

**THE ONTARIO SPRING WARBLER
MIGRATION COUNT - 1999**

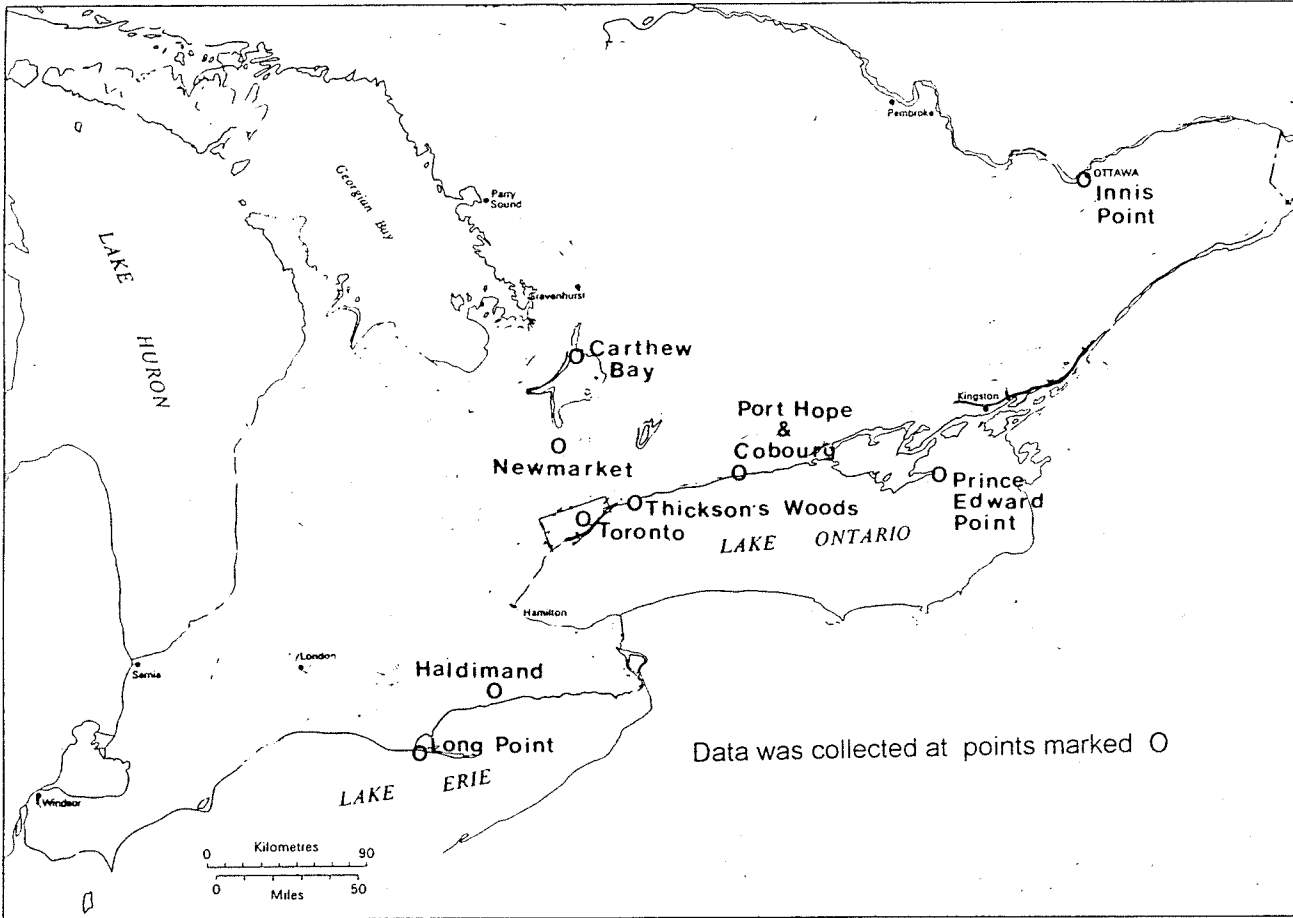
George M. Fairfield

Published by the Toronto Ornithological Club

CONTENTS

Introduction.....	1
The Observers and the Study Areas.....	2
THE STANDARD PLOTS	
Toronto.....	3
Cobourg.....	9
Port Hope.....	10
Whitby.....	12
Newmarket.....	13
Orillia.....	14
Sault Ste. Marie.....	15
THE BIRD OBSERVATORIES	
Innis Point (Ottawa).....	24
Prince Edward Point.....	25
Long Point.....	27
Haldimand.....	28
Summary of Spring Warbler Migration, 1999.....	31
References and Acknowledgments.....	33

— Sault Ste. Marie



THE ONTARIO SPRING WARBLER MIGRATION COUNT - 1999

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 of the annual report has become later and later until we have now almost reached the starting date of the 2000 survey. Also, it is too much to expect the observers to cover their plots for more than five weeks.

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

The count continues to grow slowly. Sault Ste. Marie added two more study areas this year for a total of four areas. Thanks to Bob Knudsen for organizing the Sault area. Andrew Keaveney started a new plot on Col. Samuel Smith Park. We were sorry to lose two of our longest time participants Bob Yukich and Bob Shillabeer. We must give a thank you to the two Bobs for their many years of conscientious work. We are fortunate that Don Barnett has taken over Bob Yukich's High Park plot and Ed Johns has taken over for Bob Shillabeer in Pine Hill Cemetery. Cliff MacFayden completed his warbler study near Orillia on June 5, 1999 and only a few weeks later we heard that he had died of cancer.

In addition to our census plots we receive data from the Bird Observatories at Long Point, Prince Edward Point and Innis Point (Ottawa) and we now receive migration information from Haldimand Bird Observatory. Haldimand has two study locations - John Miles mans the station at Selkirk Provincial Park and Rick Ludkin and Loretta Mousseau the station at Ruthven Park near Cayuga.

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). The study period is May 1 to June 5. (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.

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. However 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 the survey continues long enough it will also be useful in recording the effect of changes of the environment and climate.

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 1999, 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 covered two study areas each.

TABLE 1

<u>Study Areas</u>	<u>Visits</u>	<u>Observers</u>
Toronto		
<i>Standard Counts:</i>		
Brookbanks Ravine	30	Jean Iron, Naish McHugh, Ron Pittaway
Cedarvale Park	36	Mike Solomon
Cedarvale Ravine	36	Mike Solomon
Col. Samuel Smith Park	23	Andrew Keaveney
High Park North	22	Don Barnett
Humber River (South)	25	Patrick Stepien-Scanlon
Moore Park Ravine	36	Harry & Eileen Kerr
Mount Pleasant Cemetery	36	Harry & Eileen Kerr
Pine Hill Cemetery	33	Edmund Johns
Rennie Park	29	Patrick Stepien-Scanlon
Rosedale Valley	36	Donald Peuramaki
Unwin Avenue	36	Donald Peuramaki
Wychwood Park	33	Herb Elliott et al.
Total visits in Toronto	411	
<i>"Property" Count:</i>		
218 Humbercrest Blvd.	27	John Carley
Cobourg	29	Lori Wesley
Newmarket (Mabel Davis Cons'n Area.)	31	Kevin Shackleton
Orillia (Carthew Bay)	36	Cliff MacFayden
Port Hope	32	Elizabeth Kellogg & Roger Frost
Whitby (Thickson's Woods)	36	Margaret Bain, Phil Holder, Betty Ariss
Sault Ste. Marie		
Echo Bay	16	Euan Aitken
Pumpkin Point	18	Don Wilshire
Sault College Woodlot	16	W. Robertson, R. Zuchlinski, V. Walker
White Pines High School	19	Bob Knudsen
Total visits in Sault Ste. Marie	69	
BIRD OBSERVATORIES:		
Ottawa (Innis Point Bird Observatory)	36	Bill Murphy et al.
Long Point Bird Observatory. (Old Cut Sta.)	35	Observatory staff & volunteers
Prince Edward Point Bird Observatory	29	Eric Machell et al.
Haldimand Bird Observatory:		
Selkirk Provincial Park Station	35	John Miles
Ruthven Park Station	26	Rick Ludkin & Loretta Mousseau

TORONTO

In 1999 there were twelve 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.

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 12 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 which would result 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 - 3837, by the total number of visits - 411, we arrive at the average number of warblers per visit per year in 1999 - 9.3. This allows us to compare 1999 with the other years of the survey (see Table 4). 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 - 1999
12 CITY 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			
Black & Wh.	0	1	9	4	3	11	8	5	5	4	8	14	5	3	7	2	1	2	0	2	1	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	99		
Tennessee	0	0	0	0	0	1	1	4	2	4	5	5	7	4	9	17	11	21	11	13	7	8	3	1	2	4	0	6	6	3	0	0	0	0	0	0	155		
Nashville	0	4	4	10	14	22	18	10	12	21	37	30	22	15	12	11	5	3	0	4	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	257			
Yellow	0	2	1	3	4	7	12	8	8	13	15	20	9	9	14	15	15	12	12	16	11	7	9	2	12	14	14	19	9	11	6	5	7	5	4	335			
Magnolia	0	0	0	1	1	2	6	6	6	5	8	31	12	9	16	28	19	20	15	23	13	12	9	1	6	8	1	12	6	1	2	0	0	0	0	279			
Cape May	0	0	0	0	0	0	0	0	0	0	4	2	1	3	3	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17		
Bl. -thr. Blue	0	0	2	1	3	20	15	3	2	6	25	46	28	15	15	7	5	4	1	4	1	3	2	0	0	0	3	0	2	0	0	0	0	0	0	0	213		
Yel.-rumped	66	81	38	45	44	87	92	26	19	36	56	136	90	61	64	23	20	3	6	4	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	999			
Black-thr. Gr	3	12	12	11	7	28	8	5	3	12	25	20	7	9	10	6	7	5	0	4	2	6	0	3	0	0	2	3	5	0	0	0	0	0	0	1	203		
Blackburn.	0	0	0	1	1	2	3	4	4	7	11	13	3	1	6	2	2	4	2	6	0	3	0	0	2	2	3	5	0	0	0	0	0	0	0	0	87		
Chest -side	0	0	0	1	3	5	9	7	8	4	8	23	13	9	14	15	11	6	10	12	12	6	1	0	1	3	2	5	2	0	1	0	0	0	1	192			
Bay-breast.	0	0	0	0	0	0	0	1	1	2	5	12	7	4	10	10	4	5	1	8	2	3	2	0	2	2	1	6	5	0	0	0	0	0	0	0	93		
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	2	2	0	3	1	3	9	5	5	2	4	3	3	6	2	6	23	20	12	11	2	2	3	3	132			
Palm	1	2	0	0	0	2	0	1	1	9	4	8	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36		
Ovenbird	0	0	0	1	5	2	5	0	2	1	4	13	8	7	9	4	3	1	1	2	3	1	1	1	3	3	0	1	0	1	0	0	0	0	0	1	83		
N. Waterthr.	0	0	1	0	0	2	0	1	1	0	0	1	2	2	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	16		
Mourning	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	2	1	1	2	0	1	0	0	0	0	2	4	1	0	0	1	0	1	19			
Yellow-thr.	0	0	0	0	0	0	1	0	1	2	2	7	5	3	6	5	4	6	4	7	4	11	6	4	6	10	5	22	8	3	6	1	6	1	1	147			
Wilson's	0	0	0	0	0	0	0	0	0	1	2	1	0	0	2	1	2	4	3	7	6	4	6	0	2	5	2	8	3	2	0	0	0	0	0	61			
Canada	0	0	0	0	0	0	0	0	0	1	0	3	1	1	1	0	1	2	2	4	4	0	0	0	0	1	1	4	1	1	0	0	0	1	0	0	29		
Am. Redst.	0	0	0	0	0	0	5	0	2	1	2	46	28	12	29	20	3	16	7	14	15	17	21	2	13	14	15	42	34	13	6	3	2	1	2	0	385		
Total Visits	12	12	12	13	13	13	10	10	11	13	13	13	13	9	11	13	13	13	13	13	11	8	9	8	11	12	13	13	11	12	12	11	11	9	9	8	411		
Total Warb.	69	102	67	78	85	191	183	81	77	129	222	433	253	171	232	171	119	126	81	137	83	78	69	15	55	73	53	157	106	48	32	11	19	11	13	6	3837		
Birds/visit	6	9	6	6	7	15	14	8	8	12	17	33	19	13	26	16	9	10	6	5	8	10	8	2	5	6	4	12	10	4	3	1	2	1	1	9.34			
Rounded to the closest whole number																																							
Swains. Thr.	0	2	0	0	1	1	0	0	0	2	4	18	9	9	13	19	12	9	2	6	8	6	5	2	2	10	8	16	14	1	0	1	1	0	0	181			
Scarlet Tan.	0	0	0	0	0	1	1	1	2	0	5	9	1	2	1	4	5	5	3	1	0	4	2	0	1	3	1	2	3	0	0	0	0	0	0	0	57		
Rose-br. Gr.	0	0	1	0	21	32	30	22	14	7	13	23	8	9	17	14	8	3	3	5	0	1	1	0	1	4	2	3	0	1	0	0	0	0	0	0	243		

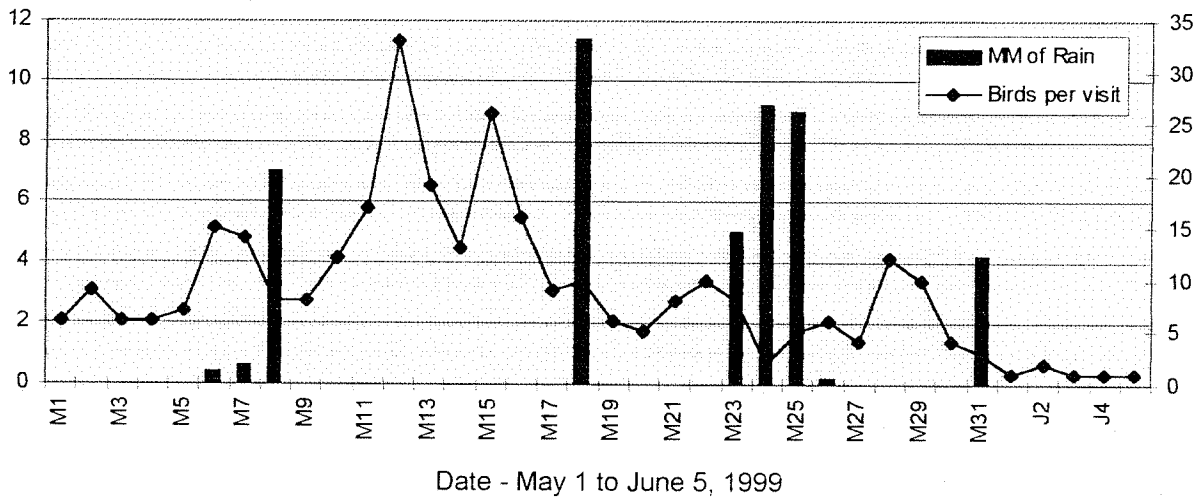
THE MIGRATION PATTERN

Graph 1 shows the pattern of migration for the plots (the lines) and the millimetres of rainfall (the bars) in Toronto. The rainfall scale in millimetres per day are on the left side of the graph and the average number of warblers per visit scale on the right.

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 at 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 rain but rather represent their normal stops for feeding and resting.

The peak of the spring migration was early at Toronto in 1999. May 12 saw large numbers of Yellow-rumps, Black-throated Blues, Redstarts, Nashville's Magnolia's, and Chestnut-sided's. From that peak the numbers trailed off quite evenly to the end of May. There was an interesting late peak on May 28 made up mainly of Redstarts, Blackpolls, Yellowthroats and Yellows. This is the normal time for the Blackpolls. The other three species' high counts probably reflects the last rush of females moving through to their nesting grounds.

GRAPH 1
Rainfall vs. Average number of Warbler per Visit



COMPARISON OF TORONTO SPRING WARBLER COUNT WITH RADAR READINGS AT ST. CATHARINES

We are very fortunate indeed to have received John Black's data on night migrants obtained by radar at Brock University in St. Catharines. John is a professor in the Physics department at Brock and he has tracked the migration with radar for several years.

Graph 2 compares the radar results from St. Catharines with our counts of grounded migrants at Toronto. I would have expected a better correlation between the samples at St. Catharines and Toronto than we got. Toronto is 50 Kilometres straight north of St. Catharines. If John's birds continued across the lake we should expect to find many of them resting and feeding at Toronto the next day, after their long crossing over the lake.

John's first peak on May 5th is reflected in a peak at Toronto on May 6th and 7th, as would be expected. But what happened on May 12th when we experienced our highest peak of the spring? There was no corresponding peak at St. Catharines on May 11th. In fact there were no birds seen on the radar that night!

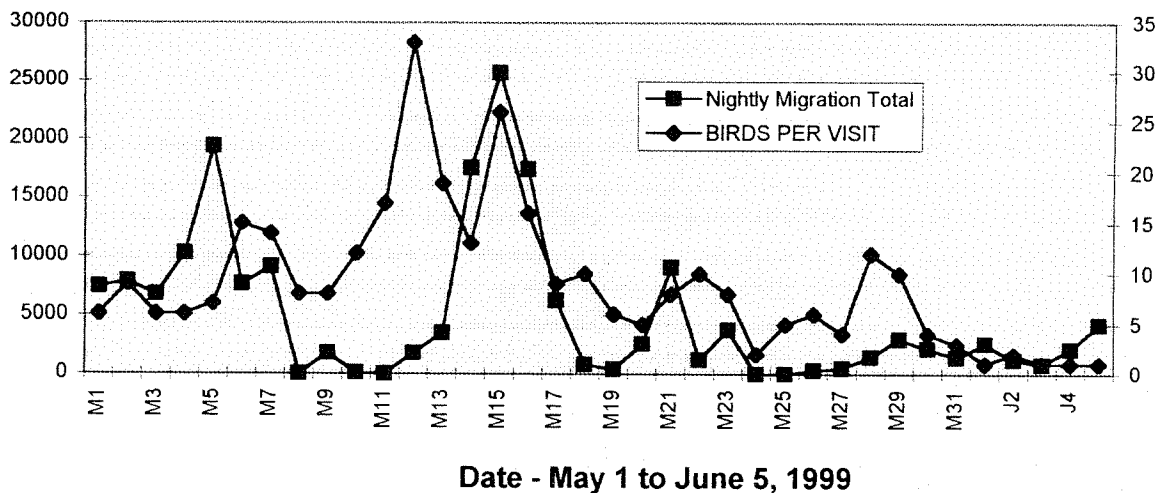
We both recorded a peak on May 15 and then a sharp drop off of numbers to May 24th. At Toronto we recorded a small peak on May 28th as stated above. There was little or no indication of these birds the night before at St. Catharines.

Both lines on the graph show that the migration was early in 1999. (I checked our past migration pattern graphs) The bulk of the migrants had gone through by May 17th.

Perhaps we should not expect a perfect correlation between the data at St. Catharines and Toronto. John's sample is very much larger than ours. He counted the images of 181,064 birds between May 1st and June 5th whereas we saw only 3837 birds, roughly two percent of his total. Also John is counting all species, not just the warblers. He is counting birds flying over at night, not grounded migrants. Since St. Catharines is south of Lake Ontario many birds probably cut their nocturnal flights short when they see the 50 kilometers of water ahead of them. They would then rest and feed for a day or so and then fly right over Toronto to be missed by our volunteers.

GRAPH 2

WARBLERS AT TORONTO COMPARED TO ALL SPECIES AT ST. CATHARINES



TORONTO WARBLER COUNTS OVER A 30-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 1999, we counted 3837 warblers in 411 visits giving us an average number of birds per visit of 9.34. This average allows us to compare 1999 with the other years of the survey.

Table 4(a), 4(b) and 4(c) give the average number of birds per visit for the full five weeks for each of the years for which we collected data (no counts were taken in 1985 and 1986) since the study began in 1970. The purpose is to provide a rough measurement of the rise and fall of warbler populations which nest north of Toronto. It appears that the fall in warbler numbers that we feared in the 1980's was an illusion and what we were looking at was the low end of a cycle, - a cycle of roughly 15 years. The very low counts in 1998 may have been caused by the difficulty in counting warblers due to the early spring with its heavy leaf cover combined with the failure of the warblers to land due to the fine flying conditions. The count in 1999 was well below average and it may be that we are starting down to the low end of the cycle again.

TABLE 3

TABLE 3(a) - THE 1970's

Year	Number of Visits	Birds Counted	Average Number 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

Average number of warblers per visit in the 1970's = 12.0

TABLE 3(b) - THE 1980's

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	-	-
1986	No count taken	-	-
1987	187	1313	7.0
1988	198	1537	7.7
1989	149	1013	6.8

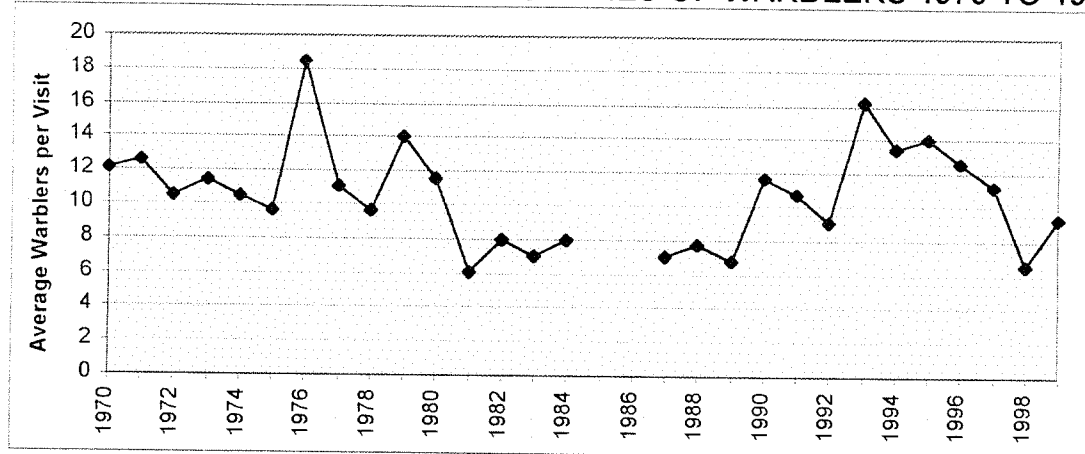
Average number of warblers per visit in the 1980's = 7.8

TABLE 3(c) - THE 1990's

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

Average number of warblers per visit in the 1990's = 11.3

Graph 3
TRENDS IN THE NUMBERS OF 21 SPECIES OF WARBLERS 1970 TO 1999



OTHER WARBLERS

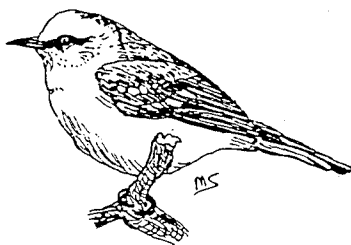
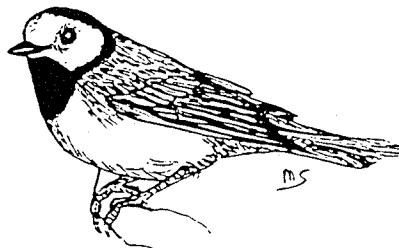
Several species of warbler are not included in our statistical analyses because too few are seen. Those reported by the observers are set out in Table 4. For the names of the observers please refer to Table 1.

TABLE 4

<u>Species</u>	<u>Number</u>	<u>Date</u>	<u>Study Plot</u>
Blue-winged Warbler	1	May 6, 8	Rosedale Valley
Golden-winged	1	May 4	Unwin Avenue
Orange-Crowned	1	May 5	Rosedale Valley
"	1	May 10	Col. Sam Smith Park
"	2	May 11	Rosedale Valley
"	1	May 12	Rosedale Valley
"	1	May 12	South Humber Park
"	2	May 13	Cedarvale Park
"	1	May 13	South Humber Park
Northern Parula	1	May 5	Rosedale Valley
"	1	May 10	Pine Hill Cemetery
"	1	May 12	Brookbanks Ravine
"	1	May 12	Rennie Park
"	1	May 12	South Humber Park
"	1	May 15	Rosedale Valley
"	1	May 15	Col. Sam Smith Park
"	1	May 16	Unwin Avenue
"	1	May 20	Wychwood Park
Pine Warbler	1	May 2	Col. Sam Smith Park
"	1	May 10	Pine Hill Cemetery
"	1	May 14	Pine Hill Cemetery

Table 4 (cont.)

Cerulean Warbler	1	May 21	Rennie Park
Worm-eating Warbler	1	May 3	Brookbanks Ravine
Connecticut Warbler	1	May 16	South Humber Park
"	1	May 28	Brookbanks Ravine
"	1	May 28	Rennie Park
Kentucky Warbler	1	May 12	Rosedale Valley



PORT HOPE

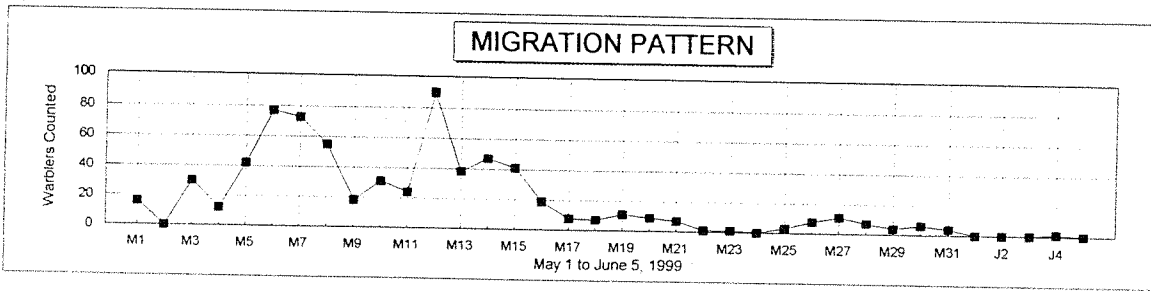
Elisabeth Kellogg provided our only new bird for the Warbler Count. The Audubon's Warbler, while no longer recognized as a separate species from the Yellow-rumped Warbler is an important recognizable form. The Audubon's breeding range is in central and southern British Columbia with an isolated population at Cypress Hills on the Saskatchewan - Alberta border. The adult male's yellow throat is as good as a colour band or colour mark and lets us know how far the bird has wandered from his home range.

ONTARIO SPRING WARBLER COUNT - 1999

PORT HOPE - Roger Frost, Elizabeth Kellogg, Bob & Mary Short

F = Frost K = Kellogg B = Bob, & M = Mary Short

	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 initial	K	a-1	F	K	F	F	K	F	K	K	K	F	F	F	F	K	F	F	F	F	F	B	M	a-1	K	F	F	F	K	K	K	a-1	a-1	K	F	F				
Black & White	0	0	2	4	3	2	0	0	0	0	1	8	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Tennessee	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Nashville	0	0	0	0	4	3	5	2	0	7	0	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Yellow	0	0	0	1	5	3	3	3	2	3	0	1	1	2	2	0	1	2	2	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	34	
Magnolia	0	0	0	0	0	2	0	0	0	0	0	3	2	2	6	2	1	2	4	3	0	0	0	0	0	3	5	0	0	0	1	0	0	0	0	0	0	0	36	
Cape May	0	0	0	0	0	0	1	2	0	4	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	10	
Black-thr. Blue	0	0	0	0	0	3	1	0	2	1	3	6	2	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Yellow-rumped	15	0	27	5	25	57	52	43	6	7	12	35	23	28	15	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	358	
Black-thr. Green	1	0	0	1	3	4	3	1	3	4	5	8	2	3	0	1	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	43	
Blackburnian	0	0	0	0	0	2	0	0	0	0	0	6	0	3	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	16	
Chestnut-sided	0	0	0	0	1	0	3	3	5	3	3	8	3	1	5	2	2	0	1	1	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	45	
Bay-breasted	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	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	1	0	0	1	0	0	1	0	0	0	0	2	1	2	0	0	0	0	0	0	0	7		
Palm	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	0	0	1		
Ovenbird	0	0	1	1	1	1	0	1	0	2	0	3	0	1	3	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	
N. Water Thrush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0		
Yellow-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	1	0	1	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	1	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3		
Canada	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	1	0	0	0	0	0	0	0	0	0	0	4		
Am. Redstart	0	0	0	0	0	2	1	0	0	0	0	5	3	1	2	0	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	35	
VISIT=1	1	0	1	1	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	0	0	1	1	1			
DAILY TOTALS:	16	0	30	12	42	77	73	55	18	31	24	90	38	47	41	19	8	7	11	9	7	1	1	0	3	8	11	7	4	6	4	0	0	0	1	0	32			
Swainson's Thr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
Scarlet Tanager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Rose-br. Gros.	0	0	0	1	2	1	0	1	1	3	1	2	3	1	4	11	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
																																						35		



Port Hope (cont.)

OTHER WARBLERS

Date	Northern Parula	Pine	Audubon's
May 5		1	
May 6		1	
May 7	1	1	
May 11			1
May 12	2		
May 13	1		
May 14	1		
May 15	1		
May 16	1		
May 20		1	
May 21		1	
May 27	1		
June 4		1	
June 5		1	



NEWMARKET

Kevin Shackleton writes:

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. There are several blocks in the area dominated by large willows and one section which appears to be native hardwoods with the understory here holding several species of native wild flowers. There is also a section which was once an orchard. The whole area is criss-crossed by trails of various origins although movement is somewhat restricted by ditches and chain-linked fences.

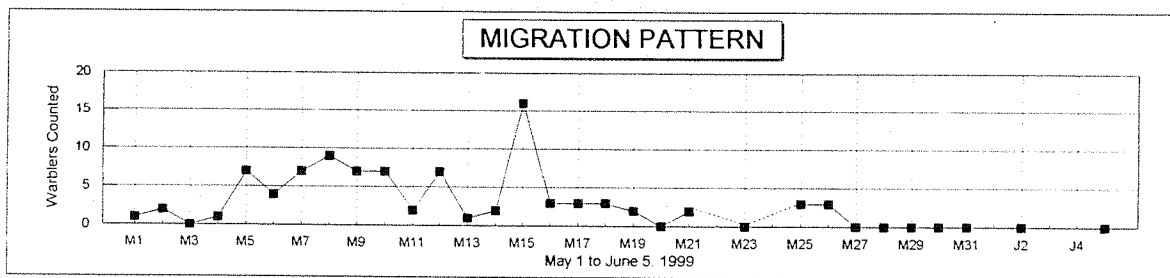
This was a much different year than 1998. While numbers did not recover to the levels of 1996 and 1997 they were over three times higher than last year. I was surprised by the early peak in migration and the extremely sharp drop off from it. In prior years the peak came in the fourth week of the month. By the 18th of May I could have left my binoculars at home as vegetation was so thick birding was done almost exclusively by ear. I was pleased to have the first Blue-winged Warblers I have counted in Mabel Davis C.A. I was also quite happy to identify by sight an Orange-crowned Warbler, a fall visitor to the area, but never before seen by me in the spring.

NEWMARKET SPRING WARBLER COUNT - 1999

MABEL DAVIS CONSERVATION AREA - Ken Shackleton

S = Shackleton, D = Dunn

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	0	0	0	0	3	1	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	6	
Tennessee	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Nashville	0	0	0	0	0	2	2	1	2	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
Yellow	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Magnolia	0	0	0	0	1	0	1	1	2	1	1	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
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	0	0	
Black-thr. Blue	0	0	0	0	2	0	0	1	0	0	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yellow-rumped	1	2	0	1	1	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	6	
Black-thr. Green	0	0	0	0	1	0	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	0	
Blackburnian	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Chestnut-sided	0	0	0	0	1	0	1	2	0	0	0	3	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	12	
Bay-breasted	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	0	0	0	2	
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	0	0	
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	0	0	
Ovenbird	0	0	0	0	0	1	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
N. Water Thrush	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	0	0	0	1	
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Yellow-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	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	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	0	
Am. Redstart	0	0	0	0	0	1	0	0	1	1	0	0	0	0	2	1	0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	10
VISIT=1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	0	1	0	0	1	31	
DAILY TOTALS:	1	2	0	1	7	4	7	9	7	7	2	7	1	2	16	3	3	3	2	0	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	92		
Swainson's Thr.	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	0	0	0	0	1	
Scarlet Tanager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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. Gros.	0	0	0	0	0	2	1	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	



OTHER WARBLERS

Date	Blue-winged Warbler	Orange-crowned Warbler
May 9	1	
May 15	1	
May 20		1

ORILLIA

Cliff MacFayden showed real dedication to have completed his Warbler Count when he was so sick. He died a few weeks after completing his survey.

Cliff sent the following note with his survey form: "Carthew Bay - At my place mature cedars 70' to 80' tall where 90% of the warblers were recorded, - and Eight-Mile Point mostly mature red maples, a few mature birch trees and dense ground cover.

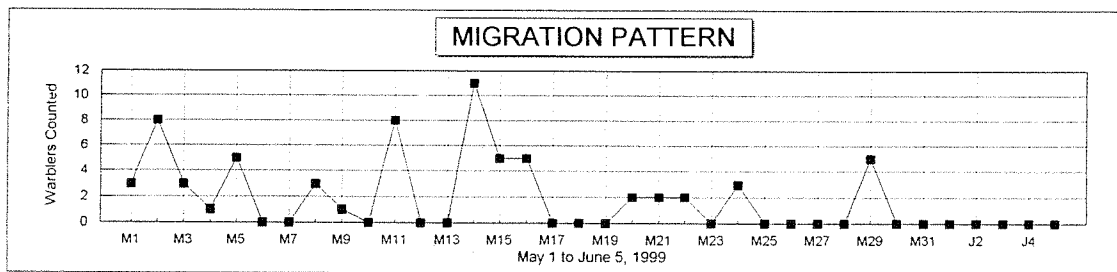
The migrant warbler numbers were seriously reduced in the violent storms in the Gulf of Mexico and the east Atlantic coast in the spring."

The writer gave a talk about the Warbler Count to the Orillia Naturalists in March, 2000. Some members of the Brereton Club at Barrie were also present and I have hopes that some members of those two clubs will do counts in 2000 so that the central part of Southern Ontario will have adequate coverage.

ORILLIA SPRING WARBLER COUNT - 1999

CARTHEW BAY - Cliff MacFayden

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	0	0	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	2
Tennessee	0	0	0	0	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	0	0	0	0	0	0	4	
Nashville	0	0	0	0	1	0	0	2	0	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
Yellow	0	0	0	1	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	4	
Magnolia	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	0	0	2		
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		
Black-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	1	0	0	0	0	0	0	1		
Yellow-rumped	3	8	2	0	2	0	0	1	0	0	7	0	0	11	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36		
Black-thr. Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Blackburnian	0	0	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	0	2		
Chestnut-sided	0	0	0	0	0	0	0	0	0	0	0	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-breasted	0	0	0	0	0	0	0	0	0	0	0	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		
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	0	0	0	0	0	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. Water Thrush	0	0	0	0	0	0	0	0	0	0	0	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		
Yellow-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		
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		
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		
Am. Redstart	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
VISIT=1, NO VISI	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:	3	8	3	1	5	0	3	1	0	8	0	0	11	5	5	0	0	0	2	2	2	0	3	0	0	0	0	5	0	0	0	0	0	0	67		
Swainson's Thrush	0	0	0	0	0	0	0	0	0	0	0	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 Tanager	0	0	0	0	0	0	0	0	0	0	0	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. Grosbeak	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		



SAULT STE. MARIE

Bob Knudsen and his friends in Sault Ste. Marie are to be congratulated for adding two new warbler study areas (they now have four) and four new volunteer observers. The new areas are Pumpkin Point and Sault College Woodlot; the new recruits - Don Wilshire, Warren Robinson, Valerie Walker, and Jerry Zuchlinski. In 1999 the observers made a total of 69 visits and counted some 1036 warblers.

The participation of the Sault adds another dimension to our study by providing dates of arrival on the nesting grounds for many of our species. The importance of this information will increase as we attempt to relate the movements of birds to weather and climatic changes. The table on page 30 which gives the arrival date of the warblers at seven points in Ontario including Sault Ste. Marie indicates that on the average the birds arrive two-days later in the Sault. All the other study areas are well to the south of the Sault. However the distance from the southern fringe of the province to Sault Ste. Marie is a short flight for night migrants, too short to account for the difference in the arrival times. No doubt the time difference can be accounted for by stops for resting and feeding before moving on to Northern Ontario.

Tables 1 to 4 show the sightings at each study area.
Table 5 shows the four combined.

TABLE 1

SAULT STE. MARIE SPRING WARBLER COUNT - 1999
WHITE PINES HIGH SCHOOL - Bob Knudsen

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	0	0	0	0	0	0	0	1	1	0	3	0	0	0	1	0	0	1	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Tennessee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	6	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Nashville	0	0	0	0	0	0	2	2	2	5	2	3	2	0	1	0	0	1	0	2	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	
Yellow	0	0	0	0	0	0	0	1	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	4		
Magnolia	0	0	0	0	0	0	2	1	1	0	1	1	3	0	1	0	1	1	0	2	5	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22		
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5		
Black-thr. Blue	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	0	0	1		
Yellow-rumped	0	0	0	0	4	6	7	2	3	9	2	3	3	0	1	0	1	3	2	1	2	2	1	0	0	0	0	0	0	0	0	3	2	0	0	0	0	57		
Black-thr. Green	0	0	0	0	0	0	1	2	0	3	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9		
Blackburnian	0	0	0	0	0	0	1	1	1	1	0	2	0	1	0	1	1	2	1	0	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	14		
Chestnut-sided	0	0	0	0	1	1	2	1	2	3	2	4	4	0	5	0	5	6	4	7	8	4	5	0	0	0	0	0	0	0	6	5	0	0	0	0	75			
Bay-breasted	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	3	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	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
Palm	0	0	0	0	0	0	1	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	3		
Ovenbird	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6		
N. Water Thrush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	1	0	2	2	2	0	0	0	0	0	0	0	3	2	0	0	0	0	13			
Yellow-throat	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	2	2	3	3	3	0	0	0	0	0	0	0	4	5	0	0	0	0	28			
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7			
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6			
Am. Redstart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	7	4	3	0	0	0	0	0	0	5	4	0	0	0	0	27				
VISIT=1	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	19				
DAILY TOTALS:	0	0	0	0	5	7	16	13	9	25	9	12	15	0	15	0	11	20	15	30	51	20	31	0	0	0	0	0	0	21	18	0	0	0	0	343				
Swainson's Thr.	0	0	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	4			
Scarlet Tanager	0	0	0	0	0	0	0	0	0	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	2			
Rose-br. Gros.	0	0	0	0	0	0	0	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	3			

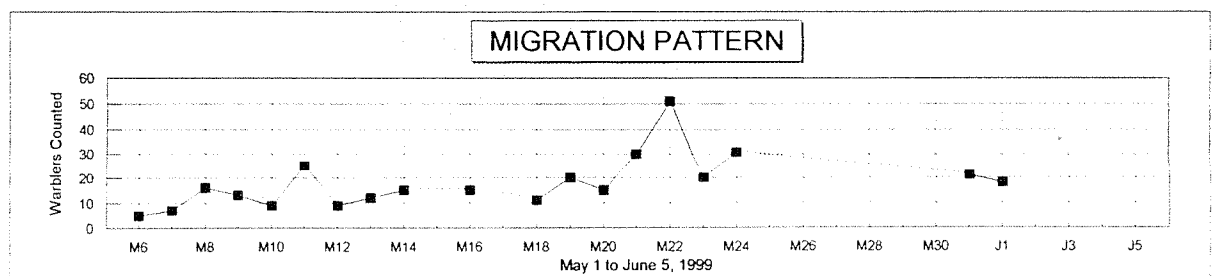


TABLE 2

SAULT STE. MARIE SPRING WARBLER COUNT - 1999

SAULT COLLEGE WOODLOT - Warren Robertson, Jerry Zuchlinski, Valerie Walker

Robertson = R; Zuchlinski & Walker = ZW

	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	
Observers Initial									R	R			R	R	R			R		ZW	ZW	ZW		ZW			ZW	ZW		R		R		R			
Tennessee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	1	2	1	0	1	0	0	4	1	0	2	0	1	0	2	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Magnolia	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	
Black-thr. Blue	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	0	2	0	0	0	0	0	0	0	0	
Yellow-rumped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Black-thr. Green	0	0	0	0	0	0	0	0	1	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	
Blackburnian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	0	2	0	0	2	2	0	2	0	2	0	0	0	0		
Chestnut-sided	0	0	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	
Bay-breasted	0	0	0	0	0	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	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	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	1	3	0	0	1	1	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
N. Water Thrush	0	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	3	0	2	0	3	0	2		
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	
Yellow-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	1	0	2	0	2		
Wilson's	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		
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. Redstart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VISIT=1	0	0	0	0	0	0	0	1	1	0	0	1	1	1	0	0	1	0	1	1	1	0	1	0	0	1	1	0	1	0	1	0	1	0	1	0	
DAILY TOTALS:								2	3			1	1	6			6		18	11	8		3	0		7	7		11		4		9		6		
Swainson's 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 Tanager	0	0	0	0	0	0	0	0	0	0	0	0	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. Gros.	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	0	0	0	0	0	0	0	

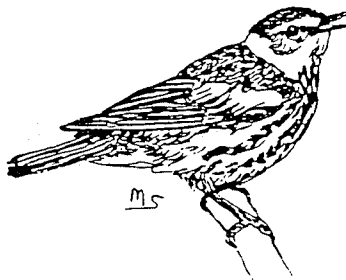
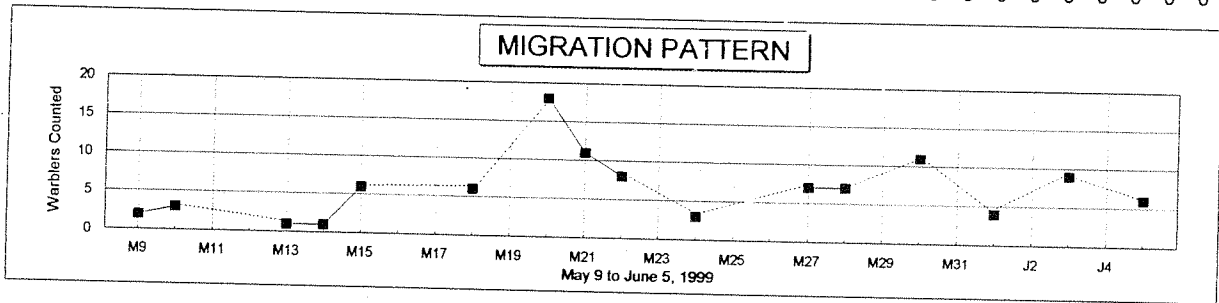


TABLE 3

SAULT STE. MARIE SPRING WARBLER COUNT - 1999
PUMPKIN POINT - Don Wilshire

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				
Black & White	0	0	0	0	0	0	0	0	3	0	1	1	2	0	2	3	0	0	0	0	0	2	0	0	0	0	2	0	1	1	0	0	0	0	0	0	1	0	19	
Tennessee	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	0	0	0	0	0	1	0
Nashville	0	0	0	0	0	2	1	0	3	3	3	2	3	0	2	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	0	0	0	0	0	0	0	0	0	1	1	1	1	0	3	3	0	0	0	0	0	3	0	0	0	0	1	1	3	5	0	0	0	0	0	0	0	4	4	
Magnolia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	3	0	0	0	0	1	3	2	2	0	0	0	0	0	0	3	3		
Black-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	0	0		
Yellow-rumped	0	1	0	0	2	1	2	0	2	2	3	3	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	
Black-thr. Green	0	0	0	0	1	1	1	0	1	1	1	1	2	0	2	2	0	0	0	0	1	0	0	0	0	2	0	1	1	0	0	0	0	0	0	0	1	0		
Blackburnian	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	2	2	2	2	0	0	0	0	0	0	2	0		
Chestnut-sided	0	0	0	0	0	0	0	0	3	0	0	0	2	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Bay-breasted	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	2	0	0	1	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	0	0		
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	0	0		
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	0	0		
N. Water Thrush	0	0	0	0	0	0	0	0	0	0	2	0	3	0	4	3	0	0	0	0	3	0	0	0	0	0	4	4	4	2	0	0	0	0	0	0	2	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	0	0	0	0	0	0	0	0	0	0	0	0		
Yellow-throat	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3	3	0	0	0	0	2	0	0	0	0	1	1	3	2	0	0	0	0	0	0	2	3			
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	3	3	4	4	0	0	0	0	0	4	3				
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			
Am. Redstart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
VISIT=1	0	1	0	0	1	1	1	0	1	1	1	1	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	1		
DAILY TOTALS:	0	1	0	0	3	4	4	0	13	10	10	8	17	0	25	23	0	0	0	0	0	20	0	0	0	0	18	14	22	20	0	0	0	0	0	21	14			
Swainson's 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	0			
Scarlet Tanager	0	0	0	0	0	0	0	0	0	0	0	0	0	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. Gros.	0	0	0	0	0	0	0	0	0	0	0	1	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	1		

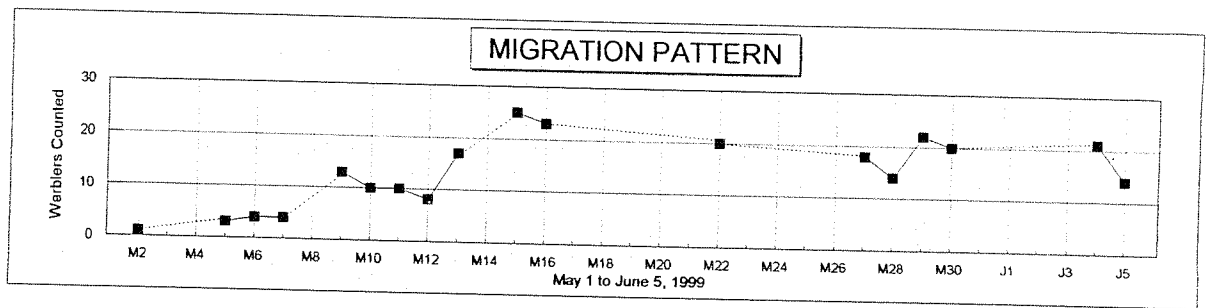


TABLE 4

SAULT STE. MARIE SPRING WARBLER COUNT - 1999
 WATERFRONT ROAD, ECHO BAY - Euan Aitken

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	0	0	0	0	0	0	3	3	0	0	0	0	0	0	6	5	4	0	0	0	0	4	6	4	0	0	5	0	4	5	3	0	0	4	0	5	61		
Tennessee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	2	2	0	0	0	0	0	0	2	2	2	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
Yellow	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	1	0	0	0	0	0	0		
Magnolia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	3	0	0	4	0	5	7	4	0	0	5	0	4	2	2	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	0	0	0	0	0	0	1	0	0	0	0	0	0	0		
Black-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	0	0	
Yellow-rumped	0	0	0	0	0	1	0	0	0	0	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	
Black-thr. Green	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	3	4	0	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackburnian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Chestnut-sided	0	0	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	2	3	2	0	0	0	2	0	2	0	0
Bay-breasted	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	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	0	0	0
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	0	0	0
Ovenbird	0	0	0	0	0	3	4	0	0	0	0	0	0	0	6	6	6	0	0	4	0	3	5	6	0	0	6	0	7	7	6	0	0	6	0	7	0	0	
N. Water Thrush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	1	1	1	0	0	1	0	2	2	3	0	0	1	0	3	2	4	0	0	1	0	0	0	0	0	
Yellow-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	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	1	1	0	0	1	1	1	1	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	0	0
Am. Redstart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISIT=1	0	0	1	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	0	1	
DAILY TOTALS:	0	0	0	0	0	11	9	0	0	0	0	0	0	24	23	25	0	0	17	0	24	25	24	0	0	25	0	29	29	28	0	0	22	0	28	0	0		
Swainson's 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	0	0	
Scarlet Tanager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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. Gros.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

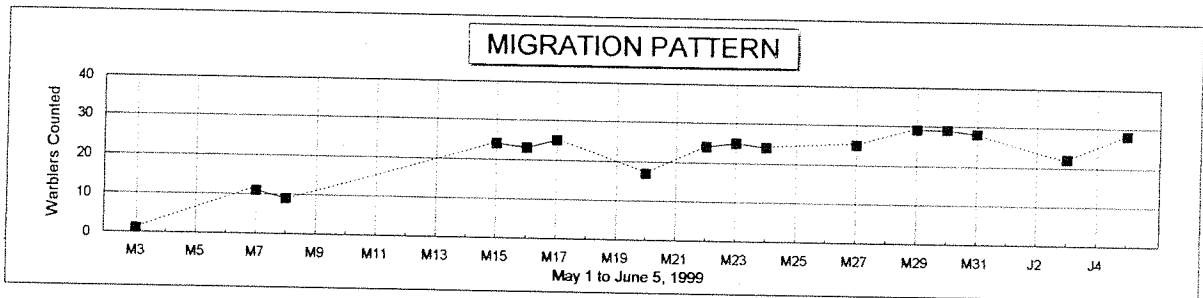


TABLE 5

SAULT STE. MARIE SPRING WARBLER COUNT - 1999
FOUR 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	
Black & White	0	0	0	0	0	0	3	4	4	0	4	1	2	0	11	9	4	2	1	2	4	8	7	6	0	0	11	1	5	8	3	1	0	6	1	5	113
Tennessee	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3	6	2	2	0	0	0	0	0	0	0	0	0	0	0	0	15
Nashville	0	0	0	0	0	2	3	4	5	5	8	4	6	2	4	4	2	0	1	0	2	6	1	2	0	0	0	0	2	0	1	0	0	0	2	0	66
Yellow	0	0	0	0	0	0	0	0	1	1	1	1	1	0	3	4	1	0	0	0	0	4	1	1	0	0	1	1	3	6	0	0	0	0	4	4	38
Magnolia	0	0	0	0	0	0	2	1	1	0	1	1	3	8	10	3	1	1	4	2	13	8	6	0	0	6	3	6	4	2	0	0	3	3	7	99	
Cape May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	0	1	0	0	0	2	0	0	0	0	0	0	0	0	10	
Black-thr. Blue	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	1	1	0	0	0	0	1	4	
Yellow-rumped	0	1	0	0	2	5	9	7	4	5	12	5	5	3	2	1	1	1	3	2	2	4	2	1	0	0	2	0	1	1	3	2	0	0	1	1	88
Black-thr. Green	0	0	0	0	1	1	2	1	4	1	4	1	3	0	6	6	4	0	0	5	4	8	0	2	0	0	8	4	6	8	5	0	0	3	2	2	91
Blackburnian	0	0	0	0	0	0	0	2	1	1	1	0	2	0	1	0	0	1	1	4	1	0	2	0	0	2	0	2	3	2	0	0	2	0	2	30	
Chestnut-sided	0	0	0	0	0	1	1	2	4	2	3	2	6	4	4	9	0	5	6	7	7	12	5	8	0	0	2	0	6	8	5	0	2	0	2	115	
Bay-breasted	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	11	
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	4	
Palm	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	
Ovenbird	0	0	0	0	0	3	4	2	5	1	0	4	1	13	11	6	2	1	7	2	8	5	6	0	0	11	6	11	12	6	2	0	9	2	10	150	
N. Water Thrush	0	0	0	0	0	0	0	0	0	0	0	0	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	1	1	1	0	1	2	0	4	4	5	0	0	2	1	6	4	7	3	0	3	2	6	53
Yellow-throat	0	0	0	0	0	0	0	0	1	1	1	1	1	1	3	4	0	1	2	2	2	6	4	4	0	0	4	3	5	5	5	5	0	4	5	69	
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	7	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	0	2	0	0	1	0	2	1	1	0	0	0	1	14	
Am. Redstart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	1	14	1	9	6	3	0	0	0	0	1	5	4	0	3	0	2	55	
No. of plots visited	0	1	1	0	1	2	3	2	3	3	2	2	3	2	3	3	1	2	1	3	2	4	2	3	0	0	3	2	2	3	2	2	0	2	1	3	69
DAILY TOTALS:	0	1	0		3	9	22	25	28	22	35	17	30	16	55	61	25	17	20	50	41	103	45	58		50	21	51	60	49	22		31	21	48	1,036	
Warblers per visit	1	0			3	5	7	13	9	7	18	9	10	8	18	20	25	9	20	17	21	26	23	19		17	11	26	20	25	11		16	21	16	15	

Rounded to the closest whole number

Swainson's Thr.	0	0	0	0	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	4	
Scarlet Tanager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Rose-br. Gros.	0	0	0	0	0	0	0	0	1	0	1	1	2	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10

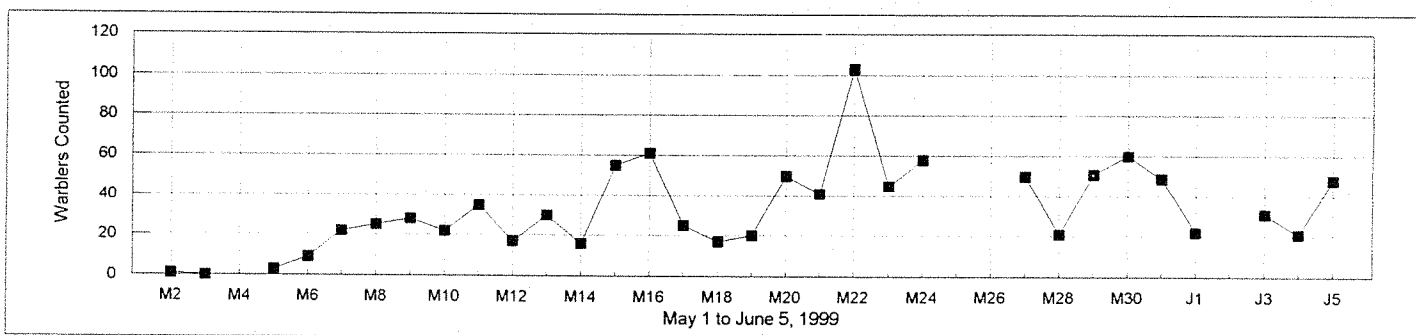


Table 7 by showing the first and last dates on which each species was recorded provides a simple way to tell which species were residents. If they arrived early and were still there on June 5 they were no doubt residents. Of course many of the "resident" species on the earlier sightings included migrants that were resting and feeding before continuing on to nesting grounds farther north.

Table 7

<u>SPECIES</u>	<u>FIRST SEEN</u>	<u>LAST SEEN</u>	<u>STATUS</u>
Black & White Tennessee	May 7	June 5	Resident
Nashville	May 10	May 24	Migrant
Yellow	May 6	June 4	Resident
Magnolia	May 9	June 5	Resident
Cape May	May 8	June 5	Resident
Black-thr. Blue	May 16	May 28	Migrant
Yellow-rumped	May 10	Jun 5	Resident
Black-thr. Green	May 2	June 5	Resident
Blackburnian	May 5	June 5	Resident
Chestnut-sided	May 9	June 5	Resident
Bay-breasted	May 6	June 5	Resident
Blackpoll	May 7	May 24	Migrant
Palm	May 21	May 24	Migrant
Ovenbird	May 8	May 24	Migrant
N. Water Thrush	May 7	June 5	Resident
Mourning	No records		
Yellow-throat	May 10	June 5	Resident
Wilson's	May 11	June 5	Resident
Canada	May 21	May 24	Migrant
Am. Redstart	May 18	June 5	Resident
	May 17	June 5	Resident

A full 14 species (out of 20 species recorded) stayed on to breed on one or more of the plots. Six species were migrants as far as the plots were concerned, though they may have nested elsewhere in the area. Only the Blackpoll which nests far to the north of the Sault was certainly a migrant. This agrees with what we find upon examining the maps in the Atlas of the Breeding Birds of Ontario (Cadman, 1987).

Though these results make it clear that Sault Ste. Marie cannot be used to monitor the warbler migration for all species it can serve an important purpose in providing us with the dates that the birds which have been recorded as migrants farther south arrive at their nesting grounds.

In contrast to the graphs from the plots farther to the south which show a peaking of warbler numbers on May 15, then a continuous fall in numbers until the end of the study period on June 5, the graphs for Sault Ste. Marie show a gradual build-up of numbers until mid-May and high counts through to the end of the study period. This is consistent with the arrival and settling in of resident birds.

It is apparent that many of the warblers, when they arrive at Sault Ste. Marie, are at the end of their migration and stay on at the study areas as breeding birds. This is very different from most of our other study areas across Ontario where few warblers other than Yellow-rumped find a habitat that is suitable for nesting.

The fact that a bird is a resident on the plot rather than just passing through on migration is easily determined. From the time of arrival the species is seen or heard on almost every subsequent visit to the plot throughout the study period and is still present on the study areas during the last week on the study period, a time when most migrants have passed through to nesting areas farther to the north.

However, on those days where an unusually high count occurs we can be sure that the count included some migrants.

The following is a discussion of each of the warblers vis a vis their occurrence as residents or migrants.

Black and White Warbler - After the arrival on May 7 and there were Black and White Warblers seen or heard on nearly every day until the end of the study period on June 5. If we assume that on many days the males were not singing and could easily have passed unnoticed it seems apparent that the Black and White Warbler is mainly a resident bird at Sault Ste. Marie and few migrants were counted.

Tennessee Warbler - Not many Tennessees were spotted during the study period. (a total of 15 birds). Tennessees are difficult to see as they forage in the tree tops and if they are not singing are easily missed. Still, since no birds were seen or heard after May 24 and apparently those recorded were migrants.

Nashville Warbler - The Nashvilles, while appearing to have come through on migration centred around May 11 also left a few residents which remained throughout the study period.

Yellow Warbler - As with the rest of the province Yellow Warblers are residents wherever they occur.

Magnolia Warbler - Are a common resident in the Sault area.

Cape May Warbler - The Cape Mays were scarce this spring across the province. Most of the ten birds that were spotted in the Sault area came through between May 20 and 24.

Black-throated Blue Warbler - With only four birds seen and the observations are spread throughout the five week period. It is not possible to assess their status.

Yellow-rumped Warbler - Our earliest and one of our most common migrant warblers. No doubt the first birds arrived before the beginning of our study period on May 1. A few pairs remained on throughout the five weeks as breeding birds in the Sault area.

Black-throated Green Warbler - Very obviously a common resident bird in the woodlots around Sault Ste. Marie.

Blackburnian Warbler - Though not common, the Blackburnian maintained its numbers throughout the study period.

Chestnut-sided Warbler - This was the warbler most often reported by our observers. The peak of the migration was about mid-May and good numbers stayed on to nest in the area.

Bay-breasted Warbler - As with the Black-throated Blue only 4 birds were counted. They appeared to come through as migrants between May 20 and May 24.

Blackpoll Warbler - A subarctic nester in Ontario, four migrants were spotted between May 21 and May 24.

Palm Warbler - An early and scarce migrant passing through between May 8 and 10 and between May 22 and 24 possibly the males came through on the first wave and the females on the second.

Ovenbird - The most common nesting warbler in the area. It is hard to miss due to its loud, easily recognized call.

Northern Waterthrush - Though it is a common resident warblers across the province its absence from our count probably reflected the lack of suitable habitat in the study areas chosen by our observers.

Mourning Warbler - Judging by the build-up of numbers toward the end of the study period the Mourning Warbler must be considered one of the common breeding birds of the Sault Ste. Marie area.

Common Yellow-throat - Like the Mourning Warbler the birds which the observers were counting could not be considered migrants but rather common breeding birds.

Wilson's Warbler - The Wilson's was one of the scarcest warblers on the study areas and was not important either as a migrant or a breeding bird.

Canada Warbler - There were a smattering of Canada Warblers over the last half of the study period and it probably should be considered an uncommon breeding bird.

American Redstart - I expect that the study areas of the observers in the Sault Ste. Marie area consist of young deciduous and mixed forest with open areas - the ideal breeding habitat for the Redstart.

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.

INNIS POINT

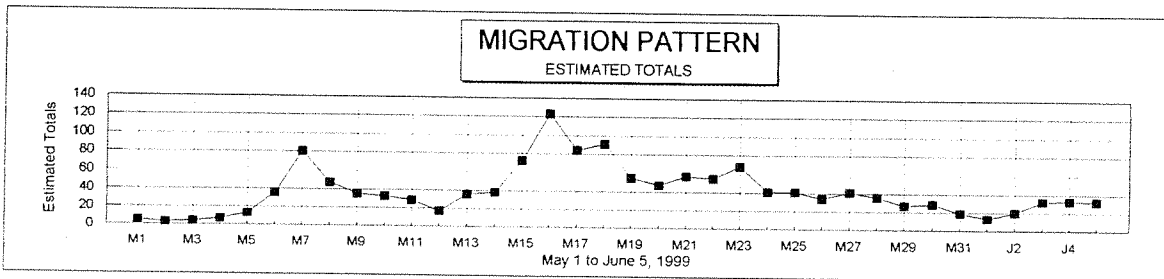
Innis Point is located along the Ottawa River in Kanata, about 20 kilometres west of Parliament Hill. The bird observatory operates on lands owned by the Department of National Defense as part on the Connaught Range and Primary Training Centre.

OTTAWA SPRING WARBLER COUNT - 1999

INNIS POINT BIRD OBSERVATORY - Bill Murphy et al.

ESTIMATED TOTALS

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	0	0	0	0	1	6	10	3	6	2	2	2	6	5	7	5	6	3	4	1	4	8	5	2	6	1	2	3	1	3	1	0	2	3	2	1	113	
Tennessee	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Nashville	0	0	0	0	0	0	0	0	0	1	1	0	1	0	4	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	15
Yellow	0	0	2	2	7	20	20	12	9	7	8	6	15	20	40	60	50	50	30	25	35	25	30	25	25	25	25	25	20	20	15	10	15	20	25	23	746	
Magnolia	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	0	1	0	3	1	1	2	0	1	0	0	0	0	0	1	0	0	15	
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	0	0
Black-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	0	0
Yellow-rumped	5	3	2	5	5	7	45	28	20	20	13	8	10	8	10	30	10	7	5	2	1	2	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	7
Black-thr. Green	0	0	0	0	0	0	2	1	0	0	2	0	1	0	0	2	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	249
Blackburnian	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	0	0	0	16
Chestnut-sided	0	0	0	0	0	0	2	0	0	0	0	0	1	0	2	5	3	4	3	2	7	1	1	0	3	0	1	0	0	0	0	0	0	0	0	0	0	4
Bay-breasted	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	0	0	44
Blackpoll	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	0	1	1
Palm	0	0	0	0	0	2	1	1	0	3	1	0	1	1	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	44
Ovenbird	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	14
N. Water Thrush	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	7
Yellow-throat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	4	3	0	3	5	5	5	3	2	4	4	2	1	1	1	1	0	2	0	2	8	
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	4	1	2	2	0	2	0	0	0	1	0	1	0	0	0	0	1	0	0	55	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	19	
Am. Redstart	0	0	0	0	0	1	1	1	0	0	0	0	0	0	2	10	4	4	3	3	1	7	1	1	2	0	1	1	2	3	1	0	2	3	3	4	61	
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:	5	3	4	7	13	36	81	47	35	33	29	17	36	38	73	123	84	91	55	47	57	55	68	41	41	34	41	36	27	29	19	13	20	32	33	32	1435	
Swainson's Thr.	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	0	0	0	1
Scarlet Tanager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
Rose-br. Gros.	0	0	0	0	1	3	0	5	2	3	1	1	0	3	8	8	6	4	3	2	2	0	0	1	1	1	3	1	3	3	1	1	1	1	1	1	1	71



OTHER WARBLERS

Date (May-June)	Blue-winged	Golden-winged	Northern Parula	Pine
16			2	
18	1	1		
29				1
24				

PRINCE EDWARD POINT

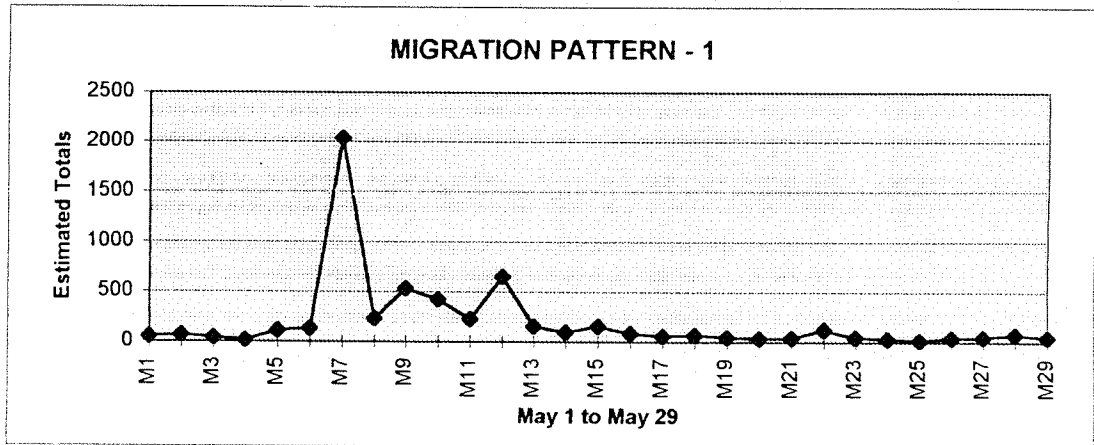
Prince Edward Point projects into Lake Ontario at the south-east corner of Prince Edward County. Eric Machell sent us both the Estimated Totals and Banding Totals which was a good idea. Because of the enormous numbers of Yellow-rumped Warblers present on May 7 the Estimated Totals graph gives a poor idea of the peaks and valleys of the migration. A more easily interpreted picture of the migration pattern is given by the Banding Totals so we have provided a second graph (next page) based on those figures.

PRINCE EDWARD POINT SPRING WARBLER COUNT - 1999

PRINCE EDWARD POINT BIRD OBSERVATORY - Eric Machell et al.

(ESTIMATED TOTALS)

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			
Black & White	0	4	1	2	4	1	1	3	0	1	1	6	6	1	2	0	1	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Tennessee	0	0	1	0	1	5	0	0	0	1	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Nashville	0	0	0	1	20	28	15	4	10	3	3	8	3	4	8	2	1	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
Yellow	0	0	1	3	30	24	1	10	2	4	10	20	20	20	35	30	20	30	30	16	20	20	20	12	10	20	16	12	20	0	0	0	0	0	0	0	45		
Magnolia	0	0	0	0	1	4	0	8	4	1	20	12	5	20	12	8	12	2	3	8	26	6	0	0	1	8	19	5	0	0	0	0	0	0	0	0	16		
Cape May	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	0	0		
Black-thr. Blue	0	0	2	1	3	1	1	0	0	1	3	10	6	0	8	1	0	1	0	0	1	8	2	1	0	1	0	2	2	0	0	0	0	0	0	0	0	5	
Yellow-rumped	51	64	33	6	32	65	2,000	200	500	400	200	500	75	40	20	5	5	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,200	
Black-thr. Green	0	0	2	1	18	7	6	8	10	3	3	40	6	3	4	1	1	1	0	0	0	4	2	0	0	2	1	1	0	0	0	0	0	0	0	0	0	12	
Blackburnian	0	0	1	1	3	1	2	0	0	0	2	6	4	0	2	2	3	0	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
Chestnut-sided	0	0	0	0	0	0	1	2	2	1	0	3	4	2	8	4	3	2	0	0	0	0	1	0	0	0	2	3	0	0	0	0	0	0	0	0	0	3	
Bay-breasted	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	1	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	2	0	2	4	2	0	6	2	4	0	2	4	2	2	0	0	0	0	0	0	0	0	3	
Palm	1	0	1	0	0	0	2	0	1	4	0	2	5	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Ovenbird	0	0	0	0	1	1	5	4	0	0	0	5	4	2	5	4	2	1	0	1	1	2	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	4	
N. Waterthrush	2	0	0	0	2	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	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	1	0	0	1	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
Yellow-throat	0	0	0	0	0	0	1	1	0	0	0	5	4	4	20	12	12	10	8	6	10	30	10	6	6	12	4	16	8	0	0	0	0	0	0	0	0	18	
Wilson's	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	6	0	3	1	3	1	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	2	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	1	1	3	1	3	0	1	1	6	1	0	0	0	0	0	0	0	0	2	
Am. Redstart	0	0	0	0	0	0	0	0	0	0	2	20	3	8	20	4	2	0	0	3	1	16	4	6	2	4	4	10	8	0	0	0	0	0	0	0	0	11	
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	1	2	
DAILY TOTALS:	54	68	43	15	114	136	2039	232	533	422	226	650	153	94	157	84	61	70	47	39	45	124	50	33	18	43	46	73	50	0	0	0	0	0	0	0	5,71		
Swainson's Thr.	0	0	1	0	0	0	0	0	0	0	2	1	0	0	3	3	1	2	4	1	1	11	0	0	0	0	3	6	8	0	0	0	0	0	0	0	4		
Scarlet Tanager	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3	8	2	4	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Rose-br. Gros.	0	0	0	0	7	15	4	1	4	1	4	30	0	4	12	10	6	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	



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.

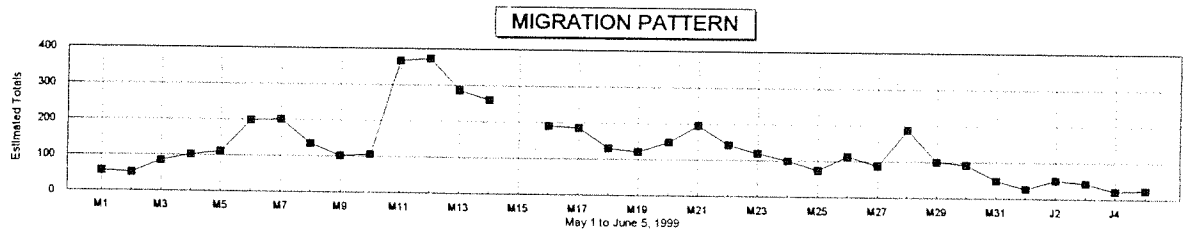
Jul Wojnowski gives a good overview of the May and June migration of neotropical migrants in the Long Point Bird Observatory Newsletter for the summer of 1999:

"The bulk of songbird migration, especially neotropical species, took place during the first two weeks of May, which is about a week earlier than normal. Quite unusual were the relatively large numbers of [Yellow-rumped Warblers]. Banding totals of over 100 birds per day were quite common, and total numbers of species encountered at the station broke the 100 mark several times, especially at Breakwater, where an impressive 113 species were seen on 12 May. Warblers of all colours were streaming through daily, especially Magnolia, which was the most numerous warbler banded this spring.

Things continued at a steady pace during the third week of May but bird numbers were definitely decreasing. This was even more evident in the last week of May, when species number started to decline too.... By the beginning of June, migration had virtually ceased. The vast majority of late migrating birds had gone through, with only a few flycatchers and stragglers left behind. At Old Cut, this consisted of a few Blackpoll Warblers, along with a couple of other warblers."

LONG POINT SPRING WARBLER COUNT - 1999 Old Cut Station LPBO

	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	
Black & White	2	2	15	12	8	10	25	6	6	5	30	10	8	3	0	3	0	1	1	0	7	2	4	1	0	1	3	5	1	0	0	0	3	0	0	1	17
Tennessee	0	0	1	0	0	0	0	2	3	2	0	3	4	5	0	3	7	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Nashville	1	2	4	0	10	5	18	20	10	16	23	28	16	30	0	12	13	5	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	1	2	3	8	18	30	30	15	20	22	30	35	20	0	45	45	20	30	25	35	30	38	45	30	30	25	40	30	30	16	15	25	30	16	16	85	
Magnolia	0	0	2	1	5	42	50	20	8	14	68	60	35	45	0	45	45	55	30	35	55	25	30	15	10	30	15	28	15	10	8	0	2	0	0	0	
Cape May	0	0	0	0	1	0	0	0	0	0	0	0	5	6	5	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Black-thr. Blue	0	2	0	5	16	20	23	12	15	10	30	25	30	20	0	16	1	2	0	1	7	10	0	0	4	0	1	2	0	1	1	1	0	0	1	25	
Yellow-rumped	42	35	30	40	36	38	20	13	5	10	60	75	80	80	0	8	10	3	1	5	2	0	1	0	3	0	2	1	0	0	0	0	0	0	0	60	
Black-thr. Green	6	4	10	8	4	13	12	10	5	6	16	12	8	10	0	0	8	1	3	3	4	1	1	0	0	0	1	2	0	0	1	1	1	0	0	15	
Blackburnian	0	0	7	1	0	2	0	3	2	5	10	5	1	0	1	3	1	1	1	1	7	6	0	0	2	1	0	6	3	1	0	0	0	0	0	7	
Chestnut-sided	0	0	0	2	1	7	3	8	5	2	30	15	7	0	5	7	5	5	25	8	5	2	2	2	2	0	10	1	1	1	0	0	0	1	0	19	
Bay-breasted	0	0	0	0	0	0	0	0	0	0	15	18	8	1	0	0	0	1	0	0	0	0	2	3	4	1	0	0	0	0	0	0	0	0	0	5	
Blackpoll	0	0	0	0	0	1	1	0	0	0	6	1	0	0	3	1	1	1	3	8	1	0	0	0	0	0	0	8	5	15	5	5	7	2	2	7	
Palm	1	1	2	0	1	2	0	6	3	1	5	10	3	3	0	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	
Ovenbird	3	1	10	20	8	8	3	8	3	4	7	22	8	8	0	12	4	4	4	5	10	8	9	4	0	5	4	2	1	0	0	0	0	0	0	4	
N. Water Thrush	1	2	1	5	0	1	1	3	1	1	2	1	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	18
Mourning	0	0	0	0	0	0	0	1	3	0	1	0	0	0	0	2	2	3	0	1	3	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
Yellow-throat	0	0	0	0	2	14	9	7	6	6	9	12	8	10	0	11	12	5	12	5	10	15	25	12	12	10	8	15	10	12	6	5	4	8	0	4	
Wilson's	0	0	0	0	0	0	2	5	3	0	0	0	0	0	0	6	16	12	15	20	12	5	1	4	1	16	10	22	3	0	3	0	0	0	1	1	
Canada	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	10	5	3	4	10	10	5	0	4	7	10	8	16	3	12	4	0	0	0	0	11	
Am. Redstart	0	0	0	0	0	6	2	1	0	5	25	15	14	14	0	8	6	8	5	0	15	25	4	7	6	5	12	22	20	10	5	0	8	3	2	1	25
VISIT=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	1	1	1	3
DAILY TOTALS:	57	51	85	102	110	199	201	135	101	106	367	374	286	260	191	186	131	121	148	195	142	120	100	75	114	88	187	100	92	50	27	52	44	21	25	4,641	
Swainson's Thr.	0	1	0	0	1	0	0	2	0	0	8	14	8	1	0	7	13	9	3	6	20	20	10	5	0	7	3	8	5	2	1	1	0	0	0	0	15
Scarlet Tanager	0	0	0	0	1	3	0	0	0	1	13	1	1	0	0	8	5	0	3	2	1	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4
Rose-br. Gros	0	1	1	5	23	9	8	10	7	8	30	20	12	0	15	10	6	5	3	6	0	2	2	0	0	0	0	2	1	2	0	0	0	0	0	0	20



Selkirk Provincial Park (cont.)

OTHER WARBLERS

Date (May)	Blue-winged	Golden-winged	Brewster's	Northern Parula	Orange-crowned	Pine	Connecticut	Yellow-breasted Chat
3				1				
5	1	1						
6								
7								
9						1		1
12					1			
14	1		1					1
15								
31	1	1			1		1	

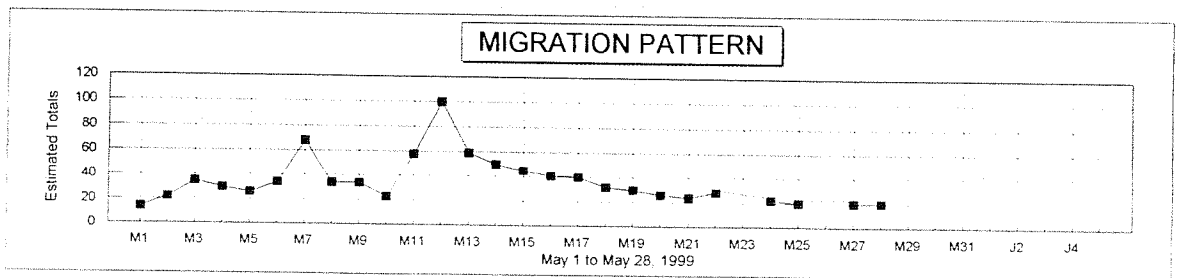
RUTHVEN PARK

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 - Rick Ludkin & Loretta Mouseau

L = Ludkin M = Mouseau

	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 initial	L	L	L	L	L	L	M	M	M	L	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	M	M									
Black & White	0	0	5	2	1	1	0	4	0	0	5	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tennessee	0	0	0	0	0	0	0	0	0	0	1	0	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Nashville	0	5	4	8	5	3	6	0	4	5	8	10	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yellow	0	0	0	5	5	8	12	20	16	10	12	20	12	10	15	20	20	15	15	20	12	0	12	6	0	10	10	0	0	0	0	0	0	0	0		
Magnolia	0	0	0	0	1	5	0	0	0	1	8	15	2	0	5	10	10	5	8	4	2	4	0	0	0	0	0	2	0	0	0	0	0	0	0		
Cape May	0	0	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		
Black-thr. Blue	0	0	0	0	0	1	0	0	0	0	0	6	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yellow-rumped	12	15	20	15	12	10	50	10	10	6	5	12	12	8	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Black-thr. Green	1	2	5	0	1	2	0	0	4	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Blackburnian	0	0	0	0	0	0	0	0	0	0	5	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	
Chestnut-sided	0	0	0	0	1	1	0	0	0	0	0	8	2	4	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bay-breasted	0	0	0	0	0	0	0	0	0	0	5	5	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	3	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	0	1	0	0	0	0	0	0	1	0	1	1	4	1	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	1	0	0	0	0	5	5	6	4	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N. Water Thrush	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	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	
Yellow-throat	0	0	0	0	0	2	0	0	0	0	0	8	5	8	8	6	6	6	6	6	6	8	0	8	10	0	8	6	0	0	0	0	0	0	0	0	
Wilson's	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	1	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	
Am. Redstart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	0	2	0	2	2	0	0	0	0	0	0	0	0	
VISIT=1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	
DAILY TOTALS:	14	22	35	30	26	34	68	34	34	23	58	100	59	50	45	41	40	32	30	26	24	28		22	20		20	20									
Swainson's Thr.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scarlet Tanager	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rose-br. Gros.	0	0	0	0	6	8	8	10	12	10	12	12	10	10	6	8	12	12	15	8	12	8	0	10	10	0	8	8	0	0	0	0	0	0	0	0	

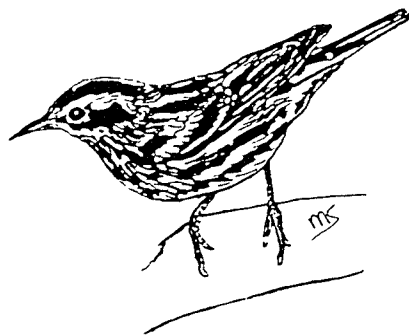


Ruthven Park (cont.)

Judging by the table below Rick and Loretta's area includes a small colony of Blue-winged and Golden-winged Warblers.

OTHER WARBLERS

Date (May)	Blue-winged	Golden-winged	Brewster's	Lawrence's	Orange-crowned
4		1			
6	1				
8				1	
9	4			2	
10	1	1	1		1
11	2	1			
12	1				
13	1				
14	1	2			
15	1	1			
16	1				
17			1		
19	2				
20	1				
21	1	1	1		
22		1	1		
24		1	1		
25	1	1	1		
27		1	1		
28		1	1		



SUMMARY OF 1999 SPRING WARBLER MIGRATION ACROSS SOUTHERN ONTARIO

Last year (1998) we wondered whether our record low count was the result of few weather related groundings along with the difficulty in seeing the birds due to the early leaf cover, or whether we were witnessing a decrease in warbler populations. According to our observations in 1999 it was some of each. The sighting conditions were improved in 1999 and the number of warblers counted was higher at all stations but populations were still lower than average and appeared to be recovering from a slump. (with the exception of the Cape May Warble - see below).

ARRIVAL DATES

The table below gives the arrival dates in 1999 for seven Ontario areas. The centres are listed from south to north, though there is little difference in latitude between Toronto, Whitby, Port Hope and Prince Edward Point. As would be expected there is a small lag in the arrival times from south to north with Sault Ste. Marie averaging about two days behind the more southerly migration monitoring points.

We hope to make this a regular part of our annual report and to expand it to cover all stations. We hope to relate the arrival dates to weather conditions and long term changes in climate.

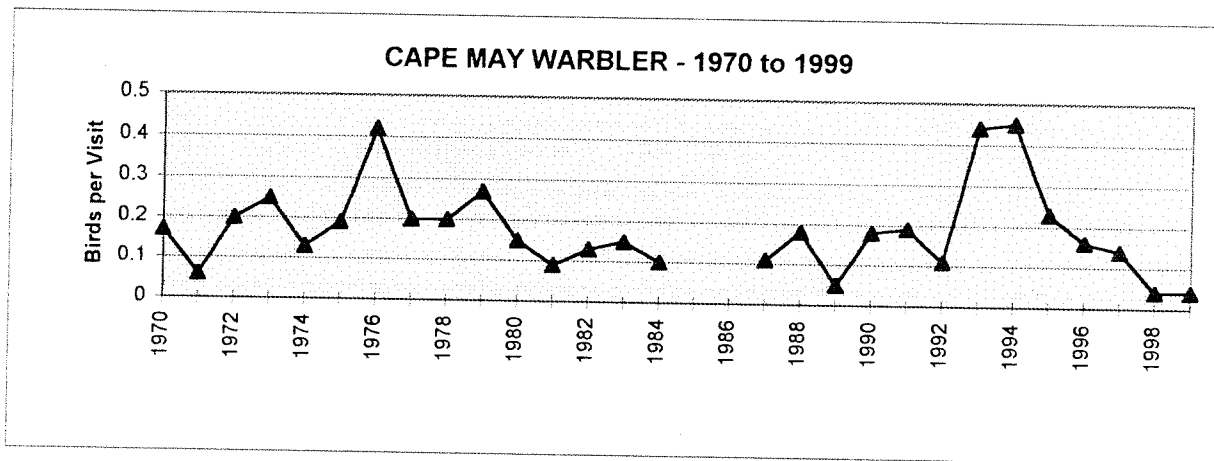
	<u>Long Point</u>	<u>Toronto</u>	<u>Whitby**</u>	<u>Port Hope</u>	<u>Pr. Edward Point</u>	<u>Ottawa</u>	<u>Sault Ste. Marie</u>	<u>Average Date</u>
Black & Wh.	May 1	May 2	May 1	May 3	May 2	May 5	May 7	May 3
Tennessee	May 8	May 6	May 8	May 12	May 3	May 11	May 10	May 8
Nashville	May 1	May 2	May 2	May 5	May 4	May 10	May 6	May 4
Yellow	May 1	May 2	May 5	May 4	May 3	May 3	May 9	May 4
Magnolia	May 3	May 4	May 7	May 7	May 6	May 14	May 8	May 7
Cape May	May 11	May 11	May 10	May 7	May 3	Not seen	May 16	May 10
Bla -thr. Blue	May 2	May 3	May 2	May 6	May 3	May 11	May 10	May 6
Yellow-rump	May 1	May 1	May 1	May 1	May 1	May 1	May 2	May 1
Black-thr. Green	May 1	May 1	May 1	May 1	May 3	May 7	May 5	May 3
Blackburn	May 3	May 4	May 2	May 6	May 3	May 16	May 9	May 6
Chest-side	May 4	May 4	May 7	May 5	May 7	May 7	May 6	May 6
Bay-breasted	May 11	May 11	May 12	May 14	May 12	May 18	May 7	May 14
Blackpoll	May 6	May 12	May 12	May 18	May 16	May 16	May 21	May 12
Palm	May 1	May 1	May 1	May 12	May 1	May 6	May 8	May 4
Ovenbird	May 1	May 4	May 2	May 3	May 5	May 18	May 7	May 6
N. Water Thrush	May 1	May 3	May 1	Not seen	May 1	May 8	Not seen	May 3
Mourning	May 8	May 11	May 12	May 25	May 14	May 18	May 10	May 14
Yellow-thr	May 5	May 7	May 6	May 19	May 7	May 15	May 11	May 7
Wilson's	May 7	May 10	May 12	May 15	May 11	May 16	May 21	May 13
Canada	May 11	May 10	May 9	May 14	May 16	May 24	May 18	May 15
Am. Redst	May 6	May 7	May 6	May 6	May 11	May 6	May 17	May 8

*Thickson's Woods

IS THE CAPE MAY WARBLER IN TROUBLE?

Among the dismal results in 1998 for all species we did not notice the continued downward trend in the Cape May Warbler numbers. It was only in 1999 when only 17 reports of Cape Mays at Toronto that the writer realized there was a problem. (Mike Solomon had not seen a Cape May in his Cedarvale plots for two years!). We plotted the Birds per Visit - i.e. the total Cape Mays seen each spring divided by the total visits made to study plots each spring. The graph below tracks the Cape May numbers at Toronto for the last 30 years. The graph indicates that there was a crash in 1991 and 1992, then a fast recovery in 1993. The recent trend, since 1994, has been steeply downhill. Our numbers in 1999 matched those in 1998 instead of showing the higher numbers recorded for all other species. However if we examine the full thirty years we see that although the 1998-1999 numbers are the lowest, (by a small margin) since the study began in 1970, the species has been subject to wide population swings. There were extreme lows in 1971 and 1989 with peaks in between in 1976 and 1994. Since this is one of the spruce budworm warblers it is likely that the numbers fluctuate with the budworm numbers on its breeding grounds.

While we do not wish the budworm success let's hope that these low numbers of Cape Mays merely indicate the bottom of a cycle and that we shall see a few more of this beautiful species in 2000.



SWAINSON'S THRUSH

There have been reports of a fall in Swainson's Thrush numbers in recent years. The Forest Bird Monitoring Program (F.B.M.P.) recorded a 35 % decline between 1987 and 1998. (Munro 1998) The F.B.M.P. Take spot checks of the singing males at established stations within the forest during the breeding season.

This is very different from our method which depends on counts of grounded birds during migration. In order eliminate the error incurred by differences in effort and time we measure bird numbers by Birds Per Visit (B.P.V.). That is, we divide the number of birds counted by the number of mornings that an observer visited his/her plot.

For the present study we took two 11 - year periods and compared them. The first period was from the year we began counting Swainson's Thrushes - 1974, until the year we temporarily suspended the survey - 1984. The second period was the last 11 years of our survey - 1989 to 1999.

In the first period we counted 2627 Swainson's in 2475 counts or 1.0614 B.P.V. In the second period we counted 3433 Swainson's in 3899 counts or 0.8805 B.P.V. Our results show a 17% fall in numbers between the two periods. (1.0614 minus 0.8805 divided by 1.0614 X 100)

Although our numbers do not closely match those of the F.B.M.P., when we consider the very different methods and time periods used in the two estimates it is safe to say that our results support those of the F.B.M.P. i.e. that Swainson's Thrushes are decreasing.

The cause of the decrease? Probably the clear-cutting of great areas of the thrush's habitat - the boreal forest.

REFERENCES

- Cadman, M.D., Eagles, P.F.J., Helleiner, F.M. 1987. Atlas of the Breeding Birds of Ontario. University of Waterloo Press: 356 - 424.
- Fairfield, G.M. 1971. The Toronto Spring Warbler Migration Study. *The Ontario Field Biologist* 25: 34 - 41.
- Fairfield, G.M. 1973. Spring Warbler Migration at Toronto, 1972. *The Ontario Field Biologist* 27: 18 - 24.
- Fairfield, G.M. 1974. Spring Warbler Migration at Toronto, 1973. *The Ontario Field Biologist* 28: 37 - 44.
- Fairfield, G.M. 1990. Spring Warbler Migration at Toronto, 1987. Toronto Birds and Toronto Christmas Count Summary (1925 - 1988), 71 - 82. (The Toronto Ornithological Club Toronto, Ontario)
- Fairfield, G.M. 1993. Spring Warbler Migration at Toronto, 1988 and 1989. Toronto Region Bird Report 91 - 99. Toronto Ornithological Club.
- Fairfield, G.M. 1992. Spring Warbler Migration at Toronto, 1992. Toronto Ornithological Club Newsletter 27: appendix 1- 7.
- Fairfield, G.M. 1993. Spring Warbler Migration at Toronto, 1993. Toronto Ornithological Club Newsletter 37: 5 - 15.
- Fairfield, G.M. 1994. Spring Warbler Migration at Toronto, 1994. Toronto Ornithological Club Newsletter 50; 7 - 15.
- Fairfield, G.M. 1995. Spring Warbler Migration at Toronto, 1995. Toronto Ornithological Club Newsletter 60; 1-11.
- Fairfield, G.M. 1997. Spring Warbler Migration at Toronto, 1996. Toronto Ornithological Club Newsletter 72; 1-18.
- Fairfield, G.M. 1998. The Ontario Spring Warbler Count - 1997. Toronto Ornithological Club Newsletter 79; 1 - 25.
- Fairfield, G.M. 1999. The Ontario Spring Warbler Count -1998. Toronto Ornithological Club, Special Publication.
- Environment Canada, *Monthly Meteorological Summary, Ontario Region, Toronto City, May 1999.*
- Munro M. 1998, Ornithology, National Post, December 2, 1998.
- Wojnowski, J. 1999. The Last Spring of the Century. The Long Point Observatory Newsletter, Vol. 31 No.2, 3 - 4.

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. Thanks also to Long Point Bird Observatory, Prince Edward Point Bird Observatory, Innis Point Bird Observatory and Haldimand Bird Observatory who supplied the data from their stations and to John Black of Brock University who supplied comparative data from his radar operation at St. Catharines. Thanks 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:

