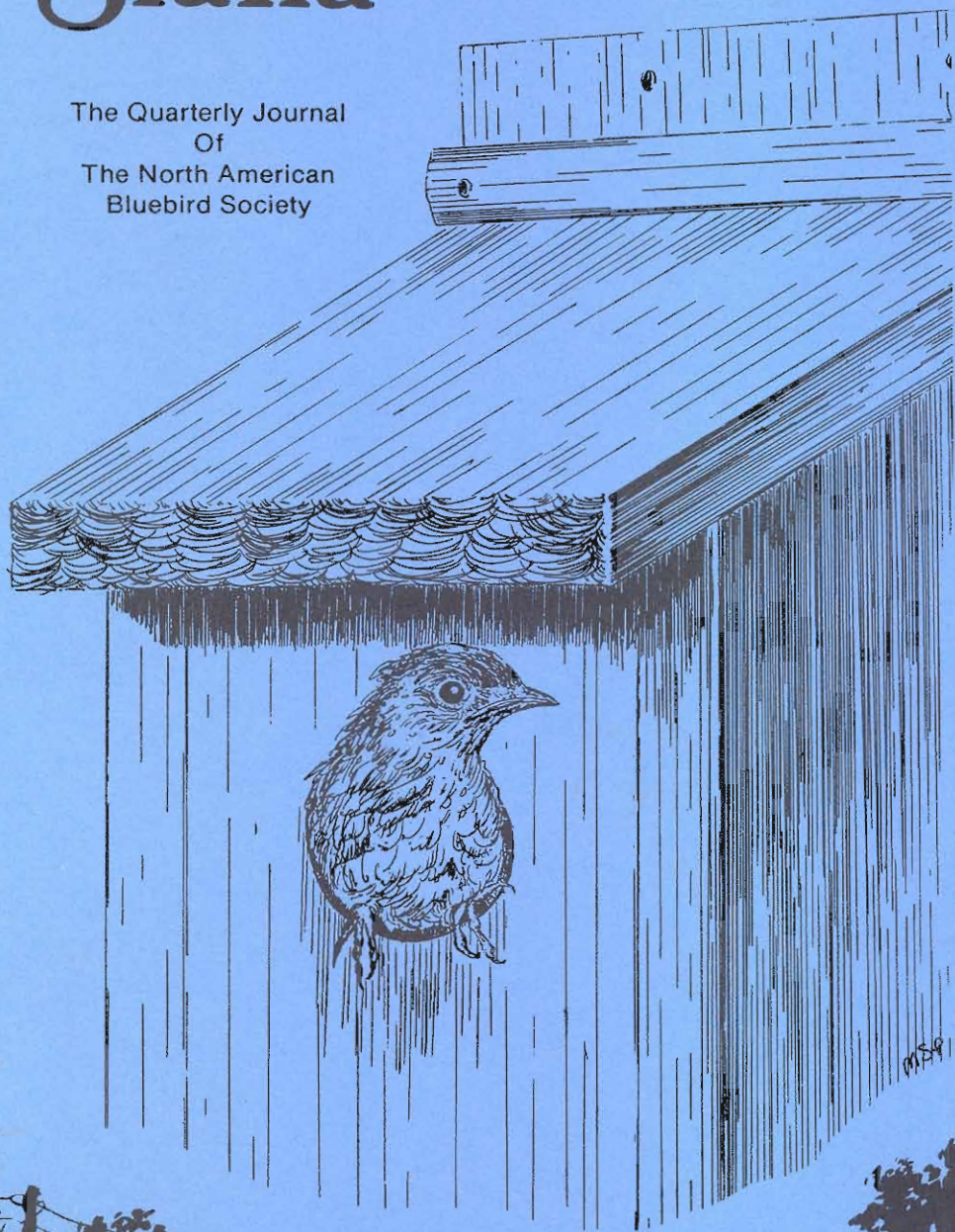


Sialia

Volume 19, Number 4
Autumn 1997
Pages 121-160

The Quarterly Journal
Of
The North American
Bluebird Society



NORTH AMERICAN BLUEBIRD SOCIETY

Founder

Lawrence Zeleny

President

Charlotte Jernigan

Vice President

Carol McDaniel

Treasurer

Glenn E. Funkhouser

Recording Secretary

Douglas LeVasseur

Corresponding Secretary

Joseph Tait

Directors

Martha Chestem 1998

Maryland

William R. Davis 1998

Ohio

Richard Hjort 1998

Minnesota

Barbara Stinson 1998

Virginia

Steve Eno 1999

Nebraska

Edwina S. Hahn 1999

Georgia

R. David Shiels 1999

Texas

William Wheeler 1999

Tennessee

David L. Eastman 2000

New Hampshire

Ray Harris 2000

Alberta

Robert M. Niebuhr 2000

Montana

Stan Reed 2000

Arkansas

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. 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, P.O. Box 74, Darlington, WI 53530-0074. 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. Deadline for submission of material is three months prior to date of publication.



Sialia

The Quarterly Journal
About Bluebirds

Volume 19, Number 4
Autumn 1997
Pages 121-160

EDITOR
Joanne K. Solem

ART EDITOR
M. Suzanne Probst

TECHNICAL ADVISORY COMMITTEE
Carol McDaniel
Myrna Pearman
Dorene Scriven
James Walters

CONTENTS

Presidential Points	122
Charlotte Jernigan	
Major Changes at NABS	123
Mary D. Janetatos	
NABS Seeks Affiliates	124
Controlled Tests to Determine if European Starlings Can Pass Through Various Hole Sizes	125
David M. Lehmann	
Exchange	132
Feeding Time: Photographs	140
Hubert Brandenburg	
1998 Awards for Bluebird Conservation Announcement	142
Cavity Nester Success in Orange County, California	143
Dick Purvis	
In Memoriam	145
Anderson Youth Home Photograph	146
North American Bluebird Society Research Grants Announcement	146
Twentieth Annual Meeting Report	147
Mary D. Janetatos	
NABS Awards Presented	150
Bluebird Express	154
Bluebird Tales	156
Mary D. Janetatos	

COVER

An Eastern Bluebird is close to fledging. Art Editor M. Suzanne Probst based this drawing on one of Hubert Brandenburg's photographs.

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 Graefloch Road, Laurel, Maryland 20723.

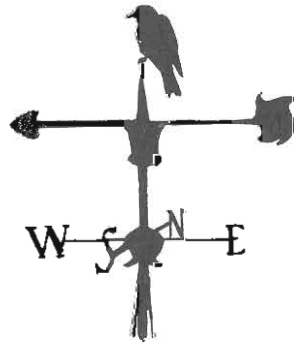
Presidential Points

Charlotte Jernigan

TEN YEARS! TWENTY YEARS! And then there we were in Newport Beach, California, for our 20th Annual Meeting. Two decades of spanning the distances from north to south and to states that embraced both the Atlantic and Pacific Oceans.

The North American Bluebird Society is dedicated to conserving our cavity nester heritage and educating the public, from school children to senior citizens, about the value of these species. We have many wonderful volunteers who have undertaken the task of spreading the word; as a result, NABS has become a strategic resource and a mighty launching pad for those who represent a true cross-section of North America. These members make good stewardship of our continent's wild things a top priority. At the annual meeting as we walked along Dick Purvis' trail, I marvelled at the efforts that this innovative member had made to protect the birds.

There is a wire handle with a hook on it attached over the top of the nesting box which he hangs on an appropriate tree limb using a long PVC pipe pole. The pole is rigged with a flexible open top box (a little larger than the nesting box it can hold). Dick lifts the combination, disengages the hook from the limb, and brings the box down to check the contents. Then he lifts the pole high into the air again, placing the hook of the nesting box back over the limb. Of all of the years that we have enjoyed visiting trails, we had never seen this. Knowing that he had a lot of boxes, I asked Dick how many he had mounted like this: he assured me that all of them were hanging. What an education! I'm glad I didn't miss it. His revelations to us pointedly accentuated that we continue to appreciate learning from each other.



Aldo Leopold wrote "There are some who can live without wild things, and some who cannot." I hope our members will always be the latter.

As a thrust toward more interaction with all states, the North American Bluebird Society is encouraging states to organize a state bluebird society. Each state and regional group is being invited to affiliate with NABS. If there is no bluebird organization in your state, I would encourage you to start contacting bluebirders wherever you are and explore this possibility. Contact NABS for help or information. It's a move in the right direction.

Our annual meeting for 1998 will be 25-28 June in Regina, Saskatchewan. Mark your calendars for a little free time in June and join bluebirders to see another area of beautiful Canada. Montana will host our meeting for 1999, and you will be in for another treat. Plan to go to Great Falls for that one. Again we say a big THANK YOU to SEA AND SAGE AUDUBON SOCIETY for all of their hard work and a great meeting. ■

ADDRESS

As of 1 November 1997, the Society's address will be

North American Bluebird Society
P.O. Box 74
Darlington, WI 53530

MAJOR CHANGES AT NABS

The headquarters and the staff of the North American Bluebird Society are changing for the first time in its 20 year history. The headquarters is moving from Silver Spring, Maryland to Darlington, Wisconsin the last week in October. The new co-executive directors will be the husband and wife team of Lisa Kivirist and John Ivanko. NABS Vice President Carol McDaniel, of Darlington, will be on hand to facilitate a smooth move to the new office. The transition will be completed by 1 November 1997.

The objectives of the Society are well known. Although it aims to assist all native cavity-nesting birds, the three species of bluebirds constitute our "banner birds." The enterprise has been a team effort, led by the bluebird conservation work and inspiration of our late founder, Dr. Lawrence Zeleny.

For years the office staff consisted of Delos C. "Chuck" Dupree, NABS' founding treasurer; Mary Janetatos, founding executive director; and, for the past 12 years, our "girl Friday," Sarah Funkhouser. Sarah's husband, Glenn, stepped in as treasurer at the time of Chuck's death, in May of 1996. A veteran volunteer in the office has been Marjorie Mountjoy, who helped regularly in the shipping department. Other longtime volunteers were the following Rossmoor Leisure World residents: Wally and Katie Knapp, Harriet Shapiro, and Helen Tunstall. These generous souls were always ready to recruit and drive the *Sialia* stuffing crew to headquarters so that our popular quarterly journal could be sent to NABS members far and wide.

Sialia Editor Joanne Solem worked from her home in nearby Laurel, Maryland, skillfully producing each issue. She did this to great good effect and will continue as editor in the coming year. She plans to retire in the fall of 1998.

The committee work of the Society will continue unabated; each committee chair will continue to work from his or her home. To list the North American Bluebird Society's accomplishments (many of them produced by committees) would take more space than is available here. *Sialia*, the original bluebird quarterly journal, appeared in 1979. The Society's colored brochure, "Where Have All the Bluebirds Gone?" along with the "Bluebird Nesting Box Plans & Instructions," was sent to those requesting information and given to people at fairs, workshops, and nature centers. Printing of these items is well into the second million. Publications also include the *Bibliography of Literature and Research on the Genus Sialia*, first published in 1985 with Theodore Gutzke as the author. It was updated and republished in 1992 by Nancy E. Niles and the original author. NABS also produced a *Directory of Bluebird Conservation Programs: North America and Bermuda* in cooperation with the Ellis Bird Farm, Ltd., last updated January 1997. Two rental slide programs were produced: one was the widely shown "Where Have All the Bluebirds Gone?" and the other, covering other native cavity-nesting birds, was assembled by Myrna Pearman. It was produced in collaboration with the Ellis Bird Farm, Ltd., of Alberta, Canada. A well-received educational package titled "*Getting to Know Bluebirds*" and designed for middle elementary grades was produced under the direction of NABS past President Sadie Dorber. The Society has assisted in the formation of bluebird/cavity nester groups in 20 states and provinces, in the private sector as well as within government agencies. It established a Speakers' Bureau under Ron Kingston's chairmanship, which helps those members who are meeting the public and directly promoting bluebird conservation. One of the most important aspects of the Society has been its commitment to research. This effort has provided approximately \$100,000 to biologists over the last 15 years to aid in the quest for greater understanding of the life histories of all native cavity-nesting birds.

Under the auspices of current President Charlotte Jernigan, locations for the NABS annual meetings have been secured through 1999. A growing number of state,

provincial, and other types of bluebird societies have accepted "affiliation" status with NABS. Our motto, "Effective Conservation" continues to be the theme for all efforts; affiliate groups will provide an even more unified platform from which to spread the bluebird word.

The time has now come to change; not direction, perhaps, but certainly the people running the organization. As the founding Executive Director, it has been a very exciting enterprise for me to meet and work with *so many* others whose hearts were captured by the little bird that "carries the sky on its back." It has been said that the ordinary citizen cannot do much to help the Bald Eagle or the Whooping Crane, but *there is something we can do to save the bluebirds!* As it must be for you, it has been a *labor of love* for me. I shall carry the memories in my heart, as I say to you who succeed us: *"Bon Voyage! Ours is a noble cause, and we are succeeding! Keep in touch, won't you?"*

—Mary D. Janetatos

NABS SEEKS AFFILIATES

Since the summer of 1995, various individuals and committees have been examining numerous ways in which NABS might become a more effective organization for bluebird conservation.

One of the first items considered by the Board was a way to bring all bluebird groups together under NABS' leadership in a more structured manner.

At the Hamilton, Ontario Board meeting on 12 September 1996, some individuals volunteered to develop a document to encourage formal affiliation of state, provincial, and regional bluebird groups under NABS as an umbrella organization. Members of this Committee on Affiliation were Joan Harmet, Carol McDaniel, Myrna Pearman, and Dean Sheldon, with additional input from Steve Eno and Dorene Scriven. A rough draft was ready by December 1996; after circulation to and discussion by the Board, the document was adopted at the March 1997 meeting in Chicago.

Invitations to affiliate have been issued to state, provincial, and regional bluebird organizations. At press time the following groups had taken formal action to affiliate with NABS: Bluebirds Across Nebraska, Calgary Area Bluebird Trail Monitors Group (Alberta), California Bluebird Recovery Program, Hubert Prescott Western Bluebird Recovery Project (Oregon), Indiana Bluebird Society, Johnson County Songbird Project (Iowa), The Bluebird Recovery Program (Minnesota), New Hampshire Bluebird Conspiracy, and Ohio Bluebird Society. Beginning with the Winter 1998 issue of *Sialia*, all affiliate groups will be listed on the inside front cover of the journal.

Affiliation involves no cost to the member groups and there is no legally binding obligation. It has no effect on individual 501 (c) 3 designations. Affiliates will be encouraged to use the NABS logo and/or the statement "affiliated with the North American Bluebird Society" on letterheads and publications. Each affiliate group is asked to designate a person to serve as a liaison with NABS. A meeting of these representatives will take place as a planned part of the proceedings at each conference. Each organization is requested to contribute information to NABS through newsletters, press releases, conference programs, annual meeting summaries, and other contacts.

In turn, NABS will enhance its efforts to provide an information exchange in such areas as annual meetings, workshops, newsletters, fund raising, membership, nest box

(Continued on page 139)

Controlled Tests to Determine if European Starlings Can Pass Through Various Hole Sizes

David M. Lehmann

Abstract

Tests were conducted to determine if breeding European Starlings (*Sturnus vulgaris*) were able to pass through 1-3/8 in. x 2-1/4 in. (3.49 cm x 5.72 cm) oval and 1-9/16 in. (3.97 cm) holes. Starlings were captured from 5 March through 25 April 1997 in South New Berlin, Cobleskill, and Seward Township, New York. A total of 10 starlings were used for data analysis. Captured starlings were placed in a test box that had two exit holes. One hole measured exactly 1-3/8 by 2-1/4 in. to match the Peterson box specifications. The second hole measured 1-9/16 in., the recommended entrance hole size for Mountain Bluebirds (*Sialia currucoides*). During each trial only one exit hole was open. All ten starlings were able to pass through the 1-3/8 in. x 2-1/4 in. opening. The escape time ranged from 1.6 to 6.3 seconds. Four females and six males escaped. Two male starlings were able to pass through the 1-9/16 in. opening. The time required to escape ranged from 4.7 seconds to 1 minute 10 seconds. No correlation was made between sex and the width of a starling's body. Two cases of European Starlings entering nest boxes with a 1-3/8 x 2-1/4 in. opening were recorded. Further research should be conducted to determine if starlings are capable of passing through a 1-5/16 x 2-1/4 in. oval opening for future bluebird management.

Introduction

European Starlings have had a devastating impact on bluebird populations throughout the United States (Zerhusen 1989). The enormous number of starlings has created intense competition for nesting cavities (Zerhusen 1992). Zeleny (1968) stated that it is impossible for bluebirds to successfully compete for cavities with large enough openings for starlings to enter. The shape and size of many nest box entrances have been designed to prevent starlings from entering (Grooms and Peterson 1991, Scriven 1993, and Zeleny 1985). There has been some controversy, however, over the effectiveness of some designs (Davis and Kalisz 1995, Kridler 1990). In order to successfully manage for bluebirds, the ability of starlings to enter nest boxes must be understood.

Eastern Bluebirds (*Sialia sialis*), like starlings, are secondary cavity nesters and will utilize either natural or man-made cavities (Zeleny 1968). Starlings have been effectively kept out of nest boxes through the use of a 1-1/2 in. (3.81 cm) opening (Grooms and Peterson 1991). The Peterson box has been gaining in popularity, particularly in Minnesota (Scriven 1993). The Peterson box is equipped with a 1-3/8 in. x 2-1/4 in. oval opening (Kridler 1990). Although the oval entrance hole is designed to prevent starlings from entering while allowing bluebirds to enter and provide easy access to nestlings (Grooms and Peterson 1991), Davis and Kalisz (1995) and Kridler (1990) have presented evidence that starlings have the ability to enter the Peterson box. Scriven (1995) argues that Peterson boxes of the correct dimensions will not allow starlings to

enter and that starlings may not select to nest in Peterson boxes.

Mountain Bluebirds are slightly larger than the other two species of bluebirds (Hagerman 1988). In some parts of their range, Mountain Bluebirds are unable to or simply will not enter nest boxes with a 1-1/2 in. opening (Zeleny 1985). Aylesworth (1984) reported that some Mountain Bluebirds using boxes with the 1-1/2 in. openings had broken feathers around their necks and shoulders. It is now recommended that a 1-9/16 in. opening should be used within the Mountain Bluebird's range (Zeleny 1985). According to Hagerman (1988), the 1-9/16 in. opening allows Mountain Bluebirds to enter and keeps starlings out. Scriven (1995) stated that starlings are unable to pass through a 1-9/16 in. opening.

The ultimate goal of this research was to find ways to minimize the interspecific competition between starlings and bluebirds during the breeding season. The objective of the study was to determine if starlings were able to pass through a 1-3/8 in. x 2-1/4 in. or 1-9/16 in. opening. Steps were also taken to determine if male starlings were unable to pass through the two holes tested. Zerhusen (1992) found that male starlings visited nest boxes at a much higher frequency than females. Information regarding body size and sexual dimorphism may potentially have management implications.

Study Area

Three locations were used for starling collection. The first site was located on the State University of New York (SUNY) Cobleskill campus farm in Schoharie County, New York. The area was characterized by several barns and other buildings, horse enclosures, cattle enclosures, silos, a bunker silo, a meat processing building, manicured lawns, and several driveways. Starlings were prolific in this area and were attracted to two particular locations: the bunker silo

and an old barn. The bunker silo was of particular importance for a variety of reasons. First, it was a readily available source of food that starlings frequented at all times of the day. The old barn provided numerous cavities and valuable night-time roosts that the starlings utilized.

Starlings were also captured in South New Barlin, in Chenango County, New York. The surrounding area consisted of manicured lawns and several houses and barns. There were numerous potential nesting cavities available to the starlings along with numerous bird feeders and fields for the starlings to feed in.

Prompted by a landowner observing starlings entering nest boxes on his property during early April, a third site was located in the Town of Seward in Schoharie County, New York. The site was located on a manicured lawn with several bird feeders and nest boxes. The surrounding area was composed of deciduous forest and an extensive wetland.

Methods

Starlings were trapped from 5 March to 25 April. Several methods were used to capture starlings, including the following: mist netting, ST-1 Nature House (Trio trap) (Scriven 1993), Troyer's V-Top trap (Scriven 1993), kestrel boxes and NABS (North American Bluebird Society) boxes with modified Huber sparrow traps (Huber 1982), Cedar Valley Trap (Scriven 1993), Webb trap (Pearman 1992), and live trapping. At the college site, three nest boxes were used to capture starlings: two NABS boxes with 1-3/4 in. (4.5 cm) entrance holes and one kestrel box with a 2 in. (5.08 cm) entrance box. The larger openings were used to allow starlings to enter the box easily. Each box contained a slightly modified Huber sparrow trap (Huber 1983). One box was placed adjacent to the bunker silo described in the study area section. The remaining two boxes were placed near the old barn also described in the study

area section. All boxes were placed 1 meter above the ground and at least 20 meters apart. The boxes were checked at least twice daily. In addition a Troyer's V-Top trap was also used on the college farm. The trap was placed in the middle of a pasture and baited with food scraps and bird seed. A ST-1 Nature House (Trio trap) and wire sparrow trap were also used on the college farm.

At the South New Berlin location, the roosting cavities of several starlings were located. After the starlings entered the cavities, the entrance holes were covered over. The next morning the entrance holes were enlarged and the starlings were captured with a hand-held net. An attempt was also made to capture starlings using a mist net.

At the Seward site, the Troyer V-Top trap was placed in the vicinity of existing bird feeders and nest boxes. Once, again the Troyer V-Top trap was baited with food scraps and bird seed. Two kestrel boxes with modified Huber sparrow traps were placed on the property adjacent to the nest boxes that starlings were observed entering. They were placed on telephone poles at a height of approximately 1 meter. A Webb trap (Scriven 1993) was also placed on the site in the vicinity of the Troyer V-Top trap.

The sex of starlings was identified using the criteria described by Kessel (1951); they were weighed prior to being used in the experiment. The lower mandible of a breeding female starling is pink, while the male's lower mandible is blue or black (Kessel 1951). The width of the starlings' bodies at the widest point, across the shoulder girdle, was measured using a vernier caliper accurate to the thousandths of an inch. All starlings were destroyed after the tests were conducted to prevent recapture.

All captured birds were placed inside of a test box that measured 8 in. x 8 in. x 9 in. (20.32 x 20.32 x 22.86 cm). There were two exit holes drilled through the front and a wire enclosure was

attached on the outside of the front of the box. Following the advice of Keith Kridler (pers. comm. 1997), the exit holes were drilled through a piece of 3/4 in. (1.91 cm) plastic for two reasons. First, the plastic would not warp or be distorted by the escaping birds. This would prevent any potential variation in the size of the escape holes from one trial to another. Second, the thickness of the opening of most nest boxes is 3/4 of an inch thick. One hole measured exactly 1-3/8 in. x 2-1/4 in. and the other hole measured exactly 1-9/16 in.

Each starling had the chance to pass through both exit holes during separate trials. During trial one only the 1-3/8 in. x 2-1/4 in. hole was open. During trial two only the 1-9/16 in. was open. Any starlings that were able to pass through either hole were prevented from escaping by the wire enclosure. The starlings were given a maximum of 4 minutes to escape through each hole. The time it took for each starling to escape was recorded.

Results

Starlings were captured from 5 March to 25 April 1997. A total of 11 starlings, six males, four females, and one bird of unknown sex was captured. Only the 10 of known sex were used. Peak starling activity occurred between 6 April to 17 April. All ten starlings were able to pass through the 1-3/8 in. x 2-1/4 in. hole. The fastest starling, a male, made it through in 1.0 seconds, while the slowest starling, a female, made it through in 6.3 seconds.

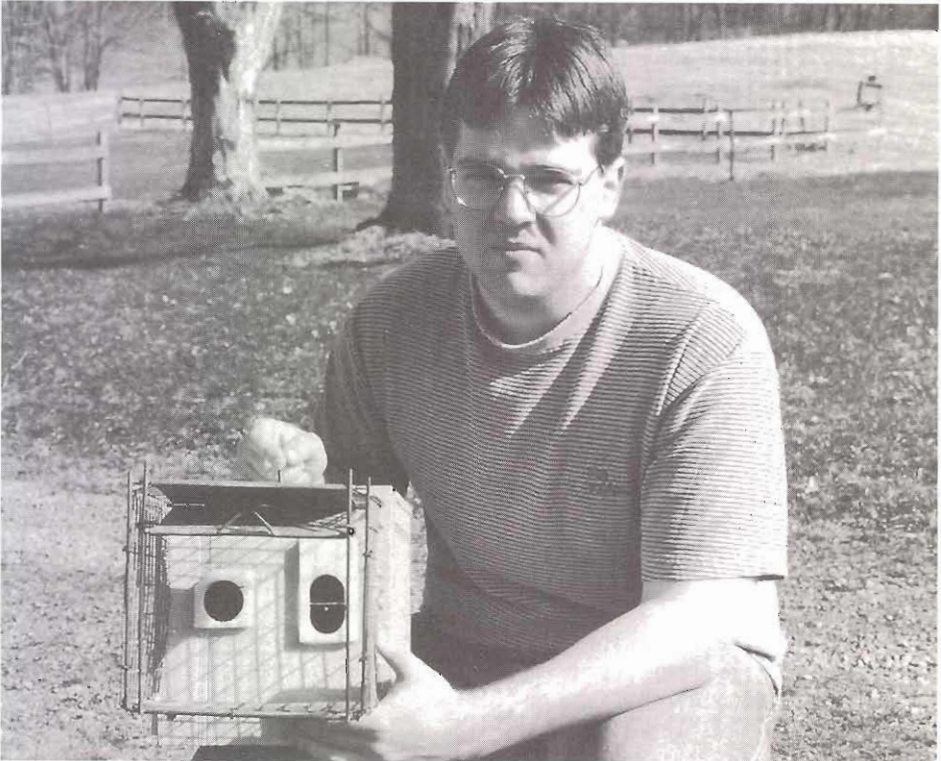
Only two starlings were able to make it through the 1-9/16 in. hole. The fastest bird passed through in 4.7 seconds; the slower starling required 1 minute and 10 seconds the first time and went through the hole a second time in 6.2 seconds. All others tried repeatedly, but could get only up to their shoulders in the 1-9/16 in. hole.

Discussion

Overall, the weight and width of the starlings were very similar. The width of the largest starling, a female, measured 1.875 in. (4.76 cm); the width of the smallest starling, also a female, measured 1.510 in. (3.84 cm). The body widths varied only by 0.365 in. (0.93 cm). The weight ranged from 84.2 grams to 68.6 grams. Both the heaviest and lightest starlings were females. Table 1. summarizes the capture data.

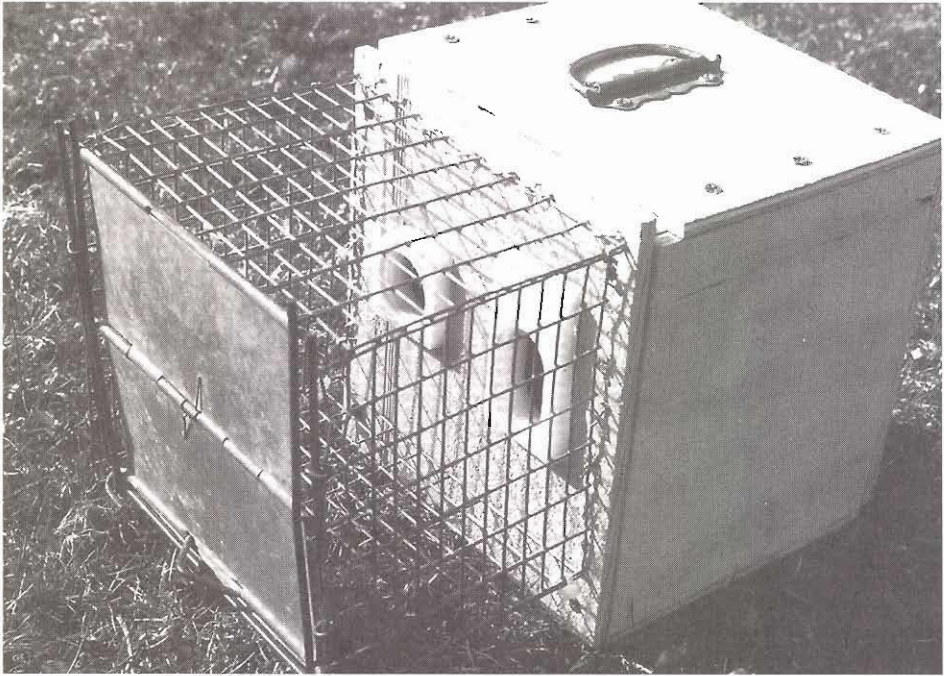
The Troyer V-Top trap, Webb trap, and the mist net were the least successful methods used for trapping. No birds were captured by either method. The kestrel boxes were the most productive method used. A total of 6 starlings were captured, one of which escaped prior to being tested. A Trio trap produced two starlings, one starling was captured in a wire sparrow trap, one bird was captured inside of a building, and three were captured inside of nesting cavities.

My findings agree with Kridler (1990) and Scriven (1995), in that starlings can pass through a 1-3/8 in. x 2-1/4 in. opening. Kridler's test required starlings to pass through a series of ten consecutive Peterson box fronts during one trial (Kridler pers. comm.). All of the starlings tested passed through the exit holes very quickly, requiring anywhere from 15 seconds to 66 seconds to escape (Kridler 1990). During my research, all of the starlings escaped very quickly, requiring anywhere from 1.6 to 6.3 seconds. The starlings did not have to struggle a great deal to pass through the opening. In contrast, Scriven (1995) found that the starlings required repeated attempts and had to squeeze through the oval hole. According to my findings, starlings are capable of getting through a Peterson box entrance hole very readily.



Photograph by Kevin Berner

Dave Lehmann and starling escape test box.



Photograph by Kevin Berner

European Starling escape test box used in Lehmann research.

Scriven (1995) feels, however, that the real question is whether or not starlings are selecting to nest in Peterson boxes. At the Seward site, starlings were observed entering two nest boxes with 1-3/8 x 2-1/4 in. oval entrances. In both cases, they were NABS boxes with 1-3/8 x 2-1/4 in. oval entrance holes, not Peterson boxes. The landowner was trying to determine if Eastern Bluebirds preferred the oval hole or the shape of the Peterson box (Berner pers. comm.). Unexpectedly, the landowner found that starlings seem to be attracted to NABS boxes with a 1-3/8 x 2-1/4 in. oval hole (Berner pers. comm.). This was the only time he had ever observed starlings entering a nest box with a 1-3/8 x 2-1/4 in. oval entrance hole. In both cases, the NABS boxes were placed immediately adjacent to a Peterson box. While reading through the Schoharie County Bluebird Society records for 1996, I found four cases out of 162 records of starlings entering and nesting in Peterson boxes. Unfortunately, the landowners

had removed the boxes or altered them making it impossible to measure the entrance hole.

Starlings may be able to enter a Peterson nest box, but they may not be choosing to. Starlings may be deterred from Peterson boxes due to the smaller box dimensions, not the oval hole size. In order to capture starlings, Kridler (1990) used nest boxes that measured 6 in. x 6 in. by 12 in. (15.24 x 15.24 x 30.48 cm), much larger than the Peterson boxes. According to Lumden (1986), starlings preferred larger nest boxes 12.99 in. (33 cm) deep, with dark interiors. During my research I utilized four nest boxes: two NABS boxes and two kestrel boxes, all of which had enlarged entrance holes. All starlings that were captured in nest boxes came from the kestrel boxes. Also, 3 starlings were trapped inside of stove pipes with 6 in. (15.24 cm) diameters which were 22 in. (55.88 cm) long. The floors of the NABS boxes measured 4 x 4 in. (10.16 x 10.16 cm), while the Peterson box floor

dimensions measure 3-1/2 x 3 in. (8.89 x 7.62 cm) (Scriven 1993). The larger dimensions may be what attracted the starlings to the boxes.

In response to Kridler's findings (1990) that starlings can pass through a 1-3/8 x 2-1/4 in. oval opening, Scriven (1995) proposed that southern starlings may be smaller than northern ones. My findings show that northern starlings can, not only pass through a 1-3/8 x 2-1/4 in. opening, but that they can do it readily.

According to Zerhusen (1992), male starlings frequent nest boxes much more than females. One of the objectives of this study was to determine if males were slightly larger than females for potential management implications. During this research 4 of the 5 starlings captured in the kestrel boxes were males. The largest starling body width measured came from a female measuring 1.875 in., while the smallest bird measured, also a female, measured 1.510 in. The heaviest starling was a female that weighed 84.2 grams and the lightest bird was also a female weighing 68.6 grams. It is important to note that the lightest starling was weighed one day after it was captured and was probably very stressed and possibly dehydrated. This may account for the light weight. Excluding that starling, the lightest one was a male and weighed 70.7 grams. Overall, it appears that females were larger than males; however, both sexes were able to readily pass through the 1-3/8 in. x 2-1/4 in. hole size. In contrast, Meijer et al. (1994) found that adult male starlings weighed 87.6 grams (avg.) and adult females weighed 84.4 grams (avg.). Meijer et al. (1994) also found that juveniles typically weighed less than adult starlings. In this study starlings were not aged and this may account for the difference in weights.

Hagerman (1988), Zeleny (1985), and Aylesworth (1984) found that starlings were eliminated from Mountain Bluebird boxes through the use of a 1-9/16 in.

entrance hole. In a test conducted by Scriven (1995), no starlings were able to pass through a 1-9/16 in. hole. During this research two starlings were able to pass through the 1-9/16 inch opening, however, most other starlings struggled a great deal and simply could not pass through the opening. Based on the data collected it seems unlikely that few, if any, starlings would attempt to nest in boxes with this hole size.

There was only one problem with actual testing of the starlings. The starlings immediately tried to escape during trial one (the 1-3/8 x 2-1/4 in. hole was open). During the second trial, however, (the 1-9/16 in. hole was open) the starlings did not attempt to escape right away. Typically, the starlings would sit in the test box for a minute or two before trying to escape. The stress of being handled between trials may have made the starlings reluctant to escape for a second time. More starlings may have been capable of passing through the 1-9/16 in. opening if the testing order had been reversed.

Based on the results of this research the author recommends using a smaller entrance hole. It is imperative that starlings be prevented from nesting in any man-made boxes. Starling populations are obviously extremely high and precautions should be taken to limit further population growth. Scriven (1995) found that bluebirds can and will utilize nest boxes with 1-5/16 by 2-1/4 in. oval entrance holes and that starlings cannot pass through this hole size. Further research should be conducted to determine if this hole size really is starling proof. Considering that a few starlings were able to wiggle through the 1-9/16 in. round hole, the added height of the oval shape may make it possible for starlings to enter.

In conclusion, starlings are capable of passing through a 1-3/8 x 2-1/4 in. opening. More research should be conducted to determine what characteristics of cavities starlings select

No	Date	Sex	Wt (gr)	Width (in.)	1-3/8 x 2-1/4 in.	Time (sec)	1-9/16 in.	Time (min.)	Comment
1	3/27/97	F	79.36	1.76	escape	5.4	no escape	4	only made it to shoulders in 1-9/16 in. hole
2	3/27/97	M	78.1	1.74	escape	3	no escape	4	only made it to shoulders in 1-9/16 in hole
3	4/6/97	F	76	1.51	escape	2.3	no escape	4	only made it to shoulders in 1-9/16 in hole
4	4/9/97	M	77.9	1.745	escape	2.4	no escape	4	went through 1-3/8 x 2-1/4 in hole twice
5	4/9/97	F	84.2	1.875	escape	6.3	no escape	4	only made it to shoulders in 1-9/16 in hole
6	4/10/97	M	78.12	1.645	escape	1.7	escape	4.7 sec	went through 1-3/8 x 2-1/4 in. hole twice, struggled through 1-9/16 in. hole
7	4/15/97	F	68.6	1.643	escape	2.4	no escape	4	had to physically remove from 1-9/16 in. hole
8	4/15/97	M	70.7	1.606	escape	2.3	no escape	4	weighed the day after capture
9	4/16/97	M	78.4	1.836	escape	3.1	no escape	4	went through 1-3/8 x 2-1/4 in. hole twice
10	4/17/97	M	77.8	1.655	escape	1.6	escape	1.1	went through 1-9/16 in. hole twice

for. It may be possible to minimize the competition for man-made boxes by changing some interior or exterior characteristics of nest boxes. ■

Acknowledgments

I would like to thank Kevin Berner for his advice throughout this project and for assisting with the methodology and revisions of earlier drafts. I would also like to thank Keith Kridler for devoting some of his time to assist to make suggestions regarding the test box and other methodology.

Literature Cited

- Aylesworth, A. 1984. Large box opening can be a curse or blessing. *Sialia* 6(4):123-124.
- . 1987. Breeding biology of Western Bluebirds in western Montana. *Sialia* 9:18-19.
- Davis, W.H. and P.J. Kalisz. 1995. Tests of the Peterson box and Zuern's tree branch box. *Sialia* 17:18-19.
- , W.C. McComb, and P.N. Allaire. 1986. Nest box use by starlings: does it inhibit bluebird production? *Trans. Ky. Acad. Sci.* 47:133-136.
- Hagerman, D. 1988. Nesting box entrance hole size preferred by Mountain Bluebirds. *Sialia* 10:83-86,92.
- Grooms, S. and D. Peterson. 1991. *Bluebirds*. Northwoods Press Inc. Minocqua, WI. 197pp.
- Huber, J. 1982. The Huber sparrow trap. *Sialia* 4:20-21.
- Kessel, B. 1951. Criteria for sexing and aging European Starlings (*Sturnus vulgaris*). *Bird-Banding* 22:16-23.
- Kridler, K. 1990. Starlings find Peterson box no challenge in Kridler test. *Bluebird News* 3:1-2.
- Lumden, H.D. 1986. Choice of nestboxes by Tree Swallows, *Tachycineta bicolor*, House Wrens, *Troglodytes aedon*, Eastern Bluebirds, *Sialia sialis*, and European Starlings, *Sturnus vulgaris*. *Canadian Field-Nat.* 100:343-349.
- Meijer, T., F.J. Mohring, and F. Trillmich. 1994. Annual and daily variation in body mass and fat of starlings (*Sturnus vulgaris*). *Journal of Avian Biology* 25:98-104.
- Pearman, M. 1992. *Nestboxes for prairie birds*. Ellis Bird Farm LTD. Canada 80pp.
- Scriven, D.H. 1993. *Bluebird trails---a guide to success*. Bluebird Recovery Committee of the Audubon Chapter of Minneapolis. Minneapolis, MN. 22Opp.
- . 1995. Do Peterson nest boxes "readily admit starlings"? *Sialia* 17:98-99.
- Zeleny, L. 1968. Bluebird nesting box temperatures. *Atlantic Naturalist* 23:215-219.
- . 1985. Hole size for Mountain Bluebirds. *Sialia* 7:11,16.
- Zerhusen, P.A. 1986. European Starling-Eastern Bluebird nest site competition revisited. *Sialia* 8:45-47.
- . 1989. European Starling-Eastern Bluebird nest site competition. *Sialia* 11:123-125, 138.
- . 1992. European Starling-Eastern Bluebird nest site competition, IV. *Sialia* 14:55-58, 72.

P.O. Box 83
South New Berlin, NY 13843

Exchange

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

ALBERTA--*Ellis Bird Farm, Ltd. Newsletter, Summer 1997*

Ellis Bird Farm (EBF) and Mountain Bluebird Trails have agreed to skip their planned joint biennial 1998 conference and encourage bluebirders to attend the NABS conference. It will be held 25-28 June 1998 in Regina, Saskatchewan.

Michael O'Brien, who died 12 June 1997, is remembered for the instrumental part he played in the establishment of Ellis Bird Farm. An active environmentalist and member of the Red Deer River Naturalists, he was awarded the Individual Commitment Emerald Award from the Alberta Foundation for Environmental Excellence in 1996.

Colleen Cassidy St. Clair of the Department of Biological Sciences, University of Alberta, is conducting research on nocturnal chickadee roost sites. Through radiotags she has tracked individuals to birch and poplar tree cavities, thick spruce tree boughs, and snow holes on the ground. These holes occur in areas of high tree density and low wind speed and may prove significantly warmer than cavities. Cavities collect solar heat, on sunny days, however, so that on moderately cold nights cavities may be warmer than snow holes. Roost sites may be adjusted depending on the weather. Ms. St. Clair would welcome observations from anyone who has observed chickadees roosting in snow. Contact her at Dept. of Bio. Sciences, University of Alberta, Edmonton, AB T6G 2E9. Telephone 403-492-7255 or fax 403-492-9234. from *Wild Bird News* (Edmonton) X1 (1).

For the second year in a row the EBF University Scholarship was awarded to Dean Hall from the University of Calgary. Mr. Hall is conducting research on avian breast-shoulder apparatus.

--*Ellis Bird Farm, Ltd.*

CALIFORNIA--*California Bluebird Recovery Program Newsletter, October 1996; March 1997*

On 14 February 1996 the California Bluebird Recovery Program (CBRP) signed a memorandum of understanding (MOU) with the U.S. Forest Service. This MOU sets forth the mutual interest of the two groups in furthering the Cavity Dependent Species effort of the Service. The Forest Service controls 20 million acres of land in the Pacific Southwest. The Service is apprising all of their biologists and supervisors of the MOU. All CBRP County Coordinators have also received a copy, along with names and addresses of biologists and supervisors who are ready to establish working arrangements with CBRP representatives. Monitoring records will be exchanged at the end of each breeding season.

Construction plans for building several different bluebird boxes are available to members by sending a self-addressed, stamped envelope.

The CBRP owns a 2' x 5' white vinyl grommeted banner with a blue logo which can be borrowed to use in conjunction with displays or booths.

Mrs. Cheryl Kaul of Sonoma County has provided funds for the purchase of 100 nest boxes to be made by youths at the Hanna Boys Center. David Graves, coordinator for Napa-Sonoma counties, will make arrangements for distribution and placement of the boxes. He has promoted locating boxes in vineyards as a means of natural insect control along with a decreased use of toxic sprays.

Hatch Graham, coordinator for Amador/El Dorado counties, summarizes his activities during the previous busy year. He had talked to dozens of people, handed out box plans,

posted "wanted" posters in prominent locations, and coordinated newspaper articles and displays at several locations.

The Soroptomist Club at Lake Tahoe, seeking a conservation project, was referred to CBRP by the Forest Service. Willing monitors are a limiting factor for the bluebird enthusiasts of this county, so the Soroptomist's help is welcome.

CBRP members can obtain boxes for \$6.00 each to help birds and young people. The Special Education Family at Irvington High School is involved in building a variety of nest boxes. The boxes are being placed throughout the state and then monitored for nesting habits and species using the boxes.

Tom Richardson describes the [American] Kestrel and bluebird nest box trails along highways 120 and 120/108 in Tuolumne County. Both trails have been successful. In 1995, the 12 kestrel boxes had four kestrel nests which fledged 18 young; the 40 bluebird boxes contained 30 nests of five species which fledged 119 young. Most numerous were Western Bluebirds (11 nests, 45 young) and Ash-throated Flycatchers (12 nests, 45 young). The trails have been accepted into the state's Adopt-A-Highway program.

Don Yoder encourages members to be aware of the possibility that woodpeckers need artificial cavities. Boxes designed for individual species differ in dimensions and entrance sizes. Specifications can be obtained from CBRP. Boxes for woodpeckers should be filled with wood chips so that birds can "excavate" their own cavity.

Hatch Graham has produced a manual for bluebirders in California. All county coordinators have been provided with a copy. The booklet contains monitoring methods, problems that can arise, description of species likely to use boxes, and a list of individuals who can provide help. This 28-page publication can be obtained for \$2.00 plus a stamped, self-addressed 6" x 9" envelope with .55 postage from Hatch Graham, P.O. Box 39, Somerset, CA 95684.

The March 1997 issue is devoted to the results of the 1996 breeding season with major articles by Hatch Graham and Don Yoder. The results were included in the NABS 1996 Nesting Box Report 19(3):98. Of the 3,020 Western Bluebirds and 137 Mountain Bluebirds fledged statewide, Dick Purvis produced 1,011 from 334 boxes in Orange County. His Wood Duck boxes produced 237. The highest average fledged per box was Roy Greenaway of Sacramento County who produced 11 fledglings from a single box. Betsy Meland, El Dorado County, and Alice Pennington (June Schellhaus, monitor), Placer County, each had 9 fledglings from one box. All were double clutches. The statewide average was 2.06 fledged per box.

In 1995 Jim Fletcher found masses of earwigs in his nest boxes. He tried moving his boxes off the fence posts around the Forest Service Nursery and hung them from the woven wire fence instead. He reported a great reduction in earwigs in 1996.

Peterson boxes were paired with NABS boxes in two locations in 1996. Ten pairs were placed on Bill and Doris Allison's ranch in Amador County at an elevation of about 900 feet. One NABS box was used; four Peterson boxes. The NABS box fledged no birds; the Peterson boxes had two double clutches fledging 27 bluebirds.

Another 19 Peterson boxes were hung alongside 19 existing NABS boxes (Cornell Lab, front-opening) at the Forest Service Nursery, El Dorado County, elevation 3,100 ft. The boxes were monitored by Jim Fletcher. Boxes were 8 to 15 feet apart. Here, six NABS boxes were used; four Peterson with two double clutches in each type with a total of 29 fledged from NABS boxes; 20 fledged from Peterson. Did the bluebirds prefer the year-old NABS boxes? The experiment will continue.

--California Bluebird Recovery Program

INDIANA--*Bluebird Flyer*, January, April, and July 1997 issues

The Indiana Bluebird Society's (IBS) first annual conference is planned for Quaker

Haven Camp near Warsaw on 11 October 1997.

Dan Sparks, president of the Brown County Bluebird Society, reported that they had started their third year. They had a booth at the county fair and on Earth Day. They plan to try some PVC and Peterson boxes in addition to the standard design.

An IBS t-shirt went to Henry and Dena Yoder of Millersburg, Ohio who became the group's 100th members. With membership at 167 by July, a lucky 200th member will soon receive a t-shirt.

The April issue included partial results from Indiana's statewide cavity nester program for 1996. The total number of Eastern Bluebirds fledged was 1,369 and Tree Swallows 765.

In the January issue Chris Salberg addresses the question of bluebirds on golf courses. He mentions that the green space afforded by a golf course provides habitat for wildlife. A new program funded by the United States Golf Association (USGA) and administered by the National Fish and Wildlife Foundation will investigate this relationship in detail. The USGA will contribute \$100,000 annually for the next three years to help fund the program. The program includes providing golf course designers and superintendents with information they need to promote wildlife while still providing quality playing conditions. To learn more about Wildlife Links and golf's other environmental efforts, write to USGA Green Section, P.O. Box 708, Far Hills, NJ 07931 or access the Internet at www.usga.org/green/index.html

--Indiana Bluebird Society

MINNESOTA--Bluebird News, May 1997

Attendance at the 19 April Annual Conference was at least 215 people. The outstanding speakers included Carrol Henderson, on the 20th anniversary of Minnesota's nongame program; Tom Nichols, on ticks on migratory birds and Lyme disease; Steve Gilbertson, on the research behind PVC boxes; Dick Hjort with unusual bat facts; Jim Gilbert, popular phenologist, tying together the spring awakening of plants, birds, and animals; Don Wilkins, describing his remarkable success with Purple Martins; and Keith Radel presenting bluebirding basics. The Young Bluebirder Award went to David Lockwood of Brainerd, who started bluebirding ten years ago. Teacher Dennis Olson was recognized as the adult Bluebirder for his major contributions in encouraging an appreciation of nature and bluebirds in the school children of Isanti County. Next year's conference will be 18 April at Camp Ripley near Little Falls, the second largest wildlife refuge in Minnesota.

Editor Dorene Scriven reminds bluebirders that the "dummy sticks" the male House Wren places in boxes to lure a female may be removed; however, once the female selects a box and builds a nest, the contents are legally protected by state and federal law. The Fish and Wildlife Service recently reminded the public that "overzealous bluebirders" may be breaking the law.

On 12 April the Hutchinson sportsmen's group again provided 300 bluebird box kits from donated materials for the Gopher Campfire Club Bluebird Day. Dave Ahlgren presented workshops and was assisted by other Bluebird Recovery Program (BBRP) members. Dr. Virgil Voigt coordinated the event which also involved Les Kouba, a wildlife artist, the Hutchinson Garden Club, and the Hutchinson City Forester.

Since Wisconsin and Minnesota are in "hot zones" for tick-borne diseases, monitors are reminded to take precautions in the field to prevent tick attachment. Once home, check your entire body carefully. New tick-associated diseases are being tracked; unfortunately, vaccines are not yet available and diagnostic tests are not always reliable. Save any tick after removal.

Boz Metzdorf describes his experience in watching a pair of American Kestrels when

he erected a box for them intending to film their behavior. Although he never saw kestrels attack the two pairs of bluebirds nesting nearby, each bluebird pair had only one brood and the fledglings left the area as soon as they left the box instead of staying in the yard as they normally would. Several bird species did suffer predation and/or harassment; birds at the feeders were also subjected to periodic raids. Grackle numbers dropped, however, which was a welcome development. All of this activity took place while the kestrels had nestlings. Although the majority of the kestrel's diet consists of rodents and insects, the presence of this family of small falcons seemed to have a negative effect on the passerines in the vicinity.

Dave Ahlgren was honored with the Hennepin Parks' Distinguished Outdoor Education Award on 15 May. This award recognizes people "dedicated to learning in the outdoors and increasing environmental stewardship." He was also featured in the 27 March issue of the St. Paul *Pioneer Press* when he returned for the ninth consecutive year to Woodland Elementary School in Eagan for a bluebird box building session. When he isn't presenting workshops, he's probably in his workshop producing boxes and feeders.

In April 1997, the BBRP Grants Committee awarded the following four research grants: Professor H. Neil Soule, Middlesex Community College and volunteer at the Nashua River Watershed Association, Groton, Massachusetts: Development of a bluebird recovery program in eastern Massachusetts; Tom Sproat, Department of Biology, Ball State University: House Wren nest defense. Can study of nest defense behavior be used to prevent House Wrens from destroying bluebird nests? Dr. Daniel E. Dunmore, Pennsylvania State University: The effects of external parasites on the levels of circulating white blood cells and red blood cells of the Eastern Bluebird; Stephen Gomez, Theodore Roosevelt Sanctuary, Long Island, New York: Creating a bluebird trail and designing an education program for the sanctuary.

Dorene Scriven will be participating in a study by Professor Terri Donovan and Peter Jones of the State University of New York at Syracuse in which 20 experienced volunteers will collect breast feathers from 120 bluebirds and 120 Tree Swallow nestlings across the Eastern Bluebird's range. The study is examining how fledged bluebirds disperse across their entire range by analyzing the chemical makeup of the feathers and matching them with geological clues which show up in the more than 70 elements which can be analyzed.

--*The Bluebird Recovery Program*

NEBRASKA--*Bluebirds Across Nebraska Newsletter*, Spring 1997

The first meeting of county coordinators of Bluebirds Across Nebraska (BAN) was held 1 March 1997 with 25 people from 21 county coordinator families and two coordinator families from Iowa. Connie and Chuck Finlay, coordinators of Otoe County were meeting hosts.

As of February BAN's membership was approximately 375.

Bob Orthwein's wren guard article is reprinted from the Winter 1996 Ohio Bluebird Society's *Bluebird Monitor*. This article describes success with using a piece of wood in front of the entrance hole of a number of chickadee boxes. It is hoped that soon his careful research on boxes for species other than chickadees will help to relieve wren pressure on bluebird boxes.

This issue contains a special supplement devoted to the subject of box pairing. President Steve Eno mailed letters to 17 bluebird organizations soliciting their experience with and attitude toward box pairing. At the time of writing he had received 10 responses which he reproduces in alphabetical order.

California Bluebird Recovery Program has not had a way to track pairing although Don Yoder, who collects the state's statistics, personally favors pairing. Ron Bittner of

Abernethy, Saskatchewan, states "Using paired nest boxes reduces competition between bluebirds and other species such as Tree Swallows." He recommends placing boxes 10 yards apart with a site spacing of 300 to 400 yards, no closer than 200 yards at any time. Myrna Pearman of the Ellis Bird Farm, Alberta, says they started pairing boxes on their 450 box trail in 1991. It has not appeared to affect Mountain Bluebird productivity, as indicated by the enclosed statistical summary since 1981. "I feel that the greatest benefit of pairing is to reduce nest site competition between swallows and bluebirds. I believe that local populations of swallows would increase, at the expense of bluebirds, if we did not pair the boxes."

Although Jim Walters, Johnson County Songbird Project, Iowa, has not worked with paired boxes on a bluebird trail, he provided a copy of an article by J.H. Plissner and P.A. Gowaty. "Eastern Bluebirds are attracted to two-box sites," *Wilson Bulletin* 107(2). The abstract noted: "Explanations for our observations include that bluebirds prefer potential territorial sites with two boxes because of increased habitat quality or that bluebirds locate two-box sites more readily than one-box sites. We infer from our result that potential territorial sites with two nesting boxes are more attractive to bluebirds than sites with only one nesting box."

Dorene Scriven responded for Minnesota's Bluebird Recovery Program (BBRP). This organization recommends placing nest boxes 20 to 25 feet apart, with 22 feet the optimum. Box pairing on trails should begin when swallows inhabit 50% of the boxes on a trail. BBRP is convinced that pairing of nest boxes can have real advantages when Tree Swallow populations tend to exceed bluebird populations. Some of their research is cited; it is ongoing and there are no simple answers. A quotation from Professor Robertson concludes with the observation that "there are many parameters, including maximum saturation levels for each species, which makes pairing a complex issue."

Art Aylesworth responds for Montana in which he cites his experience on the seven miles of trails where his 70 boxes are located along a large river bottom. "Swallows eliminated the bluebirds almost entirely through this area until I paired the boxes. Now we have swallows and bluebirds both in probably 50% of the paired boxes." He adds, "in addition to this, I have probably 30 people with smaller nest box trails using paired boxes and it works beautifully."

In New Hampshire, Bruce Burdett echoes this sentiment. "Let me say briefly that without pairing Tree Swallows would take 95% of my houses. This was my experience before I started pairing 4 years ago. Furthermore, of the 5% that bluebirds managed to occupy, most were harassed by the swallows until they abandoned their nest and eggs. It was a no-win situation. Perhaps my experience is typical of New Hampshire but not of Wisconsin, Iowa, or Nebraska."

Robert E. Orthwein of Ohio says that he does not consider anything over seven yards to be a properly paired box site; he is currently using a five yard spacing. He makes the observation that "paired and triple-box sites do reduce bluebird population per box and this should be expected." He adds that "production per location and House Sparrow protection is all that I am interested in. My paired and tripled boxes have not produced hoards of Tree Swallows. In the past 17 years I fledged 2,212 bluebirds and 690 Tree Swallows."

The Bluebird Restoration Association of Wisconsin's (BRAW) response was written by Tom Whaley. He points out that pairing data has raised questions and enclosed the article "Pairing--good or bad for bluebird production? Bad!" by Joe O'Halloran in *Wisconsin Bluebird* 11(4). Based on 1996 results "with box pairing, the bluebirds fledged per box numbers dropped to about half, and the Tree Swallows fledged per box increased by about a fourth, when compared to the singles results." The article goes on to say, "another impact of pairing for bluebirders, shown by this BRAW study, is that

box pairing shifted the bluebird/Tree Swallow production balance downward in favor of Tree Swallow production." These results appear to contradict the experience of most other areas.

The supplement about pairing boxes concludes with Steve Eno's article published in *Sialia* 19(2):63-64 "My experience with paired boxes." He indicates that pairing is used with success by many leading bluebirders in widely geographically separated areas of North America. It may not be the answer to everyone's problems, but it can be an effective tool--especially where bluebirds and Tree Swallows vie for boxes.

--*Bluebirds Across Nebraska*

NEW YORK--*Bluebird News*, Spring/Summer '97

The spring meeting in Jamestown, New York was the first held in western New York; it was attended by members from 14 counties. The fall meeting has been tentatively planned for Sapsucker Woods at Cornell University's Laboratory of Ornithology for Saturday 11 October 1997. Membership stands at 889. Former New York State Bluebird Society (NYSBS) President Ray Briggs and longtime Amity Lake Trail monitor Vivian Mills Pitzrick were presented with awards recognizing their outstanding contributions to bluebird conservation in New York State.

The 1996 nest survey results are included in which 7,475 boxes produced 6,208 bluebirds. Measured by the ratio of bluebirds fledged per reporting nest box, it was the poorest year so far in this decade. There was a decrease of approximately 24% of number fledged from 1995's 8,200 bluebirds. A dry summer in 1995 may have adversely affected the natural food supply and late winter ice and snowstorms may have been negative factors during spring migration.

--*New York State Bluebird Society*

---*Bluebird Booster*, Summer 1997

The Schoharie County Bluebird Society (SCBS) does not charge membership dues, relying instead on sales of nest boxes and shirts, along with donations to cover expenses. This issue lists and thanks almost 50 people who donated a minimum of \$10.00 when they submitted their nest box survey reports.

The 1996 survey results showed a sharp drop in bluebird production. The 1,111 fledged in 1996 contrasted with 1,942 during the previous year. Severe winter weather during 1995-1996 may have reduced adult breeders in 1996. The reduction in this county was reflected in the state as a whole. Overall Schoharie County totals were the lowest bluebird totals since 1988. Tree Swallow numbers were down from the all-time high of 2,864 in 1995 to 2,206 in 1996. Wren fledging fell from 711 to 311, and Black-capped Chickadees from 113 to 53.

The SCBS participated in a variety of educational and promotional events during the spring. In April, the first Bluebird Festival at the Fox Creek Nature Center in Gallupville was held; they had a display at the second annual Wildlife Festival at SUNY Cobleskill in April; and SCBS members helped to staff the New York State Bluebird Society's booth for the Northeast Great Outdoors Show and the New York Flower Show at the Empire State Plaza Convention Center in Albany.

Denise Moore, of Middletown, is developing a home page for the SCBS for the Internet.

--*Schoharie County Bluebird Society*

NORTH CAROLINA--*Bluebird Notes*, March-May 1997

Jane Currin's log of bluebird experiences in her yard in 1996 is reproduced. She was able to watch four nestings in various boxes in her yard in sequence from 24 March to 9 August. Not all broods were successful. Mealworms were offered during the nestling

period. Part of the fledging of the last brood was described: "Dad and mom were trying to coax them out with mealworms and dragonflies. The dad would put the mealworm in the baby's mouth and then pull it out. The baby did not attempt to eat. The parents both sat on a nearby branch and called to the babies. The babies called back."

Although 15 counties have coordinators, more are needed. For more information, North Carolina bluebirders should contact Chuck Bliss.

Lynn Hoyt of Apex is the Web Site coordinator. The correct address is as follows: <http://www.pageznet/~lhojt/ncbs.p1>

The 31 May annual meeting planned to discuss the mission statement adopted by the Board: "Our goal is to support activities that foster the resurgence of bluebirds and other native cavity nesting birds in our home areas." This state bluebird organization had 403 active members as of 31 March.

Jack Finch's request for mealworm information in a previous newsletter elicited an excellent response. Editor Helen Munro summarizes the requirements for growing mealworms.

--North Carolina Bluebird Society

OHIO--Bluebird Monitor, Summer 1997

Joan Davis's secretary's report described highlights of the 12 April meeting. Decals will be purchased to be used in new member welcome packets and, later, for Ohio Bluebird Society (OBS) members. There are now 36 county coordinators according to Bill Davis. OBS will be represented at the Midwestern Birding Symposium at Lakeside, Ohio in September. There was a unanimous vote for affiliation with NABS.

Dean Sheldon's "Ohio Blue Tip" column provides ideas for accurate and clear box marking to aid in record keeping. Each choice is listed with some advantages and disadvantages. When deciding the method to be used, consider permanence, cost, effect of sunlight/weather/cold, readability, potential for removal by vandals or animals, etc. Some monitors prefer to put box numbers on the post rather than the box so that the box can be changed without altering the numbering system. Warnings on boxes that the contents are protected by federal and state laws does not seem very effective and rarely seems to prevent vandalism. This author believes that the more unobtrusive the box and its location, the less likely it is to become a target for vandals.

The Ohio Bluebird Society's Tenth Annual Meeting will be held Saturday 18 October 1997 at the Hamilton-Williams Campus Center on the Ohio Wesleyan University campus.

The Board of Trustees has adopted a proposal to purchase an insurance policy for general liability coverage of events put on by its County Coordinator Program or any member participating in an activity sponsored by the Ohio Bluebird Society.

Wayne Davis's "Notes from Kentucky" notes that recently he picked up a copy of a British magazine called *BBS Wildlife*. The cover article featured the House Sparrow which is "in serious decline in Western Europe." Since the cause of the decline has not been pinpointed, bluebirders in North America do not, as yet, have a clue as to how similar factors could reduce sparrow populations here.

Davis continues to experiment with various box designs. He points out that the most controversial nest box is Vince Bauldry's. This Wisconsin bluebird took a standard box and put a hole 3 1/2 inches in diameter in the roof and covered the hole with hardware cloth. It was intended to simulate a hollow fence post to discourage use by House Sparrows. Although the design has been around for decades and has been tried by many bluebirders, it has not been as popular as anticipated. House Sparrows can defeat the extra light with their bulky nests and the open top makes the box colder in the spring in northern climates which are subject to late freezing temperatures. If drainage holes become blocked, a heavy rain can drown nestlings. Davis notes that *Wisconsin Bluebird*

has, for several years, run articles about box design use. Deep boxes have not been heavily used by bluebirds and the Bauldry box had the least use. A recent article by Bauldry and others in the *Journal of Field Ornithology* 66:7-18 details results of his 27 years experience with the box compared to standard boxes. Clutch size, hatching percentage, and survival were all higher in Bauldry boxes; there was almost no raccoon predation; wrens and sparrows were minor problems. His data summarized 1,506 bluebird nesting attempts in Bauldry boxes and 1,066 in standard boxes.

--Ohio Bluebird Society

OKLAHOMA--Charlotte Jernigan, president of the North American Bluebird Society and Oklahoma resident, is looking for bluebird and cavity-nesting enthusiasts to form a state bluebird society. This group could hold meetings and schedule field trips to visit successful trails. They would cooperate with the Wildlife Diversity Program summaries which are compiled each year.

--Oklahoma Department of Wildlife Conservation

OREGON--*Western Bluebird Newsletter*, April 1997

Marilynne Keyser has become the Education Coordinator, a position vacant since the death of Earl Gillis. Besides designing the group's computer program, she is responsible for monitoring more than 200 nest boxes--and has just obtained her banding permit.

Calabash gourd seeds are available to cooperators who are willing to grow them for Dave Fouts who uses them to aid Purple Martins.

Carl Sandoz is remembered as a dedicated naturalist and faithful bluebird monitor. Despite his illness he monitored his route all during the 1996 season.

This year monitors are leaving old nests in boxes between nestings. Since tests with Eastern Bluebirds have shown a preference for boxes with old nests, the Prescott Bluebird Recovery Project is attempting to determine if Western Bluebirds have the same preference. Notes will be analyzed at the end of the breeding season.

--Hubert Prescott Western Bluebird Recovery Project

(AFFILIATES--Continued from page 124)

surveys, trail management, research, etc. It will provide resources and suggestions to groups forming new bluebird/cavity nester organizations. NABS' world wide web site will be expanded to include contacts for affiliate groups.

The purpose of the affiliate relationship is best summarized as a means to strengthen "the growing interconnection between people and organizations interested in our important conservation work." ■

Article compiled from committee material provided by Dean Sheldon, Jr

TWENTY-FIRST ANNUAL MEETING OF THE NORTH AMERICAN BLUEBIRD SOCIETY

The Twenty-first Annual Meeting of the North American Bluebird Society will be held in Regina, Saskatchewan, June 25-28, 1998.

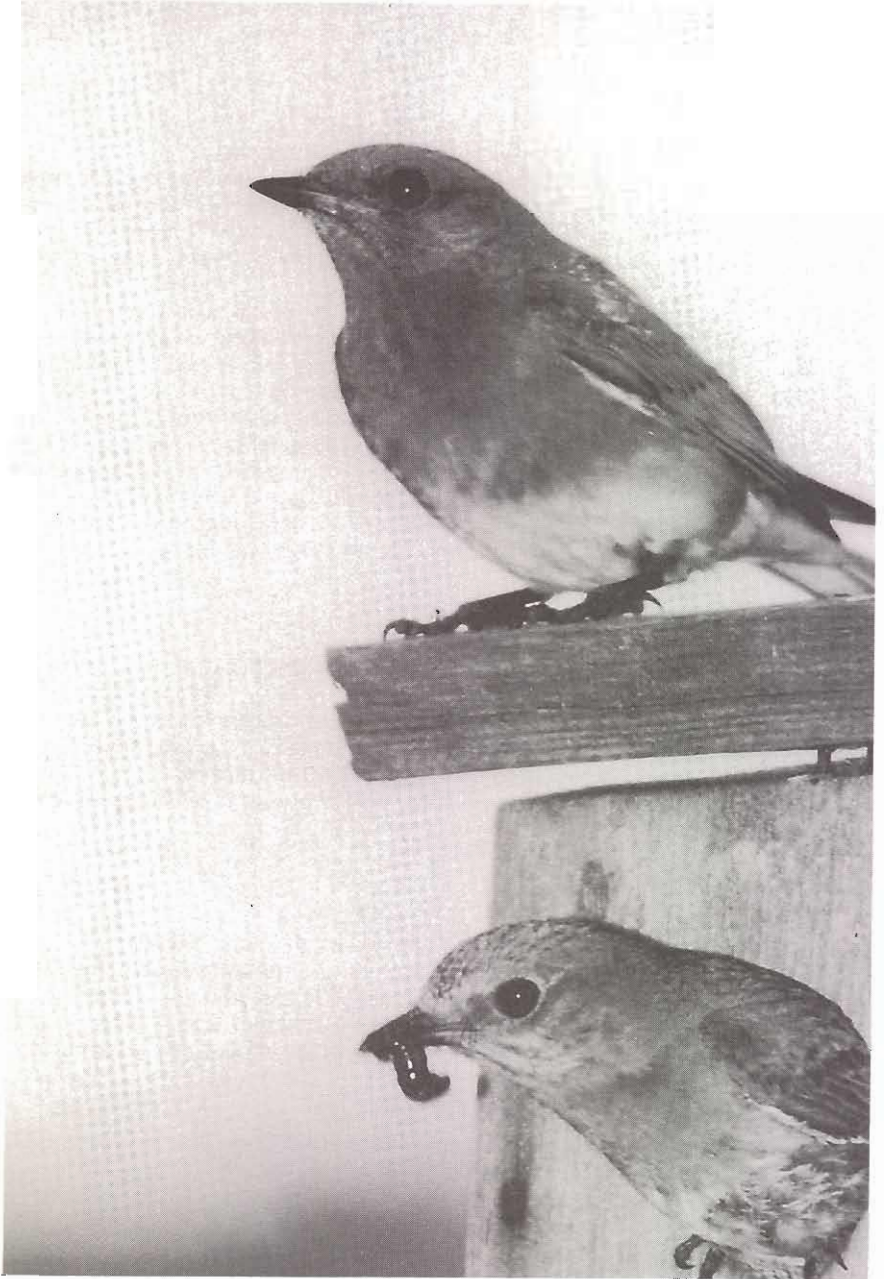
Saskatchewan bluebirders are sponsoring the meeting.

Registration materials and additional information will appear in the Winter 1998 issue of *Sialia*.

Feeding Time

Hubert Brandenburg, of Hagerstown, Maryland, provided us with two photographs taken during the breeding season: a female Eastern Bluebird at a box with food (below) and a pair at their box (opposite page, male on top of box). Mr. Brandenburg spends long hours in an uncomfortably hot blind shooting nesting bluebirds. His images reflect his patience and attention to detail.





1998 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 fledgings, 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 Awards Committee Chair Joan Harmet, P.O. Box 72, Elizabeth, IL 61028 by 1 March 1998.

Cavity Nester Success in Orange County, California

Dick Purvis

Until I was seven, I lived on a small farm in northern Georgia. Here I learned to love nature so much that it strongly affected my entire life. I can still remember daily checking my bluebird nest in a gourd. My family left there when I was seven for the relatively barren urban areas of California.

Although I was aware that there were bluebirds in California, it didn't really register until, on a family picnic at a nearby wilderness park, I saw a Western Bluebird (*Sialia mexicana*) entering a nesting cavity in a sycamore. How I longed to have a nest box for bluebirds, but it didn't seem reasonable. Where would I put it?

Some years later, I was given a leaflet from a local nature center which described a bluebird nest box; it advised building some. I built ten but didn't have any place to put them, so I went to the local park and asked to put them there. The ranger granted permission so I erected the boxes in Featherly Regional Park, Orange County, California in the winter of 1984.

That was the beginning of my bluebird trail. In the spring of 1995, there were three nests in the boxes. I was delighted by the bluebird nesting results. Since I love to work with wood, I started building boxes and looking for places to put them. The next location was Green River Golf Club which includes two 18 hole courses. Twenty-five boxes were placed in the winter of 1985. In the spring of 1986, there were a total of 13 nests in the two locations.

Each year since then, I have searched out and added new sites. Each year the range of the bluebirds expanded a mile or so away from the original locations, and they began to move out from the foothills to flat urban areas. All that was needed was the wide-open, short grass with scattered trees that is found in

parks, on golf courses, in cemeteries, in school yards, and in some industrial areas. I now have over 300 nest boxes in 30 different locations.

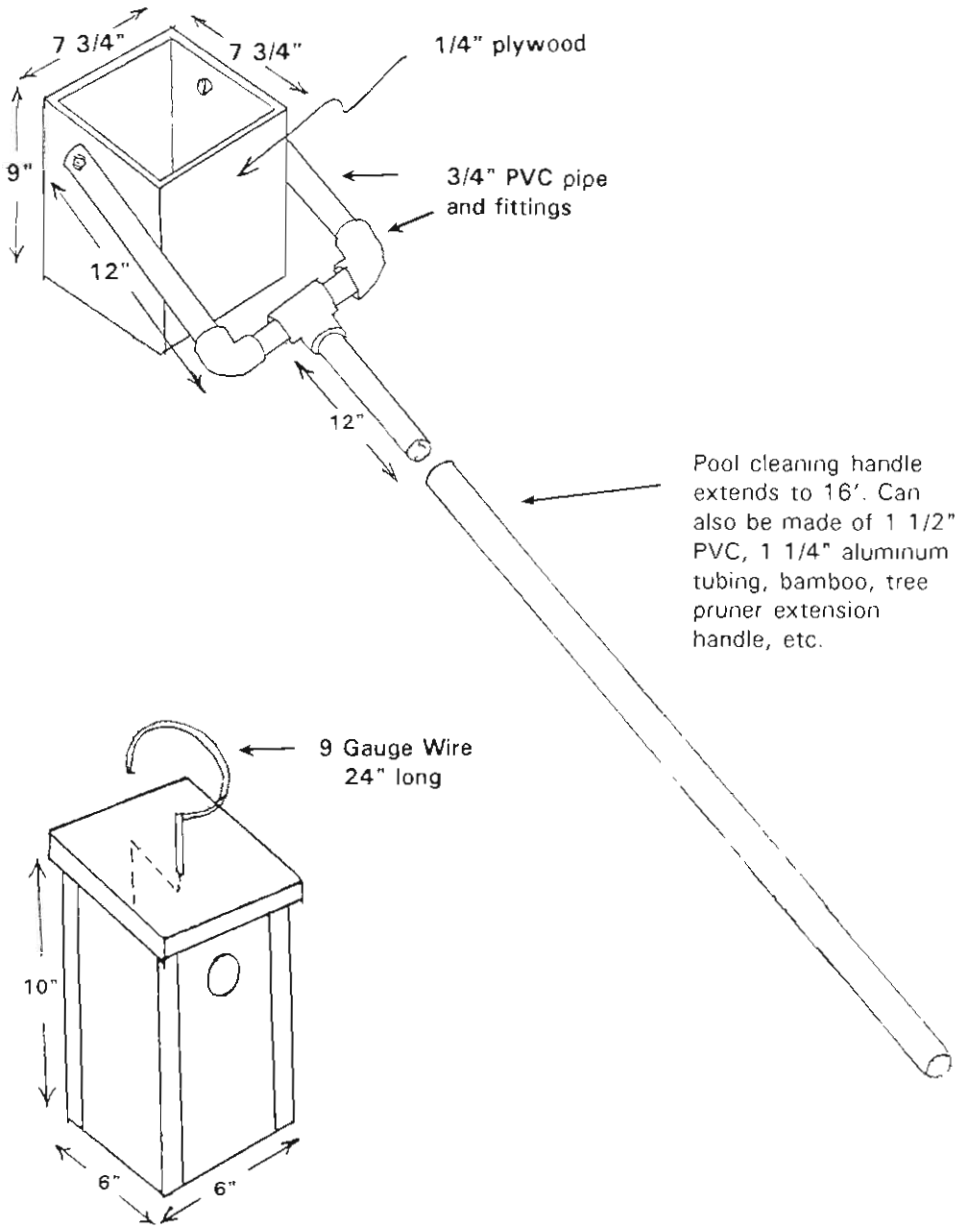
Each year the number of Western Bluebird nests has been growing dramatically. Starting with three the first year, then 13 the second year, the number of nests has grown to 137, 198, and 294 in the last three years. At the same time, there have been a few nests of a number of other species including Plain Titmouse (*Parus inornatus*), Ash-throated Flycatcher (*Myiarchus cinerascens*), House Wren (*Troglodytes aedon*), Tree Swallow (*Tachycineta bicolor*), Bewick's Wren (*Thryomanes bewickii*), and even Acorn Woodpeckers (*Melanerpes formicivorus*). This cavity nesting success is in an unlikely area. Orange County, California is one of the most urbanized and one of the smallest counties in the state. Even so, bluebirds can be enticed to breed in areas like this.

Three years ago I retired from my work as an electronic engineer for the McDonnell Douglas Corporation. I now am able to spend much more time on bluebirds and I think that it is reflected in the nesting results of the last three years.

At the 1994 North American Bluebird Society annual convention in Boise, Idaho, I heard Roger Thompson describing a new technique for hanging bluebird boxes, rather than nailing them to a post or tree. This seemed such a fine way to solve so many of my serious problems that I implemented it immediately. I have now converted all of my locations to hanging boxes and they are working beautifully. Not only do they solve my major problems of vandalism and drowned nests from sprinklers, but they are easy to monitor.

In the last three years, there have been a couple of giant steps by bluebirds to

HANGING NEST BOX AND LIFTER



HANGING NEST BOX

colonize new territories. In one new park which is 12 miles from the nearest previous nest, bluebirds showed up during the winter. I put up nest boxes and the birds stayed and nested. It happened again last year in another park which is about six miles from the nearest previous nest. Perhaps population pressure is causing them to spread out. I have real hopes that bluebirds will eventually spread throughout the urban areas of flatland Orange County.

My bluebird trail is widely scattered; therefore, it is time consuming to visit all of the boxes and am hard pressed to monitor them properly. In the last few

years, I have been recruiting new bluebirders; now there are five of us with trails in Orange County. Our Audubon chapter newsletter has publicized my workshops to train others.

My childhood in a beautiful rural mountainous region of northern Georgia instilled in me an abiding love and appreciation for nature. Because the natural world is losing ground to concrete and civilization, we need to do all we can to preserve and enhance what we have left. ■

936 S. Siet Pl.
Anaheim, CA 92806

IN MEMORIAM

Each year Sialia carries a list of memorials and special gifts received by the North American Bluebird Society. Contributions can be undesignated or they can be specified for research or education. The Society welcomes gifts or bequests and thanks members and friends for their continuing care and deep commitment to the cause of bluebird and cavity nester conservation.

In memory of W. Wilson Ford

Dr. & Mrs. Ben Bernstein
Mr. & Mrs. J. Blades, Sr.
Timothy A. Blades
William B. Bremen
Grace R. Dennis
Irma S. Farmer
Paul Ford
Ruth Kleinwachter
Mr. & Mrs. Charles A. Lacijan
Winfried Mitchell
Science and Technology Corp.
Charles & Gertrude Spang
Elwood V. Stark

In memory of Bill Jernigan

George & Marilyn A. Covey
Debbie Falk
Harold & Laverne Falk
Betty Kerr
Paul N. McDaniel
Jeri McMahan



In memory of George Lumsden

Roger Bowman
Vanessa & Jeff Brixius
Ada L. Carpenter
Kenneth & Patricia Lumsden
Virginia G. Lumsden
Sandy O'Connor
Ruby G. Prior
R.J. Reynolds International Finance co-workers
Walter & Mary Shropshire

In memory of Maxine Montgomery

Royal Montgomery, M.D.
Harry Barker
Harriet Shapiro
Helen Tunstall
Lillian Warfield

In memory of Elizabeth Nelson

Ellen Mertins
Helen Tunstall

In memory of Halvar Peterson

Lillian Files

In memory of Russell Slutz

Ruth Ann Condon



Photograph by Ray Mangham

Four residents of the Paul Anderson Youth Home, Vidalia, Georgia, hold some of the 12 bluebird boxes bought and donated by Miss Susie Daniel, Macon, Georgia. The young men established the first bluebird trail at the home, which is set on 50 acres. The boxes were made by NABS member Ray Mangham.

NORTH AMERICAN BLUEBIRD SOCIETY RESEARCH GRANTS

The North American Bluebird Society announces the sixteenth annual grants in aid for ornithological research directed toward cavity nesting species of North America with emphasis on the genus *Sialia*. Presently, three annual grants of single or multiple awards totaling up to \$10,000 are available and include these items:

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

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

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

Further guidelines and application materials are available upon request from Kevin L. Berner, Research Committee Chairman, State University of New York, Cobleskill, NY 12043. Completed applications must be received by 1 December 1997; decisions will be announced by 15 January 1998.

Twentieth Annual Meeting Report

Mary D. Janetatos

The Twentieth Annual Meeting of the North American Bluebird Society was held at the Sheraton Newport Beach Hotel in Newport Beach, California 15-18 May 1997. The meeting was hosted by the Sea and Sage Audubon Society; the sponsors were the Orange County Beaches and Parks, and Wild Birds Unlimited. Approximately 61 persons attended, from about 20 states and provinces. Although fewer in number than some other annual meetings, the beautiful sunny weather warmed everyone and the famed southern California reputation cast a spell of enchantment. All this and *bluebirds, too!*

Thursday was for registration, reunions, browsing among the gifts and viewing bluebird videos. Things went into high gear on Friday, with a guided tour of Santiago Oaks Park and Yorba Regional Park. Many birds were seen, including a variety of hummingbird species. A highlight of the *entire* meeting was the urban bluebird trail as devised by Dick Purvis. (See "Bluebird Tales") Dick also showed the group an elevated nest box for Wood Ducks. Later in the evening, President Susan Sheakley, of the Sea and Sage Audubon Society, warmly welcomed the group to Newport Beach. Dick Purvis described in detail his ingenious method of attracting bluebirds to the downtown Anaheim city parks. Dick has a cadre of assistants to help him in monitoring the aerial bluebird nest boxes. There were approximately 400 bluebirds fledged last year from this truly unique nest box trail. Picnickers enjoying an outing can see bluebirds, where most of us would be seeing House Sparrows near our own parks.

"The Bolsa Chica Wetlands: Birds and Habitat" were explored via slides and a lively talk by Sea & Sage Audubon members Sylvia Gallagher, Ph.D. and Jim Gallagher. Interaction between Black-

necked Stilts and American Avocets was highly entertaining, as both showed the extra wariness associated with all nesting birds.

On Saturday morning, the session began with the NABS Annual Meeting and presentation of awards. NABS President Charlotte Jernigan chaired the meeting, and the Nominating Committee report was given by Art Aylesworth, committee member from Ronan, Montana. The following officers and board members were elected: *President:* Charlotte Jernigan; *Vice President:* Carol McDaniel; *Treasurer:* Glenn Funkhouser; *Recording Secretary:* Doug LeVasseur; *Corresponding Secretary:* Joseph Tait; *Board Members:* Martha Chestem (to fill remainder of Carol McDaniel's term); David Eastman; Ray Harris; Robert M. Niebuhr; Stan Reed. President Jernigan announced the names of the recipients of the NABS Award plaques, and shared presentation of them with Award Chair Joan Harmet and Executive Director Mary Janetatos. (See elsewhere in *Sialia*.) Awards were presented to the following: Hobart Ellifritt, West Virginia; Justin Hoff, North Dakota; John Lapin, Ohio; Benjamin E. Leese, Pennsylvania; Robert Orthwein, Ohio; Donald E. Yoder, California; and the Hubert Prescott Western Bluebird Project, Oregon. Sea and Sage Audubon was recognized with appreciation for the fine work done in bluebird conservation as well as their warm hospitality in hosting the annual meeting. Following the members' meeting the presentations on diverse subjects were made.

"California Wildlands" were discussed by Dr. Alan Schoenherr, who presented a comprehensive view of California wildlife as seen in native habitats. Mt. Lassen in the Cascade Mountain Range last had volcanic activity in 1917. In the



Photograph by Myrnie Pearman

Dick Purvis, Sea and Sage Audubon member, organized field trips for the annual meeting. He also demonstrated the hanging boxes on one of his trails.

same area, California boasts of Mt. Shasta and McArthur-Birney Falls State Park. San Francisco Bay contains 90% of the wetland area in California. The well loved Monterey pines and cypress trees are successfully planted around the world. Mono Lake became famous for its calcium castles which became evident when water was diverted from the lake. The Desert Protection Act was passed, which changed Joshua Tree and Death Valley from National Monuments to National Preserves. California is home to creosote bushes--they grow in circles, are cloned from a single plant and are calculated to be 11,800 years old. California is the only state whose flag shows an extinct state animal--the grizzly bear. It disappeared from the state in 1938. California has a "Good Neighbor's Plan" whereby a desalination plant for Yuma, Mexico was built. This permits Mexico to use this water for agriculture in the Mexicali area. The result is that brine comes into the Sea of Cortes from

the Yuma plant and then the Mexicali waters dump into the Salton Sea.

Mini Nagendran, Ph.D of California Audubon spoke on "Cranes of the World." Estimated to be in existence for 38 million years, there are 15 crane species in the wild. They exist on all continents of the world except South America and Antarctica. The Whooping Crane population now stands at 159 in Texas and Florida. There is a 30% mortality rate in the wild due to predators and infighting. Eleven of the fifteen species were classified as endangered in 1985. Seven were similarly classified in 1997.

The "Best of Baja" was shown, by Andee Burrell, of the American Cetacean Society. The Baja region covers a 50,000 cubic mile area, has 2,000 miles of coast line, and ranges from sea level to 10,000 feet above sea level. It receives from 0 to 30 inches of rainfall each year. Seals and whales are seen as well as other fascinating life forms. This talk was developed by Ms. Burrell from a cruise she took.



Photograph by Myrnie Pearman

Art Aylesworth, Ronan, Montana, member of the Nominating Committee, presented the slate of officers at the annual meeting.

"Marshes and Rails of California" were discussed by Dick Zembal of the U.S. Fish and Wildlife Service. Highlighted here was the Light-footed Clapper Rail, an endangered subspecies. Dick has worked for decades on this particular species. It was an interesting account.

The evening banquet took place and the invocation was given by the Reverend Kenneth Krueger, of the Lutheran Church of Anaheim. After the delicious meal, Mike Wallace, Ph.D. spoke on "California Condors, Rescue and Reintroduction." Mike is with the Los Angeles Zoo. He recounted that these large birds have an incredible 9-1/2 foot wing span, and can weigh 19 to 24 lbs. Chumash Indians believe that life after death is only achieved on the wings of a condor. The condor formerly lived in the southern United States from Florida to New York. There are now 33 birds in the three sites in the wild. Efforts are under way to propagate them in Arizona, i.e., the Vermillion Cliffs. Condors need updrafts in the mountains to move. They are carrion feeders by nature; therefore, problems occur in feeding zones, especially when there is lead ingestion. In 1986, the second to the last egg laid in the wild was crushed when the mother sat on it. Lab tests and analysis revealed that 180 parts per million of the egg was DDT, even though DDT had been banned in the 1970's in California. In 1986 only five condors were left in the wild, so, after intense debate, biologists brought all the condors into captivity. A successful breeding program began to produce young. Eventually 13 birds were released in Hopper Canyon, just above Fillmore, California; four of them promptly died in powerline collisions. Six condors were released in Arizona. A life span of 60 to 70 years is common for the California Condor, and they still breed in their 60's. They lay one egg per clutch and two eggs per year; biologists usually hatch and raise them for 45 months in captivity. The fascinating presentation completed the interesting day.

Sunday morning there was a guided tour of the Bolsa Chica Wetlands. The group was rewarded by seeing many gulls (the California Gull and others) as well as terns (large numbers of Elegant Terns among others). At one point, the telescopes were focused on what seemed to be a *four-legged* adult American Avocet...which turned out to be a mother brooding young. The knowledgeable and amiable docents were Peter Knapp, Victor Liepzig, Jim Robins, Marlene and Mark Singer, Phil Smith, and Barbara Sentovich. With the completion of this very productive and enjoyable field trip, the NABS Twentieth Annual Meeting came to a close.

Thanks to Elizabeth Haring for assistance with this report.

In Appreciation

The NABS Twentieth Annual Meeting was hospitably and efficiently run, at the Sheraton Newport Beach Hotel 15 to 18 May. From the handsome Western Bluebird pins to the colorful programs, the meeting was steeped in the aura of the region. It could be argued that they do accomplish the impossible in movieland, including a very productive urban bluebird trail! Special thanks go to Dick Purvis and Ernie Schimmelman, who chaired the meeting, and worked tirelessly in planning and organizing all the proceedings. John Schmitt generously donated his original artwork. Wild Birds Unlimited provided a generous contribution; Orange County Beaches and Parks provided the accommodations at Santiago Oaks Park and Yorba Regional Park, and the Bolsa Chica Foundation provided the docents. The Sea and Sage volunteers were Marian Alter, Al and Janet Baumann, Colin Campbell, James Cox, Carol Getz, Carolyn Hartling, Suzanne Glasgow, Bob and Marcia Holcomb, Barbara Jones, Nancy Kenyon, Chris Obaditch, Katie Purvis, Jim and Jennifer Robins, Ruth Schafer, Susan Sheakley, Joan Schimmelman, Mark and Marlene Singer,

and Marylee and Doug Smith.
The 61 attendees were very fortunate
in having such a thrilling and elegant

glimpse into the real Orange County
world of nature. Thank you, Sea and
Sage Audubon. ■

NABS Awards Presented

Six outstanding bluebirders were presented with awards at the Twentieth Annual Meeting in Newport Beach, California on 17 May 1997. Plaques were presented by President Charlotte Jernigan, Awards Committee Chair Joan Harmet, and Executive Director Mary D. Janetatos.

Hobart H. Ellifritt
Justin Hoff
John J. Lapin
Benjamin E. Leese
(youth award)
Robert E. Orthwein
Donald E. Yoder

Hubert Prescott Western Bluebird Recovery Project

A *Certificate of Appreciation* was presented to Sea and Sage Audubon who were hosts of the meeting.

Hobart H. Ellifritt of Stealey, West Virginia, has been a bluebirder for 68 years. He began his affair with the Eastern Bluebird back in the 1930's before starlings came to his area and caused the bluebird population to peter out. He made his first bluebird box as a boy and it certainly explains his enthusiasm when he tells you that the first occupant was--what else?--a beautiful bluebird. More recently, in active retirement, he has built and put up nest boxes along West Virginia highways, distributed boxes to school children, talked to school groups, garden clubs, and churches, and worked alongside the West Virginia Nongame Wildlife and Heritage Program. Credited to Mr. Ellifritt are a total of 2,750 nesting boxes.

Mr. Ellifritt says his "long-range goal is to see bluebirds become as common as robins. Bluebirds are so beautiful."

Mr. Ellifritt was nominated by J. Scott Butterworth, Wildlife Biologist for the Nongame Wildlife Program in West Virginia.

An award was presented to a man who has literally brought both Eastern and Mountain Bluebirds to his North Dakota area. **Justin Hoff**, of Richardton, North Dakota, first began monitoring his boxes on foot on Nature Conservancy land. He now monitors 70% of his boxes on horseback. When the land was turned over to the state, he was able to put up more boxes along the highways. Stark County now fledges more bluebirds than any county in the state.

There was no state record of breeding Mountain Bluebirds until 1992, when a pair used one of his boxes. Last year Mr. Hoff counted 349 Mountain Bluebird eggs. His Eastern Bluebird boxes account for 900 eggs and 624 fledged after ten years of trail monitoring.

Mr. Hoff sponsors bluebird workshops through Scouts and the North Dakota Bluebird Recovery Program. He tells those who ask about his success that it is a result of ideal habitat, an outstanding family landowner cooperation, and coordination with the Bureau of Land Management. The Bureau agrees; Natural Resource Biologist Chris Grondahl nominated Justin.

The Eastern Bluebird has had an advocate in Ohio for 33 years. Bluebirds became a full-time hobby for **John J. Lapin** of Poland, Ohio, when he retired from the work force 12 years ago. His activities range from a trail of more than 300 boxes, to designing new boxes with a slide door design, to conducting workshops, installing trails in nearby parks, and writing and speaking about bluebirds through newspapers and park programs. In his "spare time," Mr. Lapin sets himself up at the local Wildbirds Unlimited store to answer customers' questions and encourage more bluebird participation.

The nomination from his son and the warm letters of praise which came from those with which he has worked closely, attest to his hard work and esteemed reputation in northern Ohio.



Joan Harmet, Elizabeth, Illinois, chairs the Awards Committee. She made award presentations for Hobart H. Ellifritt, Justin Hoff, and John J. Lapin.



Board member Bill Davis accepts fellow Ohioan Robert E. Orthwein's bluebird conservation award from President Charlotte Jernigan.



Justin Hoff, Richardton, North Dakota, receives NABS award for bluebird conservation. President Charlotte Jernigan (left) and Executive Director Mary D. Janetatos.



Photograph by Myrna Pearman

Recording Secretary Doug LeVasseur receives bluebird conservation award on behalf of John J. Lapin, Poland, Ohio. Executive Director Mary D. Janetatos is on the left.



Photograph by Myrna Pearman

Donald Yoder (right), Walnut Creek, California, receives an award for bluebird conservation



Photograph by Myrna Pearman

The Hubert Prescott Western Bluebird Recovery Project, Portland, Oregon, was awarded a bluebird conservation award made to an outstanding group. Executive Director Mary D. Janetatos presented the award to President Patricia Johnston and Brenda McGowan.

Benjamin E. Leese at age 16 is an avid bluebirder, but he really got started at his first 4-H club meeting when he was eight. The one box that he built there became the first of hundreds. Parents, grandparents, relatives, friends, and groups have been recipients of his boxes.

Ben filled his father's barn with grape boxes, and then he and his father spent many nights pulling nails and cutting boards so he would be ready for his next speaking event.

Ben is part of the Speakers Bureau of the York Audubon Society and gives programs for groups and school classes. A description of a science fair project featuring predator controls was published in *Sialia*.

This young man participates in the Backyard Wildlife Habitat Program of the National Wildlife Federation. In 1996 the Pennsylvania Wildlife Federation named him Youth Conservationist of the Year.

Benjamin was nominated by his father, Ronald E. Leese.

Robert E. Orthwein is a charter member of both the North American Bluebird Society and the Ohio Bluebird Society. He has over 50 years of bluebirding experience. When he was 13 years old, he built his first boxes after reading a pamphlet that was written by the late Roger Tory Peterson. From that time on, he has not ceased to be active in conservation, encouraging and lending a hand to others.

Mr. Orthwein has written articles and letters sharing his experiences and innovative ideas, especially those involving wren guards, raised roof boxes, and triple boxes. He is aware of the needs of a variety of cavity nesters and has raised flickers for many years.

He's an accomplished photographer; many have seen some of his slides that are a part of the NABS slide show. Photos have also been displayed at some of our annual meetings. The Ohio Division of Wildlife used his expertise in the production of a bluebird video.

Richard Tuttle nominated him.

Don Yoder is a member of NABS and a former member of its Board of Directors. He was the chief organizer of the California Bluebird Recovery Program (CBRP) and is the current program director. He has been active in cavity nester conservation since 1971. He travels widely in the state presenting programs and seeking coordinators for each of California's 58 counties. As a result of his encouragement, the number of annual reports to NABS from his state has jumped from 13 in 1994 to 78 in 1995.

He has about 100 boxes on his trail and has built many boxes to assist other bluebirders. He has helped many people with information and support. He has worked long hours with National Audubon Society members in Sacramento.

Wearing many hats this bluebirder prepares the CBRP quarterly newsletter for publication, coordinates annual nesting reports, and in 1996 could take satisfaction in seeing California's first bluebird convention, in Vacaville.

The Hubert Prescott Western Bluebird Project was the recipient of a NABS Award Plaque at the Twentieth Annual Meeting in Newport Beach, California, on 19 May 1997. Founded 20 years ago to honor the Willamette Valley (Oregon) pioneer in bluebirding, the late Hubert Prescott, there are upwards of 20 volunteers involved in maintaining approximately 600 nest boxes in the lower valley. More than 600 Western Bluebirds were banded last year. Patricia Johnston and Brenda McGowan represented the Hubert Prescott Western Bluebird Project and accepted the plaque on behalf of all the volunteers. This Project is a truly inspiring way to memorialize one of the early bluebird "greats," alongside Larry Zeleny himself: Hubert Prescott. ■

The Awards Committee chaired by Joan Harmet is composed of Ray Harris, Mary Janetatos, Charlotte Jernigan, Carol McDaniel, and Barbara Stinson.

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:

On 3 July I was standing at my kitchen window looking at the birdbath not far away near a pear tree. Suddenly, a young bluebird flew from the tree to the birdbath and stood on the rim looking at the water. Soon another young bird landed on the rim beside him and then a third. They all stood a few moments surveying the water, but not quite daring to go in. Soon an adult male flew from the tree and proceeded to take a bath. He then flew back to the tree, and one by one the young ones took baths, flying to the tree and back to the bath several times.

Mary B. Clapp
R.F.D. 47 Story Rd.
Goffstown, NH 03045

Dear Editor:

I have read with interest over the last six years many articles on what box and hole type bluebirds prefer. I've never done any great analysis, but I thought *Sialia* readers would find my experience interesting.

One of my trails was started in 1992 with 95 NABS style boxes with 5 1/2 in. square bottoms, 1 9/16 in. round holes and 10 in. fronts. On my trail were 12 Peterson boxes (which had been there a few years) with oval holes. Six of these were paired and six were set out individually. In the last five years (1992-

1996) I have never seen more than four Peterson boxes used in a year and no box was used more than once each year.

During the same time I have gradually increased the size of my trail from 95 boxes to 156 boxes; the number of boxes used by Mountain Bluebirds has grown from 63 (66%) to 129 (82%). I believe the reason for this is the NABS boxes are larger so the bluebirds can build a larger nest for their larger broods.

Swallows will use both styles. I have never seen a House Sparrow in either style along this trail.

It's not very scientific, but it is a fact.

Bob Niebuhr
600 Central Plaza, Suite 414
Great Falls, MT 59401

Dear Editor:

I have been enjoying our beautiful bluebirds for many years and have provided and maintained several nesting boxes for these birds. This spring I had a pleasant surprise when I found seven eggs in one of my boxes. I have found six eggs in a nest before, but never seven!

I kept close watch on this box until all seven eggs hatched and then enjoyed watching the busy male and female bring food to their hungry young.

My close watching of this nesting box paid off. One day I noticed the Mom and Pop birds fly to the box, look in, and then fly away. This was done several times

which made me wonder if a snake was in the box. But, before I could go to the box, a little head peeped out of the box and then flew out after its parents. I watched and counted each time a solo flight was made from the box out into the new world! Excitement had nearly exhausted me by the time I had counted and witnessed all seven babies fledge from the box.

I enjoyed this wonderful event so much that I wanted to share it with other bluebird lovers.

Doris B. Bishop
Rawlins, VA 23876

Dear Editor:

I am a lifelong bluebirder and I thought I had seen every possible scenario until this season. The pair nesting in my yard fledged four babies, no thanks to the male. He showed no interest in the babies at all and was seen actually trying to run them away from a bluebird feeder. I was wondering if any fellow bluebirders have ever had this problem?

Donna Hickman
131 Cool Springs Rd.
Lexington, SC 29073

Since other readers may have had some of the same questions which are expressed in the following letter, we are printing it along with the author's response.

Dear Editor:

I am a bit troubled by the directions for the milk carton nesting box included with the article about providing cavities for Prothonotary Warblers (*Sialia* 19(2):43-48). It seems to me that while encouraging warblers and providing cavities in appropriate habitats, these cavities should have all the features of a "good" bird house; that is, they should be sturdy and able to withstand rough weather for several seasons, they should provide protection from heat buildup, and

they should have predator baffles. I don't see how nesting boxes made from old milk cartons and strapped directly to trees can meet these criteria. While they may provide gratifying results for a short time, I don't see how milk carton nesting boxes can have a positive long term effect on the availability of safe nesting cavities for warblers. If the study shows otherwise and there are valid reasons why these makeshift nesting boxes are appropriate for warblers, I would be interested in this information.

Joan ten Hoer

Dear Ms. ten Hoer:

Thank you for your communication regarding the use of milk cartons for Prothonotary Warblers. Your concerns appear quite valid, so I'll attempt to explain why we chose the milk carton option for Huntley Meadows and Dyke Marsh. Small snags at both locations began falling at an alarming rate and Prothonotary numbers declined rapidly as a result. To compensate for the loss of snags we decided to erect a minimum of 60 boxes at Huntley, but there was no money in the park's budget to buy the materials necessary to construct that many wooden boxes. After doing some investigating, I came across Lisa Petri's article on the use of milk carton boxes in her Tennessee River study.

Her study showed that the boxes were amazingly durable--most lasted a minimum of two years before they needed to be replaced. There was no problem with heat buildup since the surrounding canopy cover provided constant shade. Most of her boxes were erected on snags in fairly deep standing water which helped to deter all but the most determined predators.

Now, in our second year of the Prothonotary Program, we have found that while the boxes hold up just fine and the birds accept them (two broods fledged from milk carton boxes in 1996) predators can potentially be a big

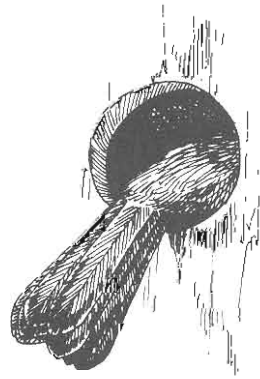
(Continued on page 159)

Bluebird Tales

Mary D. Janetatos

Call it the "Flying Bluebird Trail"...call it the "Trail in the Tree-tops"...**"Successful!"** is what the **Dick Purvis** bluebirders call it. The attendees at the NABS 20th Annual Meeting had a firsthand look at his methods. Dick led a trip to one of his trails located in a public park in the vicinity of his Anaheim, California home. He demonstrated how the "hanging" bluebird boxes provided nesting places almost 40 feet high in the branches of trees. To the astonishment (and amusement I'm sure) of everyone, NABS' diminutive Executive Director attempted to execute the process of lifting the lengthy pipe aloft, removing the hanging bluebird box, guiding it to the ground, and examining the contents. This process is followed by Dick's collaborators as they monitor this unique type of bluebird trail which forms the highly successful "Urban Bluebird Trail." Of course, Dick was hovering protectingly as the pipe teetered and tottered in my hands; he speedily rescued me *and* the nest box from the perilous situation. All could appreciate Dick's ingenious invention. On these trails, Dick and his crew encounter neither two-legged *nor* four-legged predators, not even snakes. Last year, over 400 bluebirds were fledged from one of these downtown Los Angeles park-trails, along with other cavity nesters including Wood Ducks!

Douglas and **Maria Quinn** of Ashburnham, Massachusetts, sent a newspaper clipping from Washington State which highlighted the historic Western and Mountain Bluebird work done by pioneer bluebirders **Jess** and **Elva Brinkerhoff** of Richland, Washington. Over three decades they had built about 1,500 of their original design bluebird nest boxes. After their deaths, the town took over the project, with the result that each breeding season they monitor about



2,000 boxes. There is a memorial to **Jess** and **Elva Brinkerhoff** that looks like--a *bird house!* Tourists are attracted to the town to see the two beautiful species of bluebirds streaking to and fro through the tiny village which lays claim to being the "bluebird capital of the *world!*" Anyone wishing to experience this ultimate experience in enjoying *two* species of bluebirds can look for Bickleton 90 miles through Roosevelt from Kennewick, or 70 miles from Kennewick through Mabton!

John F. Kiser, of Raphine, Virginia, for about 20 years after his retirement from the U.S. Army, worked tirelessly for bluebirds in the beautiful Shenandoah Valley. He built thousands of bluebird nest boxes, and gave hundreds of talks to groups, teaching them the tried and true methods of bluebird conservation. His legacy is the thrill of bluebirds seen hither and yon from his adopted home town. **Yulee Lerner**, John's Virginia colleague and veteran bluebirder also, told us of John's dedication to the bluebird cause, and his daughter, **Jan Kiser Landis** sent us his memorial service bulletin.

Another church bulletin made its way to us, this one with a gorgeous bluebird on the cover, with the inscription: *Make a joyful noise to the Lord all the earth.* It was sent by the "bluebirding pastor" of the Old Hickory (Tennessee) United Methodist Church, **Rev. Fred B. Hembree, Jr.** I'll bet the local bluebird

trails are very productive of bluebird young, since Tennessee is full of excellent bluebird habitat.

Robert Bechtol, of Oak Crest Village, Maryland (near Baltimore), recently wrote telling us that one of the *many* activities of this retirement community is a "Bluebird Group," which has been supported by the Wood/Work Shop Club. They have installed 14 nest boxes on the property, and 7 in a public park across the road. They will join the arduous efforts of the retirees at Rossmoor Leisure World, of Silver Spring, Maryland. There the bluebirding group maintains a productive bluebird trail, *and* helps out at the NABS office by "stuffing *Sialia*" four times a year. In that group, we recently lost a hardworking volunteer when, on 25 June 1997, **Elizabeth Nelson** went to her eternal reward. Elizabeth was a stalwart member of the "Sialia-stuffin' crew," with those mentioned in previous columns. I forgot to mention **Kathleen Mallon** last time! NABS member **George Collins** of Blacksburg, Virginia, when sending his renewal dues told us he's "age 91 but still cleaning out BB boxes!" Inspiring!

Shortly after Elizabeth's death, Maxine Montgomery passed away. She was a faithful member of the stuffing crew. Her husband, Royal, built and maintains bluebird boxes for the Rossmoor Bluebird Trail. Dr. Montgomery remembered his wife with a generous gift to NABS for which we are extremely grateful.

At the other end of the chronological timeline, **Andy Jones** of Knoxville, Tennessee, wrote of his Eagle Scout service project, including some snapshots of the 12 nest boxes and the 5 Boy Scouts whose help he enlisted. We're hopeful that he will find others to monitor them after *he* finishes high school and leaves for college. Maybe some local *retirees*, Andy? **Leilani Gillespie** of Townsend, Delaware, thought it would be nice to see "Delaware bluebirds" in *Sialia*, so she sent snapshots of "her" bluebirds. She

uses the Peterson nest boxes--really popular with bluebirds--and she also feeds them mealworms year round. Of the photos she enclosed, my favorite showed the brilliant blue male stuffing more than five yellow mealworms into his mouth at one time! Yes, Lani, those Delaware blues are *stunning!*

It seemed to be a "sparrow spring" this year....**Joseph Tinoco** of Elizabethtown, Kentucky, got so frustrated with the sparrows that he dismantled his bluebird nest boxes completely and set about improvising in-house sparrow traps. He described in detail using an old VCR tape rewriter hoping that the *motorized* trap would yield some sparrow control. He said his results were inconclusive, as he had not been able to test them on any sparrows. We all *know* those are crafty critters! **Carol Fitzpatrick** of Rochester, Michigan, said in a telephone call that in order to cope with sparrow predation she "made this a mission, and missed 2 days work" to attempt--successfully--to control the marauding sparrows!

Marie Duchow of Mechanicsville, Pennsylvania, goes in for domestication: she homeschools her four children, and, at my suggestion, she mounted her bluebird nest box right on her deck! The bluebirds moved in, so now Marie can have reading, writing, 'rithmetic *and* science classes right at home! NABS member **Louis Boone** of Orangeburg, South Carolina, told us of an unusual nesting situation. His daughter in Alabama mounted his gift nest box on a post outside a horse corral in the spring of '96, and had an early nesting of bluebirds. The young were being fed by the parents. Then the horses "discovered" the box and the chewing began, causing the top screw to come loose and this turned the box upside down, placing the entrance hole at the bottom. The parents continued to feed and the young safely fledged. Come spring of '97, the box was torn from the post and lay on the ground *on its side*. The bluebirds continued to use the box

successfully. It was placed back on the post, held together with string, and the birds continued to use it. Louis concluded: "Location, Location, Location!"

Bud Taylor of St. Louis, Missouri, bills himself a "Whitetail and Turkey Bow Hunter" and he loves his bluebirds! He wrote of *covering* his nest box poles with aluminum, even *wrapping* aluminum sheets around a small tree in such a way that the aluminum *expands* as the tree (with the mounted nest box on it) grows. His "Bluebird Express" (Bud's workshop on wheels) contains his necessities and inventions he uses in his trail monitoring--which resulted last year in 355 bluebirds and 56 chickadees. *I'd* say this was one *undiscovered* bluebirder, which we're happy to welcome! William Coleman of Ventura, California, was mistaking a Scrub Jay for a bluebird, until he received NABS' information, complete with full color photographs of the gorgeous Western Bluebird. He still enjoys the antics of the "imposter-birds," even as he becomes acquainted with the "gems of blue"!

Claire and Jim Breese of Waterloo, New York, had misfortune strike the early brood during this cold, wet spring of '97. Although they thought their brood of five young bluebirds had fledged, a look into the nest box showed only one had fledged, and the other four had died. Happily, the pair nested again, with five eggs to hatch. Claire wrote that they are "true bluebird enthusiasts"! She has now taken up that popular bluebirding hobby: feeding mealworms!

Carol and Chris Cuddeback of Front Royal, Virginia, (friends of mine from "way back") were involved in sparrow control on their lovely valley farm which borders the Shenandoah River. They serve as bluebird landlords, and have many nest boxes out and occupied by bluebirds. I visited a homeschooling group there in early April, at the invitation of Maggie Ciskanik. It turned out that a large and productive bluebird

trail nearby was at the University of Virginia's Brandywine Experimental Station and Arboretum. The clear blue April day was great fun for my three grandchildren and me, even if no bluebirds showed up. Another homeschooling opportunity came my way when I visited my daughter Kathi Smith in Ojai, California, in May, just before the NABS Annual Meeting. Laura Berquist invited me to speak on Western Bluebirds in a cozy local park for a good-sized group of children. To everyone's delight, the local bluebirds cooperated.

An amusing, if frustrating "bluebird tale" came our way via Thomas A. White, NABS member from Clarksburg, West Virginia. He recounted a new bluebirder in the area was experiencing the "deranged" bluebird syndrome--the male bluebird was attacking his image in *every* window in the house! The female went about the business of nest-building, laying eggs, brooding the eggs, feeding the young, and fledging them. *Still* the male went after his reflection. The following spring they were back, with the male exhibiting the same annoying behavior! The lady of the house had to have her windowsills sanded and repainted at the end of the season! The only action I can think of is to remove the house in the hope that the male will move on to bedevil someone else (hopefully not me) and then, later in the spring, reinstall the house and try to attract a more welcome tenant.

On a final note, Marilyn Michalski, of Kimberton, Pennsylvania, sent along her encouraging word clipped to her tip sheet which she distributes: "Keep up the excellent work! You inspire all of us who enjoy bluebirds and try to keep this world hospitable for them." *And that goes for you, too, dear reader!* ■

Art Credits

Jon E. Boone 122, 154
Suzanne Pennell 145, 156

problem. Unlike the Tennessee River, standing water under the boxes can become quite shallow by mid-June, permitting easier access to the boxes by predators. Moreover, recent studies indicate that population densities of some predators like raccoons and opossums are higher in our area than in Lisa's study site. Indeed, we did lose one clutch to a probable mammalian predator at Dyke Marsh.

That being the case, we have instituted a new plan of action. We are continuing with our milk carton program--and, in fact, have erected more of these boxes for the 1997 season--in the hope of reestablishing a viable breeding population. We believe we have a better chance of bringing the birds back with 120 milk carton boxes than with only 20 wooden ones. We have also begun the conversion to wooden boxes in areas where Prothonotary Warblers concentrated their breeding activities or were found on territory in 1996. For example, Prothonotary Warblers, which

were virtually absent from Dyke Marsh in 1995, established territories around all clusters of boxes erected for them in 1996. The Dyke Marsh boxes have now all been replaced by wooden ones.

In short, erecting a large number of milk carton boxes is a good short-term solution to an immediate crisis--a dramatic and rapid decline of a once healthy breeding Prothonotary Warbler population, especially when money is unavailable for the construction of a large number of wooden ones. Having a milk carton program in place is better than no program at all. As the birds return, conversion to wooden boxes should occur; however, don't use bluebird boxes. Female Prothonotary Warblers fill their boxes with moss up to the entrance hole so they can see outside while they are incubating. Filling a bluebird box only causes additional work for the female. Ideally, wooden boxes should be cut to the dimensions of their milk carton counterparts.

Larry Cartwright

BLUEBIRD BOOSTERS

Appearing on the inside back cover is a list of those individuals and groups 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 and provides funding for special projects. We thank the individuals, organizations, and corporations for their generosity. We are especially grateful for the long-term support symbolized by those who have become Life Members.

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

All contributions are tax deductible to the extent allowed by law. Mail your check to NABS Boosters, P.O. Box 74, Darlington, WI 53530.

NABS SLIDE PROGRAM

The NABS bluebird slide program is available for rental at \$10.00 or for purchase at \$75.00 plus \$7.50 shipping and handling. The program consists of 110 collated, plastic-framed 35 mm slides and a printed script (no slide tray). If a cassette narration is desired, add \$10.00 plus \$1.50 shipping and handling to the purchase price.

To rent or purchase the bluebird slide show, write to the following address: NABS Slides, P.O. Box 74, Darlington, WI 53530. Please allow one to two weeks for delivery and, if possible, specify several dates for rental.

Stay Here, Little Bluebird

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

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

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

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

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

Dorothy Hall

(BOOSTERS--Continued from inside back cover)

John W. Skooglund
Pat Soehnen
Dr. & Mrs. Wayne Spiggle
Helen W. Swain
Thomas A. Temple, Jr.
Stephen S. Thompson, Jr.
Dawn Todd
Mr. & Mrs. Bronson Trevor, Jr.
Elizabeth Warnke
Judy Watson
Welcome Wagon Club
Mr. Roy L. Wellman
Jeannie Wright

Nestling

Wilho S. Aalto
Karen & Larry Anderson
Raymond Arendt

Hans Beacham
Bill & Liz Becker
Clay Black
Robert P. Bodine
Mary Jo Clark
Willard Duckett
Marie M. Ewing
Fackler Family
Nancy Ferenbach
H.N. Fogel, M.D.
Dr. Marvin Green, Jr.
Christopher Greene
Lee & Karen Huss
Barbara R. Irwin
Mr. & Mrs. William Jens
Donna Legare
Mr. & Mrs. Stephen Levin
J.D. & Di McMonigle
Don McNelly

Linda D. Mannel
Leslie Markovich
Fran Maynard
Oscar Miles
Martin & Pamela Murphy
Nell & Dean Newcomb
Carol & Anthony Norman
Mr. & Mrs. T.W. Ottenad
Parkin Family
Diana & Stephen Pearson
Vicki & James Porter
William C. Reynolds
Bob Risberg
William S. Smith
Jane Merrifield Ungar
Dr. John & Karen Wanabaker
Mrs. Barbara Wheeler
Abbie Zola

BLUEBIRD BOOSTERS

LIFE MEMBERS

Charlotte Jernigan
Clark W. Hart
Katrina Renouf
Mrs. Irene S. Franz
John H. Rogers
Barbara L. Matlock
Lawrence Zeleny
Dr. Eugene Majerowicz
Lillian Lund Files
Stan Bleszinski
Laura Nielsen
Keith Kridler
Fred A. Huntress, Jr.
Gerald Edward Martin
Dr. Bill Keyes
Thomas J. O'Neil
Elizabeth Crispin
Dr. Robert F. Giddings
Haskell A. Duncan
T.L. Sanderson, M.D.
Mrs. William G. Lehl
Mark Ross
Stephen J. Garr
Lorne Scott
Sarkis Acopian
Clarence "Bud" Boone
Kevin Joseph McCarthy
Miss Georgia Hariton
Peter D. VanDuser
George K. Freeland, Jr.
Gertrude Dunn Davis
Eleanor G. Terzia
Leo F. Terzia, Jr.

Western Bluebird

Elizabeth Crispin

Mountain Bluebird

Donna R. Hagerman
Thomas C. Hoffman
Marjorie S. Samples

Eastern Bluebird

Leonard Angermeimer
Linda G. Baldauski
Bella Vista Bluebird Society
Bird Study Group
Gary Black, Jr.
Bluebird Festival Assn. TX
Warwick P. Bonsal, Jr.
Richard Bouchard
Bowater
William L. Carmines
Broncia C. Chalfant
Jane C. Chaplin
G.R. Cook
Mr. & Mrs. James E. Crowell
Robert Crumpton
Gertrude Dunn Davis

Pat & Mary Egleston
George N. Grant
George & Carol Harmon
Ann M. Harwell
Patti Hickman
Houston Forest Products
Charles & Jan Huthmacher
Pamela Isdell
Larry & Betty Jernigan
The Krusos Foundation, Inc.
Pauline R. Kasserman
Paula Klavan
Michele A. Kline
Vera Leak
Aletha J. Lindstrom
William Logan
Mrs. F. Leslie Long
Mrs. George Luce
Julie Lunsted
Stephanie Lynch
Dawn H. Maclaren
McDuff Designs, Inc.
Richard McGovern
Merry Lea Environmental Learn. Ctr.
National Federation of Garden Clubs
John W. Norman
Janet B. O'Neal
George P. O'Neil
Dudley R. Overton
Maurice & Amy Palivka Family
Dr. Robert W. Powell, Jr.
Mr. & Mrs. Joel Rapisarda
Ken & Ann Richardson
Chandler S. Robbins
Marvin & Mary Rubin
Ruritan Club, VA
Anne Sander
Mr. & Mrs. John S. Schier
Dorene H. Scriven
Dean E. Sheldon, Jr.
Susan L. Sloan
David T. Smith
Sparky & Jan Sparks
Mr. & Mrs. W.L. Sullivan, III
Ann Ashley Sweeney
Russ Valentine
Linda Walker
Anne V. White
Thomas A. White, Jr.
Wills Point Wilderness Society

Fledgling

Sandy Albert
Eugene A. Armstrong
Arrow Wiring Contractors
Augusta Bird Club
Carol Hee Barnett
Carol A. Baugh
Constance Benson
H.J. Blair

Charlene Bofinger
Dr. & Mrs. Thomas Boschen
Dr. Robert J. Bradley
Coburn Britton
A. Bruno
Todd & Deb Burrus
Edith F. Camp
Ann Chiller
Amy A. Cox
Kristine Crutch
Mr. & Mrs. James Davis
Dr. Wayne H. Davis
Joanne Dixon
Susan Doyle
Theresa Filipiak
Dee & Odell Friar
Bill Garner
Pat Givens
Betty Hamon Family
Beatrice M. Hayward
Dana L. Heisey
Joan ten Hoor
Ms. Sandra Howland
Barbara A. Inzana
Mrs. R.N. Jespersen
Lee Jolly
Robert & Grace Kocher
Leland D. Krape
Cathryn Kurtagh
Michele A. Kutner
Dorothy Lamoureux
Robert & Mary Lavell
Susy & Jack Ledgerwood
Doug & Ethel LeVasseur
Carl & Anne Little
Becky Lomax
Dwight E. Lowell
Barbara Mandot
J. Kent McNew
Thomas H. Meyer
Mrs. Marilyn Michalski
Brian Miller
Jack L. Moltenbrey
Barbara Moore
Marjorie Mountjoy
Loland M. Moss
Ohio Bluebird Society
Victor Pastor
Mark & Jean Raabe
Catherine Reno
Mrs. Catherine G. Rice
Grant C. Riggie
Roger E. Roberts
Mrs. Joan G. Rollins
Dr. William K. Roth, Jr.
Chester & Ruth Schmidt
R.T. Scott
Gretchen N. Schwartz
Mrs. E.B. Sheaff
Barbara K. Silver

(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. Three year rates: Student and Senior \$28.50; Regular \$42.00. Add \$2.00 per year for Canada and Mexico and \$3.00 per year for other countries (surface mail). U.S. funds only, please. In Canada, please use Canadian postal money order in U.S. funds. Do not use checks. Amounts over \$6.00 are tax deductible.

Address:

**North American Bluebird Society
P.O. Box 74
Darlington, WI 53530**

