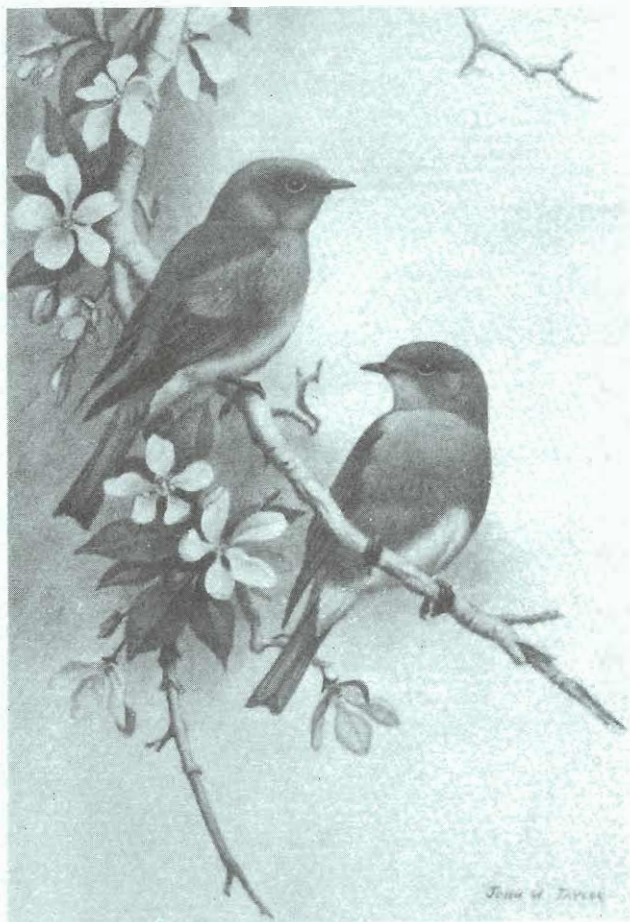


Sialia

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Of
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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 10, Number 3
Summer 1988
Pages 81-120

EDITOR
Joanne K. Solem
CONTRIBUTING
EDITOR
Lawrence Zeleny

COVER

John W. Taylor is our cover artist. His painting of a pair of Eastern Bluebirds is a reproduction of the colored print which was the 1987 Maryland Conservation Stamp and Print. We thank Mr. Taylor and the Maryland Department of Natural Resources for allowing us to use it.

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 redwing returns, geese start flying north and my thoughts turn to spring migration which reaches its peak in our area during May.

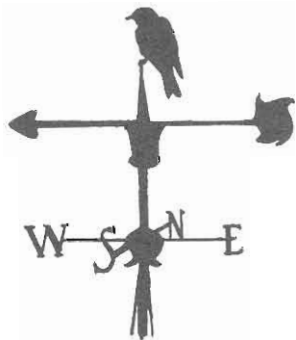
One of the Naturalists' Club events that I always look forward to is the Spring Census. When I first started participating in this count, I accompanied the experienced birders and we'd drive from one end of Broom County to the other. Most of the long day was spent in the car going from one birding hot spot to the next.

Half a dozen years ago with more confidence gained, I decided to try covering my own property; since then I've never had a desire to try covering a larger area. My staying home has turned into a true challenge as I try to beat myself at my own game.

During migration the bedroom window is always left open in order to hear the songs at the first hint of dawn. Count day this year when I struggled out of bed I already had eight species identified by song to put on the list.

The black Lab gets nearly as excited over seeing someone with binoculars as he does with a gun, so he always follows along. He is company and often finds the grouse or woodcock that I might not put up. I walked out to the back lawn and sat down at the picnic table to record any birds from that point. With many birds around, they are jotted down quickly as I hear "sweet, sweet, sweet" or "drink your tea." I then heard "gobble, gobble" and turned off any other bird song to concentrate on just the turkey call. With an abundant population of turkeys around my home, I hadn't heard one call this spring, but yes, there it was again.

The Labrador and I made a big circle around the pond in order to hide in the hemlocks and observe the dike area without being spotted. That tactic paid off as a pair of Green-backed Herons were having breakfast. When we made our presence known, the birds flew to the top of a maple.



On to the hemlock ravine, where Glenys Curran and I had found a Louisiana Waterthrush the week before. During the walk to the ravine, I had not one, but two flycatchers sit on branches so near I didn't need binoculars. Since flycatchers look alike and have to be identified by song, binoculars are never much help for them. Those little rascals swooped off the tree branch, caught their insect but refused to sing. I decided they were girls!

As I entered the ravine I noticed another dead beech had fallen since the last trip. While observing the beech and pondering how the firewood could be removed, I heard the song of a vireo. I listened intently and couldn't quite figure out what species was singing. It seemed almost like a Red-eyed Vireo, but for some reason the song wasn't quite right. I located the maple tree where the song was coming from, but with hemlocks around the maple plus the growing leaves, I couldn't see the bird. I circled the tree, smacked, splished, and "screech-owled" to no avail. He was at least accommodating and remained in the same tree. My neck was now hurting from a morning of staring upwards, so I decided to lie down on the ground and watch the top of the tree. I continued my noises. Each time I smacked, the Lab came over and licked my face. I still had all the shrub area to check for warblers—they would be easier to find before it got too late and they quit singing. I was staying entirely too long on this one bird (that would no doubt fly away), but I couldn't leave

(Continued on page 88)

Nesting Box Entrance Hole Size Preferred by Mountain Bluebirds

Donna Hagerman

Abstract

One hundred nesting boxes for Mountain Bluebirds (*Sialia currucoides*) were placed in pairs at 50 sites near Reno, Nevada, in 1987. Each site included boxes with entrance holes of 1 1/2 in. (38.1 mm) and 1-9/16 in. (39.7 mm) in diameter. Three groups of paired study boxes were established: A) 18 pairs of boxes at sites on an existing Mountain Bluebird trail which were used successfully by bluebirds the previous year, B) 12 pairs at sites on the trail which were not used or were used unsuccessfully the previous year, and C) 20 pairs of boxes placed in new locations of similar habitat along the established trail. Preference was determined when a nest was built and at least one egg was laid. Entrance holes of both sizes were used successfully by Mountain Bluebirds in all three study groups. Of the total 58 choices made by Mountain Bluebirds in this study, 72.4% preferred the 1-9/16 in. entrance hole size. The bluebirds using Groups A and B boxes showed a 60.6% preference to the 1-9/16 in. hole size, while 88% of the bluebirds in Group C preferred boxes with a 1-9/16 in. entrance hole. Nesting box use by Mountain Bluebirds may be increased by incorporating their preference for the larger 1-9/16 in. entrance hole into the nesting box design.

Introduction

The three species of bluebirds, native to North America, are the Eastern Bluebird (*Sialia sialis*), the Western Bluebird (*S. mexicana*), and the Mountain Bluebird (*S. currucoides*). The majority of bluebird literature focuses on the Eastern Bluebird and is generally applicable to all three similar species. However, the Mountain Bluebird is slightly larger than either of the other two species (Zeleny 1976, Farrand 1985).

As more individuals are becoming actively involved in providing bluebird nesting boxes, features of the nesting box design are being reviewed in order to assure maximum benefits to the bluebirds. An entrance hole with a 1 1/2 in. diameter is the standard recommendation for most bluebird box plans (Kibler 1969, Bradley 1987). However, the ideal entrance hole size for the larger Mountain Bluebird is currently a topic of controversy.

Aylesworth (1984) of Ronan, Montana, reported that he and an Alberta bluebird, Duncan Mackintosh, both observed rings of broken feathers about the shoulders and breast of male Mountain Bluebirds while nesting in boxes with a 1 1/2 in. entrance hole. Further, Aylesworth stated that many trail operators in the western states and Canada enjoyed significant increases in Mountain Bluebird occupancy when the previously used 1 1/2 in. entrance holes were enlarged to 1-9/16 in., while incidents of broken feathers ceased. Zeleny (1985) maintains that the 1 1/2 in. entrance hole is satisfactory for most Mountain Bluebirds, but may be too small in some parts of the Mountain Bluebird range. The North American Bluebird Society now sells bluebird nesting box kits with the option of either a 1 1/2 in. or a 1-9/16 in. entrance hole, following Zeleny's recommendation.

It has been determined by Zeleny (1969), Aylesworth (1984), and others that boxes with entrance holes of 1-9/16 in. or smaller eliminate competition and predation by European Starlings (*Sturnus vulgaris*). Therefore, entrance holes of 1-9/16 in. were the maximum size considered for this study.

Bluebird trail operators are naturally interested in achieving optimal nesting success. My objective is to determine whether the Mountain Bluebirds in this area prefer a nesting box entrance hole size of 1 1/2 in. or that of 1-9/16 in. in diameter. Information gathered in this study may help to resolve the entrance hole size issue and, in turn, help to increase nesting box use by Mountain Bluebirds.

Methods

One hundred nesting boxes were placed in pairs at 50 sites, using boxes with entrance holes of 1 1/2 in. and 1-9/16 in. at each site. Preference of nesting box entrance hole size was de-

termined when a nest was built and at least one egg was laid by a Mountain Bluebird in one of the paired boxes during the 1987 nesting season.

The location selected for this study was the Red Rock area, approximately 15 miles (24 km) north of Reno, Nevada. The area included an existing Mountain Bluebird trail of 30 nesting boxes in scattered juniper trees and open sagebrush habitat at elevations from approximately 6,000 ft. (1,830 m) to 6,500 ft. (1,980 m). During the 1986 nesting season, 18 of these boxes were successfully used as nesting sites to fledge 94 Mountain Bluebirds.

The original 30 nesting boxes on the established trail were constructed with 1-9/16 in. entrance holes protected from Northern Flicker (*Colaptes auratus*) predation by outer plastic shields. An additional 70 boxes of the same design and dimensions were constructed. The box interiors measured 5 1/2 in. x 5 1/2 in. (14 cm x 14 cm). The bottom of the entrance hole was 7 in. (17.8 cm) above the floor. All had removable lids. In order to maintain uniformity in their



Photograph by Donna Hagerman

Clarence Hagerman of Pinehurst, Idaho, built all of the nesting boxes for this study and helped to install them in pairs on juniper trees.

overall appearance, face plates similar to those described by Gutzke (1983) were prepared for all of the nesting boxes. These face plates were made of 4 in. x 5 in. x 3/4 in. (10.2 cm x 12.7 cm x 1.9 cm) exterior plywood, half with the 1 1/2 in. entrance holes and the other half with 1-9/16 in. holes. Each entrance hole was measured with a caliper in order to ensure size accuracy.

Boxes were paired and numbered. Three groups of study boxes were established. Group A consisted of the 18 boxes on the existing trail which were used successfully in 1986. Group B consisted of the remaining 12 boxes on the trail which were not used or were used unsuccessfully in 1986. The boxes in Groups A and B were paired with a second box at each site. Group C contained 20 pairs of boxes placed in new locations of similar habitat along the established trail.

A table of random numbers was used to determine which half of the paired boxes in each study group would receive the 1 1/2 in. entrance

hole face plates. The remaining boxes of each pair received the 1-9/16 in. face plates. The table was also used to equally distribute hole sizes on the right and left sides.

The sets of paired boxes in both Groups A and B were mounted on juniper trees side by side as close together as possible. They faced the same or nearly the same direction. Entrance holes of the two paired boxes at each site were approximately 4 ft. (1.2 m) above the ground, and usually from 1 ft. (30 cm) to 3 ft. (91.4 cm) apart. Boxes in Group C were mounted similarly.

All 50 sets of paired boxes were in the field by 22 February 1987. They were checked weekly from 17 April through 6 July 1987. Usual monitoring procedures were maintained. After each fledge, I cleaned out the old nesting material from the boxes. The boxes were also cleaned out after it was determined that a nest had been abandoned; therefore, the boxes could be used for preference data more than once.

Results

Thirty-seven of the 50 sets of paired nesting boxes were used as nesting sites by Mountain Bluebirds. Twenty-one of these were used twice. In all three study groups, entrance holes of both sizes were chosen and used successfully by Mountain Bluebirds to fledge 147 young. Bluebirds using boxes in study Groups A and B showed a 60.6% preference for the 1-9/16 in.

entrance hole. Those using boxes in Group C (new locations) showed an 88% preference for the 1-9/16 in. hole (Table 1). A comparison of boxes selected by bluebirds in Group A revealed that 14 of their 20 choices were directly related to the position of those original boxes used successfully the previous year (Table 2).

Table 1. Choices of Nesting Box Entrance Hole Size by Mountain Bluebirds.

Study Group*	Entrance Hole Diameter	
	1 1/2 in.	1 9/16 in.
Group A (17) ¹	8	12
Group B (12)	5	8
Group C (20)	3	22

* Number indicates total sets of paired nesting boxes available.

¹ One site was used by Western Bluebirds and was not counted.

Table 2. Group A* Choice in Relation to Original Position of Box Used Successfully in 1986.

Bluebird Choice	Entrance Hole Diameter	
	1 1/2 in.	1 9/16 in.
Original position of box	7	7
Moved to paired box	1	5

* These boxes had a 1 9/16 in. entrance hole during the 1986 nesting season. Half were randomly assigned a 1 1/2 in. hole for this study.

Discussion

The Mountain Bluebirds in the Red Rock study area of Nevada prefer a nesting box entrance hole size of 1-9/16 in. over that of 1 1/2 in. This is particularly true, by a margin of over seven to one, of bluebirds which have not used the box previously. Since the boxes were constructed equally, except for the entrance hole size, the data indicated that the larger hole is more desirable.

The results obtained from boxes used in Group A pose an interesting phenomenon. The Mountain Bluebirds using those boxes usually chose the same box which was used successfully the previous year, regardless of hole size. These paired sets of boxes were mounted side by side, so the entrance holes faced essentially the same surrounding trees and perch sites. The bluebirds' choices may indicate that these are the same birds which successfully used the boxes last year. Their familiarity and satisfaction with the specific box location may be a stronger choice influence than is their preference for hole size. Further studies are needed to validate this hypothesis. The remaining six choices, other than the originally located box, showed a five to one preference for the 1-9/16 in. entrance hole. Successful fledging occurred at nearly the same proportional rate from both hole sizes. Of the Mountain Bluebirds using the 1 1/2 in. entrance hole, I noted no broken feathers nor any other signs of stress.

In conclusion, my findings indicate that the Mountain Bluebirds of this area can and do use the 1 1/2 in. nesting box entrance hole, although 72.4% prefer to use the 1-9/16 in. entrance hole when given a choice. This should serve as a signal to those constructing nesting boxes for Mountain Bluebirds in any area. Our goal is to increase the bluebird population. By using the most attractive nesting box features, determined through studies such as this, we are a step closer to attaining our goal. ■

Acknowledgments

I would like to thank my father, Clarence Hagerman, for constructing and helping to place the nesting boxes in the study area. My gratitude extends to Alan Gubanich, Ph.D., University of Nevada-Reno and to Tedd Gutzke, NABS Research Committee Chairman, for their suggestions in the project design and in the writing of this paper. I would also like to thank the property owners who graciously allowed me the use of their properties for this study.

Literature Cited

- Aylesworth, A. 1984. Large box openings can be a curse or blessing. *Sialia*. 6(4): 123-124.
- Bradley, L. 1987. Here are three good bluebird house plans. *Nature Society News*. 22(4):10-11.
- Farrand, J. Jr., Ed. 1985. *The Audubon Society Master Guide to Birding* (3 vol) Alfred A. Knopf, NY 3:46-48.

(Continued on page 92)

Use of Tangle Trap™ to Measure Snake Predation at Bluebird Boxes

Wayne H. Davis and William C. McComb

Abstract

We spread Tangle Trap™ (Tanglefoot Corp., Grand Rapids, Michigan 49504) on the iron posts supporting boxes used as nesting sites by Eastern Bluebirds (*Sialia sialis*). This apparently deterred mammalian predators, but not snakes. Whereas only one rat snake (*Elaphe obsoleta*) was found in a box, snakes visited 12 of our 48 boxes. Tangle Trap™ spread over the boxes provided evidence of visits by snakes; mammalian visitors left hair in the Tangle Trap™. Three boxes visited by snakes were empty; eggs or young were taken from eight, and one may or may not have contained eggs when visited. Snakes destroyed 16.6 percent of the active bluebird nests.

Laskey (1946) observed predation on Eastern Bluebirds (*Sialia sialis*) at nest boxes by the snakes *Elaphe obsoleta* and *Coluber constrictor*. After making daily observations and noting the disappearance of eggs, or of the young before the expected fledging date, she concluded that snakes were probably responsible for predation at 23 to 40 percent of her nests in different years. Hensley and Smith (1986) reported probable snake predation of bluebird nestlings in 10 of 20 nest boxes in Arkansas.

We report a method of measuring snake predation at nest boxes that allowed weekly inspection, was less costly than a photo system (Hensley and Smith, 1986), and excluded other predators.

For a study of bluebird nesting activities on coal surface mines in eastern Kentucky in 1987, we erected 48 wooden boxes 1.5 m above ground on steel posts. To deter predators we spread Tangle Trap™ (Tanglefoot Corp., Grand Rapids, MI 49504) on each post below the boxes. We visited the boxes weekly from March through August.

The treatment apparently deterred raccoons (*Procyon lotor*), a species which had raided bluebird boxes on this site in previous years. On two

posts raccoon hair was found in the Tangle Trap™ but the nests and young were undisturbed.

Eggs disappeared from several boxes, apparently as a result of avian predation (for experimental purposes half the boxes were accessible to European Starlings (*Sturnus vulgaris*) or of bluebirds removing infertile clutches.

Twelve of our boxes were visited by snakes. Visiting snakes left obvious sign. Snakes seemed to be undeterred by the Tangle Trap™. They smeared it over the box and post. Absence of hair discounted mammalian predators.

On 20 May we found a snake (*Elaphe obsoleta*) in a box where young bluebirds were expected to be near fledging. Snakes took broods of bluebirds that were near fledging from four other boxes, took three or four young bluebirds from another, took a clutch of eggs from a box, and took three young starlings, leaving three (one of which was killed) in another.

At three boxes snakes visited empty nests, and, at another, the snake may have visited an empty nest or may have taken eggs. We found a new nest in a box on 23 July, nine weeks after a brood had fledged; on 31 July there were three bluebird eggs and sign that a snake had visited. Eggs might have

been laid in the new nest, been taken by the snake, and new ones laid before our 31 July visit.

Without the Tangle Trap™ we would have recorded one instance of snake predation plus two as suspect. Young taken were all near fledging and would have been mistakenly recorded as successfully fledged.

The predation by snakes had little effect on bluebird production. Six of the eight boxes raided by snakes each produced two broods of bluebirds; in two, the birds were incubating the week after a brood was taken. Two boxes were abandoned after snakes took the brood and no young were fledged. Our 48 boxes fledged 191 bluebirds in one breeding season; snakes took 33 fledglings plus at least five eggs. This represents a loss of 16.6 percent of our potential new bluebirds to snakes.

Predation by snakes was lower in our study than in those by Laskey (1946) and Hensley and Smith (1986). Possibly the Tangle Trap™ deterred some snakes. Johnson (1983) concluded that Tack Trap (Animal Repellents, Inc., Griffin, GA.) decreased the frequency of visits by rat snakes (*Elaphe obsoleta*) to unused boxes in experimental pens.

A more likely factor, however, was the distance of our boxes from woods. Twenty of our 48 boxes were more than 109.4 yds. [100 m] from woods and all our snake visits were to boxes within 109.4 yds. [100 m] of woods. Weatherhead and Charland (1985) found that rat snakes were most strongly associated with the forest edge during the bird breeding season, and, although they foraged frequently in the grassland, they generally were within 16.4 yds. [15 m] of the forest edge. Stickel, *et al.* (1980) found that large trees with hollow trunks or branches were especially important to rat snakes in open areas of lawns and farms.

There were no trees on our study area. Bluebirds nested in several boxes that were five-eighths of a mile [a kilometer] or more from the nearest trees or shrubs. It appears that one can minimize snake predation by placing boxes

as far from the woods as feasible. ■

Acknowledgments

We thank the Falcon Coal Company, Jackson, Ky., for permission to continue our studies on their land, and the North American Bluebird Society for financial aid.

Literature Cited

- Hensley, R.C. and K.G. Smith. 1986. Eastern Bluebird responses to nocturnal black rat snake nest predation. *Wilson Bull.* 98:602-603.
- Johnson, T.W. 1983. Repelling rat snakes from Wood Duck boxes with chemical barriers. *Proc. Annual Conference Southeastern Assn. Fish and Wildl. Agencies* pp 48-55.
- Laskey, R. 1946. Snake predation at bird nests. *Wilson Bull.* 58:217-218.
- Stickel, L.F., W.H. Stickel and F.C. Schmidt. 1980. Ecology of a Maryland population of black rat snakes (*Elaphe o. obsoleta*). *Amer. Midl. Nat.* 103:1-14.
- Weatherhead, P.J. and M.B. Charland. 1985. Habitat selection in an Ontario population of the snake, *Elaphe obsoleta*. *J. Herp.* 19:12-19.

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(PRESIDENTIAL POINTS—Continued from page 82)

now. Finally the splashing brought the little bird down. Wow! A Philadelphia Vireo. The one hour spent working on him was all worthwhile.

I arrived back at the house for lunch to compare sightings with my husband. As we totaled up the numbers and compared the results to last year's, we were three short of the previous total. The real challenge for me is to beat my own record each year. I then started down the list of birds that I should have sighted during the morning. No Veery, pewee, cuckoo, etc.—so back to the fields, shrubs, woods to try to find a few more.

I ended the day with three more species than last year and knew next year would be even harder. ■

Dead Wood for Wildlife

Jerry D. Hassinger and Jack Payne

If you were given a test or responded to a survey, you could probably do a credible job of listing the values of trees for people. Living trees provide shade. Trees filter air. Trees can soften the impact of rain, prevent soil erosion, produce food and are often pleasing to the eye. When a tree is cut it can be used to frame, insulate or, among other things, heat a house. This article was written and reproduced on a wood product—paper.

In listing values, you acknowledge, however tacitly, that a tree must die before many of these values can be realized. This is also true of trees for wildlife. Many wildlife values are realized only after a tree or part of a tree dies. Dead parts of live trees and dead trees, whether standing (snags) or fallen (logs) have special values for wildlife. This article is about these values and considerations given them in forest management.

If you fell a tree you are affecting wildlife. The effects can be beneficial or detrimental, planned or haphazard. Not infrequently the whine of the chain saw replaces any thoughts of wild birds and other animals or their habitat.

We affect wildlife largely in ignorance.

Perhaps your personal values include wildlife. If so, you cannot wholly agree with those who think every dead tree left in the woods is a waste. Dead trees left on every acre fuel many wildlife activities.

Wildlife Use of Dead and Down Woody Material

Dead limbs and trees are a natural and desirable component of wildlife habitat. The very existence of many animals depends on the presence of dead trees.

A fallen tree becomes infested with fungi and insects. As the tree de-

composes, borrowed nutrients are returned to the soil and a microhabitat favorable to the growth of new tree seedlings is often created.

Roll a rotting log aside and be ready to jump. Insects, mice, shrews, salamanders and snakes all seek refuge and search for food beneath such cover. Skunks, bears and woodpeckers repeatedly return to these cafeterias for easy pickings.

Depending on the log's location relative to good cover, a grouse may use it for a drumming site. Some rot-resistant logs have been used by generations of grouse.

The accumulation of organic material, including damp, rotting wood and leaves, favorably affects mushroom populations. Mushrooms are food for insects, turtles, birds, mice, squirrels and deer. During critical winter periods, highly nutritious mushrooms can be important to deer by compensating for nutrient deficiencies in available forage.

Ruffed Grouse and Rufous-sided Towhees are among the species that nest under partially elevated logs. Depending on their size, hollow logs will shelter a variety of forest mammals from shrews and chipmunks to bears. Fox and coyotes may use them for dens.

For deer mice, chipmunks, squirrels and other small mammals, log tops are highways over the forest floor. The rattlesnake knows this, and coils next to the log. Eventually, food will arrive.

Logs and stumps are a special habitat requirement for the redback and slimy salamander. The four-toed and longtail salamanders hide in moist, decaying wood. The eggs of the northern spring salamander are laid in running water under logs.

Greater and lesser gray tree frogs may be found in hollow trees, under loose bark, or in rotted logs during the summer.

Seven species of turtles, including

the eastern painted turtle, bask on logs in or near water. The eastern box turtle may burrow under a log during hot weather.

The northern fence lizard is found in log piles and around stumps. It hibernates in rotten wood. Special habitat requirements of the five-lined skink include open woods with logs and slash piles.

Snakes search for food around logs and use them for shelter. Some species, such as the eastern garter snake and the eastern worm snake, will hibernate in rotten wood.

At least 19 kinds of salamanders and 26 species of reptiles make some use of logs, stumps, bark and slash piles in Pennsylvania's forests.

The more I learn about direct and indirect uses by wildlife of dead and down woody material, the more I concur with the British ecologist Elton. He believes that dying and dead wood provides one of the two or three greatest resources for animal species in the forest.

Wildlife Use of Dead Snags and Cavity Trees

Standing dead trees and dead parts of live trees are both room and board for many kinds of wildlife. Thirty-five species of birds and 20 kinds of mammals in Pennsylvania use tree cavities (see Tables 1 and 2).

Wood Ducks look for cavities near water. Barn owls look for sites near large fields. Bluebirds can nest in wooden fence posts bordering farm fields, and they can occupy holes in snags left in recently clearcut areas. Unlike the barn owl and bluebird, Pileated Woodpeckers are birds of the deep woods. They will nest in tree holes far from fields. Table 1 shows where 35 bird species look for nesting sites.

In addition to location, the nature of the cavity tree determines its attractiveness to some kinds of birds. While many species will choose a cavity in either a live or a dead tree, this is not true of all species. The Yellow-bellied Sapsucker, for example, constructs a

new cavity each year in a live tree. The Northern Flicker, on the other hand, uses or excavates cavities in dead trees. Whether a snag is hard (sound) or soft (punky) also influences its use by birds. The Pileated and Hairy Woodpeckers choose to nest in hard snags. The Brown Creeper nests under exfoliating bark of recently dead trees. The Black-capped and Carolina Chickadees, however, avoid sound trees. They prefer to excavate nesting cavities in soft snags.

In addition to the soundness and location of a cavity tree, other factors that may affect its use by wildlife are

1. *The size of the cavity.* Will the entrance accommodate a bluebird, a barn owl, a squirrel, a raccoon or a bear?

2. *The diameter and height of the cavity tree.* The House Wren and bluebird, for instance, rarely nest in holes more than 12 feet above the ground; Pileated Woodpecker cavities, on the other hand, are mainly found higher than 15 feet. Generally speaking, the larger the animal, the larger the diameter of the tree selected for nesting.

3. *The direction faced by the cavity entrance.* Screech owls, for example, often choose cavities with openings facing north, possibly for their relatively low internal light levels.

4. *The location of the cavity entrance relative to a limb.* The Carolina wren is among several species that seem to prefer cavities on the undersides of limbs.

5. *The relationship to other cavity trees.* Gray and fox squirrels often choose cavities that are near other cavity trees.

6. *The nature of the woodlot.* While most species choose stands of deciduous trees or deciduous and conifers mixed, the Saw-whet Owl is one species that prefers pure stands of evergreens. The understory around a cavity tree will also influence its suitability for some species. Hairy and Downy Woodpeckers prefer open and dense understories respectively. Similarly, dense understories are favored by gray squirrels, but fox squirrels are at-

TABLE 1. Saving hard (HS) and soft (SS) snags and live trees (LT) with cavities in the following situations will provide potential benefits for the indicated cavity using birds.

Cavity Using Birds	Cutting Site and Type (A to E)* of Cutting Activity					Frequently chosen cavity tree type**		
	Forest Interior		Forest-Field Edge C	Near Water, Wetland D	Scattered trees, Large Fields E	Live		Dead
	A	B				LT	HS	
Wood Duck				x		x	x	x
Hooded Merganser				x		x	x	x
American Kestrel			x		x	x	x	x
Barn Owl			x		x	x	x	?
Screech Owl		x	x		x	x	x	x
Barred Owl	x			x		x	x	x
Saw-Whet Owl	x			x			x	x
Great-Horned Owl	x	x	x	x	x	x	x	x
Chimney Swift			x	x	x	x	x	x
Northern Flicker		x	x	x	x		x	x
Pileated Woodpecker	x			x		x	x	
Yellow-Bellied Sapsucker	x	x	x	x		x		
Hairy Woodpecker	x			x		x	x	
Downy Woodpecker	x	x	x	x			x	x
Red-Headed Woodpecker		x	x	x	x	x	x	x
Red-Bellied Woodpecker	x	x		x		x	x	?
Great-Crested Flycatcher	x	x	x	x		x	x	x
Tree Swallow			x	x	x	x	x	x
Black-Capped Chickadee	x	x	x	x				x
Carolina Chickadee	x	x	x	x				x
Tufted Titmouse		x	x	x		x	x	x
White-Breasted Nuthatch	x	x	x	x		x		
Red-Breasted Nuthatch	x			?		x	x	x
Brown Creeper	x			x			x	
Winter Wren	x	?		x		x	x	x
Carolina Wren	x	x	x	x		x	x	x
House Wren		x	x	x	x	x	x	x
Bewick's Wren		x	x	x	x	x	x	x
Prothonotary Warbler	x			x		x	x	x
Eastern Bluebird		x	x		x	x	x	x
Purple Martin		x	x		x		x	?
European Starling			x		x	x	x	x
House Sparrow			x		x	x	x	x
Turkey Vulture	x	x	x	x				x
Black Vulture	x	x	x	x				x
TOTAL:	19	19	24	27	14	26	29	27
PERCENT:	54	54	69	77	40	74	83	77

* *Type of tree cutting activity*—A: partial cutting within a woodlot, often a diameter limit cut or thinning; B: cutting heavy enough to create clearings within a woodlot, often a clearcut; C: cutting within 100 feet of a field, often fuelwood removal; D: any cutting near a stream, pond or within other wetland sites; E: removal of trees competing with crops or for purposes of site development, often the elimination of a fencerow.

** *Cavity tree type*—LT: a live tree with a cavity large enough to shelter the indicated species; HS: a hard or firm dead snag with or without bark and with a cavity large enough to shelter the indicated species, SS: a soft, punky dead snag with a suitable cavity.

Table 2. Mammals That Use Tree Cavities in Pennsylvania.

Opossum	Red Squirrel
Pipistrelle Bat	Eastern Flying Squirrel
Little Brown Bat	Northern Flying Squirrel
Keen Bat	Chipmunk
Indiana Bat	Deer Mouse
Sliver-haired Bat	White-footed Mouse
Big Brown Bat	Porcupine
Evening Bat	Raccoon
Gray Squirrel	Black Bear
Fox Squirrel	Long-tailed Weasel

Only the squirrels and perhaps one or two kinds of bats are obligate cavity nesters. Other species may use cavities if they are available.

tracted to woodlots with more open understories.

7. *The time of the year.* Cavity trees are used for nesting, roosting, winter shelter, sanctuary, food storage, and food seeking. One researcher found that amphibians and reptiles use cavities most in the summer and early fall; use by mammals is greatest in late fall and winter. Bird use is greatest in spring and early summer. People cleaning out bird boxes in early March frequently find deer mice using them as winter apartments.

The presence of cavities or the substrate (heart rot or other decay) for ex-

cavating cavities is not the only value of a dying or dead tree for wildlife. Snags are also a common source of insects and other invertebrates. This food source may be especially important for over-wintering birds. If snags are houses and cafeterias, they are also airports.

Flycatchers use snags for launch sites as they sail forth time and again after flying insects. A snag bordering a field or orchard may be used routinely by hawks in the day and owls at night while they wait for errant field mice. Similarly, kingfishers, Ospreys and Bald Eagles will perch on or fish from dead trees standing in or near water. At least 30 kinds of birds regularly use snags for foraging perches. Additionally, the Indigo Bunting, Northern Mockingbird and crow are three of eight species that regularly use snags for singing perches.

I've already mentioned or referred to 135 vertebrate species of wildlife that make some use of dying and dead trees and logs. The number of invertebrates that use decaying wood is countless; the use of hollow trees by honey bees is but one well known example. Directly or indirectly, all forest wildlife species are affected to one extent or another by the presence or absence of dying and dead trees. Clearly, dead wood is vital for wildlife.

Forest management guidelines to help provide the needs of Pennsylvania's cavity nesters will be covered next month. ■

The second of two articles under this title will appear in the Autumn issue of Sialia. The material is reprinted by permission of the Pennsylvania Game News © 1987 by the Pennsylvania Game Commission. This article was published originally in the March 1987 issue, pp. 22-26.

(HOLE SIZE—Continued from page 86)

Gutzke, T.W. 1983. A nestbox restricter as a management tool for Eastern Bluebirds. *Sialia*. 5(1):3-5.

Kibler, L.F. 1969. The establishment and maintenance of a bluebird nest-box project: a review and commentary. *Bird Banding*. 40:114-129.

Zeleny, L. 1969. Starlings versus native cavity-nesting birds. *Atlantic Naturalist*, 24:158-161.

_____. 1976. *The Bluebird*: How you can help its fight for survival. Indiana Univ. Press.

_____. 1985. Hole size for Mountain Bluebirds. *Sialia*. 7(1):11, 16.

5010 El Dorado Dr.
Reno, NV 89509

A Carbaryl Pesticide Suspected in Death of Nestling Eastern Bluebirds

Harry Krueger

On 16 July 1983, when monitoring nest box no. 4, there were four nestlings fully feathered and ready to fledge. Five days later when monitoring this nest box, there were two dead nestlings. The cause of death was unknown.

On 24 May 1984, nest box no. 6 contained five fully feathered nestlings ready to fledge. The next day when I monitored this box, there were two dead nestlings.

Since nest box no. 4 and nest box no. 6 were a city block apart and between these two boxes was a garden, approximately 80 feet x 125 feet [24.3 m x 38.1 m], where the adult birds were seen feeding many times, I checked with the owner and discovered he had sprayed Sevin on the plants in the garden one week before the dead nestlings were found in box no. 6. The owner of the garden could not remember exactly when he had sprayed in 1983, but guessed it was in July. After 1984, this garden was not planted and, therefore, no pesticide was used. From 1985 through 1987 no more natal deaths occurred in boxes no. 4 or no. 6.

On 13 May 1987, when monitoring nest box no. 42, I found three male bluebird nestlings, fully feathered, dead in the nest. There had been four nestlings in this box so it is presumed the fourth nestling fledged successfully. When checking the area, it was noted that a house across the road from box no. 42 had a garden. Upon investigation, I found the lady had dusted with "Green Light," (brand name SEVIN DUST) a week before the dead nestlings were found.

Several weeks later, a lady called and related the following story: She had checked one of her bluebird boxes that contained four nestlings and then left town for three days. When she returned, she opened the box and found

three dead nestlings. She had called me to ask if I knew what had caused these deaths. I told her I didn't know, but asked her to check the neighbors near her house to see if anyone had used Sevin on their garden. I related my experiences with boxes nos. 4, 6 and 42 and the coincidence of the use of Sevin as a *possible* cause. She immediately told me she had sprayed her tomato plants with Sevin the day before she left town. She finished our conversation with "I'll never use Sevin again."

These data are purely circumstantial. Since no autopsies were performed, it is a supposition that the cause of death was from the pesticide Sevin. I postulate that the insecticide gets on the insects. As an insect that has been sprayed goes into a death struggle, it becomes more apparent to the feeding bluebirds, the convulsive actions perhaps making it more desirable. Those of you who have ever been fishing know a wounded minnow will trigger a fish to strike. This is the same principle I am suggesting with an insect struggling against the toxic effects of a pesticide.

After feeding their nestlings contaminated insects for several days, a toxic level builds up and kills the nestling. It is possible that some of the insects that are fed to the young may not be contaminated; therefore, some of the nestling will survive. Some birds may have a better natural defense, so this may also explain why some survive. In my experience there is a definite correlation between the time Sevin was used and the death of the nestlings.

I would be very interested to learn if other bluebirders have had similar experiences. ■

Route 2, Box OR28
Ore City, TX 75683

Bluebird Foster Parents Fledge Two Broods in Novel Fashion

Carol Caufield

When my four baby bluebirds were 14 days old, my cat killed the female. The male continued feeding them for two days until he became distracted by a new female who would not feed the young but wanted the box. The male abandoned the birds so Sandy Wilson and I opened the box to take the birds. They were weak and the nest was dirty. We removed the entire nest and placed it in a bird cage. We fed the babies by prying open their mouths and placing the tweezers with a small amount of Aipo canned beef dog food far enough down their throats for them to swallow. We did not give them any water. I did keep a cover over the cage. We fed them three or four mouthfuls every hour til night.

In the morning and throughout the day they became stronger, moved around more, and started chirping. I talked with the Burnett Park Zoo and they suggested adding hard-boiled egg in a 50/50 mixture with the dog food.

In talking with several people including Paul Wilson, it was suggested that we find a nesting pair of bluebirds with nestlings of approximately the same age to which we could transfer the nestlings. We moved the birds that evening to Pineville where one of Frank Eddy's boxes had five babies which were two days younger than mine. A new post, a new box, and a new nest were placed one foot from the existing box. The male and female were there, but left. We fed them one last time, left, and prayed!

Frank Eddy was the first to arrive the following morning to find the male and female bluebird going in and out of both boxes feeding the nestlings and cleaning the nests. We left cut-up worms on a saucer on top of the new box which both adults took and fed to young in both boxes. They also used mealworms when these were offered three or four times a day.

On the third day, Frank's birds

started to leave the nest; mine were just peeking out, but the parents continued to care for both broods. By the fourth day all the baby birds had left the boxes though two were on the ground with the parents watching. Later that day, all but one were located in trees. Frank's five were together but three of mine separated with one on the ground. The parents proved very protective for this fledgling who couldn't fly.

On the fifth day we took this flightless baby bluebird to the zoo where she remains. She is well but has a broken wing that cannot be set. The other birds, as far as we know, continued to be taken care of by the parents. ■

Reprinted from the Winter 1987 newsletter of the Upstate New York Bluebird Society.

Bluebird Boosters

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

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

All contributions are tax deductible. Mail your check to NABS Boosters, P.O. Box 6295, Silver Spring, MD 20906-0295.

Canadian Nesting Box Report 1987

Alberta

Calgary Area Bluebird Trails. Major news from this area according to compiler Donald J. Stiles was a report of the first Calgary-area banded bird recovered from its wintering ground just before Christmas. The bluebird was banded as a nestling in 1986 by Ray Woods near Elkton and was found dead in the autumn of 1986 in a building in Carson Mesa, New Mexico.

Nest boxes in the Calgary area rose to 1367 on 528 miles of trails fledging more than 2184 bluebirds and 2969 Tree Swallows. A total of 838 bluebirds (96 adults, 742 young) and 922 Tree Swallows (163 adults and 759 young) were banded in 1987. George Loades banded the most birds (441 bluebirds and 553 Tree Swallows) and was able to band *all* the nestlings on his trail.

Linda Vanneste found a Tree Swallow dead in a nest box south of Lloyd Lake which had been killed by House Sparrows. This bird had been banded by Don Stiles as an adult in 1982 (the first year of the trail) in the same nest box, making it at least six years old, the

oldest bird recaptured to date on Calgary area trails.

Eighth Annual Mountain Bluebird Trail Report, Lethbridge. Thirty-three monitors helped collect the 1987 data from this area. A total of 71 band recoveries were made. One pair of bluebirds used the same nest box for the past five years. A record high number of nestlings and adult birds were banded this year by nine banders. One 1986 nestling from this trail system was reported to have been picked up in Fort Worth, Texas, in January 1987. Lethbridge compiler Duncan Mackintosh was granted an International Banding Permit in June of 1987.

Fish and Wildlife, and Recreation, Parks and Wildlife Foundation made a valuable contribution to trail expansion and maintenance in 1987. Also Shell Canada through their Community Service Fund made a very useful donation.

Although there was an enormous increase in the number of bluebird eggs laid in 1987, there was also a larger percentage than normal of sterile eggs. There was a slight increase in bluebirds fledged, however.

Table 1. Occupancy of Nesting Boxes on the Mountain Bluebird Trail, Lethbridge, Alberta, 1987.

Nesting boxes available	2217
Boxes used by bluebirds	722
Bluebird eggs laid	4105
Bluebirds fledged	3044
Bluebird nestlings banded	2224
Bluebird adults banded	159
Sterile eggs	774
Tree Swallow nests	429*
Tree Swallow eggs	2703*
Tree Swallows fledged	875*
Wren nests	32
Total number of boxes used	1339

*estimated

Manitoba

Compiler Mamie McCowan reported that 54 people monitored approximately 2000 boxes for "The Friends of the Bluebirds." Figures submitted did not include number of birds fledged but noted that the following number of nestings had been observed (a nesting being a nest with at least one egg): Mountain Bluebird 759, East-

ern Bluebird 254, unidentified bluebird 83, hybrid (Mountain male x Eastern female) 1, Tree Swallow 994, and wren 57. Thirty-eight of Hazel Bowie's 49 boxes were used by Mountain Bluebirds which fledged 152 while Mrs. T.H. Dillon reported that 4 of her 21 boxes were used by Mountain Bluebirds and 17 by Tree Swallows.

Saskatchewan

Stuart and Mary Houston's extensive trail in the vicinity of Saskatoon fledged 229 Mountain Bluebirds from

48 boxes while 166 of their 237 total boxes were used by other species, the majority by Tree Swallows.

Ontario

William F. Read of this province reports that in his 160 boxes there were 31 successful nestings of Eastern Bluebirds in 20 boxes with 107 fledged (all banded). Tree Swallows used 120 boxes along with 1 Black-capped Chickadee and 4 House Wrens. Mr. Read is attempting to compile statistics for the entire province. On the basis of the reports he had received, about 1700 bluebirds had fledged in 1987, but he estimated the actual total was considerably higher. He is also trying to determine if there is sufficient interest to form an Ontario Bluebird Society. If you are an Ontario bluebirder, contact him at 2-165 Green Valley Drive, Kitchener, Ontario N2P 1K3. Tilli Mech reported 18 boxes with no bluebirds but several used by swallows and

1 by a flycatcher. L.A. Smith had no final figures on his 500 nesting boxes though he mentions that he had 100 pairs of bluebirds. His insulated boxes have been successful early in the season. Complaints of vandalism continue from his area. Jim Sauer reports that 3 of his 18 boxes were used by bluebirds and 13 by Tree Swallows. W. Garry Smith had 8 boxes of which 1 was occupied by bluebirds and 3 by other species. Mr. and Mrs. Clifford R. Bowles had 3 of 32 boxes used by bluebirds and 3 used by Tree Swallows in their first year of bluebirding. Don Cryderman had 45 boxes on his trail of which 12 were used by bluebirds fledging 42; 19 were used by chickadees, swallows and wrens.

Quebec

Daniel Asselin had 2 of his 4 boxes

used by Tree Swallows.

Attention Canadian Trail Monitors and Compilers: This is the final Canadian Nesting Report which will appear in *Sialia*. Hereafter, all U.S. and Canadian results will be combined in a single report which will appear in the spring issue each year. Because the three species of bluebirds know no political boundaries, it seems more feasible to treat all of North America as a unit. Compilers Chuck Dupree and Michele Wright continue to ask that you try to meet a 1 November deadline for material from the breeding season. Survey results are necessary and valuable for a few boxes as well as hundreds, for unsuccessful as well as

successful nestings. Increasingly, states, provinces and regional groups are sending in trail compilations. These are much appreciated and most helpful in obtaining an accurate continental bluebird picture. In some cases, it may be impossible to assemble results of large trails by 1 November. Chuck and Michele would appreciate, however, being advised by compilers of extensive trail networks when results could be expected. With compilations, be sure to enclose anecdotal information which may be of wide reader interest concerning any aspect of trail monitoring. ■



Photograph by D. Noble.

Reprinted with the permission of John Hinde Curteich Inc.

On her way back to Massachusetts from the tenth annual meeting in Chevy Chase, Maryland, former NABS president Lil Files stopped to visit Gettysburg National Military Park in south central Pennsylvania. She purchased the above postcard and mailed it to Founder Lawrence Zeleny. The card carried the following inscription: "Thousands of guns once covered the battlefield and caused friend to fight or kill friend. As though in silent vigil this little bird of peace and freedom sits on one such cannon that caused pain and death to many." When Larry received the card, he was reminded of an incident that took place in Minnesota when he was still a boy. "About 1910 a similar cannon was mounted in front of the armory at the University of Minnesota, about three blocks from my home. A pair of bluebirds were nesting inside the muzzle of the cannon. Everything was going fine until on Memorial Day the female and its nest were destroyed during the loading of the cannon in preparation for firing it. I believe this happened in 1909 or 1910 when I was attending kindergarten in the armory in front of which the cannon stood. I was told of the incident at the time but did not actually witness it. It is recorded in Thomas S. Roberts' book, *The Birds of Minnesota*." Dr. Zeleny's guess is that the bluebird pictured on the postcard also had a nest in the cannon shown.

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.

QUESTION CORNER

Lawrence Zeleny

What kinds of problems are there if, in an emergency, baby bluebirds are raised in captivity and turned loose when adults?

**Ronald Ham
Huntsville, Alabama**

Young bluebirds raised in captivity to adulthood before being released are likely to find it difficult to adjust to the wild state. Their natural instincts for self-preservation such as finding their own food and avoiding predators are likely to have become dulled by captivity. Ideally, hand-raised bluebirds should be released as soon as possible after they are able to fly, usually at the age of about three weeks. Even then they will need supplemental feeding for a short time until they have learned to find their own food. It should be understood that a federal permit is required to hand raise any native wild bird.

Having had bluebird boxes in place for perhaps six or seven years without seeing a bluebird, I am now wondering whether there are any bluebirds in this area. I sent for the boxes, placed them as instructed, telephoned your experts for advice when there were no results, have done just about anything one might reasonably expect—but no bluebirds.

**Robert VanderKloot
Bloomfield Hills, Michigan**

We are indeed sorry that you have not been successful in attracting bluebirds. Unfortunately, bluebirds have become extremely scarce over the years in many areas. Efforts like you are making are helping to bring them back in many areas where the habitat is suit-



able, and we sincerely hope this will eventually happen in your area. In the meantime, it would seem that some of your nesting boxes should be occupied by other desirable species such as chickadees and Tree Swallows.

If there is a local bird club in your area, its members should be able to tell you if bluebirds are seen there during the nesting season.

Articles in *Sialia* have mentioned raccoon guards, but at least one article [9(3):83] described guards that were too thick as discouraging bluebirds. I would appreciate hearing about the need for guards and the experience others have had.

**James A. Kinder
Cape Girardeau, Missouri**

Guards resulting in nesting hole depths of up to 2 1/4 inches are used on many bluebird trails where there is danger of raccoon predation. Bluebirds do not usually show any serious hesitancy in using boxes equipped in this manner. A few reports have been received of bluebirds using boxes with considerably thicker guards, but we do not yet know the maximum thickness that the birds will tolerate.

The effectiveness of this type of guard in preventing raccoon predation quite obviously depends on three factors: (1) the depth of the entrance hole with the guard attached, (2) the depth of the box itself below the entrance hole, and (3) the depth of the nest. Experience indicates that rather good protection is provided in nesting boxes in which the floor of the box is at least

(Continued on page 101)

A Bird in the Bush

Karen Blackburn

We recently received correspondence from Mr. Earl Boggs, who reported observations he has made on his fifty acre farm in central Kentucky. Mr. Boggs writes, "I have made numerous wildlife plantings in the last several years and have encouraged the growth of native fruit-producing species that I know are suitable for birds. It has been my experience that, in this area, bluebirds are most attracted to mulberries (*Morus* spp.), Black Cheries (*Prunus serotina*), Pokeweed (*Phytolacca americana*), Smooth Sumac (*Rhus glabra*) and Amur Honeysuckle (*Lonicera maackii*)."

With the exception of the latter species, all of the above-mentioned plants have been featured in previous issues of *Sialia*. Amur Honeysuckle, sometimes referred to as "Rem Red Honeysuckle," is a shrub that may reach a height of 12 ft (3.64 m) at maturity. Its white flowers are followed by red fruits which ripen in the fall and persist throughout much of the winter. As Mr. Boggs notes in his letters, it is a useful plant for wintering bluebirds and many other species. He has observed American Robins, Northern Mockingbirds, Northern Cardinals, European Starlings, House Finches and Eastern Bluebirds feeding on the fruits of Amur Honeysuckle. I believe that Mr. Boggs is to be commended for his efforts in preserving dozens of species of native plants as well as further enhancing his property with a wide variety of plantings for wildlife. His goal, as we have so often recommended, is to have fruit available for wildlife throughout the year, particularly in the late months of winter when food supplies begin to dwindle.

At this point, I would like to emphasize that it is not necessary to possess a large piece of property to achieve such a goal. Over the years, I have received a number of letters from readers who are discouraged in the belief

that their city lots are too small to attract birds. Yet birds will seek out a well-landscaped yard which provides the necessities of shelter for nesting and roosting, sources of food, and a water supply, if only a simple birdbath. Here in Marianna, wintering bluebirds in search of food are often seen feeding on well-planted city lots which commonly have a road frontage of only fifty feet. We have approximately three acres outside the city limits and have had hundreds of bluebirds arrive to feed on our Flowering Dogwoods (*Cornus florida*). Whether one owns hundreds of acres of land or a small city lot, there is always the potential for attracting birds, and there is almost always room for improvement. With proper plant selections, even the small city lot can succeed in attracting a greater variety of birds. City dwellers may wish to join together with neighbors and order large quantities of fruit-producing plants from mail-order nurseries. When these trees and shrubs are planted in adjoining yards, the effect of a wildlife oasis can be achieved in the midst of a bustling city. Habitat improvement is not just "for the birds"; the beauty, color, and sense of serenity that plants add to the human environment is an added bonus for all to enjoy.

We thank Mr. Boggs for his detailed letters, and to him and to all of you who are dedicated to improving wildlife habitat, we offer our encouragement and say, "KEEP UP THE GOOD WORK!" ■

We welcome all reports of plant use by wildlife. 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 observations were made. Send your reports to Karen Blackburn, Rt. 3, Box 650, Marianna, FL 32446.

PLANTINGS FOR BLUEBIRDS AND OTHER WILDLIFE

Brambles: A Choice Summer Food

Karen Blackburn

The general category of brambles encompasses a great number of plant species in the genus *Rubus*. Raspberries, dewberries and blackberries are among the more familiar brambles which occur throughout most of the United States and Canada. Appealing to over one hundred and fifty species of birds and mammals, the brambles, as a group, are highly-rated as a source of summer food for wildlife. The thicket-forming species also provide good nest sites and protective cover for wildlife.

American Blackberry (*Rubus allegheniensis*)

Native Range—New Brunswick to Minnesota, south to Maryland, Missouri and northern Georgia.

Hardiness—Zone 2.

Habitat—Forest borders, old fields, along fencerows and roadsides.

Habit—A deciduous shrub with erect or arching canes to 8 ft. (2.44 m) in height. Angled canes are armed with stout thorns. Often forms thickets. The compound leaves are composed of three or five toothed leaflets.

Fruit and Flowers—White flowers, approximately 1 in. (2.54 cm) in diameter, appear in small clusters in late spring. The sweet, black fruits ripen during the summer months.

Landscape Value—Thicket-forming habit makes American Blackberry a good choice for naturalizing. Also useful for erosion control.

Culture—Plant in full sun. Prefers a deep sandy loam soil with a good moisture supply, but will grow on drier sites. Propagate by transplanting suckers or by tip layering. When transplanted, plants should be dormant and cut back to ground level.



Wildlife Value—As a group, common brambles provide a valuable food source for wildlife during the summer months. The fruits are a choice food for a great many birds including the Wild Turkey, Ruffed and Sharp-tailed Grouse, Northern Bobwhite, Ring-necked Pheasant, Band-tailed Pigeon, American Woodcock, Northern Cardinal, Gray Catbird, Yellow-breasted Chat, Fish Crow, Black-headed, Pine and Evening Grosbeaks, Blue, Steller's and Scrub Jays, Northern Mockingbird, Orchard and Northern Orioles, American Robin, Scarlet Summer and Western Tanagers, Brown and California Thrashers, Cedar Waxwing, Tufted Titmouse and Veery. Dozens of other

birds, including Eastern and Western Bluebirds, also take the fruits. Dense thickets provide nest sites for many birds, including Willow and Alder Flycatchers, Northern Mockingbirds, Gray Catbirds, Brown Thrashers, White-eyed Vireos and Yellow-breasted Chats. Thickets also offer protective cover for many other birds as well as mammals. Raccoons, squirrels and chipmunks are among the many mammals which

feed on the fruits of brambles, while the leaves and stems of the plants are of great appeal to rabbits and deer.

Special Uses—The fruits of American Blackberry are sweet and edible and are often used to make jam or as an ingredient in baked goods. ■

Rt. 3, Box 650
Marianna, FL 32446

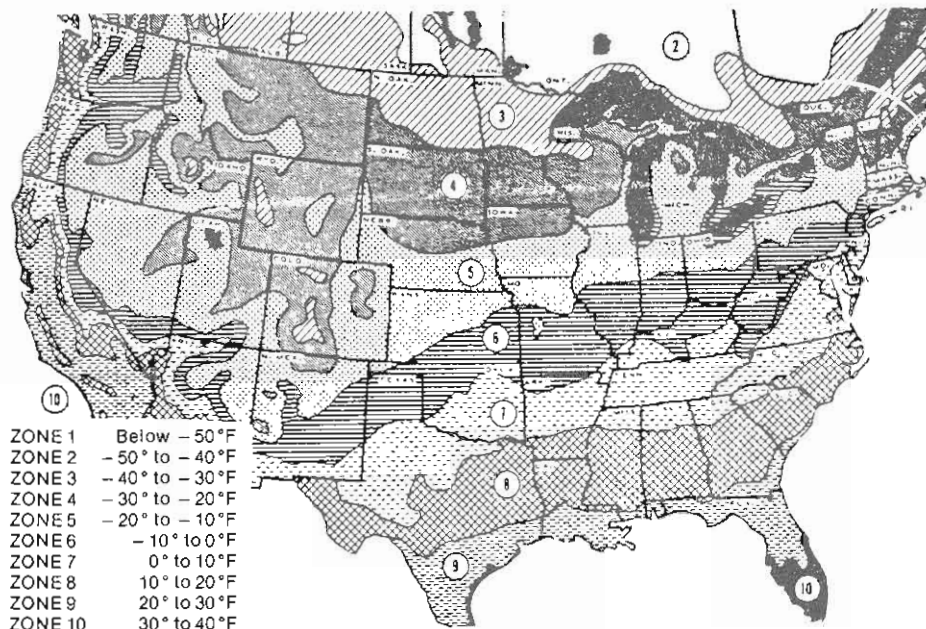


Figure 1. Hardiness Zones for the United States and southern Canada. Temperatures for each zone are the average annual minimum temperatures. When no zones are mentioned with the plant description, plants are hardy anywhere. Factors within zones such as altitude, exposure, soil type, moisture, etc. can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

(QUESTION CORNER—Continued from page 98)

6 inches below the bottom of the entrance hole and the depth of the hole with the guard attached is at least 2 inches, provided that the nest itself is not abnormally deep.

It is quite possible that bluebirds would accept your boxes a little more readily without the guard, but the guard should not deter them from using the boxes, and the birds would be much safer with the guards if there are raccoons in your area. ■

Trail Directory Additions

If you have monitored a trail of 50 or more boxes for three years or more and would be willing to offer advice, tours, or a site for research give us your name, telephone, address, time tours would be possible, and the county, city and state where your trail is located.

Mail above information to Bluebird Trail Directory, NABS, Box 6295, Silver Spring, MD 20906-0295.

An Easier Way to Build Nesting Boxes

Frank D. Browning

I have come up with a method of building bluebird boxes which has several advantages. While the construction technique may look like a long complicated procedure, it is not. It is very simple. Much of this article describes in detail things that take less time to do than to describe. Probably you could do the whole thing just by looking at the photos. A hollow box or module is constructed of square cut lumber and then one saw cut makes all the angle and tilt cuts at once, separating the module into two nearly completed nesting boxes. The saw work is greatly simplified, the marking of pieces is minimized, assembly is a lot easier, and the fit is always perfect. While I use a bandsaw to make the angle cut, I would still use the same method if working with hand tools and have even used it in building a single box out of scraps.

PATTERNS

If you are making more than one or two boxes, the patterns will save you a lot of time, a lot of thinking and maybe some mistakes; also, they will be ready next time without having to do it all over again. Mine are of 1/4 inch [see construction diagram for metric equivalents] plywood; most anything will do. The dimensions shown outside each pattern are for making it, those inside are marked permanently on the plywood with felt-marker for information. Once you make the patterns you never need to make measurements again.

PIECES FOR THE MODULE

First rip to proper width (you can set the rip fence with the pattern) lumber for the sides and front/back. Here I get 1x10 for 2 sides and 1x12 for 2 front/back and rip them to 4 inches wide for the sides and 5 1/2 inches for the front/back. The stock is lumberyard dimensions, the actual thickness is 3/4 inch.

As to length, it depends on how many you are making, available lengths, ease of transporting the lumber, etc. The pieces are now marked for length with the patterns and cut. Mark both front/back the same and use a heavy marking pencil. I make the 1 1/2 inch hole with a power holesaw bit, cutting halfway from one side, then turning the piece over to finish the cut. This makes a neater hole. The 3/16 inch hole size is not critical but about right for a mounting screw. I install screen "ladders" under the entrance holes at this point.

MODULE ASSEMBLY

The module is built with either front/back nailed along one edge to one "fixed" side. The second front/back is nailed to the opposite edge of the same fixed side piece but with the hole positions reversed. That is, in each case a 1 1/2 inch hole faces a 3/16 inch hole. In nailing, I use the pattern to mark the holes and a 7/64 inch drill to predrill the holes. This may not be necessary, but all holes then are exactly right: the nails go in straight and the wood is less likely to split (also I don't have to think each time where to nail). This then gives you a U-shaped open box with two front/back nailed to the same fixed side. Now the remaining side piece is set in place—this is "door" side that makes the swing-out doors on the finished boxes which must be nailed only according to the nail pattern marked "DOOR SIDE NAIL." You end up with only four nails into this side piece. You may be surprised to see that both front/back are marked the same with the pattern. Now turn the module so a side is up. Draw a diagonal line across it from the "FINAL SAWCUT LINE" on one front/back to the same line on the other front/back. Do the same on the opposite side. This is the time to stop and carefully check what you have done. Each large hole should be opposite each small hole.

The front/back should be solidly nailed to the same fixed side and there should be only four nails into the door side. If everything is done right, there is no chance of a nail penetrating anywhere near your final sawcut line which is very important.

FINAL SAWCUT

The one cut through the marked diagonal line is now made with the module on the saw table with a side up. You now have two nest boxes requiring only roofs and floors. In making the cut, I actually saw along a slight arc about 3/16 inch off the line at the center into one box and later repeat the cut on the other to provide a ventilation slot. It saves another complete step.

COMPLETION

The patterns for floors and roofs may seem unnecessary but again I find it easier to do it once and for all. The floor is inserted so as to be about 1/4 inch up in the box and is nailed in place. Be careful not to nail the swing out door to the floor—it is easy to do by mistake. The roof I cut with the angle shown for a nicer fit at the top. Here again I mark and pre-drill for the nails and, again, be very careful not to nail

into the door. As with any plan using an outswinging side door, use a loose fitting nail at the bottom to hold it closed. By now you realize this box has no projecting pieces top and bottom for mounting. This has been done to eliminate end-grain exposure with resulting early weathering, splitting and deterioration. It probably uses just about minimum lumber for a box. The piece of aluminum flashing folded over the top of the roof keeps rain out of the box, but it is primarily to keep it out of the exposed edge of the roof piece. The box is mounted with a #8 by 1 1/2 inch brass Phillips head screw through the predrilled hole using a screwdriver through the 1 1/2 inch entrance hole. Then I drill a hole at an angle through the bottom and back into the post for a second screw. For box assembly I use 16d galvanized nails—they hold better and don't rust. Anyone building a lot of boxes may find it worthwhile to extend this method to building a box the full length of the available lumber and then making alternate diagonal and square cuts, but in my small work area it is too cumbersome. ■

R.F.D. 1, Box 156A
Morgan Bay Rd.
Surry, ME 04684

(photographs and diagrams on following pages) →

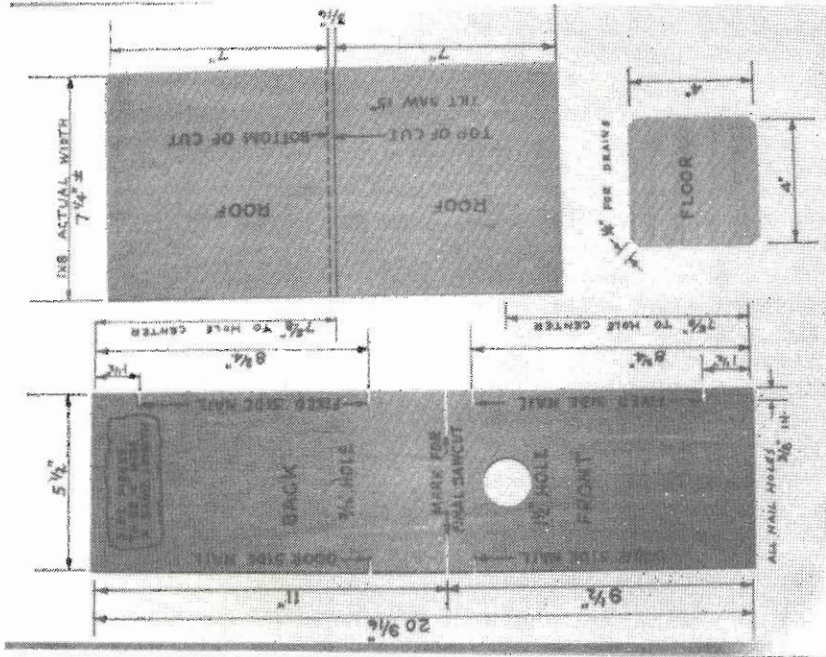
SENIOR DUES TO RISE JANUARY 1, 1989

Due to the continuous rise in printing and postage expenses, the Board of Directors has found it necessary to raise the dues of Senior Citizens (over 60). The new rate of \$10.00 per year will go into effect January 1, 1989.

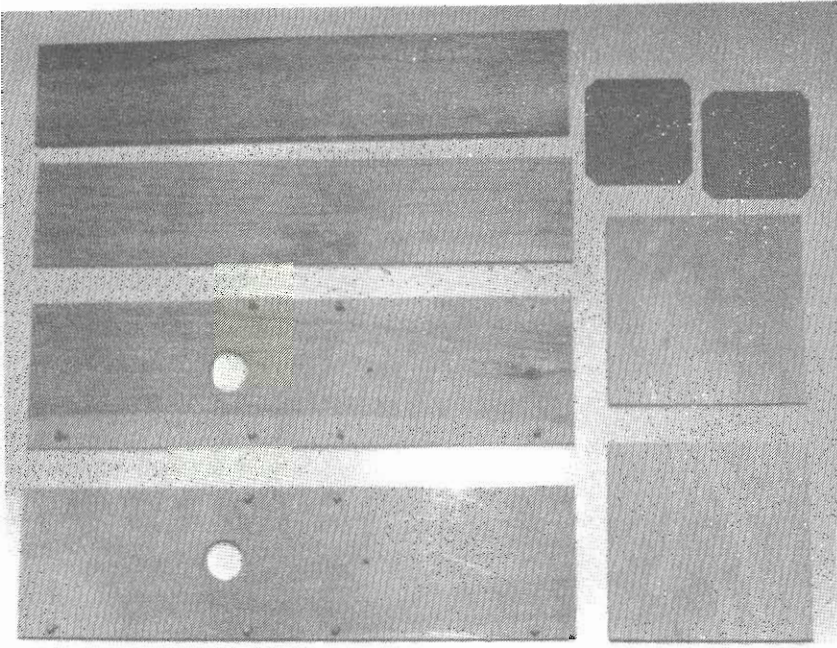
We greatly value the membership and participation of the Seniors and the Board had hoped to avoid an increase of dues for them. The Seniors play a vital role in the continuing success of the North American Bluebird Society. Not only is their help at headquarters indispensable, but also hundreds throughout North America help spread the word on bluebird conservation.

—Sadie Dorber, President

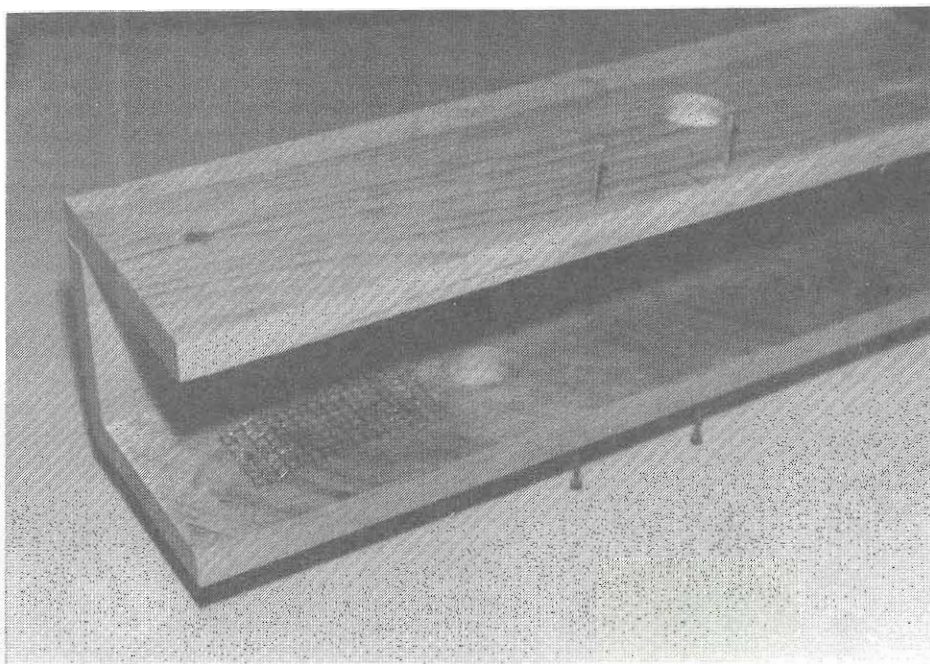
Steps to Follow in Constructing Modular Nesting Boxes



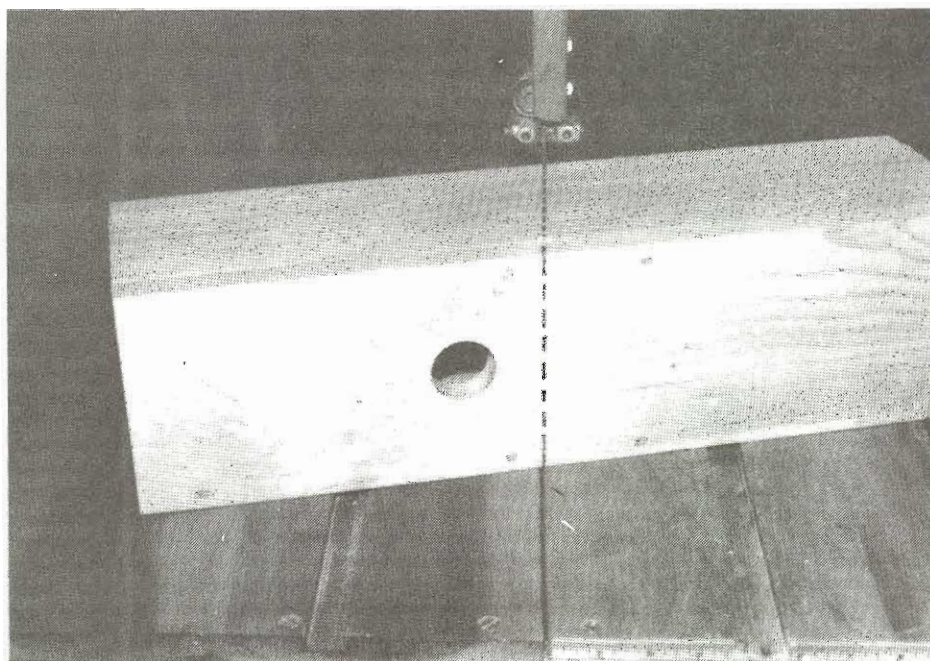
1. Patterns for all the box parts (construction diagram follows photographs).



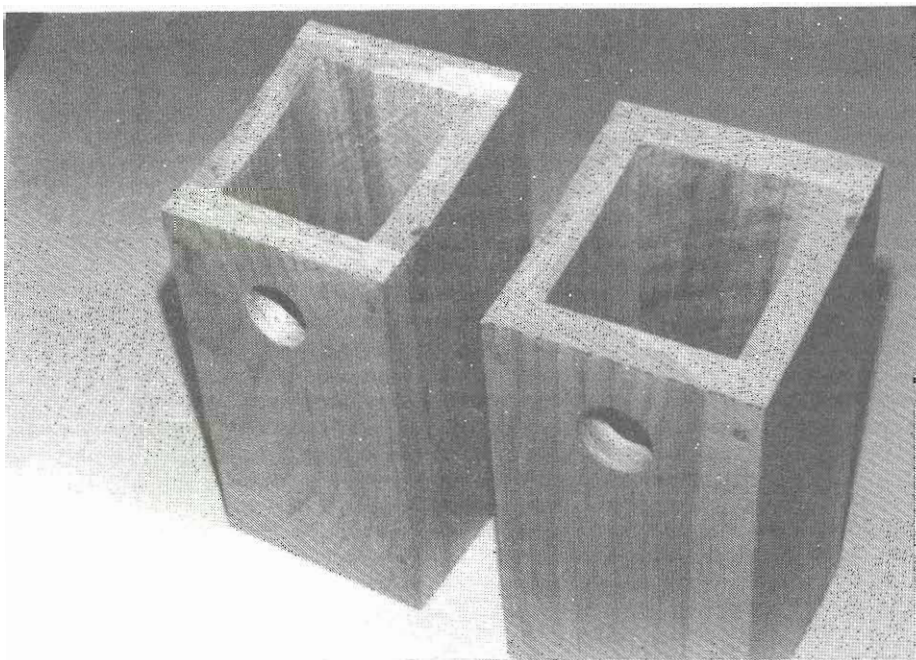
2. Complete parts for a 14x8-inch box module.



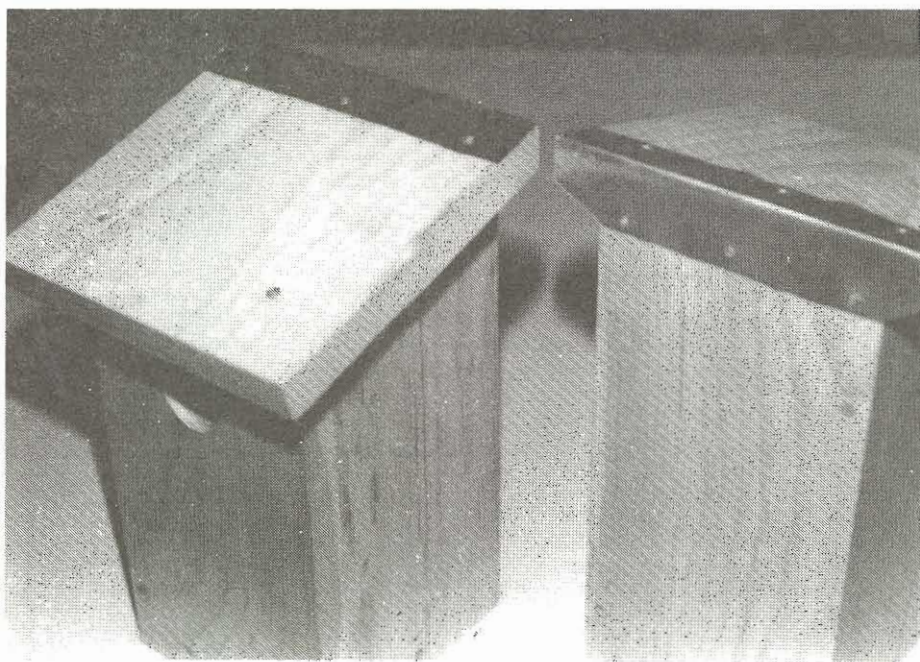
3. Module nailed together except for door side. Note nails and holes.



4. Beginning of cut to separate the two boxes.

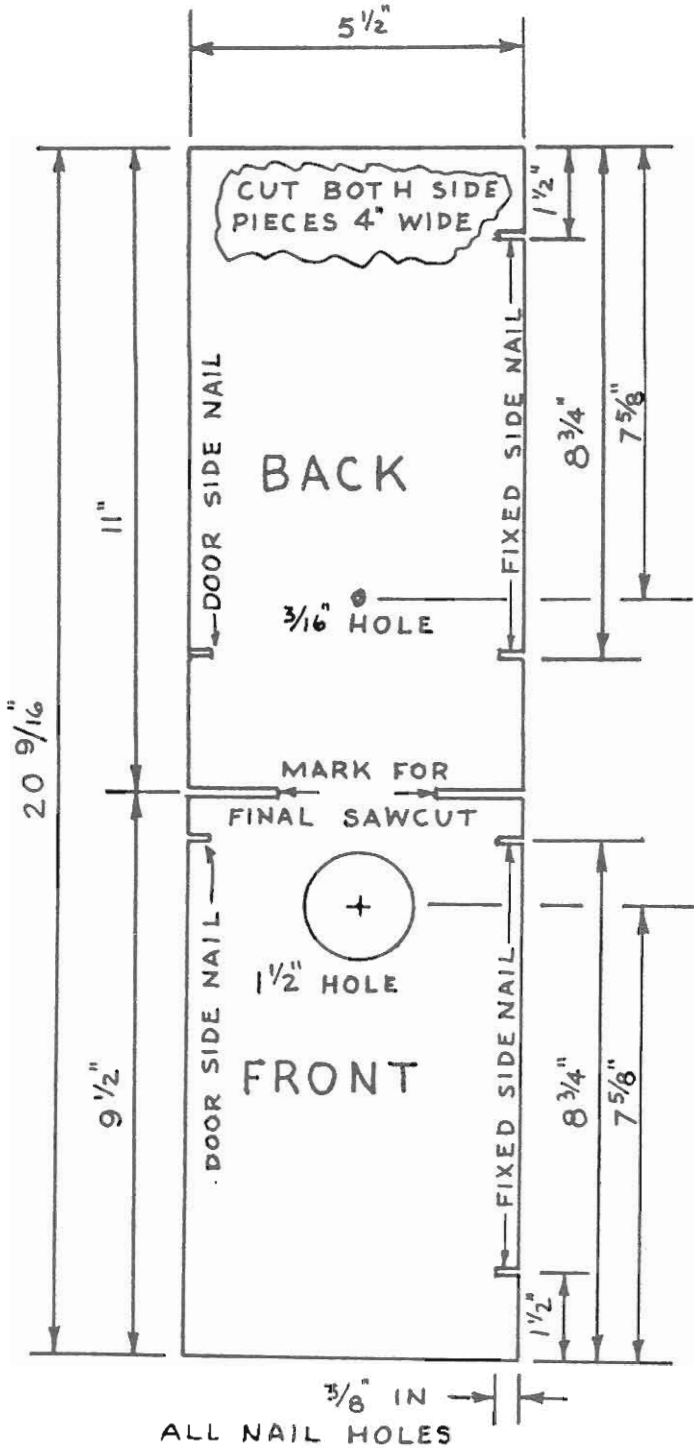


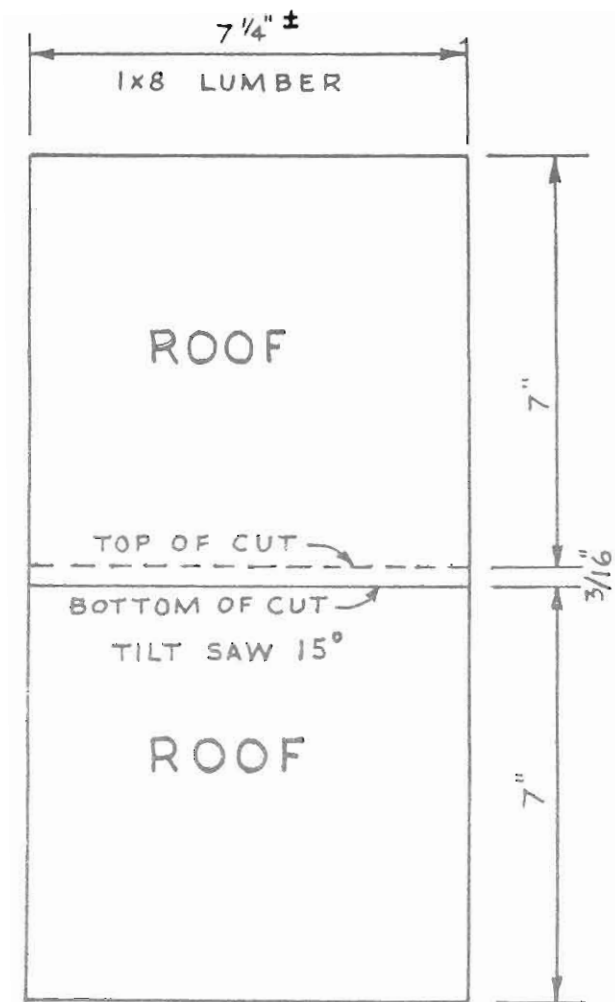
5. Module sawed into two parts.



6. Completed boxes.

PATTERNS

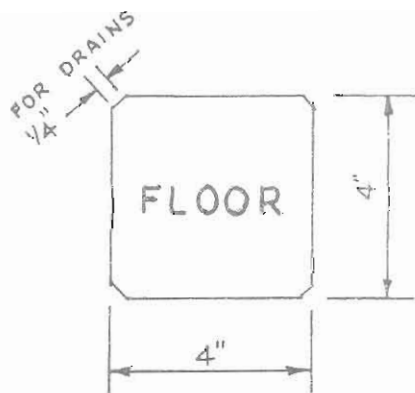




Equivalents

Inches
 7/64
 3/16
 1/4
 3/8
 3/4
 1 1/2
 4
 5 1/2
 7
 7 5/8
 8 3/4
 9 1/2
 11
 20 9/16

Cm
 .28
 .48
 .64
 .95
 1.90
 3.81
 10.16
 13.97
 17.78
 19.37
 22.23
 24.13
 27.94
 52.23



All photographs and diagrams by Frank D. Browning

Vic and Eleanor Mars

Jerry Newman

This column has been established to recognize the efforts of some of the Bureau's speakers and to bring to print some of their thoughts and projects so that others might be inspired and given ideas in bluebird conservation.

The first speakers I want to recognize are the husband/wife team, VIC & ELEANOR MARS of Pillager, Minnesota. They are retired and live in Sylvan Township about eleven miles West of Brainerd. They have been active bluebirders for over four years, but are fairly new on the speakers circuit. They belong to NABS, the Minnesota Bluebird Recovery Program and the Bee-Nay-Shay Bird Club of Brainerd. They've attended seminars, workshops, and conferences throughout the Midwest relating to bluebirds.

When they sent in their Speakers Bureau Report in December 1987, they had already lined up eleven towns in which to hold their workshops during the first two months of 1988. I think their approach is rather unique in that they put on two workshops in each town, one in the afternoon and the other in the evening. They rely upon paid advertisement in the local newspapers to stimulate interest. Vic says, "We are investing dollars in promotion, advertising, meeting space rent, visuals, and building materials to say nothing of time and mileage to get the word out and to motivate others to establish trails. The sale of bluebird house kits, completed houses and other bluebird memorabilia only helps defray the cost of doing this."

In 1987 they used the film "Bluebirds, Bring them Back," by Berlet; in the future they will be using both the Berlet film and some of the NABS slides combined with some from the Minnesota Department of Natural Resources. Also, as Minnesota residents, they are completely sold on the Peterson bluebird house which Vic builds and sells. Vic and Eleanor go on to say that they "do not do this for profit, though we would like to break even. So far we haven't, but we've had an awful lot of fun and met just a whole lot of nice people."

FOLLOW UP—The above article was written shortly after I received Vic and Eleanor's annual report. After their 11 town circuit, Vic responded to a letter of mine with the comment that "I've found people everywhere literally starved to learn more about bluebirds. We spoke to people from five to eighty-five and from pensioners living on Social Security to millionaires, from people who didn't know how to read or write to biology professors. We spoke in abandoned churches, executive board rooms, senior centers, high school cafeterias and lunchrooms, teacher's lounges and high school training classrooms and even Holiday Inn convention center rooms. In Bemidji [MN] it was -18 degrees, daytime, and wind-chill of -43 degrees and we had an almost overflow crowd in a Holiday Inn near their airport." He also said that they learned as much about putting on workshops as the people that came to them did about bluebirds. And finally he feels none of the bluebird organizations are doing nearly enough to get rid of the House Sparrow. "Instead of talking about controlling

(Continued on page 119)

Broome County New York Naturalist Designs Educational Material for Students

President Sadie Dorber was introduced to the bluebird "word find" when she was invited to join a field trip with a seventh grade class to install a bluebird trail at Hawkins Pond Nature Area.

Christine Leahy, a naturalist for Broome County [NY] Parks and Recreation, developed the Life of the Eastern Bluebird Word Find for students in the fourth through seventh grades. ■

Finch Hollow Nature Center
1428 Oakdale Road
Johnson City, NY 13790

THE LIFE OF THE EASTERN BLUEBIRD WORD FIND

DIRECTIONS: As you read about bluebirds, circle the 36 words typed in CAPITAL LETTERS. These words are hidden in the puzzle below. They may be spelled forward, backward, up, down or on the diagonal. Have fun!

Have you ever seen a BLUEBIRD? Most young people have never seen the official NEW YORK State Bird. Once very common, today bluebirds are THREATENED, which means they cannot find enough suitable HABITAT (places to live and raise young). The aggressive ENGLISH SPARROW and STARLING take over nesting areas once held by these gentle birds. PREDATORS such as a RACCOON or SNAKE may eat the eggs or young birds. When people use PESTICIDES to kill INSECTS, bluebirds have less to eat. Pesticides in a bird's body may cause the bird to lay very thin-shelled eggs which break before the chicks can fully develop and hatch.

Bluebirds make their homes in FIELDS, open ORCHARDS, golf courses, and even backyards! A NEST is built in a CAVITY (or hole) in a wooden fence POST or DEAD TREE located in open country. When the nest, made of GRASS, is finished, the female lays a CLUTCH of as many as SIX eggs. The baby birds begin to hatch in MAY. After the first BROOD (group of baby birds) leaves the nest, the parents may raise one or even two more broods.

Often confused with BLUE JAYS, bluebirds, with their RUSTY-colored chest feathers, look more like their cousin, the ROBIN. Most bluebirds MIGRATE south for the winter and are an early sign of spring when they return in MARCH. Listen for the musical SONG they perform for all who tune in!

How can YOU help these troubled birds? If you live near a field, build a nest BOX, without a PERCH, and give bluebirds a home. Some people build many boxes and make a bluebird TRAIL. These homes might also attract WRENS and TREE SWALLOWS! By planting BERRY bushes and putting ground SUET in your feeder, you can provide early spring and late fall food for bluebirds. Also, share with others what you know about bluebirds, and maybe they will want to help, too!

S T S O P E S T I C I D E S K A B
 S B C E F J W D U T X Y C F S J B
 O P E R C H U H R B S N E R W C L
 N T L K J E I X H A X F E O O D U
 G B E Y T A T I B A H I Q B L R E
 C L O U N E W Y O R K C S I L D J
 E U T X S V T W K Y Z S R N A E A
 G E N G L I S H S P A R R O W N Y
 N B A B V C D S E R F M R H S E S
 E I M A R C H D G I S N A K E T B
 S R C S G N I L R A T S C B E A Y
 T D E A D T R E E K C D C E R E T
 I S E T A R G I M J E O O R T R S
 M C L U T C H F B K S O O R L H U
 R P R E D A T O R S N R N Y M T R
 X W Y Z L I A R T G I B G P K J L

STATE BLUEBIRD ACTIVITIES

Jerry Newman, Chairman of the NABS Speakers Bureau, would like to receive information relating to cavity nesting birds that is sponsored by the individual states/provinces or organizations within a state/province that cover more than a local area. In most states/provinces the Dept. of Natural Resources or Dept. of Conservation is working to restore or increase its natural wildlife heritage and welcomes the help of local residents. Some examples of sponsoring organizations are the Bluebird Restoration Association of Wisconsin, Bluebird Recovery Program of Minnesota, Mountain Bluebird Trails, and Upstate New York Bluebird Society. Please send all information including address to Jerry Newman, PO Box 53, Rising Sun, MD 21911. Shown below as a sample is a summary of efforts by the state of Illinois.

ILLINOIS

The state of Illinois publishes a booklet titled "Wood Projects for Illinois Wildlife." This 34 page booklet is designed for the person who enjoys making things and who wants to attract wildlife to his backyard or property. The booklet contains plans for homes and feeders for birds and mammals. They also publish a booklet entitled "Your Bluebird Diary" and a brochure entitled "Help Bring Back Our Gems of Blue."

The Natural Heritage Section of the Illinois Dept. of Conservation has established a network of people throughout the state who volunteer time and effort toward reestablishing bluebirds in Illinois. The Section holds bluebird workshops each year throughout the state to show people how to build bluebird boxes and put up bluebird trails. For information on any of the above, contact the Illinois Dept. of Conservation, Forest Resources and Natural Heritage Division, 524 South Second Street, Springfield, IL 62706. The Natural Heritage Section consisting of 13 biologists is also a part of the NABS Speakers Bureau. ■

NOW YOU SEE IT; NOW YOU DON'T (THE BLUEBIRD BLUES)

Alicia Proctor

"Maw, I have some b-bad n-news for you," stammered Father Bluebird executing a wobbly landing onto a low-lying sweet gum branch jutting over the water. Mother Bluebird occupied the adjoining branch where she sat fluffing her gentian blue feathers with her beak, revelling in the coolness of the shady spot on that very hot June afternoon.

"I'm not in the mood for one of your bad jokes, Paw," she remarked dismissively. She continued her leisurely preening. Her already round body became even more rotund as she took in deep, satisfying breaths. She had enjoyed her cool dip in the lake earlier.

"It's no joke," he countered in agitation, almost falling off his perch. "It's really bad, I tell you."

"All right, all right, out with it then," she condescended, cocking her small head to one side, eyeing him surreptitiously and wondering, at the same time, why he wasn't guarding their egg-filled nest.

He dreaded having to tell her. He took a deep breath, gulped involuntarily and blurted, "The nest is gone."

"Gone? What do you mean, 'the nest is gone'?" she screeched, shifting her position so abruptly that both birds almost lost their balance. "You were supposed to be guarding it while I took a break, a much-needed break, I'll remind you. Seventeen days in that hot box was really getting to me."

"Let me explain. Okay? I had a clear view of the bird box from my perch on the telephone wire. Maw, I swear I only took my eyes off the bird house long enough to snatch a passing dragonfly. The next time I flew down to check, the nest was gone, gone, I tell you."

She eyed him suspiciously. "Have you been eating those wild red berries again, Paw? You know what they do to you. They really addle your brain, you know."

He denied that accusation vehemently.

Surely there was some mistake. She suggested that he look again, just in case ... Besides, she could use a few more minutes in her present refreshing surroundings.

He flew off obediently, hoping he had indeed erred. Perhaps the brightness of the sun had blinded him so that he was unable to see clearly inside the dark interior of the bird box. He disappeared from view in the blink of an eye.

Circling, circling he hovered over the box, shuddering fearfully before landing on the rim of the round hole that was the entrance. Nothing. His keen eyes saw nothing. Maybe if he went inside. No softness welcomed him; he merely felt the severe hardness of the wooden floor. No, the nest with its five exquisite, azure blue eggs was gone!

He reconnoitered the area, circling the immediate surroundings a few more times, stopping to peep into the box yet again to be certain....

(Meanwhile, the "people woman" of the ranch was admiring the beautiful eggs in their soft downy cushion of a nest. She placed the loosely-made nest in an empty cut-down oatmeal box, covered it with plastic wrap and prepared to package it for mailing. She smiled fondly, thinking how pleased her five year old granddaughter would be to "show and tell" at her kindergarten class. It was too bad the bluebirds had abandoned the nest. She wondered what had scared them off. All morning she had sat on the front porch watching and waiting to get a glimpse of the lovely parent birds, all to no avail.

She stepped outside for one more look. She stood in stunned silence, watching

Father Bluebird flying around and around, then peeping into the box that one last time. She was overwhelmed by the magnitude of what she had done. Father Bluebird flew off toward the lake and she swung into action.

Snatching the plastic wrap off quickly, she carefully extricated the loosely-woven nest from the oatmeal box and returned it to the bird box, no easy feat since the lax nature of the nest depended on the confining walls of the house to hold it together.

Returning to her vantage point on the front porch and heaving a sigh of relief, she waited for the birds' return, fearful that they might, just might reject the nest completely.

With great trepidation Father Bluebird flew back to the lake's edge to reiterate his earlier message to his mate. The situation was indeed calamitous.

Clearly the message unnerved Mother Bluebird. Her large eyes misted over; her proud head dropped, as did her glossy, finely-groomed wings at the thought of losing her babies, so close to being hatched.

Father Bluebird attempted to console her. They sat on a single branch, heads together, chirping softly and disconsolately.

Presently, they began to discuss their options. Should they begin anew in the old nesting box? Should they attempt to find a new one? Perhaps that would be best in light of the sudden disappearance of nest, eggs and all. On the other hand, good houses were hard to find this late in the season. The problem seemed insurmountable.

"Paw, let's investigate one more time," offered Mother Bluebird. She had composed herself and wasn't at all certain Paw hadn't been hitting the berries again.

Together they flew towards home, she leading the way, expectantly hopeful that her mate was wrong about the vanishing nest.

He landed apprehensively on the roof of the bird box, anxiously waiting Mother Bluebird's reaction when reality struck home. She was already peeping through the small entrance hole. What a pleasant surprise! She hopped in; all was in order: the nest, the eggs, the hot confining space. They were all there. He did it to me again, she thought.

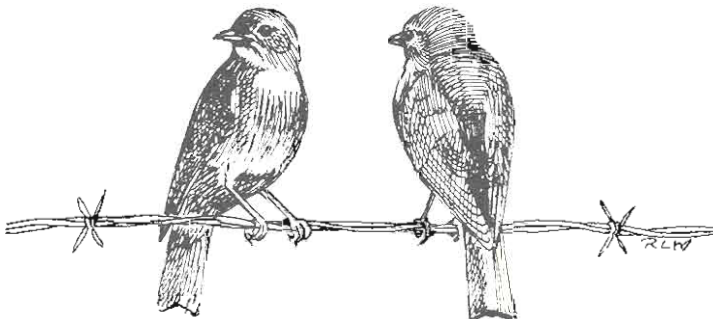
She joined Father Bluebird on the roof. Wings akimbo and with a fiery glare she scolded, "I really don't appreciate your idea of a joke at all, Paw. Or you lied about the berries."

Seconds later he confirmed what his mate had already made clear. The nest with its five shiny blue eggs was there just as it had been for the last seventeen days. He shook his head in disbelief. There was no plausible explanation, none at all, unless, of course, Mother Bluebird was indeed right about the berries.

The next day the news spread throughout the forest: Mr. and Mrs. Bluebird were the proud parents of five very ugly, gray-looking, all-head baby birds.

(The Blue Jay told the cardinal; the cardinal told the wren; the wren told the meadowlark and the "people woman" told the "people man.") ■

1504 S. Proctor Ave.
Mt. Pleasant, TX 75455



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:

Regarding the question posed by Andrew Hartley, Batesburg, SC [*Sialia* 10(1):22], I too found a dead skink in a bluebird nest. This was found in the nest three days after the nestlings fledged.

This nest box is located along an isolated road about 10 yards behind a five strand barbed wire fence. I have never had any human interference with the five boxes I have that are located behind this fence, so it appears that the skink was brought in by a parent bird and was not accepted by the nestlings.

Harry Krueger
Route 2, Box OR28
Ore City, Texas 75683

Dear Editor:

Since I wanted to determine whether there are bluebirders in this vicinity, I wholeheartedly approve of your inclusion of addresses with Bluebird Express letters. My 66 boxes are ready to go and my cooperating Scout troop with about 25 boxes has a titmouse tenant already.

Donald E. Yoder
2021 Ptarmigan Dr.
Walnut Creek, California 94595

A short item from the *Missouri Conservationist* was passed along. Earl E. Dolisi of St. James, MO, had a continuing problem with black rat snakes getting around a combination of stovepipe and an inverted funnel mounted just below the box. He purchased tack strips from a carpet shop and put a strip on the front and back of the cedar mounting post from ground to box. This combination has proved to be an effective deterrent.

Dear Editor:

I am a Boy Scout in troop 31 in Chadds Ford who recently completed a bluebird trail of 50 boxes for my Eagle project. I distributed an additional 30 boxes to Cub Scouts, friends, neighbors and the elementary school. I already have gotten three nesting pairs of bluebirds.

I showed the NABS slide program to my Scout troop and also talked to my brother's second grade class about bluebirds. I left them a box to keep and monitor. I also left a box and pamphlets at a garden club slide show on birds.

I am pleased to have helped in the growth of the bluebird population in my area of Pennsylvania.

Laird McCausland
Fairville Rd.
Chadds Ford, Pennsylvania 19317

Dear Editor:

Attached is a clipping regarding the project of Cub Scout Pack 280 to make bluebird boxes for sale to the public. The den mother, Mrs. Bob Hill, has spent a good bit of time getting interest aroused and doing research. Mr. James Thornton is providing the wood (as he has for years). We hope this project will keep the families interested and active in protecting the bluebirds.

Bluebirds are rather prolific in our area now, thanks to a Garden Club Council project of providing nest boxes and information initiated while I was Bird Chairman. Interest continues.

Laurie Jones
306 Hill Street
Washington, Georgia 30673

Dear Editor:

In regard to nesting site preference for bluebirds, I discovered a very interesting item at the Illinois Green River Game Preserve in Lee County.

At the preserve, I have a bluebird trail of 200 boxes which is now in its third year. At the end of the first year, I noticed a marked preference for sites on open posts away from trees. On the approximately four square miles of the preserve, there was not an abundance of fenceposts so I put in an additional 70 and transferred boxes to them from trees. I also used the horse trail signs which are placed on either metal or wooden isolated posts, often 50-100 yards to the nearest shrubs or trees. *I found that, in at least 9 out of 10 cases, these received bluebird nests!* The boxes on a tree—or within a few feet of a tree—9 out of 10 times did *not* have a bluebird nest. From 10-25 feet from a tree, the nesting ratio was about one in three.

If, on a bluebird trail, enough isolated posts can be found, there might be a bluebird occupancy record of 90%.

Jack Keegan
Box 463
Dixon Illinois 61021

Dear Editor:

Over the past 10 years my family and I have worked to keep the bluebird in our orchard. This year our diligence seems to be rewarded. Throwing out sparrow nests has reduced the sparrow population so now we have four boxes of bluebirds. Four young have flown and we are watching for eight more eggs to hatch.

It has come to my attention through reading the *Wonderful West Virginia* magazine that the Brooks Bird Club of Wheeling, WV, distributes informational packets on how to establish a wildlife sanctuary in your yard, farm, estate, etc. This is most appealing to my and may intrigue other persons interested in wildlife.

Arreta Jaranko
Rt. 1, Box 680
Shenandoah Junction, West Virginia

Dear Editor:

Our family provided 48 redwood bluebird boxes for the new Mahoney State Park in eastern Nebraska bordering the Platte River. We had had 30 boxes located in this area for the past six years and have experienced several nestings from these boxes. Just wanted to let you know, we are busy helping bluebirds in Nebraska.

Raymond E. Judds
RFD 1, Platte Vale Ranch
Ashland, Nebraska 68003

Dear Editor:

Please place bluebird boxes where there is little activity. Some people place boxes close to their houses where there is a lot of activity from children and pets during the spring and summer. This causes bluebirds to abandon nest and eggs. I know of two instances last year where a total of 10 eggs were abandoned because of excessive activity close to the boxes.

Mrs. Joseph Roberts
1207 E. Patuxent Dr.
La Plata, Maryland 20646

Bluebird Tales

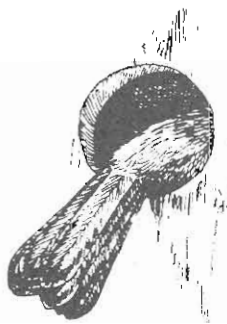
Mary D. Janetatos

"The second grade class [at Sioux Valley School, Linn Grove, IA] has undertaken a unique project. They are naming a stream! They are really excited to be able to do this. Native Americans and early explorers were the [only] ones to have this privilege...." Their teacher, Mrs. **Diane Noll**, guided this delightful enterprise. Thus, the stream running through the farm owned by Diane and her husband, Keith, became "Bluebird Creek" on April 14, 1988! Class members **Joni Nelson** and **Melissa French** kept NABS informed of the details. Nest boxes were being erected when the second grade became aware of the unnamed stream.

Another unique item was the report and photographs from **Dennis Caldwell** of Waynesville, NC, who wrote. "*I am joining your club. I'm past 80 years old. I am sending you all two pictures taken this year. For 18 years I have used these concrete boxes I make myself. I find they are better than any wooden box made. I have two regulation wooden boxes for bluebirds and only one time in 18 years have they built in one of them, and after one hatch they moved 15 feet to a concrete box and raised another brood. I also have three hollow log boxes and they have never used them. I can make one from scratch in 20 minutes and they will last a lifetime; in fact, the older they get, the better they are.*"

To continue the litany of the unusual, if not unique, in Bermuda, **Tommy and Angela Outerbridge** battle Tommy's paralyzed condition and manage to "get the school kids to BEAM (Build, Erect And Monitor) their own boxes." Tommy has been re-elected president of the Bermuda Bluebird Society and soon faces an operation in England where he must stay for six months in post-op. Our hopes, prayers and messages of cheer follow you, Tommy! You are truly an inspiration to those whose lives you touch!

Dick Williams, from East Moline, IL, wrote: "I had a rare privilege last evening that I need to share with bluebird friends. I had been invited by an Orion, IL, Boy Scout troop to present the NABS slide show at their meeting. One of their members, **Matt Litchfield**, age 13, has been busy all winter and spring building bluebird houses. He has made 110 houses and hasn't yet ever seen a real live bluebird in his young life! How is



that for extra effort and determination? In fact, he will receive his Eagle Scout badge sometime this summer for this outstanding effort. Several adults also were in attendance last night and are excited about helping Matt select proper locations, etc. Enclosed is my check for \$7.50 for a NABS membership for Matt. I had an extra NABS logo patch which I presented to him during the meeting. His fellow scouts were 'all eyes' over the patch. Isn't this a neat story?" Our congratulations go to Matt also, and I hope he tells us when he sees his first bluebird!

Thomas Baran, teacher at Emmitsburg [MD] Elementary School, reported that NABS Speakers Bureau member **Lucille Beale** aided the Special Education Students in constructing a nest box for the school property.

Marlon "Shorty" Brewer, of Cherokee, IA, claims to be "Caretaker of 100 Bluebird Boxes," and uses NABS' logo on his QSL card which confirms contracts made on ham radio. In his words, "...of 350 eggs laid in '87 we fledged around 250. I'll bet that I have gotten half a dozen started on bluebird trails by the use of my ham radio."

The most recent "blockbuster" article on bluebirds ("A Bird in the Helping Hand") was written by **Art Gingsert** of West Cornwall, CT, and appeared in the May 1988 issue of *Country Living* magazine.

As a result of reading this article, **Mrs. George Maxwell** of McComb, MS, wrote, "...Last year I raised three after the 'Mom' and 'Pop' were either killed or had deserted them. It was quite an experience and I thoroughly enjoyed it. Our Homemakers Club and our Telephone Pioneers (both of which I am a member) have been promoting bluebird trails for the past several years."

Al Johnston, of Cherokee Village, AR, tried to arouse the competitive spirit when he claimed: "We aim to be the Bluebird Capitol of Arkansas." In 1987, the third season of the Spring River Sportsman's Club

bluebird activity, club members had 44 boxes up and reported 256 young birds fledged.

They have quite a way to go, for the latest Bella Vista, AR, communique from Loo Robeberg stated that "Our Bella Vista club continues to grow and prosper—over 150 members now with a 30 mile trail and 220 boxes. Our village is a retirement community of mostly northern people who are so anxious to learn all about the bluebirds as very few of them have ever seen one before—they attend our meetings full of questions and enthusiasm. At yesterday's meeting we signed up 16 new members. Our enclosed donation is for 'Fledgling Bluebird Boosters'."

Christine Ammons, of Union Mills, NC, is leader of the Betsy Ross 4-H Club and entered their "Help the Bluebird" project in the "Keep North Carolina Clean and Beautiful" annual competition. Christine was informed that the project was named in the top three winners in the category of "Operation Clean and Beautiful 1987." She was granted permission to use the "starling" slide from NABS' slide program, which she incorporated with her own slides and showed at the seminar and awards luncheon. Another active Speaker's Bureau member—keep it up, all you Speakers!

Among bluebird organizations continent-wide, the Bluebird Restoration Association of Wisconsin [BRAW] continues bluebird assistance by media advertising to locate people with suitable habitat who are interested in having bluebirds nest on their property. I believe I am acquainted with a few people who would gladly relocate to such property just for the privilege of having bluebirds nest nearby! However, Don Kopff and Jim Kronenberg of Dodge County, WI, offered free nest boxes to people who qualified with the proper habitat.

The State of New Jersey has joined the many other states which are providing an educational program for their citizens regarding bluebirds and other native cavity nesting birds.

In a letter recently received, Patricia Wyzga of the Hackensack [NJ] Meadows Environment Center wrote, "Enclosed you will find an order for a NABS teaching packet. We are holding a workshop for the public about bluebirds on April 16 that will include a nest box building session. Junlus Birchard was originally scheduled to lead the program for us. In memory of him we are continuing with the program, but we need to quickly gather what information we can about bluebirds."

From Homer City, PA, **Charles Reichel**

wrote saying he is an employee of the Pennsylvania Game Commission for the Land Management Division in Indiana County. In three townships they have boxes which they clean, maintain, and with which they share the joy of bluebirds with others. In order to hold the side doors shut, they use a slant nail in the front and side door. Perhaps others not yet doing this could use this hint? **Helen Muniz** of Mountandale, NY, told of hand raising three orphaned bluebirds, one of which survived. She took it into the woods to release it, and said that the sparrows helped it survive! The bluebird returned with sparrows and about 30 bluebirds and then flew away. I wish sparrows were more "helpful" in their nesting habits as well!

From Dallas, TX, **Rosalie Cutrer** wrote, "My friend and I do birdwatching courses for Jr. Colleges Continuing Education Departments, and other programs. The folders you sent will be used next week at Holly Lake Ranch, Big Sandy, TX, where we give a program for the community's Women's Auxiliary." **Sally Tyner** wrote in April, "This past February, on an icy Sunday afternoon, I observed eight bluebirds gathered around my birdbath. I was completely fascinated by the beauty of these birds. They have not returned to my yard since that time. Please forward some informational material about this striking creature whose song turned a dreary, cold day into a memory." Once again a Telephone Pioneer wrote—from Rocking R Ranch in Jackson, TN. He said, "Highway 70 (the original Broadway of America) extends coast to coast and runs throughout Tennessee. We plan to stimulate enough momentum to make a bluebird trail of this old highway."

Lamar Weller of Dalmatia, PA, wrote in March, "My husband and I are avid bluebird watchers. We never had bluebirds in 20 years that he lived here until three years ago. So my husband started building bluebird houses—six of them. Well, now we have 24 houses and do we ever have bluebirds!"

Patricia Soose of Butler, PA, said in a February letter that she really enjoyed the NABS 10th Annual Meeting. She also told this plaintive story: "I had a flicker attracted to my boxes last year. I had put up a suitable flicker house, but then the starlings found it and the flicker eventually left. I finally had to take the box down to keep the starlings from using it. Later, toward the end of May, my husband and his brother were cutting firewood not very far from here. You can probably guess what happened. One of the trees they cut contained

a nest of newly hatched flickers. I wish tree cutters would think to thoroughly look before they cut." From New Hampshire, Carole St. Onge wrote as a result of reading the previously mentioned *Country Journal* article: "The article was very interesting. I'd like to make a note to you about bluebirds. I lived at one time in the town of Barnstead, NH (approximately 60 miles from the White Mountains). Each spring and only for one day my yard would be covered with bluebirds. The ground was actually blue. Truly a beautiful sight. They must have been in transit to another place because this stop was only for one day, but a day our family anticipated each spring."

The same article inspired Frank M. Ward of Walton, NY, to write, "...I have reclaimed the fields and landscape of an old abandoned farm of 60 acres. Approximately 15 are fields with the rest wooded. The article appeared in time to prevent me from cutting down and removing the dozen or so very old, decaying apple trees in the old orchard on one side of my property; I had no idea that they were a favored site for bluebird nesting. I will leave the old trees there and plant the new orchard in a different location." So you see, Art, what wonders your article is producing! From Hiram, OH, Elizabeth Hyde Siman told us that she heard

about NABS through a presentation by Sue Cook at a "Winter Snow—Out We Go" presented by Akron [OH] University and the Ohio Conservation and Outdoor Education Department; she also wrote, "I saw my first bluebird just the other day. He was sitting on a snow-covered branch fighting furious flurries. It's a sight I'll not forget."

On the telephone, many callers have questions—Sue Wylie recently called from Drayton Plains, MI, and told of her hope to write an article for an English class on an endangered creature. Sue said she's rather do the article on bluebirds than on the rhinoceros! And with greater effect, I think, Sue, because with such interest as yours, the bluebirds will avoid endangerment as well as extinction!

Intense, sympathetic interest with regard to the bluebird was manifest in the following note from a *Country Journal* reader, Paul Klam of New York City—yes, the Big Apple! He said, "I did not have one-half dollar so I'm enclosing a whole dollar. Please use the extra one-half buck to take a bluebird to lunch. P.S. I'm glad there are people like you!"

And WE'RE glad there are people out there like you, Paul, who are susceptible to the bluebird's plight and decide to get involved—in the wonder-filled world of bluebirding! ■

Sequel to the Unsuccessful Success Story

William C. Harris

You might think we would have nesting bluebirds by now, either on our property or modest bluebird trail. But no, nary a one!

We *can* boast that chickadees, nuthatches, wrens and Tree Swallows built nests in our bluebird boxes. On a still brighter note not one pair of House Sparrows nested on our property this year. Furthermore, upon scanning my wife's daily sightings of birds in her log book, I find House Sparrows scarce in the winter. Even in February we counted between 12 and 18 species of birds at our numerous feeders; some days the House Sparrow doesn't appear on the list.

If you think we can take all the credit for the reduction of House Sparrows, we can't! Instead, we find num-

erous flocks of them in certain parts of the park. Why? Because whole slices of bread are being thrown on the ground for the pretty "brown birds," the starlings, and the Rock Doves. So, one way or another, the little brown bird continues to multiply.

On a happier note, I'm pleased to report a successful fledging this year of Western Bluebirds. Last year I "smuggled" a couple of bluebird boxes (knocked down) into my suitcase when we went to California to visit our son and family. I nailed the boxes together and put them up. This spring Western Bluebirds took over a box and young bluebirds did emerge. (No count—poor monitoring!!!)

I will let you, the reader, judge if this next episode is a success story of

not.

At one of our winter bird club meetings, a young lady we knew won a bluebird box. The next weekend she nailed it to the side of her brand-new condominium. Some time later in the spring a miracle happened. A pair of bluebirds showed up in the center of this huge condo complex and took over the box. But alas! Due to the nearby porch railing, a cat was able to monitor the box at a close range. The birds gave up. A month later another surprise took place. Bluebirds returned again, rebuilt their nest and laid four eggs. A few days later one of the bluebirds hit the picture window and left a splotch of blood. Somehow this proved too much. The eggs were left untended and chilled in a short time. Needless to say, we were all saddened by this whole episode.

One question persists. Why did bluebirds insist on trying to build a nest in the midst of a condo conglomerate? We now think the answer is staring us in the face. Before the ground was broken for these condominiums, we believe it was bluebird habitat and probably had been for many years. It is just one more example of how our wildlife is losing, bit by bit, their rightful habitat. ■

15 Clovercrest Dr.
Nashua, NH 03062

(SPEAKERS—Continued from page 109)

them, we should talk about destroying the House Sparrow."

Vic and Eleanor are truly dedicated bluebirders. Their enthusiasm and dedication are sure to pay off for central Minnesota. Maybe someday we will not have to ask the question "WHERE HAVE ALL THE BLUEBIRDS GONE?" because they will be in our backyards, our parks, golf courses, along our country roads and wherever there is the right habitat to support them. But, until that day arrives, we need an ever increasing army of dedicated "speakers" to spread the word and recruit new bluebirders. ■



Frances Hanes Award Omitted

At the Tenth Annual Meeting, Fran Hanes of Utica, NY, was given a John and Norah Lane Award for an outstanding contribution to bluebird conservation. This award formally recognized the many varied activities Fran has participated in for many years to benefit bluebirds. While still practicing her profession as a school nurse, Fran began setting out nesting boxes on farms and in other suitable places near Utica. These she monitored faithfully until her retirement. Indeed her picture appears in the NABS slide program doing just that. After retirement, she became involved in founding a NABS affiliate, the Upstate New York Bluebird Society, was elected its initial president, and spearheaded that organization's considerable efforts to promote bluebird conservation before any other statewide efforts got underway. Fran was also elected to the NABS Board of Directors where she served for four years. Her prodigious artistic talent has provided inspiration for many who thrill to her wildlife paintings and carvings (especially of bluebirds). Her pieces are coveted treasures to their proud owners.

We regret the inadvertent omission of her name in the Winter 1988 issue of *Sialia*. Congratulations, Fran, faithful friend of the bluebirds! ■

—Mary D. Janetatos

Heartbeats

In the heart of the gnarled tree
Blue eggs broke when blushing buds
First held the hungry honey bee.

But now the blue bird softly sings,
For the heart of the gnarled tree
Beats once again with ready wings.

Karen Blackburn

The First Bluebird

Heaven dropped a bit of blue from its skies
On a feathered back and wings,
And a rose reached up to touch a breast
With the glow a June day brings;
A breeze swept over the open fields
With a song for a sun-filled morn—
All these joined together in a union of love
And thus the bluebird was born.

Diana Hunt Wasta

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Karen Blackburn: 100
Jon E. Boone: 82, 114
Suzanne Pennell: 98, 116
Richard L. Woodward: 113
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(~~BOOSTERS~~—Continued from inside
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Western Bluebird Boosters:

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Mrs. Irene E. Hall
William B. Watling
(Continued on page 120)

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: Student (under 21) and Senior (over 60), \$7.50; Regular, \$15; Sustaining, \$30; Supporting, \$50; Contributing, \$100; Corporate, \$100; Donor, \$250. Add \$2 per year for Canada and Mexico and \$3 per year for other countries (surface mail). U.S. funds only, please. Amounts over \$6 are tax deductible.

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