

# **SPRING WARBLER MIGRATION IN ONTARIO - 2000**

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# THE ONTARIO SPRING WARBLER MIGRATION COUNT – 2000

George M. Fairfield

Each spring the Warbler Count brings together and analyzes migration information from across Ontario on 21 common species of warblers and three other species that migrate at the same time period - May 1 to June 5. The reason for limiting the species and time period is a practical one - the coordinator can not handle any more information! As it is, the publication date is very late again this year. However we can expect an earlier date for 2001 since Winnie Yung and Tom Flinn are now helping with the data input and number crunching. If you have a computer and a little spare time we would be very glad for more help.

We were pleased to get a report from Bob Knudsen at Sault Ste. Marie again this year and a new and well-documented report from Erwin Meissner at Elliott Lake, 100 kilometres east of the Soo. In Southern Ontario we lost our Orillia plot when Cliff MacFayden died shortly after completing the 1999 count at Carthew Bay. New in Southern Ontario was Beryl Lougher's plot at Collingwood.

In addition to our census plots we receive data in the form of Estimated Totals (see page 16) from the Bird Observatories at Long Point, Prince Edward Point and the two Haldimand Bird Observatory areas - Selkirk Provincial Park, and Ruthven Park. Innis Point at Ottawa did not submit data in 2000 and we hope they will do so in 2001. Our coverage was extended well to the west when we received the Estimated Totals from Thunder Cape Bird Observatory near Thunder Bay (see page 23)

The spring warbler count is a very attractive project for those who enjoy morning bird walks and would like to see some results from their outings. It involves picking out a small area of woodland and walking the same route through it each morning. The length of the route should only be what can be covered in an hour on a day of heavy migration. (This keeps the areas to roughly equal size). Twenty-one species of warblers and three other passerines - Swainson's Thrush, Scarlet Tanager and Rose-breasted Grosbeak are counted (We ask that other warbler species be recorded but because of the low numbers we do not include them in the averaging). For a complete set of the rules see Appendix 1.

The study is aimed principally at participants who can easily visit a park or wooded area near their home each morning before going to work but who may not be able to commit extended periods of time at an established migration station. Some participants go out every morning for the full 36 days but most find it more convenient to split the task between two or three observers. Most communities, due to the lack of birders may wish to limit the number to one or two good areas. It is more important to provide daily coverage than to have several poorly covered plots. There is an advantage to picking an area that is unlikely to be altered by development in the future. A wooded park within the community is ideal.

The short-term purpose of the project is to record the songbird migration each spring. The long term is to determine the rise and fall of bird populations that are not well measured with the Breeding Bird Survey. If our project continues long enough it will also be useful in recording the effect of changes of the environment and climate. Tom Flinn is now tracing the rise and fall of individual species as recorded by our counts since 1970.

It is important that the study should continue and continue to grow. We have thirty years of data on hand and the value of the information increases as the years go by.

If you wish to initiate a warbler count in your community please write to the coordinator George Fairfield, [REDACTED] There is no charge for participating in the Warbler Count.

## THE OBSERVERS AND THE STUDY AREAS

Table 1 lists the study areas, the number of visits made to each of them in 2000, and the name of the person(s) responsible for each area. All the observers are competent, experienced birders capable of identifying all species by voice and in all plumages. The participants showed great dedication in getting up and out almost every morning for five weeks and indeed some of them covered two areas. Harry and Eileen Kerr, Don Peuramaki, Patrick Stepien-Scanlon and Mike Solomon all covered two study areas each. Most observers have been participating in the survey for many years. Harry and Eileen Kerr hold the record. They have censused their plots since 1972.

**TABLE 1**

<u>Study Areas</u>	<u>Visits</u>	<u>Observers</u>
Toronto		
<i>Standard Counts:</i>		
Brookbanks Ravine	28	Jean Iron, Naish McHugh, Ron Pittaway
Cedarvale Park	11	Mike Solomon
Cedarvale Ravine	11	Mike Solomon
Col. Samuel Smith Park	16	Andrew Keaveney
High Park North	29	Don Barnett
Humber River (South)	27	Patrick Stepien-Scanlon
Moore Park Ravine	36	Harry & Eileen Kerr
Mount Pleasant Cemetery	36	Harry & Eileen Kerr
Pine Hill Cemetery	36	Edmund & Jean Johns
Rennie Park	27	Patrick Stepien-Scanlon
Rosedale Valley	36	Donald Peuramaki
Unwin Avenue	36	Donald Peuramaki
Wychwood Park	35	Herb Elliott et al.
Total visits in Toronto	364	
<i>"Property" Counts:</i>		
218 Humbercrest Blvd.	29	John Carley
12 Cluny Drive	26	Ron Tasker
Cobourg	33	Lori Wesley
Collingwood	32	Beryl Lougher
Elliott Lake	21	Erwin Meissner
Newmarket (Mabel Davis Cons'n "Area")	27	Kevin Shackleton
Port Hope	32	Elizabeth Kellogg & Roger Frost
Sault Ste. Marie	15	Bob Knudsen
Whitby (Thickson's Woods)	36	D. Lockrey, H. Jessop, Mt Bain,
<b>BIRD OBSERVATORIES:</b>		
Long Point Bird Observatory. (Old Cut Sta.)	36	Observatory staff & volunteers
Prince Edward Point Bird Observatory	31	Eric Machell et al.
Haldimand Bird Observatory:		
Selkirk Provincial Park Station	35	John Miles
Ruthven Park Station	26	Rick Ludkin & Loretta Mousseau
Thunder Cape	34	Nick Escott et al.

# TORONTO

The results from Toronto go back to 1970 though we missed 1985 and 1986.

Toronto has always covered several plots. Having more than one study area within a community increases the accuracy by allowing averaging of the results.

In 2000 there were thirteen study areas in Toronto. In addition John Carley kept track of the migration past his property at the same time as he did his count of migrating Common Loons and Ron Tasker kept track of the warblers on his property on Rosedale Ravine.

The study areas are mostly wooded ravines and hillsides surrounded by built-up areas of the city. Their positions within heavily built-up residential and industrial areas discourages those species that would normally nest in this part of Ontario from setting up territories. Although this may result in lower counts than richer habitats away from the city it also reduces the problem of sorting out the resident birds from the migrants.

## THE COUNT

Table 2 sets out all of the observations within Toronto of the 13 counts for the 24 species studied. The totals for each day and each species are given. In addition the average number of warblers per visit per day (the daily total divided by the number of observers that visited their plots that day) are included; see - "Birds per Visit". This data is much more meaningful than the simple total of the birds observed. It eliminates the error that results from a different number of observers going out on any given day and thus allows a comparison between days. Similarly, by dividing the total number of warblers seen during the five weeks - 4606, by the total number of visits - 364, we arrive at the average number of warblers per visit per year in 2000 - 12.7. This allows us to compare 2000 with the other years of the survey (see Table 5). The average number of warblers per visit is set out in graph form below (Graph 1). The changes in warbler numbers over the years are discussed below (see *Warbler Counts over a 30 Year Period*).

TABLE 2

TORONTO SPRING WARBLER COUNT - 2000  
Thirteen Toronto plots combined

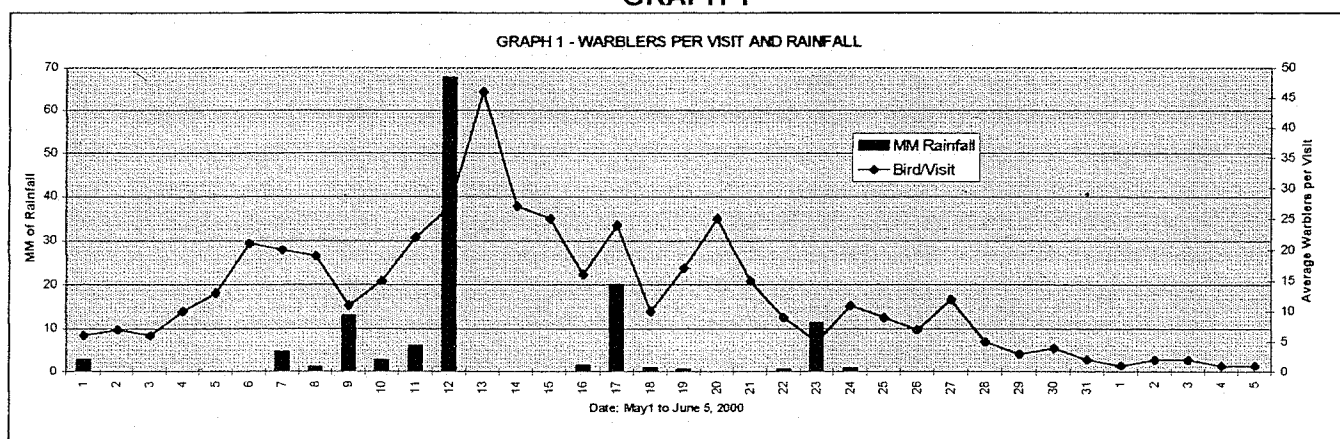
SPECIES	MAY																JUNE																TOTAL				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1		2	3	4	5
Bl. & Wh	4	9	12	18	7	19	13	9	7	4	10	6	10	6	13	3	9	0	4	1	3	0	0	2	3	1	5	0	1	0	0	0	0	0	0	0	179
Tenn.	0	0	0	1	2	0	4	17	8	6	8	10	30	8	11	12	19	6	9	14	6	3	2	2	2	3	2	1	1	0	0	0	1	0	0	0	188
Nash.	8	26	14	20	23	27	10	22	13	10	23	22	37	21	16	6	13	2	10	6	2	2	1	2	0	2	1	0	0	2	0	0	0	0	0	0	341
Yellow	1	0	1	12	10	17	17	16	7	12	13	11	23	5	7	12	8	4	4	9	6	7	8	3	5	11	11	9	3	5	4	3	3	6	3	279	
Magn.	0	2	1	3	4	10	9	18	14	20	45	31	54	32	42	28	39	22	32	39	20	5	6	30	17	11	16	3	2	1	3	1	3	2	0	565	
Cape Ma	0	0	0	0	0	2	2	0	0	1	1	4	5	4	2	2	3	1	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	31	
Bl-thr Bl	2	7	2	9	11	17	13	13	7	11	20	23	34	23	20	12	10	9	8	12	3	5	1	1	1	0	1	0	0	1	0	0	0	1	0	0	277
Yel.-run	40	27	32	53	40	54	45	69	43	26	45	45	62	50	47	15	22	4	21	26	4	0	0	2	1	2	0	1	1	0	0	0	0	0	0	777	
Bl. Thr.	10	13	9	6	20	18	9	19	6	13	9	11	27	9	11	3	7	3	5	6	3	1	0	0	2	1	4	1	0	0	0	0	2	2	0	1	231
Blackbu	1	2	1	0	3	5	4	6	4	7	6	5	14	3	7	6	13	2	4	5	6	0	2	5	2	2	3	0	0	0	0	1	0	0	0	119	
Chest-si	0	0	0	2	6	23	14	12	9	26	33	8	31	15	17	16	24	7	10	19	7	3	3	7	5	2	9	0	1	0	0	0	0	0	0	309	
Bay-bre	0	0	0	0	0	0	4	2	2	7	7	7	19	8	14	5	11	4	6	13	1	2	0	1	1	3	1	1	0	0	0	0	0	0	0	119	
Blackpol	0	0	0	0	0	1	0	1	0	0	2	1	1	3	0	2	6	2	5	7	4	9	5	12	16	7	22	15	8	6	2	0	1	2	1	4	145
Palm	6	3	2	5	2	4	1	1	3	2	4	0	4	1	4	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	
Ovenbir	0	0	1	3	13	7	1	11	6	11	19	4	37	9	9	3	10	4	8	9	9	0	3	1	3	3	3	1	2	0	1	1	1	0	0	193	
N Watert	0	0	3	1	2	1	1	0	0	1	4	1	5	4	4	2	2	1	2	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	37	
Mourmin	0	0	0	0	0	0	0	1	0	0	0	0	5	0	0	0	0	2	3	1	1	3	0	1	1	2	3	1	1	3	0	0	0	1	0	29	
Yel. thro	0	0	0	0	1	1	2	2	0	4	4	3	15	5	9	5	9	4	8	16	7	3	2	6	4	2	9	1	1	5	0	1	0	0	1	130	
Wilson's	0	0	0	0	0	0	1	1	0	2	2	2	5	3	6	5	5	5	4	6	6	5	7	8	9	7	13	4	1	1	1	0	1	0	0	110	
Canada	0	0	0	0	2	1	1	2	2	5	2	3	7	3	3	1	4	1	1	3	0	1	1	3	1	1	1	0	1	0	1	2	1	0	0	54	
Am. Red	0	0	0	0	0	6	8	6	6	11	9	21	36	28	29	21	25	18	20	32	15	15	10	22	22	12	28	10	4	14	5	2	3	3	2	446	
VISIT=1	13	13	13	13	11	10	8	12	12	12	12	8	10	9	11	10	10	10	10	9	7	7	10	10	11	11	11	10	10	10	10	10	8	7	7	9	364
TOTAL	72	89	78	133	146	213	159	228	137	179	266	218	461	240	271	159	240	101	167	226	103	64	51	109	97	73	133	48	28	38	17	11	16	17	6	12	4606
BIRDS/V	6	7	6	10	13	21	20	19	11	15	22	27	46	27	25	16	24	10	17	25	15	9	5	11	9	7	12	5	3	4	2	1	2	2	1	12.7	
Rounded to the closest whole number																																					
Swains.	0	0	0	0	1	0	1	22	5	9	13	16	16	13	23	17	33	12	18	18	18	7	7	3	14	9	11	6	4	7	2	1	2	2	0	310	
Scarlet T	0	0	0	0	2	2	3	7	2	2	6	7	10	6	15	7	11	2	7	8	8	2	2	3	0	0	2	0	0	0	1	0	0	1	0	116	
Rose-br.	0	0	0	2	6	11	22	23	13	13	15	30	35	19	26	12	21	2	8	13	13	6	0	0	1	0	1	3	2	2	1	0	0	0	0	300	

## THE MIGRATION PATTERN

Graph 1 shows the pattern of migration for the plots (the lines) and the millimetres of rainfall (the bars) in Toronto.

We began superimposing the rainfall amounts on our migration pattern graph in 1995. In 1995 there was a correlation between the rain showers and the larger counts, but in the springs since then the correlation has been weak or absent. Perhaps this lack of correlation can be looked at as supporting our results. It means that the birds we are counting on our plots are not just the ones forced down by bad flying weather but represent their normal migration. The first big rush of warblers usually comes on the 13<sup>th</sup> or 14<sup>th</sup> of May. This was the case this year with the day being the 13<sup>th</sup>. But like last year the first rush was also the peak of the migration with the large numbers of Yellow-rumps, Black-throated Blues, Redstarts, Nashvilles Magnolias, and Chestnut-sideds. And again like in 1999 the numbers tailed off fairly evenly to the end of May.

### GRAPH 1



## THE PROPERTY PLOTS

We had only two property plots in 2000. John Carley counted the migrating warblers passing his house that overlooks the Humber Valley at the same time as he was monitoring the migrating Common Loons. Ron Tasker's property is on Rosedale Ravine and Ron gets good numbers of warblers passing through his yard. Both observers had to be away for a few days during our study period but by combining their lists we have all days covered except May 22. The "warblers per visit" was much lower than the standard plots, 4.7 as compared to 12.7, due to the smaller areas censused. None the less the migration pattern agrees quite well, with peaks on May 6 and May 12-13.

**TABLE 3**

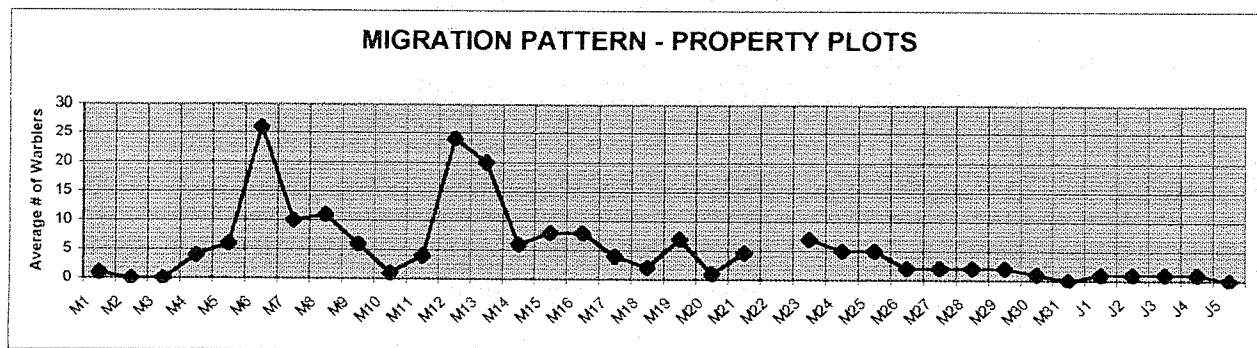
### TWO PROPERTY PLOTS COMBINED

John Carley - 218 Humbercrest Blvd.

Ron Tasker - 12 Cluny Drive

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	TOTAL
Black &White	0	0	0	0	2	4	1	1	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	14
Tennessee	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Nashville	1	0	0	4	6	9	1	2	0	0	0	0	3	2	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Yellow	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5
Magnolia	0	0	0	0	4	3	1	1	5	0	0	3	2	1	2	2	3	1	3	0	0	0	0	0	3	1	1	1	2	1	0	0	0	0	0	0	40
Cape May	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Bl. Thr. Blue	0	0	0	1	0	2	2	2	2	0	1	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
Yell.- rump.	0	0	0	3	0	16	8	9	3	0	0	5	3	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
Bl Thr Green	1	0	0	0	3	3	0	2	0	0	0	3	1	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0	17
Blackburn.	0	0	0	0	0	2	0	0	0	0	0	2	1	0	0	0	0	0	1	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	10
Chest. side	0	0	0	0	5	1	1	4	1	0	0	3	4	2	1	1	1	0	1	0	2	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	29
Bav-breast.	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	1	2	1	1	0	0	0	0	1	0	1	11
Palm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
Ovenbird	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
N. Wat. thr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mourning	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Yel. throat.	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	4
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Am. Redst.	0	0	0	0	1	1	4	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	1	1	1	1	0	0	0	0	16
# Visits	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	2	2	2	2	2	2	2	2	1	1	2	2	55
Totals	2	0	0	8	11	51	19	21	12	1	4	24	20	6	8	8	4	2	7	1	5		7	9	9	4	4	4	3	1	0	1	1	2	1	0	260
Birds per Visit	1	0	0	4	6	26	10	11	6	1	4	24	20	6	8	8	4	2	7	1	5		7	5	5	2	2	2	2	1	0	1	1	1	1	0	4.7
Swains. Thr.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	8	
Scarlet Tan.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rose-br. Gr.	0	0	0	0	0	2	3	3	6	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17

**GRAPH 2**



### OTHER WARBLERS

Several species of warbler are not included in our statistical analyses because too few are seen. Those reported by the observers are set out in Table 4. For the names of the observers please refer to Table 1. Notable was the numbers of Parula Warblers seen between May 11 and 15 with birds occurring at five widely separated locations on May 13. The Kentucky Warbler at Rennie Park on May 16 and Worm-eating Warbler at Rosedale Ravine on May 15 were our rarest warblers.

TABLE 4			
Species	Number	Date(s)	Study Plot
Blue-Winged Warbler	1	May 4, 6, 7	Rosedale Valley
	1	May 9	Rennie Park
	1	May 15	Brookbanks Ravine
	1	May 21	Rosedale Valley
Cerulean Warbler	1	May 20	Pine Hill Cemetery
	1	May 27	Rosedale Valley
Connecticut Warbler	1	May 27	Unwin Avenue
Golden-Winged Warbler	1	May 7	Unwin Avenue
	1	May 10	South Humber Park
	1	May 17, 18	Unwin Avenue
	1	May 21	Rosedale Valley
Kentucky Warbler	1	May 16	Rennie Park
Northern Parula	1	May 4, 6, 7, 12	Rosedale Valley
	3	May 13, 15	Rosedale Valley
	2	May 14	Rosedale Valley
	2	May 9	Brookbanks Ravine
	1	May 11	Brookbanks Ravine
	1	May 11	Moore Park Ravine
	1	May 12, 13, 14, 15	Rennie Park
	1	May 13	218 Humbercrest Blvd.
	2	May 13	Mount Pleasant Cemetery
	1	May 17, 18, 19	Rennie Park
	1	May 26	Pine Hill Cemetery
	1	May 7	Unwin Avenue
	1	May 12, 13	Unwin Avenue
Orange-Crowned Warbler	1	May 8, 9	Cedarvale Park
	1	May 13, 17	Unwin Avenue
	1	May 5, 9	218 Humbercrest Blvd.
Pine Warbler	1	May 1	High Park North
	4	May 1	Pine Hill Cemetery
	1	May 1	Rennie Park
	1	May 8	Cedarvale Park
Prairie Warbler	1	May 8	Pine Hill Cemetery
	1	May 20	Rosedale Valley
Worm-Eating Warbler	1	May 15	Rosedale Valley



## TORONTO WARBLER COUNTS OVER A 31-YEAR PERIOD

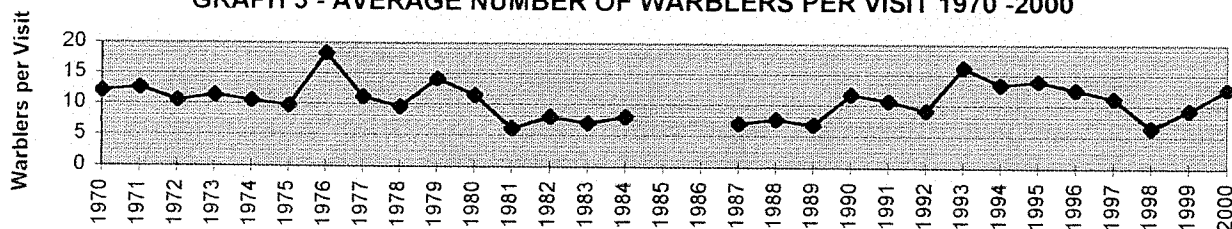
By dividing the total number of warblers seen during the full five weeks by the total number of visits that the observers made to their plots, we arrive at the average number of warblers per visit per year. In 2000, we counted 4606 warblers in 364 visits giving us an average number of birds per visit of 12.7. This average allows us to compare 2000 with the other years of the survey.

Table 5, gives the average number of birds per visit for each year since the study began in 1970. No counts were taken in 1985 and 1986. The purpose is to provide a rough measurement of the rise and fall of warbler populations that nest north of Toronto.

**TABLE 5**

Year	Number of Visits	Birds Counted	Average No. of Birds per Visit
1970	117	1413	12.1
1971	99	1248	12.6
1972	249	2622	10.5
1973	269	3071	11.4
1974	303	3174	10.5
1975	301	2921	9.7
1976	243	4466	18.4
1977	271	3007	11.1
1978	242	2321	9.6
1979	201	2826	14.1
1980	203	2340	11.5
1981	237	1436	6.1
1982	216	1721	8.0
1983	150	1051	7.0
1984	108	864	8.0
1985	No count taken	-	0
1986	No count taken	-	0
1987	187	1313	7.0
1988	198	1537	7.7
1989	149	1013	6.8
1990	221	2587	11.7
1991	263	2805	10.7
1992	294	2676	9.1
1993	349	5641	16.2
1994	299	4017	13.4
1995	369	5170	14.0
1996	360	4518	12.6
1997	467	5247	11.2
1998	439	2867	6.5
1999	411	3837	9.3
2000	364	4606	12.7

**GRAPH 3 - AVERAGE NUMBER OF WARBLERS PER VISIT 1970 -2000**



## COBOURG

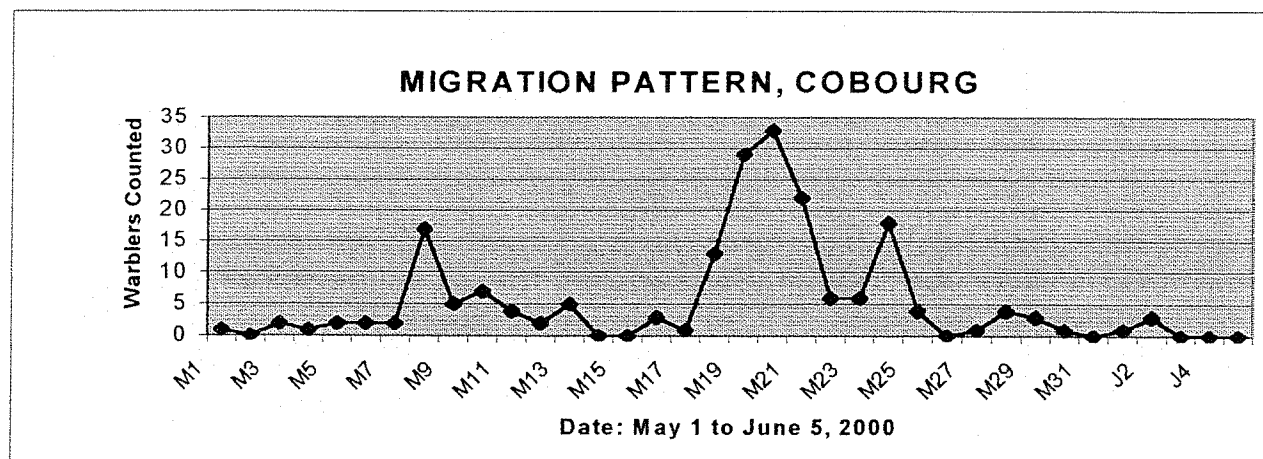
Lori Wensley's plot is along the north shore of Lake Ontario and is very much affected by the local climate conditions. She has this to say about the early part of the count period. "Cold damp foggy mornings, often with a cold drizzle left me bereft of warblers except for a meager few stalwarts."

However this was followed by record counts after May 18. "As you can see most of my warblers went through on about five days. When I tallied up at the end of the count I was quite surprised the count was the highest it has been. The number of Bay-breasteds was at an all time high (0 in 1998 and 1999). So a dismal beginning produced some record days!"

### COBOUG SPRING WARBLER COUNT - 2000

Lori Wensley

SPECIES	MAY																															JUNE					TOT
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	
Bl. & Wh.	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Tennes.	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8
Nashville	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Yellow	0	0	2	1	2	0	2	6	0	2	2	0	2	0	0	2	0	4	0	2	2	2	4	7	3	0	0	3	1	0	0	1	1	0	0	0	51
Magnol.	0	0	0	0	0	0	0	3	1	0	1	0	3	0	0	1	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	14
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bl-thr Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Yel-rump.	1	0	0	0	0	1	0	4	1	2	0	2	0	0	0	0	0	4	10	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
Bl-thr Gr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Blackburn	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Chest-side	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	2	5	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	15
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	3	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	15
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	3	0	1	4	1	0	0	0	1	1	0	0	0	0	0	0	16
Palm	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Ovenbird	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
N Watr Thr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Yel-throat	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	7	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
A Redst	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	2	0	0	2	0	0	1	0	0	0	0	0	0	0	0	10	
VISIT=1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	33
TOTALS	1	0	2	1	2	2	2	17	5	7	4	2	5	0	0	3	1	13	29	33	22	6	6	18	4	0	1	4	3	1	0	1	3	0	0	0	198
Swains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scarlet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Tan	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Ros-br. Gr	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	



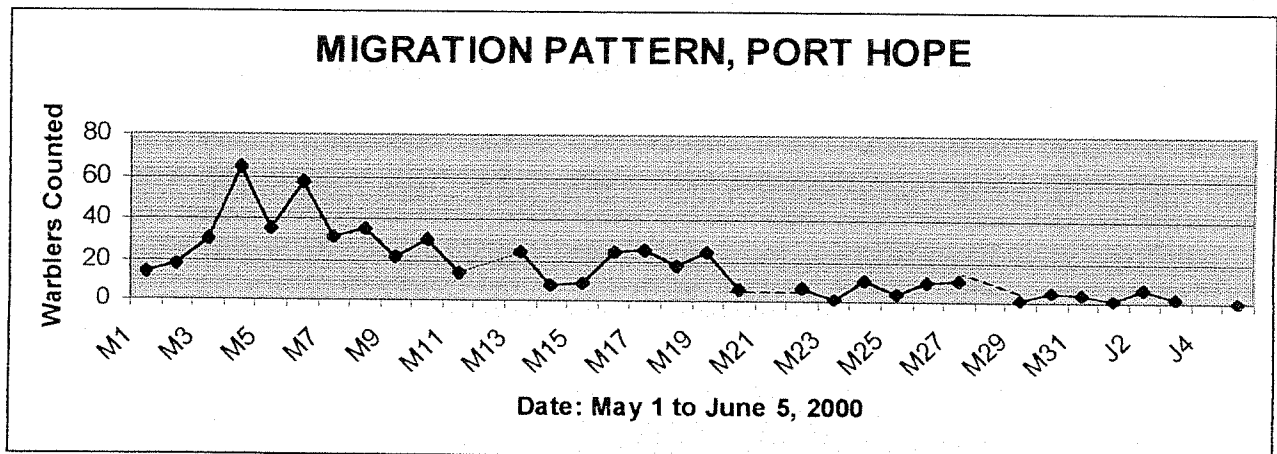
# PORT HOPE

## PORT HOPE SPRING WARBLER COUNT - 2000

Elizabeth Kellogg and Roger Frost

F = Frost, K = Kellogg

Observer	MAY																					JUNE														TOTAL	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4		5
	F	K	F	K	F	F	K	F	F	K	F		K	S	F	F	K	F	S			K	F	K	K	F	F		F	F	F	F	K		F		
Bl. & Wh.	0	2	1	1	4	4	6	0	0	2	1	0	2	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Tennes.	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5	
Nashville	1	1	0	5	6	9	2	9	3	2	3	0	3	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	
Yellow	0	0	0	0	4	0	2	1	1	5	1	0	0	1	0	1	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	21	
Magnol.	0	0	0	0	0	1	3	0	1	4	0	0	4	0	0	3	6	6	1	1	0	2	1	2	0	3	1	0	0	0	0	0	2	0	0	41	
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2		
Bl-thr Blue	0	0	0	0	1	4	1	3	1	1	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	
Yel-rump.	13	15	25	46	14	27	10	14	9	1	2	0	1	6	5	1	6	3	6	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	208	
Bl-thr Gr	0	0	2	7	2	3	1	0	3	2	0	0	2	0	1	2	1	1	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	31	
Blackburn	0	0	0	0	0	1	1	1	1	4	1	0	2	0	0	4	1	0	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	20	
Chest-side	0	0	0	1	3	4	4	4	1	3	3	0	5	0	1	4	3	1	2	1	0	3	0	1	0	0	0	0	0	0	1	0	0	0	0	45	
Bay-breast	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9		
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	2	1	3	2	0	1	3	0	0	3	2	0	21	
Palm	0	0	1	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
Ovenbird	0	0	0	0	1	1	0	1	0	1	2	0	3	1	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	18	
N Watr Thr	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	3		
Yel-throat	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	5		
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1		
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	
A Redst	0	0	0	0	0	1	0	2	0	0	0	0	1	0	1	0	3	3	5	0	0	0	0	0	2	1	3	0	0	0	0	0	1	0	0	0	
VISIT=1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	32
DAILY TOTALS:	14	18	30	64	35	58	31	35	21	30	14		24	8	9	24	25	18	24	6		7	1	11	4	10	11		1	5	4	1	7	2		0	552
Swains Thr	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	1	0	0	0	
Scarlet Tan	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
Ros-br. Gr	1	0	0	2	4	6	9	5	5	4	1	0	5	1	1	9	3	5	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



## OTHER WARBLERS

Date	Blue-winged	Northern Parula	Pine	Connecticut
May 5		1	1	
May 6	1	1		
May 7		1		
May 9		1		
May 10		1		
May 13		1		
May 26				1

# WHITBY (THICKSON'S WOODS)

Thickson's Woods continues to provide the highest counts of any of our plots. Among the "Other Warblers" the regular occurrence of the Pine and Northern Parula Warblers suggests that they are breeding birds. The Northern Parula as a resident bird would be especially interesting. Although it nests throughout eastern North America, few records were obtained in Ontario south of the Canadian Shield during the period of the first Breeding Bird Atlas (1981 to 1985).

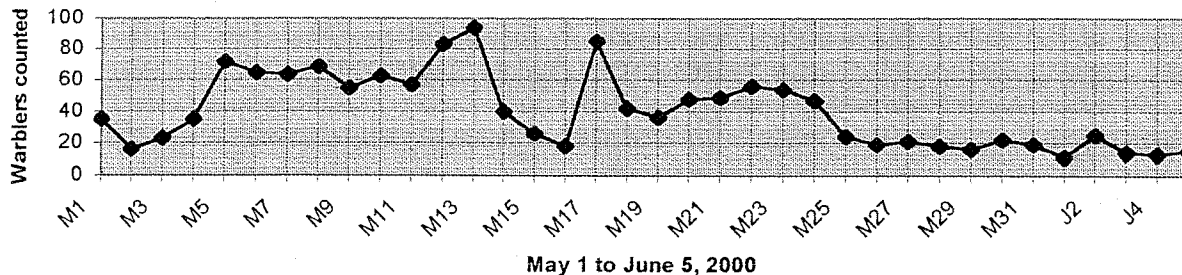
## WHITBY SPRING WARBLER COUNT - 2000

THICKSON'S WOODS - Doug Lockrey et al

L = D. Lockrey, J = H. Jessop, B = M. Bain

	MAY															JUNE															TOTAL							
Observer	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5		
Bl. & Wh.	L	L	L	J	L	B	B	B	B	B	B	B	B	B	L	L	L	L	L	L	L	B	L	L	L	L	L	L	L	L	L	L	L	L	L	B		
Tennes.	0	0	0	0	1	2	2	2	1	2	2	2	2	1	0	0	2	1	1	1	1	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	44
Nashville	1	0	0	1	2	8	5	5	4	4	3	2	5	3	1	0	3	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
Yellow	0	0	2	4	18	10	10	12	10	9	10	8	8	8	7	4	9	5	4	8	9	8	12	8	5	4	9	6	5	11	7	6	12	9	7	8	272	
Magnol.	0	0	0	0	1	3	2	5	2	3	5	11	12	3	1	1	10	6	7	3	5	2	3	5	1	2	2	1	1	0	2	0	0	0	0	0	99	
Cape May	0	0	0	0	0	2	0	2	0	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
Bl-thr Blue	3	3	3	3	6	5	5	5	4	8	6	15	11	3	2	3	12	8	4	7	3	2	5	0	1	0	0	1	0	0	1	1	5	1	1	0	137	
Yel-rump.	27	10	11	21	30	10	15	9	11	5	4	8	6	2	11	2	4	2	2	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	195	
Bl-thr Gr	3	2	2	1	3	4	3	3	2	3	2	8	7	2	2	0	3	2	1	1	3	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	60	
Blackburn	0	0	0	1	1	2	3	3	2	2	1	3	4	2	0	1	2	1	1	3	2	4	1	4	0	0	1	0	1	0	0	0	0	0	0	0	45	
Chest-side	0	0	0	0	1	6	5	5	6	4	5	8	9	4	0	1	11	5	2	7	8	3	3	2	3	1	1	0	1	0	0	0	0	0	0	1	102	
Bay-breast	0	0	0	0	0	0	1	1	1	1	3	2	4	1	0	1	1	0	1	1	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
Blackpoll	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	4	1	0	0	0	1	2	2	1	1	1	1	0	0	2	20	
Palm	0	0	1	1	3	1	0	4	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13		
Ovenbird	0	0	0	1	3	3	3	2	1	3	2	3	5	2	0	0	2	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	1	1	0	1	38	
N Waterthr	0	0	1	0	0	0	1	0	0	1	0	0	0	2	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	9		
Mourning	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	0	0	0	1	0	8	
Yel-throat	0	0	0	0	1	0	1	2	1	3	3	3	4	2	0	1	1	1	1	1	0	3	3	4	2	1	3	2	3	2	2	2	3	3	2	2	62	
Wilson's	0	0	0	0	0	0	0	2	2	0	0	0	1	0	1	0	3	1	0	1	3	5	3	3	1	0	0	0	0	0	0	1	0	0	0	1	28	
Canada	0	0	0	0	0	1	1	1	1	2	2	2	4	1	1	2	4	2	2	2	4	2	1	4	3	2	2	2	0	1	0	0	1	0	0	0	50	
A Redst	0	0	0	0	1	4	4	5	3	3	4	5	8	2	0	2	15	5	6	7	3	8	20	15	7	6	2	3	3	7	5	0	2	0	2	0	157	
VISIT=1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	36	
DAILY TOTALS:	35	16	23	35	72	65	64	69	55	63	57	83	94	40	26	18	85	42	36	48	49	56	54	47	24	19	21	18	16	22	19	11	25	14	13	15	1449	
Swains Th	0	0	1	0	1	3	2	3	2	4	3	3	6	2	0	0	2	1	0	1	0	6	3	1	0	1	0	3	1	1	1	0	1	0	0	0	52	
Scar Tan	0	0	0	0	3	8	5	2	1	1	1	1	9	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	
Ros-br. Gr	0	0	2	0	4	10	14	12	6	5	3	8	8	4	0	1	1	1	0	1	1	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	89	

MIGRATION PATTERN, WHITBY



## OTHER WARBLERS

Date (May- June)	Blue- winged	Golden- winged	Orange- crowned	Northern Parula	Pine	Connecticut
1					1	
2					2	
3					2	
4					1	
5					1	
6	1		1	1		
8	1			2		
9			1	1		
10				1	1	
11	1			1	1	
12				5	1	
13			1	3	1	
14				1		
15					1	
16				1		
17				2		
18				1		
19				1		
21		1				
22			1	2		
24				1		
28						1

## NEWMARKET

Mabel Davis C.A. is a 5.5 hectare wooded area on the east bank of the Holland River running north from Davis Drive to the Madsen's Greenhouse property. Kevin Shackleton writes:

Things were different again this year, but the rising trend continued with a 50 percent increase in numbers over last year and two more species. After a slow start there was a fairly steady flow of migrants through Mabel Davis Conservation Area from the 4<sup>th</sup> to the 27<sup>th</sup>..... Days of rainy weather did not produce a great fall out. The best day was May 13<sup>th</sup> when the warblers concentrated at the north end of the area. Unfortunately the vegetation was well out by that time and it was difficult to track down each individual. It was nice to see the Northern Parulas again after a four - year absence.

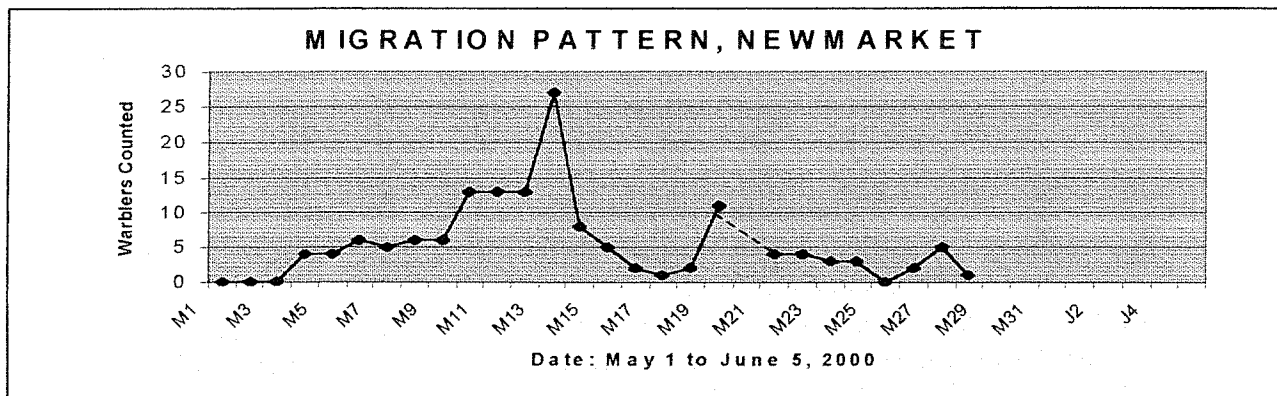
# Newmarket (continued)

## NEWMARKET SPRING WARBLER COUNT - 2000

MABEL DAVIS CONSERVATION AREA - Kevin Shackleton

S = Kevin Shackleton, D = Keith Dunn

	MAY																															JUNE					TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	
Observer	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	D	S	S		S	S	S	S	S	S	S	D									
Bl. & Wh.	0	0	0	1	0	2	0	2	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
Tennes.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Nashville	0	0	0	0	1	1	2	2	2	2	4	2	3	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	
Yellow	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	1	0	2	0	0	1	0	0	0	0	0	0	0	0	8	
Magnol.	0	0	0	0	0	0	0	0	1	2	1	1	1	2	2	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	14	
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Bl-thr	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3		
Blue																																					
Yel-rump.	0	0	0	1	0	0	0	0	0	2	4	1	5	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	
Bl-thr Gr	0	0	0	1	1	1	1	0	2	1	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
Blackburn	0	0	0	0	0	0	0	0	0	1	1	2	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
Chest-side	0	0	0	1	1	2	0	1	1	1	1	1	5	2	0	0	0	0	2	0	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	23	
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	9		
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	3		
Palm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ovenbird	0	0	0	0	0	0	2	1	0	1	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
N Watr	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
Thr																																					
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Yel-throat	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Wilson's	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
A Redst	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	1	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	7	
VISIT= 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	27	
DATE	M1	M2	M3	M4	M5	M6	M7	M8	M9	M1	M1	M1	M1	M1	M1	M1	M1	M1	M2	M2	M2	M2	M2	M2	M2	M2	M2	M2	M2	M3	M3	J1	J2	J3	J4	J5	
DAILY										0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1						
TOTALS:	0	0	0	4	4	6	5	6	6	13	13	13	27	8	5	2	1	2	11		4	4	3	3	0	2	5	1							148		
Swain Thr	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
Scarl Tan	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2		
Ros-br. Gr	0	0	0	0	0	3	2	3	2	3	2	3	5	2	5	2	1	1	6	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	43	



## OTHER WARBLERS

Date	Northern Parula
May 13	1
May 21	1

## COLLINGWOOD

This is a new area for our project. Beryl Lougher describes it as "Shoreline, open grass area, cedar trees, bush, shrubs and deciduous trees."

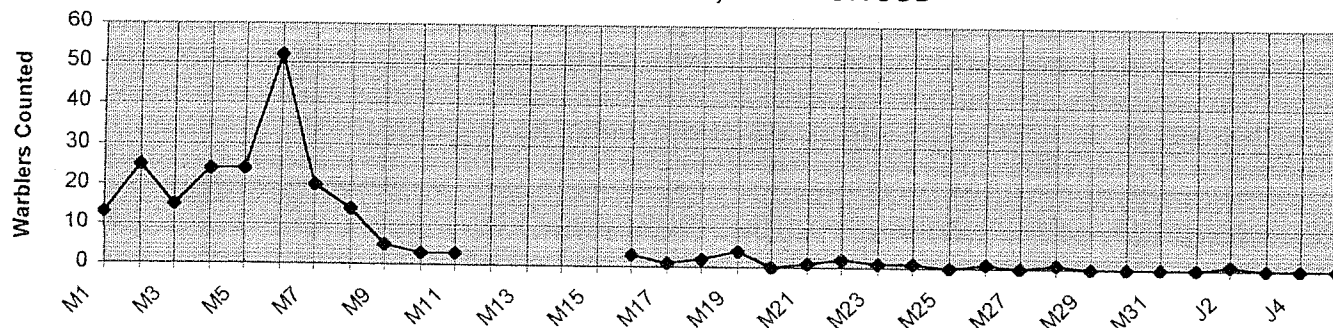
Beryl writes: "The number of warblers was very low. ...we get cold winds off the Bay and they probably stayed south of here."

### COLLINGWOOD SPRING WARBLER COUNT

Beryl Lougher

	MAY																															JUNE					TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	
Bl. & Wh.	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Tennes.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Nashville	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yellow	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	7	
Magnol.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
Bl-thr Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yel-rump.	7	23	9	22	17	47	20	11	5	3	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169	
Bl-thr Gr	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Blackburn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Chest-side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Palm	1	2	3	2	5	4	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	
Ovenbird	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
N Waterthr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Mourning	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Yel-throat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
A Redst	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	
VISIT=1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	32	
TOTALS	13	25	15	24	24	52	20	14	5	3	3					3	1	2	4	0	1	2	1	1	0	1	0	1	0	0	0	0	1	0	0	216	
Swainson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Scarlet Tan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	
Rose-br. Gr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	6		

MIGRATION PATTERN, COLLINGWOOD



### OTHER WARBLERS

Date	Pine
May 2	2
May 3	3

## SAULT STE. MARIE

Bob Knudsen was away doing surveys for the Canadian Forest Service during the time of the main migration. His data is set out on the chart below. See also "Arrival Dates – Northern Ontario" on page 27.

### SAULT STE. MARIE SPRING WARBLER COUNT - 2000

WHITE PINES HIGH SCHOOL - Bob Knudsen

	MAY																															JUNE						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	TOTAL	
Observer's initial																																						
Bl. & Wh.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tennes.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
Nashville	0	0	0	2	0	3	1	4	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	0	0	0	0	18	
Yellow	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	3		
Magnol.	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	1	1	0	0	0	9		
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Bl-thr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Blue																																						
Yel-rump.	7	1	0	14	0	4	4	3	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	1	0	1	2	1	1	1	0	0	0	45	
Bl-thr Gr	0	0	0	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
Blackburn	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	3		
Chest-side	0	0	0	0	0	1	3	4	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0	6	6	0	5	5	5	4	6	0	0	0	54	
Bay-breast	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1		
Palm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ovenbird	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	1	1	1	2	0	0	0	12	
N Watr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Thr																																						
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	3	1	1	2	2	0	0	0	13		
Yel-throat	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	1	0	2	2	1	3	3	0	0	0	16		
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2		
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
A Redst	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	4	0	3	4	4	3	4	0	0	0	26	
VISIT=1	1	1	0	1	0	1	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	15	
DAILY TOTALS:	7	1		19		8	10	18						9	11										24	18		15	18	16	15	20				209		
Swains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1		
Thr																																						
Scarlet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Tan																																						
Ros-br. Gr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2		

### OTHER WARBLERS

Date	Northern Parula	Pine
May 4		1
May 15	1	



## ELLIOT LAKE

This is another new plot and Erwin Meissner has provided a comprehensive description: "This is a tiny speck of a three kilometre trail along Angel Lake in the ancient "Penokean Hill" Range of the Canadian shield. It is located at the southern edge of Elliot Lake City. Browden Lake 1 and 2, locally known as Angel Lake, is a fairly hilly area with numerous rock out-croppings sloping sharply toward the lake shore. It is a clear lake surrounded by an edging of Pine, fir, Spruce plus some old growth Hemlock stands, sprinkled with huge Yellow birches. The adjacent mixed bush is a thick cover of mostly young maple, birch and poplar saplings with some Red Oak and Ashes. Striped and Mountain Maple understory make it even denser. Around the beaver pond one finds cedar, Tamarack, Speckled Alder and Willow. Not much open habitat exists here for open country warbler species like Yellow and Common Yellowthroat."

As with Sault Ste. Marie the first dates recorded represent the arrival dates on the nesting grounds for the species. See also "Arrival Dates – Northern Ontario" on page 27.

### ELLIOT LAKE SPRING WARBLER COUNT – 2000

ANGEL LAKE - Erwin Meissner

	MAY																															JUNE					TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	
Bl. & Wh.	0	1	3	0	0	0	0	0	0	0	0	0	0	5	11	10	11	6	11	12	10	11	14	10	0	6	7	7	7	9	8	0	0	0	0	3	162
Tennes.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Nashville	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	1	1	0	1	0	1	1	1	1	1	1	0	0	0	0	17	
Yellow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Magnol.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	2	4	4	3	0	4	2	3	2	3	3	0	0	0	0	3	37
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	
Bl-thr Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2	2	2	2	1	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	18
Yel-rump.	3	2	0	0	0	0	0	0	0	0	0	0	0	1	3	2	1	2	0	1	2	3	0	4	0	2	4	3	4	4	3	0	0	0	0	1	45
Bl-thr Gr	0	1	3	0	0	0	0	0	0	0	0	0	0	8	9	11	15	10	19	14	16	16	18	12	0	12	10	14	10	13	13	0	0	0	0	4	228
Blackburn	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	2	3	2	2	1	2	3	4	0	2	2	1	2	2	3	0	0	0	0	1	37	
Chest-side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	1	2	1	2	2	0	0	1	2	2	1	4	0	0	0	0	25	
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Palm	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Ovenbird	0	0	0	0	0	0	0	0	0	0	0	0	0	9	12	14	15	11	14	16	12	14	16	18	0	13	12	19	18	19	17	0	0	0	0	12	261
N Watr Thr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yel-throat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A Redst	0	0	0	0	0	0	0	0	0	0	0	0	0	7	9	11	11	12	8	7	9	5	10	13	0	10	9	9	9	7	7	0	0	0	0	8	161
VISIT=1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	1	21
DAILY TOTALS:	5	8	9											31	51	55	60	49	60	56	56	58	74	68		50	48	59	56	60	60		32		1,005		
Swains Thr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3	1	1	0	0	2	0	1	1	0	0	0	0	0	2	15	
Scarlet Tan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Ros-br. Gr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	2	0	0	0	0	5	

### OTHER WARBLERS

Date	Northern Parula	Pine
May 2		1
May 19	1	
May 22	1	

# THE BIRD OBSERVATORIES

Many thanks to the following four Bird Observatories who sent along their Estimated Totals (ET's) for our target species. The ETs are arrived at as follows. First, an observer walks an identical census route each day. This is the same as our warbler count. Second, the birds that are netted and banded are factored in. Third, any birds that were missed by the other two methods but are seen during the day are added in. Because of the very different method used by the Observatories and the Warbler Counts we are limited in the comparisons we can make. Nonetheless the general pattern of the migration should be comparable and can be used to pinpoint major arrivals and departures of the warblers.

# PRINCE EDWARD POINT

Prince Edward Point Bird Observatory is located at the eastern tip of Prince Edward Point, on the north shore of Lake Ontario, about 20 minutes drive southeast of Picton. The field station is located in a National Wildlife Area, maintained by the Canadian Wildlife Service. Prince Edward Point is a narrow point of land that extends approximately 10 km into the lake. Much of the habitat consists of old field (savannah) and shrub thickets, along with some small deciduous and coniferous forests. The number of and diversity of landbirds that concentrate in the small area during spring and fall migration is outstanding. The site is designated as a Globally Important Birding Area.

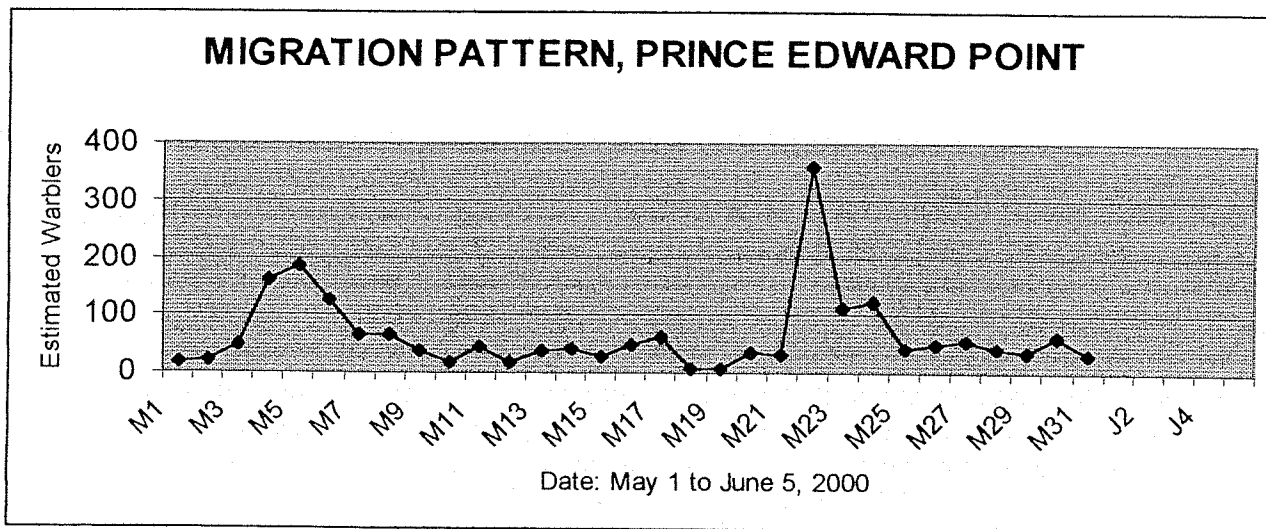
## PRINCE EDWARD POINT BIRD OBSERVATORY

Eric Machell et al

### ESTIMATED TOTALS

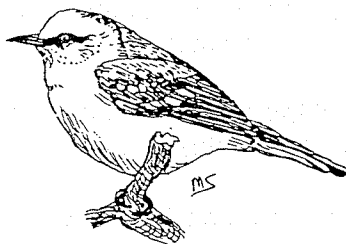
	MAY																															TOTAL	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Bl. & Wh.	2	3	3	5	2	7	0	3	1	0	0	0	0	2	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	31	
Tennes.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	0	0	0	5	
Nashville	0	1	0	3	13	2	1	2	4	0	0	0	1	1	2	0	1	0	0	1	1	1	0	1	0	0	0	0	0	0	0	35	
Yellow	0	0	0	8	8	10	16	20	10	8	20	12	17	16	20	22	25	6	4	15	11	20	25	30	20	20	15	10	20	30	16	454	
Magnol.	0	0	0	0	2	3	3	12	5	0	5	1	2	4	0	10	12	0	2	10	6	250	34	25	5	10	15	2	1	8	1	428	
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Bl-thr Blue	1	0	0	1	1	4	3	4	3	1	0	0	1	0	2	0	2	0	0	1	1	7	2	2	0	0	1	1	0	0	0	38	
Yel-rump.	13	14	32	94	115	74	34	10	12	6	6	1	0	8	0	0	0	1	0	1	1	2	4	1	0	0	0	0	0	0	0	429	
Bl-thr Gr	0	1	5	23	14	9	4	1	0	0	4	0	0	0	0	2	6	0	0	0	0	10	6	4	2	0	2	1	2	1	0	97	
Blackburn	0	0	0	2	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	3	4	1	0	2	0	0	3	0	19	
Chest-side	0	0	0	0	1	0	0	3	1	0	0	0	4	0	0	2	3	0	0	0	1	10	3	10	3	1	0	0	1	1	0	44	
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	1	2	0	0	2	0	0	0	9	
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	4	2	5	4	2	0	24	
Palm	3	1	2	20	23	10	0	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65
Ovenbird	0	0	1	1	0	4	2	6	0	0	4	0	0	0	0	3	2	0	0	0	0	2	1	2	1	2	0	0	0	1	0	32	
N Watr Thr	0	2	4	2	4	0	2	1	1	0	0	0	0	0	0	0	1	0	0	0	0	5	1	0	0	0	0	0	0	1	0	24	
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	3	1	10	
Yel-throat	0	0	0	0	1	2	0	0	1	1	3	2	4	6	3	6	8	0	0	3	6	20	12	20	3	8	8	12	6	12	13	160	
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	2	0	0	2	1	14	10	10	0	0	2	0	0	0	0	47	
Canada	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	1	2	1	0	1	0	1	0	0	0	1	10	
A Redst	0	0	0	0	0	1	1	1	0	0	0	0	8	1	0	0	0	0	1	1	2	12	2	5	1	2	8	8	1	2	0	57	
VISIT=1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31	
TOTALS	19	22	47	159	184	126	66	66	39	17	45	16	39	43	27	47	64	8	8	36	31	358	110	122	42	48	56	42	36	64	32	2019	
Swains Thr	0	0	0	0	0	0	0	2	0	0	1	0	1	0	0	1	5	0	0	0	0	6	2	4	1	0	6	3	0	1	1	34	
Scarlet Tan	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	9	
Ros-br. Gr	0	1	0	0	0	1	4	0	1	10	1	0	0	0	2	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	24	

Prince Edward Point (cont.)



### OTHER WARBLERS

Date (May)	Blue-winged	Golden-winged	Northern Parula	Cerulean	Orange Crowned	Hooded	Yellow-breasted Chat
6	1	1					
7	1	1					
11					2		1
12			1				
15						1	
17	1	1		1			



## LONG POINT BIRD OBSERVATORY

### Old Cut Station

The Old cut banding station is near the base of Long Point, on the north shore of Lake Erie south of Simcoe, Ontario.

Thank you to Long Point Bird Observatory for sending along their Estimated Totals for the period of our warbler count.

The following is extracted from Kathryn Warner's summary of the spring banding at Long Point that was published in the Long Point newsletter. Her remarks cover all three stations and not just Old Cut that is the station on which we have based the chart and graph below. Old Cut is at the base of the Point the other two stations being six miles out and at the tip of the Point respectively. We have deleted most of the references to birds other than warblers. The migration at Long Point is earlier than at the other points we reference in southern Ontario.

"The first warblers announced their arrival on 14 April, with Myrtle and Pine warblers at the Tip and Old Cut. It was a great spring for Pine Warblers, with a total of 30 recorded at the field stations.... The month (April) closed with the arrival of Ovenbirds, Black-throated Blue, Black-throated Green and Palm warblers....

May began with high winds, cool temperatures, fog and rain but that didn't stop the birds from coming.... By 5 May, several species of neotropical migrants such as Swainson's Thrush, Wood Thrush, Veery, Rose-breasted Grosbeak, Scarlet Tanager and all the common wood warblers, made their first appearance....

The first two weeks of May were also interesting because they brought a large number of uncommon species to Long Point.... Seven Golden-winged Warblers were seen between the three stations between 10 and 21 May. Northern Parulas were in high numbers this season, with 8 recorded at Old Cut and 5 at the Tip. The ever elusive Orange-crowned Warbler couldn't escape the nets or the keen eyes of volunteers, with three banded and two more spotted.

By the third week in May, migration began to slow. Although the number of birds banded declined, species diversity still remained high. Warblers and flycatchers were still arriving and the last sparrows and kinglets were moving through.... along with the newly arriving end of season migrants such as Canada, Mourning, Wilson's and Blackpoll warblers.

A small weather front passed on Victoria Day weekend, bringing a new batch of migrants for holiday visitors. Old Cut was kept busy banding Magnolia Warblers, Black-throated Blue Warblers, Swainson's Thrushes, Wilson's Warblers, American Redstarts and Common Yellowthroats. The number of Magnolia Warblers in these two days was astonishing. An estimated 300 were in the area and the crew banded over 100.

One of the rare bird highlights of the season occurred at Old Cut on 21 May when a male "Lawrence's" Warbler was banded. This is the very rare hybrid between a Golden-winged Warbler and Blue-winged Warbler.

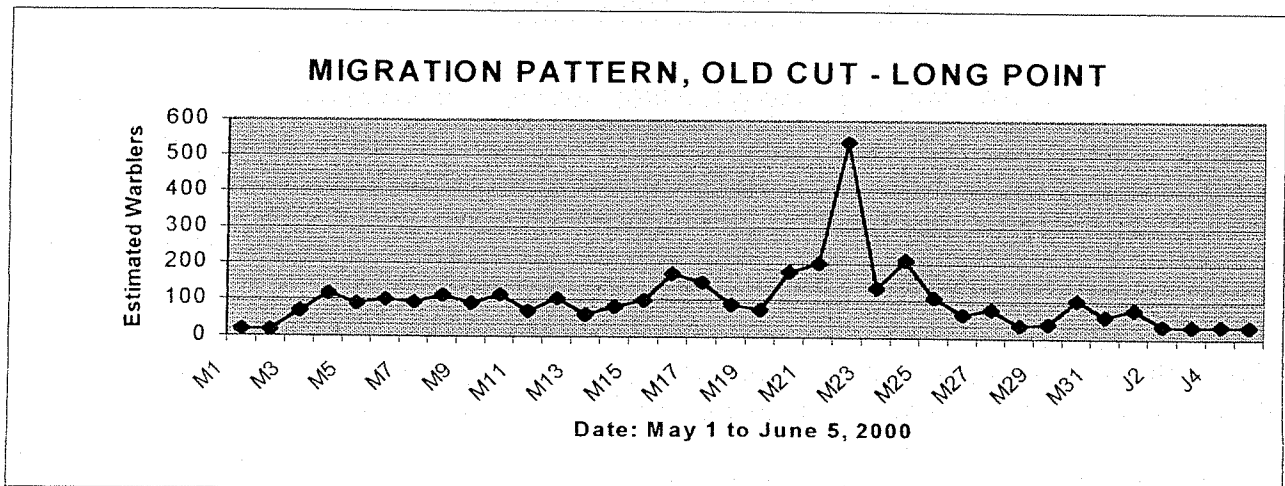
The last good day of banding occurred on 1 June with a small push of Blackpolls and the peak of Cedar Waxwing migration. The stations were finally closed on 8 June."

# LONG POINT BIRD OBSERVATORY - 2000

ESTIMATED TOTALS

Old Cut Station - Observatory staff & volunteers

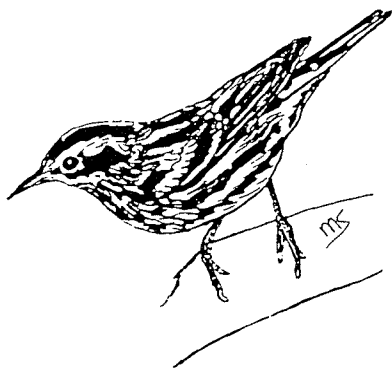
SPECIES	MAY																															JUNE					TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	
Black & White	2	2	25	10	8	10	12	10	1	12	5	4	2	0	3	5	5	5	4	10	8	15	0	1	1	2	0	0	0	2	0	0	0	0	0	0	164
Tennessee	1	0	0	0	0	0	0	0	0	1	0	2	2	1	2	0	0	0	0	0	1	0	1	2	5	2	0	0	0	1	0	0	0	0	0	0	21
Nashville	1	1	2	12	6	6	3	1	5	8	3	6	1	5	9	12	5	2	1	1	6	2	2	1	1	1	1	0	0	0	1	0	0	1	0	0	106
Yellow	0	4	5	15	20	20	30	39	31	15	13	25	16	30	25	14	17	25	22	34	18	40	40	31	20	26	23	15	20	30	20	23	25	12	18	20	781
Magnolia	0	0	1	2	6	10	15	12	8	12	6	20	6	10	14	60	64	14	18	23	62	200	34	41	14	6	13	3	3	27	11	10	2	2	1	0	730
Cape May	0	0	1	1	2	1	3	0	1	0	0	5	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	
Black-thr. Bl.	2	4	10	20	10	10	6	3	3	10	8	6	3	8	10	7	4	6	2	3	3	30	5	5	1	0	0	0	0	0	0	0	0	0	0	0	179
Yellow-rump	8	6	7	15	4	5	4	11	5	15	2	1	1	2	6	10	1	0	0	4	1	10	0	1	0	0	0	0	0	0	0	0	0	1	0	120	
Black-thr. Gr.	2	0	3	4	1	1	2	1	2	4	3	4	1	0	5	10	2	1	1	7	0	0	0	24	4	0	1	0	0	3	0	1	0	0	0	0	87
Blackburnian	1	1	2	2	2	2	1	1	0	3	0	0	1	1	2	4	8	0	0	6	6	12	1	10	4	0	2	0	1	2	0	0	0	0	0	0	75
Chestnut-sid	0	0	0	1	8	8	4	2	6	2	4	7	4	6	0	7	10	3	6	17	23	10	6	8	7	2	2	1	1	0	0	0	0	0	0	155	
Bay-breasted	0	0	0	0	1	1	1	1	2	2	0	2	10	0	0	0	3	2	0	2	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	30
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	2	0	0	7	4	5	6	4	15	5	8	6	9	20	5	8	12	8	130
Palm	1	0	2	2	1	2	0	3	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Ovenbird	1	0	4	8	3	7	2	3	7	5	7	7	3	4	4	4	6	3	1	15	17	18	7	12	6	0	0	0	0	3	0	3	0	0	0	0	160
N. Water Thr	0	0	6	2	4	1	0	0	0	1	0	1	0	1	0	0	1	0	0	0	1	4	0	1	1	1	0	0	0	0	0	0	0	0	0	0	25
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	2	8	2	3	1	1	2	7	1	3	0	3	0	0	38
Yellow-throa	0	0	1	20	12	12	6	21	15	8	8	6	2	8	8	11	8	3	5	10	15	35	17	21	12	10	11	6	3	8	11	13	4	6	5	5	346
Wilson's	0	0	0	0	0	1	0	1	0	1	2	1	1	1	4	2	3	10	1	20	17	45	9	24	10	6	0	2	0	8	2	2	0	0	0	0	173
Canada	0	0	0	0	0	1	0	0	0	0	0	0	3	2	0	12	4	1	2	2	4	10	2	1	4	1	0	0	0	4	2	0	0	1	0	0	56
Am. Redstar	0	0	0	1	1	2	4	3	3	12	6	6	3	2	5	15	5	9	8	21	19	100	3	14	10	0	7	2	1	2	1	3	0	0	0	0	268
VISIT=1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	36	
DAILY TOTAL	19	18	69	115	89	100	93	112	90	113	68	103	60	81	99	173	149	87	74	177	202	539	133	211	108	64	77	35	39	103	59	78	36	34	36	33	3676
Swainson's	0	1	2	2	1	2	12	3	0	2	0	1	0	1	1	1	15	1	0	5	5	27	5	5	8	1	15	2	0	5	3	3	0	0	1	0	130
Scarlet Tana	0	0	1	1	0	4	6	2	1	0	0	1	0	0	1	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	22
Rose-br. Grc	3	1	4	15	16	12	18	8	2	3	6	6	1	0	0	2	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	100



## LONG POINT (continued)

### OTHER WARBLERS

Date (May)	Blue-winged	Golden-winged	Lawrence's	Orange - Crowned	Northern Parula	Pine	Worm-eating	Hooded
May 1	2							
May 2	1			1				
May 4	1					1		
May 5	4							
May 6	4							
May 7	2						1	
May 8	3			1				
May 9	5							
May 10	2	1			4			
May 11		2		1				
May 12	2	1			2			
May 13					1			
May 16	1							
May 21		1	1					1



## HALDIMAND BIRD OBSERVATORY

Haldimand Bird Observatory is operating two field stations. A spring and fall banding and migration monitoring station at Selkirk Provincial Park. Located on the north shore of Lake Erie, the station was first opened in the spring of 1996 under the guidance of John Miles. Rick Iudkin operates a spring and fall banding and migration monitoring station along the banks the Grand River north of Cayuga at Ruthven Park. While HBO is in close proximity to the Long Point Bird Observatory the bird migration through Haldimand is not a mirror of Long Point but rather has its own distinct patterns.

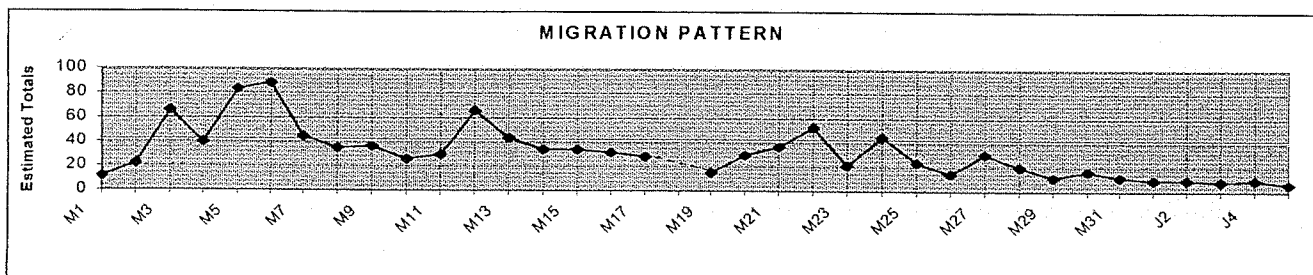
### SELKIRK PROVINCIAL PARK

The station is at the southwest corner of Selkirk Provincial Park. Starting at the north end of the study area is an oak-hickory savanna, then a planted 30 year old white pine plantation, a strip of 30 year old red and silver maple, then another 30 year old white pine plantation and finally an oak-hickory savannah at the south "tip" overlooking Lake Erie. Along the west side there is a buffer zone of oaks, hickory and hawthorns separating a field. Along the east side are hawthorns separating the pines from the Spring Creek Marsh. Size - approximately 20 acres.

# - SELKIRK PROVINCIAL PARK - John Miles

ESTIMATED TOTALS

MAY																															JUNE					TOTAL	
Observer's initial	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	TOTAL
Bl. & Wh.	1	1	5	0	5	7	0	0	1	0	0	1	3	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
Tennes.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nashville	2	6	10	1	10	5	0	0	0	0	1	0	1	0	1	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
Yellow	1	0	3	6	5	10	10	10	10	10	10	15	12	10	15	10	5	0	5	10	10	10	7	15	15	10	10	10	5	5	10	5	7	5	6	4	291
Magnol.	0	0	0	1	2	5	3	1	2	3	7	15	6	3	5	5	10	0	6	6	6	15	2	7	0	0	7	1	0	2	0	1	1	0	0	0	122
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bl-thr Blue	1	1	1	1	10	7	3	1	2	2	0	10	2	2	1	2	5	0	0	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	55
Yel-rump.	2	10	30	10	25	30	5	2	5	3	2	0	4	5	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	137
Bl-thr Gr	1	2	2	1	1	1	0	2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Blackburn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Chest-side	0	0	0	1	0	2	1	0	0	0	0	1	2	1	0	0	0	0	0	0	0	1	2	3	0	0	3	0	0	0	0	0	0	0	0	0	17
Bay-breast	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
Palm	2	1	10	0	6	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	
Ovenbird	2	1	4	15	15	10	15	3	2	1	2	7	3	1	1	0	1	0	0	1	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	90
N Watr Thr	0	0	1	0	1	1	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	1	0	0	0	0	2	0	0	0	0	0	0	9	
Yel-throat	0	0	0	4	3	5	5	15	10	5	6	10	5	10	6	5	2	0	3	5	5	10	4	7	2	3	6	5	4	5	2	2	2	3	3	2	164
Wilson's	0	0	0	0	0	0	0	0	1	1	0	4	0	1	0	3	0	0	0	2	1	3	2	5	3	1	0	1	0	0	0	0	0	0	0	0	28
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2	0	0	3	1	0	1	1	1	2	0	1	0	0	0	0	16
A Redst	0	0	0	0	0	0	0	1	1	1	2	1	3	0	2	5	3	0	1	1	3	5	1	1	1	0	4	1	0	0	0	0	0	0	0	0	37
VISIT= 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	35
DAILY TOTALS:	12	22	66	40	83	88	45	35	36	26	30	66	44	34	34	32	28	15	30	36	53	21	45	23	14	31	20	12	16	12	10	10	8	9	6	1092	
Swains Thr	0	0	0	0	2	1	1	2	2	0	0	4	2	2	0	1	6	0	0	1	1	7	4	3	1	0	14	3	0	1	0	1	0	1	0	0	60
Scarlet Tan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Ros-br. Gr	0	0	0	2	2	2	2	5	1	2	1	1	5	0	2	3	1	0	1	5	5	1	2	3	2	0	0	0	0	4	1	1	1	1	1	1	58



## OTHER WARBLERS

Date (May)	Blue-winged	Worm-eating	Connecticut	Hooded	Yellow-Breasted Chat
May 2	1				
May 4				1	
May 5	1				
May 6	1				
May 7					
May 8					
May 12					1
May 17					1
May 21					1
May 27		1			
May 28		1	1		

## RUTHVEN PARK

Ruthven Park is a National Historic Site two kilometres north of Cayuga on the Grand River. The spacious grounds are surrounded by edge scrub habitat and the heavier forest. Rick Ludkin and Loretta Mouseau run a banding/migration monitoring station and together with John Miles at Selkirk Provincial Park form the Haldimand Bird Observatory.

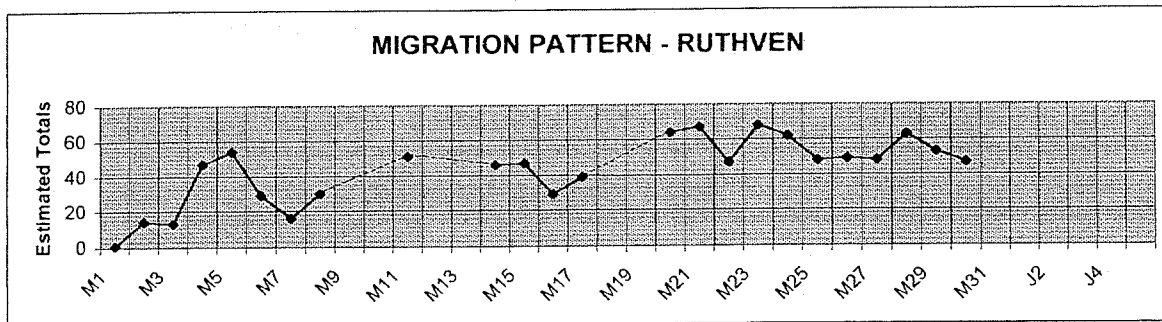
Ruthven Park suffers from one of the problems that plague bird monitoring stations that are located in good nesting habitat. Rick Ludkin notes that: "Some of the numbers are misleading as there seems to be no way of discriminating between migrants and residents. Ruthven has a good population of Yellow Warblers, Common Yellowthroats and Rose-breasted Grosbeaks and Scarlet Tanagers. So, for example, for Yellow Warblers I would be counting the same birds on many days." When we undertake long term studies of the data we will have to apply a correction for such resident species. This may entail eliminating those species from our calculations data that are seen daily at the station.

## HALDIMAND BIRD OBSERVATORY - RUTHVEN PARK-R. Ludkin et al

L = Rick Ludkin, M = Loretta Mouseau, S = Jim Smith

	MAY																															JUNE					TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	
Observer	L	L	M	M	M	S	S	L			L			L	L	L	L		L	L	L	L	L	L	M	L	L	L	L								
Bl. & Wh.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Tennes.	0	0	0	0	1	0	0	0	0	0	1	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Nashville	1	2	0	5	1	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Yellow	0	2	0	10	25	15	12	16	0	0	25	0	0	25	25	15	15	0	0	15	20	20	25	20	20	30	20	20	20	20	0	0	0	0	0	0	415
Magnol.	0	0	0	2	0	0	0	4	0	0	4	0	0	8	5	0	8	0	0	25	12	5	10	10	8	6	8	12	10	8	0	0	0	0	0	145	
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bl-thr Blue	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Yel-rump.	0	8	10	20	15	0	0	6	0	0	8	0	0	2	2	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	74	
Bl-thr Gr	0	1	1	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Blackburn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3	
Chest-side	0	0	0	0	3	2	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	2	4	2	0	0	0	0	0	0	0	0	0	0	0	18	
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	8	0	0	2	10	8	8	0	0	0	0	0	46	
Palm	0	1	2	2	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11		
Ovenbird	0	0	0	4	4	0	0	0	0	0	4	0	0	2	0	0	0	0	0	2	2	0	2	4	2	0	0	0	0	0	0	0	0	0	0	26	
N Waterthr	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9		
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	1	2	1	1	0	0	0	0	0	9		
Yel-throat	0	0	0	0	2	0	4	0	0	8	0	0	4	8	8	8	0	0	10	10	10	10	8	12	10	8	8	10	10	0	0	0	0	0	148		
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	5	4	0	0	4	5	2	0	0	0	0	0	0	22		
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	8	4	2	0	4	1	2	2	0	0	0	0	0	0	28		
A Redst	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	2	4	0	4	2	0	2	0	4	2	0	0	0	0	0	28		
																																				1032	
VISIT=1	1	1	1	1	1	1	1	1	0	0	1	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	26	
TOTALS	1	14	13	47	54	29	18	30			51			46	47	29	39			64	67	47	68	62	48	49	48	63	53	47							
OTHER BIRDS																																					
Swainson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	
Sc. Tan.	0	0	0	0	0	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	4	2	0	2	2	0	2	2	0	0	0	0	0	0	19		
Rose-br Gi	0	1	4	8	10	2	15	14	0	0	10	0	0	8	10	8	0	0	0	8	8	10	10	10	8	6	6	8	6	6	0	0	0	0	0	176	

DATE	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	J1	J2	J3	J4	J5
TOTALS	1	14	13	47	54	29	16	30			51			46	47	29	39			64	67	47	68	62	48	49	48	63	53	47						



## OTHER WARBLERS

Ruthven Park has a colony of Blue-winged and Golden-winged Warblers which were reported daily throughout our study period. Also a Cerulean Warbler was reported from May 23 on and must be considered to be a resident. A Yellow-breasted Chat was reported on May 8<sup>th</sup> and a Brewster's Warbler on May 29<sup>th</sup>.



# THUNDER CAPE BIRD OBSERVATORY

Many thanks to Nick Escott and the Thunder Cape Bird Observatory for sending along their Estimated Totals for inclusion in our (now) province-wide warbler migration report. The following information has been extracted from the Bird Studies Canada Web Site <http://www.bsc-eoc.org>.

Thunder Cape Bird Observatory is located in a clearing at the extreme southern tip of the Sibley Peninsula, a long tongue of forested land that extends into Lake Superior from the north shore... Although the Observatory is only 25 kilometres from the city of Thunder Bay (as the Raven flies), it is a remote and relatively inaccessible site.

Immediately to the north of the Observatory is a long thin butte called the Sleeping Giant. The Giant is a magnificent diabase sill with steep cliffs on each side of its length, the highest cliffs in Ontario. The combination of the shape of the peninsula and the Giant produce concentrations of several groups of birds at the Cape during migration, including passerines and waterfowl and raptors in the fall....

In addition to large numbers of regular species, TCBO has had a remarkable number of rarities, including Ontario's first Violet-Green Swallow and Black-throated Sparrow....

With support from Sleeping Giant Provincial Park, Thunder Cape Bird Observatory is a joint project of the Thunder Bay Field Naturalists, Ontario Ministry of Natural Resources and Bird Studies Canada.

## THUNDER BAY SPRING WARBLER COUNT - 2000

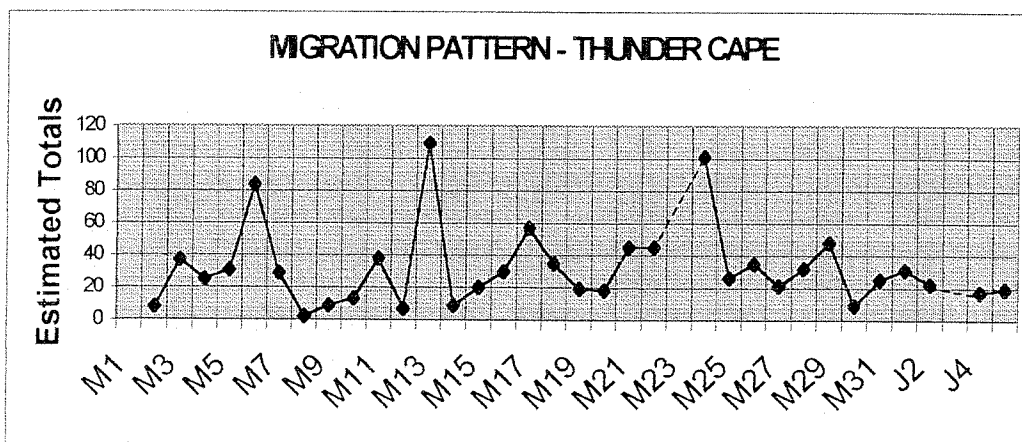
Thunder Cape Bird Observatory

SPECIES	MAY																															JUNE					TOTAL	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5		
Bl. & Wh.	0	0	0	1	1	2	5	0	1	5	0	2	5	0	3	6	4	1	3	2	0	1	0	1	2	1	2	0	1	0	0	1	2	0	0	1	53	
Tennes.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3		
Nashville	0	0	5	4	3	18	1	0	0	0	1	0	16	1	0	1	2	1	3	2	2	2	0	3	1	0	0	0	0	0	0	0	0	0	0	0	2	72
Yellow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	2	2	0	0	2	0	0	0	1	0	0	0	12	
Magnol.	0	0	0	0	0	0	0	0	0	0	0	2	8	0	2	3	8	0	4	1	6	3	0	8	3	4	1	3	6	2	3	2	2	0	1	2	74	
Cape May	0	0	0	0	1	2	0	0	0	0	1	0	8	1	0	0	4	2	0	0	2	2	0	14	0	3	1	2	1	0	0	0	0	0	0	1	0	45
Bl-thr Blue	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2	3	2	2	2	2	0	1	1	3	1	0	1	0	0	0	0	0	0	1	0	24	
Yel-rump.	0	8	23	9	18	36	14	1	4	5	31	3	14	7	5	4	10	13	2	2	1	19	0	6	1	1	1	3	2	1	2	0	0	0	2	1	249	
Bl-thr Gr	0	0	3	4	2	2	3	0	1	2	2	0	4	0	7	6	3	2	4	3	5	3	0	15	4	4	5	5	4	0	3	1	2	0	2	3	104	
Blackburn	0	0	1	0	0	3	0	0	0	0	0	0	4	0	0	1	2	4	0	2	6	0	7	0	0	1	5	2	0	2	0	0	0	0	0	1	41	
Chest-side	0	0	0	0	0	0	1	0	0	0	0	0	4	0	1	3	6	2	0	3	4	3	0	10	1	1	1	3	3	1	4	3	1	0	1	2	58	
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	2	0	4	0	1	1	0	0	0	0	0	0	1	0	13	
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Palm	0	0	4	7	6	20	2	1	3	0	3	0	37	0	0	1	2	2	0	0	3	2	0	2	2	0	0	0	0	1	0	0	0	0	0	0	98	
Ovenbird	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	2	1	1	0	0	1	1	0	1	0	4	1	0	2	0	0	0	2	0	0	0	19	
N Waterthr	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6		
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	7		
Yel-throat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	4	0	0	1	0	22	
Wilson's	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	6	2	0	2	0	1	0	3	1	1	0	1	0	29	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	0	0	0	0	1	0	0	1	0	1	0	22	
A Redstart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	1	0	0	0	0	3	0	0	1	1	1	0	0	2	0	0	1	0	10	
VISIT=1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	33
TOTALS	8	37	25	31	84	29	2	9	13	38	7	109	9	20	30	57	35	19	18	45	45		101	26	35	21	32	48	9	25	31	22		17	19	1053		
Swainson	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	9	3	0	1	1	2	1	1	2	2	1	10	0	0	6	2	43	
Sc. Tan.	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	0	0	0	0	0	0	6	
Rose-br Gr	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	
Average warblers per day =																																31.4						

Average warblers per day =

31.4

## THUNDER CAPE (continued)



## OTHER WARBLERS

DATE (May)	GOLDEN- WINGED	ORANGE- CROWNED	NORTHERN PARULA
3		1	2
4		3	2
5		3	
6		4	
7		1	
11		1	
13		1	
14			
16			2
17		1	2
18			
21	1	1	
24			5
25			2
26			1
27			3
28			2
29			2

## ARRIVAL DATES

### SOUTHERN ONTARIO

We now have some solid information accumulated on the first arrival dates of 20 of our warbler species in Southern Ontario. We have five years of data in which we have recorded our migration at three Warbler Count stations plus the Bird Observatories. We selected five locations where censuses were carried out every day during May each spring throughout the five years. They are (in south to north order) Long Point, Toronto, Whitby (Thickson's Woods), Port Hope and Prince Edward Point. We used only 20 of our usually targeted species, omitting the Yellow-rumped Warbler because it arrives in late April before our survey begins.

Table 1 gives the (average) first arrival dates of the five locations for the spring of 2000 and for the average of the years 1996 to 2000. There were no big surprises in 2000. As expected the Black and White, Nashville, Black-throated Green, Palm and Northern Waterthrush arrived near the first of the month, followed by the Tennessee, Chestnut-side and Redstarts a few days later and the Mourning and Blackpoll bringing up the rear of the migration.

As can be seen in Table 1, 2000 was a year of early migration for all species except Mourning Warbler. The right hand column gives an idea of when to watch for the arrival of each species, keeping in mind that the dates represent reports of first arrivals and the main migration is usually a little later.

TABLE 1		
ARRIVAL DATES IN SOUTHERN ONTARIO		
SPECIES	YEAR 2000	FIVE YEAR AVERAGE
	(May)	(May)
Black & White	1	2
Tennessee	8	12
Nashville	2	3
Yellow	3	5
Magnolia	4	8
Cape May	8	10
Black-throated Blue	3	4
Black-throated Green	2	3
Blackburnian	3	7
Chest-sided	4	8
Bay-breasted	9	13
Blackpoll	14	17
Palm	2	3
Ovenbird	3	4
Northern Waterthrush	3	4
Mourning	20	18
Common Yellow-throat	6	7
Wilson's	12	14
Canada	8	15
American Redstart	5	9

To compare the variation in arrival dates among the five locations we averaged the first arrival dates of 20 species for each of the years 1996 to 2000. In Table 2 the locations are arranged in south to north order with the latitudes shown.

As can be seen there is a variation of from a day to several days between locations. The difference in arrival time of one day between Long Point and Toronto/Whitby seems reasonable. However it is surprising to see that the arrival times at Port Hope and Prince Edward Point are an additional three days when they are only a few miles further north. It could be that the wider lake crossing at Port Hope and Prince Edward Point (about 70 km compared to 50 km at Toronto) acts as a greater deterrent for birds wishing to cross the lake. John Black's radar studies show that migrating birds moving north in the spring bunch up on the south side of Lake Ontario. No doubt many birds stop to feed and rest before making the crossing, especially when facing unfavorable weather.

TABLE 2		
LOCATION	LATITUDE	AVERAGE FIRST ARRIVAL DATE
LONG POINT	42 - 40	6-May
TORONTO	43 - 39	7-May
WHITBY	43 - 52	7-May
PRINCE EDWARD POINT	43 - 56	11-May
PORT HOPE	43 - 57	11-May

Table 3 gives us the arrival dates of the warblers with all species averaged for the five year period. This allows us to see which years are early and which are late. The arrivals were early in the years 1999 and 2000 and late in 1997

TABLE 3	
YEAR	AVERAGE ARRIVAL DATE
1996	9-May
1997	11-May
1998	9-May
1999	6-May
2000	6-May

## NORTHERN ONTARIO

The importance of our data from Northern Ontario is that it provides us with the dates on which most of our targeted warbler species arrive on their nesting grounds.

In Southern Ontario few of our plots are suitable for nesting for any species other than the Yellow Warbler. On the northern plots nearly all species other than the Blackpoll, which nests farther north, are good candidates for nesting. An examination of the charts for each of the three northern areas shows that the birds continue to occur on the plots from their arrival time until the end of our study period, an indication that at least some of the birds of each species are residents.

Table 4 sets out the arrival dates at the three Northern Ontario locations. The Yellow-rumped Warbler and Black-poll Warbler have been omitted; the Yellow-rump because it arrives before our study period begins and the Blackpoll because it nests to the north of our study locations. Where gaps appear in the table it indicates that the species was not recorded at that location during the spring of 2000.

We hope to get data from the north for many years so that we can record trends in the beginning of the breeding periods for our warblers. These trends could be useful when related to climate change over the years. If global warming is affecting our Ontario climate it should show in earlier dates of the arrival of birds on their breeding grounds.

TABLE 4 – ARRIVAL DATES IN NORTHERN ONTARIO

SPECIES	SAULT STE MARIE	ELLIOT	THUNDER CAPE	AVERAGE
	(May)	(May)	(May)	(May)
Black & White		2	4	3
Tennessee	8	23	14	15
Nashville	4	1	3	3
Yellow	8		18	13
Magnolia	7	15	12	11
Cape May	29		5	17
Black-thr. Blue		14	10	12
Black-thr. Green	4	1	3	3
Blackburnian	8	15	3	9
Chestnut-sided	6	17	7	10
Bay-breasted	7	16	13	12
Palm		1	3	2
Ovenbird	4	14	6	8
N. Water Thrush			7	7
Mourning	26		27	27
Yellow-throat	14		21	18
Wilson's	26		3	15
Canada			17	17
Am. Redstart	15	14	16	15

## COMPARISON OF ARRIVAL DATES, SOUTHERN AND NORTHERN ONTARIO

Table 5 compares the arrival dates of our targeted species in Southern and Northern Ontario. The Southern Ontario figure is the average of the first arrival dates at five locations. The Northern Ontario figure is the average of three locations. Again the Yellow-rumped and Blackpoll warblers have been omitted.

We assume that the southern plots are recording the time of passage of the migrants while the northern ones are recording their arrival on the breeding ground. As would be expected, the arrival in Northern Ontario is later.

SPECIES	TABLE 5	
	SOUTHERN ONTARIO (May)	NORTHERN ONTARIO (May)
Black & White	1	3
Tennessee	8	15
Nashville	2	3
Yellow	3	13
Magnolia	4	11
Cape May	8	17
Black-thr. Blue	3	12
Black-thr. Green	2	3
Blackburnian	3	9
Chestnut-sided	4	10
Bay-breasted	9	12
Palm	2	2
Ovenbird	3	8
N. Water Thrush	3	7
Mourning	20	27
Yellow-throat	6	18
Wilson's	12	15
Canada	8	17
Am. Redstart	5	15

## COMPARITIVE ABUNDANCE OF EACH SPECIES

The lists on the following pages show how common each species of warbler was compared to the other species we target at each location. The warblers are arranged from the most reported to the least reported. All 13 plots at Toronto have been added together and presented as one.

An examination of the lists points up the problem of the Yellow Warblers. They are residents at nearly all our data gathering locations and it is very difficult for the observers to separate the residents from the migrants. The result is that many birds get counted over and over again. This results in a false perception of how common the bird is. The only solution is to ignore the Yellows when we do our final calculation for this project. We would ask the observers to continue to count Yellow Warblers; this information will be useful in other ways such as mapping the bird's distribution.

Aside from Yellow Warblers the most common migrants are the Yellow-rumps, Magnolias, Chestnut-sides, Nashvilles and Redstarts. At the other end of the list we have the Cape May which is low if not at the bottom of all lists except Thunder Cape (see following section).

### COBOURG

#1	Yellow	51
#2	Yel-rump.	35
#3	Blackpoll	16
#4	Bay-breast	15
#5	Chest-side	15
#6	Magnolia	14
#7	Blackburn	11
#8	Am. Redst	10
#9	Tennessee	8
#10	Wilson's	7
#11	Bl-thr Blue	4
#12	Bl. & Wh.	3
#13	Bl-thr Gr	3
#14	Yel-throat	2
#15	Canada	1
#16	Mourning	1
#17	Nashville	1
#18	Palm	1
#19	Cape May	0
#20	N Watr Thr	0
#21	Ovenbird	0

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### COLLINGWOOD

#1	Yel-rump.	169
#2	Palm	20
#3	Yellow	7
#4	Bl-thr Gr	4
#5	Am. Redst	4
#6	Bl. & Wh.	3
#7	Ovenbird	3
#8	Mourning	2
#9	Cape May	1
#10	Blackburn	1
#11	N Waterth	1
#12	Yel-throat	1
#13	Tennessee	0
#14	Nashville	0
#15	Magnolia	0
#16	Bl-thr Blue	0
#17	Chest-side	0
#18	Bay-breast	0
#19	Blackpoll	0
#20	Wilson's	0
#21	Canada	0

216

### NEWMARKET

#1	Chest-side	23
#2	Nashville	22
#3	Yel-rump.	16
#4	Magnolia	14
#5	Bl-thr Gr	11
#6	Bl. & Wh.	10
#7	Blackburn	9
#8	Bay-breast	9
#9	Yellow	8
#10	Ovenbird	8
#11	Am. Redst	7
#12	Bl-thr Blue	3
#13	Blackpoll	3
#14	N Waterth	2
#15	Tennessee	1
#16	Yel-throat	1
#17	Wilson's	1
#18	Cape May	0
#19	Palm	0
#20	Mourning	0
#21	Canada	0

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PORT HOPE

#1	Yel-rump.	208
#2	Nashville	49
#3	Chest-side	45
#4	Magnolia	41
#5	Bl-thr Gr	31
#6	Bl. & Wh.	26
#7	Am. Redst	23
#8	Yellow	21
#9	Blackpoll	21
#10	Blackburn	20
#11	Ovenbird	18
#12	Bl-thr Blue	15
#13	Bay-breast	9
#14	Palm	7
#15	Tennessee	5
#16	Yel-throat	5
#17	Mourning	3
#18	Cape May	2
#19	N Waterth	1
#20	Wilson's	1
#21	Canada	1

552

ELLIOT LAKE

#1	Ovenbird	261
#2	Bl-thr Gr	228
#3	Bl. & Wh.	162
#4	Am. Redst	161
#5	Yel-rump.	45
#6	Magnolia	37
#7	Blackburn	37
#8	Chest-side	25
#9	Bl-thr Blue	18
#10	Nashville	17
#11	Palm	5
#12	Tennessee	3
#13	Cape May	3
#14	Blackpoll	2
#15	Bay-breast	1
#16	Yellow	0
#17	N Waterth	0
#18	Mourning	0
#19	Yel-throat	0
#20	Wilson's	0
#21	Canada	0

1005

SAULT STE MARIE

#1	Chest-side	54
#2	Yel-rump.	45
#3	Am. Redst	26
#4	Nashville	18
#5	Yel-throat	16
#6	Mourning	13
#7	Ovenbird	12
#8	Magnolia	9
#9	Bl-thr Gr	4
#10	Yellow	3
#11	Blackburn	3
#12	Tennessee	2
#13	Wilson's	2
#14	Bay-breast	1
#15	Blackpoll	1
#16	Bl. & Wh.	0
#17	Cape May	0
#18	Bl-thr Blue	0
#19	Palm	0
#20	N Waterth	0
#21	Canada	0

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TORONTO

#1	Yel-rump.	777
#2	Magnolia	565
#3	Am. Redst	446
#4	Nashville	341
#5	Chest-side	309
#6	Yellow	279
#7	Bl-thr Blue	277
#8	Bl-thr Gr	231
#9	Ovenbird	193
#10	Tennessee	188
#11	Bl. & Wh.	179
#12	Blackpoll	145
#13	Yel-throat	130
#14	Blackburn	119
#15	Bay-breast	119
#16	Wilson's	110
#17	Canada	54
#18	Palm	47
#19	N Waterth	37
#20	Cape May	31
#21	Mourning	29

4606

WHITBY

#1	Yellow	272
#2	Yel-rump.	195
#3	Am. Redst	157
#4	Bl-thr Blue	137
#5	Chest-side	102
#6	Magnolia	99
#7	Yel-throat	62
#8	Bl-thr Gr	60
#9	Canada	50
#10	Nashville	49
#11	Blackburn	45
#12	Bl. & Wh.	44
#13	Ovenbird	38
#14	Wilson's	28
#15	Tennessee	27
#16	Bay-breast	24
#17	Blackpoll	20
#18	Palm	13
#19	Cape May	10
#20	N Waterth	9
#21	Mourning	8

1449

PRINCE EDWARD

#1	Yellow	454
#2	Yel-rump.	429
#3	Magnolia	428
#4	Yel-throat	160
#5	Bl-thr Gr	97
#6	Palm	65
#7	Am. Redst	57
#8	Wilson's	47
#9	Chest-side	44
#10	Bl-thr Blue	38
#11	Nashville	35
#12	Ovenbird	32
#13	Bl. & Wh.	31
#14	Blackpoll	24
#15	N Waterth	24
#16	Blackburn	19
#17	Mourning	10
#18	Canada	10
#19	Bay-breast	9
#20	Tennessee	5
#21	Cape May	1

2019

LONG POINT

#1	Yellow	781
#2	Yel-throat	346
#3	Am. Redst	268
#4	Bl-thr Blue	179
#5	Wilson's	173
#6	Bl. & Wh.	164
#7	Ovenbird	160
#8	Chest-side	155
#9	Magnolia	155
#10	Blackpoll	130
#11	Yel-rump.	120
#12	Nashville	106
#13	Bl-thr Gr	87
#14	Blackburn	75
#15	Canada	56
#16	Mourning	38
#17	Bay-breast	30
#18	N Waterth	25
#19	Tennessee	21
#20	Cape May	17
#21	Palm	15

3101



<u>SELKIRK</u>			<u>RUTHVEN</u>			<u>THUNDER CAPE</u>		
#1	Yellow	291	#1	Yellow	415	#1	Yel-rump.	249
#2	Yel-throat	164	#2	Yel-throat	148	#2	Am. Redst	112
#3	Yel-rump.	137	#3	Magnolia	145	#3	Bl-thr Gr	104
#4	Magnolia	122	#4	Yel-rump.	74	#4	Palm	98
#5	Ovenbird	90	#5	Blackpoll	46	#5	Magnolia	74
#6	Bl-thr Blue	55	#6	Canada	28	#6	Yellow	72
#7	Nashville	43	#7	Am. Redst	28	#7	Nashville	72
#8	Am. Redst	37	#8	Ovenbird	26	#8	Chest-side	58
#9	Bl. & Wh.	29	#9	Nashville	25	#9	Bl. & Wh.	53
#10	Wilson's	28	#10	Wilson's	22	#10	Cape May	45
#11	Palm	27	#11	Chest-side	18	#11	Blackburn	41
#12	Chest-side	17	#12	Palm	11	#12	Wilson's	29
#13	Canada	16	#13	N Waterth	9	#13	Bl-thr Blue	24
#14	Bl-thr Gr	12	#14	Mourning	9	#14	Yel-throat	22
#15	Mourning	9	#15	Bl. & Wh.	6	#15	Ovenbird	19
#16	N Waterth	8	#16	Tennessee	6	#16	Bay-breast	13
#17	Bay-breast	4	#17	Bl-thr Blue	6	#17	Canada	10
#18	Blackburn	2	#18	Bl-thr Gr	6	#18	Mourning	7
#19	Blackpoll	1	#19	Blackburn	3	#19	N Waterth	6
#20	Tennessee	0	#20	Bay-breast	1	#20	Tennessee	3
#21	Cape May	0	#21	Cape May	0	#21	Blackpoll	1
1092			1032			1052		

### **TENNESSEE WARBLER**

I think most old-timers will agree that the species that has fallen most in numbers is the Tennessee. In the early days of this survey they seemed to be singing from every tree. In the 1970's and 1980's this was one of our most common warblers. We checked back on the ranking of the Tennessee and found that of the 21 species we count the Tennessee's position was as follows:

1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	2000
4	2	3	1	2	1	1	3	2	2	10

The Tennessee is one of the spruce budworm warblers and perhaps we will see a return to former numbers with fresh outbreaks of the insect in the north (see below). The figures above are for Toronto.

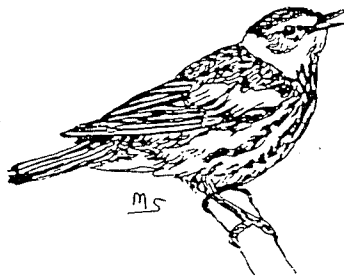
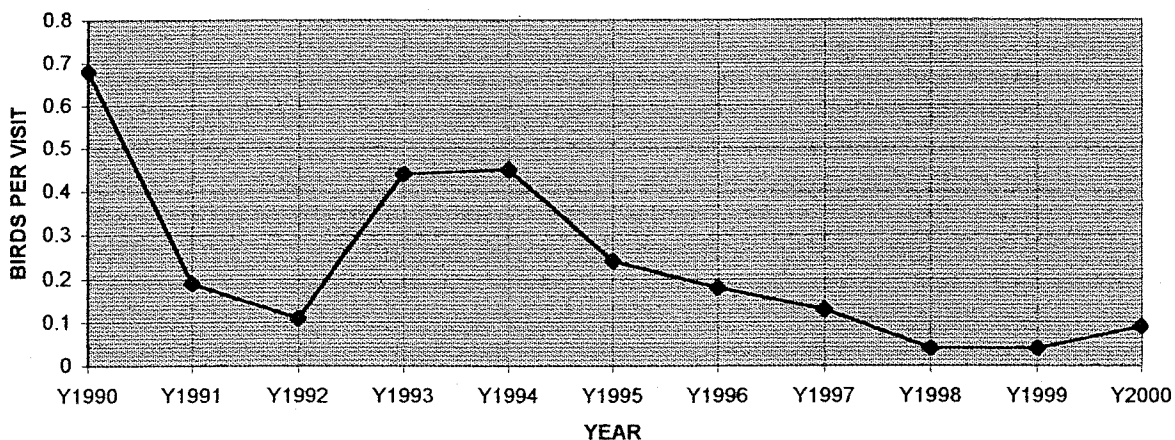
## CAPE MAY WARBLER

The following is a follow-up on our 1999 report on the Cape May Warbler. Between 1994 and 1998 Cape May numbers counted on our survey took a very steep drop reaching the lowest numbers since our study began in 1970. They remained low in 1999 and showed only a slight increase in 2000.

The Cape May is one of the warblers (along with Tennessee and Bay-breasted) whose numbers vary with the spruce budworm populations that form an important source of food during nesting. Ron Pittaway has sent along a report from the Canadian Forest Service and the Ontario Ministry of Natural Resources who have been monitoring the outbreaks of Spruce Budworm disease across the province. They reported moderate to severe defoliation in the North Bay and Sault Ste Marie districts in 2000. With this increase in food supply during the 2000 nesting season in the north we may expect some increase in Cape May counts in 2001.

Our assessment of Cape May numbers does not include Thunder Cape Bird Observatory for which we received data for the first time in 2000. We were surprised at the numbers of Cape Mays that pass through Thunder Cape. They had an estimated total of 45 birds and the Cape May was the 9<sup>th</sup> most common of 21 warbler species. Thunder Cape is well to the west of our other stations and the nesting area of its Cape Mays may be affected by a different food supply.

CAPE MAY WARBLERS 1990 - 2000



### Note

As time allows much more work needs to be done on individual species such as the Cape May and Tennessee warblers. At time of publication Tom Flinn is working on the data for each of the 21 warbler species including all the years back to our first year – 1970.

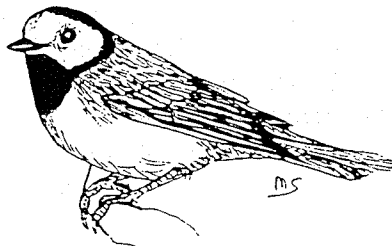
## SUMMARY OF 2000 SPRING WARBLER MIGRATION ACROSS ONTARIO

The warblers arrived a little early in 2000, with the first birds arriving anywhere from one to seven days early.

Their populations appeared to be above average. Our best indicator of warbler numbers at this time is Toronto where each year we have about 13 plots covered. Judging by the charts on page 7 the warblers reached a low in 1998, increased in numbers in 1999 and are continuing to climb toward the next peak in their population cycle. The average number of warblers per visit over the 29 years on which counts were made at Toronto is 10.7. The "average birds per visit" in 2000 was 12.7. As we accumulate more years of data from other parts of Ontario we will be able to form a more comprehensive picture of warbler population fluctuations.

Several areas including Toronto, Whitby and Thunder Cape had their largest peak on May 13<sup>th</sup> with many newly arriving Magnolia and Nashville warblers and the still plenty of Yellow-rumps. The only other notable peak was over the period May 20<sup>th</sup> to 24<sup>th</sup>. Toronto, and Cobourg had their peak on the 20<sup>th</sup>, Prince Edward Point, Long Point, and Selkirk on the 22<sup>nd</sup>, Ruthven on the 23<sup>rd</sup> and Thunder Cape on the 24<sup>th</sup>. The most reported bird in these peaks was the Magnolia Warbler at all these stations with lesser numbers of Yellow-rumps, Yellows, Black-throated Greens and, at Thunder Cape, 14!!! Cape May Warblers. In the 1970's when we used to give the relative abundance of each species each year the Magnolia was always among the top five in abundance.

Among the "Other Warblers" (those we do not include in the averaging) Parullas were reported from nearly every station. The rarest finds were a Kentucky Warbler at Rennie Park by Patrick Stepien-Scanlon and Worm-eating Warblers at Rosedale Valley by Don Peuramaki and at Long Point (observer?).



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## ACKNOWLEDGMENTS

Many thanks to the observers listed in Table 1 who got up early each morning to count the birds on their study plots. Thanks to Winnie Yung who entered most of the data from the field sheets and Tom Flynn who prepared the tables on the "Other Warblers". Thanks also to Long Point Bird Observatory, Prince Edward Point Bird Observatory, Haldimand Bird Observatory and Thunder Cape Bird Observatory who supplied the data from their stations, and to the Ontario Climate Control Centre, Environment Canada, for supplying the weather information. And a special thank you to Mike Solomon who, in addition to covering two plots also provided the warbler drawings.

## Appendix 1 - Instructions to warbler counters.

### ONTARIO SPRING WARBLER COUNT

1. For your study plot pick a wooded area which you can conveniently visit in most mornings between May 1st and June 5th.
2. Visit your plot each morning and spend one-half to one hour counting and listing the species listed on the attached form. If you are sure you know the bird's song you can count it even if you do not see it. It is a good idea to go over your warbler record or tape to review the songs. Remember, you are counting birds, - do not try to estimate the number of birds on your plot!
3. Follow the same route through your plot each day. You can get someone to do the count on mornings when you cannot make it. Just be sure the person knows the birds! Two people can share one plot as long as they cover the area the same way. Note which trip is done by which observer by entering an initial where it is indicated on the warbler form. Do not count together or combine two lists.
4. You may wish to enter your notes in a field note book and transfer them to the warbler form later. Records of any warblers not in the form can be listed below or on a separate sheet.
5. Write a short description of your plot including the location and the boundaries in case someone else should wish to use the same area in future years when you are not available.
6. On days when you do not visit your plot mark the form with a -1 in the first space in the column and run a wiggly line to the bottom. If you visit the plot but see no birds just leave the column blank.

Early in June post your completed form to : George Fairfield

#### OTHER WARBLER SPECIES:

<u>Species</u>	<u>Number</u>	<u>Date</u>	<u>Species</u>	<u>Number</u>	<u>Date</u>
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----

#### LOCATION AND DESCRIPTION OF STUDY PLOT:

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**T-2001**

Observer(s) -

[illegible]