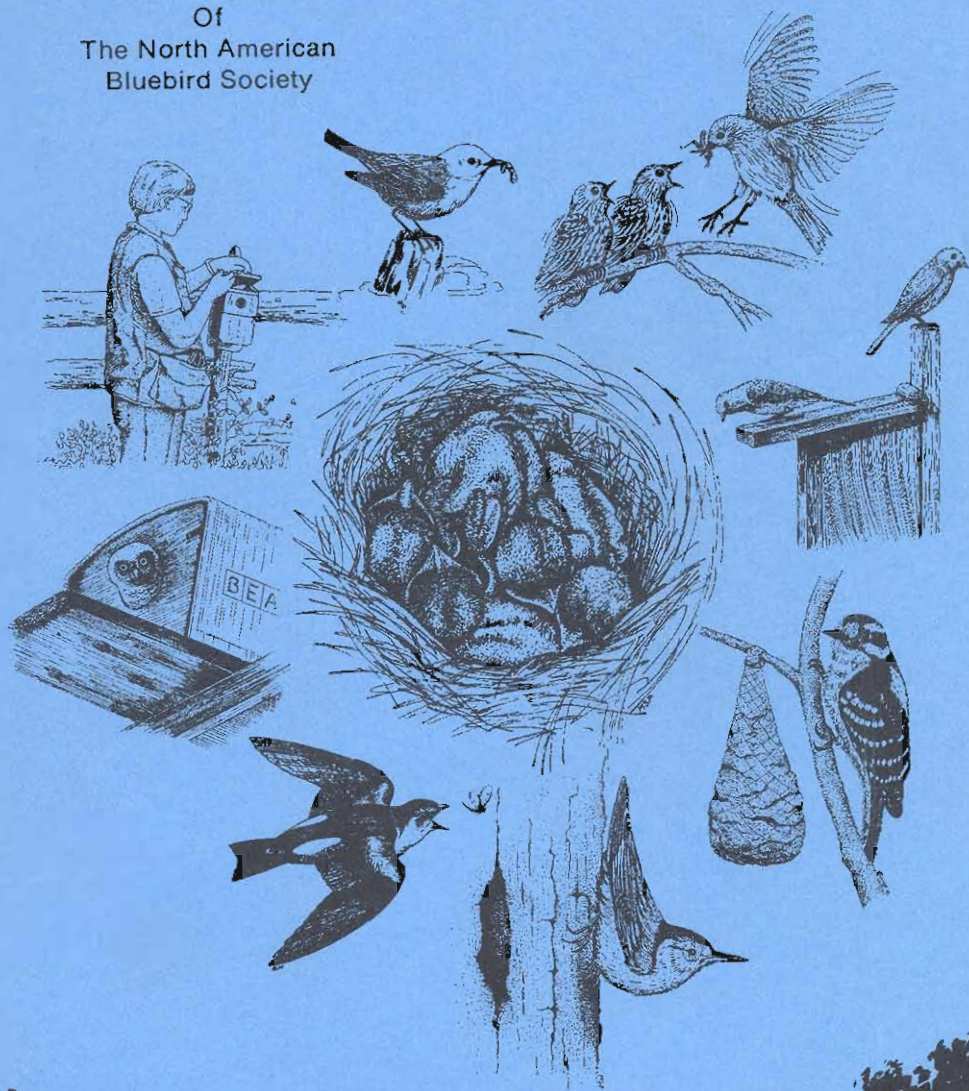


Sialia

Volume 20, Number 4
Autumn 1998
Pages 121-160

The Quarterly Journal
Of
The North American
Bluebird Society



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Sialia

The Quarterly Journal
About Bluebirds

Volume 20, Number 4
Autumn 1998
Pages 121-160

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COVER



For this final issue of *Sialia*, Art Editor M. Suzanne Probst has combined cover drawings from nine past issues depicting the variety of cavity-nesting species NABS members aid. 1. Prothonotary Warbler, Suzanne Pennell; 2. male Western Bluebird bringing grasshopper to fledglings, M. Suzanne Probst (MSP); 3. pair of Eastern Bluebirds on nesting box, MSP; 4. male Downy Woodpecker near suet bag, MSP; 5. White-breasted Nuthatch, MSP; 6. Violet-green Swallow, Richard L. Woodward; 7. Eastern Screech-Owl, MSP; 8. bluebird monitor inspecting a nesting box, MSP; and 9. brood of Eastern Bluebird nestlings, MSP.

For information about changes planned for the quarterly publication see the article on page 149.

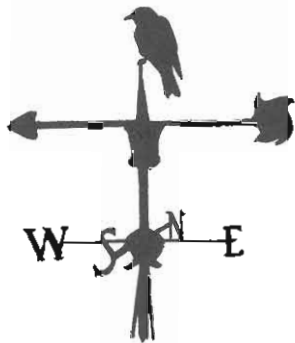
Presidential Points

Ray Harris

I am honored to be the first Canadian president of NABS. It will be a challenge to make a contribution which matches that of previous presidents. I will look for my example to fellow Canadians who have advanced the bluebird cause: John and Nora Lane, Lorne Scott, Andre Dion, Duncan Macintosh, Don Stiles, Myrna Pearman, and Bill Read. Most of them have also contributed greatly to NABS.

When we bought our country home in 1980, I started my first bluebird trail. With great enthusiasm I built some boxes—small clapboard things—and put them up along the gravel road leading to our house. With the anticipation of the uninformed novice, I eagerly awaited bluebirds in every box. Shortly thereafter I met Duncan Macintosh, one of the founders of Mountain Bluebird Trails, a man who brooked no nonsense about bluebirds or the dimensions of boxes. He soon set me straight and, lo, the bluebirds came. Then Duncan introduced me to banding and a few years later I had my first recovery. What a thrill that was! (I must admit that I did not use Duncan's banding method. To open, he placed a band on a nail set and pushed it up with a pair of needle-nose pliers. To close, he used his fingers. After a season of that method, I discovered that banding pliers were well worth the cost.)

Then, as with all dedicated bluebirders, I went to conferences and met other bluebirders as enthusiastic for the blue feathered creatures as I was. And I learned from them. Ask a fellow bluebirder how she became interested in bluebirding and note the excitement and exuberance as she goes on fast forward elaborating the whole history of her trail, number of boxes, nesting pairs, eggs, and fledgings. She moves on to the highs, the lows, the predators, and the surprises of opening each nest box. You will also learn whether she is a proponent of top, side, or front-opening boxes.



Then when she runs out of breath, you jump in to relate your experiences.

I would guess that most members of NABS would tell a similar story—learning to monitor a trail with the help and advice of an experienced bluebirder, widening understanding by attending conferences, reading *Sialia*, and learning the importance of protecting other cavity nesters. We need the shared knowledge that NABS can offer.

NABS is growing and changing, as it should. Dean Sheldon was a catalyst in giving a wake-up call for NABS to assume the role of an umbrella organization with state, provincial, and regional groups becoming affiliates. NABS could provide the expertise, leadership, and guidance to affiliates as well as to individuals who monitor trails independently. The growing list of these groups on the inside cover of *Sialia* points to the acceptance of affiliation.

Replacing many key people in executive and responsible roles is not easy; we are sorry to see them leave for they

(Continued on page 159)

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Mountain Bluebird Productivity Near Saskatoon, Saskatchewan

Mary I. Houston and C. Stuart Houston

Abstract

Since 1970, Mountain Bluebirds (*Sialia currucoides*) have increased from three to as many as 99 pairs on our 240-box trail. Average nest success rate was 76.8% and productivity of young per successful nest, 4.5. We have banded 5904 nestlings and 426 adult females

Introduction

In the early days of white settlement on the Canadian prairies, the Mountain Bluebird was scarce. They occurred regularly in the foothills of the Rocky Mountains and a few pairs nested in holes in cliff faces in the badlands of extreme southern Saskatchewan. Others used woodpecker holes in trees in the mixed forest belt north of the open plains. By 1899 they were using oak stumps in the Carberry sandhills, Manitoba. In 1912 they first nested at the Criddle farm north of Wawanessa, Manitoba, the same year that they spread north to Regina and Battleford, Saskatchewan. At Eastend, in southwestern Saskatchewan, they increased in numbers between 1911 and 1923. They reached Yorkton in 1930, Dafoe in 1932, and Nipawin in 1939. After taking 50 years to colonize, using mail boxes, binder twine boxes, crevices in sheds and barns, and flicker holes in telephone poles, they immediately began to decline again as the European Starling (*Sturnus vulgaris*) arrived and usurped many of their nest sites (Houston 1977; Fig. 1).

During the 1950s, the Prairie Bluebird Trail was established to "bring back the bluebirds." In 1968, the late John Lane of Brandon and Lorne Scott of Indian Head, Saskatchewan joined their two trails at Broadview, Saskatchewan. In the fall of 1968, members of the Saskatoon Junior Natural History Society added 207 boxes along a 122-km (76 mile) segment of the trail, with equal

distances on either side of the South Saskatchewan River, and joined at Langham with Jake Kargut's trail from Denholm. In 1970, the juniors joined at Raymore with Lorne Scott's trail from Indian Head (Houston 1971). From Denholm to the eastern terminus at Winnipeg, Manitoba, the trail was 960 km (600 miles) long, with many side branches in addition (Houston 1977; Fig. 1). Not all portions have been maintained in subsequent years.

Nest success has been reported only through 1983 (Houston 1984), and encounter (return and recovery) rates through 1985 (Houston and Houston 1987). We report on Mountain Bluebird occupancy and productivity, 1970-1997 inclusive, along the Saskatoon section of the trail.

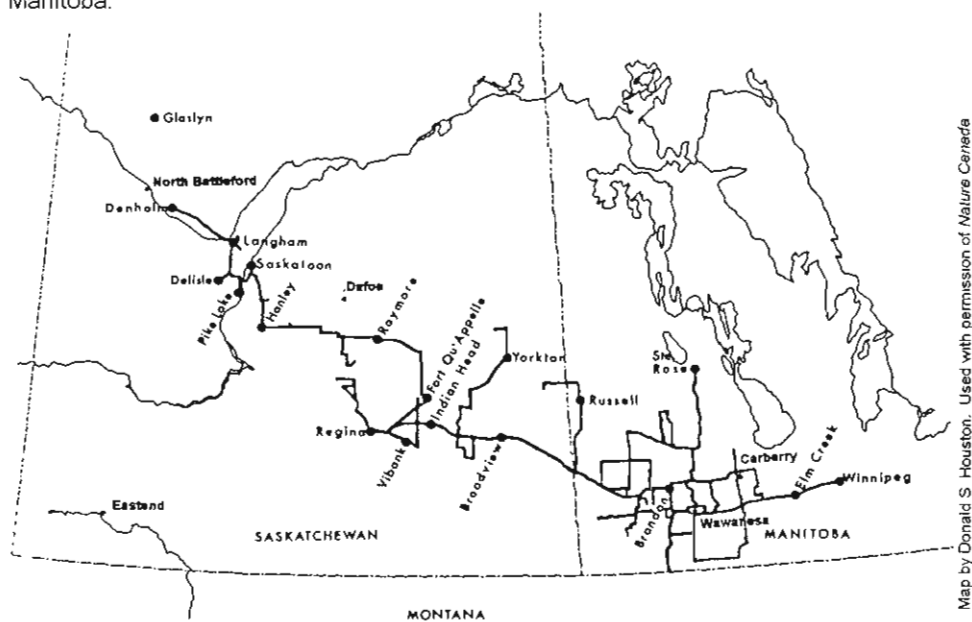
Study Area and Methods

The unpainted plywood boxes, 14.4 cm (9 inches) high, with inside measurements of 8 by 8 cm (5 x 5 in.), each had a round entry hole of 2.4 cm (1.5 in., to exclude starlings) and no associated perch. They were placed on fence posts, from two to ten per mile. They are visited every ten days from the last week of May through the first week in August.

Results

On our segment of the trail we had three pairs of Mountain Bluebirds using the boxes in 1969, increasing to 8 and 12 pairs in 1970 and 1971, and to 94 pairs

Figure 1. Map of Prairie Bluebird Trail from Denholm, Saskatchewan to Winnipeg, Manitoba.



Map by Donald S. Houston. Used with permission of Nature Canada

in 1976. Following the snowstorm of late May 1982 (Houston 1982), a sharp drop to 40 pairs, only 21 of which were successful, occurred in 1983. There was then a gradual buildup to a second peak of 99 pairs in 1991. We have banded 5904 nestlings and 426 adult females in 28 successive seasons. There have been 1315 successful nests and 397 failed nests, for an average success rate of 76.8%, though success in individual years has varied from 52.5% (1983) to 88.1% (1975, 1978). Productivity of young per nest has varied from 3.6 to 6.0 but averaged 4.5 (Table 1).

Discussion

Bird boxes are by no means restricted to the main trail or its branches. Newspaper and television publicity caused hundreds of farmers and city folk to place more boxes, often five to 100 per person, along roads across the breadth of Saskatchewan and Manitoba. We distributed plans to hundreds of people who sent a stamped, self-addressed envelope. Mountain Bluebirds increased rapidly.

The Prairie Bluebird Trail has allowed

Mountain Bluebirds to spread eastward and Eastern Bluebirds (*Sialia sialis*) to spread westward. We had one successful pair of Eastern Bluebirds in 1975, 1978, and 1995 and two successful pairs in 1977 and 1986. A mixed pair, consisting of a Mountain Bluebird male and an Eastern Bluebird female, raised five young successfully in 1974. A probable hybrid female, with a red breast but too large for a pure Eastern female, was mated to a Mountain male, and raised five young in 1987.

From sad experience we learned not to put boxes along rarely traveled roads, where they were used for target practice; not to face boxes into pastures, where cows and horses rubbed them down; and to avoid sites near farm houses and willows, preferred by House Sparrows (*Passer domesticus*).

Vandalism is almost unknown along highways, but road crews have several times torn down 10-km (6 mile) stretches of fence posts and destroyed boxes without warning. Plywood is extremely durable, even in our harsh climate; about half the boxes placed in the fall of 1969 are still in use.

Table 1. Prairie Nest Box Trail Near Saskatoon, Saskatchewan

Year	Nestings		MB % Succ	MB	MB	MB Yg/N	House	House	E. Blue- bird nests	Hybrd nests	Boxes empty
	MB Succ	MB Fail		Adults banded	Young banded		Sparrow nests	Wren Nests			
1970	3	1	75.0%	2	18	6.0	11	0			15
1971	8	3	72.7%	8	40	5.0	17	0			17
1972	32	8	80.0%	20	133	4.2	48	2			2
1973	31	7	81.6%	22	126	4.1	52	2			10
1974	43	10	81.1%	10	182	4.2	45	8		1	7
1975	52	7	88.1%	20	259	5.0	26	8	1		10
1976	79	15	84.0%	16	401	5.1	25	9			20
1977	71	13	84.5%	24	272	3.8	33	5	2		5
1978	74	10	88.1%	12	348	4.7	17	8	1		7
1979	44	11	80.0%	5	215	4.9	11	8			14
1980	65	10	86.7%	19	324	5.0	17	2			6
1981	75	18	80.6%	24	355	4.7	13	4			20
1982	33	25	56.9%	11	132	4.0	16	10			57
1983	21	19	52.5%	25	100	4.8	19	3			53
1984	39	14	73.6%	12	179	4.6	31	3			38
1985	32	12	72.7%	4	156	4.9	10	2			25
1986	53	9	85.5%	19	227	4.3	5	1	2		36
1987	61	19	76.3%	24	229	3.8	8	4		1	17
1988	67	24	73.6%	15	360	5.4	5	0			22
1989	72	14	83.7%	19	286	4.0	6	3			34
1990	68	30	69.4%	29	303	4.5	9	4			30
1991	79	20	79.8%	19	385	4.9	4	13			28
1992	40	17	70.2%	17	166	4.2	3	12			29
1993	44	28	61.1%	17	202	4.6	2	22			19
1994*	21	9	70.0%	10	85	4.0					33
1995	38	8	82.6%	11	149	3.9			1		30
1996	44	24	64.7%	11	178	4.0	6				25
1997	26	12	68.4%	1	94	3.6	2	6 f			17
Total	1315	397	76.8%	426	5904	4.5	441	139	7	2	626

revised Jun 2/98

*Figures incomplete for 1994, Mary had a hip replacement on 10 May 1994

An even greater beneficiary has been the Tree Swallow (*Tachycineta bicolor*); we have banded 12,760 nestlings and 1590 adults, but that is another story. ■

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NEW EDITOR

Please submit all manuscripts and photographs intended for publication to the new editor

James J Williams
5239 Cranberry Lane
Webster, WI 54893

1999 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, and 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, and 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 Cheryl Eno, 2500 W. James Drive, Raymond, NE 68428 by 1 March 1999.

Conservation of the Bahama Swallow

Paul E. Allen

The Bahama Swallow (*Tachycineta cyaneoviridis*) is a Caribbean relative of the Tree Swallow (*T. bicolor*) from North America and, like their northern kin, Bahama Swallows are cavity nesters. The Bahama Swallow normally nests in abandoned woodpecker holes in pine trees in the forests on the islands of Abaco, Andros, New Providence, and Grand Bahama in the northern Bahamas. Those forests are the only suitable habitat in the Bahamas that provides nest sites and the only place that the Bahama Swallow breeds.

Although the Bahama Swallow isn't an "endangered" species, it is listed as "near-threatened." This means that the species probably isn't in danger of immediate extinction, but not enough is known about its situation to be sure. A near-threatened status also means that there are other factors that might make the species particularly susceptible to becoming endangered. In the case of the Bahama Swallow, one such factor is that the forest habitat on which the species depends is relatively limited and, as a consequence, its maximum population size is relatively small. Although the land area of the Bahamas is 13,934 km² (5,356 miles²) which is about the size of the state of Indiana, the pine forest covers just 2,036 km² (786 miles²), an area smaller than Rhode Island.

What happens when a species is dependent on a relatively small amount of habitat? The species will be very sensitive to changes in the amount of habitat available. Humans have already shown their ability to alter habitat in the Bahamas on a scale that can affect entire islands in just a few years. Much of the forest of the Bahamas was logged earlier this century and much of the existing pine forest is actually second-growth forest, regrown after logging. At one point, the intensity of logging was so great that more than 82% of Grand Bahama was

cut for pulpwood in just four years. That represents nearly 27% of the forest in the Bahamas. Looking with hindsight, we are fortunate that the Bahama Swallow survived what surely must have been a difficult period after much of its nesting habitat had been logged. Would the species survive another episode of logging? It is important that we understand the ecology of this bird so we can try to understand its conservation needs and answer questions like this. With better understanding of the Bahama Swallow we can try to minimize the negative impacts humans have on this species. Very little was known about this species prior to the research I did in the spring of 1995 on Grand Bahama. Even some of the most basic information about this bird, such as descriptions of its eggs or clutch size, was unknown prior to this study.

Much of my motivation to study the Bahama Swallow was to learn more about the species *before* it was considered endangered. In essence, it is an attempt to apply to conservation the old adage that "an ounce of prevention is worth a pound of cure." Instead of making an immense, expensive effort to save a species on the brink of extinction, it would be much better to identify species with the potential to become endangered (i.e. near-threatened species) and learn about them. In this way it might be possible to take simple actions or redirect human impacts to protect species without the situation ever becoming critical.

One question that arises with the Bahama Swallow is "What would happen if a portion of its forest habitat were destroyed, perhaps by logging?" If the species were desperate for nesting sites, then one conservation measure that might be effective would be to provide artificial nesting sites in nest boxes. Many people provide nest boxes for other birds such as Eastern Bluebirds (*Sialia sialis*) and Tree Swallows in order to in-

crease local populations of those birds. One goal of my study was to test if Bahama Swallows would use nest boxes and in what type of habitat nest boxes would be best placed. I erected 227 nest boxes at several sites on Grand Bahama Island that included farm fields, a golf course, a mangrove swamp, stands of dead pine trees, and stands of secondary forest. Unfortunately, none of the nest boxes were used by swallows except for three at a site which was an abandoned military base where Bahama Swallows were already nesting in other artificial cavities. However, in that first season only about one month elapsed between the time the nest boxes were erected and the time the swallows began breeding. This gave very little opportunity for the birds to find the nest boxes and it will be interesting to see if additional boxes are used in subsequent years after the swallows have had more time to find them.

If we are to understand the conservation needs of any species, it is also important to understand its basic biology. For example, if we know that a pair of birds produces ten offspring each year, we might be less concerned about the survival of that species than one that produces only one offspring each year in a similar situation. As such, the second goal of my study was to learn about the breeding biology of the Bahama Swallow, about which very little was known. This was done by closely monitoring the nests in nest boxes at the military base as well as several other nests in various artificial cavities on the buildings at the base. I found that Bahama Swallows build their nests out of grass, pine needles, and the needle-like twigs of a non-native tree called Australian pine (though it isn't really a pine). The nests are typically lined with a few small feathers and pieces of bark from Caribbean pine. The birds lay two to four pure white eggs in their nests, with three eggs being the most common. The eggs are incubated for about 16 days before hatching, and then the chicks take about 22 days to grow before fledging. On average, 2.1 chicks fledged from each nest. I moni-

tored. There is evidence that the species is double-brooded. Besides these nests in artificial cavities, I also found and monitored several Bahama Swallow nests in abandoned woodpecker holes in dead pine trees. These nests in pine trees were 6.0-11.4 m (19.7-37.4 ft) above the ground and I used a 10 m (32 ft) long ladder to reach them. Once I got up to the nest I used a fiberoptic device called a fiberscope to see inside the cavities. At some natural nest sites I also used a small saw to carefully open the cavity to measure the eggs or chicks inside. (Don't worry. I repaired those cavities so the birds could still use them.)

Another piece of information about a species that is critical to conservation is some kind of estimate of its population size or, at the very least, an idea of whether the population is stable, decreasing, or increasing. For example, we would be very concerned about a species that had just 20 individuals but probably would not worry if there were two million individuals of that species. Also, we would be concerned if the number of individuals we observed over time seemed to be decreasing, regardless of whether we knew the population size. With this in mind, the third goal of my study was to survey Grand Bahama to get reliable counts of breeding Bahama Swallows. Unfortunately, it is quite difficult to make accurate population estimates for swallows since they are very mobile birds, but the results of surveys over several years will give an indication as to whether the population size is decreasing, increasing, or stable. I drove a total of about 120 km (74 miles) of road through the pine forest each week to count the number of swallows I saw. The number of swallows I saw varied over the breeding season, but on average I found one swallow for every 3.6 km (2.2 miles) I drove. If fewer swallows are seen in the future on surveys of the same routes during the same period of the breeding season, then we might begin to worry that the population size is decreasing even though we don't have an exact count of the population. In order to compare current results with the only

historical results available, I repeated a swallow survey done in 1988 on Andros. I saw one pair of swallows for every 4.8 km (3.0 miles) I drove and in 1988 one pair was seen every 3.6 km (2.2 miles). Although the rate of swallow sightings on Andros dropped about 25% from 1988 to 1995, we can't conclude much from these numbers because each survey was done only once so it is likely that neither of the Andros survey results is very accurate. The weekly surveys done on Grand Bahama should give more accurate results when they are compared to repeated surveys in future years.

Even with all this new information about the Bahama Swallow, there is much more to be learned. And just because we know more about this species

doesn't mean it is no longer near-threatened. The Bahama Swallow will require further monitoring and attention to ensure that humans do not unduly affect the delicate relationship this species has with the pine forest of the Bahamas. ■

Acknowledgments

This study was funded by the Lincoln Park Zoo Scott Neotropic Fund, a Kathleen S. Anderson Award from Manomet Observatory, the North American Bluebird Society, the Purple Martin Conservation Association, and a Bergstrom Memorial Award from the Association of Field Ornithologists.

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Calendar

If your organization wishes to have annual meetings or festivals listed in this calendar, please provide information to the editor as far in advance of the event as possible.

OCTOBER 17, 1998—Ohio Bluebird Society Annual Meeting. Aullwood Audubon Nature Center and Farm, Montgomery County near Englewood. OBS, 20680 Township Rd 120, Senecaville, OH 43780

MARCH 13-14, 1999—Jackson Bluebird Festival and Wildlife Art Show. Jackson Community College, Dahlem Environmental Education Center, 7117 So. Jackson Rd., Jackson, MI 49201

MARCH 27, 1999—Bluebirds Across Nebraska Annual Conference. Ramada Inn, Kearney, Nebraska. BAN, P.O. Box 67157, Lincoln, NE 68506

MARCH 27, 1999—Ohio Bluebird Society Annual Meeting—Apollo Career Center, Lima, Ohio. OBS, 20680 Township Rd 120, Senecaville, OH 43780

JUNE 17-20, 1999—NABS Twenty-second Annual Meeting. Great Falls, Montana Bob Niebuhr, 373 Beth Dr., Great Falls, MT 59405

TWENTY-SECOND ANNUAL MEETING OF THE NORTH AMERICAN BLUEBIRD SOCIETY

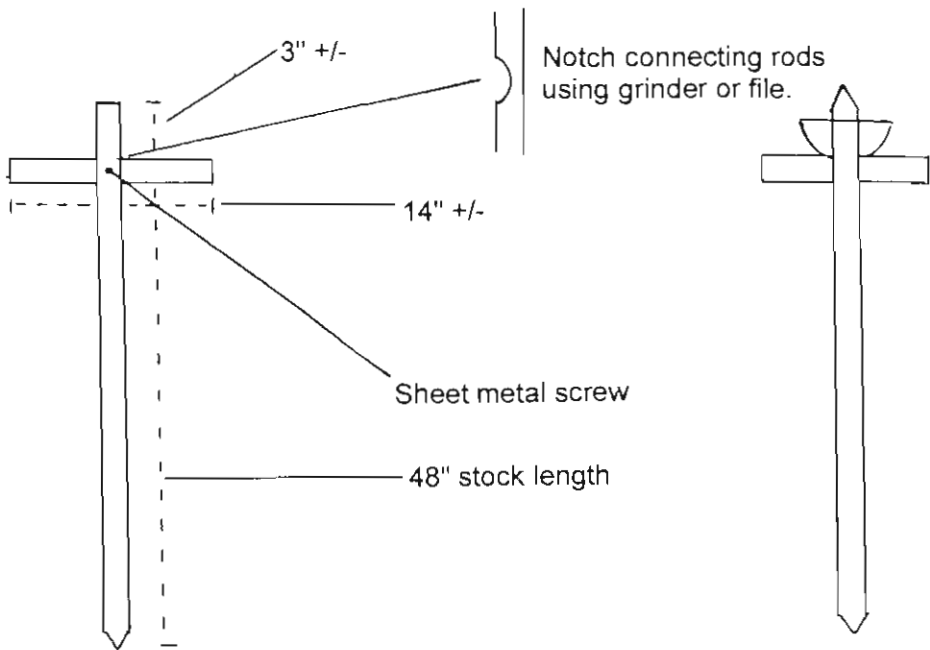
The Twenty-second Annual Meeting of the North American Bluebird Society
will be held in Great Falls, Montana, June 17-20, 1999.

Mountain Bluebird Trails, Inc. is the sponsor of the meeting.

Registration material will be enclosed in the Winter 1999 issue.

Bluebird Perch/Oriole Feeder

Steve and Cheryl Eno



Inexpensive and Easy to Make

- * Made from fiberglas[®] rods used for electric fences; available at any farm supply store for approximately \$1.00 each. Total cost of the perch \$1.40.
- * Can be used to make a nest box more attractive to bluebirds by placing perches around the nesting site.
- * Can be placed above a container used to feed mealworms.
- * Easily moved to draw bluebirds closer for viewing.
- * Can be used in manicured yards where there may be nothing to perch on. Makes for easy, enjoyable viewing from your house.
- * Easily moved in order to mow grass.
- * Easily converted to an oriole feeder. Grind the top to a point and shorten the horizontal perch. Place an orange half on pointed shaft and/or fill a hollowed-out orange with grape jelly (a real favorite).
- * Field tested in our yard. The birds love them.

Doug Smalik, a neighbor of the Eno's, produced the original design as an oriole feeder. The Eno's came up with its secondary use as a bluebird perch. ■

Reprinted from Bluebirds Across Nebraska Newsletter 4(2):14.

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 the editor and NABS are on your mailing list. We want to include your material. A name followed by an asterisk indicates a NABS affiliate.

ALBERTA--*Ellis Bird Farm Newsletter*, Spring 1998; Summer 1998

At least two pairs of Eastern Bluebirds were reported to have nested in Alberta this year. One pair was noted at Don and Ida Dargatz's near Millet, south of Edmonton. The other nested on Rafter Six Ranch west of Calgary. Both pairs raised three young. An unpaired male was sighted at Aitkens Acres near Redwater, north of Edmonton.

Kristen and Steven Tannas of Olds Koinonia School won first place with their Science Fair project at the Red Deer Regional Science Fair and went on to win silver at the Canadian National Science Fair competition. Their project, "Environmental Factors Affecting Nesting Success," identified variables affecting nest box success during the period 1995 to 1997 in three locations based on altitude, then further divided on the basis of habitat. They concluded that the negative factors affecting nesting success include the following: low temperatures in May, frost during incubation and hatching, extremely hot daytime temperatures, late spring snowfall, low plant and insect biodiversity, and dense tree cover. For the areas they examined, they concluded that the most ideal location for a bluebird box is in a mid-successional native area below 1500 m (4921 ft) with some shrub cover nearby.

Jim Potter of Delburne reported that Hooded Mergansers laid eggs in two of his duck boxes this year, two in one box and three in the other. He also found five Hooded Merganser eggs in a duck box near the Dickson Dam.

Donna Hagerman, of Reno, Nevada, had a family of American Kestrels take up residence in a bluebird box! Fearing the four nestlings would be too cramped, Donna constructed a larger box and mounted it alongside the bluebird box. She moved the kestrel chicks into the larger box which was readily accepted. Betty Fraser, of Blackfalds, had a pair of kestrels raise a brood in an old wooden grain auger attached to their barn. Tom Webb, of Turner Valley, watched a female kestrel land on fronts of three different nest boxes. At each box she attempted to reach in and pull out Tree Swallow nestlings. She appeared to target nests where the young were old enough to poke their heads out of the box. Her forays were unsuccessful.

--*Ellis Bird Farm, Ltd.**

BRITISH COLUMBIA--*The Nestbox*, Spring 1998

President Vern Johnson details expanded activity for this group in 1997. In April of 1997, they received a grant from the Friends of the Environment (Canada Trust). The grant will be used to build nest boxes. The Sixth Annual General Meeting was announced for 3 October 1998 at the Seniors Drop-in Centre, Upper Mall, Logan Lake.

Vern Johnson describes some habits of the three local species of nuthatches. White-breasted, Red-breasted, and Pygmy. Comments concerning nesting material were particularly interesting. The nest is composed entirely of very fine hair and fur. By following a White-breasted Nuthatch that was bringing nesting material to a cavity, the author soon located the source of the material. Owl pellets! In this case, the nuthatch was using pellets of a Long-eared Owl, which was perched in a large pine tree directly above the pile. Further observations indicated that a nuthatch chooses the driest of the pellets, pecks them apart, and gathers the rodent fur for its nest. If the pellets are too wet, the bird pulls them apart and tucks tiny pieces in the bark of a tree trunk to dry, six to eight feet above the ground. This observer noted that he saw one tree that a nuthatch had used for drying nesting material where there so much fur present that the trunk looked like a fuzzy caterpillar. Nuthatches nest early in the spring, sometimes at high altitudes where temperatures may drop to freezing or below. Prior to incubation, eggs are buried

in the fur which is an excellent insulating material. Nuthatches occasionally use nest boxes. Use caution when removing a nest that you believe is that of a mouse—it may belong to a nuthatch instead.

George Patrini describes the long day he and three other bluebirders put in in order to rescue seven recently hatched bluebird young in a box where the female was lost. The nestlings were divided among four boxes after many hours spent checking nests for young of the same age. Box numbers were recorded so that the progress of the nestlings could be checked. The foster parenting was a success; all the transferred bluebirds survived and fledged.

In 1997, this organization fledged 2754 Western Bluebirds, 7846 Mountain Bluebirds, 166 White-breasted Nuthatches, 14 Red-breasted Nuthatches, 18 Pygmy Nuthatches, 221 Mountain Chickadees, 26 Black-capped Chickadees, 3590 Tree Swallows, 936 Violet-green Swallows, and 9 flickers from 4420 boxes.

—*Southern Interior Bluebird Trail Society**

CALIFORNIA—BLUEBIRDS FLY, Spring 1998; Summer 1998

An additional 348 fledged birds were reported for the state for 1997 by Donald L. Dahlsten whose boxes are located in Alameda, El Dorado and Kern counties. Of the total, 71 were Chestnut-backed Chickadees, 157 Mountain Chickadees, 24 Oak Titmice, 47 Violet-green Swallows, and 29 Pygmy Nuthatches.

Don Yoder incorporated comments from annual reports in his "Notes from the Field." Billie Arthur, Orange County, reported that a Bewick's Wren fledged five from a bluebird box. Howard Rathlesberger, San Mateo County, made a successful contact at a local golf course. The course management operates five courses; there may be 20 boxes on each course by the end of the season. Henry Ratz, Amador County, has his own solution for House Wren problems. He hangs an empty gourd in a central location. "They will stuff that forever if you pull out a few twigs every morning, thus forgetting to annoy you at the other nest sites." Kevin Putman, Sutter County, reported that after a Scrub Jay invaded a NABS-style box he found just one of six hatchlings still present. He theorized that the nestlings, believing they were about to be fed, extended their necks enabling the jay to reach them. (The nest was four inches high.) Jim Fletcher, El Dorado County, turned in the second report of a Scrub Jay invading a nest box to remove nestlings. The entrance on that box had been enlarged making it easier for the jay to reach in. The same report noted that a Nuttall's Woodpecker removed a completed bluebird nest from a box and used the space for night roosting. The bluebirds moved to another box. The woodpecker gave up the box about 1 June but returned when the October rains began.

Scientists from the University of Nevada-Reno and the U.S. Forest Service monitored from 44 to 92 nest boxes on the San Joaquin Experimental Range in Madera County, California, from 1989 to 1994 in foothill oak-pine woodland and savannah. Results were published in the *Auk* 114(4):646-656, "A Comparison of the breeding ecology of birds nesting in boxes and tree cavities" by K.L. Purcell, J. Verner, and L. Oring. Ash-throated Flycatchers, Oak Titmice, House Wrens and Western Bluebirds used nest boxes in sufficient numbers to compare their nesting with natural cavity nest sites. In using nest boxes, bluebirds gained the greatest advantage of the four species; Oak Titmice had a slight advantage in nest boxes, House Wrens had a definite advantage in nest boxes, and Ash-throated Flycatchers gained no advantage in boxes.

A couple of monitors from Placer County submitted items. Dee Warencya watched a male bluebird on the Woodcreek Golf Course fly repeatedly to the base of a rotted blue oak tree. The bird was capturing bees to feed nestlings in a nearby box. That box fledged two broods of six in 1997. June Schelhaus's husband, Marvin, was bitten by an opossum when he reached into a Wood Duck box mounted so that he could not easily see inside. He had to undergo a series of rabies shots when the animal could not be

caught. His experience should be a warning to monitors.

California monitors suffered major first brood losses to weather-related conditions. In most cases, nestlings appeared to be adequately nourished but died of exposure. Dead birds tended to be nestlings that were no longer being brooded at night. Even Orange County, in the southern part of the state, experienced abandoned nests, smaller than usual number of fledglings per nest, and dead nestlings. Dick Purvis noted, "I have much more empathy now for easterners who are at the whim of bad weather which is even freezing there at times." Fortunately, many county coordinators saw evidence that second broods might make up for some of the early losses.

Garth Harwood's editorial, "Meeting the Challenge: a Case for Nest Box Diversity" in the Summer issue is a call for positive encouragement of diversity of species on nest box trails. The Santa Clara County Coordinator expresses appreciation to Hatch Graham for research concerning population trends of cavity nesters in California. Eight cavity-nesting species have declined more than the 23% suffered by Western Bluebirds during the 29 year period for which data were available. The author of the editorial states that since those figures were published in *BLUEBIRDS FLY!* last winter, the program in Santa Clara County has altered its emphasis. "We changed our distribution of boxes from 100% bluebird boxes to 50% bluebird, 50% chickadee/titmouse, and we're moving toward production of kestrel and owl boxes next." The chickadee/titmouse boxes can be integrated into existing trails (if adequate habitat is available) and can be monitored exactly like bluebird boxes. "We find that it's more fun for many monitors to have a diversity of boxes, because the different species all have their charming peculiarities, and there's a longer active season, as some of the small species get going as early as February." He adds, "Educate your volunteers and the public that non-bluebird species are neither consolation prizes nor pests, but unique species with critical conservation needs of their own."

The editorial concludes with some suggestions for encouraging diversity in nest box programs.

- At every opportunity, recognize diversity as a goal in itself. Award prizes and commendations for highest diversity of species as well as highest numbers of fledglings.
- Encourage specialization. If one volunteer is fond of chickadees, let that person become your chickadee expert. Do the same for owls, ducks, and the rest. Charge each specialist with testing specific box designs, site preferences, etc., and give them opportunities to share their discoveries with others in your network.
- If you haven't already done so, get your local chapter of the National Audubon Society [ornithological societies in many states] involved in your program.

For further support, encouragement, or information in diversifying a trail or network, contact Garth Harwood by e-mail at scvas@scvas.org or telephone (408) 252-3747.

--California Bluebird Recovery Program*

INDIANA--Bluebird Flyer, Spring 1998, Summer 1998

Carole Mitchell, of Goshen, says that bluebirds check her boxes but seem to prefer natural cavities that she has mounted on old tree stumps. "I keep on the lookout on roadsides for limbs or logs that have holes in them, then bring them home and modify them if I have to." Rosemary Bontrager had a couple of bluebird boxes in her front yard. "We could hardly believe it when two sets of bluebirds decided to make their homes in our front yard about 100 feet apart and no barrier in between. We usually feed them mealworms when they are nesting as we think this makes for healthier babies."

Tony Nagle has a suggestion for a dry, well-ventilated nest box which may help to prevent blowfly and moisture problems. 1. Drill a 1 in. hole in the bottom of a nest box. 2. Staple a 2 in. square of window screen or hardware cloth over the hole on the inside of the nest box. 3. Use a piece of 1/4 in. plywood 1/2 in. smaller than the floor; place 4 small #8 x 5/8 in. screws (or small nails) near the corners to make legs for this false

floor. 4. Place this raised floor in the box with the legs down. Air will flow into the hole in the bottom of the box and will circulate around the nest and out the top vents. This provides excellent circulation on a hot day. It is a process called "natural aspiration." (Air naturally circulates from bottom to top.) On cold days, the process can be halted by simply placing a piece of duct tape over the hole in the box floor.

—*Indiana Bluebird Society**

MANITOBA—*The Friends of the Bluebirds Newsletter*, April 1998

The 1997 bluebird nest results were down dramatically from previous years. A three day snowstorm in early April with accompanying cold temperatures disrupted first nestings. Most bluebirds did not begin nesting until the middle of May and some did not re-nest after lost first nestings. Mountain Bluebirds were hit hardest with a total of 491 nestings (a nest in which at least one egg has been laid), down from the peak of 901 nestings in 1994; Eastern Bluebirds had 289 nestings. Tree Swallow nestings were high with 1207. (They arrive later than bluebirds so the cold and snow had less impact on them.)

All three of Richard Clark's duck boxes at the junction of the Souris and Assiniboine rivers were used by mergansers; two had successful nests, the third was used as a "dump" nest which contained a total of 28 eggs. Hugh Horbeck lost one box to a bear and four broods of Tree Swallows to weasels.

--*The Friends of the Bluebirds*

MARYLAND—*Nest Box News*, June 1998

A mild winter and ideal spring weather made for an excellent beginning for bluebird nesting. As of early June, numbers equaled those of almost a month later in other years, with close to a 100% increase compared to last year. For the second year in a row, a Prothonotary Warbler successfully raised five young in a box in the Battle Creek swamp.

—*Calvert Bluebird Council*

MINNESOTA—*BLUEBIRD NEWS*, May 1998

At the annual meeting 18 April 1998 at Camp Ripley, Linda Tennis of Cottage Grove and Jeanne and Tim McCloskey of Forest Lake were named Bluebirders of the Year. They have monitored boxes along Interstate 35 north and south of the Twin Cities.

The 1998 Research Grant winners were announced. Results of their research will be published in the fall. Winners and their subjects are as follows: Al Webster, St. Paul, Minnesota, assistance with school bluebird project at Wilder Park; Prof. Kevin Berner, State University of New York-Cobleskill, the study of hole size effectiveness in preventing starling usurpation; Prof. Neil Soule, Middleton, Massachusetts, public education and training of bluebird volunteers; Charlotte Corkran, Portland, Oregon, comparison of foraging provision rates between grazed and ungrazed lands; Al Laurer, St. Cloud, Minnesota, comparison of different plot sizes in attracting bluebirds, and Kelly Helton, Lexington, Kentucky, optimum direction of entry holes.

In "The Story of the Gilbertson Box," designer Steve Gilbertson describes how he came to produce his widely used PVC box that has proven to be good for bluebirds but relatively unattractive to House Sparrows. He warns that in order to expect excellent results, it is necessary to construct, mount, and use the box as he designed it. Modifications almost always create serious design flaws.

Boz Metzdorf updates his experiences with Wood Ducks and American Kestrels nesting on his wetlands. Although, in many instances, the two species can live in proximity quite peacefully, in this case an extremely aggressive kestrel attempted to defend all the boxes in his territory to prevent the Wood Ducks from using any. Several pairs of Wood Ducks managed to nest despite the harassment, but circumstantial evidence pointed to the kestrel killing an adult male Wood Duck.

Abundant rains and a mild winter have produced high deer mouse populations in many parts of the continent. This, in turn, could lead to an outbreak of hantavirus with its high mortality rate. When cleaning bluebird boxes which may have housed mice, avoid breathing in the dust.

According to Cornell Laboratory of Ornithology's *Birdscope* (Winter 1998), Tree Swallow clutches vary in size according to latitude. In northern latitudes, Tree Swallows lay more eggs per clutch than those nesting farther south. There was no relationship between clutch size and latitude for bluebirds.

--*The Bluebird Recovery Program**

MONTANA--e-mail

In 1996 Rod Spencer banded five Mountain Bluebirds on my Highwood Trail. Three were females. In 1997, all three females returned and raised broods within one-half mile of where they were raised. Rod has banded more than 1000 Mountain Bluebirds on his trail and mine during the last few years.

--Bob Niebuhr

NEBRASKA--*Bluebirds Across Nebraska Newsletter*, Spring 1998

Bluebirds Across Nebraska (BAN) has been awarded a \$5,000 lottery environmental trust grant. It is the second they have obtained.

A current feature of the newsletter is a set of box plans for different styles of bluebird nest boxes. This issue features a NABS-style box. Because it is a simple box to construct, it is especially useful when building boxes with children.

BAN membership has grown to more than 500. Barbara Werner of Meadow Grove was honored as the five hundredth member.

In "The Importance of Checking Boxes Weekly," Justin Hoff makes a strong case for regular, frequent inspection of bluebird boxes. Not only will it benefit the occupants of the nest boxes, but the monitor will be privy to many interesting experiences and beautiful sights.

Dick and Marlys Hjort of Chisago City, Minnesota deliberately attract Tree Swallows. Dick reports, "One-quarter of our boxes are paired and many of our boxes are 100 to 150 feet apart to deliberately attract Tree Swallows in large numbers around pasturing livestock as insect control. Bluebirds move in and take whatever boxes they want. We have had these farm trails up for 12 years and it works as we have wanted it to. This was suggested in my oldest bird book: *Audubon Bird Guide of Eastern Land Birds* by Richard P. Pough, 1949."

This issue inaugurates a new section entitled "County Coordinator Highlights."

The summary of the BAN meeting 6 February 1998 includes the announcement by Steve Eno that BAN purchased a \$2,000,000 liability insurance policy at a cost of \$208. Peg Fletcher introduced the new information sheet that will be distributed to county coordinators. It is a concise one-page reference called "Getting Started with Bluebirds" and will be included in new membership packets. Connie Conover and Sanford Downs have worked out a box design based on the NABS box which uses dimensions compatible with available retail lumber.

BAN is thinking about putting together a "bluebird box" calendar. Any bluebird box designs are eligible as long as they are functional. Boxes need not be photographed in Nebraska, but the photographer must be a BAN member. More information will be available in future newsletters.

--*Bluebirds Across Nebraska**

NEW YORK--*BLUEBIRD BOOSTER*, Spring 1998

Preliminary results for 1997 show that members' boxes fledged 1018 Eastern Bluebirds, 1901 Tree Swallows, 254 House Wrens, and 51 Black-capped Chickadees. These are the lowest bluebird results since 1986.

A bluebird nestling banded by Joe Brown in 1995 near Route 10, south of Sharon Springs, was recovered last spring dead in a nest box in Girdletree, Maryland in the southeast corner of the state. This is the most distant recovery to date from Schoharie County.

—Schoharie County Bluebird Society*

NORTH CAROLINA—BLUEBIRD NOTES, May - July 1998

The 1997 bluebird survey results show a total of 4551 Eastern Bluebirds fledged.

Included in this issue is a reprint of "Bird Watching Myths" from *Bird Watcher's Digest* 30(2) by Eirik A. T. Blom. Many of the myths, of course, do not pertain to cavity nesters. One of the most prevalent myths is that "Parent birds will abandon a nestling if it has been touched by humans." Bluebird monitors know the error of this statement and can do their part in correcting the misconception.

—North Carolina Bluebird Society*

OHIO—Bluebird Monitor, Summer 1998

"First Nesting" is the subject of Dean E. Sheldon, Jr.'s column. For those living in the northern part of the continent, his recitation of weather-related and predator problems connected to the first nesting of the season is all too familiar.

"The Beneficial Bluebird" by Bob Orthwein relates some experiences and observations made while photographing bluebirds. The differences in the personalities of individual bluebirds were a revelation to him. Some refused to be photographed; others were extremely tolerant. The time spent observing cavity nesters carefully gave him a new appreciation of the tremendous number of insects they consume.

—Ohio Bluebird Society*

PENNSYLVANIA—The Progress newspaper, April 25, 1998

An article featured teenager Ryan McCracken who built bluebird boxes to fund a trip during a year as a Rotary exchange student in Finland. When he contacted NABS charter and life member Ray S. Walker of Bigler about a possible job, Mr. Walker arranged to pay Ryan to construct 100 bluebird boxes for the area. The project helped both bluebirds and Ryan who commented, "It was a good job, it helped me earn some extra money and expand my knowledge."

—Article submitted by Ray S. Walker

WANTED: Education Committee Chair

The Education Committee is a standing committee. Its purpose is to provide direction and ideas promoting NABS' educational mission and the role the public can play in native cavity-nester conservation. This is an excellent opportunity for an individual with imagination and organizational skills to influence and enhance the Society's educational function.

To apply for this volunteer position, send a letter/resume to headquarters: North American Bluebird Society, P.O. Box 74, Darlington, WI 53530.

Random Observations on Attracting Bluebirds

Bob Hammond

I live in Albemarle County, Virginia, near Charlottesville. I retired and moved here in 1986 and started a bluebird trail that same year. I now have a trail of 300 bluebird nesting boxes, mostly in county and city parks and on area golf courses. In 1996, 979 bluebirds and 361 other cavity nesters were fledged from these boxes.

We are fortunate to have many bluebirds spend the winter months here, especially if there is ample food and adequate shelter. I would like to emphasize the need for shelter. I have found that by putting a cover on the bottom of the nesting box and closing the ventilation holes with tape on about one of every four or five nesting boxes, bluebirds will have the needed shelter immediately available. I have also noticed that the boxes with a cover on the bottom have the earliest broods in the spring.

When I find a pair of bluebirds building a nest early in the nesting season, I leave the cover on the bottom of the box until the first brood has fledged. Pairs using these shelter boxes more frequently fledge three broods per year; it seems to give them a headstart. For the cover, I simply fasten a 3/4 in. by 5-1/2 in. board, which is 6 1/2 in. long, on the bottom with four #6 finishing nails. The bottom sticks out about an inch making it easy to remove with the tap of a hammer.

Food is equally important. Dogwood berries seem to be a favorite fall and winter food, but bluebirds will also consume holly, cotoneaster, and autumn olive berries. They will supplement their diet with sumac seeds and multiflora rose hips, and at winter's end, settle for cedar berries. Berries found on trees and shrubs during the winter can be readily

supplemented by picking dogwood berries in the fall and storing them in the refrigerator. If they freeze, they will turn black and the bluebirds don't seem to care for them. Bluebirds are also fond of mealworms and will readily come to a feeder if mealworms are offered daily. You can grow your own or purchase them in some birding or fishing supply stores or from NABS.

One can easily train bluebirds to come to a feeder in the wintertime. To do so, put up a platform feeder in an open area near the house. At the same time every day, whistle, ring a bell, or sing the same tune. Then, put the treats in the feeder. At first you may need to move away from the feeder, but soon the birds will be in the trees nearby waiting for your signal. The best time seems to be about 4:30 p.m. or approximately an hour before dark. To establish the feeder close to the house, it may be necessary to start feeding in an open area and move the feeder gradually (several feet at a time) to the preferred location near the house.

There are, of course, many problems encountered in maintaining a bluebird trail. By far the most troubling problem that I encounter is human vandalism. Some areas are especially vulnerable. Any spot where people tend to congregate and loiter has risks. Vulnerable locations, for example, are near the tees on a golf course, near the bleachers of a ballfield, or near picnic shelters in parks. I have found that it does help to staple a laminated card just below the nesting box explaining why the box is there. I usually include something like, "This box is here to help bluebirds survive and live in the park so that you can enjoy them. Please do listen

to them, watch and enjoy them, but remember that this is their home. Please do not disturb it."

Protecting boxes with a stovepipe and hardware cloth as described by Ron Kingston 13(2):56-57 is very effective. Also effective is the use of a four foot square piece of hardware cloth just below the box as described by Lance Wood 18(1):7-10 and others. I have often used a more simple, although perhaps not quite as effective, method of protection. I mount the box on a pipe, either metal or PVC, then spray the pipe with silicone lubricant, rub it well, and repeat several times. The pipe will become very slippery and will deter many predators. It is more effective if the silicone protectant is reapplied during each visit to the box.

The coming of Tree Swallows to the Charlottesville area has occurred in the last several years. I encountered the first nesting pair in 1990 in a box near the lake near our home. In 1991, I found three nesting pairs. The numbers have continued to increase until, in 1996, we had 26 nesting pairs with 125 swallows fledged.

With the advent of Tree Swallows taking some bluebird boxes, I have tried adding an extra box about 25 feet from the original box. It does help. Sometimes a bluebird pair will nest in the second box while the Tree Swallow uses the first box. Occasionally, another Tree Swallow will use the second box as well. I don't have enough experience yet with the newcomers to fully understand their idiosyncrasies.

One of the first bluebird nesting boxes that we put up in 1986 has been a continual source of joy. From 1986 through 1996 (11 nesting seasons) there have been 114 bluebirds fledged from this box. The box was made from cedar and, except for replacing the lid, no repairs have been required. Almost without fail the first brood will fledge from this box on 6, 7, or 8 May of each year. When describing bluebird trails to

various audiences, I almost always cite this box as an example of "one house makes a difference." Too often people feel that it is useless to put up nesting boxes unless they can erect several at one site. I try to convince them that one box *does* make a difference.

It is always interesting to open a nesting box during the nesting season. I have found as many as nine eggs in one box and as few as one. One nesting pair produced just one egg, incubated it, fed the nestling, and fledged it on time as proud as any parent could be. After discovering the nine eggs in a box, I checked it every three days, trying to figure out how to enlarge the box if they all hatched. Only five hatched, however. They thrived, grew, and fledged in the normal 17 days.

Sometimes a cowbird egg will find its way into a bluebird nesting box with an inch and a half entrance. I believe that an occasional cowbird female is small enough to get through the hole and will deposit an egg in three or four nesting boxes in a relatively small area within several days.

One of our neighbors, a woman 70+ years old, has two nesting boxes. She takes great joy in watching the bluebirds and in observing the development of their broods. One day she called to say that one of her boxes contained an especially large egg. I assured her that it was probably a cowbird egg and not an immediate threat to the brood. She persisted saying that she felt sorry for the "poor bluebird that was trying to hatch it" and wondered if I would stop by to check it. I stopped the next day. The woman was right. It would have been difficult for the female who never would have hatched it. It was a table tennis ball. Further investigation revealed that it was pushed through the hole by one of her grandsons during the previous week.

Occasionally, when I open a bluebird box and look in, a bird will fly up in my face and immediately drop back into the

nest. I look again and there is a repeat performance. This is a trademark of a Tufted Titmouse.

Weather seems to play an important role in bluebird nesting. I recall seasons when cold, cloudy, rainy weather persisted for more than a week in May. One morning, after such a week, I found five dead broods. Nearly all of the stomachs were empty indicating a lack of food and probable starvation. I cleaned out the boxes and within two weeks new clutches of eggs were found in each box. It seems like the parents could not handle the three strikes. In cold weather, more time must be spent on the nest to keep the nestlings warm, the

insects do not pass through their life cycle as rapidly so food is not plentiful, and it is more difficult for the birds to maneuver in the rain. But nature has figured it out for birds. When things get tough, protect yourself, survive, and reproduce when things get better.

A bluebird trail of several nesting boxes is a wonderful hobby. It will help you exercise as you enjoy nature and the out-of-doors. It will give you a great feeling of satisfaction as you help one of America's favorite birds make a comeback. ■

425 Mallard Lake Drive
Earlysville, VA 22936

NORTH AMERICAN BLUEBIRD SOCIETY RESEARCH GRANTS

The North American Bluebird Society announces the seventeenth annual grants-in-aid for ornithological research directed toward cavity-nesting species of North America with emphasis on the genus *Sialia*. Presently, annual grants of single or multiple awards 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*

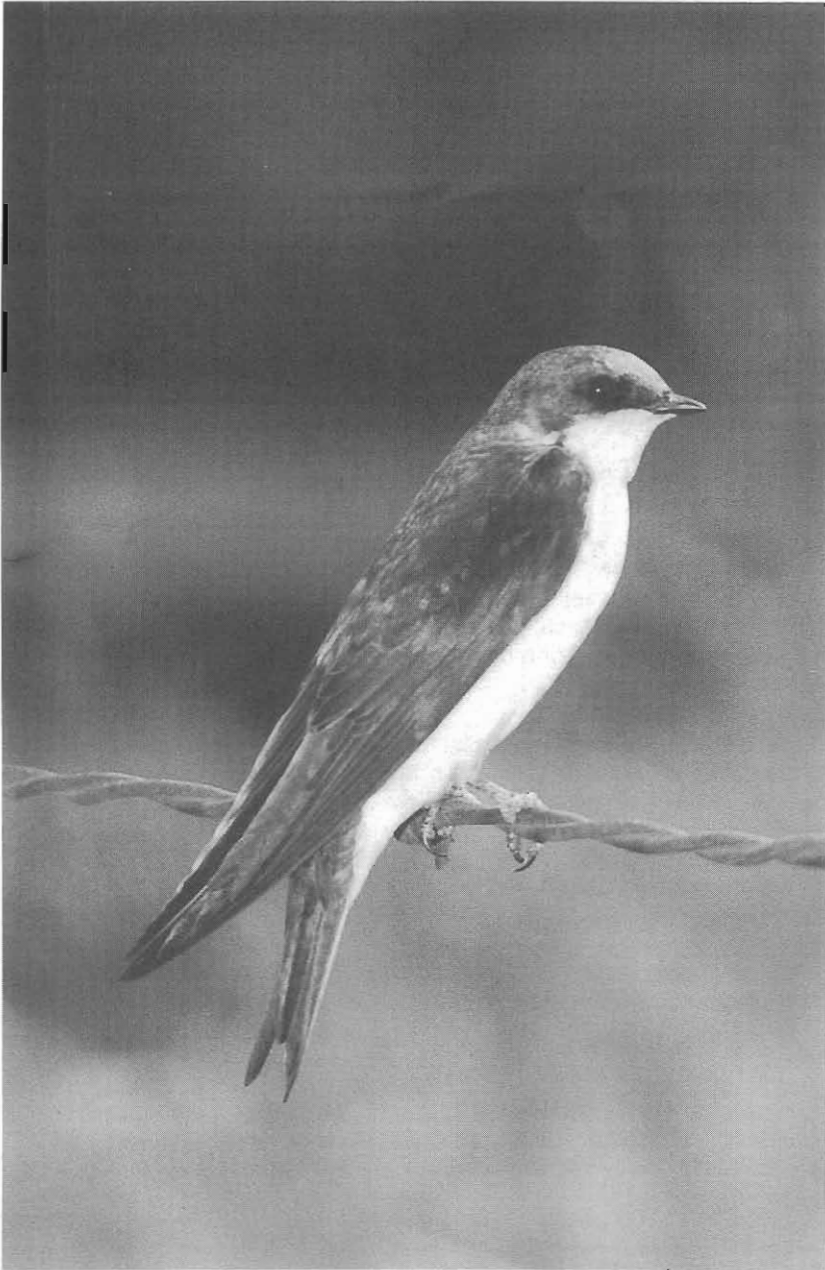
General Research Grant--Available to student, professional or individual researchers for a suitable research project focused on a North American cavity-nesting species.

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 applications 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 1998; decisions will be announced by 15 January 1999.

Cavity Nesters

Although Hubert Brandenburg, of Hagerstown, Maryland, finds bluebirds cooperative subjects; sometimes other cavity nesters pose also. Below: a female Tree Swallow. Opposite page: above, a male and a female Eastern Bluebird pause before feeding nestlings; below, a female Eastern Bluebird waits near the nest box with a sizable insect





A Strange Bluebird, Tree Swallow, House Wren Episode

Lillian Lund Files

I have many paired bluebird boxes on my property with boxes in each pair 12 to 15 feet apart. Because I've had a large Tree Swallow population for years, I find that pairing boxes gives the bluebirds a chance.

On 24 April 1997, a pair of bluebirds began nesting in one of my paired boxes; by 9 May there were three bluebird eggs in the nest. The female incubated the eggs until 12 May. For unknown reasons, she suddenly abandoned her eggs and never returned.

In the meantime, a Tree Swallow was utilizing the other box in the pair. The female swallow laid a single white egg which was punctured by a House Wren.

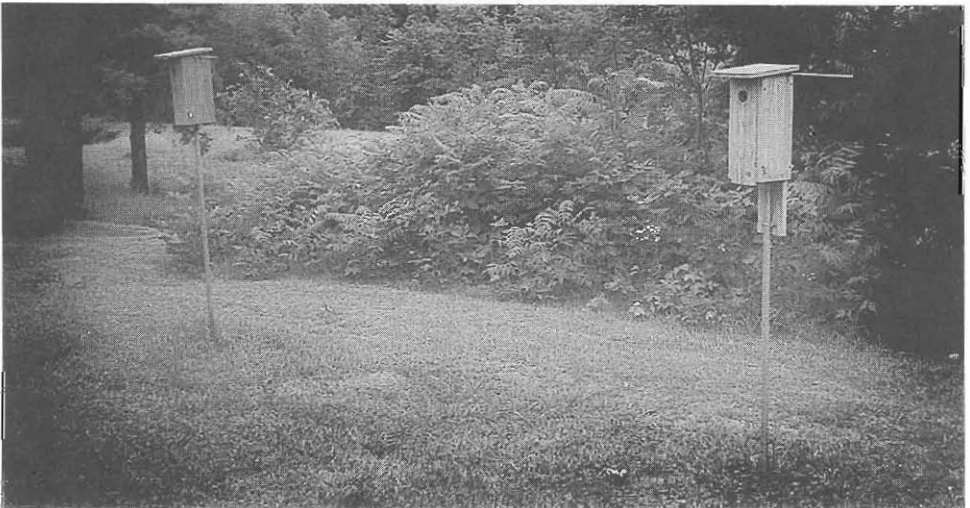
While monitoring my boxes on 16 May, I found that the female Tree Swallow had moved into the bluebirds' box and had begun incubating the three abandoned bluebird eggs. The swallow never laid any additional eggs. A few days later I was further surprised to find that the swallow had added white feathers all around the bluebird eggs!



Abandoned Eastern Bluebird eggs surrounded by white feathers added by a Tree Swallow.

The female Tree Swallow incubated the bluebird eggs until 25 June—a total of 40 days. Needless to say, they never hatched. The Tree Swallow, like the bluebird, finally abandoned this box. ■

106 Scribner Hill
Tyngsboro, MA 01879



An Eastern Bluebird nested in box on the right and abandoned the nest with three eggs. A Tree Swallow which had begun nesting in the box on the left moved to the bluebird nest and incubated the bluebird eggs for 40 days.

Finally, Nesting Carolina Wrens

Bob Orthwein

Over the years, I have seen several nature programs on television showing Carolina Wrens nesting in bluebird-type nesting boxes, but I've never had them nest on my bluebird trails. My "in the woods" chickadee and titmouse trails have never attracted Carolinas. Even productive Ohio Bluebird Society (OBS) trail operators Dean Sheldon and Richard Tuttle, who annually fledge hundreds and hundreds of Eastern Bluebirds and Tree Swallows, have never had Carolina Wrens nest in their bluebird boxes.

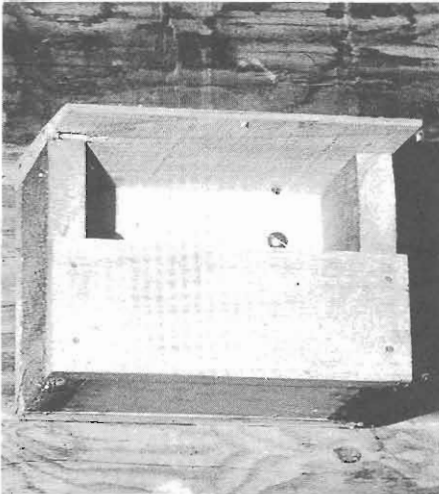
In the past several years, OBS member Jeff Davis has had Carolinas nesting at his scenic eight acre residence near Perrysville, Ohio. The successful nesting locations were as follows:

-In a 12 compartment aluminum Purple Martin house stored *inside* an open horse barn;

-In a large stick-wreath hanging *under* the front porch roof;

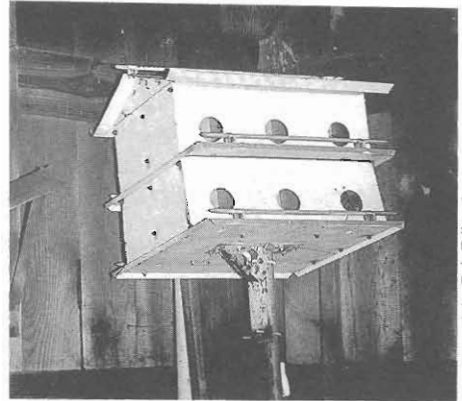
-In a pickup truck bumper leaning against a wall *inside* a covered open shed;

--On a shelf *inside* an open shed



Photograph by Bob Orthwein

Five Carolina Wrens fledged from this box mounted 7 feet high on an inside wall of a covered porch.



Photograph by Bob Orthwein

Carolina Wrens nested successfully in the bottom right compartment of this Purple Martin house stored in an open barn.

I have seen other Carolina Wren nests and ALL were under the roofs of open porches, open barns, or open sheds.

In the spring of 1997, I sketched an experimental Carolina Wren box and Jeff built two of the boxes, placing one on his covered back porch and one inside an open horse barn.

Carolina Wrens nested in the box under the back porch and fledged five young. They were very tolerant of activity in the vicinity of the nest and continued caring for their brood without concern for their human neighbors.

Carolina Wrens are one of the few birds that regularly sing during the winter months, and their song is more melodious and varied than the monotonous song of the House Wren. The Carolina is sometimes called the "mocking wren" because it often mimics the songs of cardinals, titmice, and other birds. It is called the "good citizen wren" by Dr. Wayne Davis because, unlike House Wrens, Carolinas do not destroy the nests, eggs, and small young of bluebirds, chickadees, and other birds.

Carolina Wrens winter in Ohio and survive by eating mostly hibernating insects and their eggs. Their food habits

are very beneficial to man and to the environment because of their almost 100% insect diet. Their population crashed as a result of the severe winter of 1977-78. They are making a comeback and can be found in many areas of Ohio in both winter and summer.

During the winter of 1996-97, I had a pair of Carolina Wrens frequent my backyard feeders in the city. They ate small bits of suet, but their favorite food was very small pieces of English walnuts placed on a kitchen windowsill.

The Carolinas habit of hunting insects in ground cover and low shrubs makes them vulnerable to cat predation. If you have a cat that is allowed outside, do not attract Carolina Wrens. Jeff Davis practices House Sparrow control on his property, and his big Labrador retriever discourages raccoons and feral cats.

The dimensions of the successful box shown in the photo are 4 in. x 5 1/2 in. inside floor, 2 1/2 in. x 5 1/2 in. entrance opening, and 5 in. inside height.

If you install a safe, secure Carolina Wren box in the spring, you could be rewarded with delightful songs and fewer insects. ■

2384 Johnston Rd.
Columbus, OH 43220

This article is reprinted in substantially the same form in which it appeared in the Bluebird Monitor (the newsletter of the Ohio Bluebird Society), 10(4):9 (Winter 1997). The author had two successful Carolina Wren nests in the spring of 1998: one in the same back porch box the birds used in 1997 and the other in a box attached to the inside wall of an open shed at a height of five feet.



Wildlife Biologist Laura U. Hubers, Waubay National Wildlife Refuge, Waubay, South Dakota, sent this photograph of a local Girl Scout Troop building bluebird nest boxes. The group made 12 boxes during the winter and they plan to erect them in the spring. This is part of an effort to rehabilitate a once active nest box trail on the refuge. It is being funded by a grant specifically designated for this purpose from the estate of Mrs. Patsy T. Husman, administered by the North American Bluebird Society.

Bluebirds, Tree Swallows Flourish: A Success Story with Four Tales

Nancy Rowe

Despite the loss of three bluebird nestlings to House Sparrow attack, 1997 was the most productive year for bluebirds since our boxes were erected 17 years ago. It was the next-to-best year for Tree Swallows, which have occupied companion boxes for nine years.

A total of 16 Eastern Bluebirds and 20 Tree Swallows were banded and fledged from eight boxes paired on four sites. Five adult Tree Swallows found inside the boxes were also banded.

A Tale of Two Nest Boxes. House Sparrows are the prime nemeses of our nest box occupants. Their tactics are multiple. In this case, four nestlings, seven days old, were ejected from their box. After an undetermined length of time, they were found on the ground, three still alive. Because of the continuing threat [from the House Sparrows] and the seeming inability of the parents to defend or feed their young, it was deemed best to bring them to the residents' cluster to be fed every 20 minutes during daylight, until we could find a nest box with a brood of similar age.

Baby birds learn quickly to respond to human whistles; conversely, humans learn to respond to nestlings' demanding peeps. Their nest was a pint berry box filled with tissues. At night it was placed in a spare nest box which we hung on the wall outside.

After a four day search by phone, a brood was found on a bluebird trail at Oregon Ridge Park two miles away, and a transfer was made. Their foster parents and the juvenile helpers at the nest from earlier nestings adopted them, but had twice as many bills to fill. Ours were two days older but not as strong. So it was

not surprising that two died. But it seemed like a fairy tale ending when the Oregon Ridge monitors reported that our sole survivor had fledged with its foster siblings.

A Tale with a Twist. Tree Swallows are feistier than bluebirds and usually have no problems, but human vandals demolished one box of a pair, both of which contained Tree Swallow eggs. They bent its galvanized pole and dumped everything 100 feet away on the south lawn near York Road. We opened the remaining box. Surprise! Three adult Tree Sparrows were crowded inside. With one box gone, the two sets of parents claimed the only available box. The tale becomes a mystery: who and where was the fourth? We banded them and quickly erected another box, but only one pair remained.

A Homecoming Tale. This year a banded female bluebird was incubating a clutch of eggs. Our banding records revealed a three year history. Not only had she raised and fledged a brood of youngsters on that same site a year ago, but she herself had been born, raised, and banded there the year before that. Will she return in 1998? Quite likely, as bluebirds tend to over-winter in the mid-Atlantic region.

A Tale of Feathers. Four experimental protocols comprise the Cornell Laboratory of Ornithology's Nest Box Study. One addresses Tree Swallows' use of feathers in their nests. Usually brought from chicken yards, they are soft, gently curving, contour feathers. Placed on top of a grass base, seven or more feathers may arch over the eggs or nestlings, forming a cup or globe. After

the birds leave, the base is hard and compressed to only an inch or so and there are small feathers worked into it. We wondered how many. So we broke up the bases of three Tree Swallow nests and counted every feather. The totals? 50, 81, and 98!

Six residents help me monitor our nest boxes observing, keeping records, and trouble shooting. They deserve thanks

for their constancy and work, and for promoting natural insecticides: bluebirds and Tree Swallows. ■

Broadmead A-4
13801 York Rd.
Cockeysville, MD 21030

This is a slightly abbreviated form of an article that appeared in Broadmead's Voice of the Residents, October 1997.

NABS Affiliates Hold Initial Meeting

The first NABS affiliates meeting was held on 28 June 1998. Vice President Carol McDaniel presided over the discussion at which 14 affiliate representatives were present. Because the relationship is so new, topics featured ways to strengthen the connection between NABS and the affiliates.

The affiliate relationship is a two-way street. NABS will provide its newly-designed brochure and its merchandise catalog to all affiliates on request. It will also supply a list of names and addresses of NABS board members and of all affiliates along with a contact person for each. The NABS website is a valuable resource. E-mail and letters that come to headquarters will be sent to David Shiels of Texas who will send each to the closest affiliate. Any question they contain can be answered locally. Affiliates will then have the name and address for membership recruitment.

In return, affiliates are encouraged to establish local connections with the media publicizing both the affiliate and NABS. All national and local award winners and nominees should be publicized. Affiliates were asked to put other affili-

ates on newsletter and mailing lists to maximize interconnections and the exchange of information. Articles from affiliates' newsletters can be reprinted providing credit is given. Affiliates were asked to submit to NABS names of individuals who could qualify for awards or who might be willing to serve as officers in the Society.

When the topic of bird rehabilitation was raised, it was decided that this was a subject best handled on a local level or by state or provincial government agencies.

The possibility of a transcontinental bluebird trail is in the early stages of discussion. More information on this topic will be available in the future.

Incoming Vice President Doug LeVasseur becomes the affiliate coordinator. He plans to use e-mail and letters to maintain contact with affiliates. He also plans to visit some annual meetings.

Affiliates are reminded that an affiliate meeting is planned during the NABS annual meeting in Great Falls, Montana in June 1999. Make sure you have a representative designated to attend.

-Compiled by the editor from minutes taken by Joan Harmet

Art Credits

Jon E. Boone: 122, 157
Suzanne Pennell: 146, 158



"Somewhere Over the Rainbow..."

Dean E. Sheldon, Jr.

....bluebirds fly." Ah, yes....but how many fly?

One of bluebirding's greatest conundrums has to do with the numbers of young birds which actually leave the nest box fledging into the outside world. Even the most experienced bluebirders will tell you that they rarely *see* an actual fledging take place. They know how many young birds were counted in the box at the last monitoring visit. And they view what remains there once the birds have left. But...how do they know how many have left on their journey toward the rainbow?

One of the basic reasons why monitoring and record-keeping are so important to good bluebird trail management has to do with numbers....numbers of eggs, numbers of nestlings which hatch from those eggs, and the number of fledglings which have matured to the point where they are ready to leave the nest and strike out on their own. Only periodic/regular monitoring visits can establish these numbers. Only a written record will permit the accurate recall of these numbers on subsequent monitoring visits. Without these two procedures, no reliable fledging statistics or projections can be made.

Even when fully armed with this numerical information, the trail manager must often rely on purely "*circumstantial evidence*" to help him establish the number of young birds which have left the nest box.

A few clues can be of considerable help in solving the case:

CLUE #1 An extraordinarily "dirty" box containing a matted/flattened nest which is usually damp and sometimes laced with dirt and fecal matter is a good sign that all of the young birds have fledged.

"Whitewash" outside the box below the entrance hole indicates that the parents made many feeding visits to the nest until just before the parental food coaxing calls began outside the box;

CLUE #2 Add to Clue #1 the presence of "whitewash" high up on the interior box walls and inside below the entrance hole, berry stains on the walls, and seeds in the bottom of the box together with the carcasses of a variety of dead insects. When summed up, all of these clues make a very strong case after the fledging of *all* of the birds counted at the last monitoring visit;

CLUE #3 The presence of ants as the "cleanup squad" indicates that lots of food was fed to lots of young birds who left lots of dung in the box during their last days of residence;

CLUE #4 Perhaps the *best indicator* of nesting success and the number of young fledging from the nest box is the after-fledging residual amount of a substance generally called *chitin* (kite'n). Bird feathers are formed in sheaths composed of this flexible, gelatinous material. As the nestlings grow, the feathers begin to break out of the exposed, dried sheaths causing the sheaths to disintegrate into dandruff-like particles. The chitin sifts downward into and through the nesting material with much of it coming to rest on the floor of the box. The volume of this powdery substance, in greater or lesser degree, is helpful in making a determination as to the total success of the nesting...the more birds reaching the fledgling stage, the greater the accumulation of chitin in and under the nest material. In a dry nest box, the light fluff merely blows away as the nest box is cleaned in preparation for new nesting activity;

CLUE #5 Many times, the trail manager is startled to see unhatched

eggs, broken egg shells, and decomposed or desiccated nestlings in the well worn, vacated nest after the viable birds have left. Even the most observant bluebirder sometimes overlooks this situation during the monitoring of an active nest box. This does not affect the data as to numbers of birds fledged. It is, however, a common practice to adjust the trail record book so as to accurately reflect increases in the numbers of eggs laid and/or hatchlings produced for that nesting;

CLUE #6 If good records are kept, the trail monitor knows exactly how many healthy birds might be *expected* to fledge from a particular box and about when that event might occur. Obviously, dead birds in the nest alter the statistics not only for that box but for the entire trail as well;

CLUE #7 If there is no physical evidence of predation or box intrusion, it can be assumed that the pre-fledgling

birds last monitored have successfully exited the box.

Early on, the experienced trail manager gets a composite picture of these clues as he monitors each box. Sometimes the clues are obvious, making it relatively easy to determine "what went wrong" in a particular nesting situation. At other times, the mysteries and unknowns are greater. It is then that consultation with a seasoned trail veteran is desirable. And, once in a while, even the most educated of guesses seems inadequate to explain the enigmas of the trail.

But, of course, the real joy is looking on the sunny side to determine how many young, healthy birds are out of that box because of the commitment made months ago by an effective trail manager...and if a misty rain shower comes along with that cheerful sunshine...so much better the prospect for...a rainbow.

Special thanks to Judy Garland. ■

*Reprinted from Bluebird Monitor 13(7):2.
newsletter of the Ohio Bluebird Society.*

Frances Hanes

The bluebirding community lost a vigorous member recently when Fran Hanes, longtime resident of Upstate New York, passed away on 18 May 1998. After retirement from a career as a school nurse, Fran devoted much of her time to promoting the cause of the bluebird. She spearheaded a very active nest box project in Oneida County, New York for the Oneida County Bird Club. In 1982, Fran helped found and became first president of the Upstate New York Bluebird Society, which ultimately became the New York State Bluebird Society. At the North American Bluebird Society's Tenth Annual Meeting, she received an award for her outstanding contribution to bluebird conservation. She also served a term on the Society's board. Although not a property owner, Fran approached farmers in her area and requested permission to set out and monitor nesting boxes on their farms, thus educating the public about bluebird conservation. Fran was an accomplished artist, and her exhibit was a familiar and popular site at many a NABS annual meeting. She designed and donated a bluebird greeting card to NABS for use as a fund-raiser. Fran Hanes leaves a legacy of love and activism for the banner bluebird we all treasure. May she rest in heavenly peace, where the bluebirds always fly!

--Mary D. Janetatos

NABS: *Taking Off*

Dorene H. Scriven

In October 1997, the North American Bluebird Society appointed a *Sialia* Advisory Committee to (1) interview applicants and select a new editor effective upon Joanne Solem's retirement on 1 October 1998; (2) recommend changes in *Sialia* suggested by readers who responded to the special survey, and incorporate ideas from interviews with other NABS members. The *Sialia* Advisory Committee (SAC) members were Ann and Jim Auer of Indiana, Steve Eno of Nebraska, Doug LeVasseur and Dean Sheldon of Ohio, Bob Niebuhr, of Montana, and Dorene Scriven of Minnesota. We also sought advice from and consulted with Joanne Solem, Kevin Berner of New York, Carol McDaniel of Wisconsin, and Ray Harris of Saskatchewan.

Our first task, to select someone to take Joanne's place, was tough. How could we replace someone who had fine-tuned her editing skills for almost 19 years to develop this well-respected quarterly journal? Through these many years *Sialia* has been the one and only way NABS members kept in touch with each other, with constantly evolving ideas to help all three species of bluebirds, as well as other native cavity nesters. *Sialia* was the glue that kept NABS together.

Six impressive applications for the position of editor were received. The dual application from **James J. (Jim) Williams** and **Jude Hughes-Williams**, of Webster, Wisconsin was outstanding citing many years of editorial experience. Subsequent ongoing SAC interaction with Jim has reaffirmed the wisdom of the unanimous decision to hire this team. We are delighted and inspired by Jim's suggestions, professionalism, and extensive editorial experience in both state-wide and national birding organizations. Currently, Jim is editor of the Minnesota Ornithologists' Union newsletter, and, indicative of his respect in the national birding community, was recently ap-

pointed associate editor of the American Birding Association's magazine, *Birding*. In addition, Jim and Jude have extensive business and publishing backgrounds. Typesetting, previously a separate expense, will be assumed by Jude.

The Autumn *Sialia* is Joanne Solem's last major responsibility for NABS. We are forever indebted to her for her dedication all these years. Jim and Jude will take over editorial duties beginning with the Winter issue. **NABS members can help them by seeking out local items to reprint and writing articles for future publication.** You don't have to be a grate writer, an excellent speller or gold gramer—just send ideas that work for you—and for bluebirds and other cavity nesters, along with related items of interest to Jim Williams - Jude Hughes Williams, 5239 Cranberry Lane, Webster, WI 54893.

(e-mail: twojays@win.bright.net)

WHAT WILL THE NEW "SIALIA"
LOOK LIKE?

Bluebird - Journal of the North American Bluebird Society (formerly *Sialia*)

With new editors, the journal title will now be in English, rather than Latin, which puzzled many new members. This is consistent with other national ornithological publications, e.g. *Auk*, *Condor*, etc. While nothing is written in stone, the format will probably be in an easy-to-read, magazine-sized, 8 1/2 x 11", 24-page publication (no less material, just more in larger pages). There will be some color on the cover, with line and graphic art, and photographs inside where appropriate. It will continue to be published quarterly. There may be tasteful advertising, in moderation. The new magazine will be saddle-stitched (stapled to hold the pages together), folded, and mailed without an envelope—the latter arrangement saving us some money.

The contents will be familiar to NABS members, with some or all of the following: regular listing of affiliates and contacts, feature or lead articles, profiles of cavity nesters, "Bluebird Exchange," increased coverage of Western and Mountain Bluebirds, "Bluebird Tips," box designs, sharing of articles from affiliate organizations, your questions and answers, plus some of our regular past columns.

In this Autumn issue, a black and white

catalog incorporates NABS' current products, plus some new gift-oriented items, and some new drop-shipped items. The plan for future issues is to include two four-page color catalogs (Autumn and Winter issues of *Bluebird*). Bob Niebuhr and his Merchandise Committee have all sorts of new and exciting ideas for that catalog. **So it's onward and upward for a fresh new NABS and a revitalized *Bluebird* journal!** ■

Exploring "Big Sky" Country in 1999 Montana Weather

Bob Niebuhr

Every time I meet someone from another part of the country or talk to them on the phone, they invariably ask, "What is the weather like in Montana?" For some reason, they always have the idea that Montana has long, cold winters with deep snow and short, hot summers. They find it hard to believe me when I say it has the best climate of any place I have ever lived.

In Great Falls, where I live, the average annual rainfall is 14.1 inches. The sun shines more than 320 days a year. The average humidity is less than 50%, and in the last 30 years I have never seen more than two feet of snow on the ground—a good chinook wind can melt most of that in 24 hours. Great Falls is a city of 50,000 people and has just two snow plows. The street on which I live has never been plowed!

What is the forecast for 17-20 June 1999 during the Twenty-second NABS Annual Meeting? I'm predicting sunny, daytime highs in the 70s or 80s and nights in the 40s with a chance of evening showers. Bringing a sweater and windbreaker is advisable, particularly if you plan to visit either Yellowstone or Glacier National Park after the meeting.

Extending in Montana

Although several extension tours are

planned after the 1999 meeting, many people may want to draw up their own self-guided tour. Some have specific ideas in mind such as hiking, bird watching, visiting historic sites, camping, fishing, or just relaxing by a mountain stream or lake watching the mountains turn pink at sunset.

Montana is a huge state so you'll probably find it hard to know where to begin. **Let us (1999 Convention Committee) help.** We can provide you with general or specific information about Montana, and if you can't find it in the printed brochures, we'll find people you can talk to personally.

Some people attending the annual meeting will travel to Great Falls in campers and RV's. There are two RV parks which are convenient to the Heritage Inn meeting site:

Dick's RV Park (2 blocks away)

Phone: 406-452-0333

K.O.A. (10 minute drive)

Phone: 1-800-562-6584

For more information on the 1999 NABS Annual Meeting in Great Falls, visit the NABS website at <http://www.cobleskill.edu/nabs/> or contact Bob Niebuhr :

Phone: 406-453-5143 (wk)

406-761-5842 (hm)

Fax: 406-453-3840

E-mail: BluBrdBob@Prodigy.net

Twenty-first Annual Meeting Report

Bob and Sandra Ewart, Lisa Kivirist, and John Ivanko

The Twenty-first Annual Meeting of the North American Bluebird Society was held 25-27 June 1998 at the Travelodge Hotel in Regina, Saskatchewan. Saskatchewan Bluebirders were the meeting's host. The generous support of Friends of the Environment, Shell Canada Environmental Fund, Saskatchewan Environment and Resource Management, SaskTel, Toronto Dominion Bank, Nature Saskatchewan, the Royal Saskatchewan Museum, and Wild Birds Unlimited, Inc. enabled the hosts to offer some extra services such as chauffeuring attendees who arrived by air to their accommodations. A thank you also to the Travelodge Hotel, Regina, for hospitality provided.

Registration began Thursday afternoon. Opening remarks were made Thursday evening welcoming the 182 registered bluebirders, 84 from the United States. This was followed by a program about Saskatchewan. Frank Roy's presentation, "Prairie Birds and Their Habitat" received rave reviews as he took viewers from the southeast corner to the far northwest describing the birds, landscape, and beauty of the province.

Friday, the rain held off until late afternoon as 153 out-of-province guests enjoyed the field trips. Four trips offered a diversity of subjects. The early morning birders drove into the Qu'Appelle Valley, beginning at 5:30 a.m. where they tallied close to 100 species. The second group out followed the Qu'Appelle Valley in a geologically oriented tour, also stopping to view bluebirds. The third trip went to Nicolle Flats and Moose Jaw where participants hiked among wildflowers and visited the Burrowing Owl Interpretive Centre. The fourth tour was led by Saskatchewan bluebird and bander, Lorne Scott, Cabinet Minister in the Saskatchewan Legislature (SERM). Participants toured marshlands and viewed

prairie birds with a stop at Kronau to see the endangered Burrowing Owl with a stop for lunch at Lorne's farm at Indian Head where his bluebirds could be seen. A buffet in the evening was held in the Royal Saskatchewan Museum with special gallery tours. This was followed by "Bird Banding in Saskatchewan," a presentation by Dr. Stuart Houston, who started banding birds when he was 15. His 3,011 recoveries to date is unprecedented in the world. Dr. Houston, who has authored 709 articles on ornithology, natural history, medicine, and the history of medicine showed how he has combined all of his interests in his ornithological research.

Saturday morning began with a cool, wet, and windy bird walk through Wascana Park. The formal presentations began at 9:00 a.m.

"Early Bluebird Trails," presented by the Honorable Lorne Scott, explored the development of the 2,000 mile long bluebird trail that crossed Saskatchewan.

Loney Dickson, Department of Environment Canada, presented Executive Director Emeritus Mary D. Janetatos with a special Saskatchewan Department of the Environment Award. The meeting's



Photograph by Myrna Pearman

Executive Director Emeritus Mary Janetatos (left) receives a special Saskatchewan Department of the Environment Award from Loney Dickson, Department of Environment Canada.



Photograph by Myrna Pearman

The Honorable Lorne Scott, Minister of Environment and Resource Management, presents "Early Bluebird Trails."

host, Saskatchewan Bluebirders, also honored Mary D. Janetatos, along with out-going NABS President Charlotte Jernigan, and retiring Editor Joanne K. Solem with framed Mountain Bluebird photographs by Lorne Scott.

The morning's agenda continued with "Burrowing Owl Conservation, Research and Recovery" by Karyn Scalise, "Last Mountain Bird Observatory" by Alan Smith, and "It's Time for NABS to Stand Up and Be Counted" by Art Aylesworth in which he outlined the feral cat problem and suggested what NABS' response should be.

After lunch NABS Research Chairman Kevin Berner described "Nest Box Design" in an entertaining presentation. This was followed by a panel further discussing "Nest Box Design." The group consisted of Ron Bittner, Saskatchewan; Myrna Pearman, Alberta; Jim Spear, Manitoba; and Kevin Berner, New York.

Dr. Mark Brigham presented his research with nightjars and bats. He mentioned that bats were really just nocturnal, furry bluebirds and called for support in aiding bats.

The official program came to a close with a brief NABS update by Co-Executive Director Lisa Kivirist highlighting the completed relocation, affiliation process, and launch of the bluebird nest box approval process. Members were thanked for their continued support of and dedication to the bluebirding move-



Photograph by Myrna Pearman

Research Committee Chairman Kevin Berner presents "Nest Box Design" summarizing some of his research.

ment. Bob Niebuhr then briefly discussed plans for the next annual meeting to be held in Great Falls, Montana, 17-20 June 1999.

NABS President Charlotte Jernigan conducted the business meeting, which included the election of officers and four board members. Art Aylesworth, member of the Nominating Committee, presented the slate. (Other members of the Nominating Committee were Sadie Dorber, chair, and Andre Dion.) Elected were the following: *President:* Ray Harris; *Vice President:* Douglas LeVasseur; *Treasurer:* William Davis; *Recording Secretary:* Arlene Ripley; and *Corresponding Secretary:* Carol McDaniel; *Board Members:* Ann Auer, Joan Harmet, Dorene Scriven, and Dean Sheldon, Jr.

Mark Raabe presented gifts on behalf of NABS to Mary D. Janetatos, Charlotte Jernigan, and Joanne K. Solem.

Saturday evening's banquet at the hotel was highlighted by presentations of NABS awards by Awards Committee Chair Joan Harmet and President Charlotte Jernigan. Awards were made to the following individuals and groups: Don Bragg, Wisconsin; Judy and Hatch Graham, California; Vernon C. Johnson, British Columbia; and the Bluebird Survival Program of Vernon, British Colum-



Photograph by Myrna Pearman

On behalf of Saskatchewan bluebirders, President-elect Ray Harris presents retiring Editor Joanne Solem with a framed photograph of a Mountain Bluebird taken by Lorne Scott.



Photograph by Myrna Pearman

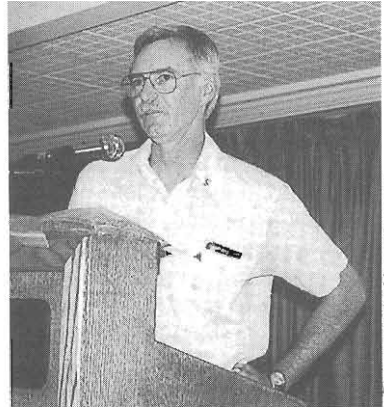
Outgoing President Charlotte Jernigan addresses the annual meeting in response to being honored for her six years of leadership.



Photograph by Myrna Pearman

Co-Executive Director Lisa Kivirist addresses the annual meeting. Co-Executive Director John Ivanko is on the right.

bia. Co-Executive Directors Lisa Kivirist and John Ivanko presented the Saskatchewan Bluebirders with a *Certificate of Appreciation* for all their bluebirding contributions and warm hospitality in hosting the annual meeting. Bob Ewart presented an award to the Telephone Pioneers of America, Saskatchewan Branch, for their commitment to the bluebird conservation movement in the province. The group has built and distributed more than 8,000 nest boxes.



Photograph by Myrna Pearman

Bob Ewart, who with his wife Sandra, headed the group of Saskatchewan bluebirders who organized the meeting.

The evening closed with readings from local birder and artist, Trevor Herriot, as he shared his writings about the Qu'Appelle Valley.

Saskatchewan Bluebirders thanked all who attended for their support.

With the success of the silent auction and the healthy American dollar, Saskatchewan Bluebirders will be returning a portion of the conference profits to NABS to be used for planning committees of future NABS conferences. Proceeds will also be used in Saskatchewan to hold nest box building workshops and bluebird education seminars before the return of the bluebirds next spring. ■

NABS Awards Presented

Four awards for outstanding bluebird conservation were made on 27 June 1998 at the NABS Twenty-first Annual Meeting in Regina, Saskatchewan. Plaques were presented by President Charlotte Jernigan and Awards Committee Chair Joan Harmet.

Don Bragg
Hatch and Judy Graham
Vernon C. Johnson
Bluebird Survival Program of Vernon, British Columbia

This year the lone representative of Eastern Bluebird conservation was **Don Bragg**, from Wisconsin.

Bluebird conservation was and is a natural occupation for Don, for he began bluebirding as an employee of the Wisconsin Department of Natural Resources. The state was taking a hard look at endangered resources and asked Don to represent them at a meeting concerning the Eastern Bluebird. This soon became 25% of his job description. He became one of the founders of the Bluebird Restoration Association of Wisconsin (BRAW)

Don is still very active in BRAW, currently serving as membership chairman out of his home in Rhinelander. Before that he was the newsletter editor, producing an information-filled publication sent quarterly to members. This communication with other bluebirders was "the glue that held the organization together." Don offers a suggestion to other local organizations: since there is a natural attrition of members, don't be afraid to offer bluebird information, helpful tips, and new ideas over and over. It is always new and helpful to part of the membership.

Don has monitored a large trail, worked with youth groups on nest box building, and spoken to local groups about bluebird conservation. He is admired and respected by fellow bluebird conservation leaders. His dedication to restoring bluebirds to Wisconsin and educating the public is an inspiration to all!

Several bluebirders from California wrote to nominate **Hatch and Judy Graham** for this award. They are county coordinators for El Dorado and Amador counties, working under the auspices of the California Bluebird Recovery Program. They helped Don Yoder establish this state organization.

People working on local newsletters will know how much work it takes for the Grahams to produce the California newsletter, *Bluebirds Fly!* Their work involves gathering, editing, and writing material, arranging for printing, then folding, labeling, and mailing the 700 copies. They summarize the monitors' annual reports and produce a 28 page survey annually. They have also compiled and published *Monitoring Your Bluebird Trail in California*, facts helpful to state monitors with all levels of experience.

Hatch and Judy have monitored or assisted in monitoring 112 boxes, banded more than 300 bluebirds, and made presentations to encourage interest in bluebird conservation. The counties they supervise now have in excess of 1,700 monitored boxes.

Vernon C. Johnson of Oliver, British Columbia, has had a long-time interest in the great outdoors, working in tourism, recreation, and water management. After retirement, he developed a rehabilitation center for injured raptors. Six young Western Bluebirds were brought to him to raise after the parents were killed by a cat. He reared them successfully and released them into the wild. Western Bluebirds and Mountain Bluebirds have captured his complete attention ever since



Photograph by Myrna Pearman

NABS awards for bluebird conservation were presented on 27 June 1998. Left to right: NABS President Charlotte Jernigan; Vice President Carol McDaniel, who accepted an award on behalf of Don Bragg (Bluebird Association of Wisconsin); Sherry Linn, who accepted an award on behalf of the Bluebird Survival Program of Vernon, British Columbia; Vernon C. Johnson (Southern Interior Bluebird Trail); Don Yoder, who accepted an award on behalf of Hatch and Judy Graham (California Bluebird Recovery Program), and Awards Committee Chair Joan Harmet.

When Vern started his bluebird conservation work, it was a somewhat rare occurrence to see a bluebird in central British Columbia, and then only singly or in groups of twos or threes. Now, ten years later, it is not unusual to see sizable flocks in this part of the province.

Vern has been a speaker, teacher, fundraiser, and spokesperson for bluebirds. He began with 37 boxes; by 1997, the Southern Interior Bluebird Trail numbered 4,500 boxes. The goal is 5,000 boxes, after which Vern and his colleagues will concentrate on providing boxes to accommodate other species of cavity nesters.

The group award this year goes to the **Bluebird Survival Program of Vernon, British Columbia**. This group was nominated by its coordinator and founder, Elsie Nykyfork. Her personal bluebird record seemed so outstanding that Elsie could easily have been awarded an individual award, but by nominating her group she demonstrated her appreciation for the cooperation of the North Okanagan Naturalist Society and its members' fine bluebird record.

Elsie sent along some of her pointers on managing trails.

1. First, and so important to success: HABITAT. Vernon is located in lovely open range. Elsie began by setting up a trail behind her house. Then the local naturalist society took over the project, with Elsie as coordinator

2. Elsie talked to local ranchers one by one and got them involved. They allowed her to set up trails on their property. She assigned monitors to all boxes.

3. Monitors keep records on cards, one for each box. Elsie compiles the information

at the end of the season and sends it to the British Columbia nest records in Victoria and to Harold Pollock to add to provincial bluebird statistics.

4. The first boxes were made of scrounged scraps of wood. Now, a lumber company donates cedar for boxes.

The Bluebird Survival Program has 37 trails and 605 boxes with 58 monitors. Monitors include an eight year old boy working with his dad, a 12 year old with a trail of ten boxes, and bluebirders up to 83 years of age.

The trails attract Western Bluebirds and Mountain Bluebirds. ■

Feathers

Chris Salberg

It is said that the bluebird carries on his back the blue of heaven and the rich brown of the freshly turned earth on his breast. But is this really true? Are bluebird feathers really blue?

Birds get their colors from pigments embedded in their feathers or by special structures inside the barbs. Pigments called lipochromes and melanin's produce most of the color we see in birds. Melanins produce blacks, browns, red-browns, and yellow. Lipochromes produce yellows, oranges, reds, blues, and greens. However, there are no blue birds. Blue is not created by a pigment but from light bouncing around special structures inside the feather. Iridescent colors such as the green sheen on a grackle or the bright glow of a hummingbird are created the same way.

A single feather can have both pigments and structural colors. Dark feathers are stronger than light feathers and black feathers are the strongest of all. That is why so many white birds have black wingtips. Some birds that appear to change color over the year do not grow new feathers but wear off the tips. This is how the male House Sparrow gets his dark bib in the spring and why starlings look so dark in the fall.

In addition to providing adaptations for flight, insulation, camouflage, territory and courtship communication, feathers are also an indicator of health, a map of migratory habits, and a pollution record.

Nutritional record. If you look closely at feathers, the solid color will be broken into alternating bands of lightly and heavily pigmented feather material. These bands, laid down during a bird's yearly molt of flight feathers, are called growth bars. Each bar, one light band plus one dark band, represents 24 hours of feather growth during the two to four weeks a feather is growing. The bars are narrow when the food supply is scarce and wide when plentiful.

Although this phenomenon was first reported in the early 1900s, Ohio State University biologist Tom Grubb, Jr. was the first person to realize the bars were a nutritional record. He calls his biological bar code reading ptilochronology, meaning the study of feather time. Studies on storm-petrels, Loggerhead Shrikes, and Eurasian nuthatches, where feathers were removed and the replacement feathers allowed to regrow, show smaller growth bars on either the adult bird or in young birds dependent on the adults. Handicaps due to lost feathers or poor habitat had reduced the food available to the birds slowing the growth of their feathers.

Habitat indicator. Feathers also carry an invisible message in the keratin protein which compose them. When a bluebird eats a grasshopper that fed on a plant growing in the glacial soils of the Great Lakes, the bird incorporates a geographical tag, in the form of isotopes, into its bones, feathers, and muscles. Rocks, soil, and plants all contain stable forms of chemical elements called isotopes. The exact isotope composition varies from region to region allowing geologists to determine what region a rock came from by measuring its isotopes.

(Continued on page 160)

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:

My wife and I just concluded our eighth season of monitoring and maintaining approximately 210 bluebird boxes in three different locations (Land Between the Lakes [LBL] in western Kentucky and Tennessee, 160 boxes; Lake Barkley State Resort Park near LBL, 30 boxes; and John James Audubon State Park in our hometown of Henderson, Kentucky, 20 boxes). We estimate (conservatively) that over 4000 bluebirds (as well as numerous Carolina Chickadees, Tufted Titmice, Carolina Wrens, White-breasted Nuthatches, and Prothonotary Warblers) have fledged from these boxes during our tenure. (We contribute our data to NABS.)

Due to weathering, vandalism, and other factors, approximately 75% of our boxes need to be replaced. Our trips to LBL are about 125 miles one way, and we estimate we spend over 200 volunteer hours each season on the LBL trail alone. Although we camp at Lake Barkley State Park during our monthly trips, we are trying to find a way to alleviate some of the many expenses (camping fees, gasoline, hardware, posts, etc.) associated with this bluebird "addiction." I'm aware that NABS awards research grants, but I'm wondering if anyone in the organization is aware of any companies, environmental groups, or philanthropic organizations that contribute to people in our position. Anyone have any ideas or leads regarding grant opportunities?

Contact my e-mail address or NABS headquarters.

Robert D. Peak
RDP0713em@evsc.k12.in.us

Dear David,

I just moved to Texas from Indiana. My mother and I both wondered, coming from our milder temperatures, is it helpful/necessary to have extra holes drilled in the boxes for ventilation? It's hard to imagine being in a bird box with these outside temperatures.

Also, up there, raccoons and other birds would be the main predators/problems. Is it the same here?

Mary

E-mail from David Shiels, chair of Bluebird Hotline Committee:

Dear Mary and Mom,

The heat down here can be terrible. Extra holes for ventilation are good. But what the boxes down here need is a false front of thin plywood with a spacer of wood between the box wall and the false front for ventilation. The false layer creates a flow of air that takes stored heat energy and moves it out away from the box.

Predators down here include (in order of concern) wild cats, snakes, raccoons, and House Wrens. Baffles help but proper placement of your boxes is the key. ■

Bluebird Tales and Tips

Lisa Kivirist and John D. Ivanko

From NABS' 1998 Annual Meeting to the hundreds of calls and e-mails from across the continent, it's been a busy bluebirding year.

The *Sialia* mailing crew, once again, helped send out the Summer issue to destinations across the continent. Thanks to **Harvey Hartwig**, **Carol McDaniel**, **Bob Clayton**, **Glenn Winslow**, and **Marjorie Bucher** for their efforts. In addition, **Judy Butz** and **Gladys Christensen** later helped a "stuffing crew" to respond to the many inquiries NABS has received from the *Birds & Blooms* and *National Wildlife* magazine articles.

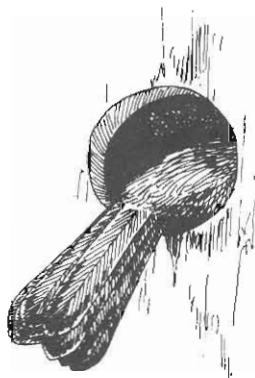
More Bluebirds Likely in Florida

William and Louise Wing, of Wildwood, Florida, shared the work their Sumter County Chapter has done to help construct and put up bluebird and Wood Duck nesting boxes with the assistance of the National Wild Turkey Federation's JAKES (Juniors Acquiring Knowledge, Ethics and Sportsmanship). After a bluebird talk by Louise and a building demonstration by Bill, the JAKES were assigned to teams to erect the boxes in proper habitat.

The first steps in helping the bluebirds in Florida, as well as across the continent, are building a quality nest box and placing it in appropriate habitat. Then, monitoring the nest box--which includes the weekly opening of the box--should take place during the entire nesting season, which varies according to the species and region of the country. Do not, however, open the nest box after the nestlings are 12 to 14 days old, since doing so might cause the nestlings to leave the box prematurely reducing their likelihood of survival.

NABS Forms Partnership with the Cornell Nest Box Network

Dean E. Sheldon, Jr was unani-



mously approved by the NABS Board of Directors to sit on the Board of Directors of the Cornell Nest Box Network (CNBN) of the Cornell Laboratory of Ornithology. Expanding NABS' conservation efforts by "partnering" with other like-minded conservation organizations, NABS plans to broaden its reach and the scope of its projects. As a cavity-nesting bird species research project, the CNBN gathers information continent-wide to examine such issues as clutch size, feather use in nests, nest-site selection, and calcium requirements. As a part of the CNBN, participants receive a research kit, access to a computerized mailing list, and a newsletter. For more information, contact: CNBN, Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, NY 14890; tel: 607-254-2482; e-mail: CNBN@cornell.edu.

Sparrow Problems!

Barry Bermudez of Hilton, New York, is now in year ten of his cavity-nester research project, originally funded by NABS. His research examined a common problem: successful breeding of native cavity nesters in areas with severe House Sparrow competition. The key to Barry's project, since the area was full of sparrows, was a regular and carefully monitored program of sparrow trapping. "Sparrows were in the area all season and were trapped all season," writes Barry, "yet the swallows were able to successfully breed." If relocating your

nest boxes away (about 100 yards) from buildings does not deter House Sparrow use, NABS sells a tri-compartment sparrow trap, catalog item number ST-1, for \$38.00, plus \$8.80 shipping.

New NABS Affiliate in Pennsylvania

"We are excited about this new venture and are especially pleased with our affiliation with NABS," writes **Diane Barbin**, secretary of the newly-formed Bluebird Society of Pennsylvania. "It is helpful to know that you are standing behind us, ready to help when we need your assistance."

The NABS affiliation process seeks to unify the bluebird conservation efforts of all bluebirding organizations across the continent, foster improved communication, and disseminate research results. NABS is pleased to welcome the Bluebird Society of Pennsylvania and is looking forward to serving as the umbrella organization for bluebirding across the North American continent. An updated listing of NABS Affiliates is available on NABS' everchanging home page (<http://www.cobleskill.edu.nabs/>). NABS' website is developed and maintained by **Nancy Niles**.

Beginnings of a Transcontinental Bluebird Trail?

National Public Radio (NPR) aired a

piece on the Route 20 Bluebird Trail and Adopt-a-Box program in New York featuring NABS Research Chairman **Kevin Berner**, as well as **Ray Briggs**, of Cobleskill, and **Joe Therrien**, of Central Bridge, New York. In case you missed the interview, a link has been established on NABS' website to the NPR website containing the interview.

Serving as a possible model for further development of a Transcontinental Bluebird Trail(s), the Route 20 Trail will be expanded, we hope—as an independent undertaking and coordinated by NABS—into a network of trails across the continent. NABS is presently developing a plan and collecting an inventory of existing trails that stretch for more than 50 miles or are located near either Rails-to-Trails (trails along abandoned railroad corridors) or the American Discovery Trail (to examine a map, see <http://www.discoverytrail.org>). If you have a bluebird trail or would be interested in volunteering to coordinate a trail in your area, please send a note to NABS' headquarters, making sure that you include your mailing address and telephone number, plus fax number and e-mail address if you have them. Include a description (and map) of the route your trail takes or where you feel appropriate habitat (and sufficient volunteers to monitor the trail) warrants the development of a bluebird trail. ■

(POINTS – continued from page 122)

have been an essential part of NABS. We are most grateful for the contributions of **Mary Janetatos**, executive director; **Jo Solem**, editor of *Sialia*; and **Charlotte Jernigan**, our president for six years. We will miss their guidance and experience.

Future changes include a Gift and Merchandise Catalog, formation of a Transcontinental Nest Box Trail, and the development of an interpretive and educational display at our Darlington, Wisconsin headquarters. We, of course, will continue to produce educational pam-

phlets and will maintain the Speakers' Bureau. Our quarterly publication will keep us informed with research articles and information about bluebird trails in many parts of the country. Each year our annual convention will be held in a different part of the bluebird world.

Our thanks to the people who organized the NABS convention in June of this year in Regina, Canada. They provided a stimulating group of speakers and well-orchestrated field trips, comfortable buses, and great food.

Please join us next year for the NABS convention in Great Falls, Montana. ■

From the editor--

As I anticipate my retirement on 1 October, I look back on nearly two decades as editor of *Sialia*. While preparing my first issue in the winter of 1980, NABS was staggering under the volume of mail generated by the Parade article, "How You Can Hear the Bluebird's Song Again." The spontaneous outpouring from all parts of the continent demonstrated that helping the bluebird was an immensely popular endeavor with true grassroots support. It has been exciting to be part of a conservation movement made up of so many thousands of enthusiastic and dedicated individuals whose energy, ingenuity, and commitment are an inspiration to others.

Anyone in an editorial position for an extended period is indebted to many people. I am particularly grateful to the four art editors who served the Society during my tenure. All of them produced covers and other drawings without monetary compensation. Sue Probst deserves special mention for her ten years of faithful and cheerful service. Columnists are appreciated but seldom receive adequate thanks. Among those long-term contributors who deserve accolades are the late Lawrence Zeleny ("Question Corner"), T. David Pitts ("Literature Review"), and George Grant who instituted the "Plantings for Bluebirds and Other Wildlife" series. The "Plantings" column was continued for almost a decade in outstanding fashion by Karen Blackburn, who also initiated "A Bird in the Bush." Presidents, executive directors, and committee chairs met deadlines consistently. To all of them, I offer a heartfelt thanks. You made my job much easier.

Members supplied much of the journal's contents by submitting material, tinkering with box and trap designs, suggesting subjects for articles, and providing names of potential authors. The new editor anticipates this continued cooperative spirit and the same willingness to share experiences and ideas.

I will treasure the memory of the many special people involved in this labor of love and anticipate that the coming years will witness the increased vitality of the Society and the continued success of cavity-nester conservation.

--Joanne K. Solem

(FEATHERS—Continued from page 156)

A team of Dartmouth geochemists think the application of isotope studies to birds will help map northern breeding populations with their wintering grounds in the tropics. It is hoped these studies will help set priorities for habitat protection by identifying critical breeding and wintering grounds for declining species.

Pollution indicator. Bird feathers are like the lapel badges that some scientists wear to document exposure to hazardous elements. Within each feather's structure is a record of the bird's exposure to heavy metals and other pollutants. Fish-eating birds are a good example. The toxic metals in the water contaminate fish and when eaten by birds, these metals circulate in their blood and accumulate in tissues such as feathers. While scientists often cannot determine the watery migration routes of fish, they do know a great deal about the migratory routes of the birds that feed on the fish giving them a clue to the source of the pollution. Local contamination can be also studied by sampling breast feathers from young birds in the nest as the food supply is collected by the adults within an established area.

Reminder. Under the Migratory Bird Treaty Act, collecting feathers of native birds requires both state and federal permits. ■

(With thanks to Amanda Carter Sheahan for the section on feather colors. See the August/September 1997 *National Wildlife* magazine for more complete information in "The Hidden Beauty of Feathers.")

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

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

Membership: Student (under 21) \$10.00; Senior (over 60) \$10.00; Regular \$15; Family \$25; Sustaining \$30; Supporting \$50; Contributing \$100; Corporate \$100; Donor \$250; Life \$500. Three year rates: Student and Senior \$28.50; Regular \$42.00. Add \$2.00 per year for Canada and Mexico and \$3.00 per year for other countries (surface mail). U.S. funds only, please. In Canada, please use Canadian postal money order in U.S. funds. Do not use checks. Amounts over \$6.00 are tax deductible.

Address:

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Darlington, WI 53530**

