

SPRING WARBLER MIGRATION IN ONTARIO - 2001

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THE ONTARIO SPRING WARBLER MIGRATION COUNT – 2001

George Fairfield and Tom Flinn

Each spring the Warbler Count* brings together and analyzes migration information from across Ontario on 21 common species of warblers and three other passerine species that migrate at the same time period - May 1 to June 5. Limiting the sample to the more common and more easily identified species assures the counting of sufficient numbers of birds to provide good averages and avoids problems of misidentification.

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 their low numbers do not include them in the averaging).

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.

This year, for communities other than Toronto that have submitted counts for five years or more we have included a five-year summary which includes arrival dates, individual species counts and a list of warblers other than our targeted species.

This report is the first one in which we have tried to recognize the rise and fall of individual species from 1970 to 2001. We were only able to do this for Toronto because that was the only area whose data went back to 1970.

In 1998 we began including the Estimated Totals from those Bird Observatories that sent us data. This year we have data from Long Point, Haldimand, Prince Edward Point and Thunder Cape Bird Observatories.

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 populations of northern passerines that are not well measured by other projects such as the Breeding Bird Survey.

If you wish to initiate a warbler count please contact Tom Flinn,

There is no charge for participating in the Spring Warbler Count.

*We use the term warbler "count" to emphasize the point that participants should not attempt to estimate the number of birds on their study area.

THE OBSERVERS AND THE STUDY AREAS

Table 1 lists the study areas, the number of visits made to each of them in 2001, 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, and Mike Solomon 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>No. of Visits</u>	<u>Observers</u>
Brookbanks Ravine	35	Jean Iron et al
Cedarvale Park	28	Mike Solomon
Cedarvale Ravine	28	Mike Solomon
High Park North	31	Don Barnett
Moore Park Ravine	35	Harry & Eileen Kerr
Mount Pleasant Cemetery	35	Harry & Eileen Kerr
Pine Hill Cemetery	35	Edmund & Jean Johns
Rosedale Valley North	31	Ron Tasker
Unwin Avenue	36	Tom Flinn et al
Wychwood Park	35	Herb Elliot et al.
Total visits in Toronto	329	
Elliot Lake	21	Erwin Meissner
Newmarket (Mabel Davis C. A.)	27	Kevin Shackleton
Port Hope	32	Elizabeth Kellogg & Roger Frost
Whitby (Thickson's Woods)	36	Margaret Bain et al.
BIRD OBSERVATORIES:		
Long Point Bird Obs. (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
Thunder Cape Bird Observatory	36	Observatory staff & volunteers

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 2001 there were ten study areas in Toronto. 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 (on page 4) sets out all of the observations within Toronto of the 10 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) is included; see - "Warblers \ 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 - 1725, by the total number of visits - 329, we arrive at the average number of warblers per visit for the year 2001 - 5.2. That allows us to compare 2001 with the other years of the survey (see Table 5).

TABLE 2

[illegible]

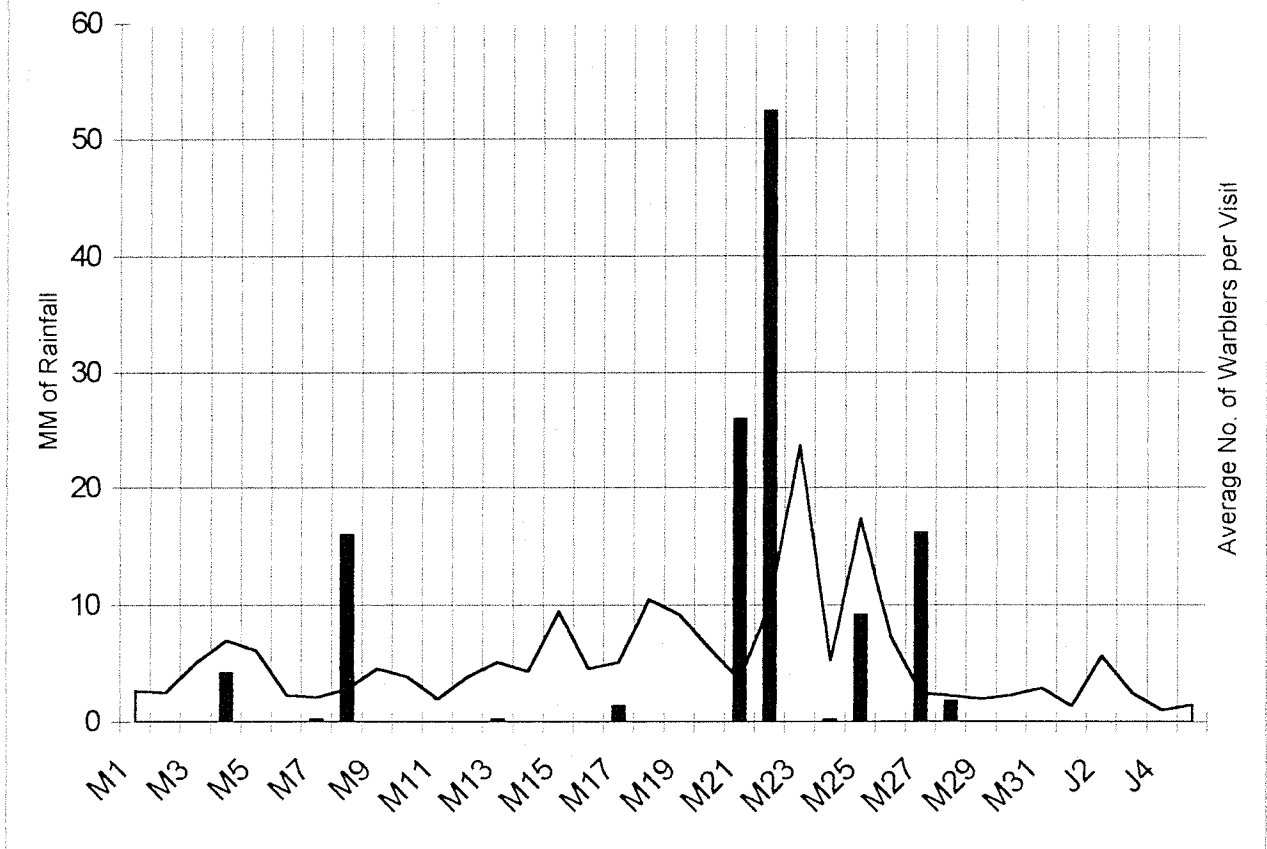
THE MIGRATION PATTERN AND THE WEATHER

Table 3 gives a summary of Toronto's weather during May 2001. The rain is given in millimeters per day. The wind is that which occurred approximately one-and-one-half hours after sunset – 2200 hours. The mean sunset time in May 2001 was 2037. The reason for picking that time was that it is about the time when the warblers are beginning their nocturnal flight. The temperature is the mean for the day.

TABLE 3

DATE	RAINFALL	WIND	TEMPERATUR E	WARBLERS PER VISIT
1-May		E-11	18.8	3
2-May		WSW-6	21	3
3-May		0	23.3	5
4-May	4.2		22.9	7
5-May		S-4	14.7	6
6-May		E-33	12.2	2
7-May	0.2	ENE-9	14.2	2
8-May	16	0	12.3	3
9-May		0	15.9	5
10-May		SW-4	18.4	4
11-May		NNW-15	18.2	2
12-May		NW-19	12.7	4
13-May	0.2	SW-17	10.6	5
14-May		W-9	12.9	4
15-May		ENE-9	13.8	10
16-May		ENE-28	13.9	5
17-May	1.4	E-15	13.3	5
18-May		WSW-6	16.2	11
19-May		ENE-17	17.8	9
20-May		ENE32	16.7	6
21-May	26	ENE-22	14.1	4
22-May	52.4	WSW-28	14.9	10
23-May		ENE-24	15.1	24
24-May	0.2	ENE-30	15.3	5
25-May	9.2	S-4	13.1	17
26-May		E-4	14.6	7
27-May	16.2	E-4	14.1	3
28-May	1.8	WNW-11	13.5	2
29-May		WNW-19	12.7	2
30-May		W-19	11.1	2
31-May		0	12.4	3

GRAPH 1 -WARBLERS PER VISIT AND RAINFALL



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

As can be seen in Graph 1 warblers per visit were below 12 birds until May 23 and we failed to have our usual peak of early migrants in the May 13 –15 period. The only peak during our study period was that of May 23-24 (warblers grounded by the storm?). With the exception of the 16 mm. of rain on May 8 the weather was fine right through to May 21 and that may have allowed the early migrants to overfly Toronto. We will be watching for the results of the 2002 survey. If warbler numbers are high next spring we will assume that we missed many birds in 2001. If they are again very low we will suspect a drop in warbler populations.

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(s)</u>	<u>Study Plot</u>
Connecticut Warbler	1	May 25	Unwin Avenue
Northern Parula	1	May 9	Mount Pleasant Cemetery
	1	May 23	Unwin Avenue
	1	May 24	Brookbanks Ravine
	2	May 25	Brookbanks Ravine
Orange-Crowned Warbler	1	May 3	Cedarvale Park
	1	May 9	Mount Pleasant Cemetery
Pine Warbler	1	May 12	Rosedale North

POPULATION CYCLES AT TORONTO 1970 TO 2001

A) – ALL SPECIES LUMPED

By dividing the total number of warblers seen during the five weeks by the total number of visits that the observers made to their plots during that period, we arrive at the Average Number of Warblers per Visit per year. This average allows us to compare 2001 with the other years of the survey. In 2001, we counted 1725 warblers in 329 visits giving us an average number of warblers per visit of 5.2.

Table 5, gives the average number of warblers per visit for each year since the study began in 1970. No counts were taken in 1985 and 1986.

Using 10 warblers per visit as the cutoff point Table 5 has been divided into four periods. We will call periods with yearly warblers per visit figures greater than 10 "high cycles". Similarly, periods with yearly warblers per visit figures lower than 10 will be called "low cycles". The first period is the high cycle from 1970 to 1980 where warblers per visit is above 10 with the exceptions of 1975 and 1978 where the figures are marginally below 10. The second period is the low cycle from 1981 to 1989 where warblers per visit is below 10. The third period is the high cycle from 1990 to 1997 where warblers per visit is again above 10 with the exception of 1992 at 9.1 warblers per visit. The fourth period is 1998 to 2001 where warblers per visit is again below 10 with the exception of 2000 at 12.7 warblers per visit.

A few words should be said about the fourth period as defined above. We really have no way of knowing if the figure of 6.5 warblers per visit for 1998 is an aberration and that the high cycle that was in place for the 1990's actually continued into 2000. On the other hand, if we do say that the low cycle started in 1998 then the figure of 12.7 warblers per visit for 2000 must be viewed as an aberration. Data from upcoming years as well as a more thorough analysis of trends for individual species will provide us some clues as to whether the above decision about the fourth period beginning in 1998 was a valid one.

TABLE 5

	Number of Visits	Birds Counted	Average No. of Birds per Visit
High Cycle			
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
Low Cycle			
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
High Cycle			
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
Low Cycle			
1998	439	2867	6.5
1999	411	3837	9.3
2000	364	4606	12.7
2001	329	1725	5.2

POPULATION CYCLES AT TORONTO - 1970 TO 2001

B) - INDIVIDUAL WARBLER SPECIES

In this section we will endeavour to use the data collected over the course of the study to reach some conclusions as to how the populations of individual species have changed. We realize that there are concerns over the validity of the raw data. For a more detailed account of these concerns please see Appendix 1 at the end of the report. However, we feel that careful handling of the raw data will allow us to draw some tentative conclusions regarding individual species.

For analyzing the individual species population trends we will see what proportion of all the species counted is represented by each species. i.e. if the total warbler numbers in a year is taken as 100 per cent, what portion is made up of each of our species? We will call this method of comparison "Relative Abundance" By comparing the Relative Abundance of each species we will assess which species are becoming more common and which less common.

TABLE 6
RELATIVE ABUNDANCE BY 5 YEAR BLOCK

	5 yr	5 yr	5 yr	3 yr	5 yr	5 yr	2 yr	30 yr
Start of Period	1970	1975	1980	1985	1990	1995	2000	1970
End of Period	1974	1979	1984	1989	1994	1999	2001	2001
Black and White	6.6	4.8	4.4	4.7	5.3	4.4	3.0	4.9
Tennessee	4.3	10.0	9.5	10.2	6.1	4.7	4.4	7.1
Nashville	7.5	6.5	8.0	4.7	5.7	7.0	7.0	6.7
Yellow	4.2	5.4	7.0	4.9	4.1	6.1	6.1	5.4
Magnolia	9.0	6.5	7.8	7.8	9.2	8.5	12.4	8.4
Cape May	1.4	2.0	1.6	1.5	2.1	1.1	0.4	1.5
Black-throated Blue	4.8	4.3	4.6	4.3	6.6	6.1	5.4	5.2
Yellow-rumped	7.3	9.9	7.2	13.6	10.8	18.7	13.1	11.2
Black-throated Green	6.0	8.1	6.1	4.9	5.1	4.4	4.6	5.7
Blackburnian	5.4	4.8	4.7	4.5	4.6	3.0	2.5	4.4
Chestnut-sided	9.4	7.3	7.0	7.4	9.3	5.4	8.8	7.7
Bay-breasted	4.3	5.4	5.1	5.0	4.3	3.5	3.7	4.5
Blackpoll	2.9	2.4	1.0	2.3	2.4	3.1	3.5	2.4
Palm	0.7	0.8	0.6	1.9	1.0	1.4	1.0	1.0
Ovenbird	4.3	5.1	8.4	5.0	5.7	5.2	4.2	5.6
Northern Waterthrush	1.1	1.2	0.8	1.3	0.5	0.8	0.7	0.9
Mourning	0.9	0.5	0.9	0.6	0.6	0.6	0.6	0.7
Common Yellowthroat	3.7	2.8	4.0	3.2	2.7	3.6	3.0	3.3
Wilson's	2.1	1.1	1.0	1.5	1.0	1.7	2.9	1.5
Canada	4.7	3.7	3.2	2.2	1.9	1.7	1.4	2.8
American Redstart	9.5	7.3	7.2	8.7	10.7	9.2	11.8	9.0
Total	100.1	99.9	100.1	100.2	99.7	100.2	100.5	99.9

Table 5 shows Relative Abundance averages obtained by simply dividing the data into 5 year blocks. The exception is the period 1985-89 which contains data for only 3 years as none was collected during 1985 and 1986. The rightmost column of table 5 shows the average relative abundance for each of the study species over the life of the study.

While this does produce some interesting numbers we do not see a lot of clear trends emerging that will allow us to draw conclusions about the changes in populations of individual species. Possible exceptions include the spruce budworm warblers (Tennessee, Bay-breasted and Cape May) who had

high relative abundance figures for the period from 1975 to 1989 and whose relative abundance has been generally declining since. This may indicate that the period of the population cycle for these warblers is quite a bit longer than the five year blocks into which the data has been divided. Further analysis of the population cycle(s) of this group will be undertaken in upcoming annual reports.

TABLE 7
RELATIVE ABUNDANCE BY CYCLE

	High Cycle (1970 to 1980)	Low Cycle (1981 to 1989)	High Cycle (1990 to 1997)	Low Cycle (1998 to 2001)	Thirty-year Average (1970 to 2001)
	% of Whole	% of Whole	% of Whole	% of Whole	% of Whole
Black and White	5.6	4.5	5.5	2.7	4.9
Tennessee	7.4	9.6	5.4	4.9	7.1
Nashville	6.8	7.0	6.4	6.6	6.7
Yellow	4.8	6.5	4.6	6.6	5.4
Magnolia	7.6	8.0	8.9	10.5	8.4
Cape May	1.7	1.6	1.9	0.5	1.5
Black-thr. Blue	4.5	4.6	6.7	5.2	5.2
Yellow-rumped	8.7	9.6	13.4	16.6	11.2
Black-thr. Green	7.1	5.4	4.9	4.4	5.7
Blackburnian	5.0	4.7	4.1	2.4	4.4
Chestnut-sided	8.1	7.3	8.1	6.7	7.7
Bay-breasted	4.9	5.0	4.1	3.4	4.5
Blackpoll	2.6	1.4	2.1	4.3	2.4
Palm	0.7	1.2	1.2	1.1	1.0
Ovenbird	5.0	7.0	6.0	3.8	5.6
N. Waterthrush	1.1	1.0	0.7	0.6	0.9
Mourning	0.7	0.8	0.6	0.5	0.7
Com. Yellowthroat	3.3	3.8	2.9	3.7	3.3
Wilson's	1.5	1.3	1.2	2.4	1.5
Canada	4.2	2.6	1.8	1.6	2.8
American Redstart	8.5	7.4	9.5	11.7	9.0
Total	99.8	100.3	100.0	100.2	99.9

In Table 5 we looked at the cycles of the total warbler population that passes through Toronto. Of course the patterns for individual species may not match that of the warblers as a whole.

In Table 7 we have broken down the full period of the warbler study into the four time periods set out in Table 5. Within each of these time periods we have calculated the proportion that each of the warbler species made of the total warblers seen. This allows us to see which species conform to the cycles in Table 5 and which species are gaining or falling behind.

The first two species we will consider are the Yellow Warbler and the Common Yellowthroat. For the Yellow Warbler we can easily see that the relative abundance is higher than the 30 year average for the species during the low cycles and lower than the 30 year average during the high cycles. This pattern of variation in relative abundance figures for the four periods indicates that the actual numbers of Yellow Warblers has been quite stable. The Common Yellowthroat exhibits a similar pattern of variation in the relative abundance figures so we again conclude there has been general stability in actual numbers.

When we see the opposite pattern of variation, namely higher relative abundance figures during high cycles and lower relative abundance figures during low cycles, this means that the actual numbers of the species swings up and down to a greater degree than that of the study warblers as a group. The best example of this is the Chestnut-sided Warbler. Another example is the Black and White Warbler although the very low relative abundance figure for the Black and White during period four is somewhat troubling.

A third obvious pattern is one that shows little variation, namely that the relative abundance figures are quite similar for all four periods. This pattern means that the actual numbers of the species goes up and down to a very similar degree to that of the study warblers as a group. The best example of this is the Nashville Warbler whose relative abundance figure for any of the four periods is within 5% of its 30 year average. The Palm Warbler is showing this pattern for periods two to four.

The patterns of the Tennessee Warbler and the Ovenbird show similarity in that their relative abundance was very high in period two and is at its lowest in period four. In fact, the Tennessee was tied with the Yellow-rumped as the relatively most common warblers of the low cycle of period two. We will have to wait for more data to come in for period four before making more comment about variation in actual numbers of these two species. It may be that the population cycle for these warblers is out of phase with that of the study warblers as a group. This means that the period of the population cycle is different than the four periods into which the data has been divided in Table 5. The discussion above about spruce budworm warblers using Table 5 seems to support this.

The pattern of variation for the Blackpoll Warbler is the opposite of that of the Tennessee and Ovenbird. Relative abundance is very high in period four when compared to the species' 30 year average and was at its lowest in period two. Another species for which the period four figure is very high is the Wilson's Warbler. Because these two species generally have differing preferred habitats in migration (i.e., the Wilson's being a 'bush' warbler often seen in bushes and low in trees and the Blackpoll usually being seen from the middle to the tops of trees) it seems unlikely that changes in which routes were censused during given years would be responsible for them having similar patterns of variation. It may also be that high and low cycles for these two species are out of phase with the high and low cycles of the study warblers as a group. Again, further comment awaits more data.

Next we come to what may be called the good news group. These are the species whose relative abundance has been generally increasing over the life of the study. The two most obvious examples of this are the Yellow-rumped and Magnolia Warblers. Two other species that have shown increases are the Black-throated Blue Warbler and the American Redstart although the pattern of increase has not been as consistent as with the Magnolia and Yellow-rumped.

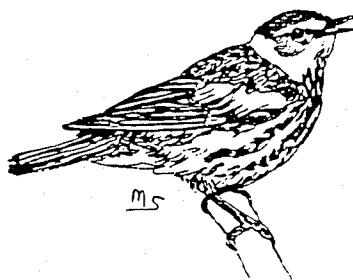
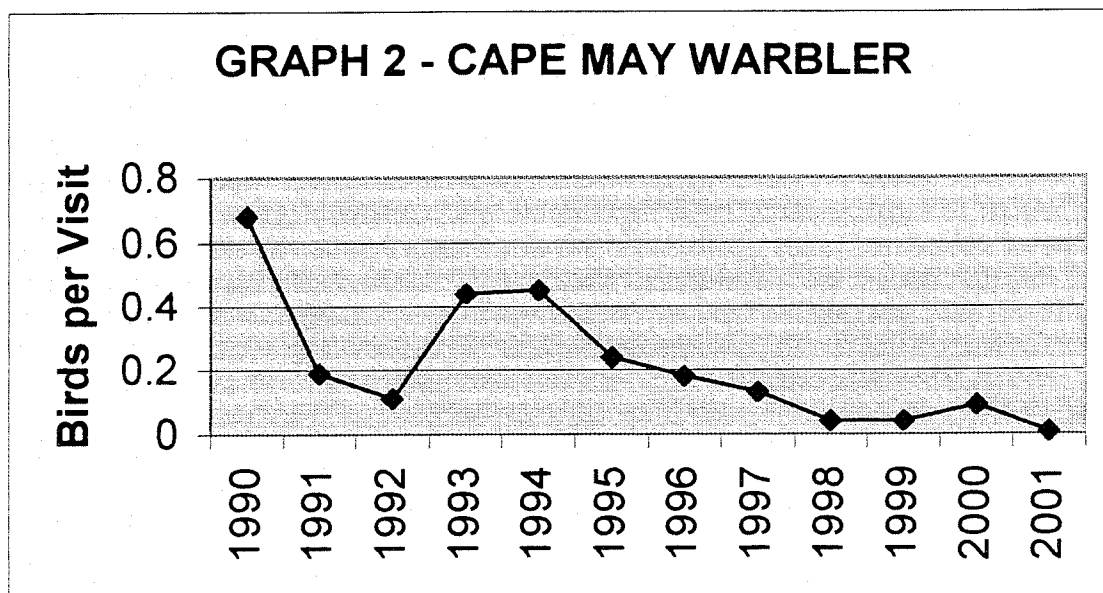
As the old saying goes, we've got good news and we've got bad news. The bad news is that we have seven species (fully one third of the group of warblers covered by the study) whose relative abundance has been generally decreasing over the life of the study. We have previously identified the Cape May Warbler as being of special concern. Though its pattern of decline has not been consistent the relative abundance figures have been going through the floor over the past ten years. The relative abundance figure for period four is only one third of this species' 30 year average. It is our dubious distinction at this time to add two more species to the Cape May as being of special concern. Both the Canada and Blackburnian Warblers have shown consistent declines in relative abundance through the four periods and the relative abundance figures for both species for period four are less than 60% of their 30 year average. The declines for the Black-throated Green Warbler have been consistent over the four periods though relative abundance for period four is still at about 75% of the 30 year average. While the declines for the Bay-breasted Warbler have not been consistent its period four figure is also about 75% of its 30 year average. The Mourning Warbler and Northern Waterthrush have never been common in the study so a handful of these birds more or less during any given year has a significant effect on relative abundance. However, both of these species are also showing declines over the life of the study.

This brings to a close our discussion of relative abundance. This section will not appear in the report every year but will be revisited from time to time.

CAPE MAY WARBLER

In 1999 as a result of the paucity of sightings we began to examine the Cape May Warbler records going back to 1990. We have updated the Cape May graph (below) and see that our data indicates that after a slight recovery in 2000 the species has almost disappeared in the Toronto area. Only two birds of this species were sighted in 329 visits to the Toronto study areas in 2001. (See also Table 5).

The only bright light for the Cape May seems to be that there are still lots of birds in north-western Ontario. It was a relief to receive the data from Thunder Cape Bird Observatory near Thunder Bay Ontario and find that the Cape May is not a rare bird in the north-western part of the province. Although their number are down from 45 birds in 2000 to 32 birds in 2001 this is still encouraging considering that all warbler numbers were lower in 2001.



PORT HOPE

PORT HOPE SPRING WARBLER COUNT - 2001

Elizabeth Kellogg and Roger Frost																				File name: TempXis2001																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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FIVE YEAR SUMMARY

ARRIVAL DATES (MAY)

	1997	1998	1999	2000	2001	AVERAGE	TORONTO
Tennessee	19	18	12	9	15	14.6	9.2
Nashville	5	5	5	1	1	3.4	2.4
Yellow	2	14	4	5	4	5.8	3.4
Magnolia	14	12	7	6	1	8.0	5.6
Cape May	15	24	7	19	-	16.3	11.6
Black-thr. Blue	12	4	6	5	9	7.2	3.2
Black-thr. Green	1	6	1	3	1	2.4	2.4
Blackburnian	12	18	6	6	1	8.6	5.2
Chestnut-sided	12	18	5	4	2	8.2	5.6
Bay-breasted	31	-	14	7	23	18.8	10
Blackpoll	29	23	17	17	23	21.8	13.8
Palm	5	3	12	3	1	4.8	1.8
Ovenbird	8	6	3	5	4	5.2	3.4
N. Water Thrush	13	-	-	3	-	8.0	3.8
Mourning	24	23	25	27	23	24.4	15
Yellow-throat	12	13	19	6	2	10.4	5.2
Wilson's	24	14	15	27	25	20.6	11.8
Canada	13	23	14	16	21	17.4	12.4
Am. Redstart	16	14	6	6	15	11.4	7.2

The above table summarizes the arrival dates for each of 19 species of warbler for the last five years. The Yellow-rumped and Black and White were omitted because many arrive in April. As can be seen there was a good deal of variation from year to year. Five years is too small a sample to note any trends.

The averages of the five-year period are in the sixth column and may be compared with the Toronto five-year averages in column seven. With the exception of the Black-throated Green the dates average later than at Toronto. As discussed in the report for the year 2000 this may result from the wider lake crossing at Port Hope. Another factor may be that with ten to fifteen observers scouring the Toronto area the chances of picking up early migrants are higher than for a single party.

INDIVIDUAL SPECIES COUNTS – 1997 TO 2001

	1997	1998	1999	2000	2001
Black & White	46	12	25	26	18
Tennessee	17	2	8	5	2
Nashville	84	9	26	49	23
Yellow	43	8	34	21	16
Magnolia	69	34	36	41	36
Cape May	15	5	10	2	0
Black-thr. Blue	39	5	24	15	12
Yellow-rumped	626	106	356	208	72
Black-thr. Green	49	8	43	31	31
Blackburnian	29	5	16	20	9
Chestnut-sided	22	11	45	45	52
Bay-breasted	7	0	3	9	2
Blackpoll	6	8	7	21	9
Palm	35	2	1	7	2
Ovenbird	20	14	18	18	17
N. Water Thrush	1	0	0	1	0
Mourning	22	8	2	3	1
Yellow-throat	17	8	3	5	7
Wilson's	6	3	4	1	1
Canada	7	5	3	1	2
Am. Redstart	40	25	35	23	16
Number of Visits	34	34	32	32	27
Total Warblers	1200	278	701	552	328
Warblers per Visit	35.3	8.2	21.9	17.3	12.1

OTHER WARBLER SPECIES SEEN DURING THE LAST FIVE YEARS

Blue-winged	Audubon's
Golden-winged	Pine
Orange-crowned	Connecticut
Northern Parula	Hooded

WHITBY (THICKSON'S WOODS)

Once again Thickson's Woods has produced the highest count of any of our plots. Like the other plots the numbers were down substantially in 2001. Margaret Bain deserves great credit for driving in from Cobourg almost daily to carry out the count.

WHITBY SPRING WARBLER COUNT

Thickson's Woods - Marg Bain et al

MB = Margaret Bain V = Jay VanderGaast

	MAY										D = Denis Barry										L = Thickson's Woods logbook										JUN							
	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	
Observers	B	D	B	L	B	B	B	B	B	B	B	B	B	B	L	L	V	B	B	L	B	L	B	B	L	B						B	B	B	L	B		
Bl. & Wh.	2	2	1	1	5	1	0	0	1	1	3	0	0	4	2	1	3	2	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
Tennes.	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3	2	1	15	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	27
Nashville	3	4	5	5	3	2	2	0	1	3	4	0	0	0	2	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
Yellow	3	4	6	5	6	4	4	6	5	5	8	6	6	5	5	6	6	8	8	8	5	5	10	6	6	5	0	0	4	4	5	0	4	0	0	4	172	
Magnol.	0	1	0	3	0	0	1	0	2	3	2	3	2	5	4	3	10	15	8	5	6	5	15	4	2	4	0	0	2	2	2	0	2	0	4	115		
Cape May	0	0	0	1	1	0	0	0	0	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	0	0	4	
Bl-thr Blue	3	2	2	2	5	3	3	1	4	6	6	2	0	2	3	3	10	5	4	1	1	1	8	3	1	3	0	0	1	0	0	0	0	0	0	0	0	85
Yel-rump.	35	30	35	10	35	20	6	0	18	6	8	3	3	0	3	0	3	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	218	
Bl-thr Gr	2	2	1	2	3	1	1	0	3	0	1	0	0	2	2	3	2	5	6	3	3	0	5	3	1	1	0	0	0	0	0	0	0	0	0	0	1	53
Blackburn	3	1	2	0	0	0	0	0	0	1	0	0	0	0	1	2	1	0	0	1	0	3	4	3	0	0	0	0	0	0	0	0	0	0	0	0	22	
Chest-side	2	5	1	2	3	2	2	0	2	4	3	2	2	3	3	3	10	10	5	3	1	1	5	2	1	2	0	0	0	0	0	0	0	1	0	0	80	
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	8	
Blackpoll	0	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	1	5	
Palm	3	2	1	1	4	1	0	0	3	0	2	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	18	
Ovenbird	1	2	0	1	0	0	2	0	1	4	2	0	0	0	2	1	0	0	0	0	1	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	24	
N Watr Thr	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	0	0	0	2		
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	5	
Yel-throat	0	0	2	0	0	0	0	1	1	2	2	3	3	2	0	1	0	3	2	0	2	0	8	3	0	1	0	0	1	0	0	0	0	0	0	0	37	
Wilson's	0	0	0	0	0	0	0	0	2	2	1	0	0	0	1	1	0	5	2	0	0	0	3	1	0	0	0	0	1	1	0	0	0	0	0	0	20	
Canada	0	0	0	0	0	0	0	0	2	1	1	0	0	2	1	0	2	4	3	0	0	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	23	
A Redst	0	0	0	1	0	0	0	0	1	0	2	0	0	2	0	2	1	0	0	0	0	0	5	2	1	2	0	0	0	0	0	0	0	0	0	0	2	21
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	0	0	1	1	1	0	1	0	1	31		
TOTALS	57	55	56	33	66	34	21	8	44	39	45	20	17	25	35	30	51	72	46	25	19	17	83	34	14	19					9	7	8	7	13	1009		
Swains Th.	0	0	0	0	1	0	1	0	0	2	2	1	4	3	1	1	2	3	5	4	5	1	6	5	1	2	0	0	0	0	0	0	0	0	0	0	50	
Scar Tan	0	1	1	2	0	0	0	0	0	4	8	5	0	0	1	3	1	5	0	2	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	38	
Ros-br. Gr	0	0	2	3	1	0	2	2	1	6	3	0	2	5	2	4	2	4	4	2	3	3	2	3	0	2	0	0	0	0	0	0	0	0	0	0	58	

OTHER WARBLERS

	Orange-crowned	Northern Parula	Pine	Prairie	Cerulean	Worm-eating	Louisiana Waterthrush	Kentucky	Hooded
M1			2						
M2		1							
M3							1		
M4		1			2			1	
M5					1			1	
M6		1							1
M7									
M8									
M9	1		1						
M10									
M11		1		1					
M12		2							
M13		1							
M14									
M15		1							
M16									
M17		1							
M18		2				1			
M19									
M20									
M21									
M22									
M23		4							

FIVE YEAR SUMMARY – THICKSON'S WOODS

ARRIVAL DATES (MAY)

	1997	1998	1999	2000	2001	AVERAGE		TORONTO
Tennessee	10	15	8	5	4	8.4		9.2
Nashville	1	5	2	1	1	2		2.4
Yellow	10	6	5	3	1	5		3.4
Magnolia	10	6	7	5	2	6		5.6
Cape May	5	13	14	6	4	8.4		11.6
Black-thr. Blue	2	4	2	1	1	2		3.2
Black-thr. Green	5	3	1	1	1	2.2		2.4
Blackburnian	7	14	2	4	1	5.6		5.2
Chestnut-sided	13	5	7	5	1	6.2		5.6
Bay-breasted	15	14	12	7	15	12.6		10
Blackpoll	25	16	12	9	23	17		13.8
Palm	3	2	1	3	1	2		1.8
Ovenbird	4	4	2	4	1	3		3.4
N. Water Thrush	2	2	1	3	18	5.2		3.8
Mourning	24	15	12	7	18	15.2		15
Yellow-throat	8	11	6	5	3	6.6		5.2
Wilson's	12	15	12	8	9	11.2		11.8
Canada	23	15	9	6	10	12.6		12.4
Am. Redstart	9	13	6	5	4	7.4		7.2

The above table summarizes the arrival dates for each of 19 species of warbler for the last five years. The Yellow-rumped and Black and White were omitted because many arrive in April. As can be seen there was a good deal of variation from year to year. Five years is too small a sample to note any trends.

The averages of the five-year period are in the sixth column and may be compared with the Toronto five-year averages in column seven. With the exception of the Cape May, Bay-breast and Blackpoll the arrival dates at the two locations agree quite well. The poor match in the Cape May could be expected because so very few birds of this species were seen.

INDIVIDUAL SPECIES COUNTS – 1997 TO 2001

	1997	1998	1999	2000	2001
Black & White	116	45	41	44	34
Tennessee	45	53	31	27	27
Nashville	142	30	42	49	38
Yellow	92	124	234	272	172
Magnolia	152	82	67	99	115
Cape May	34	7	10	10	4
Black-thr. Blue	153	76	119	137	85
Yellow-rumped	1237	270	314	195	218
Black-thr. Green	82	48	55	60	53
Blackburnian	42	57	39	45	22
Chestnut-sided	122	57	51	102	80
Bay-breasted	26	18	7	24	8
Blackpoll	25	40	36	20	5
Palm	65	14	14	13	18
Ovenbird	68	46	38	38	24
N. Water Thrush	15	12	3	9	2
Mourning	18	33	14	8	5
Yellow-throat	40	76	82	62	37
Wilson's	19	45	26	28	20
Canada	39	32	31	50	23
Am. Redstart	142	84	120	157	21
Number of Visits	35	36	36	36	31
Total Warblers	2674	1249	1374	1449	1009
Warblers per Visit	76.4	34.7	38.2	40.3	32.5

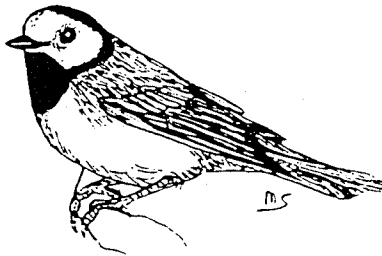
The number of birds counted dropped substantially over the five-year period. Since a few days were missed a more accurate result can be obtained from looking at the number of warblers per visit. This figure may be obtained by dividing the number of birds counted each year by the number of visits made. The result is:

1997 – 76.4; 1998 - 34.7; 1999 – 38.2; 2000 – 40.3; 2001 – 32.5. From this it appears that there was not so much a downward trend in numbers but that there was a very large count in 1997.

OTHER WARBLER SPECIES SEEN DURING THE LAST FIVE YEARS

Over the past five years the list of warbler species seen at Thickson's during the annual spring counts includes nearly all the species that could be expected in southern Ontario. The table below shows those warblers that are not among our targeted species.

Blue-winged	Cerulean	Kentucky	Yellow-breasted Chat
Golden-winged	Prairie	Hooded	
Orange-crowned	Pine	Worm-eating	
Northern Parula	Connecticut	Louisiana Waterthrush	



NEWMARKET

NEWMARKET SPRING WARBLER COUNT - 2000

Mabel Davis C. A.

Observers-Keith Dunn(D) Kevin Shackleton(S)

JUNE

Date (May)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	#	#	21	22	23	24	25	#	27	28	29	30	31	1	2	3	4	5	Total	
Initial	D	D	D	D	D	S	D	S	S	S	S	S	D	D	S	S	S	D	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Bl. & Wh.	0	0	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
Tennes.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Nashville	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
Yellow	0	0	0	0	1	0	0	1	2	0	0	1	1	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	11	
Magnol.	2	0	0	0	0	0	0	0	1	0	0	2	2	1	1	0	0	1	0	2	1	0	1	1	0	0	0	0	0	0	0	0	0	0	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	
Bl-thr Blue	0	0	0	0	0	0	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	0	2	
Yel-rump.	0	0	0	0	0	0	0	0	0	0	0	0	0	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 Gr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	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	0	0	0	1	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	1	0	1	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Bay-breast	0	0	0	0	0	0	0	0	0	0	2	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	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	1	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	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	1	0	0	0	2	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6		
Yel-throat	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
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	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	0		
A Redst	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	0	3	0	0	0	0	0	0	1	0	0	0	1	0	8	
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	31	
TOTALS	2	0	1	0	1	1	0	1	5	0	3	4	5	3	5	0	1	11	0	5	4	11	1	5	1	0	0	1	0	1	0	1	0	0	0	0	72	
Swains Thr	0	0	0	0	0	0	1	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	2		
Scarlet Tan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2		
Ros-br. Gr	0	2	0	0	0	1	0	3	1	0	0	0	0	1	3	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13		

OTHER WARBLERS:

Orange-crowned Warbler, 1 May 5, 2001

Northern Parula, May 16, 2001

FIVE YEAR SUMMARY**ARRIVAL DATES (MAY)**

	1997	1998	1999	2000	2001	AVERAGE	TORONTO
Tennessee	22	18	9	19	15	16.6	9.2
Nashville	17	8	7	5	3	8.0	2.4
Yellow	19	-	9	10	5	10.8	3.4
Magnolia	22	-	5	9	1	9.3	5.6
Cape May	-	-	-	-	-	-	11.6
Black-thr. Blue	15	-	6	11	12	11.0	3.2
Black-thr. Green	12	-	5	4	15	9.0	2.4
Blackburnian	23	-	7	10	22	15.5	5.2
Chestnut-sided	12	-	5	4	9	7.5	5.6
Bay-breasted	25	-	8	19	11	15.8	10
Blackpoll	-	-	-	26	27	-	13.8
Palm	-	-	-	-	-	-	1.8
Ovenbird	14	5	7	7	-	8.3	3.4
N. Water Thrush	6	5	14	5	-	7.5	3.8
Mourning	25	-	15	-	14	-	15
Yellow-throat	25	18	-	12	9	19.5	5.2
Wilson's	12	-	-	12	23	-	11.8
Canada	25	18	-	-	-	-	12.4
Am. Redstart	19	23	6	10	15	14.6	7.2

INDIVIDUAL SPECIES COUNTS – 1997 TO 2001)

	1997	1998	1999	2000	2001
Black & White	22	0	6	10	2
Tennessee	22	1	4	1	3
Nashville	8	3	12	22	5
Yellow	9	0	6	8	11
Magnolia	11	0	11	14	15
Cape May	0	0	0	0	0
Black-thr. Blue	10	0	6	3	2
Yellow-rumped	13	3	6	16	0
Black-thr.	12	0	3	11	4
Green					
Blackburnian	15	0	5	9	1
Chestnut-sided	32	0	12	23	6
Bay-breasted	7	0	2	9	4
Blackpoll	0	0	0	3	1
Palm	0	0	0	0	0
Ovenbird	7	2	5	8	0
N. Water	3	3	1	2	0
Thrush					
Mourning	3	0	3	0	6
Yellow-throat	3	11	0	1	3
Wilson's	6	0	0	1	1
Canada	1	1	0	0	0
Am. Redstart	11	1	10	7	8
Number of Visits	30	26	31	27	31
Total Warblers	195	25	92	148	72
Warblers per Visit	6.5	1.0	3.0	5.5	2.3

OTHER WARBLER SPECIES SEEN DURING THE LAST FIVE YEARS

Blue-winged
Orange-crowned
Northern Parula

ELLIOT LAKE

ELLIOT LAKE SPRING WARBLER COUNT - 2001

STATION Angel Lake, (Algoma District)

Observer-Erwin Meissner(M)

File name: Elliot Lake 2001.xls

	MAY														JUNE																						
	1	2	3	4	5	6	7	8	9	10	11	12	#	14	#	#	#	18	19	#	21	#	23	24	#	26	27	28	29	#	#	1	2	3	4	5	TOTAL
Initial	M	M	M	M		M	M	M	M	M	M	M		M				M	M		M		M	M		M		M	M							M	
Bl. & Wh.	7	7	6	7		7	8	10	7	9	8	8		8				11	7		7		8	8		9		8	7							8	165
Tennes.	0	0	0	0		0	0	0	0	0	0	0		0				0	0		0		0	0		0		1	1							0	2
Nashville	2	2	0	0		0	0	2	0	0	4	0		1				0	0		0		0	1		0		0	0							0	12
Yellow	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	4	2	2	2	2		4				3	2		1		5	5		4		4	7							4	51
Cape May	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	1	0		0	0	1	0	0	2	0		1				0	0		1		1	0		0		1	1							1	10
Yel-rump.	11	11	9	9		6	4	9	8	6	6	4		6				4	1		2		1	1		1		2	2							3	106
Bl-thr Gr	3	8	10	4		5	4	11	9	11	8	8		7				8	8		9		9	11		6		9	6							7	161
Blackburn	0	0	1	0		1	4	1	1	2	3	1		2				3	3		1		2	2		1		1	1							2	32
Chest-side	0	0	0	0		0	0	2	4	2	2	1		1				0	0		2		3	2		1		1	0							1	22
Bay-breast	0	0	0	0		0	0	2	0	0	1	0		0				0	2		0		0	0		0		0	0							0	5
Blackpoll	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	5	0		0	0	0	0	0	0	0		0				0	0		0		0	0		0		0	0							0	5
Ovenbird	1	2	3	0		1	2	4	5	3	9	5		12				8	7		7		9	8		10		6	7							6	115
N Watr Thr	0	0	0	0		0	0	0	0	0	0	1		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
Yel-throat	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
Canada	0	0	0	0		0	0	0	0	0	0	0		0				0	0		0		0	1		0		0	0							0	1
A Redst	0	0	0	0		0	0	0	1	1	3	2		2				3	4		6		6	4		5		5	6							9	57
VISIT=1	1	1	1	1		1	1	1	1	1	1	1		1				1	1		1		1	1		1		1	1							1	21
TOTALS	24	30	35	20		20	22	46	37	36	48	32		44				40	34		36		44	43		37		38	38							41	745
Swains Thr	0	0	0	0		0	0	0	0	0	1	2		2				0	0		2		0	0		1		0	2						1	11	
Scarlet Tan	0	0	0	0		0	0	0	0	0	0	0		0				0	0		0		0	0		0		0	0							0	0
Ros-br. Gr	0	0	0	0		0	0	2	0	1	1	0		0				0	0		0		0	0		0		0	0							0	4

ARRIVAL DATES AT ELLIOT LAKE (MAY)

	2000	2001	AVERAGE	AVERAGE AT TORONTO
Tennessee	23	28	25.5	6
Nashville	2	1	1.5	1
Yellow	-	-	-	1
Magnolia	15	8	11.5	2.5
Cape May	29	-		10.5
Black-thr. Blue	14	3	8.5	2
Black-thr. Green	2	1	1.5	1
Blackburnian	15	3	9.0	2
Chestnut-sided	17	8	12.5	2.5
Bay-breasted	10	8	9.0	8.5
Blackpoll	16	-		12
Palm	1	3	2.0	1
Ovenbird	14	1	7.5	3.5
N. Water Thrush	-	12		3.5
Mourning	-	-		13.5
Yellow-throat	-	-		4
Wilson's	-	-		11
Canada	-	24		10
Am. Redstart	14	9	11.5	5

The arrival of the first migrants at Toronto was much earlier than at Elliot Lake. This is to be expected since the Toronto records are of the earliest migrants while the Elliot Lake records are of birds that are, for the most part, arriving on their nesting grounds.

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 BIRD OBSERVATORY

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 Machel et al.

ESTIMATED TOTALS

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	
Bl. & Wh.	4	2	1	0	0	0	0	0	0	3	0	2	2	6	4	1	0	1	1	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	33
Tennes.	0	0	0	0	0	0	0	0	0	1	4	0	0	2	0	2	7	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Nashville	8	7	9	7	3	3	1	2	3	6	1	1	3	0	6	3	2	16	2	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	86
Yellow	3	3	5	3	6	4	3	6	15	17	12	12	8	9	16	20	30	50	40	15	50	15	30	35	20	25	30	20	20	20	24	0	0	0	0	0	566	
Magnol.	0	0	1	0	0	0	0	0	4	8	0	2	1	11	24	5	4	24	100	12	4	0	40	250	20	150	18	10	0	0	2	0	0	0	0	690		
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	0	1	0	0	0	0	0	3	0	2	2	3	2	0	1	0	0	1	0	0	0	12	2	12	1	0	0	0	0	0	0	0	0	0	44	
Yel-rump.	95	75	40	6	15	10	6	1	30	30	50	15	12	10	10	4	6	4	2	1	0	0	1	10	0	5	0	0	0	0	0	0	0	0	0	0	438	
Bl-thr Gr	1	2	4	3	1	1	0	0	1	2	2	5	4	8	4	4	0	18	20	4	2	0	11	50	2	20	2	2	2	0	0	0	0	0	0	0	175	
Blackburn	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	3	0	1	0	0	6	35	0	5	1	0	0	0	0	0	0	0	0	0	56	
Chest-side	0	0	0	0	1	1	0	0	1	1	3	0	5	1	2	6	11	12	2	1	0	2	20	2	12	5	1	1	0	0	0	0	0	0	0	0	90	
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	2	0	0	2	6	0	1	0	0	0	0	0	0	0	0	0	0	0	19	
Blackpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	10	0	8	10	1	0	0	0	0	0	0	0	0	33		
Palm	6	4	5	0	0	0	0	0	0	1	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24		
Ovenbird	0	2	0	0	1	0	0	0	1	6	0	1	2	1	2	1	2	1	6	3	0	0	1	4	1	1	1	0	0	0	0	0	0	0	0	37		
N Watr Thr	0	0	0	0	0	0	2	0	0	0	1	0	1	0	0	0	1	1	0	0	0	0	1	0	1	4	0	1	0	0	0	0	0	0	0	12		
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	1	6	0	0	2	0	0	0	0	0	0	14		
Yel-throat	0	0	0	0	1	0	0	1	2	0	1	6	5	3	0	4	5	10	8	6	6	1	10	12	10	12	6	8	5	6	6	0	0	0	0	134		
Wilson's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	1	10	2	8	4	1	0	0	0	0	0	0	0	0	30		
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	1	20	1	3	1	0	0	0	0	0	0	0	0	33		
A Redst	0	0	0	0	1	0	0	0	0	0	0	2	2	0	4	2	0	9	0	2	3	0	1	1	8	40	10	5	4	4	2	0	0	0	0	100		

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	0	0	0	31
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TOTALS	118	96	65	20	29	19	12	10	56	76	72	56	45	61	78	47	58	168	200	50	67	16	114	487	70	312	89	49	34	30	34							2638
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Swain Thr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	2	0	0	1	6	1	4	5	0	0	0	1	0	0	0	0	27
Scarlet Tan	0	0	0	0	0	0	0	2	3	0	0	0	0	1	1	0	0	0	0	2	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	12
Ros-br. Gr	2	3	0	0	1	0	1	0	2	4	3	1	2	2	4	0	0	2	2	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	32

LONG POINT BIRD OBSERVATORY

Old Cut Station

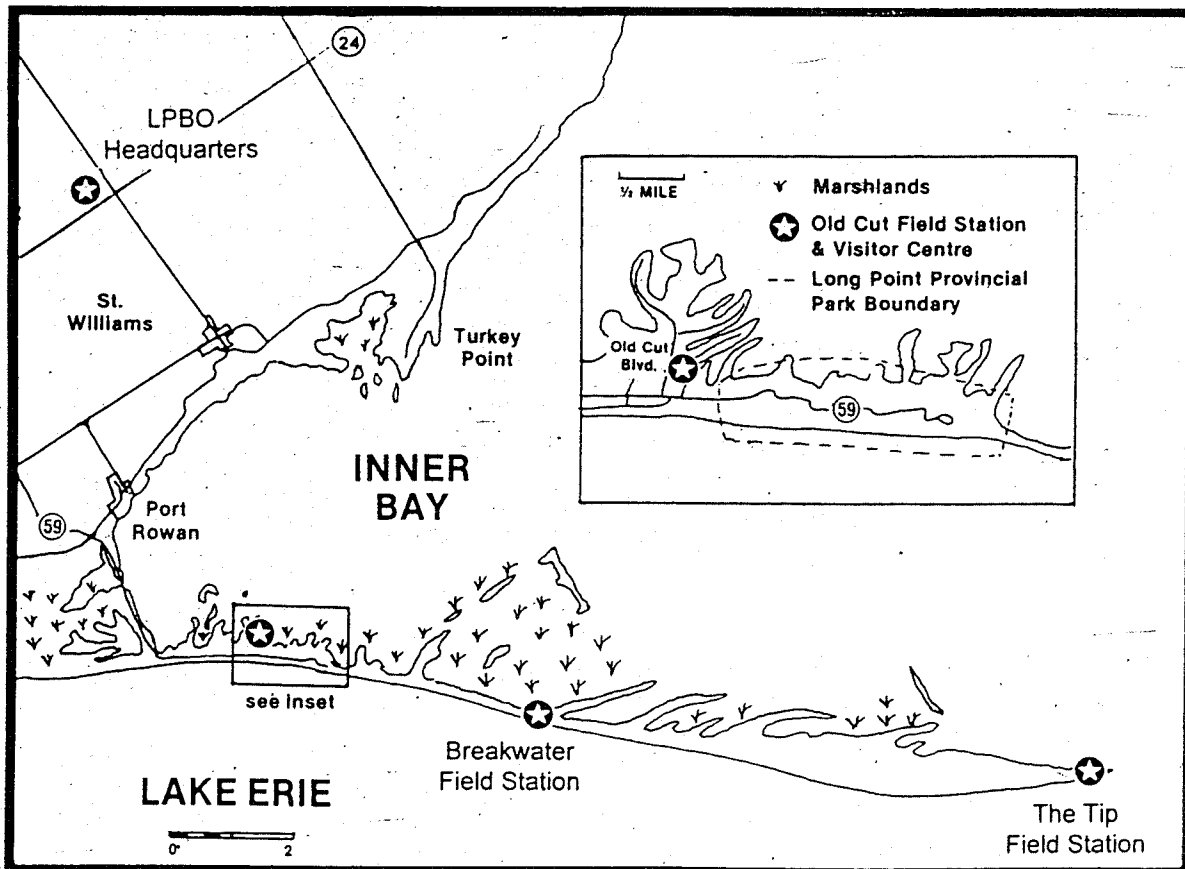
The Old cut banding station is near the base of Long Point, on the north shore of Lake Erie south of Simcoe, Ontario.

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 Jody Allair'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 the station upon 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.

"An average number of birds came through the field stations during May, Primarily due to the clear and sunny weather that had settled over southern Ontario. However, a "fallout" of migrants occurred on 18 May, presenting all three field stations with their busiest day of the spring. Of the 169 birds banded at the Tip, two Hooded Warblers and one Prairie Warbler were included. Breakwater banded the third Worm-eating Warbler of the year and Old Cut banded 39 Magnolia Warblers, 19 Wilson's Warblers and 26 Gray Catbirds...

The spring migration slowed down considerably towards the end of May. The last songbirds to migrate north in the spring, flycatchers and Blackpoll Warblers, were coming through but in fairly low numbers."



Map from Long Point Bird Observer-Summer 1997

LONG POINT BIRD OBSERVATORY

Old Cut Field Station - Observatory staff and volunteers
MAY

Estimated Totals

File name: LPBodata2001

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.	10	5	7	7	1	1	2	4	5	6	5	0	3	10	5	0	10	6	3	2	0	5	6	1	1	1	0	0	0	0	0	0	0	0	0	0	106
Tennes.	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	2	12	5	3	3	8	5	2	1	1	0	0	1	1	1	0	0	0	0	49	
Nashville	6	6	5	3	0	1	5	2	0	1	4	0	2	4	1	0	12	12	3	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	71	
Yellow	8	10	6	7	10	7	8	10	25	20	20	0	15	40	20	14	30	30	23	15	15	16	30	12	20	12	10	13	20	20	22	14	10	0	0	532	
Magnol.	3	0	0	3	1	0	4	8	20	30	15	0	10	30	40	20	100	100	18	35	18	24	30	35	35	30	5	8	7	1	10	5	3	0	0	648	
Cape May	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	2	5	0	1	0	0	1	2	0	0	0	0	1	0	0	0	0	0	0	16	
Bl-thr Blue	7	3	3	5	6	2	2	1	0	2	2	0	2	8	10	5	4	5	1	3	1	0	2	12	1	3	0	0	1	0	0	0	1	0	0	92	
Yel-rump.	25	10	2	2	2	5	2	2	0	12	10	0	0	1	5	1	5	5	1	1	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	95	
Bl-thr Gr	5	2	0	0	1	0	1	1	2	0	5	0	3	8	1	5	8	12	10	2	1	3	6	0	1	0	0	1	1	1	2	0	0	0	0	82	
Blackburn	0	0	0	0	0	0	1	0	0	1	0	0	0	6	5	0	6	12	5	2	0	2	3	0	0	0	0	0	2	2	0	0	0	0	0	47	
Chest-side	3	3	1	0	0	0	1	0	0	14	1	0	0	6	3	4	8	30	12	6	1	10	10	2	1	0	0	1	1	1	2	0	0	0	0	121	
Bay-breast	1	0	0	0	0	0	0	0	0	4	2	0	0	2	3	2	8	6	5	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	37	
Blackpoll	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2	2	6	1	3	2	6	5	5	3	3	3	4	8	4	4	3	3	0	0	70	
Palm	1	2	0	1	1	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	8	
Ovenbird	7	8	4	6	0	0	2	1	5	6	3	0	1	4	6	2	35	20	4	5	3	2	6	3	0	4	2	1	2	3	1	1	1	0	0	148	
N Watr Thr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	1	4	2	2	0	1	0	0	0	0	1	1	0	0	20		
Mourning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	3	1	0	0	3	0	0	2	2	0	0	0	0	16		
Yel-throat	0	10	5	3	0	4	2	2	9	6	5	0	3	6	6	6	3	5	5	4	4	4	10	5	3	7	1	4	15	5	5	7	5	0	0	159	
Wilson's	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	5	35	9	10	5	3	4	7	1	6	0	3	5	8	6	0	1	0	0	110	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	18	9	4	6	12	2	0	2	6	1	0	2	0	0	1	1	0	0	69	
A Redst	2	0	0	4	3	2	4	2	0	6	2	0	0	1	10	6	0	3	9	7	2	1	3	8	5	0	0	1	3	1	1	1	0	0	0	87	

VISIT=1

TOTALS	78	59	33	42	25	22	34	33	67	109	76	0	40	133	117	68	246	328	123	111	63	104	127	98	74	77	22	36	73	49	89	32	27	0	0	2583
	78	59	33	42	25	22	34	33	67	109	76	40	133	117	68	246	328	328	123	111	63	104	127	98	74	77	22	36	73	49	89	32	27	0	0	

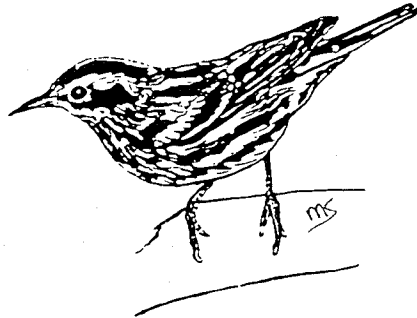
Swains Thr	0	1	0	2	0	0	0	0	3	3	1	0	1	2	0	2	10	15	3	23	8	8	2	3	2	6	2	3	4	5	3	6	2	0	120
Scarlet Tan	1	1	4	7	0	0	1	0	6	1	2	0	0	2	0	0	9	10	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	47
Ros-br. Gr	10	7	1	10	8	8	6	4	22	3	5	0	2	4	0	0	2	8	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	102

HALDIMAND BIRD OBSERVATORY

Haldimand Bird Observatory is operating three field stations –One on Ruthven Park, on the Grand River between Cayuga and Caledonia, and two on the north shore of Lake Erie - Rock Point near Port Maitland and Selkirk south of Cayuga. John Miles has sent us the Estimated Totals from the Selkirk station.

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.



HALDIMAND BIRD OBSERVATORY - 2001

SELKIRK PROVINCIAL PARK - John Miles et al.

Estimated Totals

File name: Selkirk 2001

		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	3	1	0	0	0	0	0	2	3	1	0	0	0	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	18
Tennes.		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	0	0	2	
Nashville		1	6	7	5	2	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	0	0	0	0	0	24	
Yellow		7	3	20	8	10	10	12	10	15	20	15	10	15	10	20	10	0	30	20	25	10	15	10	10	10	10	5	6	10	6	7	6	5	7	6	3	396
Magnol.		0	0	0	0	0	0	1	0	2	1	3	2	1	1	10	0	2	4	5	10	1	5	5	3	3	3	0	1	0	1	2	0	0	0	1	2	69
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	0	0	2	2	0	0	0	0	0	0	1	0	0	3	0	0	2	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Yel-rump.		15	20	10	15	15	6	1	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92	
Bl-thr Gr		0	1	1	2	0	0	0	3	1	0	0	1	1	1	1	1	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	17	
Blackburn		0	0	0	0	0	0	0	1	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	2	
Chest-side		0	1	10	3	2	0	1	2	4	2	2	0	1	0	3	0	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	
Bay-breast		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		
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	1	3	3	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	0	0	0		
Ovenbird		5	4	5	3	0	0	1	0	1	12	3	3	2	6	10	3	0	1	2	10	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	11	
N Watr Thr		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	78		
Mourning		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	2		
Yel-throat		4	0	1	3	2	2	1	2	5	5	4	5	4	5	5	0	2	1	3	2	4	4	5	5	5	5	4	5	6	6	0	3	4	3	123		
Wilson's		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	2	4	2	6	0	1	0	0	1	0	0	0	0	20		
Canada		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	8	
A Redstart		0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	0	0	1	3	2	0	2	0	1	1	3	1	0	0	0	0	0	0	0	0	18	
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	36		
TOTALS		37	38	57	44	36	20	22	18	31	45	29	20	25	22	64	21	2	41	38	54	14	35	26	30	25	24	12	11	17	14	15	14	7	10	11	8	937
		37	38	57	44	36	20	22	18	31	45	29	20	25	22	64	21	2	41	38	54	14	35	26	30	25	24	12	11	17	14	15	14	7	10	11	8	
Swains Thr		0	0	0	0	0	0	0	2	7	2	0	1	0	1	2	0	2	3	2	20	5	1	0	2	1	1	0	0	0	1	1	0	0	0	0	54	
Scarlet Tan		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5		
Ros-br. Gr		1	3	7	10	0	0	5	5	5	5	5	2	5	2	5	5	0	5	5	5	0	1	2	3	2	1	0	0	2	2	1	0	0	1	0	95	

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 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.

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....

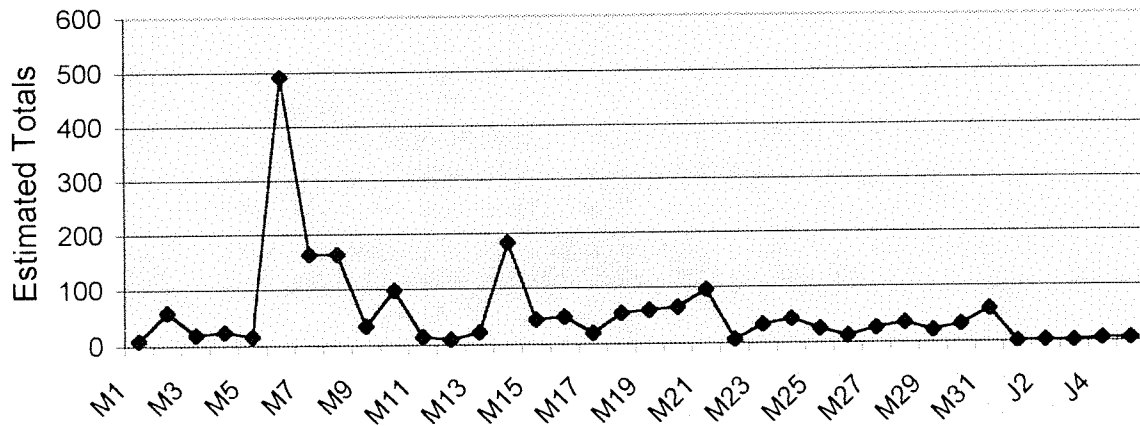
With support from Sleeping Giant Provincial Park, Thunder Cape Bird Observatory is a joint project of the Thunder Bay Field Naturalists, Ontario Ministry of Natural Resources and Bird Studies Canada.

It is likely that the warblers encountered at Thunder Cape are on a different flyway and represent a different population from those recorded at the migration monitoring sites in the eastern part of the province. Banding recoveries are still too few to provide a clear picture of the migration routes used by the warblers. *The Canadian Atlas of Bird Banding* (2000) shows individual Yellow Warblers traveling north to the east of Lake Huron and west of Lake Michigan, a Blackburnian Warbler flying south from Thunder Cape along the west side of Lake Michigan, and a Palm and a Blackburnian Warbler moving north to the east of Lake Huron. Lakes Huron and Michigan probably act to divide the northbound flying birds so that part of the population travels east of Lake Huron and part travel west of Lake Huron and Lake Michigan. To reach the north shore of Lake Superior the western birds can take advantage of the peninsula running north into Lake Superior from northern Michigan and island-hop to Isle Royale and thence to Thunder Cape. We therefor should not expect the migration pattern graphs for Thunder Cape to agree closely with those from eastern Ontario.

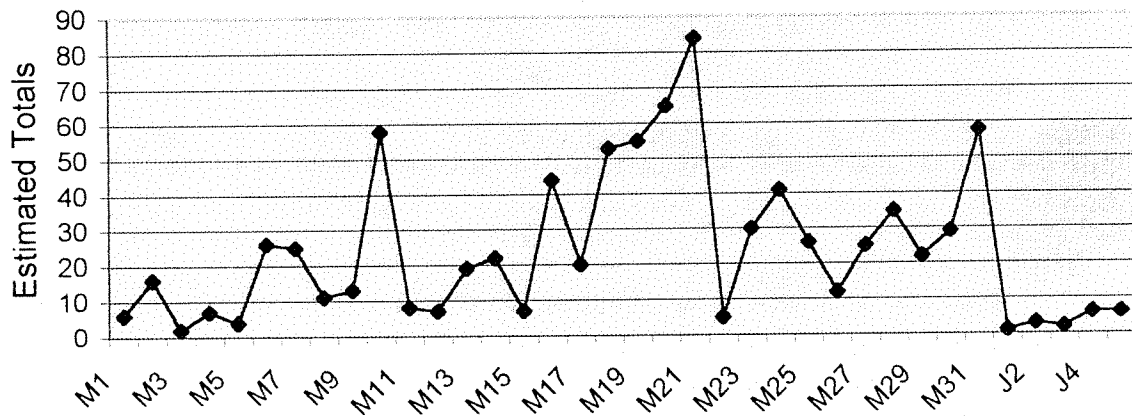
We have presented two versions of the Migration Pattern for Thunder Cape. The first includes all our targeted warbler species. The problem with this graph is that there were such huge numbers of Yellow-rumps that it is difficult to see the pattern of the other warblers. We therefore present a second graph with the Yellow-rumps deleted. Aside from the huge flight of Yellow-rumps on May 6 the main peaks appear to be May 10 (Palm Warblers), May 21 (Black-throated Greens) and May 31 (American Redstarts). The May 21 peak is three days later than Long Point and two days earlier than the main peak north of Lake Ontario.

As expected the earliest arrival dates for the are very different. This is illustrated on the table on page 37.

MIGRATION PATTERN - THUNDER CAPE



MIGRATION PATTERN - THUNDER CAPE WITH YELLOW-RUMPED WARBLER REMOVED



THUNDER BAY SPRING WARBLER COUNT - 2001

Thunder Cape Bird Observatory

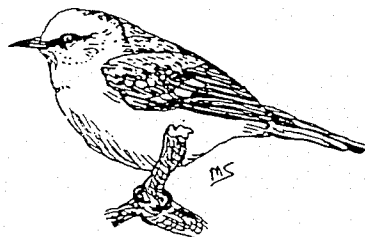
Estimated Totals

File name:ThunderCape2001.xls

	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	2	0	0	0	2	1	0	0	0	1	3	0	1	2	6	5	3	6	1	0	2	4	3	1	1	2	2	1	0	0	0	0	0	49
Tennes.	0	0	0	0	0	0	0	0	0	1	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	3	
Nashville	1	8	0	0	0	2	3	3	2	5	0	3	5	0	0	3	1	2	2	1	2	0	0	1	1	0	1	2	2	1	0	0	0	0	0	1	52
Yellow	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	1	0	1	3	0	0	0	0	0	2	0	0	2	1	0	0	0	0	2	16
Magnol.	0	0	0	0	0	0	0	0	1	1	1	0	2	1	0	2	2	7	4	3	9	1	8	7	2	1	2	5	1	2	0	1	2	1	3	1	70
Cape May	1	1	0	1	0	2	2	0	1	3	1	0	2	5	4	2	1	1	0	0	1	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	32
Bl-thr Blue	0	0	0	0	0	0	0	0	2	3	0	0	2	2	0	1	1	4	2	4	4	0	2	0	0	0	0	1	3	1	0	0	0	0	0	0	32
Yel-rump.	4	44	18	18	13	466	139	153	21	40	7	3	4	162	37	5	0	2	5	0	12	2	3	2	0	1	2	0	0	3	1	0	0	0	0	0	1167
Bl-thr Gr	0	0	1	1	0	0	0	0	1	6	3	4	1	5	0	10	6	19	16	16	25	1	4	7	6	5	4	9	6	7	14	0	0	0	0	0	177
Blackburn	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	1	1	0	3	3	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	19
Chest-side	0	0	0	0	0	0	0	0	0	1	1	0	0	1	2	10	1	3	5	3	10	0	1	3	6	0	1	1	0	2	5	0	1	1	3	2	63
Bay-breast	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	6
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	4	5	1	3	4	22	19	6	3	31	1	0	4	1	1	1	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	111
Ovenbird	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	5	1	6	7	3	3	0	5	2	1	3	2	0	1	3	1	0	0	0	0	0	47
N.Wat. Thr	0	2	0	0	0	0	0	0	2	2	0	0	0	1	0	5	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	0	0	0	17
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	1	0	0	0	0	1	0	0	0	0	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	2	0	2	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	8	
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	2	1	0	10	0	0	0	0	19	
A Redst	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	12	19	18	2	6	10	3	0	11	13	3	6	25	0	0	0	0	130	
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	
TOTALS	10	60	20	25	17	492	164	164	34	98	15	10	23	184	44	49	20	55	60	65	96	7	33	43	26	13	27	35	22	32	59	1	3	2	6	6	2020
Swains Thr	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	1	4	2	1	4	7	1	4	2	5	5	4	0	3	5	6	2	61
Scar Tan	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	1	0	0	0	1	0	0	1	1	6	
Ros-br. Gr	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	2	1	0	1	3	2	1	0	1	0	0	0	1	0	0	0	0	16	

EARLIEST ARRIVAL DATES AT TWO ONTARIO LOCATIONS (MAY 2001)

SPECIES	THUNDER CAPE	TORONTO
Black and White	4	1
Tennessee	10	8
Nashville	1	1
Yellow	10	1
Magnolia	9	3
Cape May	1	15
Black-throated Blue	9	3
Yel-rump.	1	1
Black-throated Green	3	1
Blackburnian	10	3
Chest-sided	10	1
Bay-breasted	14	10
Blackpoll	0	18
Palm	1	1
Ovenbird	7	4
N. Waterr Thrush	2	4
Mourning	0	19
Yellow-throat	11	3
Wilson's	17	15
Canada	19	15
A. Redstart	17	4



SUMMARY OF 2001 SPRING WARBLER MIGRATION ACROSS ONTARIO

Warblers Counted

The two most notable characteristics of the warbler migration this spring are that 1) our counts were the lowest since the study began in 1970, and 2) the migration was very early. These two characteristics may be related. Many of the early warblers such as Black and White, Yellow-rumped, Black-throated Green and Palm may have passed through before our May 1 starting date.

However this cannot be the complete explanation because the later species were also down in numbers. If we take the Number of Birds per Visit at Toronto for Tennessee, Bay Breast, Blackpoll and Canada for 2000 and 2001 we find that they fall out as follows:

SPECIES	B.P.V. IN 2000	B.P.V. IN 2001
Tennessee	0.51	0.24
Bay-breast	0.33	0.25
Blackpoll	0.40	0.20
Canada	0.15	0.08

We can only conclude that either a) warbler populations have dropped drastically or b) many warblers did not stop in southern Ontario but flew on further north. The next couple of years should provide the answer.

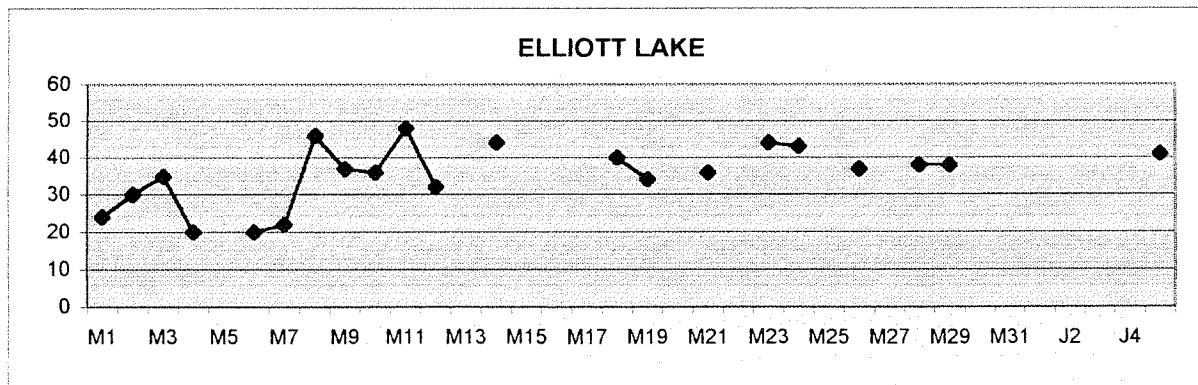
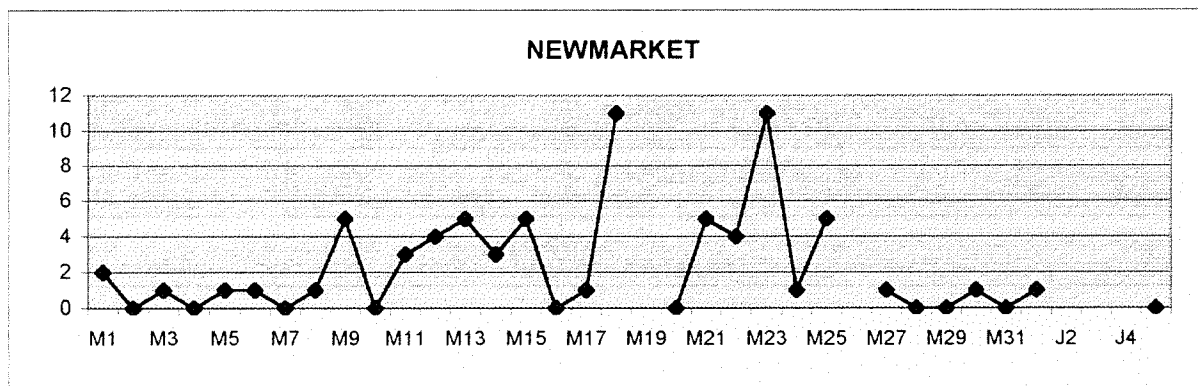
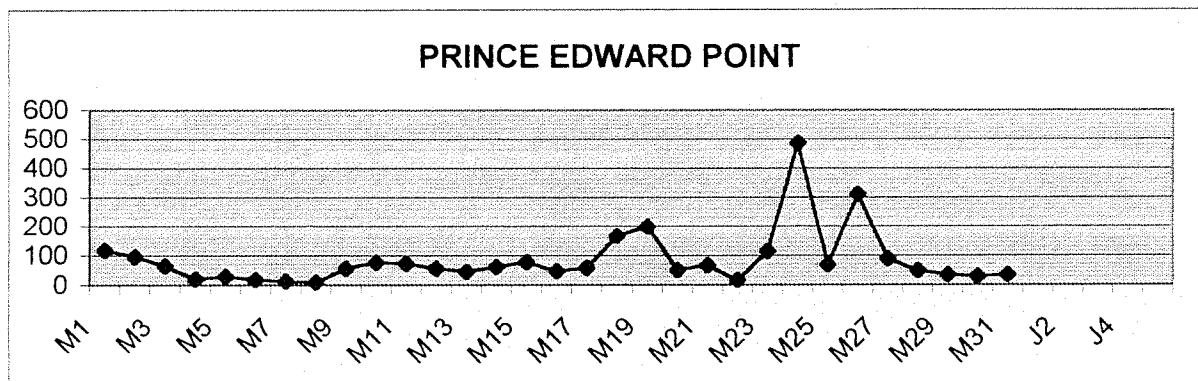
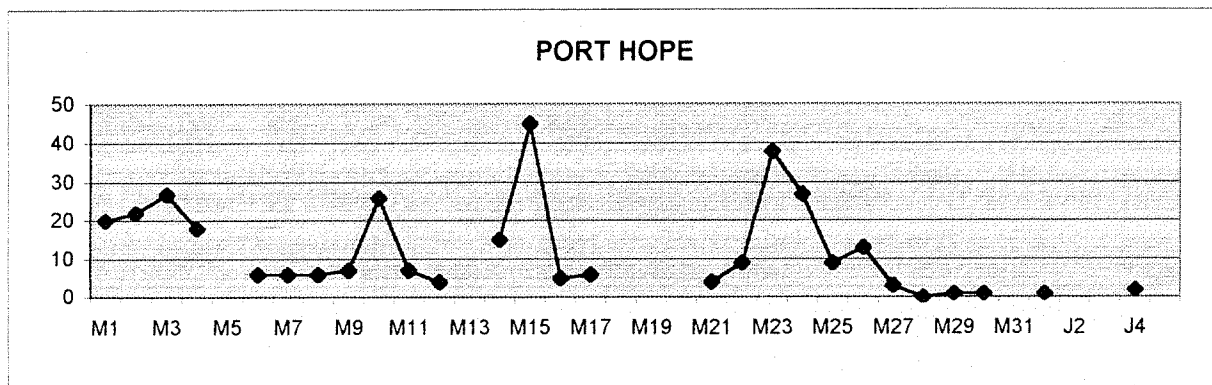
Migration Pattern Charts

This year instead of placing the migration graphs with their write-ups we decided to place them all together to make comparisons easier. All the graphs are on the next two pages except Thunder Cape which is on page 35. As discussed under the Thunder Cape section their warblers likely Thunder Cape represents a different population facing different geographical obstacles (the western Great Lakes) and subject to different weather conditions (see page 32).

Elliot Lake is also a special case since it includes many birds on their nesting grounds.

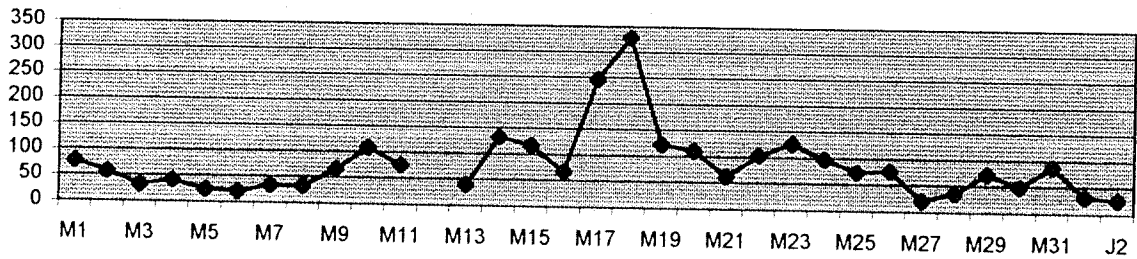
The first thing that is apparent at the Southern Ontario sites is the enormous difference in the number of birds counted at the different locations. They vary from hundreds of birds per day at migration traps such as Prince Edward Point and Long Point to eleven or fewer birds per day at inland areas such as Newmarket. However the idea of a Migration Pattern graph is to try to find similarities in the flow of migration in spite of number differences. For example a huge movement at Prince Edward Point and Long Point should be reflected in peaks at the other locations.

What we find is that the counts reflect geographical differences. The sites at Long Point and Selkirk on Lake Erie appear to be slightly earlier than those along Lake Ontario. Long Points largest peak was on May 18, Selkirk on May 14 and 20. All the Lake Ontario sites except Prince Edward Point had peaks on May 23. Prince Edward Point's high peak was on May 24. The north shore of Lake Ontario is roughly 100 kilometres north of the north shore of Lake Erie.

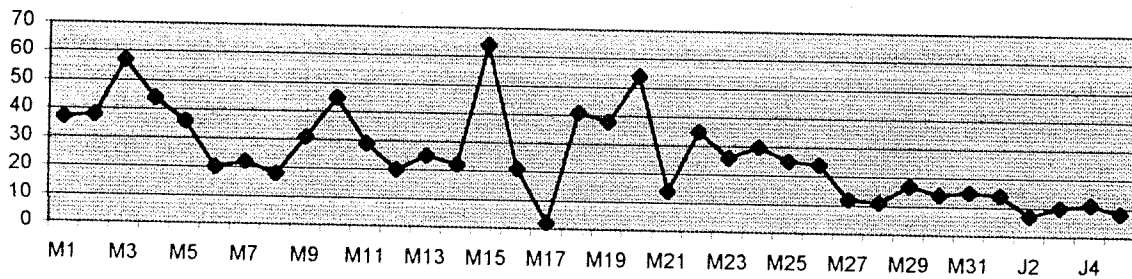


MIGRATION PATTERNS - 2001

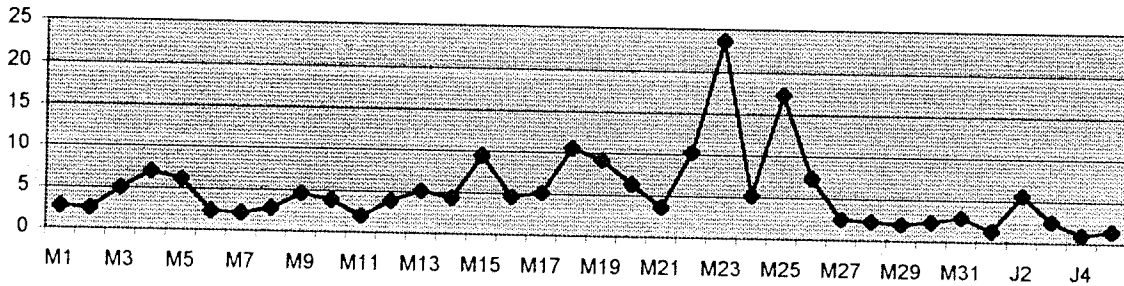
OLD CUT - LONG POINT



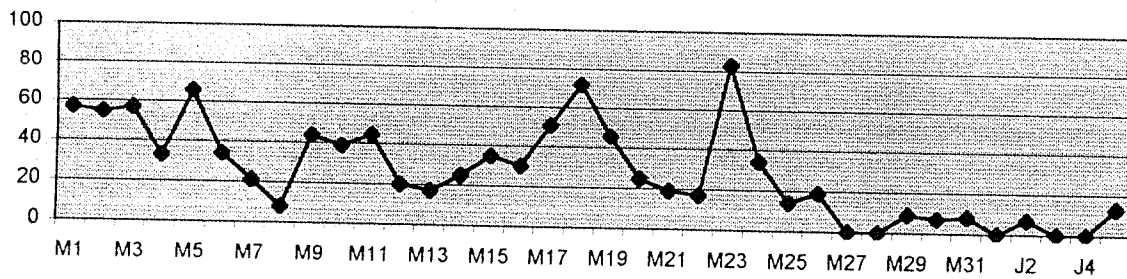
SELKIRK PROVINCIAL PARK



TORONTO



THICKSON'S WOODS



Appendix 1 – Pros and Cons of the Spring Warbler Count

A. Tom Flinn

As the study progresses through the years, one of the things that we hope to get some kind of handle on are population cycles - both for the study warblers as a group as well as for individual species. This is a difficult proposition for the reasons listed below:

1. There are methodological concerns such as the counting of all warblers observed versus using a point count system. It is left to the observers to be certain they are not recounting individuals who have moved along with them while a point count system would eliminate that source of uncertainty.
2. There is significant variation in the lengths of the routes covered.
3. Not all routes have been covered every year which could mean that in certain years some types of habitats are receiving more coverage than they are in other years.
4. Even on routes that have been covered for many years there are vegetative changes (usually degradation) that will effect the numbers and species of birds seen on that route.
5. There has been a significant turnover in observers. This is not meant to impugn the reputation of any individual. Indeed, without the dedication of the volunteer observers there would be no study. Rather, it is just to note what all of us know, namely that some birders have more expertise than others.
6. While the yellow-rumped warbler has been the most commonly observed bird, the fact that in some years much of their migration occurs before May 1 and thus outside the parameters of this study is problematic to the goal of identifying trends.
7. While most of the warblers under consideration do not establish breeding territories in Toronto the yellow warbler certainly does. This can lead to possible confusion over whether individual birds are migrating or territorial birds that may have already been counted.
8. No data was collected during the years 1985 and 1986.

Given the above should we just throw up our hands and walk away from the goal of identifying trends. We don't think so. While the data we have may not be perfect that is far from saying that it is not useful. We must realize that any tentative conclusions that we do reach from it may not be 'hard' science but can provide good indications as to where further more rigorous research can be best directed.

B. George Fairfield

Tom Flinn has pointed out some of his concerns about factors that affect the accuracy of our survey. Nearly all his points are valid to a degree. Here are my comments on Tom's eight points.

1. Having done very many plot counts I doubt if many birds are counted more than once. Our plots are not large (they should be covered in an hour or less) and are usually covered by a walk through and a return back to the starting point. We quickly get a feel for what birds are present and I am sure all observers have discounted some birds because they think they have counted them before. There is usually a mix of species and this gives us a handle on how many of each is present. Most of the forest patches that are used for our plots are too small for a point count method, which is more appropriate for estimating breeding bird numbers in large tracts of forest.
2. There is not a lot we can do about the variation in the size of the plots. We try to keep them roughly the same size by asking the observers to limit the size to what they can cover in one hour on a day of heavy migration.
3. Tom is quite right in pointing out the change of plots and observers over the years. Over the last thirty years most of the parks and ravines throughout Toronto have been used. Since we want the observers to continue their surveys for many years it is imperative that their plots are convenient to their homes and are places they like to go for warblers. My experience is that most Toronto plots are wooded ravines and parks and do not appear to differ greatly in habitat. I think that in our analysis we should classify the plots into a few habitat types and see how they differ.

4. I have not seen a great deal of degradation of the plots. Most had been parks and or ravines for many years before our study started in 1970. A few old trees die and fall down and saplings grow but I believe most areas have reached their climax many years ago. The occasional wealthy home is allowed to intrude into the ravines, notably in Wychwood and Sherwood but I think that for the flocks of nocturnal migrants that drop out of the sky on spring mornings The treed areas of Toronto look pretty much the same year after year. (Harry Kerr reports that Moore Park Ravine is undergoing severe alteration as non-native species of trees are being removed. We must try to assess the effect of this on the 2002 warbler count).
5. I have no concern about the ability of the observers. They Most were recruited from the Toronto Ornithological Club and all are highly qualified to recognize our twenty-four common species in all plumages and by song. Even a novice birder when censusing his own area every morning very quickly learns to identify the common warblers. A possible problem as the years go by is the loss of the ability to hear the high notes in a warbler's song. We have had several observers including myself disqualify themselves from the survey.
6. The Yellow- rumped Warbler should not be included in the analysis of our results. As Tom points out the number seen varies more with how early the migration goes through. On early years much of the Yellow-rump population goes through before our counts begin.
7. It is not difficult to find out which species contain birds that are residents. Birds of passage show large numbers for a few days and then disappear. The resident species remain high until the end of the survey on June 5. Few of the Toronto plots show evidence of resident birds. A few yellow warblers remain on some plots and this should be factored into our results.
8. It is unfortunate that we have a two-year gap in our coverage. The writer ended the survey in 1985 because he could not process all the data by hand in a reasonable length of time. In 1987 home computers became available at reasonable prices and I started up the project again.

Our most serious problem is that on some years larger numbers of migrants overshoot our study areas than on other years. This is a problem for all migration monitoring projects. While on some years our sampling of the migration may reflect the actual number of migrants better than others the length of our project (30 years so far) and the great mass of data we have on which to base our averages should provide a reasonable picture of the trends in the timing of the migration and the increase or decrease in the numbers of individual species.

Appendix 2 - Instructions to warbler counters.

TORONTO ORNITHOLOGICAL CLUB 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 : Tom Flinn

OTHER WARBLER SPECIES:

<u>Species</u>	<u>Number</u>	<u>Date</u>	<u>Species</u>	<u>Number</u>	<u>Date</u>
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LOCATION AND DESCRIPTION OF STUDY PLOT:

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 helped enter the data to the computer, and to Mike Solomon who, as well as censusing two plots, provided the warbler drawings. Thanks to the Ontario Climate Control Centre, Environment Canada, for supplying the weather information.

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AFTERWORD

Beginning in 2002 Tom Flinn is taking over as Coordinator of the Spring Warbler Migration Count. Tom's skills in mathematics, ornithology and computer know-how assure the continued success of the study into the future. I know the participants will give Tom the same great support that they extended to me.

Many thanks to the huge number of people who participated on the project since we started in 1970. This study is one of a very few projects that has sampled North American bird migration for such an extended period of time and it should be continued for as long as possible.

George Fairfield