time in their six years of monitoring they

noted a decrease in the number of birds that they fledged. They attributed the decline to a cool and wet spring and one of the hottest, driest summers on record. They also had an increase in raccoon predation. They observed 38 white eggs (3.14%) among their total of 1,208 bluebird eggs.

Dick Walker of Loofootee, Indiana observed that adding a hardware cloth Noel guard practically eliminated losses due to raccoons. He had a record year for wasp nests which he found in 67 boxes. Tree Swallows do not nest in southern Indiana; however, he found six dead adults in four different box locations. Dick observed 11 boxes with three separate bluebird nestings and one even had four successful nestings. He fledged 619 bluebirds, 12 House Wrens, and 6 Carolina Chickadees.

Kenneth Schar of Libertyville, Illinois has had four straight years without any raccoon predation. He mounts his boxes on thin-walled electrical conduit treated with silicon spray applied with a cloth. He uses mostly slot boxes and fledged 106 Eastern Bluebirds, 233 Tree Swallows, and 8 House Wrens from 67 boxes.

Robert Rager of Rockford, Ohio has had persistent House Sparrow problems. He kept traps in place until male sparrows were captured. He destroyed 52 sparrows and 221 sparrow eggs along his 134 box trail. His losses to raccoons declined from 6 boxes in 1994 to 1 box in 1995 after increasing the roof overhangs on his boxes to 5 1/4 in. (13.3 cm) or 5 1/2 in. (14.0 cm). Robert fledged 327 bluebirds, 157 Tree Swallows, and 24 House Wrens.

Kevin Riley of Royal Oak, Michigan lost a female bluebird and 4 nearly-fledged Tree Swallows to House Sparrow predation. He captured both male and female sparrows in the nest box after approximately 5 minutes using mouse glue traps. He cautioned that this should only be done in established sparrow nests and with constant observation.

Hot Spring Village Audubon Society in Arkansas monitors 188 standard nest boxes. They fledged 620 Eastern

Bluebirds, 51 Brown-headed Nuthatches, 50 Carolina Chickadees, and 31 Tufted Titmice.

Richard Sims of Ellisville, Mississippi tested a variety of nest box styles. Eastern Bluebirds attempted 36 nests in 39 standard boxes, 8 in 6 Peterson boxes, 2 in 2 slot boxes, and 3 in 4 PVC boxes. Overall 165 bluebirds were fledged.

Marilyn Gericke of Archbold, Ohio also used a number of different box styles. She had 39 nesting attempts in 103 standard boxes, 10 in 8 Peterson boxes, 2 in 2 slot boxes, and 1 in 3 PVC boxes producing 143 bluebirds. Tree Swallows attempted 13 nestings in the standard boxes, 2 in Peterson, and 1 in a PVC box with 80 swallows fledging overall. All five House Wren nesting attempts were in standard boxes.

Svante Humbla of Cincinnati, Ohio had 11 standard, 11 Peterson, 5 PVC and 1 other style box. All six bluebird attempts and 27 fledged bluebirds were documented in the Peterson boxes. House Wrens nested 5 times in standard boxes, 4 times in Peterson boxes, and 5 times in PVC boxes yielding 70 young.

Gerald Kauffman of Goshen, Indiana had 5 bluebird nesting attempts in 12 standard boxes, 6 in 10 Peterson boxes, and 2 in 10 Zuern tree branch boxes. Tree Swallows nested 8 times in the standard boxes, 3 times in the Peterson, and 5 times in the tree branch boxes. Forty-four bluebirds and 48 swallows fledged from this trail.

Trish Quintenz of Peresburg, Illinois monitored 4 standard, 13 Peterson, and 1 PVC box. She observed 19 bluebird attempts in the Peterson boxes, 2 in the PVC boxes, and none in the standard boxes.

NABS President Charlotte Jernigan of Wagoner, Oklahoma monitors 42 standard boxes and 1 slot box from which 46 bluebird nesting attempts produced 114 young. She also fledged 9 Carolina Chickadees and a clutch of Tufted Titmice.

Frank Zuern of Oshkosh, Wisconsin studied 50 standard boxes and 50 of his

tree branch box design. Nineteen standard boxes and 23 tree branch boxes were used by bluebirds, producing 45 and 91 young respectively. Success rates were similar between boxes, but many more eggs were laid in the tree branch boxes. Tree Swallows used 23 standard and 22 tree branch boxes producing 85 and 110 young respectively. All bluebirds nested behind the baffle placed in the tree branch boxes in 1995.

Mary Reed of Wildwood, Texas reported for the 24 monitors of the Wildwood Bluebird Trail which has fledged 3,025 bluebirds over its history. This year their 221 boxes produced 331 bluebirds, 114 Carolina Chickadees, and 15 Tufted Titmice.

The Bella Vista Bluebird Society in Arkansas monitors 327 nest boxes. They produced 1,052 Eastern Bluebirds, 82 Carolina Chickadees, 9 Carolina Wrens, and 5 Tufted Titmice.

Peter Eiger of Kirtland, Ohio reported for the Holden Arboretum trail. He observed 25 bluebird nesting attempts in 51 standard boxes, 69 in 117 Peterson boxes, and 29 in 37 slot boxes yielding 388 bluebirds overall. Swallows had 26 nesting attempts in standard boxes, 48 in Peterson boxes, and 15 in slot boxes producing 294 young. He removed 213 House Sparrow nests.

Preliminary reports from the Bluebird Recovery Program in Minnesota indicated that 8,753 bluebirds fledged from Minnesota nest boxes with another 5,452 being reported from other states to the BBRP.

R.N. Hudgins of Obion, Tennessee has a three year old trail and now monitors 112 boxes. Last summer he had 9 bluebird nests with white eggs out of 303 nests. Four bluebird nests had six eggs and two had seven. He fledged 985 bluebirds, 14 House Wrens, 11 Carolina Chickadees, and 6 Tufted Titmice.

The late John Findlay, III was one of NABS's best bluebird ambassadors for years. Barbara Munson of Homewood, Alabama reported that his trail is now being monitored by a new group known as "Findlay Fledgers." This trail produced

565 bluebirds, 22 Carolina Chickadees, 7 Tufted Titmice, and 4 Brown-headed Nuthatches.

Ann Wicks of Black Earth, Wisconsin documented four bluebird broods in one nest box and three triple broods. The nest box with 4 broods produced 17 young. She credits supplemental feeding of mealworms for her high productivity levels. Her 91 boxes fledged 316 bluebirds, 79 Tree Swallows, 10 House Wrens, and 8 Black-capped Chickadees. Only 4 boxes of 91 were completely unused by any species.

The Iowa Bluebird Recovery Program summarized reports from 174 respondents indicating that 6,548 bluebirds, 1,273 Tree Swallows, 767 American Kestrels, 471 Purple Martins, and 160 Black-capped Chickadees fledged. Bluebird fledging levels were down from 1994's total of 8,232.

West

Elsie Elzroth of Corvallis, Oregon observed a period of cold and persistent spring rains coinciding with the time when many nests had eggs or young and this caused many nests to fail. She documented the death of 5 females and the disappearance of 4 others. Thirty-six percent of the 77 first clutches failed. She fledged 390 Western Bluebirds, 58 Chickadees, (Black-capped and Chestnut-backed), 230 Swallows (Tree and Violet-green), 16 House Wrens, and 14 White-breasted Nuthatches.

Nancy Noble and Wayne Border of Salt Lake City, Utah included 7 cement and sawdust nest boxes on their trail of 53 boxes. The cement boxes fledged 5 Mountain Chickadees and 10 Plain Titmice. Overall they fledged 89 Mountain and 6 Western Bluebirds.

William Anaka of Canora, Saskatchewan had 63 nesting attempts by Mountain Bluebirds in 199 standard boxes, 25 attempts in 25 Peterson boxes, and 76 attempts in 76 other experimental box designs. Overall he has 300 nest boxes which fledged 635 Mountain Bluebirds, 695 Tree Swallows, and 32 House Wrens.

Dick Purvis of Anaheim, California monitors 263 standard nest boxes within 28 parks, cemeteries, and golf courses. He fledged 704 Western Bluebirds, 162 Wood Ducks, 48 House Wrens, 37 Ash-throated Flycatchers, 17 Plain Titmice, 4 Bewick's Wrens, and 4 Tree Swallows.

Art Gruenig, of Cranbrook, British Columbia reported on a trail of 500 standard nest boxes. It fledged 725 Mountain Bluebirds, 426 Western Bluebirds, 352 Tree and 41 Violet-green Swallows, 27 House Wrens, 20 Red-breasted Nuthatches, 19 Mountain and 6 Black-capped Chickadees.

Donald Stiles of Calgary, Alberta reported the results from 54 Calgary area trails. He observed that the percentage of second bluebird broods was the lowest ever recorded and the clutch sizes were also small due to a late start in the spring. Tree Swallows were very successful and House Wren populations continued to rise. Overall he summarized results from 3,125 standard boxes fledging 5,402 Mountain Bluebirds and 7,324 Tree Swallows.

Art Aylesworth summarized data for the Mountain Bluebird Trail in Montana. He reported a disastrous year for bluebird nestlings with hundreds being found dead due to late spring snows and rain. Extended cold weather discouraged many pairs from renesting. He also noted that raccoon predation was a problem. Overall the group fledged 8,228 Mountain and

2,227 Western Bluebirds. The total of 10,455 bluebirds was down from 20,391 last year.

Doug Martinof of Sylmar, California reports great success within Los Angeles County. Using only 37 boxes he produced 139 Western Bluebirds, 36 House Wrens, 8 Ash-throated Flycatchers, 7 White-breasted Nuthatches, and 5 Mountain Chickadees.

Comments

I receive data for this report in every conceivable format. To facilitate our data summary efforts it would help if everyone filled out the NABS survey form as thoroughly as they can. This would eliminate any interpretation errors I might make in converting your data to the same format in which the other surveys are done. All data is entered onto a computer spread sheet and this is most efficiently done directly from a NABS data sheet.

It would also help if each bluebird organization would delegate someone to submit its final survey results to me or NABS. I receive many on a hit or miss basis, introducing considerable bias to this report.

Literature Cited

Berner, K.L. and B.S. Smith 1995. 1994 Nest box report. *Sialia* 17:89-95.
 Gilbertson, S.L. 1993. PVC box update. *Sialia* 15:131-135.

Table 1. 1995 Nest Box Data by Geographic Region.

	East	Central	West	Total
No. surveys	185	143	94	442
No. standard boxes	7,664	7,965	10,417	26,046
No. Peterson boxes	304	1,100	94	1,498
No. slot boxes	50	262	5	317
No. PVC boxes	35	113	2	150
Other or unspecified box styles	2,081	314	202	2,597
Total no. boxes	10,134	9,754	10,720	30,608

No. fledged:

Eastern Bluebird	19,881	36,198	0	56,079
Western Bluebird	0	0	12,158	12,158
Mountain Bluebird	0	85	11,089	11,174
All bluebird species	19,881	36,283	23,247	79,411
Black-capped Chickadee	392	429	196	1,017
Carolina Chickadee	289	545	0	834
Mountain Chickadee	0	0	19	19
Chestnut-backed Chickadee	0	0	8	8
Tufted Titmouse	174	194	0	368
Plain Titmouse	0	0	203	203
White-breasted Nuthatch	16	21	81	118
Brown-headed Nuthatch	38	61	0	99
Red-breasted Nuthatch	0	0	20	20
Pygmy Nuthatch	0	0	121	121
Tree Swallow	6,770	4,798	10,012	21,580
Violet-green Swallow	0	0	492	492
House Wren	2,186	1,628	443	4,257
Carolina Wren	76	82	0	158
Bewick's Wren	0	22	0	22
Great-crested Flycatcher	5	21	0	26
Ash-throated Flycatcher	0	0	214	214
Prothonotary Warbler	0	4	0	4

Geographic Regions According to States and Provinces

East: Bermuda, Connecticut, Delaware, Florida, Georgia, Maine, Maryland, Massachusetts, New Brunswick, New Hampshire, New Jersey, New York, North Carolina, Nova Scotia, Pennsylvania, Quebec, Rhode Island, South Carolina, Vermont, Virginia, Washington, D.C.

Central: Alabama, Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Ohio, Oklahoma, Ontario, Tennessee, Texas, West Virginia, Wisconsin.

West: Alaska, Alberta, Arizona, British Columbia, California, Colorado, Idaho, Manitoba, Montana, Nevada, New Mexico, North Dakota, Oregon, Saskatchewan, South Dakota, Utah, Washington, Wyoming.

Impact of Trail Size on the 1994 Per-Box Bird Productivity in the East Wisconsin Zone

Joe O'Halloran

Background

Analyses of the 1994 BRAW data base revealed two distinct equal-area bluebirding zones in Wisconsin, one west, the other east. The West Zone was characterized by a high bluebird per box productivity which was double that of the East Zone.

In an earlier report, we questioned whether the high Tree Swallow/bluebird ratio in the East Zone was natural or man-made. In that report, we cited a 1982 *Sialia* article [4(1):10-11] by D.D. Boone, "Managing Trails for Bluebird-Swallow Balance." Boone's article tended to confirm that adding boxes within a trail in a given area resulted in an increase of Tree Swallows, but few or even fewer bluebirds. This is a "boomerang" to the bluebirder, indeed. Boone concluded, in effect, that in order to maintain the balance between bluebirds and Tree Swallows, one must take great care when thinking of increasing the number of boxes within a unit of area.

The numerous analyses of the BRAW data base led me to the opinion that the high Tree Swallow ratio in the East Zone was due, at least in part, to Boone's boomerang phenomenon; the result of the human intervention through trail management practices.

The response I have received regarding the boomerang hypothesis has been about 10 to one in complete agreement. Those monitors in agreement stated that this is exactly what has happened to them, too. For example, some reported virtual eradication of bluebirds as they added more boxes to their property. Some reported an increase in bluebird fledging after eliminating some boxes from their property. Some reported small portions of their trails spread along the

country roads yielded more bluebirds than twice the number of boxes within a fixed parcel of property.

However, a few monitors expressed reluctance to accept the "boomerang" hypothesis, because they attribute the results to other factors, such as the nature of the particular habitat.

Out of respect for the honest opinions of the "scoffers," further confirmation of Boone's boomerang hypothesis may be useful. This analysis was undertaken to provide such further confirmation. It looked into the impact of trail size on the productivity of bluebirds and Tree Swallows in the East Wisconsin Bluebirding Zone. Larger trail size may indicate more saturation of boxes within a unit of area, for example, with a park or other government-owned tract, etc.

Summary

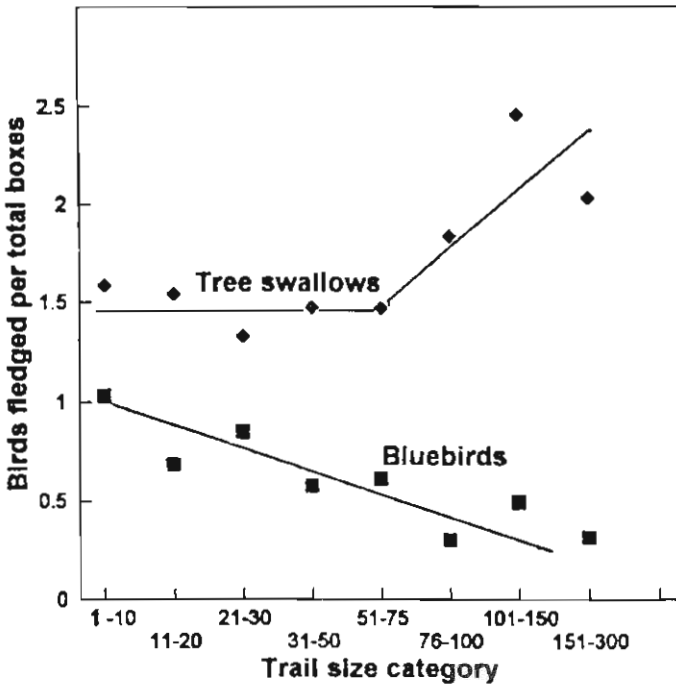
The attached chart [Figure 1] shows a decreasing bluebird productivity per box as trail size category increases. The same chart shows substantially level Tree Swallow productivity until trail sizes reach about 75 gross boxes of all types per trail. Then it literally zooms upward with increasing Tree Swallow productivity as the trail sizes increase.

Discussion

"Trail size," for the purpose of this analysis, refers to the gross number of boxes of all types within a monitor's trail unit. Multiple "trails" reported by a single monitor were not regarded as one trail, on the presumption that these trail units are in substantially different locations.

The issue, in the author's mind, is not

Figure 1. Impact of trail size on box productivity in the East Wisconsin Zone.



Trail size is the total number of boxes of all types reported within each trail. The larger trail sizes may indicate a degree of box saturation for the area covered.

about the sheer number of boxes in a trail, but about the density of boxes--the number of boxes per unit area.

How often have we walked from box to box along a "trail" and then driven for miles along the country roads without seeing a single bluebird box. As reported earlier, the per square mile density of boxes in each county in Wisconsin is extremely low--0.7 boxes per square mile in the three most congested counties, with about half the reporting counties reporting less than 0.07 boxes per square mile. Moreover, the author is aware of a few large trails in which the boxes are not on a single parcel of property but are widely-spaced, with the boxes spread out over miles and miles of roadside, and which have very high bluebird productivity and very low Tree Swallow ratios.

Conclusion

The correlation between the drop in bluebird productivity and the increasing trail size (Table 1.) tends to further confirm the validity of Boone's boomerang hypothesis in the East Zone of Wisconsin. The soaring increase in Tree Swallow productivity in the larger trails also supports the position that Boone's boomerang is at least part of the explanation of the high Tree Swallow to bluebird ratio in the East Bluebirding Zone of Wisconsin. We are now considering ways to quantify the box per unit-area factor for use in future analysis. →

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Table 1. Trail size versus fledged birds per total boxes.

East Wisconsin Zone: bluebirds and tree swallows		
Trail category	Bluebirds per box	Tree swallows per box
1 - 10	1.03	1.59
11 - 20	0.68	1.54
21 - 30	0.85	1.33
31 - 50	0.58	1.47
51 - 75	0.61	1.47
76 - 100	0.30	1.84
101 - 150	0.49	2.46
151 - 300	0.31	2.03



Original art by Roger Tory Peterson

New York State residents now have the option of choosing the state's first conservation license plate (made of recycled aluminum) featuring an Eastern Bluebird. Painted by New York State native Roger Tory Peterson, this plate with the state's official bird is designed to augment the Environmental Protection Fund established by the state legislature in 1993. Twenty-five dollars from the sale of each plate is earmarked for the fund which benefits open space, wildlife habitats, and recreational opportunities. Personalized plates can be incorporated for an additional fee. The bluebird plate was introduced in December 1995 at a news conference in Albany attended by New York State Bluebird Society President Ray Briggs.

DELOS C. DUPREE 1919-1996

The North American Bluebird Society was saddened to learn of the death of its treasurer and one of its founding members on 6 May 1996. Chuck Dupree was a tireless volunteer for bluebird conservation and was the first and only treasurer NABS had ever had. Perhaps no other person besides Larry Zeleny was more responsible for the creation of the Society than Chuck.

Delos C. Dupree retired from a career as a master electrician and began work as the Chief of Buildings and Grounds at NASA's Goddard Space Flight Center in the early 1970's. While in that position he met Larry Zeleny who, at that time, was still working at the nearby Beltsville Agricultural Research Center of the USDA. Chuck was an enlightened grounds manager who completed a comprehensive survey of wildlife at Goddard. He wrote a published pamphlet on mowing and planting for wildlife.

Chuck was very involved in local civic associations and gave frequent talks on bluebird conservation and nest box building. He became a member of the Prince George's County Beautification Committee and regularly buttonholed local politicians for support of bluebird conservation. He pioneered concepts such as "Bluebird Week," an annual week of events each March to encourage people to get their boxes in place *before* the bluebirds began courtship. As a result of Chuck's dedication and enthusiasm, Prince George's County, Maryland named the Eastern Bluebird as its official bird in 1976.

Chuck Dupree's contributions to the North American Bluebird Society were enormous. As a founding member, he was pivotal in charting its course in the early years. He fervently believed in the Society's research mission and, under his guidance, NABS has disbursed many thousands of dollars for research grants for the conservation of not just bluebirds, but for many species of native cavity nesting birds.

Chuck attended every annual meeting of the Society. He arranged the now legendary tour of Goddard for the tenth anniversary meeting. He charmed the Queen's representative in Bermuda during a visit to the royal residence when Tommy Outerbridge put up a bluebird box on the grounds and a pair of bluebirds landed on it. Chuck is justly remembered as the ambassador of good will for the North American Bluebird Society.

When I think back on the most enjoyable birding trips I have ever taken, I think first of a trip I led for the Maryland Ornithological Society's annual conference some years ago. It was an oppressively hot summer morning on the Eastern Shore, but the birding was great. We hiked along a dirt farm road through the middle of a field bordered by tall white oaks and loblolly pines. Chuck was bringing up the rear of this large group when he spotted a Scarlet Tanager in the tiptop of the tallest tree. We all got a great look as it bobbed in and out of the forest canopy. As Chuck helped each and every fledgling birder find the elusive bird, he declaimed with all the enthusiasm and energy he could muster, "Oh, man, look at the color of that bird! Will you just look at that color! Isn't that the most beautiful thing you have ever seen in your life?"

Yes, Chuck, it was. And I am truly grateful you were there to help me realize it.

--Richard J. Dolesh

More on the Gilbertson Nest Box

Del Parkinson

I have purchased over 250 Gilbertson nest box systems from Steve Gilbertson. I have installed over 750 bluebird houses (Peterson and Gilbertson) during the last four years and monitor the majority of them myself, with associates monitoring the remainder. The first 150 Gilbertson boxes were set up in the summer of 1992, with 50 more added during each of the last two summers. I have fledged over 1,200 bluebirds and 2,000 Tree Swallows. The hatching and fledgling success rate of the two boxes is comparable, except predation by raccoons.

If I wax the electrical conduit post as Steve suggests (*Sialia*, Gilbertson, Autumn 1993), I have yet to have the Gilbertson box predated by raccoons. During the summer of 1994, I did have Gilbertson nest boxes predated by raccoons only because I hadn't waxed those posts in two years.

Also, in the last three years, I have had mice in only two Gilbertson houses and they were paired boxes (a Super Mouse!). I don't recall having ants and have had wasps in only two of the Gilbertson houses.

In my opinion, the Gilbertson box is equal to the Peterson box as far as nesting acceptance is concerned, but the Gilbertson post (consisting of a five-foot reinforcing rod support) and a waxed electrical conduit (mounting pipe) make it superior. In 1992 with 150 Gilbertson boxes and in 1993 with 200 Gilbertson boxes, I had absolutely no raccoon predation. ■

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Easy Way to Trap House Sparrows

Gayle Fogarty of Arnold, Missouri, has come up with a very effective way to evict House Sparrows from a standard wooden nest box. Out of corrugated cardboard cut a 3-inch diameter circle (alter shape and size for slot, Peterson, or PVC boxes). Using fishing line threaded into a needle, pierce the center, take one stitch, and pull through, tying the end securely. Place the cardboard circle on the nest box floor, draw the excess yards of twine through the entrance hole, and walk some distance (carrying the line) to where you can watch the sparrow enter the nest box. When he has completely entered the box, pull the line tight, and you have the sparrow! Keeping the line taut, walk to the nest box. Remove the sparrow carefully by placing a mesh or plastic bag over the top or side opening. (You may wish to wear gloves when handling birds.) The sparrow can be dealt with in a humane way.

You can also try placing a toy snake on the inside floor of the nesting box if you are sure a House Sparrow has taken over the box. The fake snake should scare the sparrow so thoroughly that he will desert the nest box and not return even after you have removed the snake, and the box has been taken by bluebirds or other native cavity nesters.

Please let us know your results!

--Mary D. Janetatos

Testing Three Cage Traps for House Sparrow Capture

Joseph E. Therrien

Abstract

The capture efficiencies of three traps, a funnel, a Trio, and a Havahart were tested. Of the three, the Havahart had the best trapping rate with a catch per unit effort (CPUE) of 0.32. The Trio and funnel traps had CPUE efficiencies of 0.05 and 0.027 respectively. The sparrows tended to be wary of the traps in general and avoided entering them when only food was used as bait. When live sparrows were used as bait however, trapping rates increased greatly.

Introduction

House Sparrows (*Passer domesticus*) were introduced into North America in the early 1850's. Shortly after their introduction into America, sparrows spread throughout the continent. This rapid infestation was due to the aggressive nature of sparrows and the abundance of grain and nesting cavities that were present in the days of the horse-drawn wagon and widespread farming (Case 1979). Sparrows were introduced as an insect control method for the cities and at first were heralded as a savior to man. In the first few years of their existence in America, House Sparrows were pampered by man receiving nest boxes and food from him. It quickly became apparent, however, that the sparrow was not the positive influence that it was thought to be and, instead, proved to be an aggressive nuisance to our native birds as well as spreading disease throughout our farms (Fitzwater 1981). The House Sparrow soon fell into ill favor and was actively hunted and discouraged from nesting whenever possible. Recently, the main attacks on the sparrows have come from people and groups who are interested in helping native songbird populations; including and perhaps leading this battle are avid bluebirders. House Sparrows not only compete directly with our native birds for nesting cavities (Zeleny 1985), but they will also, on occasion, kill parent bluebirds

(*Sialia spp.*) and their young as well as destroy their eggs, sometimes for no apparent reason. It is because of this aggressive behavior and other negative qualities that the House Sparrow has been actively discouraged from nesting in the United States. Many methods have been incorporated to stop the spread of the sparrow ranging from destroying their nest when it is encountered during the breeding season to active trapping of adults. Most trapping methods to date have involved capture of the sparrows in nest boxes using various trap designs. An example of one of this type of trap is described by Gilbertson (1993). One of the main difficulties in trapping at the nest box is that the female is often the bird captured, not the male. This is a problem since the male is the bird that has the attraction to the box and will, upon losing its mate, find another female and bring her back to the box to continue breeding (Grussing 1983). Few studies have been done testing trapping techniques outside of the breeding season away from nest boxes. Zimmerman (1985) documented great success in capturing House Sparrows using a large starling trap in which he caught over 2,000 sparrows in a nine year period. Little information is available, however, as to other methods of trapping these birds.

The goal of this study is to test various traps and methods for capturing House Sparrows outside of the breeding season.

The capture efficiencies of the Trio, Havahart, and funnel traps will be compared.

Study Area

The study area chosen for this research was the SUNY Cobleskill farm located in Schoharie County, New York. Two sites on the farm were used for trapping. The first was located on the north end of the complex approximately 39 ft. (12 m) from the campus road. Between 20 and 30 sparrows had been seen roosting daily in the bushes located 16 ft. (5 m) from the road. The farm's grain supply was stored 23 ft. (7 m) north of the bushes directly in front of the smaller dairy cattle barn and feeding area. The sparrows had established this area as a feeding site due to the abundance of grain from the storage area and dairy barn. Maintained lawns surrounded the bushes; the area surrounding the grain storage and barn consisted of packed gravel and dirt.

The second trapping site used was in front of the main dairy building located at the center of the farm complex. High densities of House Sparrows were present

at the barn roosting in the rafters of the building and on the roof. Grain was also stored here but was covered and unavailable to the birds. The sparrows had, however, established this as a feeding area due to the abundance of grain in the barns and in the farm's harvesters which were parked in front of the building. The surrounding area consisted of maintained lawns with paved roads running in front of the building

Materials and Methods

Three cage traps were used during the research period. The first two, a Trio and Havahart, are described by Grussing (1980). The Trio (Figure 1.) had three chambers each within a 4.5 in. (11.4 cm) by 5.75 in. (14.6 cm) entrance. The middle chamber is not intended to be baited with food but to be used instead as a holding area for using live birds as bait.

The Havahart (Figure 2.) measured 8 in. (20.3 cm) x 16 in. (40.6 cm) x 24 in. (61 cm) and had a 3 in. (7.6 cm) x 5 in. (12.7 cm) catching entrance and a 2 in. (5.1 cm) diameter one-way door leading into

Figure 1. Trio Cage Trap.

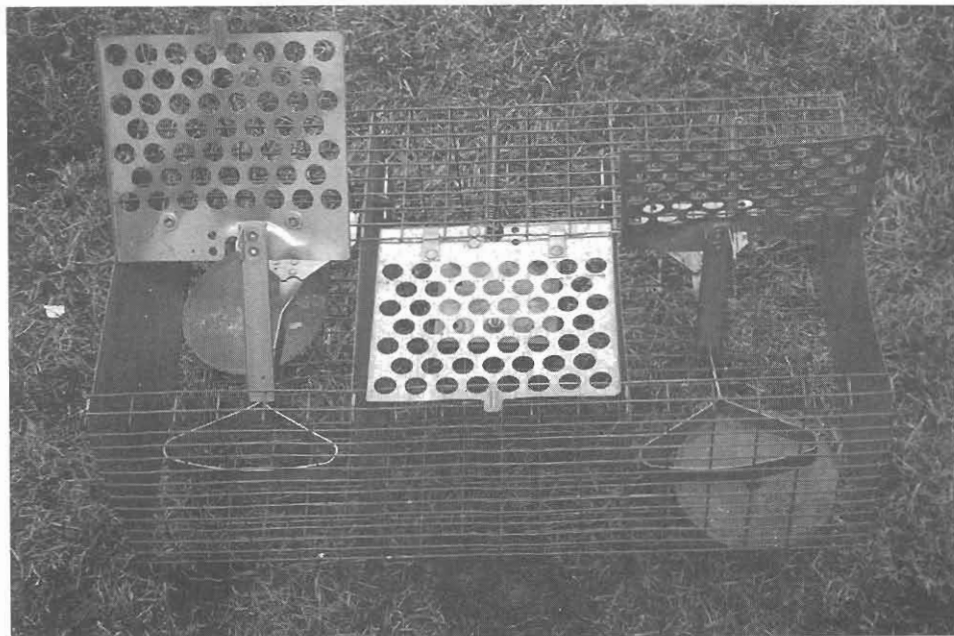
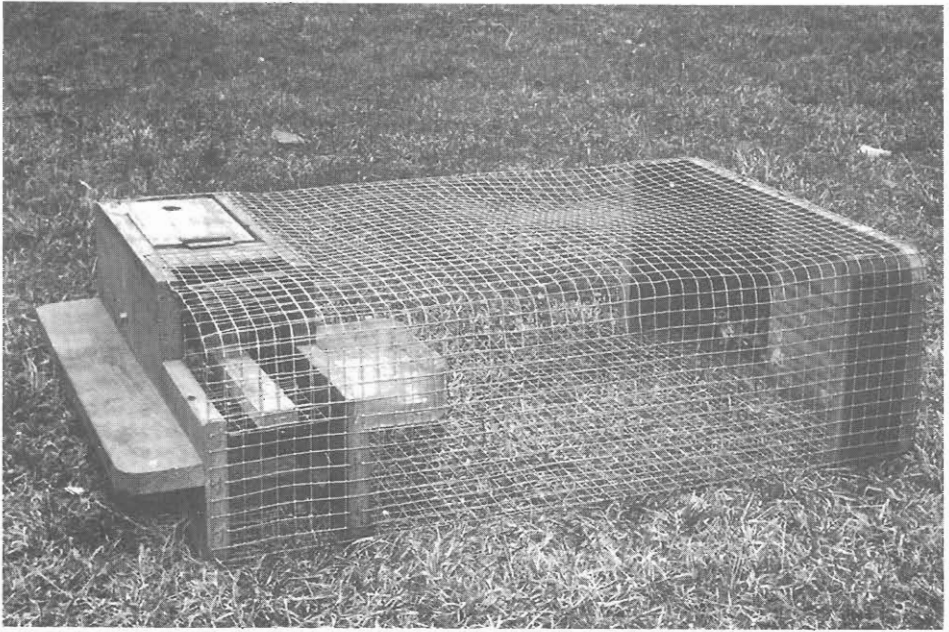


Figure 2. Havahart Cage Trap.



the main holding area of the cage.

The third trap used, a funnel trap (Figure 3.) is described by Bub (1990) and measured 14 in. (35.6 cm) x 16 in. (40.6 cm) x 43 in. (109.2 cm). The first compartment was floorless and was entered through a 3 in. (7.7 cm) x 1.75 in. (4.4 cm) oval hole set close to the ground. The rear chamber did have a floor and a 2.5 in. (6.4 cm) x 1.75 in. (4.4 cm) hole leading into it which was set 6 in. (15 cm) from the ground.

Traps were set on ten different days from 1 October to 7 November for a total of 37.5 hours. Site one was used for eight of the trapping days and site two was used only twice due to the appearance of a farm cat near the traps. The farm's grain was used as bait on the first trapping day since the sparrows were already accustomed to it as a food source. A mixture of the farm's grain and commercial seed consisting of white millet, striped sunflower seed, cracked corn, and husked oats was used for the second and third trapping days. Whole kernel corn was used on the fifth day and cracked corn was used on the fourth, sixth, and all the following days.

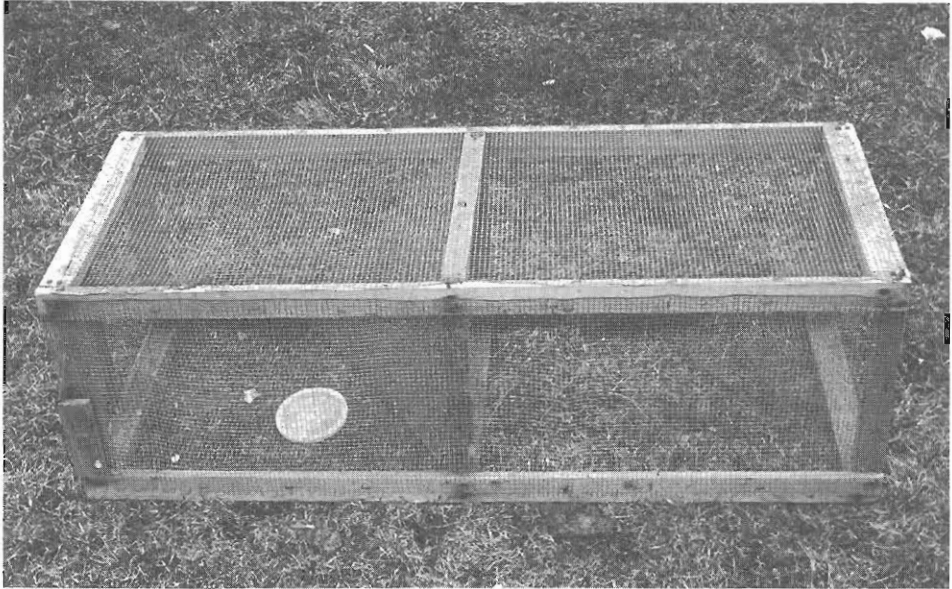
The Havahart and funnel traps were set 9 ft. (2.7 m) apart from each other and the Trio was set 18 ft. (5.5 m) away from them so the birds would not be startled when the trap snapped shut. For the first six trapping days the Trio was set on the ground; for the remaining days it was mounted on a fencepost approximately 3 ft. (0.9 m) off the ground. Each trap was set near the bushes at site one for the first four trapping days and moved to the grain storage area where the birds had been seen feeding for the remainder of the days.

A male sparrow, which had been captured in a mist net, was placed in the Havahart trap along with cracked corn on the eighth day of trapping as a lure for the other birds as recommended by Grussing (1980). On the ninth and tenth days, each trap was baited with a female sparrow which had been caught previously.

Results and Discussions

A total of 15 House Sparrows were caught during the 37.5 trapping hours. Of the three cage traps used, the Havahart

Figure 3. Funnel Cage Trap.



was the most successful catching 12 of the 15 birds. The funnel and Trio traps caught one and two birds respectively.

Catch per unit effort (CPUE) was determined to give a better understanding of the traps' efficiencies and was calculated as follows:

$$\frac{\text{Total \# of birds caught}}{\text{Total trapping hours}}$$

Trapping with the Havahart resulted in 12 birds being captured in 37.5 trapping hours resulting in a CPUE of 0.32 birds/hour. The Trio and funnel traps had a ratio of 0.05 and 0.027 respectively.

Only three birds were caught using food as the only bait while 12 were caught using live sparrows as a lure. Although no direct testing of these two variables was undertaken, it seems that trapping with live birds as a lure greatly increases capture efficiencies. Of the food baits used, the sparrows showed the most preference for cracked corn, followed by the farm's grain, and then millet seed. The birds showed no preference for whole kernel corn.

The sparrows overall tended to avoid entering any of the cages. During all trapping days the birds would land on or near the traps and examine them in a

cautious manner. On several occasions sparrows were seen entering the first compartment of the funnel trap only to quickly hop back out.

The success of the Havahart can be attributed to its two stage arrangement with the first entrance being separated from the main cage and also resembling the roost of a bird feeder rather than a cage. This was the only trap that captured sparrows without using a live bird as lure.

The funnel trap did the poorest out of all the traps possibly due to its enclosed appearance. This cage also has less use in trapping since the sparrows, once captured, can readily get back out. Grussing (1980) observed similar results with sparrows he had captured. The funnel trap used for this research was further modified with four 3 in. (7.6 cm) pieces of coat hanger wire that were cut and individually hinged on the inside of the second entrance hole in the hopes that this would discourage the birds from leaving the cage. One sparrow, which was placed in the trap as bait, failed to get out while a second bird, which entered the trap and was successfully caught, escaped the next day.

The Trio trap seems to have potential as an effective means of sparrow control but is limited since it can only capture a maximum of two birds at a time. No sparrows were captured using only seed as bait but two birds were caught using a live sparrow in the center chamber as a lure.

Recommendations

The Havahart proved to be a far better trapping method than the two other traps tested, and I would recommend it for use where House Sparrows are a problem. The Havahart (and other cage traps) are advantageous since they can be left unattended for a short period of time saving on the cost of trapping. All traps should be checked periodically in order to make sure that no native birds are caught. ■

Acknowledgments

Special thanks go to John Cubit for his help during the research and also for his ideas on

different approaches for trapping and to Kevin Berner for his help in editing the earlier drafts of this paper.

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Bluebird Boosters

Appearing on the inside back cover is a list of those individuals who have made a financial commitment to bluebirds and cavity nesters over and above their annual dues. Such support is essential in maintaining a stable dues structure. We thank the individuals, organizations, and businesses for their generosity.

You, too, can become a Bluebird Booster. For a donation of \$25.00 per issue or \$75.00 per four issues, you can be designated as an Eastern, Western or Mountain Bluebird Booster (your choice); for \$15.00 per issue or \$50.00 per four issues, be a Fledgling Booster; while \$10.00 per issue or \$25.00 per four issues makes you a Nestling Booster.

All contributions are tax deductible. Mail your check to NABS Boosters, P.O. Box 6295, Silver Spring, MD 20916-6295.

(EXPRESS--Continued from page 117)

second week of March and brought off three successful broods by late September. It was so exciting. We were lucky enough to actually see two of the broods fledge from the box, an all-day operation that had the parent birds and Fran and me worn out from the tension.

With the third brood we were able to watch the offspring from the first two helping out at the nest. The breeding success since that year has not been as good, primarily because of House Sparrow competition for the box. We also had a Carolina Chickadee successfully bring off a brood in it one year.

So, yes, get a bluebird box. By all means! You might want to consider a baffle on the pole for snakes, and you will likely have to fight annual battles with the House Sparrows. But it's all worth it. Go for it!

Norm Saunders
Colesville, MD

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..., Winter 1996

President Jim Walters encourages those readers new to computers to try the Internet and World Wide Web. It's not easy but stick with it for this technology is the wave of the future. Resources for any interest (including bluebirds and conservation) are available. Once you are familiar with the way it operates you can then decide whether you need it or what you wish to do with it.

Bernie Knight spotlights some wintering birds which might be guests at your (Iowa) feeder including the Carolina Wren, Pine Siskin, and Red-breasted Nuthatch. Anyone who feeds birds has, undoubtedly, matched wits with squirrels. Half a dozen ways to mount feeders are pictured and described in a reprint from *Bird Watcher's Digest*.

Barbara Boyle, director of the Sherman Tower Project, updates readers on Althea Sherman and her research in the first decades of the twentieth century. Although she published dozens of papers on many bird species, she is best known for her observations of Chimney Swifts in a wooden tower constructed so she could watch them. The tower has come into the hands of the Songbird Project which is still seeking a site on which it can be re-erected. They also received some manuscripts (most had been deposited with the Iowa State Historical Society). Microfilming of all of this material is nearly complete. Indexing is the next step. A major fundraising campaign will begin this year for siting and restoring the tower. If you wish to make a donation to this cavity nester project, make checks payable to the Sherman Tower Fund at Johnson County Songbird Project, 2511 Hwy 1 SW, Iowa City, IA 52240.

Jim Walters reviews three new bluebird books. He makes comparisons on subjects such as box design, wrens, House Sparrows, and premature fledging. The books are *Bluebirds: the How-To Book--Attract Them, Help Their Survival* by Fred Comstock; *Bluebirds and Their Survival* by Wayne H. Davis and Philippe Roca; and *Bring Back the Bluebirds: Even on YOUR Hand!* by Andrew M. Troyer. In summary he says, "There are things I like and dislike about each of these books. I'm tempted to see Comstock and Troyer as regional authors--they deal with the problems they experience (and do that well). The Davis book contains as thorough a discussion of all issues as any book since Dorene Scriven's. Nature photographer Philippe Roca also contributes a thorough chapter on photographing bluebirds in the Davis book--and his shots are excellent. But if you want great bluebird pictures my favorite is still Don and Lillian Stokes' *The Bluebird Book*."

--Johnson County Songbird Project

MAINE--DOWNEAST BLUEBIRD, Winter 1996

Census reports for 1995 are still being collected. Bluebirders are urged to return forms even if no bluebirds nested. Few reports have been received from southern or mid-coastal Maine.

Lyman Feero, a wildlife biologist for Great Northern Paper Company, with the help of East Millinocket Boy Scouts, placed 16 nest boxes at a closed company landfill in April 1994. No bluebirds nested the first year but at least one pair nested successfully twice in 1995. On a 7 July monitoring visit, Lyman discovered that all but three boxes had been destroyed by a bear. Fortunately, the bluebirds were using one of the three surviving boxes. Hornet nests in some of the damaged boxes may have been the attraction for the bears.

James J. Hill, III, head of the Purple Martin Conservation Association, recently wrote

about the ectoparasites that plague martins as well as bluebirds. When weather conditions are good and food supplies ample, parasites do not usually kill birds. A *Nasonia* wasp may also help to keep blowflies in check. When a heavy infestation is present, nest replacement is the best control method.

Anti-predation hints are described. No matter what techniques of monitoring are used, "the bottom line, however, is that the posts or pipes supporting nest boxes should not be climbable."

--*Bluebird Association of Maine*

MINNESOTA--BLUEBIRD NEWS, February 1996

Two Mountain Bluebirds (male and female) were reported at Lake Rebecca in Hastings on 7 November. There were no January reports of over-wintering bluebirds in Minnesota.

The Bluebird Recovery Program now has wallet-size membership cards available. Each new member will receive one in the membership packet. Current members can request up to three without charge.

Ohio bluebird Bob Orthwein is going to use Teflon Insect Barrier Tape® made by SureFire Products. Ads claim that fire ants and other insects can't crawl over the slick surface. Anyone experimenting with this product must mount it carefully so that insects can't crawl under it.

Minnesota bluebirders did their usual fine job of reaching potential monitors with 14 workshops during February, March, and April.

The bluebird report form for 1996 is enclosed with a request that it be returned by 15 September.

--*Bluebird Recovery Program*

MONTANA--MOUNTAIN BLUEBIRD TRAILS, Summary for 1995, February 1996

This U.S. group includes trails in Montana, Idaho and Nevada. It is in the process of establishing a more formal organization. Initially, dues will be \$7.00. A questionnaire elicited responses to help in organizing the group. Almost everyone who responded wanted two newsletters a year. More than half wanted material developed for new bluebirders. An organizational meeting is planned for spring. Volunteers were solicited to serve as officers or directors.

Unfortunately, 1995 was disastrous for bluebird nestlings. Late spring snows and rains caused the death of hundreds of bluebirds. The continuing cold weather meant many females did not re-nest after initial nest failures. Not since the eruption of Mt. St. Helens have bluebirders in this area had an equivalent experience. Because bluebird population is more widespread now and the numbers higher, there is hope that the recovery will be rapid. In 1995, 2,459 boxes were used of a possible 4,069. A total of 8,228 Mountain Bluebirds and 2,227 Western Bluebirds were fledged for a grand total of 10,455. This compares to 20,391 in 1994 and 16,118 in 1993.

--*Mountain Bluebird Trails*

NEBRASKA--Bluebirds Across Nebraska Newsletter, Winter 1995-1996

Bluebirds Across Nebraska (BAN) co-sponsored with bird stores three workshops in different parts of the state.

BAN donated a feeding station to Mahoney Park. It is located at the administration building near the park entrance. Connie Conover built the majority of the feeders. He also made 27 boxes for American Kestrels for the State Game & Parks Commission. The boxes will be placed on the back of signs along the interstate highway between Lincoln and Omaha.

Curt Sommer, BAN member from New London, Wisconsin, uses a 40 inch piece of downspout permanently attached to the bottom of his boxes as a predator guard. The box

and downspout combination is then placed on a steel or wooden post. He has found it exceptionally successful against raccoon and cat predation.

BAN is soliciting photos for a display board to be used at fairs, workshops, and conferences.

Jackie Howe summarized trail reports for Omaha Audubon for 1995. The total number of bluebirds fledged was 309 along with 627 Tree Swallows. Production on major trails is summarized along with comments about steps taken to rectify problems in order to improve production. In some cases boxes were removed or House Sparrow trapping was planned; in other cases box pairing will be instituted or predator guards added to mounting posts. Trail monitors seem willing to tinker to find the most advantageous setup--and if nothing works, move entire trails.

Bob Orthwein, BAN member from Columbus, Ohio, provided an article and photos about triple box locations which he has found successful in reducing House Sparrow attacks on bluebirds and Tree Swallows.

BAN mailed a letter to 257 golf courses in the state and in western Iowa. The letter describes why golf courses can be favorable locations for bluebird trails, warns against extensive pesticide use, and emphasizes the need for regular monitoring. Image enhancement for the golf course could be the result of establishing a trail. BAN offers to provide boxes at a reasonable cost, enclosed some basic bluebird information, and includes a reprint of an article about a golf course in North Carolina which has a popular and successful trail. BAN has arranged to be present at the Nebraska Turf Grass Conference in Omaha so they can answer questions face to face.

--*Bluebirds Across Nebraska*

NEW HAMPSHIRE--Update 25 March 1995 from Bruce Burdett

This is an informal, totally volunteer one-man effort to exchange information and assess bluebirder interest and fledging success in this state. Bruce has mailed hundreds of packets of information in response to letters to half a dozen newspapers. This mailing passes along items gleaned from letters sent to him. He addresses some basic information for those new to bluebirding, shares comments about several references, includes a "Bluebird Troubleshooting Chart" to help people figure out nest failures, includes a box construction diagram, and information about paired boxes.

--*THE (Great) NEW HAMPSHIRE BLUEBIRD CONSPIRACY*

NEW YORK--*Bluebird News*, Winter '96

The Arrowhead Lodge in Brewerton proved to be a successful location for the fall 1995 meeting. At that time paid membership was 962. The spring meeting will be held at the Five Rivers Environmental Education Center in Delmar 4 May 1996. The Route 20 Bluebird Research Trail will be dedicated.

Ray Arendt addresses "To Feed or Not to Feed...That is the Question." Since more and more wintering bluebirds are being reported, people are encouraged to plant a variety of trees and shrubs whose fruits will aid in the birds' survival. When wild fruits and berries are exhausted, should one feed bluebirds? Supplemental feeding of bluebirds that are seen in winter may help rather than harm the individuals. There is no question that at that point the food a person provides is not enticing birds to stay. Raisins, currants, or other fruits may be taken. Branches of multiflora rose (with hips) or other stems bearing fruit can be placed in a platform feeder in which holes have been drilled. Miracle Meal, consisting mostly of suet and peanut hearts, is another option.

NABS Research Chairman Kevin Berner's presentation at the fall meeting underscored the attractiveness to bluebirds of the Peterson nest box over all other designs. It was also the first choice of Tree Swallows. Of equal interest is the fact that Kevin's research shows that the PVC box is least preferred by House Sparrows. They had no successful nesting attempts.

President Ray Briggs was honored at the New York State Chapter of the Wildlife Society awards banquet in Syracuse on 2 February by being named Outstanding Conservationist for his bluebird work. Joe Therrien was named Outstanding Graduate from a Two-Year School. His activities in bluebird banding, research, and management should be the foundation for a promising career as he begins a bachelor's degree program in wildlife management.

--New York State Bluebird Society

----BLUEBIRD BOOSTER, Spring 1996

Schoharie County survey results for 1995 indicate that at least 1,942 bluebirds fledged from 1,977 nest boxes. This is the second highest total in the 11 years of the program. The dry spring reduced dead young in nests from 270 in 1994 to 178 in 1995. Tree Swallow fledging established a record high of 2,864, up nearly 400 from the previous year. House Wren totals of 711 were down from the record 1,000 in 1991. Chickadees at 113 fledged just two fewer than last year's record high. The survey data collected in Schoharie County paralleled Kevin Berner's research results with bluebirds reported to have attempted nesting in about 45 of every 100 Peterson boxes, fledging 95 young. For every 100 standard nest boxes bluebirds attempted 27 nestings and fledged 67 young. Tree Swallows and House Wrens showed higher use rates for Peterson boxes but had higher fledging rates in standard boxes.

--Schoharie County Bluebird Society

----BROOME COUNTY NESTBOX NETWORK SUMMARY REPORT

A total of 32 members monitored 412 nest boxes in 1995. They fledged 249 Eastern Bluebirds, 657 Tree Swallows, 138 House Wrens, 30 Black-capped Chickadees, 4 White-breasted Nuthatches, and 5 Wood Ducks.

Joe Sedlacek had two interesting experiences with banded birds. An adult Tree Swallow was originally banded by him on 26 May 1990, was recaptured on 6 June 1993, and again on 24 June 1995 always in the same nest box. On 30 April 1995 he captured a banded female bluebird at the Gagnon Farm. After determining that it was not one of his bands or that of other area banders, he sent the necessary data to the Bird Banding Laboratory in Laurel, Maryland. He was eventually informed that the bird had been banded as a nestling near Dresden, Maine on 3 June 1992, about 425 miles from where it was nesting. Tree Swallows took over the nest box which the banded female bluebird had been using. She and her mate were not seen again. Joe also banded a Tree Swallow adult female on 3 June 1992, recaptured it 30 May 1993 and again on 31 May 1995--all in the same general area. Another adult female Tree Swallow was banded on 26 May 1990, was recaptured 6 June 1993 and once again on 24 June 1995, each time in the same nest box.

--Broome County Nestbox Network

NORTH CAROLINA--BLUEBIRD NOTES, Jan-Feb 1996

Ruby Clodfelter described an experience in spring 1995. A pair of bluebirds hatched five young in a box in her yard. During the period the nestlings were being fed the female disappeared, but the male continued to feed the brood. Two days after the female's disappearance, the male seemed to be absent. After watching for four hours without seeing the male, Ruby picked up the five babies and took them to her brother's nest box 12 miles away. Fortunately, the three young in that nest were close to the same age. The parents fed all eight nestlings and five days later all eight fledged. The male which had disappeared was found a week later dead at the edge of the yard. He had been hit by a car.

Taking a cue from the Ohio Bluebird Society, the North Carolina Bluebird Society is establishing county coordinators. Chuck Bliss chairs this effort. The Board hopes that

county coordinators will raise the visibility of the organization and publicize bluebirding activities and techniques in all parts of the state.

Nora and Hobie Burluson monitor the boxes at the Bryan Park Golf Course. They have had a variety of experiences and fledged 552 bluebirds in 1994 out of 582 eggs. In 1995 that total was raised to 634 fledged. One nest had eight bluebird eggs, of which seven fledged.

The 1995 nesting totals for North Carolina were 5,254 bluebirds fledged from 6,228 eggs from 1,407 boxes. Among comments which monitors added to their survey forms was the observation by Carl Cranmer that he had had 24 nuthatch nests with 110 fledged! Evelyn Hill was kept busy not just with bluebirds. She had "swarms of hummingbirds. Make a gallon of nectar daily." Ron Bolton and his Starmount crew had good news, "The baffles work! 1995 egg loss was 8% vs. 46% in 1994 and 28% in 1993; 86% fledged vs. 53% in '94."

--North Carolina Bluebird Society

OHIO--Bluebird Monitor, Spring 1996

The Ohio Bluebird Society (OBS) plans participation in a dozen meetings, workshops, and presentations during the spring season.

Dean Sheldon's Blue Tip column, "A Flight to the Finish" provides a discussion of what kind of exterior finish to put on nest boxes. That subject always elicits almost as much discussion among bluebirders as what box is best. At least there seems to be unanimity on the fact that box interiors should not have any kind of a finish coat. The popular commercial possibilities fall into three categories: 1) exterior latex or oil house paint with light earthtones, not white, the clear choice; 2) exterior stains, again in light colors; and, 3) clear wood preservatives. He prints a couple of recipes for homemade stains which have proven durable. Box builders are warned against using Wolmanized® wood because of the chemical content. Of course, boxes need not have any exterior finish at all!

Bob Orthwein, long-time Ohio bluebirder, addresses increasing problems with the House Wren in "An Experimental House Wren Guard." Not only are wrens responsible for numerous bluebird nest failures, but they are an even greater problem for chickadees. Since chickadees don't nest far from wooded areas, one can't move chickadee boxes farther into open areas in an attempt to escape wrens. Moving the boxes into the woods, whenever possible, saw an improvement in production of young. Bob is also using a wren guard developed by Warren Fry of East Berlin, Pennsylvania which blocks the view of the entrance hole but allows entrance in the space behind it. Warren Fry and Dick Tuttle have experimented with wren guards on boxes accepted by bluebirds. For bluebirds, Dick used a 2-inch space between the guard and the entrance hole while with chickadees he reduced the space to 1-1/4 inches. With bluebirds he attached the guard when incubation started and removed it when the young were four days old, too heavy to be thrown out by wrens. If you experiment with these guards, be sure the species accepts and adapts to it and continues to enter the box. Much further testing is required to determine the guards' effectiveness and best use.

Orthwein also updates a Summer 1995 article about triple box locations which he has found save bluebirds and Tree Swallows from House Sparrow attacks. The previous article specified a spacing of seven yards between each of the three boxes. Dick Tuttle, who fledged and banded 864 Tree Swallows in 1995, feels five yards between boxes may be a better spacing. Be sure that all three boxes at any one location are of the same type.

Merlin Lehman discusses bluebird predators and various means of protecting boxes.

A flier published by The Ohio Wildlife Rehabilitators Association entitled "Cat Facts: Effects of House Cat Predation on Our Native Wildlife" is reprinted. Readers are encouraged to copy and distribute the material. If there is any doubt as to the damage songbirds sustain from house cats, the numbers cited should jolt even the most avid cat

fancier into keeping his or her pet inside, especially during the bird breeding season.

Wayne Davis explores a number of topics in his "Thoughts from Kentucky." He advocates putting up boxes whenever they're built rather than waiting for some ideal time. His favorite time for box placement is in the fall. Not only does this make boxes available as roost sites for overwintering bluebirds, but it is easier and more pleasant to erect boxes in September and October rather than in February.

Davis has done some tests on the Peterson entrance and the slot entrance. This year he is experimenting with a round 1-9/16 inch (40 mm) hole to see whether Eastern Bluebirds show as much of a preference for this size as do Mountain Bluebirds. He also encourages individuals to scrounge wood for boxes in order to save trees.

Bill and Joan Davis describe methods of reaching interested individuals and encouraging them to become OBS members in "The How-To of Building Membership."

--Ohio Bluebird Society

WISCONSIN--WISCONSIN BLUEBIRD, Winter 1995

The lead article is reprinted on page 100 of this issue of *Sialia*.

Steve Gilbertson, Andover, Minnesota, and designer of a widely used nest box, describes the materials needed and methods for construction of the PVC box. Don Bragg has laid out a construction diagram.

A number of comments are reprinted from the 1995 surveys. Darriel Kumbler, Jr. of Oshkosh, describes an unusual location for a bluebird nest. At Fort Bragg, North Carolina he found a bluebird nest in the rafters of a bunker on the hand grenade range. The neat nest contained six nestlings.

Carol McDaniel in her "County Coordinators Column" lists ways some bluebird enthusiasts have publicized the species. Among method used were the following: an exhibit of 15 types of boxes, a literature display at a meeting of the Wisconsin Conservation Congress, a slide presentation at a local historical society, literature given to people attending a conservation club banquet, a question and answer day at a local bird store, and a box building session coupled with a slide program.

--Bluebird Restoration Association of Wisconsin, Inc.

(TALES--Continued from page 119)

the project, and they make happy reading. Bluebirds nested successfully in at least five boxes, producing a total of at least 16 baby birds."

Marjorie has generously given of her time for many years at the NABS office by assisting in shipping catalogue orders. Where would NABS be without these wonderful people? Not where we are, that's for sure! Mrs. Rose Marie Ranck said it well recently: "You do a great job! *Sialia* is so interesting! I saw five or six bluebirds in Downingtown (PA) two weeks ago! Yes! And we agree!"

As we mourn Chuck and all those other bluebirders who have gone before us, I want to quote Debbie Dupree Gillen, youngest of Betty and Chuck's two daughters and three sons, who at his funeral said that she was certain that "I'll

see my Dad again, because God our Father, Jesus our Savior, and the Holy Ghost our Comforter have through Holy Scripture promised just that." Chuck would comment after yet another full day at work for NABS: "I've been so busy today, I haven't had time to do *nothin'!*" But you did *more* than *nothin'*, Chuck, and may your rest be sweet and peaceful! ■

NEW RATE OPTIONS FOR NABS MEMBERS

Effective 1 January 1996, individuals who choose the Student, Senior, or Regular category of membership in the North American Bluebird Society have the opportunity to renew for either a single year or for a three year period. See back cover for complete list.

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:

While delivering in rural Edwardsville, I happened upon one of the sons of a boyhood chum to learn he is an avid bluebirder. In order to discourage the cats and other predators on his land, he mounted the nesting box on a metal fencepost, applied heavy grease, and stuck it in the ground in the middle of a cactus garden.

Sounds like the perfect solution to me and I wonder if anyone else has come up with such an idea. So I plan to share the idea with the owners and managers of golf courses on my route.

H. Coy Winter
1802 West Adams
Belleville, IL 62223

Dear Editor:

After reading the article, "Protecting Nest Boxes from Snakes" (18(1):7) about an obviously effective but somewhat complex and messy way of deterring climbing predators, I felt I should write about our very simple technique, learned from *Sialia*.

Some years ago, mention was made in *Sialia* of the use of tack-strips (the strip used to secure the edges of wall-to-wall carpeting) to deter snakes from raiding nest boxes. Since then we have used it both on metal poles (a 2-foot strip wired to the pole) or on fences, where we nail several pieces vertically on the post and horizontally on the rails. In some situations which look especially vulnerable, we even

put very short pieces, strategically placed, on the box itself.

We can strongly recommend the use of tack-strips for low cost, ease of use, and unobtrusive appearance (it very soon weathers). Our experience over several years suggests, also, that it works very well.

Richard Taylor
6432 Old Goose Creek Rd.
Middleburg, VA 22117

Dear Editor:

Here's a reminder to all bluebirders out there--which, I think, is VERY IMPORTANT! I was quite disturbed after reading the Winter 1996 issue of *Sialia*. There's a nice picture on page 6 of an adult male and two females perched on the fence (one bird is on top of the nesting box).

The box appears to be mounted on the post which supports the fence and *that's what disturbs me!* Obviously, there are still many people out there who don't realize that raccoons patrol fence lines. Once they find a box with eggs or babies inside...you can bet that they'll check all other boxes on that fence line. Do the bluebirds a big favor. Move the boxes away from fences and mount only on slick metal posts with raccoon guards!

Marcy Hoepfner
Route 1
Metamora, IL 61548

Dear Editor:

Our daughter teaches school at the Savannah Christian Preparatory School in

Savannah, Georgia. Our grandchildren also attend school there, one in first grade and the other in fifth. In 1995 my husband cut out 45 bluebird boxes for the fifth grade to build as Mother's Day presents.

After completing this project, the school expressed an interest in starting a bird sanctuary on the property. We requested and received information from NABS that would help us with this project.

After many hours of work, my husband had two bird feeders assembled and 36 bluebird boxes cut out and ready for assembly. With our car loaded with wood, nails, hammers, etc., we headed for Savannah. Needless to say, the day we helped build the boxes was more fun than a barrel of monkeys. Seeing how proud the children were as they each completed a box was a just reward for the many hours spent in preparation.

We only wish more grandparents would get involved with their grandchildren. For many years to come as they watch the birds and take care of the nest boxes, they will remember one who cared.

Nancy W. Mills
P.O. Box 247
Culpeper, VA 22701

almost fell off the ladder. I don't know who was more frightened! There were five beautiful blue eggs in a neat nest. What a wonderful Easter surprise!

Harriet S. Henderson
20 Coventry Close
Savannah, GA 31411

Dear Editor:

We had about 31 bluebird boxes on the Turner Turnpike (in 1994) about 16 miles between Bristow and Stroud, eastbound and westbound. The project started out small, something I could do on my way to work. Every year it grew a little more.

We work with the maintenance department and the highway patrol so as not to be a bother. We raised 195 bluebirds and 12 chickadees.

We learned to control our snake problems using a T-post and putting a sleeve of the thinner 2 inch PVC pipe over it. I polish the PVC with Klean-and-Shine. We only lost five birds to snakes in a box we had not yet moved off a fencepost. We have now.

Veda Beck
315 W. 9th
Bristow, OK 74010

Dear Editor:

When we moved to our new home in November 1994 we immediately installed a bluebird box. We have always had bluebirds near our other homes, but we had never had a yard that backed up to an Atlantic marsh before. In early April a lonely male bluebird showed up and sat on the box for hours; then he left. A pair of chickadees moved in and built a nest.

Shortly the male bluebird came back and removed every single piece of the huge chickadee nest. Then a female bluebird showed up with nesting material. We didn't see any action at the box for some time so we decided to check. My husband, on the stepladder, knocked on the box several times; nothing happened so he began to unscrew the top. Out flew the female bluebird and my husband

The following item was on the computer bulletin board *The Osprey Nest* in response to a query from Laura Downey who had asked, "If I put up bluebird boxes, will they come?"

Kind of as an exercise in wishful thinking, I bought myself a birthday present of a bluebird box about five years ago. I mounted the box in the corner of my yard, walked back indoors, and glanced casually out the back window to see if the box was easily visible. And I almost passed out!

There, on top of this spanking brand new box was the first bluebird I had ever seen in or near my yard. They nested once that year, successfully. Since I had gotten the box out so late (late April), they only single-brooded. The following year the bluebirds had moved in by the

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Bluebird Tales

Mary D. Janetatos

The very sad news that NABS Treasurer **Delos C. "Chuck" Dupree** was stricken by a cerebral hemorrhage and died clouds a cool, late spring here in Maryland. While returning from a trip with his wife **Betty**, Chuck complained of a severe headache when they stopped for the night on 26 April near Wilkes Barre, PA. After being rushed to Geisinger Hospital and undergoing a lengthy operation, he was transferred to Doctor's Hospital in Lanham, MD. Chuck never regained consciousness and passed away on Monday, 6 May 1996. Betty said that Chuck had seen bluebirds along the Maine coast. They cheered him greatly and may have been his last sight of them. NABS Historian **Shirley Adams**, of Alton, IL, visited headquarters with her sister **Anne** earlier in April and snapped what was probably the last photograph of Chuck. We are experiencing now *all* of the ways that he had worked for bluebirds--not coming *near* to coping with his loss! As one of our business contacts remarked: "He was the *foundation* of the place!" Sarah Funkhouser's husband, Glenn, a past treasurer for the Audubon Naturalist Society, has stepped in to assist with day-to-day matters. We aim to satisfy *all* of our commitments! But we are *devastated!*

Chuck leaves a legacy of a great love for bluebirds and *all* wildlife, coupled with a great energy to crusade on their behalf. At his funeral on 9 May, I was able to chat with his brother, **Donald Dupree**, of Milwaukee, WI, who said he was happy to give financial support to NABS, even if his health did not permit him a more active role in bluebirding. **Rev. Ray Prybis**, OMI was the officiating clergyman at Chuck's funeral. As a birding companion of Chuck's, as well as NABS' first corresponding secretary, Fr. Ray was able to eulogize Chuck movingly. Chuck joins in eternity other bluebirders who I am aware died within the last year: NABS



Founder **Larry Zeleny**, former NABS board member from Oregon **Earl Gillis**, and Mountain Bluebird Trails co-founder **Duncan Mackintosh** of Lethbridge, Alberta. (Duncan's partner-in-bluebirding **Art Aylesworth** of Ronan, MT, carries on in energetic style.) Other bluebirders who passed away include **Revel Broyles**, of Springfield, Missouri, **Bob Ahearn**, of Binghamton, NY, **Frances Willis Harper**, of Granada, MS, **Harold Bullerman**, Windsor, IL, and **Joseph Patrick Treaber**, of Palos Heights, IL (d. 1991). May they live out the fantasy expressed by **Nell Charula**, of Inez, TX, when she wrote: "...Very seldom do we see a bluebird; once a migratory flock came through our yard--I thought I'd died and gone to heaven!" May the corner of heaven where all the bluebirders have gone, in former Audubon Naturalist Society President **Bob Lavell's** words, "...be the happiest corner of heaven"!

While still *aspiring* to heaven, we carry on the bluebird cause. **Georgeann Wood**, of Comus, MD, showed the reason our work is needed: a snapshot she sent shows a CAT reaching into a bluebird nest box. She assured us that the cat was *not* successful in harming any bluebirds, and that her friend, past president of NABS **Anne Sturm** of Barnesville, MD, had urged her to send the snapshot to us for laughs!

You never know where the NABS address will be seen by prospective bluebirders. **Kim Smith** of Poneto, IN, told us she saw the Society's address in a magazine at the doctor's office, "so I don't remember what exactly to ask for. I just

know we have a few bluebirds around our house. I would like to know how to feed them and house them. Any info would be helpful." Betty Rountree of Goldthwaite, TX, said "I just read your "bluebird" story in the *Birds and Blooms Magazine* at my beauty shop while I sat under the dryer. Could I please have some more information on the beautiful bluebird?"

Which reminds me of a recent visit to my hairdresser's, owned and run by Tommy and Voula Spiropoulos, in Cloverly, MD. Voula was complaining to me about the constant onslaught of House Sparrows in her bluebird nest boxes. I was about to tell her that I could lend her a sparrow trap when a woman in the next chair said, "Voula, you should contact the bluebird society--I'm a member, and they sell sparrow traps!" Voula laughed and pointed to me, and said "Mary here runs the bluebird society!" (A great exaggeration!) So we became acquainted--NABS member Ruth Grace Crutchley, of Damascus, MD and me, the executive director!

Barry Good wrote from Hatchville, MA, that he is able to welcome back more bluebirds as he goes birding on Cape Cod. "Bluebirds are well reported throughout the Cape most of the year. They are becoming more and more frequent and their numbers seem to be increasing."

One of our reliable volunteers, Maxine Montgomery of Leisure World in Silver Spring, MD, recently wrote: "Due to many physical problems, I will be unable to participate in the mailings of *Sialia*. I always looked forward to those 'talk and stuff' sessions. I shall miss them."

We heard from another senior citizen who, with her husband, helps in bluebird conservation, Evelyn Thompson, of Aiken, SC: "My daughter-in-law is a first grade teacher in Easley, SC. Every year my husband and I go there in February and I give a talk on bluebirds and he helps the children assemble and nail a bluebird house to put in their yard. He and my son pre-cut the houses before the

exciting day. This year all other first grades want to do this and if we agree to take them all on, that will be 90 bluebird houses."

A bluebird *reward* came across the path of Harold Boley, of Washington, IL. "While working in our garden I noticed a few bluebirds in a nearby tree. They were singing their happy little song. I decided to answer them the best I could and, to my surprise and delight, one flew to me and sat on my head for two or three seconds. I froze in my tracks from that surprise."

From Pulaski, TN, Johnnie Vincent reported how *he* had become involved in bluebird conservation. Paul and Alice Crislip, before their deaths, had explained the bluebird's plight to Johnnie, and they all had installed and monitored a bluebird trail. Now with both of the Crislips gone, Johnnie said: "Now I have retired and I have the distinct privilege of continuing the good project that Paul Crislip started."

Those bluebirds *will* steal your heart, as Douglas and Katherine McElroy of Douglasville, GA found out. "Last year I built 15 boxes and put them up in various places. I put up six on my golf course after checking with the greenskeeper about pesticides. He assured me that they do not use harmful pesticides. All the bluebirds are multiplying as there were three sets of young birds per box. I feel very good about my golf course birds."

Veteran NABS volunteer Marjorie Mountjoy hails from Tennessee and showed us the Collingtonian newsletter, which reported in an article by Edward Behr, "Collington's much-admired bluebirds have evidently won this year's battle against their arch-enemy--the House Sparrows. A new strategy was adopted this year in the effort to end the sparrow's lethal invasions of bluebird nests. New nesting boxes were installed at several sites outside the perimeter road, away from the sparrows' usual hangouts. The bluebirds soon occupied some of these new homes. Now the results are in, thanks to Mary MacMartin, who oversaw

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The Perfect Thing

If I had to pick just one tune
To sing my whole life long,
Would I choose melancholy
Or a gay, sweet, simple song?

The composer could be Mozart,
McCartney, Willie Nelson,
From classical to country
To set my feet in motion.

If asked to pick just one dress
To wear until I die,
Which color would become me,
A bright or pastel dye?

The fashion of the century,
To fit my shapely form.
The fiber cotton, knit or wool,
Summer cool or winter warm.

Alas, it is too hard to choose
The perfect song and dress!
I dare not pick just one of each
And go without the rest!

How then, can our sweet bluebird, with
no comment in the choice,
Go through his life with perfect garb
And such befitting voice?

I thrill at his familiar song,
Its sweet simplicity.
I never tire of the tune
This dear bird sings to me.

The blue robe is exquisite,
A hue of finery!
The Ultimate Designer
Dressed him impeccably!

Men yearn for perfect song and dress
We search the whole world through,
Perhaps we feel our final choice
In time would never do.

So precious little bird of blue
When you return each spring,
Your song and dress should tell us
That love's the perfect thing.

--Carol J. McDaniel

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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. Three year rates: Student and Senior \$28.50; Regular \$42.00. 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

