

ONTARIO EASTERN BLUEBIRD SOCIETY
ANNUAL GENERAL MEETING
SATURDAY, APRIL 3, 1993
LECTURE ROOM
ROYAL BOTANICAL GARDENS HEADQUARTERS

- 08:45 - 09:30 Registration (\$4.00 members, \$5.00 non-members)
Viewing of Bucket Raffle Prizes and Display Table
- 09:30 - 09:45 Introduction and Business Meeting Bill Read
- 09:45 - 10:25 Bird Quiz David Brewer
- 10:25 - 10:45 Coffee Break
- 10:45 - 11:45 Long Point Bird Observatory Nest Box Survey
.....Michael Richardson
- 11:45 - 1:15 Lunch and Tour of the Mediterranean Room
- 1:15 - 1:40 Bruce Peninsula Co-operative Nest Box effort
..... Lorne Smith
- 1:40 - 2:10 Halton Blue Bird Club Sandy Gage
- 2:10 - 2:20 Bucket Raffle Draw
- 2:20 - 2:40 Coffee Break
- 2:40 - 3:30 Cavity Nesting Ducks Ron Bowman GRCA
The presentation will feature a live wood duck and wild turkey

BUCKET RAFFLE PRIZES

The OEBS is providing prizes for the Bucket Raffle: If you would like to contribute a nestbox or book etc. you can bring it to the meeting and we will gladly enter it in the raffle.

DIRECTIONS TO SITE OF APRIL 3 1993 OEBS CONFERENCE

Royal Botanical Gardens Headquarters, 680 Plains Road, Burlington, Ontario

From Toronto:

Take the QEW west to Burlington, then continue on Highway 403 west towards Hamilton. Take the Highway 6 north exit. At the first traffic lights, turn right onto Plains Road. At the next lights turn left (this is still Plains Road). The Royal Botanical Gardens Centre is about 1 km down on the right at Botanical Dr. Parking is available behind the building.

From North or West of Hamilton:

Take Highway 401 to Highway 6 south to Hamilton. Stay on Highway 6 past the intersection with Highway 5. Continue down a long hill (this is the Niagara Escarpment) until you come to a set of traffic lights (about 2 km past Highway 5). Turn left and travel about 0.5 km to another set of traffic lights (Plains Road). Turn left here. The Royal Botanical Gardens Centre is about 1 km along Plains Road on your right at Botanical Dr. Parking is available behind the building.

From South or West of Hamilton:

Take Highway 403 east through Hamilton, then take the exit to Highway 6 north. About 0.3 km past the exit ramp there is a set of traffic lights. Turn right here. Go about 0.5 km to another set of traffic lights (Plains Road) and turn left here. The Royal Botanical Gardens Centre is about 1 km along Plains Road on your right at Botanical Dr. Parking is available behind the building.

Membership Renewal

A membership renewal notice has been included with each newsletter. If you have already paid your dues for 1993, the year 1993 will appear on your mailing label. Thanks again for your support.

Editors Note The following article is reprinted from Sialia volume 15, number 1 winter 1993. North American Bluebird Society, Box 6295, Silver Spring, Maryland, U.S.A. 20906 Membership - Regular: \$15.00 American.

I talked with Kevin Berner on February 9, 1993 concerning his research on field testing of Bluebird Nestboxes. Kevin stated that if possible boxes should be placed on poles and that fence posts should be avoided because of the likelihood they will be raided by raccoons or other predators. The OEBS also recommends placement on a T-BAR that is greased or a metal

pole with a special raccoon guard. The extra thickness wooden raccoon guard placed over the entrance hole has proven to be virtually useless in combating raccoon predation. During Kevin's studies heavily greased poles proved an effective deterrent in stopping raccoons from climbing poles. I had only 1 incidence of raccoon predation in 1992 after greasing most of my T-BARS. The grease had worn off the box that was climbed.

Raccoons and weather are the two factors which can severely limit EABL nest success. The OEBS congratulates Kevin on the extensive and very important research he is carrying out on field tests of Bluebird nestboxes. Kevin has tentatively agreed to be our keynote speaker at the 1994 March 26 OEBS conference at RBG in Burlington On.

FIELD TESTS OF SEVERAL STYLES OF BLUEBIRD NEST BOXES

Kevin L. Berner and Veronica A Pleines

Introduction

Bluebird enthusiasts are continually modifying conventional nesting boxes or developing new styles of boxes. These attempts to develop the "perfect nest box" are usually aimed at finding a box that is readily accepted by bluebirds (*Sialia spp.*), while being unattractive to non-native competitors and resistant to nest predators. The tests reported in this paper were constructed at three separate study areas to compare the use of several box designs or boxes with predator deterrent features by native and introduced species. This study replicates and expands on earlier work funded by NABS as reported in Berner (1990).

Conventional bluebird nest boxes are described by Zeleny (1976). Some of the boxes I tested were modifications of this design which featured either wooden predator guards of 3/4 in. (1.9 cm) or 1 3/8 in. (3.5cm) thicknesses or "Bird Guardian" commercial plastic predator guards. Test results from Boxes with these plastic guards were reported by Berner (1991). Some of the conventional boxes also had roofs which extended 5 in. (12.7 cm) beyond the entrance hole while all others had an approximately 2 in. (5.1 cm) overhang. These boxes had either 4 x 4 in. (10.2 cm) or 5 x 5 in. (12.7 cm) floors. I did not separate the box use data based on floor size, but Pitts (1988) found that bluebirds did not show a strong preference for small - vs. large floored nesting boxes.

Peterson boxes were also used on all three study areas. These boxes are widely used in Minnesota and the surrounding region (Scriven 1989). My reviews of nest box surveys submitted to NABS indicates that this style is not as widely used outside of the north-central states as are the Zeleny boxes.

Another style of nesting box tested was the slot box. Davis (1989) found that House Sparrows (*Passer domesticus*) prefer boxes with circular entrances over those with a slot. Earlier, McComb *et al.* (1987) determined that European Starling (*Sturnus vulgaris*) could be excluded from slot boxes by using a 1 3/16 in. (30 cm) wide opening across the box top. Tuttle (1990) observed that slot boxes were readily accepted by all common trail species in Ohio. He also noted that they are probably the most simple box style to build.

The Bermudez box was designed based on the premise that starlings and House Sparrows will avoid boxes that are shallow and have large entry holes (Bermudez unpubl. report 1989). This experimental nest box has a 2 3/4 in. (7.0 cm) round entrance with a floor only 4 inches (10.2 cm) below the entry hole. Field work by Bermudez indicated that sparrows used this box at lower rates than standard boxes.

The PVC box, developed by Gilbertson (1991) is constructed from a 4 in. (10.2 cm) diameter PVC pipe with a wooden floor and is covered by a flat wooden roof. He feels that this box design has great potential for providing bluebird nesting opportunities while being shunned by House Sparrows. These boxes can be mounted on 1/2 inch (1.3 cm) electrical conduit and rebar.

Study Areas

I have used one of the study areas, the New York Power Authority (NYPA) Blemheim-Gilboa Pumped Storage Power Project, for research since 1989. The site, described in detail in Berner (1990), is within a large plantation of uniformly spaced northern white cedars (*Thuja occidentalis*). Prior to 1990, this site had been kept in an early successional stage through occasional cutting of hay; however, during the summers of 1990 - 1992, little hay was harvested and much of the area became poor bluebird habitat by early summer due to the dense growth of grasses 3 ft. (91 cm) or taller.

A second study area was developed in 1990 on the State University of New York (SUNY) Cobleskill College of Agriculture and Technology campus by expanding an existing nest box trail. Boxes were located on the campus farm and the adjacent recreation complex. The farmlands included pastures used by cattle and horses, intermingled with corn and alfalfa fields. The recreation complex abuts the campus farm and contains large open areas of grassy ski slopes and lawns.

A third study site was developed in 1991 on another trail that had existed for approximately 10 years in the Myers Road area east of Cobleskill, New York. All three trails are within Scholharie County where bluebirds exist in some of the highest densities found in the state.

Methods

Equal numbers of either four or five types of nest boxes were placed along each trail. Boxes were monitored weekly from early April to late August. Nearly all nestling Tree Swallows (*Iridoprocne bicolor*) and Eastern Bluebirds (*Sialia sialis*) as well as some adults were banded. All boxes at the NYPA site were mounted on metal pipes. During 1989 boxes at the SUNY site were mounted on either fence posts or pipe, but by 1991 all boxes had been mounted on pipe except one pair placed on a utility pole. All of the Myers Road boxes except two pairs were mounted on pipe. The pipes were heavily coated with automotive grease to deter raccoon predation, since raccoon populations in the county are currently extremely high.

1990 Field Work

NYP A site

There were 13 boxes each of five styles at the NYPA site in 1990 for a total of 65 boxes. The box styles consisted of conventional boxes with 3/4 in. wooden predator guards, 1 3/8 in. wooden predator guards, 3/4 in. wooden predator guards and 5 in. roof overhangs, and Bird Guardians which included tail braces. The remaining 13 boxes were Peterson boxes, the fifth style of box tested.

Sixty nesting attempts were made at the NYPA site by native species of cavity nesting birds in 1990. A nesting attempt was defined as constructing a nest and laying at least one egg. No nest boxes were used by non-native House Sparrows. Eight nesting attempts were made by bluebirds, five in Peterson boxes, two in boxes with the thick 1 3/8 in. wooden guard, and one a long-roofed box.

Tree Swallows used all styles of boxes at the NYPA site in their 35 nesting attempts, with the greatest use of the conventional boxes with 3/4 in. and 1 3/8 in. wooden guards with short roof overhangs. House Wrens (*Troglodytes aedon*) made 17 nesting attempts using all styles of boxes. Many of the House Wren nests were constructed late in the season after the peak of bluebird and swallow nesting. Eleven of the 13 boxes with Bird Guardians were unused by any species for the entire breeding season. (See Table 1.)

SUNY site

The SUNY site had 32 boxes in 1990 with eight boxes each of conventional boxes with 3/4 in. woodenguards, 5 in. roof overhangs with the same size guards, and Bird Guardians. There were also eight Peterson boxes.

Twenty-five nests were attempted by four species on the SUNY study area in 1990. Bluebirds, which have only recently begun to occupy the campus property, attempted two nests in boxes with 3/4 in. guards and one additional nest was documented in a Peterson box.

Key to all tables:

BB: Eastern Bluebird
 TS: Tree Swallow
 HW: House Wren
 HS: House Sparrow
 HF: House Finch

"attempt" = at least
 one egg laid

Table 1. Number of nest boxes used by box type and species at the NYPA site in 1990.
 Number of Attempts

Box Styles (8 each)	BB	TS	HW	Tot	No. boxes never used
3/4" wooden grd.	0	12	3	15	1
1 3/8" wooden grd.	2	11	2	15	2
Extended roof w/ 3/4" wooden grd.	1	4	4	9	5
Bird Guardian	0	2	2	4	11
Peterson	5	6	6	17	2
TOTALS	8	35	17	60	21

Swallows were much more abundant than bluebirds at the SUNY site and they dominated Peterson boxes, using them for seven of their 14 nesting attempts. They also used each of the other box styles at least twice. House Wrens are uncommon on the SUNY site due to the lack of brushy areas near the nest box trail and nested only twice, in long-roofed boxes. House Sparrows made six nesting attempts, half of which were in Peterson boxes. They attempted to use all box types except the long-roofed boxes. Ten of the 32 boxes on this trail were not used by any species. Five of these boxes had "Bird Guardians." None of the eight Peterson boxes were unused. (See Table 2.)

1991 FIELD WORK

NYP A site

Due to the low level of acceptance of boxes with "Bird Guardians" in 1989 and 1990 (Berner 1991), the 13 boxes with Guardians at the NYPA site were replaced by slot boxes in 1991. Each of the slot boxes at the NYPA site and the other research sites had a 2 x 4 block in the bottom making the box more shallow which Davis (1992) had suggested to discourage House Sparrows. My slot boxes were deeper by design than those used by Davis, so that even with the 2 x 4 block inserted they were

5 in. (12.7 cm.) to the floor from the bottom of the slot. All other styles used in 1990 were retained at this site. Unfortunately during the summer, maintenance staff mowed only narrow strips along each of the tree rows of nest boxes leaving the bulk of the grasses too tall to provide quality bluebird habitat.

Five of the seven bluebirds nesting at the NYPA site were in Peterson boxes. While bluebird activity was high early in the nesting season when the grasses were short, most bluebirds abandoned the area by midsummer. One of the two pairs of birds that remained nested immediately adjacent to a lawn area at the Visitor's Centre.

Swallows on the site had numerous nestings in all box styles except the

Table 2. Number of boxes used by box type and species at the SUNY site in 1990.
No. of Attempts

Box Style (8 each)	BB	TS	HW		Tot	No. boxes never used
3/4" wooden grd.	2	2	0	2	6	3
Extended roof w/ 3/4" wooden grd.	0	3	2	0	5	2
Bird Guardian	0	2	0	1	3	5
Peterson	1	7	0	3	11	0
Totals	3	14	2	6	25	10

slot boxes which they used for only one nesting. They used the other types for between six and nine attempts. House Wrens showed the highest use of slot boxes (five attempt) and used all other styles for two nesting each. Overall the Peterson boxes were used the most and were least frequently vacant. Slot boxes were the boxes least used by any species. (See Table 3)

SUNY site

I replaced the "Bird Guardian" boxes with slot boxes at the SUNY trail in 1991. I also added Bermudez boxes to this trail. There were eight boxes of each of five styles: 3/4 in. wooden guards with either long or short roofs, Peterson, slot, and Bermudez.

Bluebirds attempted eight nestings, five of them in Peterson boxes, with one each in three other box styles. Sparrows destroyed the bluebird eggs of two attempts in slot and Bermudez boxes.

Tree Swallows used all styles of nest boxes except the slot boxes on the SUNY trail, with highest use of Peterson boxes, followed by the conventional boxes with both roof lengths, then Bermudez boxes. Only four wren attempts were made and no box preferences were obvious. House Sparrows attempted four nests, three of which were in slot boxes. No Peterson box went unused on this site in 1991, while at least three of each of the other styles did. A pair of House Finches successfully nested in a Bermudez box. (See Table 4).

Table 3. Number of nest boxes used by box type and species at the NYPA site in 1991.

Box Style (13 each)	BB	TS	HW	Tot	No. boxes never used
3/4" wooden grd.	0	8	2	10	4
1 3/8" wooden grd.	0	9	2	11	3
Extended roof w/ 3/4" wooden grd.	2	6	2	10	5
Peterson	5	9	2	16	1
Slot	0	1	5	6	7
Totals	7	33	13	53	20

Myers Road site

The Myers Road site consisted of private lands in a rural area of croplands as well as active and abandoned dairy farms. This site first served as a research trail in 1991 and had six boxes each of five box styles: conventional boxes with 3/4 in. predator guards, Peterson, slot, Bermudez, and PVC boxes. This was the only study area where PVC boxes were tested in 1991.

Five of nine bluebird nesting attempts on the Myers Road trail were in Peterson boxes, three were in slot boxes, and one was in a PVC box. Tree Swallows were the most common species, nesting 11 times and using all styles of boxes, with the highest number of attempts in standard boxes. Wrens attempted four nests in three different box style. House Sparrows attempted only two nests, both in slot boxes. Overall the Peterson boxes received the highest level of use on this trail in 1991. (See Table 5)

1992 Field Work

Between 1989 and 1991, bluebirds showed little preference among the various modifications of conventional nesting boxes. Since studies I had done earlier indicated that longer-roofed boxes were better able to protect bluebird nests from raids by raccoons

Table 4. Number of nest boxes used by box type and species at the SUNY site in 1991.

Box Style (8 each)	BB	TS	H W	HS	HF	Tot	No. boxes never used
3/4" wooden grd.	1	4	0	1	0	6	3
Extended roof w/ 3/4" wooden grd.	0	4	1	0	0	5	3
Peterson	5	6	1	0	0	12	0
Slot	1	0	2	3	0	6	4
Bermudez	1	2	0	0	1	4	4
Totals	8	16	4	4	1	33	14

(Berner *et al.* 1990), and that longer roofs did not appear to discourage bluebird use (Berner 1990), I placed long roofs on all standard boxes. I have observed many bluebird boxes with wooden predator guards which were still raided by raccoons. My captive raccoon test also indicated that these guards provide minimal protection from raccoons (Berner *et al.* 1990). In order to determine whether the strong preference by bluebirds for Peterson boxes in 1990 and 1991 was due to less thickness of wood over the entry holes, I eliminated all wooden guards from all standard boxes in 1992. Each study area had conventional boxes with longroofs but no predator guard, slot boxes, and Peterson boxes. The SUNY and Myers Road areas also had Bermudez boxes. Slot widths on some 1991 boxes had changed from their original sizes during their initial season due to drying and warping of the wood. The slot widths were carefully monitored in 1992 to ensure that the recommended widths were maintained. The blocks at the base of the slot boxes were removed on all study sites creating a 6 1/2 in. (16.5 cm) deep box.

Lithium automobile grease was applied liberally to most of the pipe mounts to keep raccoons from climbing the poles. PVC boxes were mounted on electrical conduits and coated with carnauba wax at the NYPA and SUNY sites. On all sites grass was hand clipped periodically around the base of each pole to keep it from wiping off the grease.

NYPA site

By 1992, lack of mowing had reduced the area of suitable habitat at this site. Therefore, I decreased the size of the study area and reduced the number of research boxes from 65 to 44, leaving 11 each of four styles. The box styles were changed from a semi-random order to a systematic sequence of styles to eliminate potential problems of interpreting data if some areas were mowed and others were not. The NYPA was again only able to mow strips adjacent to the nest box rows and therefore nesting densities of bluebirds rapidly decreased as the grass heights increased. Unlike most previous years, in 1992 Peterson Boxes were not the dominant box used by bluebirds at the NYPA, in fact they were the only style not used. Instead three boxes of each of the PVC and long-roof design were used by bluebirds along with two additional slot boxes. Three of the first five clutches of bluebird chicks died during one week of unseasonably cold and wet weather in May. Only the pairs nesting closest to Visitor's Centre lawn re-nested, with the others abandoning the more remote sites possibly due to the tall grasses.

**Table 5. Number of nest boxes used by box type and species at the Myers road site in 1991.
Number of Attempts**

Box Style (6 each)	BB	TS	HW	HS	Tot	No. boxes never used
3/4" wooden grd.	0	4	0	0	4	2
Peterson	5	3	1	0	9	1
Slot	3	1	0	2	6	3
Bermudez	0	2	1	0	3	3
PVC	1	1	2	0	4	3
Totals	9	11	4	2	26	12

Tree Swallows were less affected by the increasingly tall grasses probably because of their aerial feeding habits. Twenty-four nesting attempts were made by swallows. The most commonly used box types were Peterson and long-roofed boxes were most used and PVC boxes the least used by all species combined. (See table 6)

SUNY site

The SUNY site had eight boxes each of the five different styles. Bluebirds made 10 nest attempts, four in Peterson, and three each in PVC and slot boxes. No bluebirds used long-roofed or Bermudez boxes.

Tree Swallows nested 14 times, selecting peterson boxes most frequently. Some nesting attempts were made in each of the other styles except PVC boxes. House Wrens selected long roof, Peterson, and slot boxes for their seven nesting attempts. House Sparrows nested in two Peterson and two slot boxes. When combining the use of all species, the Peterson boxes were the most used boxes by a wide margin, and none of them remained empty for the entire breeding season. Slot boxes had the second highest use and the next lowest vacancy rate. (See Table 7)

Myers Road site

There were six boxes of each of the five box styles on the Myers Road trail in 1992. Bluebirds made seven of their 11 nests in Peterson Boxes, with two additional nests each in slot and PVC boxes.

Tree Swallows attempted six of their 13 nesting attempts in long-roofed boxes, with one to three attempts in each of the other designs. House Wrens split their six attempts among all types except the long-roof boxes. House Sparrows were rare on the trail and attempted to use just one slot and one Peterson box. A pair of House finches nested twice in a Bermudez box. When combining all species' use, Peterson boxes were used twice as many times as any other box style while no Peterson box went unused for the entire summer. No long-roofed box was unused but each one was used only once while most Peterson boxes were used for multiple netings. (See Table 8)

Table 6. Number of nest boxes used by box type and species at the NYPA site in 1992.

Number of Attempts

Box Style (11 each)	BB	TS	HW	Tot	No. boxes never used
Extended roof w/ no guard	3	8	1	12	2
Peterson	0	9	0	9	2
Slot	2	5	3	10	3
PVC	3	2	1	6	6
Total	8	24	5	37	13

Predation

Raccoon predation on the NYPA trail had been very high in 1988. Poles were greased in 1991; however, windblown tall grasses removed much of the grease. In addition, after thin strips were moved along each row of boxes that summer, raccoons had an easy time locating boxes and climbing the low lightly greased poles. In a one and a half week period 24 swallow nests were destroyed by raccoons. Predation was not a significant problem at the other study sites.

In 1992, poles on all areas were very heavily greased, or in the case of the PVC mounts at NYPA and SUNY, treated with carnauba wax. Only one NYPA box was raided by raccoons. It had been knocked over by a mower and had lost its coating of grease before being put back up. One box on the Myers Road trail was raided by raccoons which climbed up an adjacent woven wire fence and reached the roof without touching the pole. Periodic trimming of the grass in a 2-3 foot radius around the poles appeared to help maintain heavy coatings of grease of most poles. No PVC box with carnauba wax on the pole was disturbed.

DISCUSSION

The combined results of the four years of research described here and in Berner (1990) indicate that species' acceptance and use of various styles of nesting boxes varies greatly. When given a choice of box styles, each species will choose some types over other types. While a preference may exist, a less desirable box style will probably be used when it is the only type available to a pair of birds.

Table 9 summarizes my four years of research. It has both raw data on numbers of nesting attempts as well as the expected number of attempts for every 100 boxes in the field. This type of calculation makes comparisons between box types easier. It appears that the most preferred box type for bluebirds is the Peterson box, which was used for 4 nesting attempts for every 100 boxes in the field. PVC and slot boxes had the next greatest attraction for bluebirds. All of the standard boxes had relatively low levels of use when alternative boxes were available. I would discourage the use of Bermudez boxes and the Bird Guardian for bluebird management.

Tree Swallows appear to be willing to use most box styles, particularly any standard or Peterson box. Slot boxes and Bermudez boxes still had fairly high levels of use, but were chosen considerably less frequently than the two styles mentioned above. The two boxes with at least some non-wood component, the PVC and the Bird Guardians, appear to be the least attractive nesting alternatives for the swallows.

House Wrens exhibited a relatively narrow range of use levels, not showing a marked preference or avoidance of any box style. House Sparrows were not a serious competitor on any study area, possibly due to not being allowed to nest successfully on any of the study areas for several years. Slot boxes, proposed as a sparrow-resistant box, actually had the highest level of sparrow use in this study, followed by Peterson boxes. No sparrows nested in PVC boxes, but it is unknown whether this suspicious species would become more tolerant of this style box over time, as has been suggested. None of my Bermudex boxes were used by sparrows even though several were placed in areas of high sparrow density. Still, this box appears to have limited potential due to the bluebirds' avoidance of it.

Table 7. Number of nest boxes used by box type and species at the SUNY site in 1992.

Box Style (8 each)	Number of Attempts					Tot	No. boxes never used
	BB	TS	HW	HS			
Extended roof w/ no guard	0	2	4	0	6	4	
Peterson	4	6	2	2	14	0	
Slot	3	3	1	2	9	1	
PVC	3	0	0	0	3	5	
Bermudez	0	3	0	0	3	5	
Totals	10	14	7	4	35	15	

Table 8. Number of nest boxes used by box type and species at the Myers Road site in 1992.
Number of Attempts

Box Style (6 each)	BB	TS	H W	HS		Tot	No. boxes never used
Extended roof w/ no grd.	0	6	0	0	0	6	0
Peterson	7	3	1	1	0	12	0
Slot	2	1	2	1	0	6	3
PVC	2	2	2	0	0	6	1
Bermudez	0	1	1	0	2	4	3
Total	11	13	6	2	2	34	7

I feel that heavy coats of grease or a slick coating of carnauba wax can provide a very high level of protection against predation by raccoons. Keeping raccoons from getting to the box at all is superior to allowing them to get to the box and then relying on some modification to restrict their entry. Their harassment alone may cause birds to abandon the box.

FUTURE WORK

I plan to continue this research with minor modifications to reduce the problems of small sample size and year to year variation. Next year I will eliminate the Bermudez box, as I have already done with the Bird Guardian, due to its low level of use by bluebirds. I would encourage others to conduct similar controlled tests on their trails to confirm or refute my research results.

Table 9. Total number of observed attempted nests for each species and the predicted number of nesting attempts/100 nest boxes in parentheses. Data combined for 1989 - 1992.

Number attempted (No. expected/100 boxes)

Box Style	No. boxes	BB	TS	HW	HS
3/4" Wooden Grd.	61	4(7)	36(59)	7(12)	3(2)
1 3/8" wooden grd.	39	3(8)	27(69)	7(18)	0(0)
Extend roof+3/4"	55	8(15)	25(46)	10(18)	0(0)
Extend roof no grd.	25	3(12)	16(64)	5(20)	0(0)
Bird Guardian	34	0(0)	5(15)	4(12)	1(3)
Peterson	73	32(44)	49(67)	13(18)	6(8)
Slot	52	11(21)	11(21)	13(25)	8(15)
Bermudez	28	1(4)	8(29)	2(7)	0(0)
PVC	31	9(29)	5(16)	5(16)	0(0)
TOTALS	398	42	131	48	18

ACKNOWLEDGEMENTS

The establishment of the NYPA trail and travel money to the study sites in 1990 was supported by a grant from NABS. NABS also purchased some of the PVC boxes. Graduate Research Initiative grants from SUNY Cobleskill were used to supply materials to build research boxes and to pay student assistants in 1991. Students from the SUNY Cobleskill Fisheries and Wildlife Technology program built many of the research boxes, modified the SUNY and NYPA trails, and repaired damaged existing boxes each spring of the study. A grant from the Bluebird Recovery Program of Minnesota covered my travel to the three research areas and additional miscellaneous expenses including purchase of PVC boxes in 1991 and 1992. Barbara DiCocco and John Hamor of the NYPA assisted by providing logistical support throughout the study. A private donor who prefers to remain anonymous has made generous contributions each year to my research, allowing me to cover expenses beyond my other grants. I would also like to thank my wife, Nancy Niles, for her assistance in trail monitoring and in reviewing this manuscript.

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EASTERN BLUEBIRDS ON CHRISTMAS BIRD COUNTS IN ONTARIO

The Christmas bird count chart gives the total Bluebirds found on Christmas Bird counts from the 86th count (Winter 85-86) to the 92 count (winter 91-92)

Most people are amazed when told that EABL's actually over winter in Ontario and do so in most winters successfully. As president of the OEBS I receive many letters telling of EABL sightings through the winter months. Most of these come from areas along the Lake Erie shore line and throughout the Niagara Peninsula. (Areas which are warmer than most other parts of Ontario during the winter.

Looking at the chart we can see that the Bluebird count has increased from 44 on the 86th count to 284 on the 92 count. This may indicate that overall numbers of EABL's have increased in Ontario and more are being sighted on Christmas bird counts. It may also result from greater count intensity. (More people looking for birds on the counts).

Warm weather through the fall and early winter can delay migration and will result in more bluebirds on Christmas Count Areas. During the 92 count (Dec. 14 1991 to Jan 2 1992) we experienced unusually warm weather for Ont. (see Fall 92 newsletter) and this resulted in record numbers of EABL on the Christmas Bird Counts (284). With 102 EABL counted at Point Pelee and another 96 at St Catherine it probably indicates that they were delaying their migration somewhat both through the Niagara Peninsula to Buffalo and south and along the Lake Erie shoreline to Windsor and South.

This 92-93 winter temperatures have not really been that extraordinary but have been more closer to normal than the past few years, according to Mac Magregor of the Environment Canada weather office at the Waterloo Wellington Airport. The chart below summarizes temp. and total precipitation from Oct 92 to Feb 93. Even though it seemed like we have had a lot of precipitation in Feb. (as snow) it must be considered that 1 cm of snow only equals 1 mm of rain and total precipitation is measured as rain. The snow accumulation and unusually cold weather in Feb. (-9.4C compared to the normal of -6.4C) may be factors in determining if most EABL's were able to successfully overwinter.

MEAN TEMPERATURE °C

MEAN RAINFALL(mm)

MEAN RAINFALL(mm)			MEAN TEMPERATURE °C				
92	OCT	ACTUAL	NORMAL	92	OCT	ACTUAL	NORMAL
		6.6C	9.6C			68.mm	66.9mm
	NOV 92	2.0	2.5		NOV 92	157.8	70.8
	DEC 92	-2.6	-4.0		DEC 92	73.8	69.9
	JAN 93	-4.7	-6.8		JAN 93	106.8	61.9
	FEB 93	-9.4	-6.4		FEB 93	31.6	53.7

EABL sightings on Christmas bird counts may tell us that there are more Eastern Bluebirds but greater count intensity (more counters, more counts) and warmer winter weather delaying migration may obscure the true picture as far as an indicator for population increase.

Editors Note

If you observed EABL's over the winter could you write to me telling the location, date and if they were successful. The temperature's and precipitation are those recorded by the Environment Canada weather office at the Waterloo Wellington Airport near Kitchener Waterloo Ontario. Thanks to Mac Magregor for providing the weather information.

EASTERN BLUEBIRDS ON CHRISTMAS BIRD COUNTS IN ONTARIO

86th - 92 COUNT

	86	87	88	89	90	91	92
BLENHEIN	-	6	6	5	7	2	1
CAMBRIDGE	-	4	-	-	4	-	-
CEDAR CREEK	-	3	16*	19	5	9	3
CALEDON	-	-	-	-	CW	-	-
FISHERVILLE					-	-	6
HAMILTON	-	4	10	5	10	6	13
KETTLE POINT	-	-	-	-	5	-	-

	86	87	88	89	90	91	92
KINGSTON		-	-	-	-	-	1
KLEINBURG			-	-	-	-	CW
LONG POINT	-	5	CW	4	29	12	11
MOSCOW	-	-	-	-	-	1	5
NAPANEE		-	-	-	4	-	8
NIAGARA FALLS ont & ny			-	-	4	32	-
PRINCE EDWARD POINT				12	4	-	2
POINT PELEE	6	2	-	-	11	1*	102
PRESQVILE P.P.		-	-	-	-	-	5
RICHMOND HILL	-	-	-	-	-	1	-
ST. CATHERINE	13	8	6	2	12	12	96
TORONTO		-	-	-	-	-	-
WALLACEBURG			-	-	5	4	-
WOODHOUSE		14	6	-	39	8	31
ST. THOMAS	25	14	18	24	5	NO	COUNT
WESPORT ON.			-	2			
TOTALS	44	60	62	73	144	88	284

* MOUNTAIN BLUEBIRD

CW SEEN COUNT WEEK BUT NOT COUNT DAY

* Cedar Creek 88th count includes one Mountain Bluebird.

YOUNG ORNITHOLOGISTS' WORKSHOP

The Young Ornithologists' Workshop is a major component of Long Point Bird Observatory's educational program. Since its inception in the mid 1970s, it has been an extremely successful undertaking, and has literally been the jumping off point for many of Ontario's present day field biologists.

This week-long workshop provides an opportunity for high school students to enhance their knowledge and skill in the study of birds. Students learn how to identify, age and sex birds, and to study their populations and behaviour. During the week, instruction will be provided on taking field notes, making detailed observations, bird banding, preparing specimens for scientific study, and censusing birds. If weather and lake conditions permit, there will be a field trip to the tip of Long Point. During the course of the week, regular afternoon field trips will also be taken to various local places of biological interest (e.g. Backus Woods, Turkey Point, South Walsingham Sand Ridges, Big Creek Marsh). Evenings too will be busy with slide presentations and nocturnal field work.

Space is limited to 6 participants, ranging in age from 13-17 years old. The cost of the workshop is \$275, which includes accommodation, meals, travel while at Long Point, and instruction. Financial assistance may be available in some cases. Naturalist clubs are encouraged to sponsor a member to attend this intensive and enjoyable week of bird study.

Prospective participants are invited to send a letter outlining their interest in birds, to Jon McCracken c/o LPBO by 1 April 1993. Participants will be selected thereafter based upon these informal applications.

(Editor's Note) The Ontario Bird Banding Association will be sponsoring at least one individual, 13-17 years old. If interested in sponsorship the participant must send to me a letter outlining why he/she would like to take part and a brief history of their interest in birds. Send to Bill Read 165 Green Valley Dr. #2 Kitchener On. N2P 1K3.

CELEBRATE INTERNATIONAL MIGRATORY BIRD DAY

Saturday, May 8, 1993, has been declared the first annual International Migratory Bird Day. Bird watchers throughout the western hemisphere will encourage conservation action for migratory birds with a host of special events--bird walks, bird counts, habitat restoration, educational displays, and more.

Each year millions of birds--more than 330 species--embark on migrations across the Americas, breeding in the north and wintering in the south. Recently, however, scientists have documented drastic declines in some migratory bird populations. Because of the concern for these birds, governments and conservation groups in North and South America joined forces to launch the international program, "Partners in Flight-Aves de Las Americas." Its mission: to develop coordinated plans for migrator bird conservation.

International Migratory Bird Day is the brainchild of the Smithsonian Institution, working in cooperation with Partners in Flight. Bird watchers everywhere--individuals, bird clubs, and other environmental organizations--are invited to join in the celebration by planing their own local events.

Here are some resources to help you plan exciting events for the International Migratory Bird Day in your area:

Migratory bird Handbook. this 172-page workbook is full of ideas for planning and running events. Send \$5.00 to Jamie K. Doyle, Bird Conservation Specialist, Smithsonian Migratory Bird Centre, National Zoological Park, Washington, DC 2008. (202) 673-4908.

Birds Over Troubled Forests. An award-winning, 32 page, full-colour booklet about the natural history and conservation of migratory songbirds. Send \$5.00 to the Smithsonian Migratory Bird Centre, address above.

Partners in Flight newsletter. Keep current with the program's activities. Free. To add your name to the mailing list, write to Peter Stangel, National Fish and Wildlife Foundation, 1120 Connecticut Avenue, Nw, Suite 900, Washington, DC 20036.

Directory of Volunteer Opportunities of Birders. Send \$2.00 to American Birding Association Sales, P.O. Box 6599, Colorado Springs, Co 80934.

1992 NEST BOX SURVEY

I am still collecting nestbox data from 1992. If you have not sent your nest box information in please do so.

Last years (1992) field season brought much lower than average temperatures and above average rainfall which greatly affected reproductive success of both Tree Swallows (TRSW) and Eastern Bluebirds (EABL) (See 1992 Fall Newsletter). Without next box information we cannot document the effects on reproductive success.

If you know of someone with a nest box trail please make sure they have reported their findings to OEBS or send the address to me so I can contact them.

The 1992 nest box survey will be printed in the Fall/93 newsletter. To date 90 nest box surveys have been received.

Survey Year	No. of Nest Box reports	EABL fledged young (Ontario) only
1987	97	4950
1988	156	6352
1989	176	8260
1990	148	7307
1991	134	8138
1992	information still being collected	

BAILLIE BIRDATHON

Sylvia Van Walsum who has been our Baillie Birdathon representative the last two years is getting married this spring, and will be unavailable. Congratulations Sylvia and thanks again for the money you have raised for OEBS. Rick Ryan half of our membership treasury duo has volunteered to be our official Baillie Birdathon representative this year. Pledges will be taken at the AGM on April 3, 1993. If you are not attending the meeting and would like to make a pledge you can send it to OEBS. Income tax receipts are issued for all amounts over \$10.