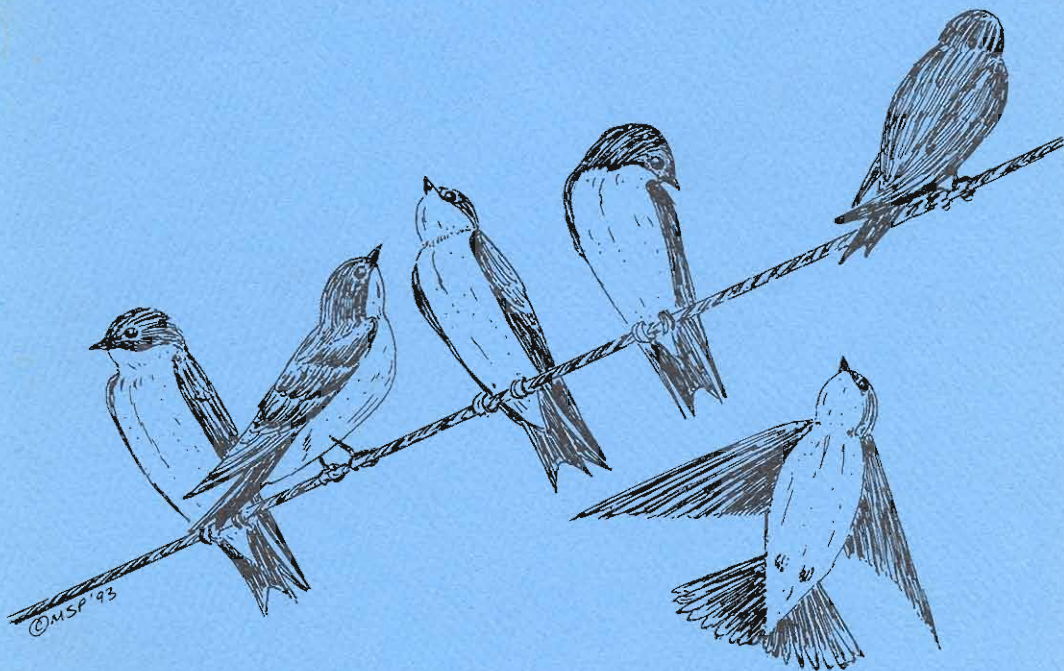


Sialia

Volume 15, Number 4
Autumn 1993
Pages 121-160

The Quarterly Journal
Of
The North American
Bluebird Society



NORTH AMERICAN BLUEBIRD SOCIETY

Founder

Lawrence Zeleny

President

Charlotte Jernigan

Vice President

Thomas Tait

Treasurer

Delos Dupree

Recording Secretary

Douglas LeVasseur

Corresponding Secretary

Joseph Tait

Directors

Andre Dion 1993

Quebec

Kenneth Jankowski 1993

Indiana

Alfred Larson 1993

Idaho

Marlon Liles 1993

Oklahoma

Marston Husmann 1994

Maryland

Arthur Kennell 1994

Pennsylvania

H.E. Koontz 1994

Montana

William F. Read 1994

Ontario

Richard Hjort 1995

Minnesota

Steven Parren 1995

Vermont

Hazel Skuce 1995

Manitoba

Donald E. Yoder 1995

California

Executive Director

Mary D. Janetatos

Editor

Joanne K. Solem

Sialia means bluebirds. Hence the title of this journal. Technically, *sialia* is the Latinized, neuter plural version of the Greek word *sialia*, a noun meaning a "kind of bird." Since the Eastern Bluebird was the first bluebird classified by Carolus Linnaeus (1707-1778), he gave it the species name *sialis*, though he placed it in the genus *Motacilia* which is now reserved for the wagtails. It was William Swainson (1789-1855), who, in 1827, decided that the bluebirds needed a genus of their own within the thrush family (*Turdidae*). He selected the generic name *Sialia* which he simply adapted from the species name *sialis* which Linnaeus had used. Therefore, the scientific name for the Eastern Bluebird is *Sialia sialis* (pronounced see-ahl'-ee-ah see'-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.

Sialia (ISSN 0890-7021) is published quarterly by the North American Bluebird Society, Box 6295, Silver Spring, MD 20916-6295. Subscription price is included in annual membership dues. Single copies: \$2.50. Write for information about bulk quantities. Checks and money orders should be made payable to North American Bluebird Society and should be in United States funds. Issues are dated Winter, Spring, Summer and Autumn and appear approximately on the fifteenth of January, April, July and October respectively. Deadline for submission of material is three months prior to date of publication; dated items only, two months.



Sialia

The Quarterly Journal
About Bluebirds

Volume 15, Number 4
Autumn 1993
Pages 121-160

EDITOR
Joanne K. Solem
**CONTRIBUTING
EDITOR**
Lawrence Zeleny

ART EDITOR
M. Suzanne Probst

CONTENTS

Presidential Points	122
Charlotte Jernigan	
The Effect of Predation by Insectivorous Birds on Populations and Communities of Insects: A Possible Role for Birds in Pest Management? ...	123
John P. McCarty	
Literature Review	126
T. David Pills	
Tests of a New Sparrow-Inhibiting Box	127
Wayne H. Davis	
PVC Nest Box Update	131
Steven L. Gilbertson	
Noel Guard Stops Raccoons	136
Tom A. Barber	
Bluebird Monitoring in Illinois	137
Shirley Adams	
Snowstorm Deadly for Bluebirds in Alabama	140
John Findlay, III	
1992 Speakers' Bureau Report	143
Ron Kingston	
Speakers' Bureau Report: Idaho	145
Ron Kingston	
Pennsylvania Monitor Experiments with a PVC Nest Box Design	146
Fledging of Hand-Reared Tree Swallows	147
John McFaul	
Bluebird Unit in Maine School Benefits Students, the Com- munity, and Bluebirds	149
Chuck Martin	
Is There Hope for House Sparrows? ..	151
Tami Nielsen	
Helping Nestling Bluebirds Overcome Blowflies	153
Micheel Phillips	
Bluebird Express	156
Bluebird Tales	158
Mary O. Janetatos	
Poetry: Maxson	160

COVER

Tree Swallows gather in large flocks before migrating each autumn. Art Editor M. Suzanne Probst shows half a dozen in assorted poses.

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

Presidential Points

Charlotte Jernigan

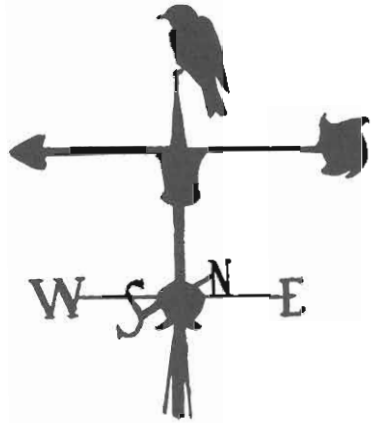
On a global basis, we are now into a shifting vision of how we deal with the dilemmas of Mother Earth. There is a growing recognition that we must live in a symbiotic relationship with nature, or there will eventually be no nature to live with. And when a problem surfaces, we need to activate our communication network and contact those who are in a key position to inform others.

NABS has received a number of complaints from New Mexico citizens who are deeply concerned about the deaths of many, many birds such as bluebirds, flickers, kestrels, owls, finches, shrikes, hawks, and even bats. The complaints have been well-documented with colored photographs of both the offenders and the victims. Open vent stacks on oil and gas units have been the cause of these cruel deaths. The North American Bluebird Society has worked in past years to save countless birds from a tragic and senseless fate, and the evidence presented on this occasion certainly merited support.

Tamie Bulow, president of the Central New Mexico Audubon Society, was one of the individuals who contacted us. I wish to thank her and all the others for not only seeing the problem, but especially for being willing to give the time that a good steward must spend in order to have a voice that is heard.

The U.S. Department of the Interior, Bureau of Land Management (BLM) and the Department of Agriculture have answered our inquiries and sent information to us. Their responses are appreciated. They are working to resolve the problem and a draft Notice to Lessees requiring the modification of production equipment to prevent bird and bat losses has been made.

A few oil companies have voluntarily installed protection devices on



their locations; the majority of the devices are cone-shaped and made of metal grating. We appreciate those who have voluntarily taken the lead and commend them for it. The companies are as follows: Bayless, Phillips Petroleum, Snyder Oil Company, Falcon-Seaboard, Schalk Development, and Williams Field Service.

Other companies have supplied schedules for installation. Certain designated equipment is to be modified by 1 October 1993; others will be modified by 1 October 1994. Monitoring is to be done by both the BLM and the operators to determine the effectiveness of the modifications made to the exhaust stacks. If the modifications are shown to be ineffective, additional measures will be required.

Thanks, Volunteers!

And speaking of those who volunteer and without whom we could not succeed, let's give three big cheers for the crew that arrives at headquarters every quarter to "stuff Sialia" to get this information out to our members. Observing them at work is uplifting. Thanks so much to Blanche Kendrick, Anna Kathryn Crook, Helen Tunstall, Rosalind Peart, Maxine Montgomery, Harriet Shapiro, Lillian Warfield, and Sarah Funkhouser.

There's pride in the fact that all of us, wherever we are, can cooperate in taking positive steps for the future. ■

The Effect of Predation by Insectivorous Birds on Populations and Communities of Insects: A Possible Role for Birds in Pest Management?

John P. McCarty

Birds in the United States enjoy better protection today than any other group of animals. This was not always the case. Throughout the 1800s it was both legally and socially acceptable to kill most species of song birds: thrushes were served in many fine restaurants and the plumage of warblers and many others adorned ladies' hats. Attitudes towards birds began to change in the second half of the nineteenth century as several states enacted laws that gave some protection to non-game species that were considered beneficial. As public opinion continued to change, groups such as the newly established Audubon Societies and the American Ornithologists' Union worked to bring about laws to protect all non-game birds. These efforts resulted in the passage of bird-protection legislation on both the state and national levels.

Although there were some early bird lovers who were motivated by their enjoyment of birds, much of the early change in public attitudes was brought about by efforts to educate farmers and the general public about the role birds play in controlling pest insects. One of the first bird protection acts passed in the United States was an 1850 New Jersey law that was directed specifically at insectivorous birds. Species that were protected by this act included "...chimney swallow, barn swallow, martin or swift,...wren, bluebird, meadow lark,...warbler, bat[!], blackbird, [and] blue jay..." From such general beginnings, the field of Economic Ornithology arose and quickly became an important area of study. The U.S. Department of Agriculture established a Division of Ornithology whose role was to study the food of birds and their relationships to agriculture and to educate the public about the value of birds. Throughout the first

part of this century the government published frequent bulletins directed at farmers, gardeners, and the general public, with such titles as "Birds as Weed Destroyers," "How Birds affect the Farm and Garden," and "Economic Relations of Birds and their Food." Children, too, were included in this education campaign, both through school programs and through best-selling children's books such as *Citizen Bird* (1897) by the eminent ornithologists Mabel-Osgood Wright and Elliott Coues.

Although the general appreciation of birds this fostered has continued, the possible role of birds in controlling populations of insects is no longer considered important by most agriculturists. What happened to change the attitudes of farmers? Prior to the 1940s the goal of pest control programs was to keep levels of harmful insects below a level that would cause severe economic losses to the farmer. With the development of broad spectrum chemical insecticides, the goal of pest programs shifted from preventing outbreaks of pests to eradicating pest species. It seemed obvious that with such effective pesticides available farmers no longer needed the assistance of birds. Economic Ornithology shifted away from a program aimed at educating the public about the beneficial nature of most birds, to one focused on finding cheaper and more effective ways to kill large numbers of birds considered to be pests.

The attitudes about birds and agriculture may be shifting back. Over the past 25 years the growing negative public reaction to the effects of pesticides has pressured farmers and governments to try to find ways to cut back on the use of these chemicals. When forced to examine pesticide use

more closely, many farmers are finding that economic alternatives to heavy pesticide use do exist. One of the most promising of these alternatives is an area known as Integrated Pest Management (IPM). IPM is a philosophy of pest management that combines new and old methods of pest control in an attempt to minimize damage to the environment while still keeping pest populations below the level where they cause economic damage. While IPM still includes the use of some chemical pesticides, the emphasis is on ecological control of pests through use of pest-resistant plant varieties and natural enemies. Since IPM no longer emphasizes the complete eradication of pest species, there may again be a role for wild birds in agriculture.

The early work on the benefits of birds to agriculture focused on documenting what different bird species ate and what proportion of their diet consisted of harmful species of insects. Although this work shows that birds are eating the right insects, the question that now needs to be answered is, are birds eating enough of these pests to really help farmers control pests? Some ornithologists have continued to study the relationships between birds and insects, and their results suggest that, although birds will not be helpful in all cases, they can play a very important role in controlling insects. The role of ornithologists and bird-lovers will be to help provide the information necessary to advise agriculturalists about what species are most likely to benefit agriculture.

One area that has continued to receive considerable attention is the role of birds in controlling insect pests in forests. There are numerous published studies of cases where birds have played a central role in controlling outbreaks of such important forest pests as spruce budworm and larch sawfly. Even in tropical rainforests scientists are finding evidence that birds control insect populations. The attention received by birds from researchers interested in forest ecology has helped establish the importance of birds in

those ecosystems. There has continued to be some work in agricultural systems, but not enough to establish the role of birds in those habitats. Those studies that have been done in agricultural areas show that additional attention to this area would be valuable. For example, several studies have shown the ability of woodpeckers, crows, and blackbirds to significantly reduce the overwinter survival of such important corn pests as European corn borer and earworm. The effectiveness of birds as agents of biological control has also been shown in grasslands and apple orchards; however, not all studies have shown the effectiveness of birds so clearly. Although Red-winged Blackbirds (*Agelaius phoeniceus*) reduce corn-borer damage, the birds themselves damage corn at other times of the year, countering any benefit from the birds' action as a pest control. In most cases, however, the benefits of the birds outweigh the damage they might do.

Based on these and other studies it seems likely that birds can play a role in Integrated Pest Management. One major disadvantage to using birds in IPM is that since birds are very mobile, it is difficult to ensure that they will be where the farmer wants them when they are needed. There are some things that can be done to attract birds, such as providing more cover along fence rows, providing nesting sites, and making supplemental sources of food and water available. Cavity nesting birds can be encouraged to breed in a specific area by providing nest boxes. Foresters in Europe have shown that by providing nest boxes they can dramatically increase the number of birds in their managed forests. Those forests with additional nest boxes have fewer problems with insects thanks to the birds that nest there.

Is it possible that by encouraging our cavity nesting species, such as Eastern Bluebirds (*Sialia sialis*) and Tree Swallows (*Tachycineta bicolor*),

we might be contributing to a reduction in pest insects? The answer to that question will probably differ depending on the pests that are important. My studies of Tree Swallows around Ithaca, New York have found that in some years almost half of the swallows' diet consists of leafhoppers and aphids, two insects which can be important pests. Based on samples collected and observations of the behavior of the birds, I have calculated that each family of Tree Swallows eats as many as 14,000 insects each day! Whether this huge number would be sufficient to control an outbreak of a pest would require additional research, but it does appear that insectivores such as swallows and bluebirds have the potential to be important agents of insect control.

What information will we need before we can narrow in on which birds might be good pest controls? Perhaps the most important information is detailed data on what insects each bird species is feeding on, how many of those insects they eat, and where they find those insects. Limited or incomplete information can lead to misdirected efforts. For example, if you know only that Tree Swallows eat small flying insects and I tell you that each family is eating 14,000 insects a day, you might be tempted to put a couple of nest boxes in your backyard and let the swallows take care of your mosquito problem. In order to successfully manage your mosquito problem, you need to know whether swallows actually eat mosquitos. Unfortunately, my studies of the diets of Tree Swallows show that they almost never eat mosquitos at my study site in New York, something we may not have guessed unless we did a very detailed study of their diets. Some insects that appear invulnerable to predation by birds may reveal some weakness if we look at their life cycle closely enough. At first glance you may think that no birds eat the big Japanese beetles in your garden. Although it is true that most birds avoid the adult beetles, one study shows that European Starlings (*Sturnus vulgaris*) eat large numbers of

Japanese beetle larvae and also help spread a fungus that attacks the larvae.

Birds do have a role in the control of insect populations. There is still considerable need for observations by bird-lovers and amateur ornithologists on the prey choice and habitat use of birds. If you have a bluebird trail in a rural area, consider keeping information about the crops grown in the fields where your birds breed and the use of different fields for foraging. By learning the details of each bird's natural history we will be able to determine which birds show enough potential to warrant further research on their role as biological control agents. Happily, the protection of birds in the United States is no longer based solely on whether we consider a bird to be "beneficial." It may again be time for us to consider the possibility that birds may help us by the role they play in the ecosystems we share. ■

Section of Ecology and Systematics
Cornell University
Ithaca, NY 14853

Mountain Bluebird Trails Conference 1994

Mountain Bluebird Trails and Ellis Bird Farm will co-host the 1994 Mountain Bluebird Trails Conference on 8, 9, and 10 July 1994 in Red Deer, Alberta. To contribute ideas or to volunteer, contact Myrna Pearman, Ellis Bird Farm, Box 2980, Lacombe, Alberta, Canada TCC 1S0.

Art Credits

Jon E. Boone: 122, 156
Suzanne Pennell: Tree
Swallow 157; 158



Literature Review

T. David Pitts

Tucker, James W., Jr. 1990. Male Eastern Bluebird rears four broods during one nesting season. *Wilson Bulletin* 102(4):726-728.—Some pairs of bluebirds do not produce a single brood during an entire nesting season because they cannot find a nest cavity or because they experience repeated nest failures. Other pairs that live in areas where the climate allows a long nesting season and whose nests consistently escape predation, inclement weather, and other misfortunes may produce three broods in a year. Production of more than three broods in one nesting season is extraordinary. In this article the author documents an example of a male who helped care for young at four nests in Alabama. Two females were involved and, presumably, the male was simultaneously mated to both. While this is an interesting record, I believe the report of Harry Krueger (*Sialia* 13(3):91-92, 1991) is still the only documented example of a single pair producing four consecutive successful broods in a single nesting season.

Craven, Scott R. 1991. The other things that live in bird houses. *Passenger Pigeon* 53(1):79-82.—This is not a scientific article describing original research, but it does give a summary of some of the consequences of erecting nest boxes. Wasps, snakes, squirrels, mites, House Sparrows, and other "things" generally considered to be undesirable are briefly considered. While most of the information presented here can also be found in the back issues of *Sialia*, this is still a useful article, especially for people who are building their first nest boxes or for people who have discovered that their nest boxes attracted the "wrong" species.

Beane, J.C., and P.R. Trail 1991. *Scincella lateralis* (Ground Skink) Predation. *Herpetological Review* 22(3):99.—The authors point out, correctly, that while large song birds such as crows and jays regularly feed on reptiles, most reports of small song birds feeding on reptiles represent isolated incidents. In this brief note they describe the feeding activities of a pair of Eastern Bluebirds that captured at least 12-18 skinks a day for several days and fed them to nestlings. A photograph shows a bluebird with a ground skink in its beak. The authors conclude that ground skinks were a preferred food item for this pair of bluebirds. The authors suggest that bluebirds, and other small birds, may have more impact on populations of ground skinks than is generally recognized. ■

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

Historian's Request

Please send newspaper and magazine articles about bluebirds to Historian Jane Williams, Box 123, Ware Neck, VA 23178. Be sure name and address of publication, volume and date are included. Photographs of members engaged in publicizing bluebirds or those documenting some unusual occurrence are also welcome. They will be added to scrapbooks which are a permanent record of activity on behalf of bluebirds and other cavity nesters.

Tests of a New Sparrow-Inhibiting Box

Wayne H. Davis

Introduction

I am continuing efforts to develop a nest box that bluebirds like and House Sparrows (*Passer domesticus*) will not use. We have shown that Eastern Bluebirds (*Sialia sialis*) prefer a slot entrance to a circular one (McComb *et al.*, 1987; Davis 1991) and that House Sparrows prefer the circular entrance (Davis 1989). In my tests with a shallow box with a slot entrance I found that House Sparrows almost never used them (Davis 1991; 1992) when alternative boxes were available. Though bluebirds successfully used these shallow boxes, they showed a preference for the deeper controls. More of the shallow boxes were left empty, and bluebirds had an unfortunate tendency to build a neat nest in a shallow box and abandon it. I, therefore, decided to test another idea.

Materials and Methods

Experimental boxes had a large entrance, 2 inches by 3 1/2 (5 cm x 8.7 cm). They were shallow, 4 inches (10 cm) deep, but not as shallow as those previously tested. They were made of standard lumber (1 x 6 and 1 x 4) and painted light gray. The floor was 4 inches (10 cm) by 3 1/2 inches (8.7 cm).

My controls are slot boxes with entrances 3 cm by 10 cm (4 inches), with floors 10 cm x 10 cm, and a depth of 5 inches (12.5 cm). They are made of rough oak, used horse-farm fence.

I erected 102 of each style of box on the University of Kentucky agricultural experiment farms at Lexington and a horse farm near Versailles, Kentucky. Boxes were placed 0.1 miles (165 m) apart, alternating the two styles. They were wired to fence posts at a height of 4-5 feet (about 1.5 m). All boxes were erected during September 1991, thus giving the abundant House Sparrows and European Starlings (*Sturnus vulgaris*) ample opportunity to explore and lay claim to boxes at any time throughout the fall and winter. The experimental boxes were accessible to starlings; the controls were not.

All boxes were checked in March and then monitored weekly from 4 April until all nesting activity had ended in mid-September. We allowed House Sparrows to nest and lay eggs. After a clutch was complete, we removed nest and eggs to prevent them from fledging

young. For other species of birds, we cleaned out the box if the young were dead, if the eggs had been abandoned, or if a raccoon had raided the nest. Otherwise, we simply recorded information and closed the box. We did not remove old nests after the young had fledged. Statistical analyses were done with chi-square tests.

Results

Results are shown in Table 1. Boxes were counted as used if a nest was completed and at least one egg laid. Bluebirds used 69 controls and 58 experimental boxes, a difference which was not significant ($P = .3$). They did not show a tendency to build nests and abandon them in the experimental boxes as they had in the shallow boxes I had tested the year before. Bluebirds started nests in 13 experimental boxes, however, only to abandon them, whereas they did this in only one control box; this difference is highly significant.

Bluebirds used more nests and fledged more young in the control boxes than in the experimental ones. These differences were significant, whereas the differences in the number of boxes used was not. This apparent paradox was due to the fact that raccoon predation was high and bluebirds had a stronger tendency to re-nest in control boxes than they did in the experimental boxes.

Table 1. Results of the Nest Box Experiment

BOX STYLE	N	BLUEBIRDS					HOUSE SPARROWS USED	HOUSE SPARROWS STARTS	HOUSE WRENS PUT STICKS IN	NESTS RAIDED BY RACCOONS	EMPTY BOXES
		BOXES USED	NESTS ONLY	STARTS ONLY	NUMBER FLEDGED	NESTS USED					
Experimental	102	58	6	13*	95*	83*	1*	8	16	33*	19*
Control	102	69	5	1*	186*	125*	21*	10	24	57*	4*

*Significant at $P \leq .01$

The difference was most noticeable in fledglings, with the control boxes fledging nearly twice as many bluebirds as the experimentals. This was because raccoon predation, very heavy in the first half of the season, nearly ceased by the middle of July (only one raid thereafter), after which most of the bluebirds were using control boxes. In July and August, the raccoons fed heavily on the ripening wild cherries. The abundant supply of Japanese beetles, green June beetles, and grasshoppers may have helped the raccoons to lose interest in climbing to the boxes.

Raccoons raided significantly more nests in the control boxes than in the experimentals ($P = .01$). However, this surely was due to the fact that there were more active bird nests to be found in the control boxes; raccoons were probably no more likely to raid one style than the other.

House Wrens (*Troglodytes aedon*) built nests, or put sticks into, more control boxes than experimentals. This difference was not significant ($P = .2$), however, and, thus, may have been due to chance.

The tendency of House Sparrows to start a nest and then abandon the box appears the same for both styles of boxes. Nearly all these cases involved male sparrows, early in the season, putting a few sprigs of seed heads or rootlets into boxes and then abandoning them. Most of these boxes were later used by bluebirds or wrens.

Use by House Sparrows, however, was strikingly different, with sparrows using 21 controls and only one experimental box. The difference is highly

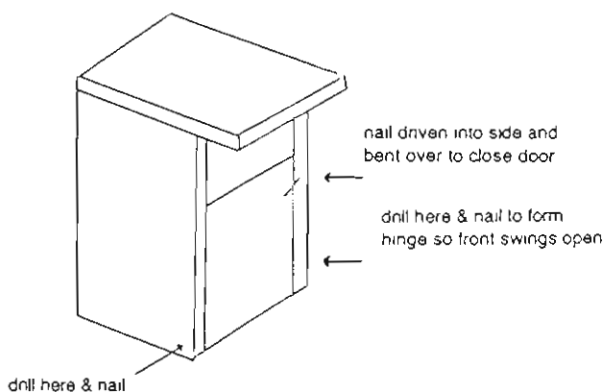
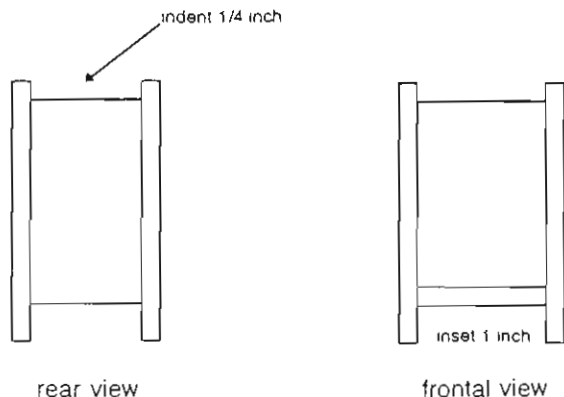
significant ($P = .0001$). The single experimental box used by sparrows stood empty until 18 May when a completed nest was found. The following week the nest contained five eggs. I removed the nest and eggs, and the box stood empty until 13 July when it contained the beginning of a bluebird nest. This was then abandoned.

Of the 21 control boxes used by House Sparrows, six were used again after I removed the nest and eggs, i.e., sparrows immediately built nests and laid eggs again. This is in contrast to last year's study when no sparrows re-nested in the 13 control boxes after their completed clutches were removed, while their nests were left in the box. Unfortunately, these data are not sufficient for statistical analysis; I will gather more data in 1993. It does look promising, however. Some readers may want to try to discourage sparrows by removing a completed clutch and leaving the nest in place for a while.

Discussion

One would think that any box with a large entrance would be unsuitable because it is accessible to starlings. My experience, however, is that starlings are just not interested in a rather small, rather shallow box mounted on a low post. The Peterson box, which bluebirds seem to prefer to various other box styles (Berner and Pleines 1993), is readily accessible to starlings. Keith Kridler (1990), using Peterson fronts, built six large deep boxes, mounted them high on utility poles in

AN EXPERIMENTAL SPARROW - INHIBITING BOX



Use standard 1 x 4 and 1 x 6 lumber. Tools needed: hammer, saw, drill; number 5d, 6d, or 7d galvanized nails; a number 6 or 8 finishing nail.

From your 1 x 6 cut three 8" pieces for the sides and roof. From your 1 x 4 cut a 4" piece for the floor, a 6" piece for the front and a 7" piece for the back.

Assembly:

- 1 Drill through the side into the edge of the back and nail. Repeat the other side.
- 2 Put the floor in place against the back and inset an inch from the bottom. Drill and nail into place.
- 3 Drill the roof and nail into place, or fasten with drywall screws
- 4 Fit the front into place and drill through the side half an inch above its lower edge into the edge of the front and nail. Repeat the other side.
- 5 Drive a finishing nail half way into the edge of a side and bend it over to hold the front in place. It can be pushed aside to open the box
- 6 Drill holes into the sides or back or both for wiring your box to a post or bolting it to a pipe.

town, and starlings nested in all six. Yet among the hundreds of Peterson boxes monitored and reported to the Minnesota and Wisconsin programs annually only occasionally is a starling nest found.

In our experiments with starlings (Davis *et al.* 1986; Davis and McComb 1989), we were surprised to find that starlings rarely bothered nesting bluebirds, even in our large, deep boxes intentionally made accessible to starlings for experimental purposes. Thus, I thought it unlikely that starlings would show an interest in my new boxes.

Blue Jays, grackles, crows, and kestrels were common residents in all my experimental areas. There were four resident breeding pairs of American Kestrels (*Falco sparverius*), yet avian predation was negligible. A House Wren ejected eggs and hatchlings from one experimental box. Allison Westmoreland, a student who monitored part of the trail, reported that four eggs produced one fledgling at one experimental box, and she saw the adult bluebirds attacking a grackle perched nearby. A Brown-headed Cowbird (*Molothrus ater*) egg appeared in one box which had a large entrance. This is another matter of concern.

Although we had no problem with our kestrels in this particular study, their potential damage might limit the usefulness of this experimental box type. Kestrels are known to pull nestling bluebirds out of a box (Havera and Havera 1983), and Parren (1992) reported kestrels trying to snatch young bluebirds from boxes. Pearman (1991) reported that Black-billed Magpies (*Pica pica*), which had apparently not been a problem before, learned to pluck nestlings from the boxes and preyed heavily on bluebirds and Tree Swallows (*Tachycineta bicolor*). Since kestrels or other avian predators might learn to take nestling bluebirds, the large entrance box will probably not be suitable for general use. However, this box is clearly undesirable to House

Sparrows, and may be a useful part of our arsenal in dealing with these pests. If you have a problem with House Sparrows in the bluebird boxes in your yard, you may find it helpful to add a large entrance box and a shallow slot box (Davis 1992) which sparrows also find not to their liking. ■

Literature Cited

- Berner, K.L. and V.A. Pleines, 1993. Field tests of several styles of bluebird nest boxes. *Sialia* 15:3-11.
- Davis, W.H. 1989. House Sparrows prefer a circular entrance. *Sialia* 11:8-10.
- , 1991. Folling House Sparrows. *Sialia* 13:51-53.
- , 1992. Tests of the shallow slot box. *Sialia* 14:83-84.
- and W.C. McComb. 1989. Bluebirds and starlings: competition for nest sites. *Sialia* 11:123-125, 138.
- , -----, and P.N. Allaire, 1986. Nest box use by starlings: does it inhibit bluebird production? *Trans. Kentucky Acad. Sci.* 47:133-136.
- Havera, S.P. and N.G. Havera. 1983. Kestrel preys on nestling bluebird. *Sialia* 5:93-94.
- Kridler, K. 1990. Starlings find Peterson box no challenge in Kridler test. *Bluebird Monitor* 3(2):1.
- McComb, W.C., W.H. Davis and P.N. Allaire. 1987. Excluding starlings from a slot-entrance bluebird nest box. *Wildl. Soc. Bull.* 15:204-207.
- Parren, S.G. 1992. Evaluation of nest box sites selected by Eastern Bluebirds, Tree Swallows, and House Wrens. *Sialia* 14: 85-90.
- Pearman, M. 1991. Avian predation of bluebird nestlings. *Sialia* 13:89-90.

School of Biological Sciences
University of Kentucky
Lexington, KY 40506

Wildlife Plant Use

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

PVC Nest Box Update

Steven L. Gilbertson

The Summer 1991 issue of *Sialia* 13(3):93-97 included an article about a PVC nest box of my design which seemed to show promise. Two styles of this box now exist and will remain largely unchanged (Figures 1 and 2).

1. The original squeeze-opening now has an "interior pin piece" (Fig 3). The body is first hooked onto the longer pin, squeezed to create a slightly oblong shape, and then snapped onto the shorter pin. Each pin is an 8d finishing nail with the head removed and inserted backwards into a predrilled 7/64 in. (0.3 cm) hole about 1 in. (2.5 cm) deep.

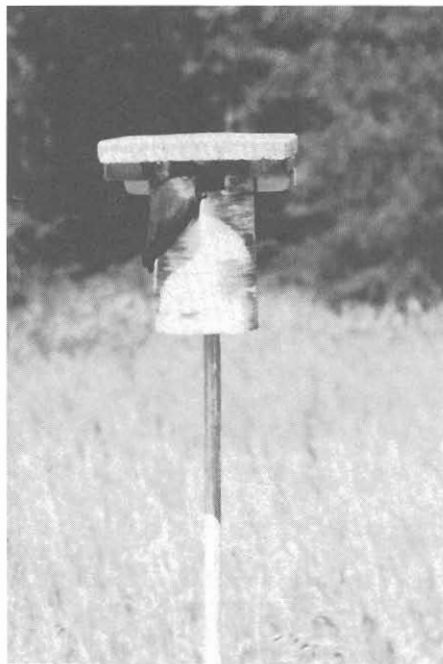
An optional roof design with a removable pin can be used in cases in which a monitor has weak hands or thicker PVC tubing is being used (Fig 4). It requires that a 1/8 in. (0.3 cm) hole be drilled 1 in. into the pin piece where a short pin would normally be.

2. The horizontal entrance slot was originally conceived by Wayne Davis. The slot entrance as a House Sparrow deterrent is not yet determined, although when I placed five PVC boxes with slot entrances at a nearby nature center, no sparrow attempts occurred and one brood of bluebirds fledged. Simultaneously, approximately 20 wooden nest boxes fledged no bluebirds; some House Sparrows nested, though unsuccessfully.

The short height of this slot box makes a squeeze opening impractical so I use a removable 8d finishing nail. The box depth is 4 1/2 in. (11.4 cm) from the bottom of the slot to the top of the floor.

Mounting

Nest boxes are secured to 1/2 in. (1.3 cm) thin-wall electrical conduit exclusively. Where no previous post exists, I use a 5 ft. (1.5 m) section of 1/2 in. concrete reinforcing bar (known as rebar) as a primary post driven half-way into the ground over which slides a 5 ft. section of conduit. A conduit con-



PVC box mounted on electrical conduit.

ductor secures the arrangement. The bottom bolt of the two supplied with the connector should be replaced with one at least 1/2 in. long to insure contact with the rebar. The nest box will now be about 5 ft. above the ground and will not rotate. Conduit and rebar are normally available in 10 ft. (3 m) sections at building supply stores as are the other items needed.

Attaching a box to a post on an existing fence line requires you to cut the conduit to 3 ft. 4 in. (0.9 m 10.2 cm). Drill two 3/16 in. (0.5 cm) holes approximately 5 in. (12.6 cm) apart at the free end so that the box can be screwed, nailed, or wired to the fence.

House Sparrow Deterrence

Reports of nesting attempts by House Sparrows seem to fall mainly into two categories:

Figure 1. Slot Entrance PVC Nest Box.

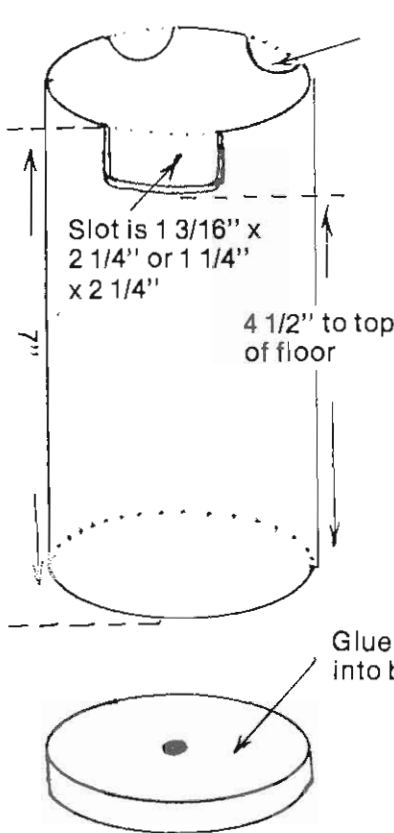
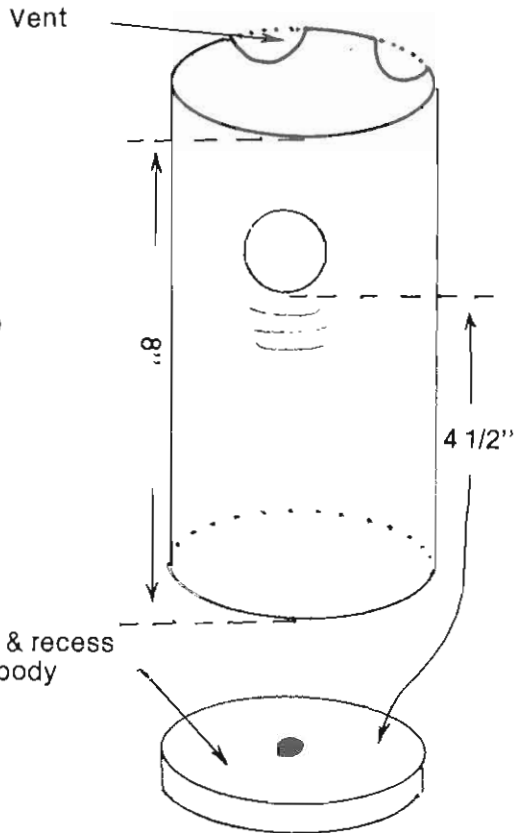


Figure 2. Round Entrance PVC Nest Box.



1. Removal of House Sparrow nests in conventional boxes which may be paired with this design may cause nest attempts. If given a choice, the House Sparrow will usually avoid the PVC box. Traps exist for most nest box designs and should be used.

2. Older urban neighborhoods, containing numerous mature trees and homes with intricate detail, provide many nesting opportunities for House Sparrows. The resulting high population of these birds, I believe, creates nesting pressures they otherwise would not feel.

Predation

Raccoon predation continues to be nearly nonexistent in these PVC boxes. In 1992, I undertook to further

“slicken” the 1/2 in. thin-wall electrical conduit with coarse steel wool followed by an application of carnauba-based automobile paste wax. Predation, previously at possibly four attempts per 120 boxes, dropped to possibly two. Intrusion by ants, mice, or squirrels is highly unlikely.

Tips and Observations

Drill a 7/8 in. hole through the body of the PVC box and into the pin piece at one time by placing the roof upside-down on a bench with the body in place.

The box interior must be stained brown, gray, or olive-green and the exterior mottled or the desirability of the PVC box will drop off. Spray paint may be used. Latex paint will peel and must

Figure 3. Roof Designed for Squeeze-Opening Attachment of PVC Nest Box.

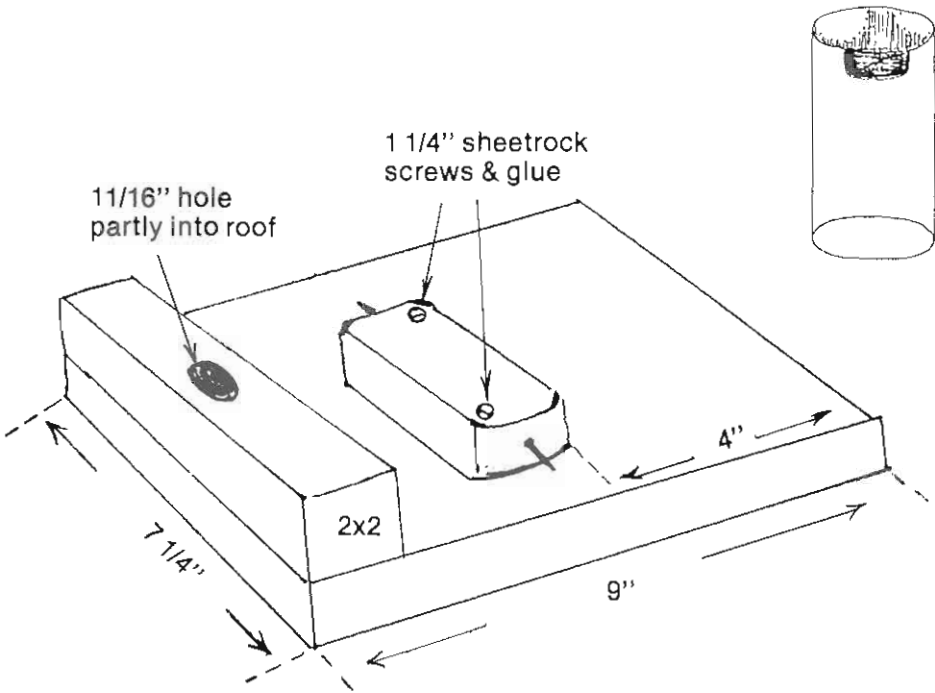
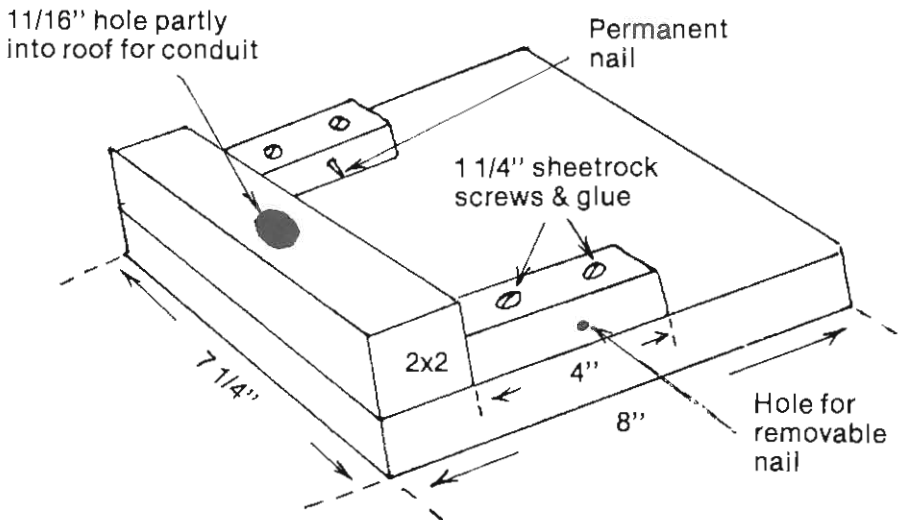


Figure 4. Roof With Removable Pin Attachment for PVC Nest Box.





Female Eastern Bluebird with food for brood in PVC nest box with slot entrance.

not be used. I've observed no harmful effects on the birds in any way from use of stains or paint.

Roof pieces must be secured with good quality construction adhesive (I use PL 500) and 1 5/8 in. (4 cm) galvanized sheetrock screws. Pre-drill 7/64 in. holes to prevent splitting.

Roofs of aspen or pine resist splitting while cedar will occasionally split. Exterior plywood seems acceptable. I seal all my roof parts with a wood protector.

Within reason, a wiggle or loose fit between body and roof doesn't seem to affect a box's use.

Properly mounting a nest box to a crooked fencepost requires you to compensate by merely bending the conduit which results in a flat or slightly forward-sloping roof.

Mount boxes on fenceposts as high as it is possible to reach; no ladder is needed.

Tree Swallows seem reluctant to use the slot entrance while House Wrens seem to prefer it.



Brood of Eastern Bluebirds in Steve Gilbertson's PVC nest box.



Closeup of Eastern Bluebird at PVC box. Note the mottled exterior.

A box depth of 5 in. or more will result in greater House Sparrow usage and in post-migration entrapment of Tree Swallows.

A box depth of 4 in. or less is avoided by all but Tree Swallows.

The slow swaying of the entire support system seems to be preferred to a solid mounting such as a fence-post.

Acknowledgments

Having designed this box in 1989, I am grateful to those who have used it and helped test it these past four years. Without them, much less would be known about what constitutes a good nest box. Special thanks to Dick Peterson and Dorene Scriven who have always supported me—and to

Kevin Berner for his research.

I am also grateful to Linda Janilla for providing the fine diagrams. ■

3521 - 135th Ln., N.W.
Andover, MN 55304

If readers are interested in obtaining this experimental box and aiding in the author's research, please send a stamped, self-addressed envelope to the address above for information.

Memorial Gifts

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

Noel Guard Stops Raccoons

Tom A. Barber

This summer marked a decade of bluebirding for me. Over the years, I have had both positive and negative experiences. Raccoons have been one of my greatest challenges.

In 1992, I had put four boxes in a pasture owned by Joe Martin. Although all the mounting poles were greased, a raccoon raided each box. I live-trapped one raccoon that didn't have a tail and freed him 14 miles away. No bluebirds fledged from any of those boxes that year.

During the fall and winter I wrote to Joe Huber about my raccoon problem, and he suggested I try a Noel guard (*Sialia* 13(2):58-59). He said he could make some and send them to me. Since he had previously made some Huber sparrow traps for me that had worked wonders with my sparrow problems, I told him to go ahead with the raccoon guards.

This spring I was very busy. Even though I had received the Noel guards that Joe had constructed, I didn't have them installed on the boxes in that high risk field at the beginning of the breeding season. As a result, a Tree Swallow laid six eggs in one of those boxes and was already incubating them when I discovered her. Joe had written that the best time to install the guards was after an egg was laid and the bluebirds were laying more. I was worried that because the female swallow was already incubating a full clutch the guard might cause her to abandon the eggs.

Joe's advice to my inquiry was not to worry about that. Go ahead and install the guard. So I did.

During the following week as I checked it, the swallows were circling around the box: six eggs and no change. The guard had worked so far. One week later there were still eggs but no young. Was the Tree Swallow female sitting on eggs that had cooled because she was originally spooked by the guard and took too long going back to the eggs? No, Joe felt Tree Swallows must incubate longer than bluebirds. It had been over 14 days from my calculations.

Finally, the following week of checking proved Joe correct. Six nestling Tree Swallows were in good shape. In the meantime, the other three boxes in that field were occupied by bluebirds. I quickly installed Noel guards.

When the Tree Swallow nestlings fledged, I felt like having a party. They were the first birds to fledge from that raccoon-infested area in over a year. Then, soon after, a bluebird family of five nestlings fledged. I was excited. I wrote Joe and told him of the success. In all, 13 Eastern Bluebirds and six Tree Swallows fledged from the boxes in that field.

In all, I'll probably fledge 189 bluebirds and 56 Tree Swallows from my 61 box trail this 1993 season. None will be as satisfying as the ones that fledged from "raccoon alley." ■

60406 Stewart Rd.
Cambridge, OH 43725

Bluebird Monitoring in Illinois

Shirley Adams

Midwife to a Bluebird

During the first nesting for the season on my property, the first egg laid had another egg broken over it. The broken egg must have been removed by the parents. Since the first egg was soiled and somewhat sticky, I could recognize it and knew it should have been one of the first to hatch. The other three eggs hatched, but not the first one. Two days later the babies were growing, but the soiled egg remained in the nest. On the day it should have hatched I had picked it up very carefully and held it to my ear--and had heard the baby trying to peck its way out. When the three nestlings were two days old, I once again picked up the unhatched egg and found that the

largest end was caved in and covered with hairline cracks. One side of the egg had a small crack in it which enabled me to see the baby bird inside. The egg and baby were extremely dry--not a bit of moisture anywhere. I couldn't help but wonder if having had another egg cracked over this one had caused the problem.

Guidelines told me to leave the egg alone, but intuition told me that if I did nothing the baby would be dead very shortly. I decided to crack the egg around the center in a straight line. There was no blood or moisture. When I was able to remove one half of the egg, I found that the baby was stuck to the other half of the eggshell by the hair on its head. Because his hair was dried and stuck, he couldn't move! I



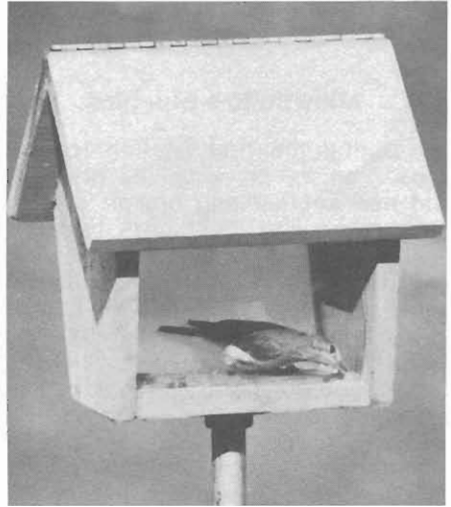
The top nestling (facing right) is the runt which Shirley Adams extricated from the shell two days after the rest of the brood. It eventually fledged successfully with the other three nestlings.

carefully removed his hair from the shell (he had been pulling hard enough so that he had pulled out some of his own hair). When I laid him on his siblings, he collapsed over them, lying in that position for about five minutes, and then began begging for food. He was the obvious runt for several days, but by the time all four nestlings had fledged, I couldn't tell any difference in size among them.

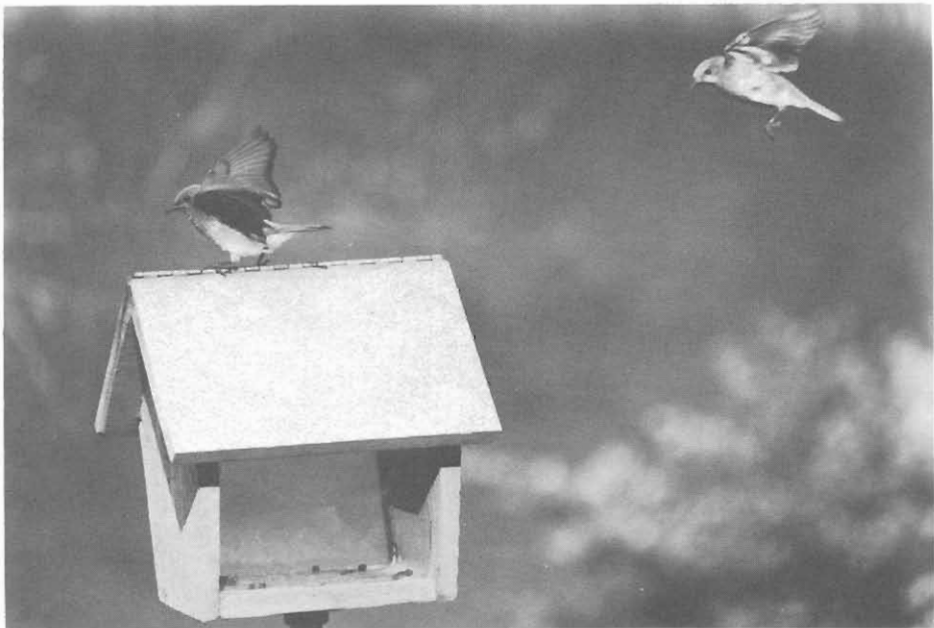
Mealworm Feeder Training Successful

This year I have successfully trained bluebirds to eat mealworms from an enclosed feeder with transparent sides. I started by placing the mealworms in a cup nailed to a log close to the bluebird nest boxes. The birds did not go to the cup. I then placed some mealworms on the roof of each of the boxes. The bluebirds gobbled those up and must have decided I might have some more "goodies" in the cloth bag I was showing them. They watched me put the mealworms

in the cup and seem to have decided they would eat from the cup. I tried to persuade them to come to the enclosed feeder by shaking the cloth bag



Female Eastern Bluebird inside transparent-sided feeder after learning to use the end holes to reach the mealworms inside.



Pair of Eastern Bluebirds arriving at Shirley Adams' bluebird feeder in which she has placed mealworms.

over the top of the feeder. They sometimes perched on the feeder to watch for insects. Now I left the feeder top open. You could almost see the shock on their faces when they perched on the feeder and spotted the mealworms inside. They jumped right in and ate the mealworms. I let them eat through the open top the first evening, but the next evening insisted that they use the end holes to enter the feeder. They are now completely trained to eat from the feeder with the top closed.

Bluebird Box with Nestlings Moved Successfully

I got by with moving a bluebird nest box with young nestlings in it to a safer mounting setup which was supplied with the predator baffle suggested by Ron Kingston. These babies were extra special since they came from white eggs.

I had reason to believe that if this box was not moved immediately that the birds would fall prey to a raccoon or cat that very night. My husband was opposed to moving the box but eventually gave in and reluctantly moved it. The bluebird parents were not happy with the move and neither was I, although I knew they were now much safer. I was awake most of the night worrying about them, but the next day the entire family settled down—and what was important was that no predators destroyed the nest. Ron Kingston's baffle guard really works (*Sialia* 13(2):56-57). I sent copies of the design to a man having major trouble with raccoons and it has worked wonders. He says he has to laugh when he sees the raccoon's footprints only at the base of the baffle. ■

3484 Torch Club Rd.
Alton, IL 62002

Babies Only a (Bluebird) Mother Could Love



Allen bluebirds computer wrist pad used by Shirley Adams of Alton, Illinois.

Snowstorm Deadly for Bluebirds in Alabama

John Findlay, III

It was aptly called the "snowstorm of the century" for Alabama. The late winter storm was unprecedented in its fury as it blew in the night of 12 March 1993. It dumped 12 to 17 inches of heavy, wet snow on the area. The snow froze when temperatures dropped rapidly.

Central Alabama, which was the hardest hit, gets little or no snow most winters. It doesn't have the means to cope with the conditions that accompanied this powerful storm. The blizzard quickly became both an emergency and a massive inconvenience to thousands of people for days.

For the Eastern Bluebird it proved deadly. A total of 53 dead bluebirds were found in 20 of my approximately 180 nest boxes. It was the worst weather-related disaster in my 17 years of trail operation. Most dead bluebirds were found in boxes in Oak Mountain State Park, just east of metropolitan Birmingham. Oak Mountain, the largest state park in Alabama, was completely isolated by the storm that downed thousands of trees and caused widespread power outages in the state for many days.

As many as ten bluebirds (five males, five females) were found huddled dead in one box, another box contained six. Other boxes averaged one to three birds. Many bluebirds had already paired; some had selected nest box sites, although none had as yet nested. (Nesting usually begins the last week of March here.) All were permanent residents. A few of the birds that had been banded as nestlings verified this observation as had previous recoveries in other years from the more than 3400 bluebirds that I have banded.

The heavy blanket of snow caused starvation by preventing access to the little remaining fruit. The situation was made worse when temperatures

plunged to 9° F on 13 March, the first night after the storm, and to 2° F the following night. Temperatures in rural areas, accompanied by winds, fell well below zero both nights. Unlike many bird species that could, and did, survive on feeder handouts, the bluebirds, for the most part, were unable to survive on feeder food. Insects were unavailable and wild fruits and berries were already stripped from trees and shrubs by other species. It was a desperate situation for the bluebirds at a critical time of the year.

At this writing, six weeks later, the first brood has been completed with mixed results. Bluebird production percentages were substantially lower than usual. Fully one-third of my boxes were empty; approximately one-third had been taken over by the hardier, more opportunistic Carolina Chickadee (by comparison, only ten boxes were so occupied in 1992); and the remaining one-third or so had active bluebird nestings.

After checking my boxes as soon as I could after the storm's passage, when the downed limbs, trees, and utility poles had been cleared from the roads, I placed a "bluebird alert" in the Birmingham newspapers. This was done to urge area bluebirders to check their boxes before the nesting season got underway. I received many calls reporting dead bluebirds in boxes for miles around. A more complete picture of the snow/cold effect on the bluebirds became clear. Bob Sargent of Trussville had 42 dead bluebirds in some of his 81 boxes. George Cusick of Leeds reported six dead in one of his 16 boxes—and he hasn't seen a bluebird on his property since. Similar calls came in from numerous other central Alabama communities.

For two days the storm traveled on a northeast course through Tennessee, the Smoky Mountains, and the Caro-



Dead Eastern Bluebirds found in one of John Findlay, III's central Alabama nest boxes after the mid-March 1993 snowstorm.

linas to the East Coast. A *Knoxville News-Sentinel* of that period reported in a nature column that many bluebirders in that part of Tennessee were reporting dead bluebirds in boxes. The annual spring bird count on 1 May of the Birmingham Audubon Society covering Jefferson, Shelby, and St. Clair counties had its lowest bluebird total in years.

Man and predators can be blamed for most of the decline in the Eastern Bluebird population in my lifetime. In this sad situation, however, the cause must be attributed to the weather. Unfortunately, we can't do much about that.

NABS members and those who work with us have successfully helped to bring back the bluebird in many areas. We can all continue to work to that end. Chandler S. Robbins, the noted ornithologist, once said, "The average citizen can't do much to save the Bald Eagle, the Northern Shrike, or the Whooping Crane, but each and every one of us can help save the bluebird." ■

2749 Millbrook Rd.
Birmingham, AL 35243

Bluebird Boosters

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

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

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



This photograph was taken on 13 March 1993, which was the beginning of the blizzard of '93 for us in Charlottesville, Virginia. The male Eastern Bluebird is keeping his eye on the Dark-eyed Junco (below left). The bluebirds are with us all year. After this picture was taken, the bluebird flew from the limb down to the feeder containing dogwood berries and raisins. I gather dogwood berries in the fall and mix them with sawdust before refrigerating them. When I run out, I order what I need from Jack Finch of Bailey, North Carolina. In April, I found two dead male bluebirds in two different boxes.

—Ron Kingston

NORTH AMERICAN BLUEBIRD SOCIETY RESEARCH GRANTS

The North American Bluebird Society announces the eleventh annual grants-in-aid for ornithological research directed toward North American cavity nesting species with emphasis on the genus *Sialia*. Single or multiple awards may be made within the following three categories.

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

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

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

Further guidelines and application materials are available upon request from Kevin L. Berner, Research Committee Chairman, State University of New York, Cobleskill, NY 12043. Completed applications must be received by 1 December 1993; decisions will be announced by 15 January 1994.

1992 SPEAKERS' BUREAU REPORT

Ron Kingston

In January 1993, 293 questionnaires were sent to speakers and organizations which had purchased or rented the NABS slide program "Where Have All the Bluebirds Gone?" One hundred and nine returned the questionnaires.

Generally, all of the speakers use the NABS slides; many substitute some of their own. Some would like the NABS program changed or updated, but all said that they were having tremendous success and just great fun. Many discussed different types of nest boxes, nests, food samples, plantings, and feeders. Nest boxes and books were sold at some programs. Workshops were also used to spread the word with kits available. A favorite presentation was to give a program on birds in their particular area or on cavity nesters with emphasis on bluebirds. Some added a special note to say that they targeted groups to which to give the programs because those were the ones that would most likely start a bluebird trail.

Thirty-nine states, six provinces, and Bermuda all have speakers. We could always use more, especially in the southwestern part of the United States. Please contact me if you are speaking on bluebirds or know anyone who is and their name does not appear on the list in this article.

Each state and its number of speakers is listed below: Alabama-5; Arkansas-3; California-1; Connecticut-6; Florida-4; Georgia-19; Iowa-7; Idaho-5; Illinois-24; Indiana-5; Kansas-3; Louisiana-1; Massachusetts-3; Maryland-12; Maine-5; Michigan-5; Minnesota-3; Missouri-5; Mississippi-3; Montana-9; North Carolina-9; North Dakota-1; Nebraska-1; New Jersey-4; Nevada-1; New York-37; Ohio-17; Oklahoma-3; Oregon-3; Pennsylvania-23; South Dakota-2; Tennessee-5; Texas-3; Virginia-18; Vermont-3; Washington-2; Wisconsin-6; West Virginia-4; Wyoming-2.

Speakers in the Canadian provinces are Alberta-4; British Columbia-3; Manitoba-2; Ontario-7; Quebec-1; Saskatchewan-2.

Bermuda has one very active speaker.

Comments made by some of the speakers which I thought were of interest are as follows:

Ken Schar of Libertyville, IL stated that Lake County Forest Preserve had a display of all its activities which included their bluebird program and they passed out NABS brochures and nest box plans. The event was held at the county fair.

John Findlay, III of Birmingham, AL said that after all these years he still enjoys giving programs (he has banded over 3000 bluebirds). He says that he is getting a lot of help these days from Barbara Munson, Paulette Haywood, and, of course, his wife, Harlett.

Douglas Weeks of Apalachin, NY says that he finds many people who would like to know more about the current research relating to nest box design. "We very much enjoy presenting bluebird programs."

Marcy Hoepfner of Metamora, IL says she and Don host a *Bluebird Informational Potluck* for all interested people to learn and exchange helpful ideas on helping this beautiful bird in its fight for survival. "It's a good way to meet other bluebirders and fun to share good food!"

Eleanor Dunham of New Salem, IL states that she would love to give more programs. A bluebird nest box is given away at each meeting. Only those who have suitable habitat and want to put up and monitor it register to win the box.

Ken Jankowski of Valparaiso, IN uses a fence post that bluebirds used for a nest before the land was cleared. He gave out 200 brochures and showed a bluebird video at the Fish Fair that 2,000-4,000 people attend. He also shows those who are interested photos of dead bluebirds killed by House Sparrows.

Marvin Schwilling of Emporia, KS shows NABS slides as well as some of his personal collection at his programs. He hands out NABS brochures and ones called "Increasing Eastern Bluebirds in Kansas."

Dr. Larry Zeleny of Hyattsville, MD, when answering the question of number of years speaking on bluebirds, notes 75!!! *Amazing!*

Lillian Flies of Tyngsboro, MA says that she gave approximately 30-36 programs throughout six New England states and has given 274 lectures. She really likes to give programs and Elderhostel groups are among her many favorites.

Jill Miller of Natick, MA uses the NABS slide show purchased back in 1988 and says "Several times I have combined the

talk with a bluebird-box-making workshop. This has been very well received."

Vicky Hallman of Osseo, MN is heavily into bluebirds. "Each March we have a special bluebird weekend which kicks off our bluebird program for the year. Activities during this weekend include hikes out to see part of a bluebird trail, the opportunity for participants to purchase and build a bluebird house, a coloring contest for the kids, games and activities for the kids, displays and information, and a video about bluebirds."

Willard Cash of Goldsboro, NC has been speaking for about five years and stated that bluebirding is his full-time hobby since retirement. He says, "I have given programs to all five of our local garden clubs and a few for garden clubs in surrounding towns. We have bluebird habitat unlimited in our area."

Eisie Eltzroth of Corvallis, OR uses NABS brochures and a new brochure printed by the Oregon Department of Fish and Wildlife. She is a well-respected bluebird and rehabilitator who has given numerous programs for over 16 years. It is interesting

that when appropriate (she has the necessary federal/state permits) she uses a live handicapped bluebird.

Warren Frey of East Berlin, PA spoke to the local 4-H Club on conservation and they built a bluebird exhibit for Earth Day. He states that the kids were responsible for answering questions from interested spectators.

Mary Miller of Sharon, PA uses bluebird boxes with nest samples. She often shows the video "Bluebirds—Profile of Nature."

Barbara Stinson of Warrenton, VA uses as her props a bluebird nest box, downed tree limb with cavity, and books and magazines. Her slides consist of more than 100: some from NABS, some of her own, and others from Cornell's Laboratory of Ornithology. She spoke to a grand total of 1,115 individuals in 1992. Keep up the great work!

William Ryan of Yakima, WA says, "Most of my programs to adults are a combination bluebird-wildflower slide program. The combination works well together because nearly all of Yakima Valley Audubon Society trails are located in prime wildflower areas. We encourage people to visit our trails and to help us in any way they can."

The following speakers returned their 1992 questionnaires, which helps us ascertain what is going on in their state, what works well in programs and what doesn't. We also get the sense of what is beneficial and what is needed/lacking in the NABS slide program. We want to thank all the speakers for their hard work and stalwart effort to educate the public about bluebirds. The 1993 questionnaires will be sent in January 1994, so please keep a log of your 1993 programs and send back the questionnaire as soon as possible. Thanks for all your work on behalf of bluebirds!

Robin Axsom
Diane Allison
Christine Ammons
Art Aylesworth
Travis Bardon
Lorna Beasley
Kevin Berner
Thomas Blshop
Alan Boulton
Beth Brown
Gerry Brown
Scott Butterworth
Willard Cash
Nancy Cogsdale
Charles Cooper
LuAnn Craighton
Mary Cutler
William Davis
Lyle Droge
Eleanor Dunham
Jean Eakin
Hobart Elliffritt
Eisie Eltzroth
Eialne Felkema
Lillian Files
John Findlay III
Patricia Foley
Max Forbes
Mary Elizabeth Ford

Warren Frey
Louise Gates
Genesee Country Nature Ctr.
Mrs. Homer Germond
Michael Gillis
Eima Goodman
Edward Gray
Donna Hagerman
Vicky Hallman
Fran Hanes
Thomas Hayden
Marcy Hoepfner
Svante Humbla
Jerry Hunefeld
Ken Jankowaki
Charlotte Jernigan
Nannette Johnson
Patricia Johnston
Ken Karnes
Arthur Kennell
Dr. R.D. Kiff
Gord Kingsmill
John Kliser
Emil Klanchar
Gary Knippling
Karl Krdler
Alfred Larson
Frank Laubinger
Eleanor C. Lawrence Park

Robert Lechner
Donna Legare
Linda Lovell
Duncan Mackintosh
Chuck Martin
Charles Mauldin
O.D. McDaniel
Brenda McGowan
Bill Merriman
Gene Miller
Jill Miller
Mary Miller
John Monroe
Theodore Morus Jr.
Jerry Newman
Native Nurseries
Paxtuxent River Park
Wilbur Peachey
Myrna Pearman
Alfred Parry
Sam Phelps
Doug Quinn
Mary Reed
John Rogers
Larry Rohrbaugh
Derrail Rush
Jean Rutan
William Ryan
Fred Sahl

Frances Sawyer
Ken Schar
Bob Schutsky
Marvin Schwilling
Dorene Scriven
Joe Sedlacek
Glenn Sikes
Ann Smith
Lorne Smith

Marva Smith
Southern Interior Bluebird Trail
Barbara Stinson
Henderson Taylor
Ed Tuthill
Bluebirds Across Vermont
Jim Walters
Doug Weeks
Richard Wells

Delores and Ernie Wendt
Richard Williams
Lloyd Wilson
Judy Wink
Don Yoder
Al Yusko
Dr. Lawrence Zeieny

Speakers of the Quarter

Speakers' Bureau Report: Idaho

Ron Kingston

Idaho, often called the "Gem State," has two avian gems: Western and Mountain Bluebirds. The Mountain Bluebird was adopted as the state bird in 1931 and ever since has been the pride of Idaho. Bluebirds are doing very well, although in the past few years, the rainy cool weather has given them a difficult time. The following speakers are doing their best to keep everyone informed and to keep the bluebirds flourishing.

Alfred Larson, of Boise, teaches an adult education bird watching class which includes a section on starting a bluebird trail. He also gives programs to scouts and in schools. Last year he spoke to 13 different fourth grade groups for 15 minutes each. He speaks to people who are in rehabilitation; he spoke to 40 at a Parkinson's disease support group. He uses his own 80 slides of Western and Mountain Bluebirds, other cavity nesting birds, and desirable bluebird habitat. He says that red squirrels and weasels are his main predators, but House Wrens played havoc last year.

Alfred Perry, also of Boise, is a very busy man. He gives programs to students at the high school, the High Desert group, the Fish and Game League, the scouts at Meridian, and, as he says, "To anyone who will observe and listen!" He uses 344 slides which he goes through rapidly in one hour and ten minutes. He says "I have given many narrative slide programs for the last 12 years, didn't think it was any big deal, just a part of being a bluebirder." He mentioned that he has a trail 129

miles away consisting of 380 boxes which runs for 85 miles. It has 100% occupancy!

He is thankful that George Sherer is helping him these days. The Idaho Fish and Game published a pamphlet "Building Homes for Idaho's Bluebirds" with his information and box size. Alfred Perry is so respected in Idaho for his bluebird effort that he was named the Idaho Wildlife Federation Conservationist of 1992.

Elma Goodman, of Glens Ferry, 75 miles east of Boise, along with other members of the Elmore County Wildlife Club, give Mountain Bluebird programs to the fourth graders in their area. She says "fourth grade is Idaho history year." She uses the NABS slides and the "Bluebird, Fly" cassette. The program lasts about an hour and the kids made cutout bluebirds with a sunflower seed as the bill.

Up in the panhandle, 70 miles east of Spokane, WA, is Pinehurst, Idaho, the hometown of **Clarence Hagerman**. He has slowed down a bit, but for many years gave programs to women's groups, teachers, and fourth graders. He still has 250 boxes which are 48 miles away. He made 190 boxes for his daughter, Donna, in Reno, NV and a few for his other daughter, Patty Gerdef, in Denver, CO. Donna, one of NABS' speakers, has done extensive research on entrance hole sizes for Mountain Bluebirds. Nevada is the other state that claims the Mountain Bluebird as its state bird.

Clarence said that he would love to do more, but is having a hard time

getting around these days. He and his wife were on a motor bike ride through Montana back in the late '70's when they saw a man looking in a box on a post along the highway. They stopped, went over, and asked the man what he was doing. That man was Art Aylesworth—a long time bluebird enthusiast from Ronan, Montana who explained about the bluebirds and their problems. Ever since that meeting Clarence has been helping the bluebirds of Idaho.

Our last speaker is **Dan Davls** of the U.S. Forest Service at Orofino, some 250 miles north of Boise. Dan is in Western Bluebird country where he uses the NABS slide program plus the video "Bluebirds, Bring Them Back" to educate and inform elementary and high school teachers and students. He talks to more than 400 students a year. He reaches out to the community in three ways: first, by getting the new "birding fledgling group" (new birders)

excited about bluebirds; next, by involving the schools around Orofino and Kamiah in bluebirds; and, last, by promoting and speaking to the "Partners in Flight" organization on the thrill of bluebirding. "Partners in Flight" is an international organization to help the neotropical migrants of the world.

He gets help monitoring his trail of over 450 boxes from students, teachers, the Old American's club, and other senior groups. The main bluebird competitors on the trail are wrens, Tree Swallows, and a few Violet-green Swallows. Dan indicated that he would like to see more emphasis on Western Bluebirds in the NABS slide program.

These five speakers are making sure that the people of Idaho know that the Mountain Bluebird is their state bird. The Idaho state motto is "Esto perpetua"—"May it endure forever" or "It is forever." With the help of these five speakers and other conservation pursuits, the bluebirds of Idaho *will* endure forever. ■

Pennsylvania Monitor Experiments with a PVC Nest Box Design

Robert Early

I started helping bluebirds after reading a *National Geographic* article by Lawrence Zeleny in 1977. My initial effort consisted of 20 boxes which attracted only House Wrens and House Sparrows. The following year I increased the number of boxes to 80 and had eight pairs of bluebirds.

Currently I have 300 boxes available for cavity nesters including 20 for Wood Ducks and a dozen for American Kestrels and Eastern Screech-Owls.

Most of my boxes are of wood, although recently I've been experimenting with either five or six inch PVC pipe with wooden floors and plywood roofs. The one-half inch walls are highly durable—not easily damaged by predators or vandals.

This year, for the first time, one of my boxes contained a bluebird nest with white eggs. All five of the nestlings fledged.

If any readers would like a copy of my PVC nest box plans, please send a stamped, self-addressed envelope to me at the address below. ■

RD 3, Box 196
Hummelstown, PA 17036

Instructions to Authors

Authors planning to submit articles for publication in *Sialia* are encouraged to obtain "Instructions to Authors," a page which summarizes manuscript requirements.

Address requests to the editor at 10617 Graeoch Rd., Laurel, MD 20723.

Fledging of Hand-Reared Tree Swallows

John McFaul

In early August [1989] Inglewood Bird Sanctuary was given the task of hand-rearing three Tree Swallows which were brought in when they were approximately one week old. The Inglewood staff fed them for about one week using a mixture of cat food and "duck and goose starter," purchased from Master Feeds (50% each). Water was added to the mixture to give it the consistency of pudding. Insects were also given to them as they became older. During this period, one bird died, perhaps as a result of a severe mite infestation.

As the remaining swallows reached fledging age, the sanctuary staff became concerned about the chances of the birds surviving if they were released on their own. With this in mind, I approached Don Stiles with the idea of fostering them to an active Tree Swallow nest on a bluebird trail. Don suggested a nest on a trail he runs west of Lloyd Lake, southwest of Calgary.

On Friday evening, 4 August, the two Tree Swallows were placed in a nest box with four other young of approximately the same age. Before being placed in the nest, the foster chicks were banded by Don. I put a spot of red dye on the breast of one of the birds and a spot of blue dye on the other which would enable us to watch their progress. We left the box for a short period to look at other nest boxes.

When we returned to the box with the foster chicks, both were observed being fed by adults. The following afternoon I returned to

the nest box and watched the brood, including the foster chicks, being fed. It seemed that each chick would be fed about five times in less than five minutes before giving up its place at the hole to another nestling. In about 15 minutes that same chick would reappear for further feeding.

Two days later I went to the nest box again and observed the two fostered chicks with their dyed breasts on a nearby fence being fed by adults. When closely approached the two young flew a short distance, but they returned to the fence when I returned to the car. The other four nestlings were still in the nest box and fledged later. ■

43 Hartford Rd., N.W.
Calgary, Alberta
Canada T2K 2A4

Bluebird Song Available

The bluebird is often mentioned in songs, but a song has never been written exclusively about the bluebird.

At the request of the North American Bluebird Society, Douglas Wood of Sartell, Minnesota, has composed "Bluebird, Fly." The song explains the plight of the bluebird in a touching, beautiful way.

Doug has composed songs for the National Wildlife Federation, Minnesota Tourism and the Wildlife Rehabilitators Association. He is well-known at nature centers and outdoor education organizations for his nature oriented songs.

Cassette tapes are now available at NABS headquarters for \$5.00.

1994 Annual Awards for Bluebird Conservation

The North American Bluebird Society annually makes awards for outstanding contributions to bluebird conservation. If you wish to nominate an individual, a group, or someone involved in research for an award, please provide the following information.

INDIVIDUAL

1. Name, address, county, state, telephone number
2. Affiliation(s) with bluebird group(s) or other bird or conservation societies with bluebird programs. Describe the individual's involvement and activities.
3. Number of years active with bluebird/cavity nester conservation (minimum of seven years necessary)
4. If nominee has a trail, describe its location, when established, number of boxes, production, record-keeping techniques, etc.
5. Describe any ways in which nominee has publicized or aided bluebird/cavity nester conservation. Examples might include (but are not limited to) speaking before groups; working with young people; obtaining publicity in newspapers, radio, or television; working at nature centers, workshops, or fairs; inventing or improving trap or box designs; designing and producing publications; plantings, etc.
6. Anything else you feel is relevant to understanding the outstanding commitment to bluebird/cavity nester conservation of the nominee.

GROUP

1. Complete name, address, location, current president or other officer or contact (for governmental agency)
2. Specific information about the bluebird program: printed information (enclose samples), workshops, number of boxes, increase in bluebird production, methods of recruiting monitors, successful fledglings, etc. (Program must have been in place for a minimum of five years.)

RESEARCH

1. Name, address, telephone number, academic affiliation
2. Briefly summarize research completed (and in progress) involving bluebirds/cavity nesters
3. Bibliographic citations of articles published about bluebirds or other North American cavity nesters (copies of articles or abstracts are desirable)

Send all nominations to President Charlotte Jernigan, R.R. 2, Box 434-B, Wagoner, OK 74467 by 1 March 1994. ■

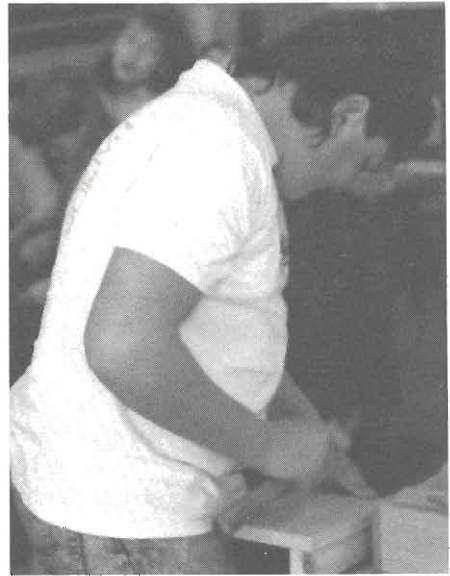
Bluebird Unit in Maine School Benefits Students, the Community, and Bluebirds

Chuck Martin

The Paris Conservation Commission, located in the town of South Paris, in western Maine, has once again been busy building and monitoring bluebird boxes for interested community members. Since the introduction of the bluebird nesting program several years ago, the program has evolved to include a joint partnership among the local middle school, Oxford Hills Middle School, and the town (Paris Conservation Commission). As a result, the Commission has increased its number of available nest boxes each year, from 20 to approximately 190.

When I first joined the Commission, I realized the need for extra help in maintaining this program, due to a decrease in membership. (Presently, we have five active members.) As a life science teacher at the local middle school, I realized the benefits of a coordinated effort between the school and the Commission and decided to develop an interdisciplinary unit on bluebirds lasting approximately three weeks. After applying for and receiving a \$300.00 grant from the Western Maine Center for Educational Excellence to further develop this program for dissemination, I had the funds to carry out this project.

Each discipline, within the team at the middle school, spends the three weeks of the unit teaching the subject matter around the theme of the "bluebird." In math, students study graphing and statistics; they also develop a monitoring sheet which is given out with each box. This sheet is sent back to the Commission in the fall so that the success of the program can be monitored. Each student also creates a blueprint for his bluebird box, and projects the cost for a group of 30 students to each build a box. In reading and English, students learn vocabulary relating to bluebirds and create poems. They also send information to



A student at Oxford Hills Middle School, South Paris, Maine, assembles a bluebird nest box for distribution to the community.

pen pals in other parts of the country about the Eastern Bluebird in exchange for information about Mountain and Western Bluebirds. Stories are also read about bluebirds and summaries are written. In science and social studies, mapping is studied, and characteristics of the bluebirds and their habitat are discussed. In art, the students develop informational posters for the school and community. They design a cover for an informational pamphlet about the bluebird which describes nesting requirements (developed in science class). Pamphlets are typed in computer keyboarding class and are then distributed with each box.

With the grant, money is available for each student to keep his own box for monitoring purposes, and it allows for 80 boxes to be available for sale to interested community members. The

boxes usually sell out within two days. Each year the demand is greater as people in western Maine have really enjoyed the monitoring project. We have a return rate of 30% on monitoring sheets and are addressing strategies to increase this percentage. The class also has started a bluebird trail around our school field; bluebirds have nested in two of the eight boxes.

The Interdisciplinary unit has proven to be very successful, as students see the connection between each class and a related theme. Students share their reports daily on the success of their own bluebird boxes which they are monitoring. Two students, with behavioral problems, spent one whole day taking pictures and observing the bluebirds in their boxes. Their excitement was well worth the overall effort.

The Conservation Commission concerns itself with selling the boxes (for \$5.00 to cover the cost of materials)

and collecting monitoring sheets. Charles Johnson, a longstanding member of the Commission, pre-cuts the pieces for the 180 boxes to make assembly easier.

With the remaining money, I was able to purchase the NABS slide program and have now presented it to a local nature club and hope to present it to other interested area groups. Nearby golf courses have also erected and monitored bluebird boxes for our group.

I hope to hear from other schools interested in swapping ideas or materials about the bluebird. The interdisciplinary unit on bluebirds, in partnership with the local conservation commission, was cited this past year as an exemplary environmental program by the Roger Tory Peterson Institute of Natural History. ■

Oxford Hills Middle School
100 Pine Street
South Paris, ME 04281

North Salem, New York School Continues Bluebird Project



Fifth grade teacher Ray Bassi is shown with students from his class at Pequonack Elementary School in April 1993. This on-going bluebird project adds nest boxes to the school grounds each year. These boxes were placed in the lower fields.

Is There Hope for House Sparrows?

Tami Nielsen

The call came in around 11:00 a.m. As I listened to the concerned voice of one of my dedicated bluebird volunteers, I knew I had my work cut out for me. Although the Geauga Park District in Ohio provides around 70 bluebird boxes for the Eastern Bluebirds, several other species find the boxes an inviting location in which to raise their young. One species we encourage is the Tree Swallow.

Our "Bluebird Box Docs" are a very dedicated group of volunteers who take their monitoring seriously. They love "their" babies dearly and do everything possible to assure them a safe start in life. As a result, I was not surprised to hear the distressed voice over the telephone. A box of Tree Swallows had been checked earlier that morning. Three out of the four young had been found dead with the only survivor emitting weak peeps every few minutes. Feeling that something must have happened to the parents, the volunteer settled down to watch the box for an hour. As expected, nothing showed up. Thus the phone call. The young swallow was still in the box. Was there ANYTHING I could do?

And so the fun began. First, I pulled out a list of all the Bluebird Box Docs. Then I began to make phone calls to find out the status of the broods in each box. Did any of them have active Tree Swallow nests? How about bluebirds? What was the age of the young? After about 10 calls, I realized I was at a dead end. This dying swallow was from a late brood; all the other swallows in our parks had fledged.

There were, however, several nests with young bluebirds, but they were too young. The swallow seemed only a few days away from fledging. To put him in with newly hatched bluebirds would surely put them at risk.

Then I had a thought—kind of far reaching—but what did I have to lose? The previous day I had been checking some boxes and had come across a House Sparrow's nest. Normally, I have no trouble removing nest and eggs, but this nest contained four young which were just about ready to fledge. Being the "softie" that I am, I, for some reason, could not bring myself to destroy them. Could this nest offer the solution? Quickly, I got on the phone to let the volunteer in on my plan. Shortly thereafter I left to pick up the abandoned swallow. It was late afternoon when I arrived at the box with the House Sparrows. I wondered if I should remove a couple to give the swallow a fighting chance. Once again my heart ruled my head, and I quickly stuck the swallow inside and shut the door.

It wasn't until noon the following day that I had a chance to check on my experiment. With much apprehension, I opened the door, half expecting to see the swallow pecked to death as House Sparrows often do to their competition. Instead, I was amazed by what I saw. Upon opening the box I came face to face with a bright-eyed, big-mouthed swallow seemingly determined to beat its new-found siblings to their next meal. Was this yesterday's swallow? The one which could barely lift its head

or make a noise? Its fresh strength seemed to be contagious for I spent the rest of the day in a happy state, and even began to wonder if House Sparrows may, after all, be good for something! I did not make it back to the box the next day, but the following day I did and found an empty nest. Every shred of evidence showed that all birds had successfully fledged.

This brings an interesting

thought to mind. Rather than destroy the bad, isn't it better to put it to good use? Perhaps we will figure out some way to use House Sparrows in a positive way in the future. They certainly make great foster parents for large nesting Tree Swallows. ■

Geauga Park District
9160 Robinson Road
Chardon, OH 44024

Ford's Colony Recognized as a Bird Sanctuary

Ford's Colony, Williamsburg, Virginia, has been recognized as an Audubon Cooperative Sanctuary (ACS) by the United States Golf Association (USGA). This designation indicates Ford's Colony has taken steps to promote ecologically sound course management that has resulted in a sanctuary for birds.

To qualify for this recognition, Ford's Colony Country Club recently embarked on an ambitious plan to protect existing wildlife and promote additional wildlife habitat. The first step was the construction of specially designed bird houses. Ford's Colony residents periodically check the homes to ensure they are in good shape and to ward off any predators.

The next phase involved the planting of special shrubs and other vegetation that produce edible berries. Many Ford's Colony homes bear evidence of this effort with a remarkable variety of new shrubs and plants now prospering in residents' yards and near the fairways.

One Ford's Colony homeowner, Jim Mays, has played an active role in this effort by building more than 100 bird houses for residents. In addition, Mays has worked with the golf course staff to provide advice to property owners on what types of vegetation are beneficial to the local bird population.

"As a member of the North American Bluebird Society I am aware that golf courses in general provide valuable open spaces, greenbelts, and wildlife habitats, so it was a natural move for me to assist on this project" says Mays. "Our efforts at Ford's Colony have already begun to generate exciting results including an increase in a wide variety of birds such as owls, crows, bluebirds, hawks and even Bald Eagles.

The Audubon Cooperative Sanctuary Program for Golf Courses is a cooperative effort between the USGA and Audubon Society of New York. The program provides advisory information on how course superintendents, officials, and the general public can conduct proactive environmental projects for golf courses.

Ford's Colony is the recipient of numerous awards for environmentally sensitive development including the *Take Pride in America Award*. Ford's Colony's other environmental efforts have been recognized by the U.S. Department of the Interior's Fish and Wildlife Service, the Virginia Colonial Soil and Water Conservation Society, the Colonial Williamsburg Foundation, the College of William and Mary, and the Virginia Department of Transportation. ■

Helping Nestling Bluebirds Overcome Blowflies

Michael Phillips

It turns out that placing nesting boxes for the bluebird isn't all we can do to help this beautiful little bird.

This past spring a naturalist friend showed me how to help nestling bluebirds by removing the blood-sucking larvae of the bluebird blowfly. *Protocalliphora sialia* females lay their eggs in the nesting material once the female bluebird has begun to nest. The parasitic larvae hatch and attach themselves to the baby birds. The larvae usually attack the nestlings at night, hiding from the adult birds in the nesting material by day. A severe infestation can kill nestling bluebirds outright; newly fledged young weakened from loss of blood may also succumb in those first critical days out of the nest.

Nature's course often has such gruesome endings, but humans can intervene on the bluebird's behalf. When blowflies are discovered, it is best to act quickly. Choose warm, sunny days over cold, rainy ones. Gently lift the nest. The surest sign of blowfly infestation is 3/8" long, blood-filled pupae lying on the floor of the nesting box. If that's the case, allow the bulk of the nesting material in your hand to fall away from beneath the babies. Sweep the box bottom clean and place previously-gathered dry grasses inside for a new nest. Gently place the babies back on top and close the box.

Chuck Dupree, of the North American Bluebird Society, adds one guiding rule: "If you hear the babies chirp, don't go near the box." The young bluebirds at 10 to 12 days old are open-eyed, vocally-inclined, and easily disturbed into leaving the nest early. That premature leap before the normal two-to-three-week-old first flight is as likely to seal a baby bluebird's fate as the blowfly. "You can keep putting them back in all day long, but they'll keep jumping out to the ground where the adults can't feed them," relates Dupree. ■

RD 1, Box 275
Groveton, NH 03582

NABS SLIDE SHOW

To rent or purchase the bluebird slide show, write to the following address: NABS Slides, Box 6295, Silver Spring, MD 20916-6295. Please allow a month for delivery and, if possible, specify several dates.

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.

Tenth Anniversary Issue Available

The tenth anniversary issue of *Sialia*, which was sent to all members a few months ago as a membership bonus, is now available singly or at special prices for multiple copies.

Single copies are \$2.50. In larger multiples they are 4 for \$7.50, 10 for \$15.00, and, if a minimum of 25 are ordered, they are \$1.00 each. All prices are postpaid.

This one issue contains a wealth of bluebirding information in a concise form and is designed to compliment *The Bluebird* by Lawrence Zeleny. It is of particular value to individuals who present the NABS slide show or who organize a bluebird workshop.

Send orders to NABS, Box 6295, Silver Spring, MD 20916-6295. ■

An East Texas Trail: Learning to Expect the Unusual

B. Gayle Twiname and Peggy Reed

We developed an interest in bluebirds four years ago and each year we add to the number of bluebird boxes along our fence rows. We currently have 24 boxes and have enjoyed the varied experiences of being bluebird "parents." Last spring was unusually eventful on the trail.

We have learned (through negative conditioning) that it is important to check for wasp nests prior to opening the nest box. We've discovered that if bluebirds are currently in residence, wasps aren't; however, if no bluebird is in sight (after watching the nest box for a while), then generally wasps are. Because one of the authors is highly allergic to wasps, we have learned to approach nest boxes very carefully. A number of nest boxes were inhabited by wasps even though we diligently applied petroleum jelly to the inside roof of the boxes.

On approaching one nest box we discovered long pieces of dried grass sticking out the hole and by carefully peering into the hole we could see feathers everywhere. We knew that bluebirds are fond of pine needles and that this was not a bluebird nest. After watching the box closely for a few days, it became apparent that some House Sparrows had taken up residence. Two weeks later we opened the nest box and started pulling apart a cocoon of feathers and grass only to discover two sparrow eggs and two bluebird eggs. In checking the box a week later we found two bluebird chicks and two sparrow eggs. Needless to say the bluebirds fledged and the sparrow eggs never did hatch.

A few weeks later we went to check a nest box and saw something sticking out the hole which disappeared quickly when we got closer to the box. We waited a few minutes and thought we saw a snake's head. Sure enough, there was a large snake curled up in the box. Not being very brave peo-

ple (where snakes are concerned) and not being able to identify whether it was poisonous or not (I really think they should identify themselves), we decided to shoot the snake. Of course, with a shotgun we killed the snake and destroyed half of the nest box as well. We have learned since then that primarily non-poisonous snakes get into nest boxes.

We found another bluebird house (without bluebirds) inhabited by a black widow spider complete with an egg sack. We discovered all kinds of interesting inhabitants last year!

We also had a pair of bluebirds nest in the Purple Martin house and raise three broods successfully. With all the bluebird nest boxes around, it seems odd that they would choose a 20 foot high apartment complex in which to live.

In our past experiences, we were quite used to our bluebirds laying from two to five eggs per nest. This spring, we had one pair that laid six eggs. We waited expectantly to see just how many of the eggs would hatch (all six did), and tried to provide supplements for the parents so they could feed all of the young adequately. All six fledged and we saw them frequently throughout the summer.

Becoming bluebird "parents" has been very rewarding and challenging. We have had many successful broods fledge from our boxes, and we've had the enjoyment of checking nests and seeing bluebird development. We have also learned "the hard way" about other undesirable creatures that can inhabit a nest box built for bluebirds. We would like to encourage others to be careful of what may lurk behind those walls, especially those allergic to bee and wasp stings. ■

6975 Birch Dr.
Beaumont, TX 77708



Shirley Adams obtained this Illinois license plate displaying her passion for bluebirds. She chose Sialia 2 after finding that the word bluebirds was taken "no matter what way it was spelled" as was Sialia 1.

Readers, send us a photograph of your bluebird/cavity nester license plate or just drop us a postcard to let us know how your plate lets others know your favorite bird. Send to *Sialia*, 10617 Graeoch Rd., Laurel, MD 20723.

(TALES—Continued from page 159)

Jean Johnson, of Middletown, MD, told of meeting NABS member, **Betty Nichols**, also of Middletown, at the Feed and Seed Shop in Frederick. "Her enthusiasm for the 'bluey' is contagious. The bluebird trail in our town park is a wonderful, organized conservation effort of Betty's—and a joy to observe!" Jean had success this first year with five fledglings. The water and plantings in her yard surely helped attract the bluebirds.

Mr. & Mrs. Billy C. Brown, of Noel, MO, wrote about a bluebird feeder they had purchased which they found to be disappointing but then modified. Billy formed a bin inside the enclosed feeder which they fill with the standard mixture of lard, peanut butter, and cornmeal to which they add raisins which

have been simmered to plump them. (For the recipe, see *Sialia* 15(2):73).

Nancy Huykman, of Blairstown, NJ, wrote about raising mealworms. "I have managed to raise quite a lot of mealworms to feed the birds—starting with bluebirds and now a pair of Carolina Wrens which come to our back porch for a handout....I learned about raising mealworms from an article in *Sialia* 10(1):11-12." Now *that* might be an interesting winter activity!

Here's hoping we meet dear readers, friends new and "seasoned," on 22-23 October at the Sixteenth Annual Meeting, Callaway Gardens, Pine Mountain, Georgia, where, once again, we can study, swap tales, and just plain *revel* in the beauty of one of God's most beautiful creatures—the bluebird! ■

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:

I wanted to tell you about my success as a novice bluebirder.

We moved from the city of Houston, Texas to a beautiful 160 acre farm in the rolling hills of east-central Ohio. As animal and nature lovers my husband and I are doing all we can to encourage and help to save the bluebirds as well as other species.

We noticed only two pairs of bluebirds half a dozen years ago and decided to make them some nesting boxes to encourage them to stay. There are lots of dogwood trees, multiflora rose bushes, etc., around here for winter food. We constructed six nest boxes and made our own mini bluebird trail along our half mile lane. It is lined with huge old white pines with open pastureland on either side. We had huge success in the late '80s and early '90s with five pairs nesting. Each had three broods of four. We have now put up six more boxes to handle the growing population. Since we noticed that they stay during the winter, we made and put up a roosting box.

Karen Blackburn has done such an excellent job on her "Plantings for Bluebirds and Other Wildlife" articles that it would be nice to have a composite of all her articles to use as a reference.

Doris McCutcheon
P.O. Box 87
Newcomerstown, OH 43832

Karen Blackburn is working on a

compilation of her "Plantings" articles. All this valuable information will be available in one handy book.

Dear Editor:

Two years ago I read your pamphlet "Where Have All the Bluebirds Gone?" I shared this with my fifth grade class and we decided to build a bluebird trail. To make a long story short—things went far beyond our wildest expectations! Our little trail grew to 46 houses and we donated four more to Rocks State Park. Neighbors in the community learned of our project and built boxes as well. The end result: 135 boxes installed in our community.

I have been asked to present our project to teachers attending the Maryland Association of Environmental and Outdoor Educators Conference.

Sylvia Hutt
North Harford Elementary School
120 Pylesville Rd.
Pylesville, MD 21132

Dear Editor:

The other day, while at my grandma's, I started reading the magazine your society publishes and found it very interesting. I have read many magazines about wildlife and birds and, of them all, *Sialia* is the one that supplies the most information on bluebirds.

I am very interested in bluebirds, especially the Eastern Bluebird. My 4-H project is "wildlife" and my demonstration is on the Eastern Bluebird. I have built nine bluebird boxes and will probably build more of them in the future.

Nathan Perry
1132 Lamont St.
Macon, GA 31204

Dear Editor:

Many bluebird monitors find it impossible to monitor nesting boxes on a weekly basis as recommended by most experts....My heavy work schedule allows me to monitor my boxes on a 30 day schedule only, beginning about 15 March and extending through 15 August.

Whenever I encounter a fully completed House Sparrow nest, I remove it...I immediately plug it with a cork, which is removed at the next monitoring....Only rarely will a House Sparrow return to its chosen nesting site after an extended period of corking. Should this occur, I would recommend moving the box to another location. With 20 boxes, I never have more than two boxes corked at one time. Having used this technique for two years, I have never had House Sparrows fledge, and I always fledge many bluebirds....

Ed Barnett
7 Donna Heights
Huntington, WV 25704

Dear Editor:

I tell anyone who will listen about my four bluebird eggs laid as of 8 April—and two more nests built! We have added 16 new nest boxes this year and are looking forward to a bluebird population explosion. Beware all grasshoppers!

Geoffrey A. Larsen, M.D.
161 Stonewall Heights
Abingdon, VA 24210

Dear Editor:

I normally get 200 good nestings of

bluebirds from 530 boxes. In 1992, because of the dust from Mt. Pinatubo only 85 good nestings resulted.

This year, 1993, things appear to be worse. Many young birds died on the day they hatched out. Some birds died at the age of ten days. Clutches of eggs were abandoned.

Tree Swallows have now completed the nesting process, and, as I go around cleaning out my units, I find that they did well.

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

Dear Editor:

In the last two Christmas counts in Millis, Massachusetts, we discovered bluebirds wintering over. This gave me the idea to put up boxes in the area they were seen, along the Edison power lines....The real problem was Edison owned the right-of-way but not all of the property. So I had to visit the tax offices of three different towns to get the names of all the property owners [for permission to erect boxes].

By the middle of March I had all the signed permissions and a written contract from Edison, so up went the boxes: eight bluebird boxes (five regular and three Peterson style) and four kestrel boxes. By mid-April [1992] two bluebird boxes were occupied. Both boxes were regular style boxes, the only two of the eight occupied....This has been my first attempt to raise bluebirds and I'm pleased to have 20 birds fledged from only two boxes.

You know, there are powerlines all over the country and I'm sure the local companies would be just as cooperative as the one I dealt with.

The kestrel boxes yielded five female birds from seven eggs.

Paul Iarrobino
40 Spencer St.
Millis, MA 02054



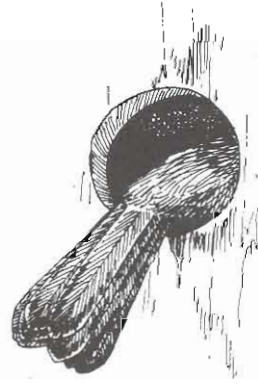
Bluebird Tales

Mary D. Janetatos

The head and plump upper body of the baby bluebird came into sight. One of the four young in the backyard nest box was having a look at the world through the entrance. NABS staff member **Sarah Funkhouser** and I were denied the thrill of watching the first flight of these young birds as they graduated from nestling to fledgling. There was the usual press of business to contend with.

We can identify with our many callers who voice one concern or another. A rather bizarre call recently was from an unidentified individual who described the "irritating" behavior of their backyard bluebirds. These juvenile birds became enamored of their own images as seen in the rear view mirrors of family or visitor's cars. The bluebirds left their "wash" on the cars. We trusted that time would mature these birds and they would drop the annoying behavior. I'll bet many would-be bluebirders would accept this problem gladly, if they just had bluebirds to start with....**Mildred Deese**, of Old Hickory, TN, wrote an entertaining letter about the backyard bluebirds she and her family are hosting. "This is our third year [bluebirding] and how enjoyable it has been. The books that I have read say that the young help feed the next nestlings. That isn't true here. Buster (the father) runs them off by the time the next clutch has hatched.

"We call the female, Sassy, because that is just what she is. Buster is laid back and has been harder to interact with....I never dreamed that there could be so much communication from birds....Our son was sleeping on the couch under Sassy's window (a place that we have prepared for her to look in). When we got up the next morning, he said he couldn't sleep until he got up and fed her. Sassy likes to sit on the window and watch us or watch the t.v. If there is any new music or visitors, she has to come and see who it is."



James A. Cook, of Germantown, MD, needed "convincing" to become a bluebirder. He wrote, "I recently became a park volunteer with the Montgomery County parks system....At first it was a bit of a chore. I was assigned a trail way up in Little Bennett Park with a quarter-mile walk once I got there. I began questioning my generosity when, after five or six visits, no one had taken up residence in any of my four boxes.

"But, finally, out of nowhere, there were three nests. Two I confirmed as bluebird nests; one belonged to a pair of chickadees. This "chore" has become a weekly high point for me. Sadly (and happily, too) my boxes had been abandoned this past weekend. My nine eggs had hatched, grown feathers, and fledged. The six chickadees should be leaving their nest soon."

May Gislis, of Arroyo Grande, CA, wrote a note on the back of her renewal form: "I love the bluebirds, we have one pair of *Eastern* Bluebirds around our home this year. Why—I don't know!" Well, May, we have had reports of a Mountain Bluebird here in the East this year, so I guess we're even!

Karen Poull wrote from Port Washington, WI, "Fortunately, for the past three summers I have had a nesting pair of bluebirds. I do not know of any others in my immediate area. I am getting some neighboring farms to put up boxes this spring so hopefully our population will increase." You are working in the right direction, Karen—welcome to the Society!

Edna Hammond of Brookings, OR, wrote wistfully, "Since living on the West Coast, I have not seen a bluebird; however, having been a resident of Illinois for many years, I enjoyed the bluebirds of that area." You see what other bluebirders have done, Edna. Now *you* can get involved!

When **Carlos DeStefano** of a town in northeastern Missouri wrote requesting NABS' bluebird information, he asked, "Can the boxes be effective in northeastern Missouri where I live? How can I tell the difference between bluebird and sparrow eggs? And the vital question: do sparrow eggs make good omelets?"

Another request for information came from 12 year old **Eden Jach**, of Burchville, MI, who said, "I love all animals on earth, good or bad, they all have a purpose....I just wish I could save all endangered species, but I probably can't, but I can start now and try to save one of the prettiest birds I know." It may not be possible to save ALL the endangered species, but to assist in bluebird conservation is often a very distinct possibility. Bluebirds have not been in the specific classification of *endangered*, but they are in need of human help. With that human help, they will remain *off* the endangered list.

Back in the winter of '93, **James O. Mays**, of Williamsburg, VA, joined NABS and then wrote of his bluebirding. He is now regarded as Ford's Colony's "Bluebird Man." His residential development, Ford's Colony, has benefited from his activities since Jim "got inspired" while recovering from back surgery. His convalescence removed him from the golf course temporarily and he delved more deeply into bluebirding. The clipping that Jim enclosed said that he has built and placed more than 100 bluebird boxes within Ford's Colony. Built from scrap lumber they are located along the golf course, in yards of homeowners, and along several streets. He monitors all of them.

Rosemary Ritter, of Long Green, MD, wrote about the trials on her trail

when she returned the annual nesting report form. House Wrens and mockingbirds were problems for her. One bluebird pair tried four times to nest, laying 17 eggs in all. They had only three successfully fledge because of wren interference.

"Another pair of bluebirds started building a nest but left. Chickadees took over the nest and laid six eggs. They were successfully nurturing their babies when the bluebirds returned. The bluebirds hovered around the box and kept looking in....The next morning all six chickadee babies were dead. I cleaned out the box and the bluebirds started housekeeping. They laid four eggs with three babies fledging.

"For the past two years, I have been feeding my bluebirds mealworms. Every morning and evening I go to the bluebird boxes and call in a singsong voice, "Where are the bluebirds?" I put the mealworms in a flat container near the boxes, and the bluebirds come as soon as I call. Even the babies learn and now they, too, come when I call. It's wonderful!"

The bluebirds lost a fervent friend when **Myron Whitney** of Leisure World in Silver Spring, MD, passed away in July. Myron (and **Mabel**, his wife, who preceded him in death) were NABS office volunteers. Myron also monitored a very productive trail on the grounds of Leisure World. They join the list of bluebirders who have gone before us—each one of whom had contributed to the large picture of saving the bluebird. Myron will be missed!

As we face the winter months, we ask ourselves what we can do to assist our banner bird in the cold weeks ahead. This varies with geographic location, but some bluebirders have described their winter bluebirding efforts. **Mervin Dellum**, of Potomac, MD, sent snapshots of the bluebirds in his yard feasting on mealworms during the summer, even perching on a hummingbird feeder before landing on the banister where the mealworms were placed in a plastic dish.

(Continued on page 155)

Encouraging Bluebirds

Mother bluebird, call your child.
Your little one, peeking out the box—
quavering, chirping,
so eager to fly, yet so frightened.
Tell your blue child
that the blue sky awaits.
Tell your blue child
the meadow flowers await.
Tell your blue child
“Stretch your wings,
Fly out into June sun!”
Tell your blue child
“Come! I will be with you.
I will teach you,
and watch over you
through the storm!
Now—
Fly!”

—Marion Maxson©

(BOOSTERS—Continued from inside back cover)

Richard F. Taylor
Cheryl Smith Tolley Family
Mrs. Garnett T. Tunstall
Nancy L. Weiss, M.D.
Sue Wells
Barbara Whitney
Mary L. Williams
Robert H. Williams
The Woman's Club of Woodbury

Nestling

Mr. & Mrs. Don P. Altholz
Janet R. Baksh Family
Linda G. Baldauski Family
James & Donna Beers Family
Gary & Wendy Bekx Family
Alfred M. Boehly Family
M.T. Brace
Gordon & Martha Brewster Family
J. William Bruner Family
Barbara & Bill Buckley Family
Ann C. Cannon Family
Mr. & Mrs. Floyd Chase Family
Archie A. Cowan Family
Dale & Andrea Cross Family
June Dunn Davis Family

Samuel Davis Family
Mrs. Joseph H. Dimon, III Family
James Farrell Family
Stanley A. Fisher
Susan A. Fisher Family
Dr. & Mrs. Harold Floyd Family
Henry & Linda Frank Family
Alicie A. Moise & Al Gest Family
Shannon R. Gordon Family
Einar Graff Family
Dr. & Mrs. William Hallenbeck Family
Judy Hayden Family
James R. Hood Family
Ralph H. Hoss Family
Senter & Marie Jackson Family
Paul Jung
Tammera Kelley Family
John & Linda Knowlton Family
John & Shirley Koerner Family
Richard Leatherman Family
Dr. & Mrs. Steven Leers
John & Shirley Leonard Family
William S. Leslie Family
A.T. Lindholm Family
Mark & Terry Lott Family
Donna S. McDowell Family
Jerry McKenna Family

Wesley McClung Family
Mr. & Mrs. Charles Mason Family
Charles A. Mauldin Family
Richard & Ann Miller Family
George Morey
Shelley Packard
Sue Pairsh Family
James B. Peebles
Mrs. Deborah H. Pettus Family
Esperanza C. Refanan
Ron & Pam Redus Family
Mr. & Mrs. Ken Richardson Family
Kenneth L. Schar
Percy R. Shinn Family
Ms. Darlene Sillick
Chris J. Slabaugh, Sr. Family
Furman South, III
Don & Fran Stange Family
Lillian K. Stevenson
Jane M. Sylves Family
Robert Teetshorn Family
Tom & Melanie Thompson Family
Richard Tomaselli Family
Jane Mefffield Ungar Family
Donald E. Vernon
Lorraine D. Watkins
Steven B. Wilson Family

BLUEBIRD BOOSTERS

Life Members

Charlotte Jernigan
Clark W. Hart
Katrina Renouf
Mrs. Irene S. Frantz
John H. Rogers
Barbara L. Matlock
Lawrence Zeleny
Dr. Eugene I. Majerowicz
Lillian Lund Files
Stan Bleszinski
Laura Nielsen
Keith Kridler
Fred A. Huntress, Jr.
Gerald Edward Martin
Dr. Bill Keyes

Mountain Bluebird

Donna Hagerman
Bonnie Jackson

Western Bluebird

Robert Crumpton
Randy & Laura Jerberg Family

Eastern Bluebird

Sarkis Acopian
John F. Adams, Jr.
Robert E. Ahearn, M.D.
Neal B. Allen
Terry Andrews
Raymond Arendt
The Backyard Naturalist
David Bageley
Mrs. Nancy Baron
Gary Black, Jr.
Judy Bland
Warwick P. Bonsal, Jr.
Sarah S. Braunwell
Mrs. Hilda Bretzlauff
Lylla Bryant
Broncia C. Chalfont
Jane C. Chaplin
Giles R. Cokelet
G.R. Cook
Joyce & Joseph Coyne
Mrs. R.R. Cravens
Mr. & Mrs. James E. Crowell
Mr. & Mrs. Richard Davis
Barbara G. Donaldson
Mrs. Coleman Donaldson
Haskell Duncan
Eastern Aluminum Co.
Wendell Edgar
James R. Ehrler
Mr. & Mrs. E.C. Eisenhart
Peter & Theresa Elmendorf
Ethelreda C. Fesmire
Douglas Flood
Dee Friar
Melvin H. Gesink
Anne Giddings
Linda R. Gilchrist
Tommye S. Glivens
George N. Grant

Miss Georgia Hariton
Mr. & Mrs. George Harmon
Vivian Harrell Family
Andrew J. Hartley
Jonathan Harshman
L. Edward Haws, Jr.
Suzanne Howard
Pamela Isdell
Kenneth W. Jacobs, Jr.
Kenneth L. Jankowski
Mrs. R.N. Jespersen
Pam Johnson
Mrs. R. Kallinich
Pauline R. Kasserman
Paula Klavan
Mrs. Charles Kopfer
Sam J. Kuykendall, M.D.
Aletha J. Lindstrom
Becky Lomax
Mrs. F. Leslie Long
Ms. Felicia Lovelett
Mrs. George Luce
Joe & Marilyn Luce
James P. Massie, Jr.
Conn M. McConnell
Bruce McNaughton
Elmer B. Mellen
Betty J. Neeks
David B. Oliver, II
George P. O'Neill
Martha & Lou Pacilio
Roger Peloquin
Patricia & Craig Rauber
Sharon Richard
Rosemary Z. Rittler
Marvin & Mary Rubin
Fred Sahl
Dorene H. Scriven
Shreveport Society for Nature Study
Mrs. Patricia Soose
Mr. & Mrs. W.L. Sullivan, III
Ruth C. Tevis
Isabelle & Stan Thomas
Chris Thoma
Susan F.C. Well
Wild Bird Crossing
Robert D. Williams, M.D.
Michael Owen Willson
Ms. Betty Wise
Suzanne Wybrantec
Tom Zorn Family

Fledgling

Mrs. Shirley Adams
David Alpert, M.D.
Donald F. Anderson
Augusta Bird Club
Gray Balrd
Brenda Baldwin
Hans Beacham
Orhan Birol
H.J. Blair
George Boos
J. Boyce
Coburn Britton
Robert J. Brown
Jo Eilyn R. Bunting

Bruce Carison
Mrs. Dwight Collmus
Mary L. Contakos
Adrienne Ryder Cook
Elizabeth Crispin
Kristine Crutch
Louise Dailey
Mrs. Diane T. Deslbur
Mr. & Mrs. Malcolm Dorber
Duncan Mills Restorations
Delos C. Dupree
Jacqueline S. Fonticella
Ms. Vivian Glenn
Elizabeth A. Hall
Miss Frances Hanes
Gerald L. Hartley
David W. Heidenreich
Dana L. Heisey
Floyd V. Hosler
Mrs. Arthur A. Houghton, Jr.
Charles Huthmacher
Mrs. R.L. Ireland, III
Barbara R. Irwin
Mary D. Janetatos
Mrs. William G. Jens
Larry & Betty Jernigan
Ron E. Kingston
Frank H. Kruhl
Donna Lang Family
Kenneth G. Lehnert
Louise Lehrman
Mrs. Marty V. Leonard
Neal Lower
Geoffrey & Lisa Marcus
Kenneth M. Nagler
Marjorie Mountjoy
Mr. & Mrs. George Nallsnik
Sue Holly Newman
Laura Nielson
James B. Nlederauer
Nancy Ogg
P.P. Olson
Harry B. O'Rear
C.W.E. Paine
Kathleen M. Perry
Mark & Jean Raabe
Gayle C. Reddick
Catherine Reno
Grant C. Riggle
Lois M. Roberts
Roger E. Roberts
Col. W.R. Robertson
Todd Ryker
Carl J. Sagmuller
Cynthia L. Saltzman
Harry Sanders, III
John S. Schler
Robert A. Schoentag, M.D.
Shearson Lehman Brothers, Inc.
Glenn H. Sikes
John W. Skooglund
Mrs. R.H. Patmore Skuce
Mrs. Susan L. Sloan
Patricia Spielman
Dr. & Mrs. Lester D. Stephens
Anne Sturm
Mr. & Mrs. G.J. Tankersley
(Continued on page 160)

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

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

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

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

