

INTERIM REPORT

SPRING WARBLER MIGRATION AT TORONTO, 1989

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This interim report has been prepared for those who participated in the survey in 1989 so that they can see the results of their work. It is intended that when time allows further analyses of the results will be made and a more complete report will be prepared for publication in the 1989 Toronto Region Bird Report.

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This study is a project of the Toronto Ornithological Club. The purpose is to show the patterns of the spring warbler migration at Toronto, to compare the relative abundance of each species studied and to document the fluctuations in the number of warblers seen from year to year.

This was the eighteenth year in which the study was carried out in the same manner. The study was begun in 1970 and continued each year with the exception of 1985 and 1986. The first four years were published in the Ontario Field Biologist (see Fairfield, 1971, 1973, 1974). The results from 1987 on are to be published in the Toronto Region Bird Report.

METHODS AND STUDY AREAS

The 21 most common species of warbler were chosen as indicators of the migration through Toronto. For additional information and comparison three other species which migrate through Toronto at the same time as the warblers were also counted. They were, Swainson's Thrush, Scarlet Tanager, and Rose-breasted Grosbeak.

The data was collected by several observers making daily counts of a number of study areas during the month of May plus the first five days of June. In 1989 there were five study areas within the boundaries of Metropolitan Toronto plus three areas outside Metro Toronto.

The Toronto study areas are mostly wooded ravines and hillsides surrounded by built-up areas of the city. The areas are small enough that they can be covered in 30 to 60 minutes. Their positions within the 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 results in much lower counts than the richer habitats away from the city it also avoids the problem of sorting out the resident birds from the migrants.

The "resident bird" problem was well illustrated on Derrick Marven's Pickering plot. Two Yellow Warblers, two Yellowthroats and two Redstarts were listed almost daily after their first appearance and almost certainly were not migrants. This resulted in an extra 80 records in a total of 201. The out-of-town plots are nonetheless of great value in allowing a comparison of those species which are migrants and in providing arrival dates for the resident birds.

Table 1 lists the study areas, the number of visits made to each of them in 1989, and the name of the observers responsible for each area.

All the observers are competent, experienced birders capable of identifying all the species by voice and in all plumages.

TABLE 1

Study Areas	Number of Visits	Observer
<u>Metropolitan Toronto</u>		
Moore Park Ravine	20	George Fairfield & Harry Kerr
Mount Pleasant Cemetery	27	Harry Kerr
Rosedale Valley	32	Donald Peuramaki
Unwin Avenue	34	Donald Peuramaki
Wychwood Park	29	Hugh Currie & Herb Elliott
<u>Outside Metropolitan Toronto</u>		
Erindale College Woods	13	Xavier & Luc Fazio
Penetanguishene	17	John Sherrin
Pickering	36	Derrick Marven

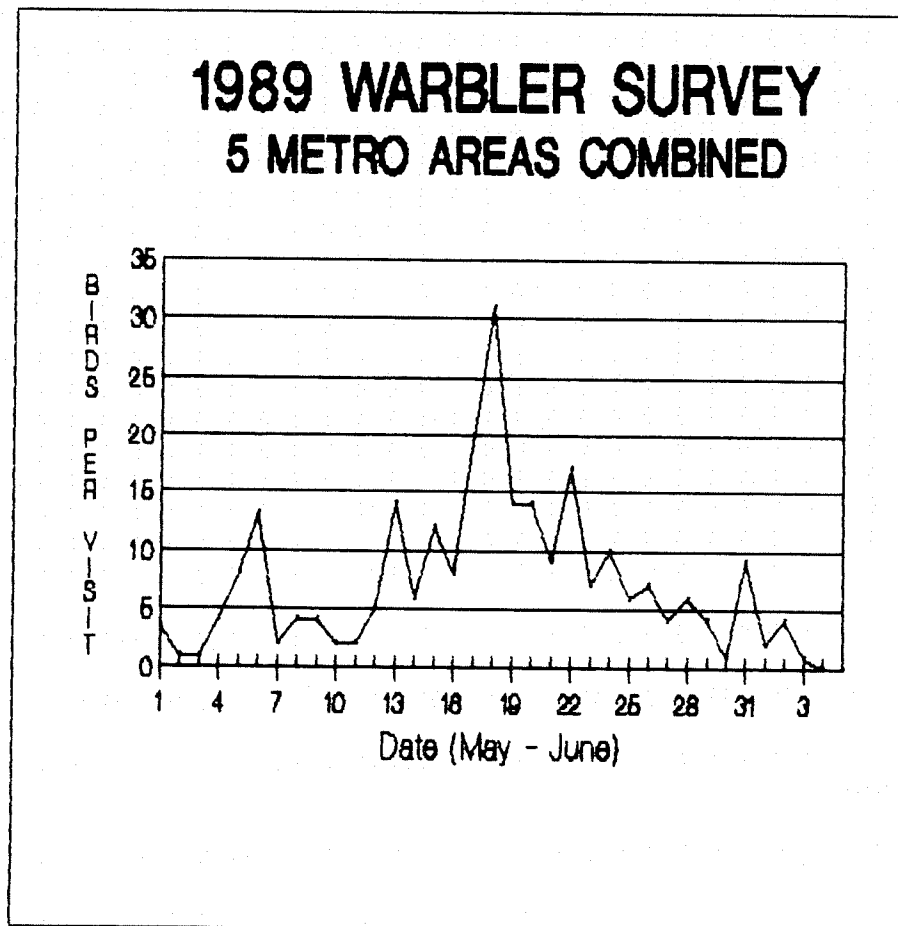
THE MIGRATION PATTERN

Graph 1 shows the average number of warblers per visit for each day from May 1 to June 5, 1989. The visits per day varied from 1 to 5 and averaged 4.

The small peaks on May 6 and 13 are caused by the first waves of Yellow-rumped Warblers. May 18 was the date when the largest number of migrants were counted. Again, Yellow-rumps were much the most common followed by Nashvilles and Yellows.

There was another small wave on May 22 made up mostly of Tennessees, Magnolias, and Chestnut-sides.

The spring was very late in 1989. Both the vegetation and the appearance of the small migrants were at least one week late. When the warblers appeared they went through in a rush and good numbers of migrants were only seen between May 17 and May 21.



WARBLER COUNTS OVER A 20-YEAR PERIOD

Table 3 gives the figures for the twelve years for which our calculations have been completed (six years of data have still to be input).

Variations from year to year can be expected because on some years more of the migrating warblers pass over Toronto without landing than on other years. After all, we are only counting grounded birds.

Another variable is introduced by the fact that we do not use the same mix of plots each year. Invariably some participants have to drop out and others decide to join. Some of the new people will survey previously used plots but many must opt for a new area closer to their home or work place.

But even with these inaccuracies the fall-off in warbler numbers since the early 1970's as illustrated in Table 3 is difficult to ignore.

Whether this apparent decrease results from the destruction of the birds' winter habitat in Central and South America or some other factor we cannot tell without much more research.

TABLE 3
NUMBER OF WARBLERS SEEN

<u>Year</u>	<u>No. of Visits</u>	<u>No. of Birds Counted</u>	<u>Average No. of Birds per Visit</u>
1970	117	1413	12.1
1972	99	1265	12.8
1973	248	2600	10.5
1974	303	3174	11.4
1975	301	2921	10.5
1980	203	2340	11.5
1981	237	1436	6.1
1984	108	864	8.0
1987	187	1313	7.0
1988	198	1537	7.8
1989	142	1013	7.1

RELATIVE ABUNDANCE OF THE SPECIES STUDIED

Table 4 gives the order of abundance of the warblers for the years 1970 through 1975, 1980, 1981, 1984 and 1987 through 1989. The most common warbler each year is given the number 1 and the least common number 21.

Where the individual species fall in the hierarchy is affected by a number of factors including how easily the species is to observe and its propensity to sing during migration. Therefore it is more important to note whether a species is becoming more or less common over the years than to note where it stands in the hierarchy.

Not surprisingly the Yellow-rumped was the most common warbler this year. Because of the late spring its migration fell almost entirely within our study period. On some years many of the Yellow-rumps go through before our study begins. This accounts for the erratic movement of the species on the chart.

The Tennessee Warbler has become much more common at Toronto relative to the other warblers since our study began in 1970.

Black-throated greens were much more scarce in the last two migrations.

The sharp movement on the hierarchy of the Palm Warbler, from 21st in 1988 to 12th in 1989 appears to represent a true increase. Nearly all the birds were counted by Don Peuramaki who carried out his survey in the same way in both years.

TABLE 4

ORDER OF ABUNDANCE

SPECIES	1970	1971	1972	1973	1974	1975	1980	1981	1984	1987	1988	1989
Black and White	3	6	4	9	11	6	9	10	13	13	10	8
Tennessee	15	16	13	6	3	4	1	3	3	2	1	3
Nashville	7	7	2	8	9	1	12	5	2	11	13	5
Yellow	8	18	8	11	13	10	13	9	1	8	12	6
Magnolia	5	3	11	3	2	5	6	6	4	5	3	4
Cape May	20	20	16	17	20	16	17	16	17	19	16	20
Black-throated Blue	9	9	10	12	12	11	14	8	14	15	9	10
Yellow-rumped	2	11	1	3	17	2	3	12	6	1	7	1
Black-throated Green	13	5	3	10	5	3	5	4	12	4	11	14
Blackburnian	11	8	7	7	10	12	10	14	11	10	6	11
Chestnut-sided	1	2	9	2	4	8	7	2	8	7	2	7
Bay-breasted	16	12	15	4	6	17	8	7	10	6	5	18
Blackpoll	14	15	11	15	15	15	16	18	21	14	17	19
Palm	18	21	20	21	21	20	21	21	20	18	21	12
Ovenbird	10	10	14	13	7	7	4	1	5	9	8	9
N. Waterthrush	17	19	19	19	18	18	19	19	18	21	18	15
Mourning	21	17	21	20	19	21	18	17	19	20	20	21
C. Yellowthroat	4	13	17	16	14	13	15	13	9	12	14	13
Wilson's	19	14	18	18	16	19	20	20	16	17	19	17
Canada	12	4	12	14	8	14	11	15	15	16	15	16
Am. Redstart	6	1	6	5	1	9	2	11	7	3	4	2

OTHER WARBLERS

Several species of warbler are not included in our statistical analyses because too few are seen. Those reported by the observers are set out in Table 5. For the names of the observers please refer to Table 1.

TABLE 5
OTHER WARBLERS

Species	Number	Date (1989)	Study Area
Golden-winged Warbler	1	May 15	Rosedale Valley
	1	May 17	Erindale Col. Woods
	2	May 20	Rosedale Valley
Orange-crowned Warbler	1	May 5	Unwin Avenue
	1	May 9	Unwin Avenue
	1	May 12	Unwin Avenue
	1	May 13	Unwin Avenue
Northern Parula Warbler	1	May 5	Unwin Avenue
	1	May 16	Rosedale Valley
	1	May 21	Erindale Col. Woods
	1	May 31	Unwin Avenue
Pine Warbler	8	May 4	Penetanguishene *
	1	May 6	Pickering
	1	May 17	Erindale Col. Woods
Cerulean Warbler	1	May 9	Unwin Avenue
	1	May 18	Rosedale Valley
	1	May 19	Rosedale Valley
Connecticut Warbler	1	May 27	Unwin Avenue
Yellow-breasted Chat	1	June 2	Unwin Avenue

* These were resident birds reported by John Sherrin.

ARRIVAL DATES

Table 6 sets out the arrival dates at four locations, Toronto, Erindale, Pickering and Penetanguishene. Those birds which appear to be residents (continuous occurrence after the arrival date) are marked with an "R"

TABLE 6
ARRIVAL DATES (May)

Species	Toronto	Erindale	Picker.	Penetang.
Black and White	1	4 R	6	4 R
Tennessee	18	18	24	15
Nashville	1	7	18	12
Yellow	6	7 R	6 R	5 R
Magnolia	15	17	27	20
Cape May	17			
Black-thr. Blue	5	7	13	15
Yellow-rumped	1	4	4	4
Black-thr. Gr	13	4	20	15 R
Blackburnian	14	4	27	15
Chestnut-sided	6	17	20	15 R
Bay-breasted	18	17	27	
Blackpoll	25	21	30	
Yellow Palm	4	7	13	9
Ovenbird	7	9	25	13 R
N. Waterthrush	1	27	5	4 R
Mourning	28			
C. Yellowthroat	6 R	19	13 R	
Wilson's	18	18		
Canada	18	19	27	17 R
Amer. Redstart	7 R	17 R	24 R	20 R

Note - On the Metro plots the only warblers that appeared to be in residence were one Yellowthroat and two or three Redstarts on Unwin Avenue.

SUMMARY

Counts were made of 21 species of warblers plus three other passerine species on the mornings from May 1st to June 5th, 1989 at five study areas in Metropolitan Toronto and three areas outside Metropolitan Toronto.

The average number of birds per visit was compared with similar averages taken in most years between 1970 and 1988. Although there were fluctuations from year to year the trend has been markedly downward with a drop of about one third in the number of warblers visiting out study areas from 1970 to 1989.

A graph was prepared showing the flow of the warbler migration over the five-week period. The largest count was on May 18 and most birds appeared to go through between May 17 and 21.

A table was prepared showing arrival dates recorded at four widely scattered study area locations.

The order of abundance of each species of warbler for each year of the study was set out in a chart.



