

Ontario Eastern Bluebird Society Nestbox Survey - 1994

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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 1994 survey.

Methods

A survey form was distributed to all known operators of EABL nestbox trails in Ontario and to all members of the Ontario Eastern Bluebird Society. 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 5) 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 (3.5 x 6) or 21 fledged young was used. On the other hand, no estimates were made for the other categories if they were not reported on the survey.

Results

One hundred and two reports were received in 1994, a decrease of 17 over 1993. The number of monitored nestboxes declined to 4999 from the 1993 total of 6561 (TABLE 2).

The 1994 Nestbox Survey represents a total of 889 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.¹ 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. This calculation is made only if the respondent did not include the number of EABL pairs. Because of lower reproductive success in 1994, 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 1994, I examined the 55 surveys that recorded both numbers of EABL pairs and fledged young. A total of 516 EABL pairs fledged 1944 young or 3.77 young per pair in 1994. This figure is much lower than the average estimated value of 4.8 and more accurately represents overall breeding success in 1994.

Four hundred and thirteen EABL's and one thousand and forty-four tree swallows were reported banded during the 1994 season. Banding was carried out by David Lambie, Bill Read and Bob Hubert.

Occupation (number of nestings only - not fledged young) of nestboxes by the usual other bird species occurred with 319 House Wrens, 1610 Tree Swallows, 10 Black-capped Chickadees and 17 House Sparrows.

¹ Unpublished report, W. F. Read

Year	Attempted Nestings	Successful	Unsuccessful	%
1988	2112	1608	504	23.86
1989	2321	1985	336	14.48
1990	2548	1977	571	22.41
1991	2393	1956	437	18.26
1992	2065	1574	491	23.77
1993	1140	805	335	29.28
1994	1107	864	243	21.95

Year	Boxes Monitored	Number of Surveys	Fledged Young	EABL's Fledged Per Monitored Nestbox
1987	7503	101	4910	0.65
1988	8809	153	6352	0.72
1989	11426	175	8260	.72
1990	9209	148	7307	.79
1991	8784	134	8138	.93
1992	7605	133	5770	.76
1993	6561	119	3677	.56
1994	4999	102	3681	.74

OEBS Nestbox Surveys 1987-1994

Special thanks are extended to Art Rusnell, who compiled a computer report of all Nestbox Surveys from 1987-1993. He has also listed all participants in the OEBS Nestbox Survey from 1987-1994 by county, name and years of participation. A total of 314 different individuals or groups have sent in surveys over that period. Of the 101 original participants in the first survey in 1987² only 24 were still actively sending in surveys in 1994. In order to document nesting success in Ontario we need as many surveys as possible. Even if trails (1 box to 1000 or more) are unsuccessful we still need that information. TABLE 4 below shows the number of participants by county from 1987-1994. In order to be listed an individual or group must have sent in at least one survey over that period. Example: in Algoma district John Ashdown has sent in his survey faithfully from 1987-1994. He would be listed as 1 participant in Algoma District.

² Bluebird Nest-Box Trails in Ontario and Their Usefulness for Bio-effects Monitoring of Agricultural Chemicals Technical Report Series No 202, Ontario Region 1994. Canadian Wildlife Service, Martin K. McNicholl, William F. Read, D.V. (Chip) Weseloh

TABLE 3 Summary of the number one presumed cause of lost eggs or nestlings as recorded on 58 1994 Surveys

Cause	No. Occurrences	%
Weather	27	46.6
Raccoons	12	20.7
House Sparrows	7	12.1
Tree Swallows	3	5.2
House Wrens	2	3.4
Humans	1	1.7
Pesticides/Herbicides	1	1.7
Weasels	1	1.7
Mites	1	1.7
Snakes	1	1.7
Squirrels	1	1.7
Blowflies	1	1.7
TOTAL	58	99.9%

TABLE 4 Number of Participants by County or District 1987-1994

Algoma	2	Huron	8	Perth	6
Brant	4	Kenora	6	Peterborough	8
Bruce	12	Lambton	4	Prescott Russell	1
Cochrane	3	Lanark	8	Prince Edward	2
Dufferin	11	Lincoln	4	Renfrew	6
Durham	5	Manitoulin	7	Simcoe	18
Elgin	7	Middlesex	6	Thunder Bay	5
Essex	8	Muskoka	4	Timiskaming	1
Frontenac	4	Niagara	7	Victoria	7
Leeds Grenville	4	Nipissing	1	Waterloo	19
Grey	22	Northumberland	8	Wellington	5
Haldimand Norfolk	18	Ottawa Carleton	18	York	8
Halton	7	Oxford	11		314
Hamilton-Wentworth	17	Parry Sound	2		
Hastings	5	Peel	5		

Summary

Although reproductive success was closer to normal in 1994 extremely cold winter weather starting December 21, 1993 and lasting into early March 1994 greatly affected the number of pairs of EABLs returning to nest in 1994.³

Weather is a major factor affecting the number of EABLs that are able to overwinter successfully and return to breed the following year. The winter of 1993-94 was much colder than normal with all months except December below the normal mean (TABLE 5).

³ See OEBS 1994 Spring Newsletter.

TABLE 5	Mean Temperature	
	Actual °C	Normal °C
September 1993	12.4	14.3
October 1993	6.9	8.0
November 1993	2.0	2.5
December 1993	-4.0	-4.0
January 1994	-13.2	-7.3
February 1994	-9.6	-6.8
March 1994	-2.0	-1.5

January 1994's mean temperature of -13.2°C was the coldest since records were kept starting in 1914.⁴

Twelve records were either tied or broken for this area. This cold extended well into the American northeast with record cold temperatures in many areas. This caused greater than usual mortality among overwintering EABLs in those areas and meant fewer pairs returned to Ontario in the spring to breed.

Reproductive success during the 1994 breeding season was greatly affected by extremely cold, windy, wet weather on May 26.⁵ This made it almost impossible for adults to find enough insects to feed their young and themselves. Most of the season's EABL nestling mortality occurred on this day. June and July were warmer than usual and resulted in many successful nestings that were started after May 26th.

The number one most important presumed cause of nest failure was again weather.⁶ With a warmer winter than 1993-94 and average summer weather in 1995, the Ontario population of EABLs should return to the highs observed from 1989-1991.

⁴ Weather data recorded at Waterloo-Wellington Regional Airport Environment Canada Weather Office. Temperature norms have been adjusted slightly to take into account the 30 years of additional information.

⁵ 43mm of rain was recorded at Waterloo-Wellington Regional Airport on May 26, 1994. Snow was reported in some areas to the north i.e. Renfrew.

⁶ See TABLE 3 - Number 1 presumed causes of nest failure.

Acknowledgments:

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 names listed but this does not consider family teams or naturalist groups whose members were not individually identified.

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Brant	Donald Wills	Nipissing	Ted Price
Bruce	M. J. Doll, Peter Lever	Northumberland	Hazel Bird, Elwood M. Jones
	Dennis & Gwen Lewington		Marie & Heinz Ott
Dufferin	Doug Martin		Jean & Ross Stroud
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	David T. Hampton,		Mrs. Maureen Riggs
	Leo Smith,	Ottawa-Carleton	Michael Shaw
Durham	George & Kittie Fells	Oxford	Douglas Harrison, Daniel Entz
	Grace & Graham Terhune		J. W. Lambe, Ryan Visscher
	P. Royal Lee		G. Cooke
Essex	James Baur, Mark Whelan	Peel	Phyllis Graydon
	Essex. County Field Naturalists	Perth	Wayne & Linda Buck
Elgin	Bob Hubert, Joe Hurst		Hilbert Mohr
Grey	Ernie Nicholls, Patricia Burgon	Peterborough	Gary Harrod
	David & Sharon Turner	Prescott & Russell	Clayton & Josephine Keith
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Halton	Michael M. West, Bill Tindale,		Sandy Agnew, James Forrest
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Hamilton-Wentworth	George Coker, Andrew Fevez,		The Adjala, Tecumseth & West
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	Christel Charlton	Timiskaming	Lloyd Taman
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Huron	Huron Fringe Naturalists		Kawartha Field Naturalists
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	Tom Hunt,	Waterloo	Bill Read, Read C. W. S.,
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Lambton	Don A. Smith, Michael Japp	Wellington	David R. Lamble
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Leeds-Grenville	John Nelson, Barbara O'Neill		Richmond Hill Naturalists Club
Lennox-Addington	David Keeling		Ted & Susan Hampton
Lincoln	Donald Cryderman, H. A. Zuzek		
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Muskoka	J. Robert Burton		
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Table 5. Summary of responses for Eastern Bluebird nestbox questionnaire for Ontario - 1994

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	TRES Successful Nestings	Black-capped Chickadee	House Sparrow	Banded EABL	Banded TRES
Algonia	1	8	9	0									6				
Brant	1	213	213	38	47	160	6	238	11		38	53	138				
Bruce	4	171	171	35	36	109	11	158	30		35	2	71	1	2		
Dufferin	4	566	585	8	101	398	33	47			84	4	15				
Durham	2	67	67	8	9	29	6	56		1	7	1	3		1		
Elgin	2	126	126	15	12	198	5	78	5	1	38	2	6	1		102	
Essex	3	261	251	25	28	114	10	139	11		23	56	106				
Grey	3	38	38	7	8	24	3	15			6	1	5	1			
Haldimand -Norfolk	6	77	81	11	16	221	2	42			45		9				
Halton	3	56	56	3	3	13	4	24			5	8	15	2	4		
Hamilton-Wentworth	6	168	177	31	37	122	5	171	8	2	29	4	51				
Hastings	1	40	40	2	2	10					2	8	13				
Huron	2	21	730	3	115	460	1				97	97	222				
Kenora	1	60	60				1	5			1		45				
Lambton	3	240	240	16	14	46	5	77		1	11						
Leeds-Grenville	2	81	27	5	5	21		24			4	7	14				
Lennox/Addington	1	15	15	1	2	7					1		14				
Lincoln	2	100	100	41	12	154	5	202			37	12	5				
Manitowlin	3	96	96	18	18	71	2	78		1	16		12		2		
Middlesex	4	50	50	4	5	19	2	32		1	4	7	10				
Muskoka	1	32	185	23	24	63	11	100		1	25	1	75		2		
Niagara	2	91	91	2	3	10	1	14			2		48				
Nipissing	1	45	45	2	2	8					2						
Northumberland	7	315	400	47	81	271	43	295	6	5	76	18	44				
Ottawa-Carleton	1	59	59	18	24	99	2	117			19		30				
Oxford	4	271	271	3	48	188	27	306	2		72		18		6		
Peel	1	6	6									1	2				
Perth	2	18	25	3	9	23	1	21		1	6		13				
Peterborough	1	5	8														
Prescott-Russell	1	10	10	2	2	6	1	12			4	3	3				
Prince Edward	1	2	2										1				
Renfrew	2	18	24	4	2	25	1	25			6			1			
Simcoe	9	271	271	34	38	174	18	201		3	42	23	61	3			
Thunder Bay	1	24	24	4	4	17	1	20			4		8				
Timiskaming	1	135	135	7	7	24	4	41			11		60				
Victoria	4	158	273	45	51	173	5	204	5		45		39				
Waterloo	5	547	582	65	85	359	21	458	41	2	78		203	1		297	129
Wellington	1	549	564	3	3	11	4	26		4	5	3	192			14	915
York	3	88	88	8	40	50	2	56	5		9	8	53				
TOTALS	102	4999	6195	541	864	3681	244	3282	124	23	889	319	1610	10	17	413	1044