



# Ontario Eastern Bluebird Society

## 2017 Fall Newsletter ~ Editor Bill Read

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**The AGM is set for Saturday, March 17, 2018 at the Royal Botanical Gardens in Burlington.**

**Meeting starts at 9.00 am, registration is from 8.30-9.00 am**

**See our website for the program [oebbs.ca](http://oebbs.ca)**

**W**elcome to the 2017 OEBS fall newsletter. As always weather played a major role in nest box success in 2017. Overall bluebirds had good nesting success and Tree Swallows on most trails had excellent breeding success. It did not start out that way. A somewhat mild winter allowed most bluebirds to overwinter successfully. Weather data from the University of Waterloo Weather Station recorded the warmest February in the last 100 years of weather data at 4.4 degrees Celsius above average. For the 5th time since records have been kept the average temperature in March was lower than it was in February. March was also a wet month with 90.2 mm of rain, almost 50% more than normal.

April was also very wet and mild with 124.4 mm of rain and an average temperature of 2.5 degrees above normal. May was 0.6 degrees Celsius below the average but the real story was the rain at 146.2 mm compared to an average of only 82.3 mm. This rain almost always came with some very strong east winds that made it feel cooler and made it difficult for bluebirds and Tree Swallows to find insects. The early part of May was particularly cold and wet combined with strong east or north east winds. Most early nesting bluebirds were able to get through this without too much nestling mortality as their young had just hatched or they were still being brooded. The real crunch came on the 24-25 of May when nestlings were older and required more food and were not being brooded. Almost continuous rain on the 25th combined with cold east winds made it very difficult to find enough insects to satisfy the food requirements of growing young. Adult bluebirds were forced to feed young the only thing they could find—earth worms. Bluebird nestlings can not properly digest earth worms which results in diarrhea rather than the normal fecal sac that can be removed by the adults. The nests become a wet soiled mess which eventually gets all over their feet and feathers. Inexperienced bluebirders attributed the wetness to water somehow getting into the nest box but this is not the case. I had one nestling that was so caked with this mess on his feet and wings it could not get a grip to get out of the nest box. I had to wash off its feet and feathers. Most bluebird nestling mortality occurred during these two days. Boxes that had ventilation holes that al-

lowed the wind and rain to enter would have quickly killed the nestlings. Young that had recently just fledged would have also had a difficult time surviving as they would still require the adults to feed them. Most failed pairs quickly re-nested and were able to raise at least one brood. Despite these early losses bluebirds made up for it with somewhat larger clutches and excellent fledging success in June, July and August. Warm dry weather made it ideal for both bluebirds and Tree Swallows during this period. We will have a better idea of overall nest box success when more nest box reports are received and those will be included in the spring 2018 newsletter.

Tree Swallows had excellent nesting success on most nest box trails. Unlike last year there were very few reports of dead Tree Swallow nestlings in nest boxes.

## The 2017 Report on Prothonotary Warbler nests in Southern Ontario-Don Wills.

2017 was my 20th year setting up nest boxes for this Warbler. Overall there were 7 successful Prothonotary Warbler nests in two different locations fledging a total of 36 young. This is a new record for fledged young. The Prothonotary Warbler is listed as endangered in Canada with probably no more than 15 known pairs. All of the pairs are found in southern Ontario. Locations have included Point Pelee, Point Pelee Island, Holiday Beach, Rondeau Provincial Park,



*Prothonotary warbler*  
Carla Chippendale

## Prothonotary Warbler Young ~ *Bill Read*



3 day old young



7 day old Prothonotary Warbler Young.



10 day old

Backus and the Hahn Marsh near Port Rowan.

One nest in 2017 was located in a large swamp forest north west of Burford in Brant County where for the last two years young have fledged from my log boxes. This location came to my attention when birders saw a male Prothonotary Warbler flying across the road from one swampy area to another in June 2015. I talked to the tobacco farmers who own the land about permission to set up nest boxes on their property. They both welcomed and supported the project. These landowners are very protective of their property keeping any trespassers out of the slough areas. In 2016 one of the nest boxes produced 5 young. In 2017 a pair (probably the same pair) produced 6 beautiful young. I have added more boxes to this 15 acre wetland in the hope that more pairs will nest here. No second broods occurred in 2017 in this location even though a nest box contained a finished nest which this male was also guarding. To my knowledge these nests are the only monitored nests ever found in Brant County and are some 60 miles from the next nearest colony near Port Rowan.

The other 6 nests of Prothonotary Warblers fledged from a large woodlot north of Port Rowan that contains a number of fresh water sloughs. The nest boxes are located in the sloughs and are monitored on a regular basis throughout the breeding season. During the fall and winter plastic bags are placed over the nest boxes to prevent Northern flying Squirrels from occupying the nest boxes. The bags are removed just before the warblers return. The Garfield Weston family have been instrumental at protecting this woodlot and others adjacent to it by buying up properties near by and then handing control of them over to the Nature Conservancy so they can be preserved in their natural state for future generations to enjoy. Mary Gartshore and Peter Carson have supplied their considerable expertise to the Garfield Weston purchases by ensuring only native species are replanted and large woodlots are left alone.

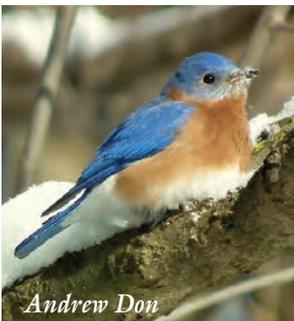
I have had nest boxes in these sloughs for the last 20 years and during the last five years have produced more prothonotary young than in the previous 15. This year I asked Bill Read if he would accompany me through the sloughs so we

could take pictures of the prothonotary young at various stages of their development. These pictures were taken by cell phone and are included in this article. I carried a stepladder and both of us were wearing chest waders which are necessary to get through the sloughs. The nests had been checked the day before to make sure all was well and that the young were at the right ages to photograph. I set up the ladder and when Bill was in position above the nest I opened the lid to allow pictures to be taken. This only required 2-3 minutes at each nest box and none of the young were removed or touched. After we left the adults quickly resumed their normal feeding behaviour. When I returned 4 days later the 10 day old young had fledged and the other two were progressing normally. Prothonotary young leave the nest between 11-13 days and are fed by the adults for some time. The photos turned out really well and I know of no others that were taken in this safe manner. A week after the photo shoot I watched another nest box from a safe distance in the south end of a button bush swamp. The adult was perched on the front looking in at the babies. The next thing I saw was the two adults fluttering above the box as a fledgling emerged. They carefully guided it to a large log lying in the water close to the nest box. The adults brought all the young out in order. Watching from a distance with binoculars revealed this rare fledging event. Getting 5 young birds to safety must be a stressful time for the adults. After one day the young are strong enough to fly to the tree canopy and their yellow green colour blends in perfectly. In summary 39 eggs were laid, 36 young hatched and 36 fledged. No second broods were recorded even though 4 nest boxes had added nest box material. Overall my most successful season. Next year can't come soon enough.

**Edited by Bill Read**

## What we do with our membership fees and donations.

The Ontario Eastern Bluebird Society mandate is to increase managed nest box trails in Ontario, give expertise or guidance to new trail operators, and monitor population trends from year to year by surveying the number of fledged young from nest boxes. This is done with our annual survey. The membership fees go towards operating the society and paying for the newsletter. The newsletter is the most expensive part of our operation. Our executive have debated the cost and all executive are in favour of maintaining the same quality publication. We have also agreed to leave the membership fees at \$10 single and \$15 for a family. We will be increasing the AGM entrance fee to \$10 from \$5. It has remained at \$5 for the last 28 years so we felt it was time to in-



*Andrew Don*



**Bluebird with Grasshopper near Long Lac, ON.**

*Gary Elms*

crease it. That will include coffee and donuts which cost around \$100 to supply for the meeting. Because of the support of our members through memberships, donations, birddathon and bequests we are at present in a favourable financial position. Our financial report can be viewed on our website. Our executive have decided to use some of this money to fund other projects that will help cavity nesting birds. Last year we agreed to donate \$1000 yearly to the Bailie fund that can be used for any ongoing or proposed study on cavity nesting birds. This year the money was used to fund a Western Bluebird re-introduction program on Vancouver Island. We also gave \$1000 to Bird Studies Canada to be directed towards the refurbishing of the nest boxes at the three Tree Swallow grids at Long Point, Port Rowan and Mud Creek. The money was to be used for the purchase of hardware to enhance predator protection.

Getting younger people involved in organizations involving the natural environment is presently one of the biggest challenges facing most organizations. There are fewer youth today and with increasing urbanization many young people from all cultural backgrounds lack initiation in natural history appreciation. To this end our executive have agreed to give \$250 to help fund the Ontario Field Ornithologists young birders weekend and \$250 to help fund Ontario Nature's young naturalists weekend camp. We will also be funding a study using radio transmitters to study migration patterns with post breeding Eastern Bluebirds. The bluebird society will pay for approximately 10 nano tags. The cost will be around \$2200.

## Environmental Stewardship Awards

Louis Kociuk of Port Rowan received one of our 2017 Environmental Stewardship awards. Louis' promotion of Purple Martin nest boxes and gourds and his mentor-ship of Purple Martin landlords has led to a substantial increase in their population in the Long Point and Port Rowan areas. For a picture of the award presentation go to our face book site.

## Nest Box Survey

The nest box survey reporting form is included with this newsletter. We are particularly interested in your Tree Swallow reproductive success.

## Great Canadian Birdathon

Our birdathon representative in 2018 will again be Sylvia Van Walsum. In 2017 Sylvia raised \$960, 25% of this or \$240 goes back to the bluebird society. Thanks again Sylvia. She is a member of the Halton Bluebird Club that maintain nest boxes in Bronte Provincial Park. Halton had a record 56 bluebirds fledged in 2017.

## How Does Clutch Size Impact Bluebird Parents?

The authors of this study (which is part of a larger, long term study of Eastern Bluebird breeding) wanted to find out how clutch size affected these factors.

- The likelihood and timing of a second clutch.
- The size of a second clutch, and its hatching and fledging success.
- The survival of the parents to the following year.
- Plumage colouration of the female in the following year.

The authors manipulated clutch sizes in 44 nest boxes by moving two day old nestlings around-they moved two nestlings from half the nests and added them to the other half. This resulted in an average of 2.2 chicks in half the nests and 5.6 chicks in the other half. Because the parents were all marked with unique combinations of coloured leg bands, the authors were able to keep track of each bird and its subsequent nesting attempts.

### What the authors found was this:

- Parents that had raised an artificially large clutch were less likely to raise a second clutch; when they did produce a second clutch, it was initiated later than the second clutches of birds that had small first clutches. This could be a result of the extra time needed to care for the large number of fledglings, or the extra energy needed to raise the large family.

- The size of the first clutch had no effect on the size of the second clutch or its hatching or fledging success.
- Females that raised an enlarged brood were less likely to survive to the following year than females with a normal-sized brood. Also, the females that raised large clutches were less likely than the males to survive to the following year.
- Clutch size had no effect on the colouration of females. Ie Females that had raised large clutches were just as colourful the following year as the females that had raised smaller clutches. This contrasts with the authors previous research, which showed that males are less colourful in the year following the raising of a large clutch.

Overall, it appears that male and female bluebirds have different "investment strategies" when it comes to breeding, with females investing more in the care of young (hence the females lower survival rate after raising a large brood) while males invest more in the things that allow them to attract and compete for a female (specifically their colouration). In essence the females worked harder to raise the large brood, while the males saved their energy for mating with other females.

L.Siefferman and G.E.Hill. 2008. Sex-specific costs of reproduction in Eastern Bluebirds *Sialia sialis*. *Ibis* 150:32-39. Article from the *Bluebird* Summer 2009 Vol 31 No 3.

### Editor's Note – Bill Read

It is sometimes difficult to understand why some bluebird pairs have second clutches and some don't, especially when there is plenty of time to do so and they don't. It does make sense as the authors have found that when a pair has a large successful first brood they are less likely to have a second. If they proceed to quickly with a second clutch it may jeopardize negatively the success of the first brood fledglings. The parents have put a lot of energy into raising that first brood and want to make sure as many survive as possible. Doing this doesn't always allow time for that second brood. I analyzed 6 years of my own bluebird reproductive success to look at clutch size in first and second nests. **Any eggs laid after June 1 are considered second broods, those before June 1 first broods.** Do bluebirds lay more eggs in second clutches as a result of initial nest failure



Male bluebird

~ Nancy Barrett



*Bill Read*

**Ideal Nest Box Location both successful, 2 broods of Eastern Bluebird and one of Tree Swallows. Nest holes are not facing each other and are about 6 feet apart. Poles are greased. They are placed in a position which does not interfere with the farming or the grass cutting along the road.**

caused by environmental factors like weather or predation? The only predation I experienced during the six years was due to House Sparrows which are dealt with immediately. The chart below shows the average number of eggs per nest for first (F) and second (S) broods for the years 2012-2017 on my bluebird trail. The chart also shows total fledged young and the percentage of eggs that turned into fledged bluebirds.

YEAR	Total Eggs	Total Nests	Eggs/Nest	Total Fledged	% Egg/Fledge
2012 F	306	65	4.71	375	68.81
2012 S	239	55	4.35		
2013 F	221	45	4.91	277	68.40
2013 S	184	46	4.00		
2014 F	123	27	4.56	182	63.64
2014 S	163	39	4.18		
2015 F	160	33	4.85	216	71.76
2015 S	141	31	4.54		
2016 F	260	54	4.81	338	69.26
2016 S	228	52	4.38		
2017 F	303	62	4.89	369	69.89
2017 S	225	49	4.59		

**Discussion** I examined weather events during first nests from 2012-2017 based on summaries of reproductive success as written in the fall Ontario Eastern Bluebird Society newsletters of those years. Each year I analyze the effects of weather events during first broods on reproductive success. This is based on weather data from the University of Waterloo Weather station affiliated with Environment Canada. Early

nestling mortality caused by weather was minimal during most of those years except in 2017. (See OEBS fall newsletters on our website for weather summaries). Most of this nestling mortality occurred during May 24-25 when we experienced heavy rain combined with bitter east winds. It resulted in heavier than usual nestling mortality. Bluebirds that lost their young re-nested very quickly. The eggs per nest on both first and second broods were well above average in 2017 (see above chart). A total of 15 six egg clutches were recorded, 11 on first broods and 4 on second broods in 2017. The next highest total of six egg clutches during the six years was 6 in 2012 and 7 in 2013. Two of our coldest winters ever occurred in 2013-14 and 2014-15. This is reflected in the lower egg totals (fewer returning pairs), for both these years. The first brood egg totals for these years were well below the other years and in 2014 there were more second brood eggs (163) than first brood (123). This indicates very poor over winter survival. This was also reflected in the lower numbers of recaptures of previously banded adult Eastern Bluebirds (45 in 2014 and 55 in 2015). (see chart below) This bitterly cold weather stretched well into the central United States. Numbers increased on second broods as immigration from other areas filled in the gaps. Bluebird numbers can decrease quickly but can also increase quickly as evidenced by results from 2016 and 2017. Weather has always been the determining factor affecting both over wintering and reproductive success. Weather also affects Tree Swallows, with an abnormally dry spring in 2016 water sources dried up resulting in very few water born insects during the critical nestling feeding stage. This resulted in very high numbers of dead nestling Tree Swallows in boxes in 2016. With the very wet spring of 2017 and much greater insect abundance almost no dead Tree Swallow nestlings were found in nest boxes and reproductive success was very high.

**Recaptures of Previously Banded Adult Eastern Bluebirds on my bluebird trail – Bill Read**

2012	2013	2014	2015	2016	2017
131	91	45	55	61	90



**Carden Alvar Male Bluebird ~ Paul Reeves**

## Calculating fledged young from bluebird nests

*Bill Read*

There are different ways of calculating the number of fledged young from bluebird nests. I visit my nests on a regular basis and in most cases know the exact number of eggs and young that have fledged. (see above)

In cases where you know it was a successful nest but do not know the exact number of young that fledged it can be calculated based on using a figure of 70% X # of eggs per nest. The average number of eggs that turn into fledged young is around 70% in most years. For **first nests** in 2017 using the above table there were **4.89** eggs per nest, multiplied by 0.7 (70%) = 3.42 fledged young. So 3.4 young could be used as an estimate for successful first nests where the number is not known. For **second nests** in 2017 there were **4.59** eggs per nest X 0.7 (70%) = 3.21 fledged young. So for second broods that were successful and the exact number of young or eggs are not know use 3.2 fledged young per nest. These numbers would change from year to year depending on the success rate and number of eggs laid per nest.

## Eastern Bluebird Clutch Sizes First and Second Nests 2012-2017

	NUMBER OF EGGS PER NEST – 2012-2017					
	1	2	3	4	5	6
2012 F	1	2	0	16	41	5
2012 S	1	1	4	22	26	1
2013 F	0	0	1	9	28	7
2013 S	0	3	7	23	13	0
2014 F	0	0	2	9	15	1
2014 S	0	2	4	19	13	1
2015 F	0	0	0	7	24	2
2015 S	0	0	3	9	18	1
2016 F	0	0	0	13	38	3
2016 S	0	0	4	24	24	0
2017 F	1	1	0	11	38	11
2017 S	1	1	1	15	27	4



Female bluebird feeding young

*Patty Gale*