

# Ontario Eastern Bluebird Society Nestbox Survey - 1992

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Since 1987, the Ontario Eastern Bluebird Society (OEBS) has conducted a survey of the results from nestbox trails operated throughout Ontario. Results from these annual surveys have been published in the OEBS Newsletter and in Ontario Bird Banding. This report summarizes the data obtained from the 1992 survey.

## Methods

A survey form was distributed to all known operators of EABL nestbox trails in Ontario. The forms requested standard information regarding the operation and nesting success of the nestboxes. The data reported was incorporated directly into the attached summary table (Table 1) which is arranged on a county basis.

Because not every form was complete, it was necessary to make some estimates for the missing data based on the information that was supplied. For example, if a respondent indicated six successful nestings, but made no estimate of total fledged young, an estimate of (4 x 6) or 24 fledged young was used. On the other hand, no estimates were made for egg totals. This is why the egg total reported is lower than the EABL fledged total. The egg total would probably be around 10,000 if all trail operators had counted and recorded on their survey sheets the eggs laid.

## Results

One hundred and thirty-three reports were received in 1992, a decrease of one over 1991. The number of monitored nestboxes declined to 7605 from the 1991 total of 8704.

The 1992 Nestbox Survey represents a total of 1381 EABL pairs in Ontario. If EABL pair information was not recorded on survey forms, the figure was estimated using an average of 4.8 young per EABL pair per nesting season. This value has been found typical in earlier studies of EABL's.<sup>1</sup> In calculating the number of pairs of EABL's, the number of fledged young reported is divided by a factor of 4.8 to establish the estimate of EABL pairs. Because of lower reproductive success in 1992, the figure of 4.8 young per pair is an over estimate.

In order to arrive at a figure that more accurately represents EABL breeding success in 1992, I examined the 69 surveys that recorded both numbers of EABL pairs and fledged young. A total of 801 EABL pairs fledged 3121 young or 3.9 young per pair in 1992. This figure is much lower than the average estimated value of 4.8 and more accurately represents overall breeding success in 1992.

Table 2 indicates that many EABL pairs only had single nestings in 1992 as compared with other years or, at least, much lower numbers that were attributable to cold weather.

Year	Boxes Successful	Successful Nestings	Nestings/Successful Box
1991	1114	1956	1.76
1992	1101	1574	1.43

Cold weather during the 1992 nesting season greatly affected EABL and Tree Swallow reproductive success. The monthly average temperatures were lower than normal for all months except May. Although the mean monthly temperature in May of 12° C was the norm, we did experience some very cold weather towards the end of the month while the first broods of EABL's were fledging. Daytime highs from the 24th to the 27th of May were 11-14° C and, on May 25th, the temperature reached a low of 1° C. Greater than usual EABL mortality occurred during this period. Second broods frequently produced more young than first broods in 1992. (The opposite is usually the case.)

<sup>1</sup> Unpublished report, W. F. Read

The record cold front that moved through the province on June 20-21, 1992 caused heavy Tree Swallow mortality. The daytime high temperatures of 9°C on June 20th and 21st were record low maximums. The low temperature on both days was 5°C. It warmed up on the 22nd to 18°C and on the 23rd to 19°C but stayed very cool at night with 3°C on the 22nd and 2°C on the 23rd. Dr. David Hessel, a research scientist who manages three Tree Swallow grids for the Long Point Bird Observatory, recorded 60-70% Tree Swallow nestling mortality at two of the mainland sites. David states that mortality of nestlings on this scale has not occurred previously in 15 years of study at Long Point. David Lambie, who maintains a trail of 522 boxes near Guelph, Ontario, lost 797 Tree Swallow nestlings almost all due to the cold snap of June 20-21.

Eastern Bluebirds were not affected to the same extent as Tree Swallows because they were re-nesting or were incubating eggs on June 20-21. Young just before fledging are the most vulnerable because of high food requirements. Never the less, some mortality did occur. This mortality combined with earlier mortality in late May resulted in much lower than usual reproductive success in 1992. Fledged EABL's per nestbox decreased to 0.76 from 0.79 in 1991.

The total fledged young in 1992 was down to 5770 from 8138 in 1991. This reduction can be explained by the lower than usual reproductive success in 1992 because of the unseasonably cold weather during the nesting season and lack of reports submitted to the EABL Society. The Pembroke Field Naturalists Club (32 fledged young in 1991) and the McNamara Field Naturalists of Renfrew County (226 fledged young in 1991) did not send in reports for 1992. The Grey County Lorne Smith Cooperative effort reported 1978 fledged young in 1991 but only reported 129 successful EABL nestings of 439 fledged young in 1992. In discussions with Lorne Smith, he indicated that some participants in the co-operative effort did not submit their reports for 1992. Combined reductions in numbers from these clubs from 1991 to 1992 amount to 2092 birds. If the unreported fledging rate had been maintained at 1991 levels, the total for the province would have been 7862 instead of 5770.

Four hundred and ninety-one EABL's were reported banded during the 1991 season with almost three times that number of tree swallows (1239).

Occupation (number of nestings only - not fledged young) of nestboxes by the usual other bird species occurred with 357 House Wrens, 1485 Tree Swallows, 31 Black-capped Chickadees and 67 House Sparrows. The reduction in Tree Swallow nesting may be attributed to reporting of successful nestings only rather than total attempted nestings (including failed nests) and by lack of reporting mentioned above.

Fifty-eight out of eighty-eight (65.9%) responses said weather was the most important (or number 1) presumed cause of lost eggs or nestlings in 1992. Raccoons were ranked second with 12 out of 88 responses citing these as the primary cause of unsuccessful nesting. House Wrens, Blow Flies and House Sparrows were identified as the main problem on three responses each. Pesticides, humans and squirrels were listed twice each. Tree Swallows, stray cats and a lack of food were each noted once.

**Table 3** Summary of the number one presumed cause of lost eggs or nestlings as recorded on 88 1992 Surveys

Cause	No. Occurrences	%
Weather	58	65.9
Raccoons	12	13.6
House Sparrows	3	3.4
House Wrens	3	3.4
Blowflies	3	3.4
Pesticides/Herbicides	2	2.3
Humans`	2	2.3
Squirrels	2	2.3
Tree Swallows	1	1.1
Stray Cats	1	1.1
Lack of Food	1	1.1
<b>TOTAL</b>	<b>88</b>	<b>99.9 %</b>

The number of times a presumed cause was mentioned on a survey is summarized below in Table 4.

<b>Cause</b>	<b>No. Occurrences</b>	<b>Cause</b>	<b>No. Occurrences</b>
Weather	78	Ants	3
Raccoons	34	Weasel	2
House Sparrows	26	Kestrel	2
House Wrens	25	Blue Jay	1
Blowflies	23	Starling	1
Humans	16	Hawks	1
Squirrels	16	Lack of food	1
Pesticides	13	Chipmunk	1
Tree Swallows	8	Crow	1
Snakes	6	Mice	1
Stray Cats	3		

**Acknowledgements:**

We would like to thank the following people or groups for their contributions. Without their help, this summary would not have been possible. There are 133 names listed but this does not consider family teams or naturalist groups whose members were not individually identified.

Algoma	John Ashdown	Niagara	Henry Baur, George Krupa
Brant	Peter Romyn, Donald Wills		Ivor McCarthy
Bruce	M. J. Doll, Merv Duke	Nipissing	Ted Price
	Frank M. Garrett	Northumberland	R. Martin Bird, Hazel Bird
	Wm. A. Henderson, Peter Lever		Elwood M. Jones
	Dennis & Gwen Lewington		Marie & Heinz Ott
	Doug Martin	Ottawa-Carleton	Patricia J. Narraway
	Lorne Smith Co-operative		Ottawa Duck Club
Dufferin	Effort, George Culbert		William Petrie
	Charles F. Burbank		Colleen Ringleberg
	David T. Hampton		Jim Saur, Michael Shaw
	Lorne Smith Co-operative		Gerald Tanner
Durham	Effort, Leo Smith	Oxford	Douglas Harrison, Daniel Entz
Essex	Grace & Graham Terhune		J. W. Lambe
	James Baur, Gerry Waldron	Parry Sound	Ray Hughes, Tom Johnson
	Shirley Almond	Peel	Curt Nicholls, Phyllis Graydon
	Essex. County Field Naturalists	Peterborough	Garnet Graham, Don Porter
Elgin	Joe Hurst, Rhonda McNaughton		Gray Harrod, Glen McMullen
Grey	David & Sharon Taylor	Perth	Jack
	Gordon Erb	Prescott & Russell	Clayton T. Keith
	Grey-Sauble Conservation	Prince Edward County	K. M. Mills
	Authority, Stuart Hill	Simcoe	Donna Paul, James Forrest
	David & Jill Livingston		Bill Downing, Dorothy Farrell
	Ernie Nicholls		Ray Kiff, Sandy Agnew
	Lorne Smith Co-operative		Gord Luker, R. W. Adams
	Effort, Robert Young	Stormont, Dundas &	Jim Cameron
Haldimand-Norfolk	Kenneth S. Crabtree	Glengary	
	Louis H. Kociuk	Temiskaming	Lloyd Taman
	Lorraine Pierias	Thunder Bay	Lyn Aldrich
	Alan Robinson, Roy J. Smith	Victoria	Simon C. Connell
	Wilfred H. Martin		Don Parkes & Herb Furniss
Halton	Michael M. West, Bill Tindale		David D. Calvert, Dana Burrage
Hamilton-Wentworth	Glen Barrett, George Coker	Waterloo	M. Ross
	Michael Doyle, Andrew Ferez		Phares Bauman
	Harvey Hewick		Mark Denomme, Bill Read
	Lynda Davidson, Craig Peters		Read C. W. S., Norm Shantz
	John E. Smith		Wayne & Linda Buck
	Wm. Vandermark		James Reinhart
Hastings	John & Janet Foster		Amos S. Burkhart
	Donald E. Presant		Ivan W. Martin, Harvey Martin
Huron	Huron Fringe Naturalists		Enos Beringer, Cleon Martin
	Tom Hunt, Thomas Lobb		Bradley Martin
Kenora	Jean Capor		Melvin Gingrich
	Mrs. Mervin Pollard	Wellington	David R. Lamble
Lambton	Tom Chatterton, Don A. Smith	York	Margaret & Art Rusnell
Lanark	Ian & Elinor McRae		Jack Rothfels
	Carson Thompson Rideau Valley		Lloyd G. Watson, James Shore
	Conservation Authority		
Leeds-Grenville	Annette Mess, John Nelson		
	Wright Smith		
Lincoln	Donald Cryderman, H. A. Zuzek		
Manitoulin	Ruth Nicholson		
	Lorne Smith Co-operative		
	Effort, Mr. George Third		
Middlesex	Eleanor Davies, Don Gutuski		
	Francis H. Pulham		
Muskoka	J. Robert Burton		
	Muskoka Field Naturalists Co-op Effort		

Table 1. Summary of responses for Eastern Bluebird nestbox questionnaire for Ontario - 1992

County	Survey	Boxes Monitored	Boxes on Trail	Boxes Used Successfully	Nesting Successful	Young Fledged	Unsuccessful Nestings	Eggs: Blue	White	Nesting Natural Cavities	EABL Pairs Represented	House Wren	Tree Swallow	Black-capped Chickadee	House Sparrow	Banded EABL	Banded TRSW
Algoma	1	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brant	2	45	47	10	15	63	3	57	0	0	11	9	14	0	0	0	0
Bruce	9	1086	1091	178	245	731	51	817	30	1	190	48	168	0	7	0	0
Dufferin	4	555	555	6	95	327	0	8	0	0	67	1	21	0	4	0	0
Durham	1	28	28	1	1	5	0	5	0	0	1	1	0	0	4	0	0
Elgin	2	92	92	18	24	100	0	0	0	0	21	3	0	1	4	69	0
Essex	4	265	265	30	43	171	3	180	0	2	30	47	85	0	0	0	0
Grey	8	455	1640	12	141	479	4	45	0	1	104	91	144	4	4	0	0
Haldimand-Norfolk	6	257	283	67	77	322	21	346	0	0	70	8	20	5	0	0	0
Halton	2	13	13	1	1	3	0	0	0	0	1	7	1	0	0	0	0
Hamilton-Wentworth	8	286	286	5	7	152	3	187	0	0	50	8	59	0	0	0	0
Hastings	2	61	61	7	7	32	9	62	0	0	14	7	49	0	0	0	0
Huron	3	509	513	147	140	477	13	33	0	0	113	3	8	0	6	0	0
Kenora	2	8	8	1	1	3	1	0	0	0	1	0	3	0	1	0	0
Lambton	2	336	336	37	49	137	43	331	3	0	61	0	9	0	0	0	0
Lanark	2	76	110	30	40	143	21	222	0	0	30	5	13	0	0	0	0
Leeds-Grenville	3	111	111	19	24	78	7	99	0	2	23	16	28	0	6	0	0
Lincoln	2	115	100	40	49	200	14	258	4	1	34	20	14	1	0	0	0
Manitoulin	3	24	24	6	13	49	4	45	0	3	12	0	7	0	0	0	0
Middlesex	3	35	35	6	7	26	0	14	0	0	6	6	12	0	5	0	0
Muskoka	1	44	200	25	30	110	25				30				2		
Niagara	3	11	11	3	5	14	1	20	0	1	3	0	4	0	0	0	0
Nipissing	1		39	3	3	10					3						
Northumberland	4	389	465	31	86	300	66	366	0	0	79	13	28	0	0	0	0
Ontario	7	328	451	68	80	307	37	450	0	2	68	23	148	1	2	83	341
Ontario-Carleton	3	145	284	33	31	128	14	184	1	1	37	2	17	2	7	0	0
Oxford	3	42	42	12	12	45	3	57			14	6	16				
Parry Sound	2	11	11	2	2	8	1				2		2				
Peel	1	10	10										3				
Perth	1	166	166	32	41	162	16	67	0	0	36	1	29	0	2	0	0
Peterborough	4	8	8				4	4			4		4				
Prescott-Russell	1	2	2	2	2	7	1	9			54	9	22	0	0	0	0
Prince Edward	8	201	201	48	62	236	35	250	8	4	3		29	1			
Simcoe	1	44	44		4	16					3		70				
Stormont	1	310	310	21	21	82	16	141			30		3		1		
Thunder Bay	1	24	24														
Thunderstorm	1	174	187	46	54	224	30	396	10	0	44	4	47	0	4	0	0
Victoria	5	556	577	114	116	431	39	674	14	1	94	12	199	1	4	294	4
Waterloo	14	487	522	8	11	37	3	57			8	2	129	3		45	894
Wellington	1	289	319	32	35	155	3	187	6	0	33	5	80	12	8	0	0
York	3	7605	9478	1101	1574	5770	491	5571	76	19	1381	357	1485	31	67	491	1239
TOTALS	133	7605	9478	1101	1574	5770	491	5571	76	19	1381	357	1485	31	67	491	1239