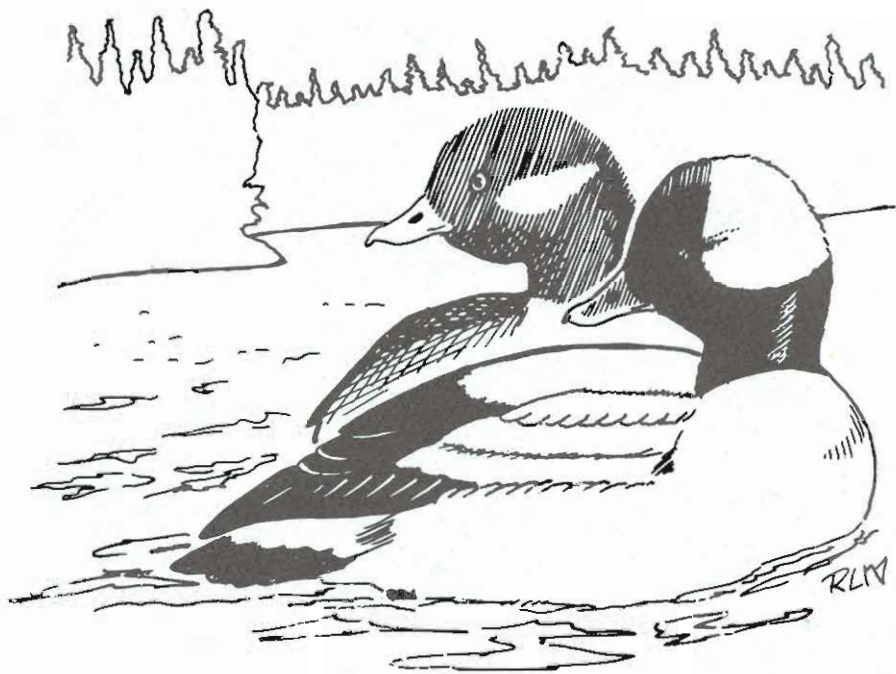


# *Sialia*

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The Quarterly Journal  
Of  
The North American  
Bluebird Society



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*Sialia* means bluebirds. Hence the title of this journal. Technically, *sialia* is the Latinized, neuter plural version of the Greek word *sialis*, 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'-ahl-iss). Similarly, the Western Bluebird and Mountain Bluebird, the two other species within the genus, were named *Sialia mexicana* and *Sialia currucoides* (coo-roo-coy-dees) respectively. Their species names are descriptive of their locations. 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 8, Number 4  
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Pages 121-160

**EDITOR**  
Joanne K. Solem  
**CONTRIBUTING**  
**EDITOR**  
Lawrence Zeleny  
**ART EDITOR**  
Richard L. Woodward

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## COVER

Art Editor Richard Woodward's cover features a pair of Buffleheads, a cavity nesting species of duck.

*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 20707.

# Presidential Points

Sadie Dorber

The bluebirds arrived in my area to be greeted by an unusually warm spring, in fact, a few days were summer-like. We all were concerned that the prematurely warm weather would entice the bluebirds to start their nests early. Most of the pairs apparently realized it was too early, but a few did start nests that resulted in failure.

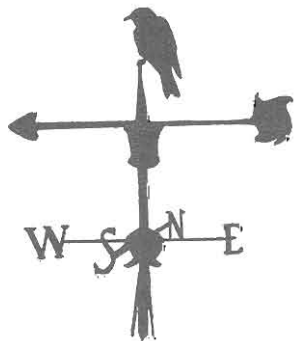
April brought a return to colder weather with many days of cold rain and snow flurries. The bluebirds seemed to realize it would be wise to wait for milder weather. Although some pairs built nests, females did not lay eggs. It seemed strange to find complete nests still empty when the box was monitored again.

The weather finally turned milder and the bluebirds settled down to serious business. The much-dreaded late storm arrived leaving 6-10 inches of snow in some areas. Most nests that had brooding females were not affected. Eggs not being incubated did freeze and in some cases actually cracked open.

Dr. Robert Ahearn was saddened to find a female dead on her clutch of five eggs. He reported the male found another female within two days and the pair had a successful nesting.

Periods of several rainy days have continued here throughout the summer, but the bluebirds have fortunately managed to be successful. The Tree Swallows had a more difficult time finding sufficient food for nestlings and lost several clutches. Several Tree Swallows have late nests which I feel are the result of an unsuccessful first attempt.

The persistent rains and storms, no doubt, have been disastrous for many fledglings of all species. The loon, another species of special concern in New York State, has lost many nests due to the high water in lakes flooding their nesting sites.



Barn Swallows again raised their first brood in our garage this year. The parents chose an old nest that, by now, is nearly touching the roof since a little addition is added each year. The nest was so crowded for the nestlings that we could only see five looking over the edge. One nestling fell out and we soon realized there had been six in the cramped quarters. After the swallows fledged, the young would return to the garage each night for about a week to roost. During heavy rains, they would seek shelter in the garage in the day time. Barn Swallows will sometimes have a second nesting and the female is again brooding. She chose another nest the second time which will allow the family a little more room and I'll fret less about the cramped conditions.

An overflowing crowd of enthusiastic bluebirders greeted Dr. Larry Zeleny and Executive Director Mary Janetatos when they were guest speakers at Finch Hollow Nature Center in Johnson City, New York. The three of us attended the press conference of County Executive Carl Young to receive the proclamation declaring Bluebird Week in Broome County. Broome County is one of only two counties in North America to have a formally declared Bluebird Week.

As the bluebirds finish their second nesting and some start a third nest, I hope all of you have had a successful nesting year and will try to provide more houses for the upcoming year. ■

# The Use of Nest Boxes by Buffleheads And Other Cavity Nesting Birds

Giles Gauthier

*This paper was presented at the Eighth Annual Conference of the North American Bluebird Society, July 12-13, 1985, at Red Deer, Alberta.*

## INTRODUCTION

Nest boxes are an important management tool to improve the nesting habitat of many cavity nesting birds. The provision of nest boxes can increase breeding density in several species (e.g., Hamerstrom, Hamerstrom and Hart 1973, McComb and Noble 1980, Froke 1983), including some species of waterfowl like the Wood Duck (*Aix sponsa*; McLaughlin and Grice 1952, Doty and Kruse 1972) and the Common Goldeneye (*Bucephala clangula*; Ericksson 1982, Dennis and Dow 1984). Numerous factors have also been shown to influence nest box use and nesting success including the size of the box (e.g., Moed and Dawson 1979, Lumsden, Page and Gauthier 1980, VanBalen 1984), age of the females (Ericksson 1979, Dow and Fredga 1983), breeding density and dump nesting (Jones and Leopold 1967, Heusmann, Belville and Burrell 1980, Haramis and Thompson 1985) and previous use (Dow and Fredga 1985).

The Bufflehead (*Bucephala albeola*) is the smallest cavity-nesting duck in North America. Because they can use unaltered flicker (*Colaptes auratus*) holes, Erskine (1972) believed that, in a natural situation, cavities were not limiting for Buffleheads and that nest boxes received little use. However, there has not been any quantitative study yet on the use of nest boxes by this species. In 1982, I initiated a study of the nesting habitat of the Bufflehead by providing a large number of nest boxes. The objectives of this study were

- 1) to determine if nest boxes can be successfully used by Buffleheads, and
- 2) to investigate factors affecting nest box selection and nesting success.

In this paper, I have summarized the results of this nest box program and I have provided recommendation on how provision of nest boxes can improve the nesting habitat of the Bufflehead.

## METHODS

This study was conducted in the Caribou Parkland of British Columbia, 15 km [9.3 miles] north of 100 Mile House. The study area covered 223 km [139 miles] and included 26 ponds and lakes. Most of these ponds were small (less than 8 ha [3.2 acres]), shallow and moderately alkaline. The habitat in this area was a mosaic of rangeland, groves of aspen (*Populus tremuloides*), and boreal forest of Douglas fir (*Pseudotsuga menziesii*) and Lodgepole pine (*Pinus contorta*). Although the boreal forest was dominant in the general area, about 2/3 of the study area was located in the parkland habitat. The

forest was in various stages of regeneration as small-scale logging activities had taken place in some areas over the past 50 years.

Thirty-five nest boxes were installed by Ducks Unlimited in the fall of 1978 and these will be referred to as the OLD BOXES. More boxes were added in 1982 (N = 90), 1983 (N = 60) and 1984 (N = 20), and these will be referred to as the NEW BOXES. The internal dimensions of the OLD BOXES were 23 × 23 × 45 cm [9 × 9 × 17.7 inches], (floor area 529 cm [81 inches]) and the entrance was 7 × 10 cm [2.7 × 3.9 inches]; (Type I, large boxes with large entrance). In 1982, I manipulated nest box size: at the end of the breeding

season, I added more of these large boxes but I reduced the entrance size of all of them to 6.5 cm [2.5 inches]; (Type II, large boxes with small entrance). I also added 40 small boxes with internal dimensions of 15 × 15 × 40 cm (floor area 225 cm) [5.9 × 5.9 × 15.7 inches, floor area 34.8 inches] and an entrance size of 6.5 cm [2.5 inches] (Type III). In 1983 and 1984, I added more boxes of intermediate size (18 × 18 × 40 cm, floor area 324 cm [7.1 × 7.1 × 15.7 inches, floor area 50.2 inches]); (Type IV, medium boxes), also with a 6.5 cm [2.5 inches] entrance. Finally, at the end of the 1984 breeding season, I enlarged the entrance of 20 (Type II) boxes back to 7 × 10 cm [2.7 × 3.9 inches]. Large boxes (Type I and II) were made of rough plywood (1.25 cm thick [.5 inches]). The rest of the boxes were made of rough cedar board, 2.5 cm [1 inch] thick. The exteriors of the OLD BOXES were stained brown, but all interiors were unstained.

Nest boxes were nailed on aspen or fir trees at a height of 3 to 5 m [9.8 to 16.4 feet]. They were spaced out along the shoreline of ponds, generally within 20 m [65.6 feet] of the water. Type I boxes were restricted to only 6 ponds of the study area. The three other box types were spread all over the study area, most ponds having two types of nest boxes and many of them all three. All ponds were saturated with nest boxes (from 4 to 24 per pond) by providing them in excess to the maximum estimated breeding density of Buffleheads.

From 1979 to 1981, boxes were checked only once in June. Since 1982, however, they were checked several times each summer from late April to the end of July. At the end of each season, they were cleaned and re-supplied with a fresh layer of wood chips. In an attempt to control the use of boxes by starlings, I removed their nests and eggs from 1983 to 1985. However, clutches that hatched out between two successive checks were left undisturbed.

## RESULTS

From 1979 to 1985, breeding at-

tempts occurred in 55.2% of the nest boxes (N = 649 box-years; a few boxes that were used by two species in the same season were included twice). Fifty-seven (8.8%) breeding attempts were recorded by Bufflehead and 34 (5.0%) by goldeneyes (mostly Barrow's Goldeneye, *Bucephala islandica*). Other users included the European Starling (*Sturnus vulgaris*) (27.0%), the American Kestrel (*Falco sparverius*) (6.8%), Tree Swallow (*Tachycineta bicolor*) (4.9%), Flying Squirrel (*Glaucomys sabrinus*) (1.4%) and Red Squirrel (*Tamiasciurus hudsonicus*) (1.2%).

### Age Of The Nest Box

The use of the OLD BOXES increased with age of the box from 39% to 71% over the first five years. The decrease in the following years resulted from manipulation of the nest boxes. After four years, goldeneyes were the dominant users with 57% of the OLD BOXES used. At the end of 1982 (fifth year), the entrance of these boxes was reduced, which led to the exclusion of the goldeneyes. They were, however, quick to reuse these boxes when the entrance of some of them was subsequently enlarged. Few Buffleheads used the OLD BOXES: only one and three breeding attempts were respectively recorded before and after the entrance was reduced. Buffleheads, however, used the NEW BOXES in their first year. After three years, they were the main users of these boxes.

Starlings were the dominant users of the NEW BOXES in their first year, and of the OLD BOXES in the year following the reduction of the entrance. However, removal of starling nests after 1982 resulted in a sharp decline in the use of both OLD and NEW BOXES by this species in the last two years. Finally, both kestrels and swallows used nest boxes in their first year, and their rate of occupancy remained relatively stable throughout the study.

### Size Of The Nest Box

The preference for the four different types of nest boxes was assessed for four species. Buffleheads were the most selective in their use of nest boxes: small boxes received over half of all their breeding attempts, whereas large boxes and especially those with the large entrance were strongly avoided. The relatively low use of medium boxes could be partially explained by the fact that most of them were available for only two years compared to three or four years for the three other types of boxes.

Starlings also showed a strong selection in their choice of nest boxes. They preferred medium to large boxes with a small entrance, but they avoided small boxes or large boxes with a large entrance. Kestrels tended to avoid small boxes and used mostly large boxes irrespective of entrance size. This difference was, however, not significant, probably because of the relatively small sample of nest. Surprisingly, despite their small size, swallows used mostly large boxes with a small entrance and tended to avoid small boxes. However, as in kestrels, this difference was not significant.

### Previous Use Of Nest Boxes

With Buffleheads, nest boxes that were successful (i.e., at least one egg hatched) were reused significantly more often than those that were unsuccessful in the following year. Depredated nests were never reused in the following year, whereas a majority of those that were deserted were not reused either. In kestrels, successful boxes were not reused significantly more often than unsuccessful ones. The sample of kestrel nests was, however, small.

I have shown before, that after the start of the starling nest removal program, their use of boxes declined. The comparison of the use of boxes with the outcome of the breeding attempt in the same box in the preceding year, provided a test of the hypothesis that the nest removal program was a direct cause of the decline in starling use.

Successful nests were those that fledged some young, whereas unsuccessful nests were divided into three groups: a "low intensity" removal (removed 1 group) where only nests without eggs were removed once or twice; a "high intensity" removal (removed 2 group) where nests with eggs were removed any number of times or nests without eggs were removed more than twice; and a third group where nests were depredated. Nest boxes of the removed 1 group were not reused less often in the following year than those that were successful. When all unsuccessful nests were combined, successful boxes were much more likely to be reused than unsuccessful ones. Therefore, removal of starling nests, and especially multiple removal where one (or several) birds persistently re-nested, caused a decline in the use of nest boxes by this species.

### Nesting Success In Nest Boxes

The number of breeding attempts by Buffleheads in nest boxes increased from 0 in 1982 to 9 in 1983, to 26 in 1984. In 1983, nesting success was high and 89% of the nest boxes successfully hatched some eggs. In 1984, nesting success declined dramatically; despite a 190% increase over 1983 in the number of nest boxes used, the number of nests that were successful was identical to the preceding year. The major cause of nest failure was nest desertion. In all nests deserted during the egg-laying stage, only one to three eggs were laid. In nests deserted during incubation, two of them were parasitized, i.e., more than one female laid in the same nest (more than 1 egg/day was laid in each of these nests). Four nests were depredated in 1984, but the predators were unknown. One of these incubating females was killed on her nest.

In 1985, 21 nest boxes were used by Buffleheads, down slightly from 1984. Although the fate of all these nests is not yet known, nesting suc-

cess will probably be higher than in 1984. By early June, only three nests had been deserted during the egg-laying stage, compared to seven in 1984. Two nests were however, depredated by Black Bears (*Ursus americanus*).

## DISCUSSION

These results show that Buffleheads readily use nest boxes. In 1984, I estimated that 37% of all Bufflehead breeding attempts in my study area were in nest boxes. This shows that boxes are at least an adequate substitute for natural cavities, and may even offer better nest sites if they are nearer to water than natural cavities. More data are needed, however, to determine whether the provision of nest boxes did increase the total breeding population in my study area.

The high number of boxes used by Buffleheads in 1984 coincided with a very low nesting success. Although the success of females using boxes was much lower than those using natural cavities (Erskine 1972, Gauthier unpubl. data), this does not necessarily mean that boxes are "worse" nest sites. A more likely explanation is that boxes were used by a different segment of the population. My results showed that boxes where females nested successfully were more likely to be reused in the following year. Ericksson (1979) and Dow and Fredga (1983) also found that female Common Goldeneyes that nested successfully, tended to reuse the same nest site in the following year. Therefore, females using nest boxes in the first few years after they were installed may be mostly young and inexperienced breeders who

have a lower nesting success (Ericksson 1982, Dow and Fredga 1984).

One would expect that nesting success would then increase with the age of the nest box. Preliminary data from 1985, the third year that most of the NEW BOXES were available, indeed showed that nesting success may be higher. Why then was success so high in 1983, the first year the NEW BOXES were available? First, only nine boxes were used in that year. This is not surprising since females probably use mostly sites that they have visited in the preceding summer (Eadie and Gauthier 1985). Therefore, the presence of only a few experienced breeders in that small sample, such as females whose nest site disappeared since the previous summer, could account for the high nesting success in 1983.

The size of the nest box is very important to insure a successful nest box program for Buffleheads. They showed a very strong aversion toward large boxes and those with a large entrance. This contrasts sharply with goldeneyes who show a strong preference for large boxes with a large entrance (Lumsden, Page and Gauthier 1980). Interspecific competition with the latter species (e.g., Erskine 1959, McLaren 1969) may have selected for the strong preference for small boxes in Buffleheads.

Older boxes and those that have been previously used are the most valuable to Buffleheads. Boxes where clutches successfully hatched are especially valuable, not only because females tend to return to their previous nest site, but also because females changing nest sites prefer to use nest boxes where a clutch successfully hatched the year before (Dow and Fredga 1985, Eadie and Gauthier 1985).

As in many other nest box programs designed for waterfowl, use of boxes by starlings was found to be a problem (e.g., McGilvrey and Uhler 1971). Although starlings tended to prefer medium size boxes over small





ones (those preferred by Buffleheads), Peterson and Gauthier (1985) showed that there is a high overlap in the size of natural cavities used by these two species. Removal of starling nests was effective in reducing their use of boxes, but this is a time-consuming method because boxes have to be visited frequently. The most effective means to prevent use by starlings is probably to place boxes in coniferous habitat. Starlings never use coniferous habitat and even boxes placed in small patches of conifer surrounded by rangeland received little use by this species.

As with Wood Ducks, nest parasitism or dump nesting, has sometimes been reported to be a problem with nest box programs (Jones and Leopold 1967, Haramis and Thompson 1985). With Buffleheads, nest parasitism is usually rare (Erskine 1972). Nest boxes, however, may be more prone to parasitism because they are often more conspicuous than natural cavities. Only two of the 457 Bufflehead nests in boxes were parasitized over three years. Although parasitized nests may be more likely to be deserted (Gauthier submitted), the low rate of parasitism suggests that it is not a major problem with Buffleheads.

## RECOMMENDATIONS

This study shows that a well designed nest box program can be a useful management tool for Buffleheads. The size of boxes is very important: the small boxes used in this study (Type III) were strongly preferred and are recommended. Boxes should be placed near water, preferably in coniferous habitat to minimize use by starlings. Older boxes and those that have been previously used are most valuable to Buffleheads. Density of nest boxes should not be too high. One box per 200 m [656 feet] of shoreline is suggested although a higher density may be desirable if use by species such as starlings is high. More study is needed on the potential effects of high nest box density on predation rate, especially in habitats where mustelids are abundant.



## Acknowledgments

I thank Rory Brown and Ron Boychuck of Ducks Unlimited for giving me access to the data of this nest box program from 1979 to 1981 and for providing many of the boxes. This study was funded by the Canadian National Sportsmen's Fund, the Natural Sciences and Engineering Research Council of Canada (NSERC), and the Canadian Wildlife Service. Danielle Gauthier, Barbara Peterson, Simon Richards, and Linnie Nyland helped me in the field. Jean-Pierre Savard and especially Jamie Smith provided invaluable assistance throughout this study, and W. Monical kindly allowed me to work on his property. ■

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## Announcement

Effective 1 January 1987, the dues for regular membership only, will be increased to \$15.00.

Though postage rates have doubled since the North American Bluebird Society was formed and other expenses continue to increase, the Board of Directors has, in the past, relied on other sources of income to operate. The decision to increase the regular dues was a difficult one for the Board, but one that we felt could no longer be delayed.

It is our hope that the public will continue to support us in our endeavor to help save the bluebird.

Sadie Dorber, President

## SETTING UP A NEST BOX TRAIL FOR DUCKS

The following specific management techniques should be followed when establishing and monitoring a duck box trail.

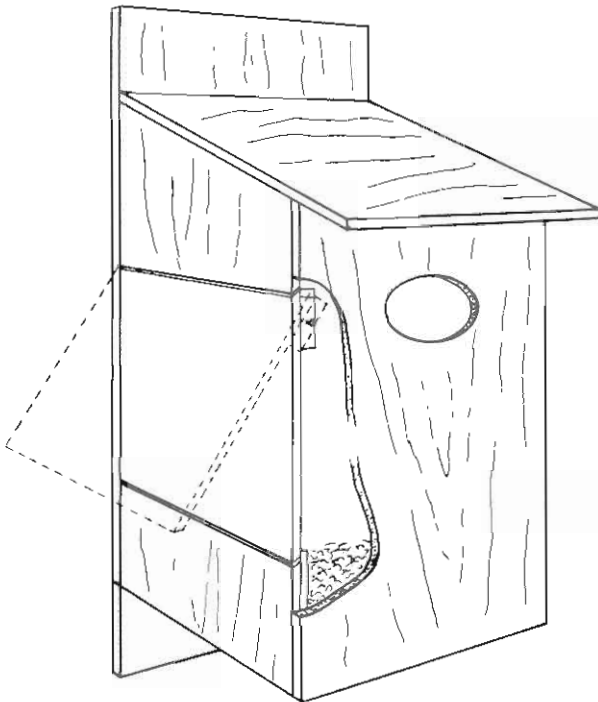
### Nest Box Construction

The inside of the front of the box should have either wire mesh attached or horizontal saw cuts etched into it to allow the ducklings to climb out of the box. This is especially critical for the small Bufflehead when it nests in boxes intended for the larger species.

While painting is not absolutely necessary, it is recommended by Ducks Unlimited. A drab grey or green stain can be used to blend the boxes in with their environment. There is some indication that goldeneyes prefer boxes with dark interiors. D.U. recommends that the interior be stained the same as the exterior.

Ten cm (4 in) of wood shavings, dried grass, or other suitable material should be put into the bottom of the box and changed annually.

Screws are stronger than nails and should be used to join the sides and the back.



Nest box design by: G. A. Forbes  
Supplied courtesy of Ducks Unlimited Canada

## Nest Box Placement

The best places for boxes are near to lakes, marshes, or slow-flowing rivers. Ideal locations have a good inter-spersion of water and aquatic vegetation in the form of dense emergent plants and small open pools. Fallen trees and muskrat lodges make good loafing spots, so their presence should be considered. Standing water should remain for the young ducks until at least mid-August.

Boxes should be as high as practical. They can be placed up to 12 m (40 ft), but a 5 m (16 ft) height makes them easier to monitor and repair.

Only a few boxes should be erected initially, and when the occupancy rate reaches 30%-50%, more boxes can be put out. Since ducks usually return to the areas where they were raised, additional boxes can be placed around larger ponds.

Wire mesh or tin can be put around the base of trees with nestboxes attached to them if beavers are a threat.

No branches should obstruct the hole.

The box should be tilted slightly forward to allow easy escape for the ducklings.

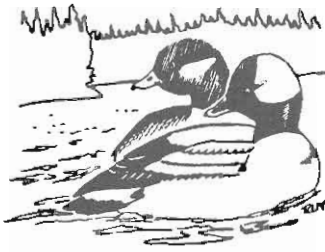
If boxes are screwed into live trees, subsequent pressure will be exerted on the box. This problem can be alleviated by loosening the screws by a few turns every couple of years.

Late summer is a good time to erect new boxes. If this is done before the leaves have fallen, spots hindered by branches can be avoided. In some cases it may be best to put them out during the winter when easy access is provided by snowmobiles. If left until spring, all boxes should be out immediately after ice break-up.

## Nest Box Monitoring

Monitoring, at least early in the season, is essential to prevent starlings from becoming established. Plugging the holes until the arrival of the ducks will save frustration and monitoring time. Once the ducks arrive this plug must be immediately removed as they begin nest site selection. Once it is confirmed that a duck is established in the box, no further disturbance should be allowed, as ducks are especially sensitive during incubation.

Frequently, nest boxes are not used until their second year because most adult females return to their previous nests, and two-year-olds nesting for the first time have often selected the site during the previous summer.



### **BUFFLEHEAD**

**EGGS:**  
8-12 (7-16)

**INCUBATION:**  
29 days

**TIME IN NEST**  
24-36 hr

**MINIMUM HEIGHT**  
3m (10ft)

### **BUFFLEHEAD**

The Bufflehead is a small, fairly common diving duck. The male is distinguished by his puffy black and white head and the female by a large white wing patch and a small white cheek patch. This species breeds in the forested regions of central and northern Alberta and less commonly in the foothills and Rocky Mountains. Their diet consists mainly of invertebrates, aquatic insects, and snails. Seeds of water plants are eaten in some areas.

**NESTING:** Buffleheads arrive in southern Alberta in mid-April. They rely almost exclusively on old flicker holes for nesting sites, so the retention of forests adjacent to lakes and ponds is essential for the survival of this species.

Most, if not all, females attempt to nest during their second year. Nest-site searching by yearling females is well documented for goldeneyes and probably occurs in this species as well. Breeding adults are paired by the time they get to the breeding ground. The females fly through the forest looking for a suitable nest hole. Rarely is a nest site more than 200 m (650 ft) from the shoreline, and even more rarely is it right

over the water. In many cases, the female will return to the area where she was raised and will often nest year after year in the same hole.

No nesting material is brought in, but the female will cover the eggs with her own down towards the end of the egg-laying period. Nesting commences about one month after her arrival on the breeding ground. The male, briefly, and then permanently leaves the area once the female begins to incubate. He joins other drakes and yearlings on nearby lakes and ponds. The female is not easily flushed from her nest, and is sometimes killed by female goldeneyes if the entrance hole is large enough for them to enter. Once hatched, the young are brooded for 24 to 36 hours. They then jump out of the nest hole to the ground and follow the female to the nearest pond or lake. Only 50% of the nestlings survive to fledge.

In the fall, Buffleheads gather in open water of lakes and usually remain until November. A few occasionally overwinter on the rivers of southern Alberta.

Flickers, starlings, kestrels, bluebirds, and swallows compete with Buffleheads for nest sites. Competition from most species can be lessened if boxes are placed in more densely wooded areas, rather than in the open.

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*"Setting Up a Nest Box Trail for Ducks," was reprinted from Nest Boxes for Alberta Birds by Bryan R. Shantz and Myrna d. Pearman (Red Deer, ALBA: Ellis Bird Farm LTD., 1984), pp. 8-9.*

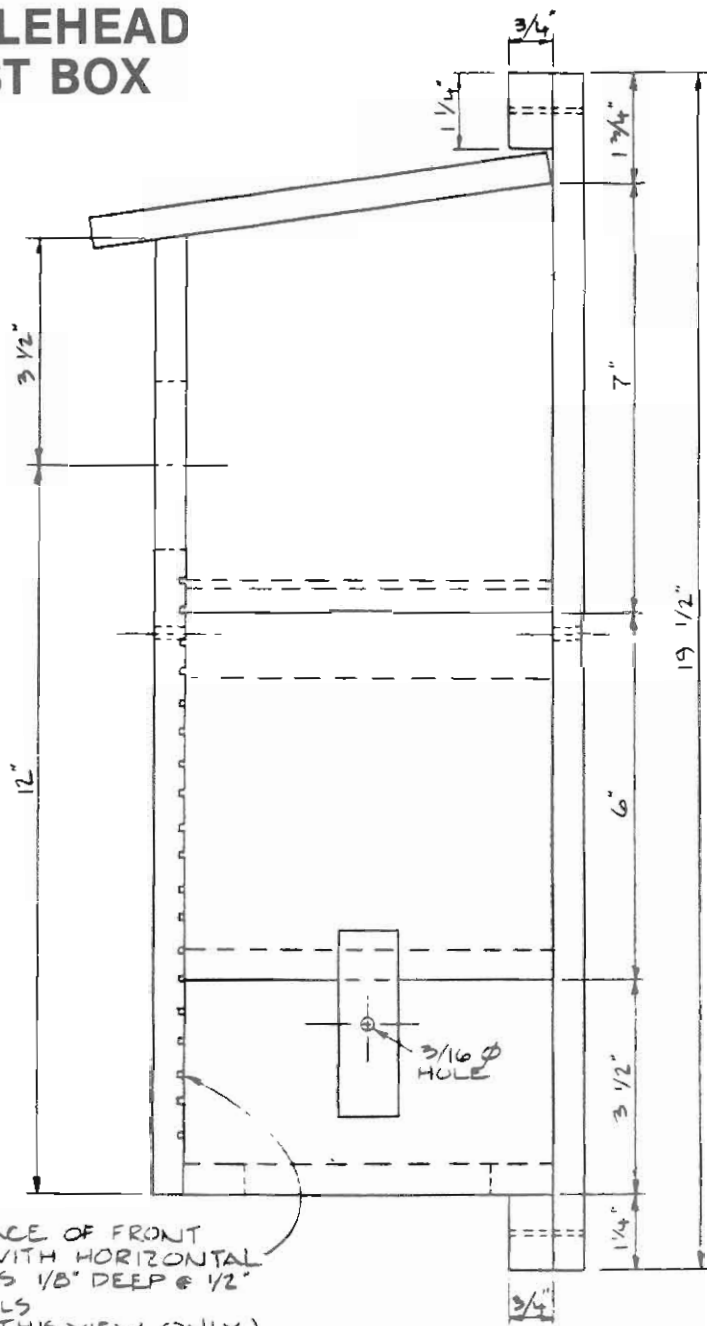
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### **Bluebird Slide Show**

The NABS slide show is available for rental at \$10.00 or purchase at \$55.00. The show consists of 141 collated, cardboard-framed 35 mm slides and a printed script (no slide tray). If a cassette narration is desired add \$5.00 to the purchase price.

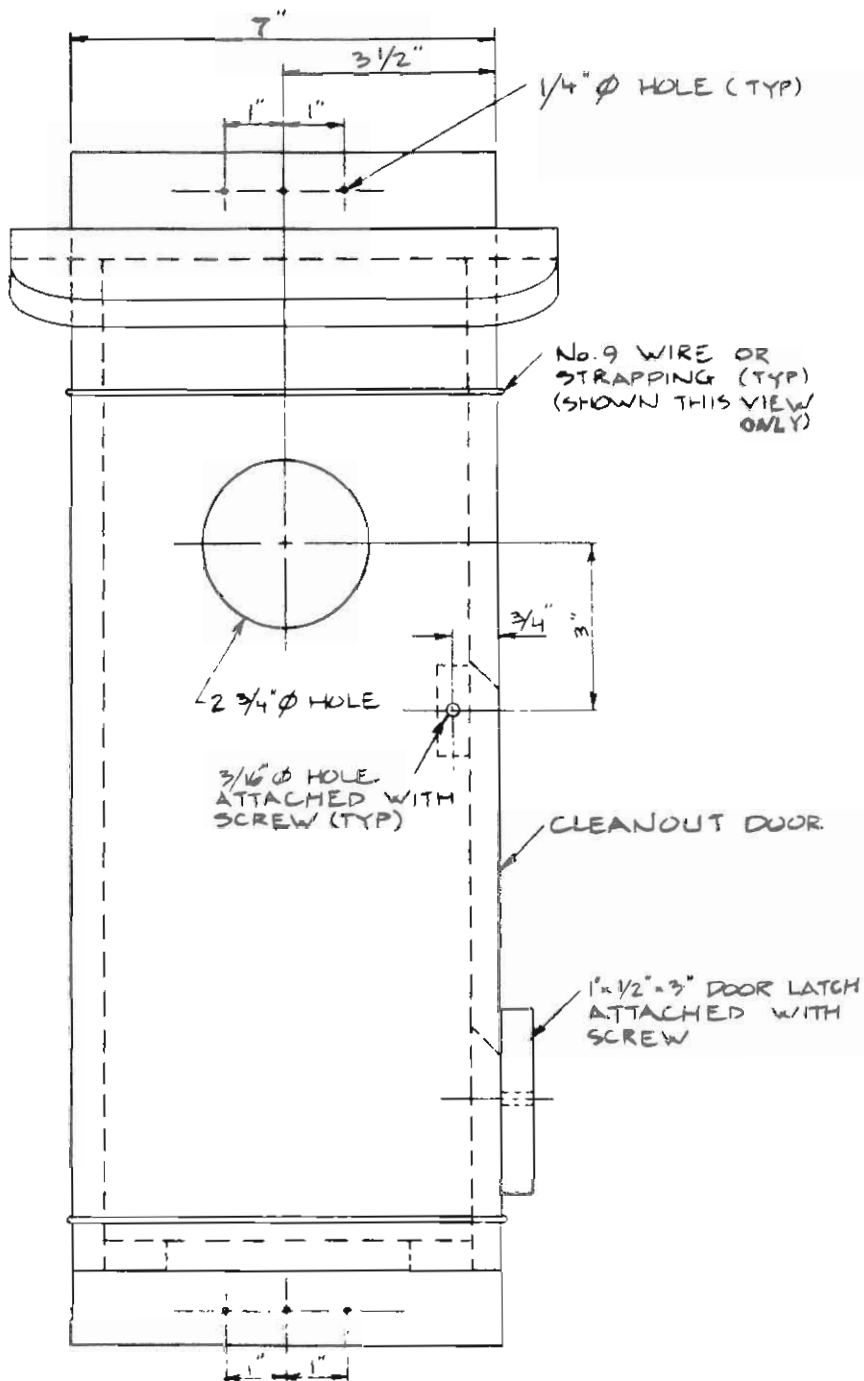
To rent or purchase the bluebird slide show, write to the following address: NABS Slides, Box 6295, Silver Spring, MD 20906-0295. Please allow a month for delivery and, if possible, specify several dates.

# BUFFLEHEAD NEST BOX



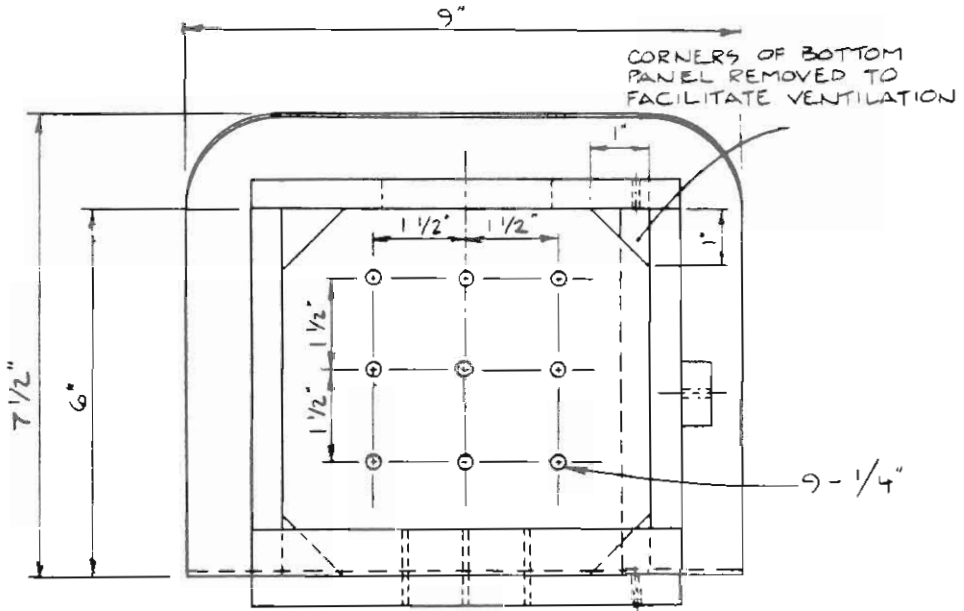
INSIDE FACE OF FRONT  
PANEL WITH HORIZONTAL  
SAWCUTS 1/8" DEEP @ 1/2"  
INTERVALS  
(SHOWN THIS VIEW ONLY)

RIGHT VIEW  
1/2" = 1"



FRONT VIEW

1/2" = 1"



BOTTOM VIEW  
1/2" = 1"



- NOTE:
- ALL 1/2" SPRUCE PLYWOOD CONSTRUCTION (UNLESS OTHERWISE SHOWN)
  - TO BE STAINED
  - USE 1/4" RING NAILS

### Midwestern Regional Bluebird Meeting

Minneapolis, Minnesota — June 19, 20, 21, 1987

sponsored by

North American Bluebird Society and Bluebird Recovery Program (MN)

For information write

Mary Ellen Vetter  
6913 Oliver Ave., North  
Brooklyn Center, MN 55430



## Literature Review

T. David Pitts

**Gowaty, P.A. 1984. House Sparrows kill Eastern Bluebirds. *Journal of Field Ornithology* 55:378-380.**—While it is well known that House Sparrows sometimes take over and destroy bluebird nests, few studies have documented the amount of adult bluebird mortality caused by House Sparrows. During a 6 year period, 28 dead adult Eastern Bluebirds were found in nest boxes. Circumstantial evidence indicated at least 20 of the 28 (71%) were killed by House Sparrows. An account of House Sparrows killing nestling bluebirds and descriptions of House Sparrows building their nests over the bodies of dead adult bluebirds are also included.

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**Shealy, F.G. 1968. Ectoparasite control on the Eastern Bluebird, *Sialia sialis* Linnæus, including observations on biology and nesting habits. Master of Science thesis, Clemson Univ., 44 pages.**—This study reports on 148 Eastern Bluebird nests near Clemson, South Carolina, in 1967. The presence of a nearby perch, such as a utility wire or fence, was thought to be the most important factor influencing nest site selection. One clutch of 7 eggs was observed. Eight of 591 eggs were white. Vandals, flying squirrels, and snakes caused most of the nest losses. Two types of chemicals were tested for parasite control. Diazinon did not eliminate mites from nests. Shell Pest Strips effectively controlled mites in nests and on nestlings. Boxes with Pest Strips produced about 20% more fledglings than control boxes. In spite of the apparent short term benefits of chlorinated hydrocarbon pesticides such as those in Shell Pest Strips, I do not recommend the use of such pesticides. We now know that resistant strains of pests may develop, and that some species of birds are eventually harmed, or even killed, by such pesticides.

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**Sinnott, Ricky J. 1981. Ecology and management of the Eastern Bluebird in**

**Missouri. M.S. thesis, Univ. of Missouri, Columbia. 168 pp.**—The long-term decline of Eastern Bluebirds in Missouri is documented. Two years of nest-box data are analyzed, including a detailed comparison of characteristics of boxes used by bluebirds and House Sparrows. House Sparrows readily used open-top boxes. Effects of heat on nesting success are described. Bluebird migration patterns in the midwest are reviewed. Winter food and roosting habits are surveyed. The insulative capacity of several types of nest boxes was measured. A unique feature of this well written thesis is a description of some characteristics and attitudes of persons who have bluebird nest boxes.

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**Rounds, R.C., and H.L. Munro. 1983. Brood size of Eastern and Mountain Bluebirds in Manitoba. *Journal of Field Ornithology* 54:304-311.**—This article uses John Lane's records and notes on 11,462 nestlings of 2609 broods banded during 1970-1974; 427 broods were Eastern Bluebirds and 2182 broods were Mountain Bluebirds. Brood size averaged 4.04 young per nest for Eastern Bluebirds and 4.46 young per nest for Mountain Bluebirds. Brood size ranged from 1 to 6 for Eastern Bluebirds and from 1 to 8 for Mountain Bluebirds. Many pairs of both species apparently had two broods per year but there was no evidence of three successful broods in one year. First broods were larger than second broods in both species. The effects of adverse weather in late spring and outbreaks of black flies are discussed. The timing of second broods was more synchronized than for first broods. The opposite would be expected; the authors speculate that availability of nest boxes may be responsible for the synchronization. ■

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Dr. Pitts welcomes reviews from members. Readers should submit material to Dr. T. David Pitts, The University of Tennessee at Martin, Martin, TN 38238-5014.

# The Bluebird Parasitic Blowfly

Lawrence Zeleny

**A**lmost all living things are troubled from time to time by some kind of parasite, and the bluebird is no exception. The most serious parasite of the bluebird is the blowfly *Protocalliphora sialia* (also known as *Apaulina sialia*), and several closely related species. This blowfly attacks various kinds of birds but seems to prefer birds that nest in cavities, especially bluebirds and Tree Swallows.

The adult female blowfly enters the cavity or nesting box while the birds are nesting and lays her eggs in the nesting material. The eggs soon hatch and the larvae or maggots attach themselves to the baby birds and suck their blood. After they have gorged themselves sufficiently, they bury themselves in the nesting material where they become inactive and surrounded with a flexible membrane. At this stage they look like small dark brown eggs about 3/8 inch long which are known as puparia. After about 12 days the adult blowflies emerge from the puparia and fly from the cavity, ready to find other fresh birds' nests and repeat the life cycle.

Bluebird nestlings usually survive the attack of the parasitic blowfly and are free of any blowfly infestation by the time they leave the nest. If the infestation is heavy, however, the young birds may be seriously weakened from loss of blood. This may be a contributory cause of the death of young bluebirds in the nest or even after they leave the nest, particularly during cold wet weather when the food supply is low. Very heavy infestation, for example, when there may be more than 100 blowfly larvae in a nest, may kill the young birds outright.

What can we do to prevent blowfly infestation of our bluebird nests or to eliminate it when it does occur? Although this is a natural hazard that bluebirds and other birds have faced successfully for millions of years, our bluebirds today are faced with serious unnatural hazards that threaten their very existence. They, therefore, need our help in any way we can provide it.

Dusting the bluebird nests with one-half percent or one percent rotenone powder, seems to provide rather good protection against the blowflies. If this is done, the rotenone should be applied after the nest is completed, preferably before the eggs are laid. If, for any reason, rotenone is applied when there are eggs or young birds in the nest, the eggs or young birds should be *carefully* lifted from the nest, then replaced immediately after the nest has been treated. In this case, the powder should be worked into the top layers of the nesting material with a finger or a small stick so that not much of it will come in direct contact with the eggs or young birds after they have been replaced in the nest.

*The use of rotenone in bluebird nests is not, at present, recommended as a routine procedure.* Although rotenone does not appear to harm the young bluebirds, it has not yet been proven positively that it does not do some harm in some obscure way that might not become evident until long after the young birds have left the nest. Although it is unlikely that rotenone used in the manner suggested does any harm to the birds, it seems wise not to risk using it on all bluebird nests, particularly in view of the fact that the young birds usually tolerate the blowfly infestation anyway. In any area, however, where experience has

shown that blowfly infestation is likely to be heavy enough to do serious damage, it may be wise to treat all nests with rotenone. No other insecticides should be used except possibly those formulated for use on caged birds and in which the active ingredients consist of pyrethrins.

One-half percent rotenone powder can often be obtained in pet shops. It is packaged under various trade names for use in treating caged birds for mites, etc. One percent rotenone powder is available in most garden supply stores for use as a garden insecticide.

The blowfly larvae that attack bluebird nestlings may be as long as one-half inch and quite fat when fully grown, yet they are rarely seen when examining the young birds, even when the infestation is heavy. This is because the larvae attach themselves to the young birds only at night. During the day they hide in the nesting material out of sight. This is Nature's way of protecting the larvae. It is reasonable to assume that during the course of evolution blowfly larvae that attacked nestling birds during the day were probably seen and eaten by the parent birds and, therefore, did not survive to reproduce their kind. Those that fed only at night were not molested by the sleeping birds. These "wiser" larvae, therefore, survived and passed along to succeeding generations their important "knowledge" that dining on bird blood can be indulged in safely only at night.

Heavy infestation of blowfly larvae can be suspected if bluebird nestlings that are a week or more old look sick or too small for their age. The nest may also appear soggy and the nestlings may have a dirty appearance. Under these circumstances drastic action may be necessary to save the nestlings. They should be carefully lifted from the nest and placed temporarily on some grass or cloth in a small box or basket. The nest should then be removed from the bluebird box

and examined. If blowfly larvae are present they will be found wriggling around within the nesting material, usually well below the top surface. If these larvae are found, the nest should be destroyed and replaced with dry grass or similar material packed down firmly into the box. Replace the nestlings, close the box, and go away quickly so that the parent birds can resume feeding their young. This whole operation should be completed within about five minutes, if possible. When the infestation is removed in this manner, the young bluebirds that were weakened by the larvae will usually survive and gain strength remarkably within a day or two. It is unlikely that there will be any further infestation before the young are ready to leave the nest.

In some areas where blowfly infestation is normally very heavy, bluebird trail operators have resorted to routinely replacing *all* nests in the manner described above, when the nestlings are quite small. This, of course, solves the problem but is a rather drastic and time-consuming operation justified only under rather extreme conditions.

The old saying that "every flea has its own fleas" applies equally well to the bluebird parasitic blowfly. A tiny wasp, *Nasonia vitripennis*, is a parasite that preys on the parasitic blowfly as well as other flies. It is probably the best natural control for the blowfly. This wasp lays its eggs on the blowfly puparia, and the wasp larvae then develop within the puparia and devour the developing blowflies. Adult wasps rather than adult blowflies then emerge from the blowfly puparia! Obviously this tiny wasp is quite beneficial to the bluebirds.

When one finds blowfly puparia in a bluebird nest it is not possible to say whether the destructive blowflies or the beneficial wasps will emerge from them; hence, it is difficult to decide whether or not to destroy these puparia. It has been suggested that as soon as the young birds have flown, all infested bluebird nests be collected and placed in a container covered with a 12-mesh screen until the adult in-

sects have all emerged and only the empty puparia shells remain. The tiny adult beneficial wasps will then escape through the screen and the much larger blowflies will be trapped in the container and can be destroyed. Theoretically, this might seem like an excellent way to control the blowfly. Practically, however, it would probably not be a very effective control unless all bird nests in a wide area could be collected and placed in screened containers at just the right time.

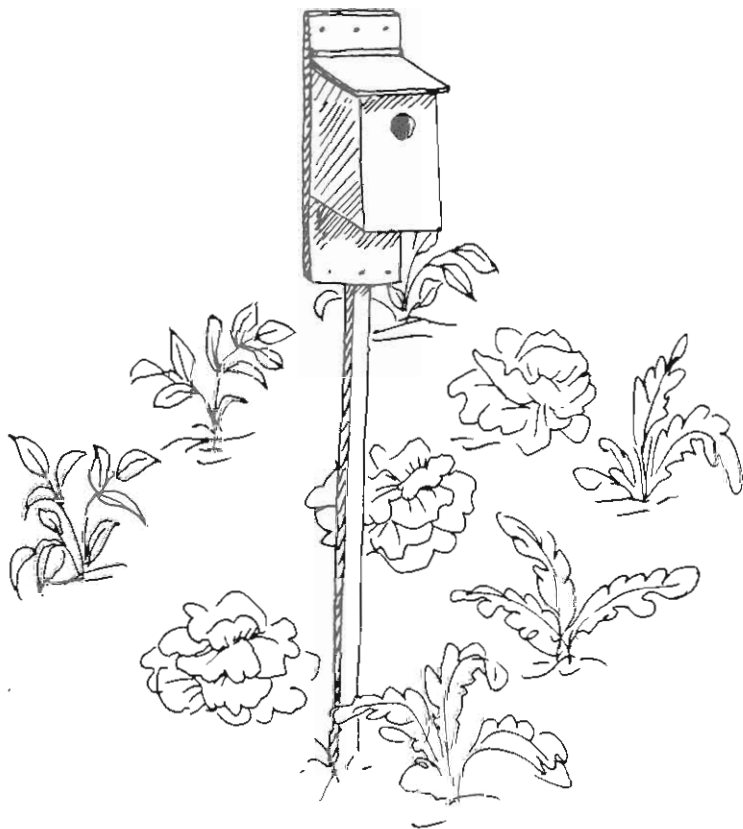
A unique method for controlling blowfly infestation has been devised by Ira Campbell of Timberville, Virginia, originator of the Shenandoah Bluebird Trail. He inserts a piece of  $3/8$  inch hardware cloth about an inch above the bottom of the nesting box. Bluebirds do not hesitate to build their nest on this elevated floor. When the

blowfly larvae retreat toward the bottom of the nest during daylight hours, many and perhaps most of them fall through the hardware cloth and are unable to get back through it. For details, see *Sialia* 4(2):49-51 and 6(2):70.

In summary, it should be said that all persons interested in helping to save our bluebirds should be aware of the presence and nature of the parasitic blowfly. Ordinarily no action against this parasite need be taken, but under certain circumstances control measures taken at the proper time may indeed save valuable broods of young bluebirds from probable death. ■

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*A substantial portion of this article first appeared in Purple Martin Capital News (now Nature Society News) July 29, 1970. It is reprinted with permission.*



# QUESTION CORNER

Lawrence Zeleny

Does your society have any information concerning locations where bluebirds have been successfully transported to new locations and survived?

Ronald Ham  
Huntsville, Alabama

We are not aware of any instances where this is known to have been done. It is possible, however, that bluebirds may have been introduced by man either purposely or accidentally into the islands of Bermuda many years ago, although there are no records of any such introduction. Bermuda is the only place outside of continental North America where bluebirds are known to breed.

I feel sure I saw several bluebirds in and around my nesting boxes this morning. Are they already looking for nesting sites in this part of the country (mid-late January)?

Anthea C. Proffitt  
Amelia, Virginia

Nesting boxes and natural cavities are likely to attract the attention of bluebirds at any time of the year. In winter bluebirds frequently use the boxes for sleeping quarters. Sometimes as many as a dozen or more will pack themselves into a single box at night for protection against cold winter winds. In your case, the bluebirds may have been using one or more of your boxes for this purpose. In January their instincts are likely to be aimed at self-preservation rather than procreation.



Could I help provide nesting sites for bluebirds if I bored some 1½ inch holes in hollow apple tree limbs?

Paul Beach  
Frankenmuth, Michigan

Yes, if the cavities thus provided are of suitable depth and provide sufficient floor space for the nests. Ideally, the floor of the cavity should be from 6 to 8 inches below the entrance and should have an area of from 16 to 25 square inches; however, bluebirds often accept cavities that vary considerably from these measurements.

I cleaned a nesting box a few hours after five healthy bluebirds fledged. There were eight dead beetles scattered throughout the nest. I am interested in why the beetles were in the nest. Had the parents killed them? Were they living in the bluebird nest? Could they harm the young?

Betty McIlwain  
Brevard, North Carolina

Dead beetles and other large dead insects are occasionally found in bluebird nests after the young birds have fledged. In such cases they were presumably brought into the nest to feed the nestlings and were lost in the nesting material or perhaps rejected because they were too large for the small nestlings to swallow. Such insects are no threat to the bluebird nestlings. ■

# PLANTINGS FOR BLUEBIRDS AND OTHER WILDLIFE

## Another Attractive Dogwood

Karen Blackburn

**A**s a group, the dogwoods are well known for their ability to attract birds, and the shrubby Gray Dogwood is no exception. Its fruits appeal to fifteen species of avian consumers, and its thickets provide nest sites as well as good protective cover.

While the showy Flowering Dogwood (*Sialia* 3:100-101) and the Red-osier Dogwood (*Sialia* 4:142-143) show a preference for moist, fertile sites, the Gray Dogwood exhibits a tolerance for a greater range of site conditions. Commonly found in moist lowlands as well as dry uplands, it is perhaps the most adaptable of the dogwoods. The Gray Dogwood is an "edge species" which typically forms pure stands at the forest's edge; it is ideally suited for this purpose in the home landscape.

### Gray Dogwood (*Cornus racemosa*)

**Native Range**—From central Maine south to West Virginia and west to Missouri and Oklahoma.

**Hardiness**—Zone 5

**Habitat**—Usually found in pure thickets bordering woodlands, abandoned fields. Moist lowlands to dry uplands.

**Habit**—A thicket-forming deciduous shrub reaching a mature height of ten feet. Slow to reach maturity. Leaves opposite one another along gray to purplish stems. Fall foliage is dull red.

**Fruit and Flowers**—Small white flowers appear in conical clusters in early summer. In autumn, 1/4 inch white fruits are borne on red stalks. If not eaten by wildlife, fruits remain on branches well into winter months.

**Landscape Value**—Excellent for forest shrub borders to provide vegetative transition from trees to grassy areas. Fall fruits produced in showy clusters.



**Culture**—Adapted to moist to dry conditions and many soil types. Partial shade is recommended for drier sites. Propagate by seed, layering, or by digging suckers.

**Sources**—Sometimes available through mail-order nurseries.

**Undesirable Traits**—Thicket-forming habit may be considered undesirable on some sites.

**Wildlife Value**—Thickets provide excellent cover for many birds including the American Woodcock and Ruffed Grouse. The fruits are favored fare for the Wild Turkey, Ruffed Grouse, Northern Bobwhite, Northern Flicker, Downy Woodpecker, Eastern Kingbird,

Gray Catbird, American Robin, Swainson's Thrush, Eastern Bluebird, Cedar Waxwing, Northern Cardinal and Pine Grosbeak. Good crops of fruit are produced annually. ■

Rt. 3, Box 213  
Marianna, FL 32446

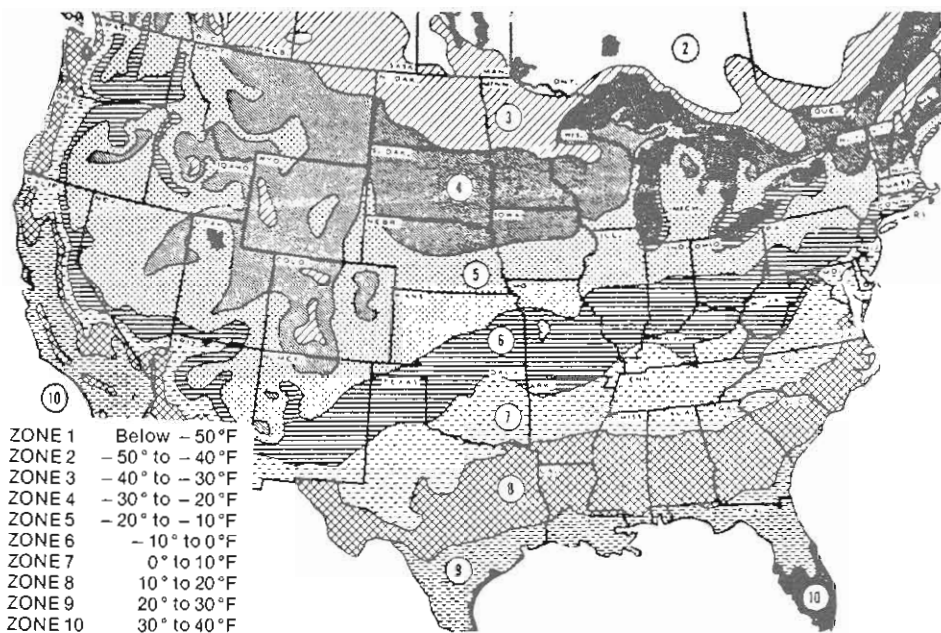


Figure 1. Hardiness Zones for the United States and southern Canada. Temperatures for each zone are the average annual minimum temperatures. When no zones are mentioned with the plant description, plants are hardy anywhere. If a zone is given, it indicates that plants are hardy within the zone and in all areas south of it. Factors within zones such as altitude, exposure, soil type, moisture, etc. can create variations. This map was developed by the Agricultural Research Service of the U.S. Department of Agriculture.

## A BIRD IN THE BUSH

Beginning with this issue, we invite readers to share their observations of plant use by wildlife. For example, have you "planted for wildlife" or seen wildlife feeding on the native plants in your area? Western readers, have you noticed fruiting plants that are particularly attractive to Mountain or Western Bluebirds?

"A Bird in the Bush" will provide readers with the opportunity to share their observations of the relationship between plants and wildlife. In reporting observations, please be as specific as possible, including such information as the name of the plant (botanical name when known) and the approximate time of year when the observation was made. Mail to the address at the end of the "Plantings" article.

# "WORMS" TO THE RESCUE

Frances Hanes

May and June can serve prolonged sessions of cold, windy, wet weather in New York State and 1986 proved no different. After five days of rain, some heavy for hours, I felt sure all my baby bluebirds would be found dead from malnutrition and cold nights.

In desperation I had to do something to help them so I decided to experiment and went to a tropical fish store where I purchased 100 meal worms at \$.02 each. I also received instructions on how to keep the worms in cornmeal and refrigerated.

After locating three broomstick handles, I drove to a fellow bluebirder's home where we nailed round, plastic covers from TV dinners on one end of each handle, punching holes for drainage. We took the materials and pounded the handles into the wet ground near boxes containing young in three yards. In each case, one dish was placed near a favorite perching site. After placing worms in the dishes, I made the rounds and discovered one dish empty and at the second the adult male bluebird was beating up worms and taking them to the young. The third dish was not touched after two days so it was removed. I feel the adults were so desperate for insects that they took off directly east or west from the box to get food away from their yard which had been chemically treated to kill the weeds. I promptly told that property owner I would be removing my two boxes if and when the

young left. Another property owner was so excited about the idea of the supplementary food that he drove 10 miles to the village where he purchased worms and continued to feed them a few more days before and after work.

All broods fledged successfully. I'll reserve the idea of putting worms in a soda cup cover thumb tacked to the roof of boxes in pastures for another time.

This proved to be a good idea and was easy to accomplish. I'm sure other bluebirders have tried other novel ideas. I'd like to hear about them. ■

138 Melrose Ave.  
Utica, NY 13502

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## 1987 Research Grant Announcement Maryland Ornithological Society

The Maryland Ornithological Society announces the availability of one year research grants for ornithological research to be conducted in the state of Maryland. Either ornithological research anywhere in the state or ecological research at one of our sanctuaries is acceptable. Grants are for not more than \$500. If the research is to be done at or near one of our sanctuaries, it may be possible to provide accommodations at nominal cost.

This year there are two application periods. The deadlines are December 1, 1986 and May 1, 1987.

For application guidelines and further information write Margaret Hubbard Jones, Chairman, M.O.S. Research Committee, Route 1, Box 325, Golts, MD 21637. Applicants will be notified approximately two weeks after each deadline. ■



# A HISTORY OF THE ELLIS BIRD FARM

Bryan R. Shantz

*This paper was presented at the Eighth Annual Conference of the North American Bluebird Society, July 12-13, 1985, in Red Deer, Alberta.*

The Ellis Bird Farm is located in Alberta's aspen parkland region near the railway siding of Prentiss in the Red Deer-Lacombe area. On this 930 acre farm, Charlie Ellis and his sister Winnie have been encouraging Mountain Bluebirds and Tree Swallows to nest since 1955, together with waging an intensive and extremely effective House Sparrow and starling control program. Although the land had been in the Ellis family since 1906, they agreed (with some conditions) to sell it to Union Carbide Canada Limited (UCCL) in 1981 for the development of a petrochemical plant on a portion of the land.

Charlie began building nest boxes for the birds around 1955. The first house he put up in his yard attracted a pair of Tree Swallows. He was delighted that these beautiful and beneficial birds had chosen to nest in the home he had provided. One morning, however, the box had been taken over by a pair of House Sparrows and one Tree Swallow was dead on the nest, its head pecked open. Friends told Charlie to forget about trying to help the birds, but Charlie vowed to get rid of the House Sparrows. This proved to be a time-consuming task but his persistence was worthwhile. Today the only place on his farm that House Sparrows are found is an effective sparrow trap in his yard. Every sparrow that enters the farmyard soon ends up in the trap, where it is fed and watered while it decoys in any newcomers. Each year sparrows find their way to the farm from neighboring farmsites. Those that avoid the trap get shot or caught in a nest box trap and are promptly disposed of.

The introduction to North America of the House Sparrow in the 1850's and their subsequent spread throughout the continent is a sad example of

man's interference with the natural ecosystem. The aggressive sparrows out-competed many native cavity nesting species including the three bluebird species. Further problems were added by the introduction of European Starlings. These introductions have permanently altered the ecology of almost the entire continent. Thus, all three North American bluebird species have become threatened.

Each year Charlie set out more nest boxes. The farm is fenced into 80 acre fields and the 12 miles of fences eventually had a bird box every 70 to 100 yards. Both Tree Swallows and Mountain Bluebirds increased until almost every box in suitable habitat had a pair of birds. Because of the numbers of bluebirds on the farm, Charlie became known to people in the community as "Mr. Bluebird." Purple Martins also established homes in several apartment style boxes in the yard.

About the same time, Charlie and Winnie began a bird feeding program. The birds responded and soon several hundred Evening Grosbeaks became winter residents. Along with redpolls, Blue Jays, Black-capped Chickadees and the occasional junco, they were soon consuming over two tons of sunflower seeds each winter. Woodpeckers and chickadees came for suet year round and, in the summer, robins ate cornmeal cake and Ruby-throated Hummingbirds darted about their sugar water feeders. It is not Charlie's "way" to keep records on bird numbers or other information such as hatching dates or productivity, so records of the numbers of birds and their increase over the last 25 years are not available. However, Winnie has kept some records, particularly of spring arrivals. They are deeply concerned about the welfare of each individual

bird on the farm, be it a bluebird, swallow, martin, robin, or Killdeer. For example, during the spring of 1970 or 1971, a prolonged wet spell occurred during the nestling stage of the Mountain Bluebirds. It is known that under these conditions the parents will temporarily desert their brood. This time, however, the rainy weather was longer than usual and most of the deserted nestlings perished. It is interesting to note that Charlie observed that only birds that had some feather development were abandoned and the little naked nestlings were not. Unwilling to see preventable hazard to the birds that were left, Charlie proceeded to bring in every birdhouse and insulate the sides in hope of preventing a similar disaster in the future. On another occasion, Charlie found a nest of six young bluebirds in which the mother had been killed by a House Sparrow. After considering but then abandoning the idea of hand-rearing the little ones, Charlie set out to find a nest with young of the same size. Finding such a nest, he was greeted by the sight of six little birds in a circle, beaks out, tails in, completely filling the nest. A gentle finger made room for one orphan. Fifteen bluebird and countless swallow nests later, the last of the orphans was placed in a "foster home." This activity must have meant walking over a third of the farm.

When a visitor wishes to drive through the field to see bluebirds that have just fledged, Charlie walks ahead of the vehicle to ensure that no young birds are run over. Potential nest box sites along municipal roads are not used for fear the young birds will be hit by passing vehicles.

Do the birds know Charlie? Tree Swallows use great quantities of feathers to line their nests. Charlie carries a bag of feathers with him during the time the swallows are building their nests. As he walks along, he drops feathers and the birds follow him picking up the feathers. At times he holds a feather in his hand and a swallow alights to take it from him. When Winnie wanted to photograph this, Charlie decided to wear his new hat for the picture. The result was that

the swallows refused to come near him. Winnie's picture shows Charlie in his old hat with a swallow on his hand. Do the birds know Charlie? I think so.

Charlie Ellis is a shy man who does not seek public attention. The publicity of the past few years is not his idea and he wishes that he could keep his name out of the newspaper. When local author, Kerry Wood, first wrote about Charlie, he was informed that the publicity was not appreciated. Kerry Wood responded by naming him "Mr. Bluebird" and referring to him as such in future newspaper articles and radio programs. He even dedicated a book, *Just For Fun*, to "Mr. Bluebird" but nowhere in it is Charlie's name mentioned.

One final story about the Ellises is of note. When a pair of bluebirds took up residence just behind their house, they were delighted; however, shortly thereafter the male bluebird discovered his image reflected in the window and began to fight it. Charlie and Winnie responded by covering the window. When all the north-facing windows were covered, both main and upper story, the crisis was over. They remained covered until the end of the nesting season. (Luckily, the bluebirds never did fly around to the south side of the house!)

As they were approaching their senior years, Charlie and Winnie, both single, became concerned as to how they could somehow ensure that the birds would be cared for after they were no longer able to do so themselves. On numerous occasions they had been approached by potential buyers of their land. They knew that if they did sell, things would change. The miles of cross fences would be taken out so that the larger fields could be farmed more efficiently with large equipment. They also knew that the very people approaching them showed no interest in birds on their own farms and were unlikely to do much with the birds if they bought the farm.

When approached by Union Carbide in 1980, the Ellises agreed to sell the farm if UCCL would look after the birds and allow them life tenancy on

the remaining section included in the homesite. Local naturalists and bird lovers were dismayed to hear that the new industry was to be located on the Ellis farm and UCCL was invited to discuss the future of the birds and farm with a group from the Red Deer River Naturalists. As a result of continuing discussions, UCCL agreed to two major items. First, a position was created on the operating staff for a wildlife biologist. In January 1981, I began to document the population and assist Charlie in regularly monitoring the birds. In January 1982, following the final approval of the plant, a new company was created called the Ellis Bird Farm Limited. This non-profit charitable company is now responsible for the future of the bird farm. The Board of Directors currently includes Charlie and Winnie Ellis; Walter Lindley, UCCL Prentiss Plant Manager; Fred Schutz, Federation of Alberta Naturalists representative; Ken Larsen, Red Deer River Naturalists representative; Orest Litwin, County of Lacombe representative; Morris Flewelling, Director of the Red Deer Museum; and Harold Pinei, Park Naturalist for the City of Calgary. The company has guaranteed funding from UCCL and has been able to obtain additional funding from other sources.

Their objectives are the following:

1. To preserve Mountain Bluebirds and Tree Swallows both in the Prentiss area and throughout Alberta;
2. To sponsor research on Mountain Bluebirds and Tree Swallows and on the effect of the petrochemical industry on bird populations; and
3. To sponsor public education programs dealing with wildlife conservation and habitat development and preservation for wildlife species. This cooperation between industry and naturalists does not happen very often, and we have not found a parallel situation. During 1981, 57 pairs of Mountain Bluebirds and 156 pairs of Tree Swallows used the nest boxes on the Ellis farm. Following the nesting season, 50 boxes were removed from the plant site to be relocated in the surrounding area. The first objective was to expand the

bluebird population to the 800 additional acres of farmland that UCCL owns around the plant site. With the help of a local Boy Scout group, 200 new boxes were built for this area. Construction on the 99 acre site started in October 1981, and by October 1984, a world scale ethylene glycol (antifreeze) plant was in operation. The impact of the construction and operation of this plant on the birds has been closely monitored and every effort made to preserve the bluebird population. Union Carbide Canada Limited inherited one of the world's best-managed Mountain Bluebird populations and has placed their plant on a quarter section that had 14 pairs on it in 1981.

We are now able to look back at the bluebird population as it has changed over the past five years. Because of the expansion of the area involved in the management program, birds that nested on the farm have dispersed to a much larger area. The density of birds on the Ellis Farm has declined each year since the expansion program, but the population in the community has continued to climb. In 1981, 76 pairs fledged 196 young; in 1982, 70 pairs fledged 246 young; in 1983, 86 pairs fledged 353 young; in 1984, 93 pairs fledged 350 young; and in 1985, 77 pairs fledged 341 young. At first glance these results present conflicting indications of success of the management program for bluebirds.

The results of the banding program are of some help in determining what is happening with the population. Since 1982, over 1200 bluebirds have been banded on the management area. Of these only 29% of the adult females, 34% of the adult males and 4% to 5% of the immatures are known to return as breeding birds in subsequent years. Only three records exist of birds banded here showing up in other areas, two of these were yearling males found about 50 and 100 miles away, while the third was an adult female which nested about 50 miles away. Clearly this population has a great deal of immigration and emigration. Lorne Scott found similar results; however, only 25% of adult females

and 1% of immatures were found in subsequent years.

Going back to the records that the Ellises have kept, we find one pair of bluebirds in 1956, three in 1957 and seven in 1958. From there on no numbers are available, but the population likely peaked around 60 pairs of birds in the early 1970's. During this period we know of no other large scale bluebird conservation program in Alberta. I speculate that during this time a larger percentage of bluebirds were returning to the farm than we currently have.

In the late 1950's and 1960's, the Ellis farm was one of the few safe nesting areas for Mountain Bluebirds in the agricultural area of Alberta. During the 1970's, extensive programs of bluebird trails in Alberta were started by Harold Pinel in the Calgary region, Cam and Joy Findlay in the Edmonton region and Duncan Mackintosh in the Lethbridge region. In addition, many other people throughout the province started smaller or less publicized programs. By 1982, the Ellis Bird Farm Ltd. began widescale public education programs promoting the use of nest boxes. In 1984, the booklet "Nestboxes For Alberta Birds" by Myrna Pearman and me was published and used along with an audio-visual program at a series of 35 province-wide seminars presented by Myrna. The first printing of 10,000 copies was distributed in eight months. As a result of these and other educational efforts both by the Ellis Bird Farm Ltd. and by numerous volunteers across the province, a large number of nest boxes have been made and placed for bluebirds. Given the scarcity of nest boxes in the 1960's and the abundance of nest boxes in the 1980's, it is not surprising that the Prentiss population has not grown significantly in the past few years. While the Union Carbide plant displaced about 20 pairs of birds because of its location, we have no evidence that it has affected the population in any other way. Numerous pairs of bluebirds have nested within one-quarter mile of the plant. The major reason for the decline on the rest of the Ellis farm

is, in my opinion, that there are simply more sites for the birds to choose from. Because at least half of the nesting birds come from other areas, there is little reason to expect them to be attracted here if other sites offer suitable nest sites and habitat. Most studies have shown that the birds prefer areas of short grassland, and avoid areas of cereal crop production. The Ellis Farm is a mixed farm in a predominantly cereal crop production area. Vast areas of pasture are lacking. While the farm itself is about 1/3 pasture only about 1/10 of the surrounding farmland is used as pasture and farm sites with sparrow populations are found on almost every section. Although 500 nest boxes are monitored as part of the management program, it is unlikely that more than 300 suitable sites for bluebirds exist in the 80 square mile management area. One management technique that has been successful has been to pair nest boxes, allowing both bluebirds and swallows to co-exist in the territory. It also makes monitoring the nest boxes more efficient. ■

Box 2920  
Lacombe, ALTA T0C 1S0

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(MASSACHUSETTS—continued from page 152)

for bluebird conservation in Massachusetts. I'm sure bluebirds are going to "make it" in Massachusetts through this project thanks to the Massachusetts Fisheries and Wildlife Division and especially to Brad Blodgett. ■

Scribner Hill  
Tyngsboro, MA 01879

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(RETIREMENT—continued from page 154)  
to extend my trail again this year.

Perhaps there are other disabled or retired persons who have the time who would like to be doing something constructive and useful. Maybe, they, too, could find satisfaction in helping the bluebird's fight for survival. ■

Route 3, Box 255 XK  
Norwood, NC 28128

# Project Nest Box Alberta And Environmental Education

Myrna d. Pearman

*This paper was presented at the Eighth Annual Conference of the North American Bluebird Society, July 12-13, 1985, in Red Deer, Alberta.*

**M**y involvement in nest box trails goes back about 14 years. I was given two boxes by a neighbor at a time when sighting a Mountain Bluebird in our area was a rare luxury. After successfully attracting a nesting pair of bluebirds, I expanded my trail to 40 boxes and since then have consistently raised 10 to 12 pairs each year. My trail will never qualify for the Guinness Book of Bird Records, but bluebirds are now a common sight in our area and today there are over 25 trails just around Rimbey. I feel, therefore, that my efforts have paid off. While I still enjoy monitoring my own trails, especially the boxes which I have set out for some of the larger cavity nesters, I find that my greatest joy comes from working with young people and helping them become enthusiastic about birds and establishing their own trails.

## PROJECT NEST BOX ALBERTA

Nest box trails are now common in several parts of Canada and the United States. Their immense success can be directly attributed to the unselfish efforts of hundreds of dedicated conservationists, who have spent countless hours and have driven thousands of miles setting up and maintaining trails. Project Nest Box Alberta is a product of these efforts and owes its unique characteristics to the Ellis Bird Farm, Union Carbide Canada Ltd., NABS, and several government agencies who provided funding to the project. This enables it to operate on a province-wide scale. Project Nest Box Alberta was established to encourage widespread interest throughout Alberta for all species of native cavity nesting birds. So, while the Mountain Bluebird is certainly deserving of all the efforts put forth to assist it, the time has come for us to also assist the other species that suffer from the same plight as the bluebird; owls, kestrels, ducks, flickers, nuthatches, and chickadees are also being adversely affected by habitat

loss and nesting-site takeover by the sparrows and starlings.

Project Nest Box Alberta has no intention of replacing existing volunteer efforts; rather, it is seeking to assist and encourage local existing efforts, while at the same time providing information and enthusiasm for widespread involvement throughout the province. The volunteers, who maintain their trails through a "labor of love," will always be credited for assisting our native cavity nesting birds.

### Phase 1

Phase 1 of the project was undertaken in 1984, when the Ellis Bird Farm received a grant through an "Environment 2000" program which was sponsored through the Federal Department of the Environment. This program provided funding for projects which would "extend and accelerate activities which contribute to the conservation, preservation, and restoration of the natural environment." Seven young naturalists were hired by the Ellis Bird Farm through this program, and each was assigned one region of the pro-

vince in which to do the following:

1. Locate existing nest box trails and trail operators. A brief history was collected on each trail through interviews with the trail operators, and scientific information was collected on each box. This information included nest box dimensions and habitat location. The boxes of participating operators were identified for computer entry by a small serial-numbered tag which was attached to the box in an inconspicuous place. Nesting records were not collected during this phase of the study, but a form was left with the trail operator to fill out at the end of the nesting season. It is hoped that operators will participate by sending in these forms each year for five years. An analysis of this data will no doubt provide important information on nest box use by different cavity nesting birds in Alberta. Other data to be analyzed will include nesting success rates, productivity, clutch size, and hatching date variations throughout the province.

2. Assist operators with their trails: the naturalists assisted trail operators if requested to do so. This often meant contacting the Ellis Bird Farm regarding specific questions or problems. All participating operators were put on a mailing list and receive periodic Project Nest Box Alberta newsletters.

Prior to this study, the numbers and locations of nest box trails throughout the province were not known. Through newspaper coverage and by word of mouth, these young naturalists combed their respective regions, and located over 200 operators and tagged over 5,000 boxes.

### Phase 2

This phase of the project included the production of a slide-tape presentation entitled "Nest Boxes for Alberta Birds," and the accompanying booklet by the same name. The funding for this phase was provided by Alberta Fish and Wildlife, Recreation, Parks and Wildlife Foundation, and Union Carbide Canada Ltd. Ten thousand booklets were produced, and are being

distributed free of charge through Fish and Wildlife offices and the Ellis Bird Farm. Sixty copies of the slide-tape presentation have been distributed to Fish and Wildlife, 4-H, Boy Scout, and Junior Forest Warden regional offices. Extra copies are available at the Ellis Bird Farm for groups or individuals who wish to view them.

During the months of November and December, 1984, I was hired to tour our province to give seminars on cavity nesting birds. I visited approximately 30 centers from the Peace Country in the north to the Montana border in the south, meeting with interested individuals and group leaders. At these workshops, I distributed the booklets, showed the audio-visual program, and discussed cavity nesting birds and nest box trails. Over 650 people attended these seminars and a great deal of enthusiasm was generated. Funding for these seminars was provided by Alberta Department of Fish and Wildlife and Union Carbide Canada Ltd.

## THE FUTURE OF PROJECT NEST BOX ALBERTA

Unfortunately, I am no longer involved with the project other than on a voluntary basis. As long as logistical support is available, however, the Ellis Bird Farm will continue the Project. The main focus will be the follow-up of Phase 1, including the continued collection and analysis of data sent in by participating trail operators.

The Project will also continue to be actively involved with Alberta 4-H. This past winter I wrote the field notebook, project manual, and leaders manual for the 4-H Nest Box Project. These books were not off the press in time for many clubs to become involved this year, but we are confident that involvement will soon be widespread. At the end of the nesting season, the Project Manuals will be submitted to the Ellis Bird Farm for judging and the Ellis Bird Farm will provide awards for the best projects. Data collected from all of the 4-H trails will be included in the Project Nest Box Alberta study.

## ENVIRONMENTAL EDUCATION

Another concept I feel deserves much discussion is that of nest box trails and environmental education. Although environmental education encompasses people of all ages, I wish to make note of the young people in the school setting since this is the area with which I am most familiar.

In June of this year, I attended a Mountain Bluebird Trails conference in Montana where one of the speakers discussed his experiences as an environmental education teacher. His message was summed up clearly and simply: "Take a kid along." It is this message that I feel is so important to the future of our birds.

Nest box trails provide excellent opportunities for young and old alike to watch, to learn, and it is to be hoped, to appreciate—and hence to protect—our natural environment. Nest box trails can be set up with a small budget, the knowledge of a few basic concepts, and no government approval or bureaucratic hassles.

Involvement is not restricted by age, education, or level of intellectual sophistication. Commitment lies entirely with the individual or individuals involved; for some trail operators, involvement consists of checking the boxes only twice a year. For others it entails daily or weekly monitoring and the diligent collection of scientific information.

These assets, which I have just mentioned, can also be applied to a school setting. Trails can be set up and maintained by students of different grades, academic abilities, and for different subjects. A nest box trail can be operated with equal success for special education, in a regular classroom setting, or for a gifted program. For young people, the collection of scientific information is not as important as the development of healthy attitudes and a respect for the natural environment. Nest box trails provide the perfect opportunity to facilitate such development.

For the past two years, I have assisted the Rimbey Elementary special education teacher, Ms. Faye



McConnell, in setting up a nest box trail with her class. The photo of the Mountain Bluebird that adorns the cover of the booklet "Nest Boxes for Alberta Birds" was taken at a box built and set out by one of her students last year. We started our nest box project by doing a bird study. Six dust-covered specimens from the library were the focus of this phase of the project. We then moved on to studying cavity nesting birds, and discussed the difference between primary and secondary cavity nesters. The next step was to go out on field trips, which we called "cavity hunts." These field trips reinforced everything that was covered in the classroom discussions. Films and further discussions preceded the next phase, which we called "adopt a species." Each student studied one cavity nesting bird commonly found in Alberta and prepared a report, drew pictures, and then reported their information to the rest of the class. The level of sophistication of these reports varied greatly; for some students, remembering only the name of their species was a major accomplishment.

In mid-March, we had a "box-building day." I feel that it is very important for each student to be able to build his own box. This not only gives them a sense of accomplishment, but also of ownership—and, therefore, responsibility. Each student built two boxes: one for the communal trail and one for themselves. A couple of the more accomplished carpenters went into full production for a few days and made boxes to sell to the other teachers on the staff. These boxes were sold at an enormous profit, and the money has been put toward buying a classroom spotting scope.

An elderly bluebird lover near

Rimby invited the class to set out the boxes along the fence lines of her property. This worked out extremely well, as the trail was located only a few minutes drive from the school.

Monitoring a nest box trail is probably the most important aspect in terms of environmental education. The trail provides a "transition" from the classroom to the out-of-doors; it provides a focus and a purpose for field trips. As students learn to observe activities in their nest box, they also learn to observe activities around the nest box. Their interest is soon expanded to everything they see on their field trips. Outings provide teachable moments, as new and perhaps unexpected activities are observed. They learn about interrelationships and the cycles of birth and death. This past season, a cold and rainy period cost the lives of almost half of the young Tree Swal-

lows that occupied our nest box trail. For the students, it was a sad, but realistic and important discovery that nature is not always "kind." Let us hope, from these experiences, they will move from the "Bambi" attitude to one that is more realistic.

The future of cavity nesting birds rests not only with our present efforts at maintaining our own trails; it rests also with our efforts to inspire and assist our children to become likewise committed. This may mean taking your own children, your grandchildren, or the neighbor children along when you go out on your trail. It may take some persuasion, persistence and convincing on your part, but I am sure that you will eventually be rewarded for your efforts. ■

41 Springfield Ave.  
Red Deer, ALTA T4N0C8

## NORTH AMERICAN BLUEBIRD SOCIETY RESEARCH GRANTS

The North American Bluebird Society announces the fourth annual grants in aid for ornithological research directed toward cavity nesting species of North America with emphasis on the genus *Sialia*. Presently three annual grants of single or multiple awards totalling \$5,000.00 are awarded and include:

**Bluebird Research Grant**—Available to student, professional or individual researchers for a suitable research project focused on any of the three species of bluebird from the genus *Sialia*.

**General Research Grant**—Available to student, professional and individual researchers for a suitable research project focused on a North American cavity nesting species.

**Student Research Grant**—Available to full-time college or university students for a suitable research project focused on a North American cavity nesting species.

Further guidelines and application materials are available upon request from Theodore W. Gutzke, Research Committee Chairman, P.O. Box 121, Kenmare, North Dakota 58746. Completed applications must be received by December 1, 1986; decisions will be announced by January 15, 1987.



## SEVENTY YEARS OF BLUEBIRDING

Lawrence Zeleny completes 70 years of bluebirding in 1986! This formidable record began when, as a child, Larry won a bird identification book after memorizing Bible passages for a Sunday School class. From there he went on to build nesting boxes, observe the inhabitants (House Sparrows and Eastern Bluebirds), and begin the writing which was to be so major a part of his birding career. While he might have preferred to pursue his deep love of birds in his university studies, he went instead into the field of bio-chemistry.

As his absorption with birds soon focused on bluebirds, he became increasingly aware of the precarious position of their population. The young Dr. Zeleny's career blossomed, and marriage to his beloved Olive was blessed with two children, Nancy and Bill. Despite professional and family responsibilities, Larry's interest in bluebirds continued as an enjoyable hobby. Then came the opportunity to bring the now obvious problems of the bluebird to the public.

Larry began to write a bluebird column for the Purple Martin Capital News, now known as The Nature Society News. Another opportunity presented itself when the Audubon Naturalist Society of the Central Atlantic States decided to publish Larry's book, *The Bluebird: How You Can Help Its Fight for Survival*. Many other publications requested bluebird articles including National Geographic Magazine which, in the June 1977 issue, ran his story "Song of Hope for the Bluebird," accompanied by Michael Smith's stunning bluebird photographs.

Larry had also been touring the lecture circuit giving his slide-illustrated talk to audiences all around Maryland gradually extending his range to places farther away. His inspiring message was falling upon sympathetic ears. In 1978 a continent-wide group of bluebird admirers gathered together to form the North American Bluebird Society, Inc. with Larry as founder. Now he was able to see his efforts increase exponentially. With the higher public visibility spotlighting the plight of the bluebird, state non-game departments began to pay attention and conservation and birding groups across the country increasingly used the needs of the bluebird to attract new activists to their membership.

It can be safely said that Larry Zeleny has been the inspiring force behind the efforts of thousands of individuals who want to be a part of the movement to rescue the bluebird from the "threatened" list. Those people wish to insure that the bluebird will not be simply a pleasant memory or the subject of artistic renditions. For that, we can all say, "Thank you, Larry, and God bless you in your 70th year of bluebirding!"

Mary D. Janetatos

# Bluebirds Making It in Massachusetts

Lillian Lund Files

**B**luebirds are not as common as they once were in Massachusetts—back when the state was more characterized by open countryside and agriculture around the turn of the century. Besides the ordinary reasons for the scarcity of bluebirds, their numbers have diminished drastically due to rapid development in this high-tech state.

In 1984 our State Ornithologist, Bradford Blodget, contacted me to look over a 2000 acre parcel of land in Gardner and Westminster that the Massachusetts Division of Fisheries and Wildlife had just acquired through an act of legislation. This was the former Gardner State Hospital property and the Division was to restore it to wildlife habitat. It is now called the "High Ridge Wildlife Management Area." The land consists primarily of two-thirds expansive open fields interspersed with one-third woodlands. The fields are prevented from returning to forest land through a farming program supervised by the state Food and Agriculture Department.

After touring this wonderful piece of property, Brad wanted my opinion on starting a bluebird trail (because I'm known in my state as "The Bluebird Lady" and am a past president of NABS). Naturally I told him that the Division had a real treasure in this choice piece of land as it was great bluebird habitat. I could envision it potentially becoming the largest bluebird trail in Massachusetts so I enthusiastically encouraged him by providing information regarding the establishment of a bluebird trail. He was convinced and put the "wheels in motion" by having over 200 boxes built; eventually the trail will be expanded to over 500 boxes in the near future. These boxes were built, using my design, from native pine cut from the Division's land and constructed in the Ayer Game Farm shops. Two hundred

steel pipes 7 feet long and 1/2 inch in diameter were donated by a Worcester firm.

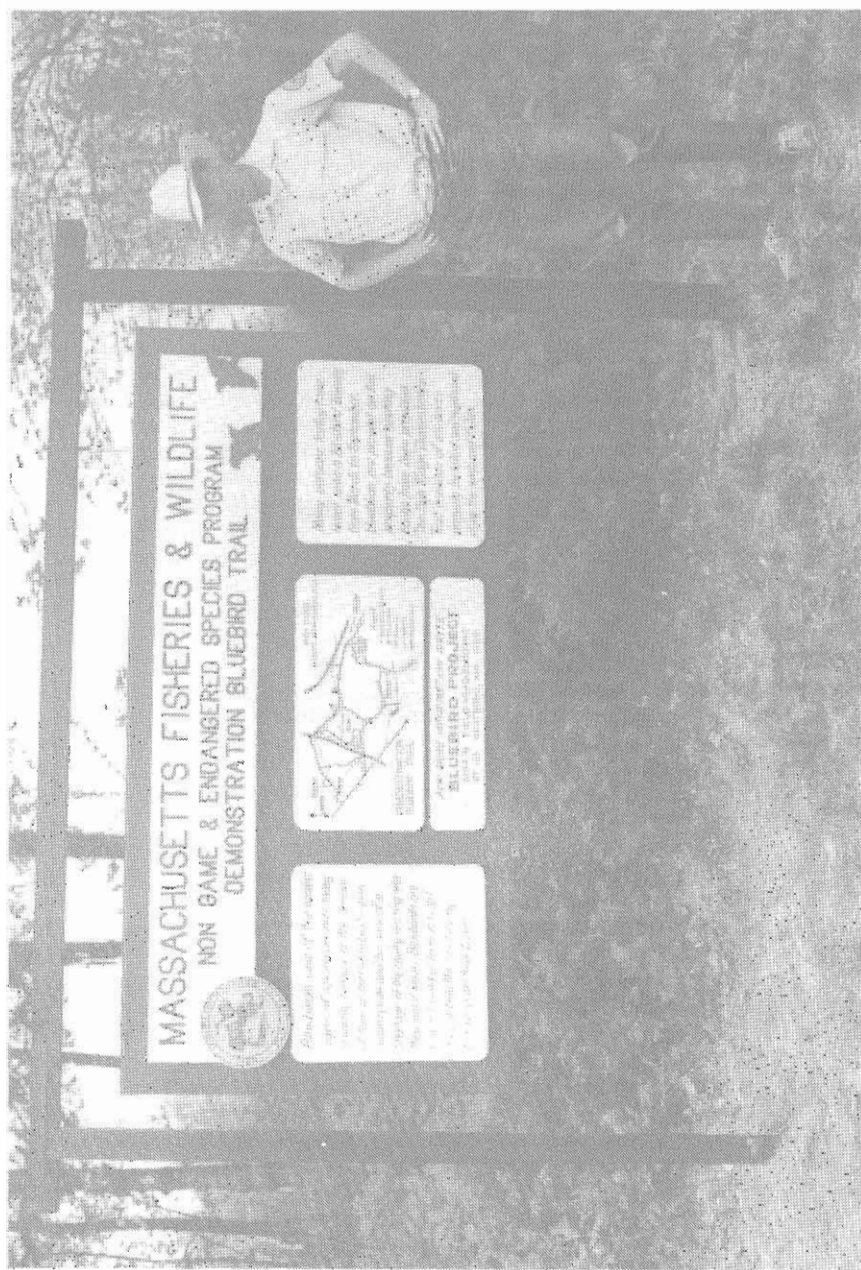
Much appreciation goes to Brad for developing this program. Brad wishes to mention that "This six-mile long High Ridge Demonstration Bluebird Trail was developed and laid out with assistance from the North American Bluebird Society's representative, Lil Files, and the funding from the Nongame Wildlife Fund (\$1000.00). Revenues from this fund are derived mainly from voluntary contributions from the Massachusetts state income tax check-off for non-game wildlife."

The High Ridge Demonstration Trail is intended to provide the opportunity to actually see the rather rare, beautiful bluebird and to serve as an example of how a bluebird trail can be set up to attract them back to our state.

Finally, Brad's and my dream became a reality! Our state's largest bluebird trail was officially dedicated and opened to the public on 15 May 1986. Journalists with binoculars, state wildlife officials and many birders came to a very successful dedication. For the occasion a very attractive and impressive "bluebird blue" and white sign greeted the spectators.

An automobile caravan tour of the trail was led by Brad through the property making selective stops. While viewing breathtaking scenes of Mt. Monadnock and Mt. Wauchussetts from the high meadows, the group was treated to seeing many bluebirds flying about, which was very encouraging. Other species seen were Tree Swallows, House Wrens, Black-capped Chickadees and White-breasted Nuthatches. Following the tour, the NABS bluebird slide program was presented at the environmental police headquarters.

To me, this was a very special day  
(Continued on page 146)



Massachusetts State Ornithologist, Bradford Blodgett, stands beside a sign describing the Demonstration Bluebird Trail in the High Ridge Wildlife Management Area, Massachusetts. The trail was begun with the advice and encouragement of one of NABS' former presidents, Lillian Lund Files.

# Disability Retirement Is for the Bluebirds

Richard W. Griffin

On 31 January 1981, I went on disability because of chronic back pain after three unsuccessful back operations. Initially, I was able to fish some and do a little gardening but, as time went on, I had too much time on my hands and became extremely bored. I so wanted to be able to do something useful with my life and gain some sense of accomplishment.

Two years passed. In February 1983, I read an article in *The Charlotte Observer* by a well-known columnist in this area. He wrote about a retired gentleman from Matthews, North Carolina, about 50 miles away, whose hobby was helping the bluebird. The bluebirder offered to give a nesting box to the first 50 retired people who would come to his home and get them. In about two weeks columnist Kays Gary wrote another short article stating that the gentleman had already given away all of the 50 boxes and was surprised that so many people had come for them in such a short period of time.

I live on Lake Tillery about five miles from the town of Norwood, NC. I love birds and had a bird feeder, but I had never seen any bluebirds around. My interest was aroused by the newspaper article and I began searching for information in our county library. The information there was very limited and I could find no plans to aid me in building a bluebird house. A friend told me I might find a plan at our local county courthouse which was indeed the case. It was made available by the North Carolina Wildlife Resources Commission. The plan was for a 4 x 5 inch box with a 1½ inch entrance. I built two boxes with front openings. These were made of scrap lumber with a hand saw. They really were rough looking, but I put one up in my backyard about five feet above the ground and another in my neighbor's yard about 300 feet from my cottage. About the middle of March, to my delight, I saw a pair of bluebirds at the box be-

hind my house. They built a nest and laid five eggs, but something, sparrows I think, destroyed the eggs and the birds deserted the box. I was heartbroken. I cleaned out the box and shortly thereafter a pair built in my neighbor's box. A little later they nested in the box behind my house again. The bluebirds fledged 13 young from those two boxes that year and, of course, my interest grew.

I read in our local paper in the early spring of 1984 about a bluebird symposium sponsored by the North American Bluebird Society to be held at Southern Pines, NC, which is only about an hour's drive from my home. I drove down on Saturday, 27 April, and attended the meeting. To say the least, I was surprised at the interest exhibited in helping to save the bluebird. I met Lawrence Zeleny and purchased his book, *The Bluebird: How You Can Help Its Fight for Survival*. I came home very excited about what I had seen and learned at this meeting.

I found much-needed information in Dr. Zeleny's book as well as plans for building nesting boxes. I immediately purchased a tablesaw and a 1½ inch drill saw and went to work building 4 by 4 inch boxes out of cedar. I obtained permission from neighboring farmers around my home and made a small bluebird trail of 15 boxes. I was amazed at my success. I monitored the boxes continually and fledged 64 Eastern Bluebirds, 3 Carolina Chickadees, and 5 Brown-headed Nuthatches. I extended my trail to 25 boxes in 1985 and fledged 107 bluebirds with 78% occupancy in my boxes along with 15 chickadees and 5 nuthatches. I had to monitor quite often, sometimes two or three times a week, to have the success I had because sparrows are plentiful around our area. I discarded sparrow nests and eggs continually, never letting any of the eggs hatch. I intend

(Continued on page 146)

## "Miracle Meal" and Feeder Aid Wintering Bluebirds

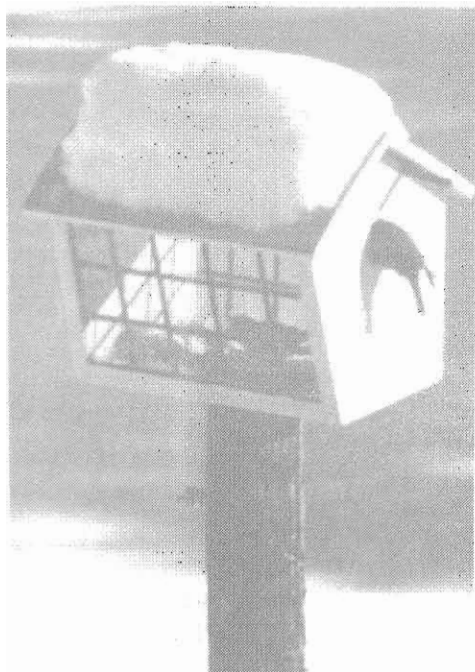
Susan Weil

Thanks to Carol Marmon's recipe for "Miracle Meal" (6(4):135), I am able to send this photograph of bluebirds feeding after a snowstorm. Sometimes there are as many as seven in and around the feeder at one time. Since late winter snow and ice storms are particularly devastating to bluebirds wintering in the area, it is wonderful to be able to give them a source of food.

Note that the plexiglass windows are taped to prevent any birds from trying to fly through them.

Although the original recipe called for lard and not shortening, I have used solid shortening and/or fat as well as peanut hearts and the bluebirds find the mix quite acceptable. ■

Baldwin Road  
Mt. Kisco, NY 10549



Photograph by Susan Weil

Bluebirds feeding in Susan Weil's plexiglass-sided feeder.

(TALES—continued from page 156)

birds. These youngsters, members of the Bluebird and Adventure groups, constructed several nest boxes and established a bluebird trail in their community

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under the guidance of their leader, **Ledra Bailey** and her assistant, **Betty Meade**. **Kay Billips**, of Glenville, WV, wrote in June, "because of **Mike Murphy's** Eagle Scout project, approximately 100 nest boxes have been constructed and distributed in Gilmer County. Many boxes are already being used by the birds. Thank you for your help."

NABS member **Charles F. Nelson** wrote in July that "our Bella Vista (AR) Bluebird Society made reservations for six couples for the annual meeting to be held at the Western Hills Lodge, in Wagoner, Oklahoma, October 25 and 26. We are looking forward to meeting 'YUALL' in October." The feeling is mutual, Charles, and I conclude with this question posed by **William M. Atwater** of Norfolk, MA, who asks, "Will any bluebirds settle in our wooded area . . . assuming we contribute to the preservation movement? And if they are so disposed to bring us such happiness, how may we help return the feeling to them?"

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**CORRECTION:** As the telephone company recently said when sending a list of corrections, "Nobody's Perfect," and that goes for me, too. Let me assure all of our generous and loyal NABS members and supporters in Sewickley [PA], misspelled in my column in the Spring issue, that **Ann Morrow** pointed out that it is a "beautiful little local town—a charming place." **David B. Oliver II**, **John C. Oliver, Jr.** and **George P. O'Neil**, among others, have all been busy benefiting the bluebirds there. I regret the errors and salute your efforts, Sewickley bluebirders! ■

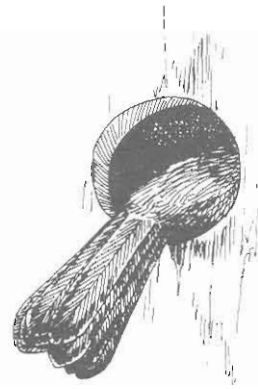
# Bluebird Tales

Mary D. Janetatos

"Hello, is this the North American Bluebird Society? My name is **George Dwyer** and I'm a television producer with ABC in New York. I'd like to do a story on your organization and the work you are doing to save the bluebird. May I come over and see you about it?" "Yes, of course," I said weakly. A television producer coming over, soon, and I was alone? After hastily stashing piles of paper out of sight, I panicked and called **Larry Zeleny**. "Larry, I'm scared!" I said. "Shall I come over, Mary?" "Yes, and bring **Ollve** with you. A television producer from ABC wants to come here and talk about a story on bluebirds." Larry soon came over though **Ollve** begged off. George came over with his friend, **Krishna** who is employed by the Nature Conservancy.

Thus began an exciting adventure, as George, Larry and I discussed the possibilities of showing the story of bluebird conservation on television. George turned out to be decidedly "unfrightening," and even became a NABS member right then and there! Since George was based in New York City, he first planned to film the excellent work being done by **Junius Birchard**, in the Hackettstown, NJ area. Larry and I decided that this would be a good time for us to visit **June** and **Bea Birchard** and watch the television filming. When we contacted June, he and **Bea** insisted we stay overnight with them. And so, off to New Jersey we went. June's method of bluebirding involves the entire community. Into the schools he goes, regaling the students (in this case, **Mrs. Pam Laughlin's** 3rd grade at Flocktown School, Long Valley), with lively narrative on the bluebird's nesting habits and lifestyle. He serenades them in a clear baritone with songs about bluebirds—the students are alternately mesmerized, melted, and energized. Then out come 24 hammers and boxes of nails, and soon the rat-a-tat of the construction fills the room with a busy din. Twenty-four children line up to have **Junius** drill the final hole allowing for the screw in the lid. Voila! The world has 24 new nest boxes and 24 new bluebirders!

After we left the school, we headed for the rest of June's "trail." These nest boxes were placed in his Hackettstown neighbors' backyards and pastures. We met **Marle Wills** at Heath Village, **Cherly Dodenhoff** at her home and **Ann Terry** on her farm. Sadly, the television crews never made it due to other commitments.



Larry and I travelled back to Maryland, and the final plans for television filming fell into place. George and his crew would film at NABS headquarters and on Larry's Beltsville, MD trail in late June. It was a rewarding and challenging experience: rewarding, because so many of the faithful NABS volunteers were going to be filmed; challenging, because many couldn't be here or stay, among whom were **Joanne Solem**, *Sialia's* editor, **Sarah Funkhouser**, my "right hand," and volunteer **Irene McCabe**.

The filming process took two hours at the NABS office and another hour at Larry's bluebird trail. All of that footage was to be condensed to 90 seconds of programming to be aired on the ABC "Good Morning, America" show on August 27.

Television coverage of Larry Zeleny and his bluebird trail was also done locally. **Jan Thompson**, a young woman with the variety program, "Capital Edition," from the greater Washington, D.C. area, conducted an enthusiastic interview with Larry after the filming was finished on his trail.

One newcomer to the ranks of bluebirding is **John Davidson**, who lives on a rolling hillside in Dickerson, MD, with his son, **Darryl**, a retired Marine Corps colonel. John has a wonderfully efficient workshop in which he builds his nest boxes, now numbering over 500, which have been distributed in the locale by various means. One outlet is the popular country eatery, **Comus Inn**, where samples of John's work are on display in the foyer. John is remunerated for lumber only (he donates his labor) and then turns the proceeds over to NABS. He was put in a real quandry recently when a local Girl Scout troop revealed to him that they used their "cookie money" to buy his nest boxes. As he wrote, "I would rather have donated the houses than be accused of taking their *cookie money*." But it is a

great use of those resources, John.

**Robert Rager** of Rockford, OH, writes that he is now 68 years old, had not seen a bluebird in 45-50 years in the states of Ohio, Indiana, and Michigan and has had nest boxes available for 20 years when finally in 1985 a pair came and nested in a martin house, raising two young. This year they moved into one of the houses he had built. He put a little notice in the local paper and had a visit from NABS member **Jim Showalter**. This is how news gets around, bluebird interest spreads, and bluebirders are drawn together. **Linda Glickert**, of Millstadt, IL, tells us "I have bluebirds! It took four years and finally!" **Mrs. Florlene Edwards**, of Mexico, MO, sent in her membership dues saying, "I just love the bluebirds; in fact, a pair is building a nest in my backyard. We live in a *mobile park*, too. I fought off the sparrows and it paid off." **James C. Morehead, Jr.** of Houston, TX, sends his best regards and encouragement, telling us: "I admire your work in attempting to preserve and increase the number of bluebirds. We do have bluebirds here in Texas, although one has to go pretty far from the city of Houston to find them."

**Paul Kock**, of Delaware, OH, a hotbed of bluebird activity thanks to veteran bluebirder **Dick Tuttle**, writes that his persistent efforts paid off in '85 and '86 when one of his three "... boxes was occupied by a pair of bluebirds! Things are looking more 'blue' around our place."

**Annie L. Ward** of Pilot Mountain, NC, wrote of her success in that headiest of all bluebird pursuits, feeding them in winter. "I tried different kinds of things with them and now I don't have any problem in getting them to eat and feed their babies with it all year long. I started out with gathering pokeberries in the fall and freezing them and putting them in their feeder boxes. Then I put other mixes in there also. Now I have them guarding their feeder. I told my cousin about it and he did not believe me. So one day he came over and watched them from my door and saw for himself. I feed eight bluebirds and all through the winter. Sometimes there would be four in the feeder at one time eating. He was really surprised to see all this. I really love my bluebirds and I know they really are happy, too. So to all bluebird lovers, don't give up and I wish you the very best of luck." **Joe and Terry Dana** of Hot Springs Village, AR, have great success feeding bluebirds in another type of feeder. Their unique photo taken in February of 1986 from their deck shows three male and six female bluebirds at the feeding station. The mixture used was birdseed with peanut butter and bacon grease.

In trying to cope with some of the problems and frustrations of bluebirding, several correspondents have sent their insights. **Pat and Mike Smith** of Moneta, VA, wrote, "Our second nestlings from one box just fledged at 16 days. The night before, we killed a black snake going up a weed and just in the nick of time." **Elizabeth Kirkpatrick** of the Lehigh Valley, PA, area said the local mockingbird chased the bluebirds for three years and if they ever see one, "it goes on—mockingbirds are right there." **Paula Smith** of Elkhorn, NC, telephoned NABS in May to get advice on coping with sparrows. Here's hoping she was successful, because she said, "NABS was the impetus behind my getting involved." Have you ever had problems with a kingbird? From Spring City, PA, **Sarah Trzaska** wrote saying, "After much warring with sparrows and wrens, I now have a pair of bluebirds incubating eggs for the second time [June 30] this summer. An Eastern Kingbird dive bombs them now and then, but they seem to be fine. I'm eager to read more about bluebirds."

From Beaver Dam, WI, **Don Kopff** wrote for more copies of the NABS brochure, "Where Have All The Bluebirds Gone?" after he received some from **Mike Mossman** of the Wisconsin Department of Natural Resources. Don described building 250 bluebird boxes in the senior citizen workshop. Also requesting more copies of the brochure were **Jo and Louis Kohn** of Brooklandville, MD. They wrote that the one they received from NABS two years ago started their family off in "perpetuating the trail—successfully! And now I'd like to get a few more friends interested in expanding the trail." **Bill Arne** was introduced to NABS by seeing the brochure and wrote, "I am employed at the Seneca Army Depot in Romulus, New York, as Airfield Operations Specialist and have operated the bluebird trail here for the last four years." He enclosed nesting results of his trail of 77 boxes. The nest boxes were used by 9 pairs of bluebirds, 67 pairs of Tree Swallows, and 17 pairs of House Wrens. **Jeanne Zulick** of Pottsville, PA, wrote that she raises "Jenny wrens" in all of her bluebird and wren boxes. She added that her neighbors, **Mr. and Mrs. Wayne Berger** and **Mr. and Mrs. Allen Yakimo** raised several families of bluebirds and some of them were banded by a bird bander from Hawk Mountain Sanctuary in Kempton, PA. In March, 1986, the Camp Fire Girls & Boys, Inc. from Mitchellville, MD, received a "Certificate of Appreciation" from the North American Bluebird Society for their effort in promoting blue-

(Continued on page 155)

# 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:

Please do not take this thing of small bluebird houses so lightly. I have been working with bluebirds in this area for nearly 10 years and the small box and the open-top box constitute my main defense against House Sparrows.

Some of my boxes next year will be 5 inch cubes with the hole  $3\frac{1}{2}$  inches above the bottom. Once bluebirds are established and nestlings hatched a cardboard bonnet is attached to make cat entry impossible.

John W. Wood  
Tyler, Texas

Dear John W. Wood:

We do not take small bluebird boxes lightly. We know that under natural circumstances cavity nesting birds use a wide variety of cavity dimensions and entrance hole sizes. We also know that some people have fledged bluebirds successfully from boxes whose dimensions are much smaller than what the Society recommends. We applaud that success; however, we are also mindful of the fact that shallow boxes can have serious drawbacks. Both climbing and flying predators have much easier access to eggs, nest, and the incubating female in a shallow box than they do in the deeper types. For this reason we will continue to endorse and sell only the latter.

Dear Editor:

I have been a bluebird helper for many years, almost enough to make the bluebird honor roll.

Mark A. Benish  
Irwin, Pennsylvania

Dear Mark A. Benish:

Congratulations for being a long-term friend of the 'bluebird'. The proposed bluebird honor roll noting those who had worked with bluebirds for at least 50 years elicited no response—but there must be some who will reach that mark within a few years. If you do, please let us know.

Dear Editor:

We are much indebted to Mrs. Louis Soule of Mt. Airy, N.C., for her suggestion that a plastic milk bottle be used to remove House Sparrows which have been caught in a nest box rigged up as a manual, string-operated trap (*Sialia* 7(3):113).

For the same purpose my wife recently used a one quart glass Mason jar very successfully. The glass probably admits more light into the nest box than an opaque or translucent plastic milk "bottle."

Whichever container is used, this method of removing trapped sparrows is especially useful when the box contains bluebird eggs or nestlings. Quick removal of the sparrow minimizes damage to either eggs or nestlings.

Morris Green  
Walkersville, Maryland



Dear Editor:

I put out bite-sized pieces of mild cheddar cheese on a feeding shelf at a second story window for our local birds. One January day a male bluebird alighted on the shelf and ate some cheese. He made several more trips before the female joined him.

This year the bluebirds returned in the spring to find chickadees occupying the box they have always chosen. The bluebirds showed an interest in the box though the chickadees vigorously defended their nest and five eggs. One day while the chickadee was off the nest, the male and female bluebirds went in and out carrying away moss and cotton while the chickadees uttered distress calls. The battle between the bluebirds and chickadees went on for three days. The bluebirds finally examined the other boxes and then flew away.

Although I missed having bluebirds nesting this year, I feel the brave little chickadees deserved the box. They fledged five nestlings.

Norma K. Williams  
Asheville, North Carolina

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Dear Editor:

I would like to suggest that you publish the names of licensed bird banders who would be willing to band birds for trail operators. I happen to be a bander who is interested in doing this; the names of other cooperative banders could be solicited through your membership.

Betsy Jones  
Absecon, New Jersey

*Dear Betsy Jones:*

*There may well be trail monitors who would welcome the names of banders willing to band cavity nesters using bluebird boxes. Perhaps if there is a sufficient response to your suggestion, we could publish a list prior to next year's breeding season.*

*If you are a licensed bander who would be willing to band birds on bluebird trails in your area, send your name and address (telephone number optional) to the editor by January 15, 1987.*

Dear Editor:

We feel wonderful about the progress we have made with assistance received from various of your publications and books. For several years we had only sparrows interested in our bluebird boxes. In 1983, we finally had a pair of bluebirds only to have a sparrow kill the female on the nest. That's when we learned from you about trapping which has been a tremendous help to us. In 1984, with one pair of bluebirds, four babies fledged and this year, with two pairs, 14 babies fledged! We are still learning and hope for increased success this year.

Dana Blagg  
Stilwell, Kansas

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Dear Editor:

I enjoy your magazine very much and have learned much about Eastern Bluebirds from reading it. However, I wish you would include a "Western Page" where we could find correspondence from western members about the Mountain and Western Bluebirds native to our section of the United States.

There are three bluebird trails here in Yakima County and I'm sure there must be many more in the western region. It would be nice to hear about them and perhaps to correspond with some other members as well.

Rosemary Jones  
Yakima, Washington

*Dear Rosemary Jones:*

*We hope you enjoy the articles in this issue which feature bluebirds in the western area. The fact is that we publish (sooner or later) most of the material we receive from the West. Unfortunately, there are not many articles submitted nor letters received from that area. We would be happy to print more. Recently, another reader complained that she'd like to see more stories from southern states. Submissions tend to run in cycles, but we don't purposely favor one region over another.* ■

## THE BLUEBIRD HOUSE

This old house is gray and weathered, has no windows and no door,  
Just a neat, round hole for entry, several inches from the floor.  
Through the winter it was vacant, buffeted by wind and snow,  
Till the sunshine warmed the prairie and the cold wind ceased to blow.  
The house was cleaned and readied and the grass was green and new,  
When a miracle unfolded on wings of brilliant blue.  
Straight to this house he travelled, he remembered it last year,  
The woods, the fence, the pasture, everything that he held dear.  
Soon he found a mate, a lovely one, to share his bluebird life,  
He lost no time in courting her, then took her as his wife.  
They built a nest as springtime paved the way for summer's hue,  
And the little house soon cradled seven eggs of palest blue.  
Through wind and rain she settled in to keep her blue eggs warm,  
As he watched and waited patiently, and weathered out the storm.  
Tasty morsels he would bring her as the weary days passed by,  
And on the house and all within it kept a keen and watchful eye.  
Then each day a blue egg shattered and a baby bird was born,  
Till seven hungry bluebirds greeted sunrise every morn.  
All day long the parents labored just to feed this hungry crew,  
And they thrived and filled the little house as teenage youngsters do.  
This little house provided shelter from the summer sun,  
Then the fledglings left their little home to fly off, one by one.  
Once again the house is empty, for the bluebirds have all flown,  
But in spring they shall return again to the house they know as home.

Hazel A. Bowie

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### WANTED: Back Issues of *Sialia*

Many new members and libraries desire complete sets of back issues which we are unable to supply. The following issues are needed: Volume 1:1,2; Volume 3:2 and Volume 4:2. Mail these back issues to headquarters and claim a \$2.50 tax deduction for each.

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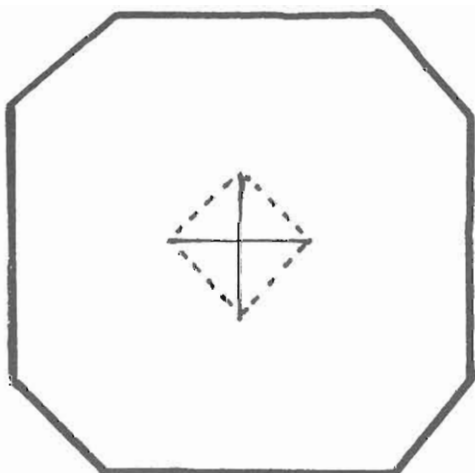
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Jon E. Boone: 122, 158  
Suzanne Pennell Turner: 138, 139, 156  
Richard L. Woodward: 131, 140, 149  
Violet-green Swallow

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Clarification of Hardward Cloth  
Predator Guard 8(3):99, Fig. 1.



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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 other 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: Students (under 21) and Senior (over 60), \$7.50; Regular, \$10; Sustaining, \$30; Supporting, \$50; Contributing, \$100; Corporate, \$100; Donor, \$250. Amounts over \$5 are tax deductible.

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