

Ontario Eastern Bluebird Society
Fall Newsletter
November 1991

165 Green Valley Drive, Unit 2, Kitchener, Ontario N2P 1K3

Welcome to the Fall 1991 Newsletter. Most reports indicate the 1991 nesting season was a successful one. We had warm weather early in May and continuing through the breeding season in almost all parts of Ontario, ideal for Bluebirds.

Sylvia Van Walsum was our official representative in the Ballie Birdathon. Sylvia raised \$124.46 for the OEBS. Thanks again Sylvia for a great job! At present we have over \$600.00 in the treasury. Costs for the Fall newsletter and Nestbox Survey still have to come out of this amount, but we will start receiving 1992 dues after the newsletter is mailed.

On the evening of July 11th, David and Nancy Sternthall of Caledon brought a young male EABL to my home in Kitchener. The young bird was a nestling that did not fledge with the others in its brood and was removed by a friend of theirs, John Jefferson, only after waiting almost half a day to see if the adults would return. This sometimes happens in a large clutch where the last hatched is not quite ready to fledge with the others. It was quite healthy at about 22 days of age and was constantly making Bluebird food calls so the adult Bluebirds could locate it. David and Nancy had been feeding it insects during the time they were keeping it but were quite anxious to see it released so it could carry on a normal Bluebird life. Young Bluebirds are completely dependent on the adults for two to three weeks after fledging and would quickly starve to death if released on their own at this age.

The problem was how and where to release it. They brought with them a supply of grasshoppers which we put in my refrigerator to slow down their metabolism. This made it a lot easier at feeding time (every twenty minutes). Since it was later on in the nesting season, I did not have a lot of Bluebirds still nesting. I thought for a while and then remembered that a pair of E.A.B.L.'s had just fledged three young at the back of the Fisher Apple Orchard near Copetown three days before. They would still be close by. Young birds that fledge fly to the highest part of a nearby tree and stay there for some time while the adults feed them. I drove to the Fisher Apple Orchard the next morning with Ben (nicknamed by David and Nancy) in a small box with perch and hardware cloth over it secured with clothes pegs. As soon as I arrived, adult Bluebirds began making distress calls which indicated their fledged young were in the trees behind me. I put the box down below the trees and hid in my car about 100 feet away to see what would happen. As soon as Ben began his begging calls the adults flew down beside the box. I knew then that I could release him successfully to the care of his soon to be foster parents. I ran back to the box and opened the screen from behind so Ben wouldn't see me, and then went back to hide in the car and observe. No sooner had I left than both adults came back down and perched nearby. A gust of wind came up and blew the box slightly upon which Ben took off and flew to almost the top of one of the large trees. Both adult Bluebirds followed him and perched nearby. Now all Ben has to do is continue his begging food calls. Ben was banded male hatch year 2021 - 79181.

Editor's Note:

It is illegal to keep any native passerine for an extended period of time without a special permit from the Ministry of Natural Resources. Very specialized care is needed to raise EABL young successfully and it is best to let adult Bluebirds do that if at all possible. There are, however, some cases where intervention will save young from sure death. If a situation arises give me a call and I can suggest what the best course of action would be. (Bill Read at (519) 748-4853)

Raccoon Predation on EABL Trails

When I first started making nestboxes some twelve years ago, I felt building a deeper box and providing a raccoon guard (extra thickness of wood over the entrance hole) would be sufficient to keep most nest predators out, especially raccoons. Placement in an open area away from busy fence rows was also important. Now I'm not so sure this is the right approach. My Bluebird trail and the Canadian Wildlife Service trail that I monitor in apple orchards fledged 350 young in 1991. That number would have been over 400 if it had not been for raccoon

predation at some of the boxes. Raccoons have increased dramatically in Ontario and are the Number one problem on nestbox trails.

I am now placing most of my boxes on the tops of 7 foot T-bars and then thoroughly coating them with automobile grease. Next season I may start applying cayenne pepper to the grease. I have yet to have any of my greased boxes climbed. (Any comments concerning the effectiveness of greased poles would be appreciated.) I have also removed boxes which I have not been able to monitor on a regular basis.

Because of the importance of nestbox design and placement, I am reprinting an article by Kevin L. Berner on the subject that was printed in *Sialia*, the quarterly journal of the North American Bluebird Society. Kevin was one of the feature speakers at our 1991 OEBS AGM and is current Research Chairman of the NABS.

Editor's Note:

By far the easiest part in establishing an EABL trail is building the boxes. The difficult part is what to do with them once they are built. Placement of the boxes and proper monitoring techniques are critical to EABL nest success. I recommend building 5-10 boxes and then locating them in proper habitat rather than building 100 and putting them up anywhere. Poorly located, unmonitored nestboxes have a negative effect on the population.

Bluebird Etiquue

1. Bluebird or other next boxes can not be put up on Hydro or telephone poles without the **written permission** of the utility which owns the poles. Some utility companies will give permission to put kestrel boxes on the support poles which do not carry live wires.
2. Permission of the **land owner** must be granted before putting nest boxes on private property, golf courses, cemeteries, parks, etc.
3. Do not put nestboxes up in an area where another bluebirder has already established a bluebird trail. There are plenty of other areas where the boxes can be located.

OEBS Questionnaire

At the 1991 OEBS AGM on April 13, 1991 a questionnaire was distributed to those attending. The questions and a summary of the comments follows:

1. What month of the year would you like to have the AGM?

April was mentioned fifteen times as an acceptable date for the AGM - Oct. 6 x's, Mar. 4 x's, Feb. 2 x's, Jun. 2 x's, Sep. 2 x's, Nov.1, Jan.1 The 1992 OEBS AGM has been set for Saturday, April 4.

2. Would you like a two-day conference with field trips on the Sunday?

This was split down the middle with 11 "no's" and 11 "yes's". A couple of people suggested having a one day conference with a field trip later on in the nesting season. Not a bad idea!

3. What would you like to see at this conference i.e. speakers, workshops, etc.?

Most people approved of the present format of speakers and some workshops in between. Nine respondents wanted speakers only while eight wanted workshops and speakers. One suggestion was to have short slide shows by individual members.

4. Should conference presentations deal exclusively with Eastern Bluebirds or are other Natural History topics acceptable?

Thirteen respondents indicated other Natural History topics were acceptable, another respondent said it was acceptable if it was a two-day conference or if choices were available. These surveys also indicated that the

majority of the presentations should deal with Eastern Bluebirds. Seven people said we should deal with Bluebirds only.

5. We hope to form a Board of Directors to provide new direction and lessen the workload. If you are interested, put your name, address, phone number and area of interest below:

Eight people said they were interested in joining a board of directors. Hopefully, early in the new year we can get it going.

6. Code of Ethics regarding Native Species:

Most of us believe non-native species such as House Sparrows and Starlings should be trapped and humanely destroyed from Bluebird nestboxes. Should other native predators be trapped or is it up to us through proper placement of nestboxes, etc. to prevent this from happening? Many Native Species also need protection. Comments.

Eighteen people said that native predators should not be trapped; that it was up to Bluebirders to prevent predation etc. through proper box placement, raccoon cone guards, etc. Most agreed, however, that non-native House Sparrows and Starlings should be removed and humanely destroyed. Two respondents said that some native animals (raccoons, opossums, and feral cats should be trapped if they become a nuisance. One respondent disagreed with both statements while another stated that live trapping and transfer of House Sparrows, Starlings and other predators might be feasible.

Editor's Note:

Only non-native House Sparrows and Starlings can be legally removed from nest boxes and destroyed.

Your comments on any of the above questions would be appreciated.

Testing a Raccoon's Ability to Raid a Nest Box

Kevin L. Berner, Dale McGettigan and Sherry Krieger

Raccoons (*procyon lotor*) are a common predator of Eastern Bluebirds (*Sialia sialis*) and other cavity nesting birds using nest boxes (Read 1989, Dew *et al.* 1986, Zeleny 1976). Raccoons commonly will climb up to nest boxes and remove eggs, nestlings, or even incubating adult birds. Even when raccoons cannot reach into the box, they may harass incubating or brooding adult birds enough to cause nest abandonment.

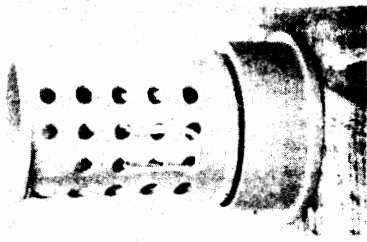
Numerous strategies have been proposed to reduce losses to raccoons. The most common strategy is to place an added thickness of wood over the entry hole to increase the distance that a raccoon or cat would have to reach into

the box. Read (1989) and I have noted that these devices are often inadequate in excluding predators. Fuerst (1988) has proposed that an enlarged roof, 3 in. [7.6 cm] longer than normal on a box, might deter predators. Others have stated that installing a conical metal guard on the mount post or greasing a smooth metal support post would deter raccoons from entering nest boxes (Scriven 1989, Zeleny 1976). Scriven (1989) has also advocated mounting boxes on PVC pipe.

While numerous proposals have been made for techniques to keep raccoons out of nest boxes, few controlled tests have been reported in the literature

concerning the effectiveness of these techniques. People have made various modifications to nest boxes or mounts for nest boxes which subsequently were not raided and consequently have felt that they were successful in creating a raccoon-proof box. In many instances, they may only have been successful because no raccoons attempted to gain access to the box.

My goal for this research was to identify what predator deterrent devices actually were effective against raccoons and to identify inexpensive methods for minimizing losses of cavity nesting birds to raccoons.



A commercial plastic guard known as "Bird Guardian" tested as a raccoon deterrent.

Methods

I borrowed a captive, but not tame, female yearling raccoon from a licensed furbreeder under a special permit from the New York Department of Environmental Conservation. It was housed in an unheated chicken brooder house and fed commercial dog food pellets from two nest boxes mounted approximately 4 ft. [1.2 m] high on poles within the brooder house. The dog food was approximately the size of a bluebird egg and was placed in an artificial grass nest 3 in. [7.6 cm] high. Some supplemental food was also given to insure a nutritionally balanced diet. A wooden box similar to a Wood Duck nest box was mounted on one wall to provide a place in which the raccoon could hide and conserve heat during cold weather. Water was provided in a large plastic tub and changed daily. During extremely cold periods, snow was provided instead of water.

Initial tests lasting different periods of time were conducted to determine the basic capabilities of the raccoon. In most tests once these capabilities were known, 10 night sampling periods were established. Each night either 75 or 100 food pellets were placed in

each of two nest boxes. One box served as a "control" and the second was considered the "test" box. Only one feature was varied between the boxes to insure that differences in feeding rates were due to the box designs or mounts. A variety of box supports and roof sizes were tested. No tests were conducted using greased poles because the raccoon would have had no grass or vegetation with which it could remove grease from its paws and body. I felt that under these conditions it would be inhumane to subject it to this type of test.

Due to the semi-wild nature of the raccoon, it would not feed or even leave its box during the day or whenever anyone was near the building. As a result, all feeding use was documented by counting the number of food pellets removed after each night of feeding. Damage to boxes was noted and repaired daily.

Results

Raccoon Capabilities

The raccoon readily learned to associate the nest boxes in the brooder house with its food. It quickly developed the ability to remove the dog food from the boxes. The raccoon could remove food from the very bottom of a nest box with a standard 3/4 in. [1.9 cm] wooden predator guard, even when no false nest was present. We also noted that a 7/8 in. [2.2 cm] galvanized water pipe was ineffective in keeping the raccoon from the nest boxes. The pipe was relatively smooth and non-rusted, and attached to the box bottoms with a threaded flange.

Tests were conducted early in the study on a commercial plastic predator guard distributed by Audubon Entities and known as the "Bird Guardian". This 3 in. [7.6 cm] guard extended out from the entry hole. During ten nights of tests, the raccoon removed food material from the control box every night, while the box with the plastic guard was never raided. It appears that these guards would provide excellent protection from predation by raccoons and are sufficiently strong to prevent their removal by the raccoon.¹

Extended Roof

During the first of the formal tests all features of the boxes were the same except for the roof size. Both boxes were mounted on 7/8 in. water pipe and were identical, except that the control box had an 8 in. x 8 in. [20.3 x 20.3 cm] roof which overhung the front by 2 in. [5.1 cm] and the test box had a 9 1/4 in. [23.5 cm] wide by 11 in. [27.9 cm] long roof with a 5 in. [12.7 cm] overhang. Neither box was equipped with a predator guard over the entry hole. In the control box, from 95-100% of the test "eggs" were removed over the 10 night period while 0-96% of the pellets were removed from the test box. Removal rates for the test box were far more variable and averaged 63% per night, while the control box lost an average of 97% of the pellets each night. It would appear that the raccoon probably had somewhat more difficulty reaching into the longer roofed nest box, but that its persistent efforts were rewarded. Under these circumstances in the field a

raccoon probably still could raid a box with a similar size roof.

Extended Roof with Wooden Guard

In the second formal test all the box characteristics were the same as in the first test, with the exception of the addition of a 3/4 in. wooden predator guard over the entry holes of both boxes. The combination of these two deterrents further reduced the raccoon's ability to raid the nest boxes. In the control box with a standard 2 in. overhanging roof, the raccoon removed from 48-77% of the pellets, averaging 64% removal each night. In the test box, featuring the enlarged roof with the 5 in. overhang, it removed from 15-90% of the feed, averaging 55% removal.

Box Mount

In the nest test all variables were identical to the previous test except the mount type. In this test, both boxes had 8 in. square roofs with 2 in. overhang and 3/4 in. wooden predator guards. The control box was mounted on a 7/8 in. water pipe, while the test box was mounted on a slick 1 in. [2.5 cm] PVC pipe. The control box on the metal pipe had from 22-66% (average 49%) of the pellets removed during the trial, while the PVC mounted boxes had from 40-85% (average 72%) removed over the 10 night period. More food was removed each night from the box mounted on the PVC pipe than from a box on a metal mount. These results would indicate that an ungreased 1 in. PVC pipe is not effective in reducing raccoon predation.

Box Size

The fourth formal test involved a comparison of a 4 1/2 x 4 1/2 in. [11.3 x 11.3 cm] box with a box having a 5 x 5 in. [12.7 x 12.7 cm] floor. Both boxes were supported by the 7/8 in. water pipe. Similar amounts of food were removed from both boxes on most nights, with the larger boxes being more heavily raided on four nights and the smaller box having more pellets removed on the other four nights. The smaller box had from 26-100% of the pellets removed, while the larger box suffered 26-68% removal. The average number of pellets removed per night was 45% for the smaller box and 47% in the larger box. It did not appear that the larger box significantly increased the difficulty of reaching most of the pellets in the box.

Super-Extended Roof vs PVC Pipe

The fifth test involved increasing the roof overhang from the standard 2 in. to 7 in. [17.8 cm] on a box mounted on 7/8 in. water pipe. The second box had a standard size roof and was mounted on a 3 in. [7.6 cm] PVC pipe. During the first two days of the test the raccoon did not feed from either box. For the next 9 days it removed from 82-98% of food from the shorter roof box mounted on the PVC pipe. In the box with the extremely long overhang, it was unable to remove any food for the first nine nights. On the last two nights it removed 86% and 73% of the pellets. It would appear that the raccoon was highly challenged by this long extension of the roof. It is



A standard nesting box with a 3/4 in. predator guard.

likely that a wild raccoon with a similar challenge would not persist in its efforts to enter this type of nest box, but would seek out alternative food sources. Since the captive raccoon had no alternative food sources, it naturally would put an unusually large effort into learning how to defeat this deterrent.

In the sixth test, both boxes had 13 in. [33 cm] roofs which overhung 7 in. [17.8 cm]; however, the control box had a 7/8 in. metal pipe mount and the test box was mounted on a 1 1/2 in. [3.8 cm] PVC pipe. Due to box damage only four nights of valid results were recorded for the PVC mounted box while 6 nights of data are available on the box on the metal pipe. The average use level was 59 and 57% for the metal pipe- and PVC-mounted boxes, respectively. The PVC pipe did not provide any more protection for the box than the metal pipe did. It was noted that the raccoon had apparently mastered the technique of defeating the greatly extended roof.

Conclusions

These tests illustrate the remarkable level of dexterity and intelligence possessed by the raccoon which aid it in defeating the deterrent devices. These abilities make it difficult to protect cavity nesting birds against its attacks. I feel that these tests give a less biased evaluation of commonly applied deterrents than field tests could yield. In many cases a deterrent feature is tried in the field and no further predation is observed. Without controlled experimentation, it

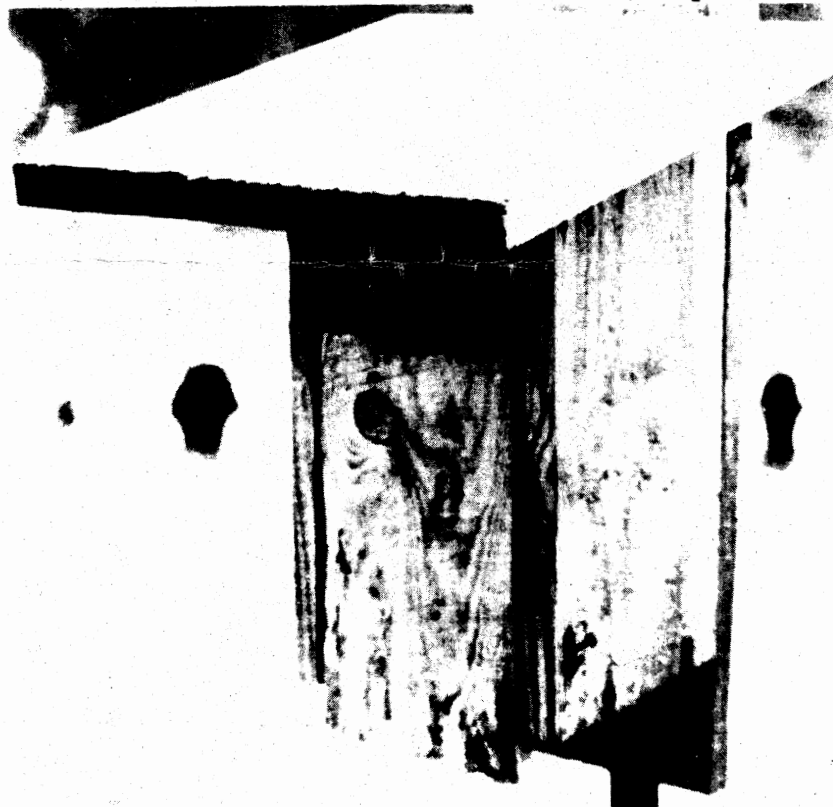
is impossible to know if a deterrent actually was successful, or merely if no predator attempted to enter the nest box after the modifications were made.

My goal was to determine which deterrents would be effective against raccoon predation while remaining relatively cheap to use on extensive nest box trails. Since one of the needs is for inexpensive deterrents, I did not test structures such as costly conical metal baffles or other commercial pole guards. The results of my research challenge the belief of many individuals that PVC or smooth metal pipes serve as adequate deterrent mechanisms, at least when used without grease. The most promising feature that I tested was a long roof extension. This feature completely excluded the raccoon for several days, and probably would be an

effective deterrent against most wild raccoons. My field tests described in other reports of four deterrent features under uniform habitat conditions compared extended-roofed boxes to standard boxes in the field for their acceptance by bluebirds. In those experiments, the test boxes used most by bluebirds featured a 5 in. overhang. Thus it appears that extending the box roofs is acceptable to bluebirds and aids in deterring predation. I would recommend that more individuals test extended-roofed boxes as an inexpensive means of reducing raccoon predation.

Acknowledgements

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Nesting box with an extended roof (5 in. overhang).