

INTERIM REPORT

SPRING WARBLER MIGRATION AT TORONTO, 1988

George M. Fairfield

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 seventeenth 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 1987 results are to be published in the Toronto Region Bird Report 1986 - 1987 (see Fairfield, 1987).

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 on a number of study areas during the month of May plus the first five days of June. In 1988 there were six study areas within the boundaries of Metropolitan 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 position 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. Thus we avoid the problem of sorting out the resident birds from the migrants.

There is one species for which our data must be used with caution, the yellow-rumped warbler. On some years a great many yellow-rumps go through before May 1st when our counts begin with the result that our study shows fewer birds than there are.

Table 1 lists the study areas, the number of visits made to them in 1988, 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
McCowan Park	30	Edmund Johns
Moore Park Ravine	33	George Fairfield & Harry Kerr
Mount Pleasant Cemetery	35	Harry Kerr
Rosedale Valley	32	Donald Peuramaki
Unwin Avenue	32	Donald Peuramaki
Wychwood Park	36	Hugh Curry & Herb Elliot
	----- 198	

On no day were less than three areas covered.

THE MIGRATION PATTERN

Figure 1 shows the migration pattern of the warblers at Toronto with all six study areas and 21 species grouped.

The striking thing about the 1988 spring migration is the large influx on the night of May 19-20. There was an average count of 51 warblers per study area which is very high for the rather bird-rich parks and ravines of Toronto.

A look at the newspaper weather maps for the preceding few days indicates a low with stormy weather in the central-eastern United States on May 16, 17, and 18. The weather in southern Ontario and the northern United States was clear during this period but on May 19 the showers started which lasted through until the 21st. It is likely that the large counts on the morning of May 20th resulted from the grounding of migrants due to this rainy weather.

A more detailed account of the migration patterns will be presented when the writer has examined the weather maps at Ontario Climate Control Center.

NUMBER OF WARBLERS SEEN

In the Metropolitan Toronto area a total of 1537 warblers of the 21 species studied were counted on the 198 visits giving an average of 7.8 birds per visit. This is a little higher than in 1987 but still well below the numbers counted in the early 1970's.

Table 2 gives the figures for the nine years for which our calculations have been completed.

TABLE 2

<u>Date</u>	<u>No. of Visits</u>	<u>Birds Counted</u>	<u>Birds per Visit</u>
1970	117	1413	12.1
1971	99	1265	12.8
1972	248	2600	10.5
1973	270	3070	11.4
1974	303	3174	10.5
1975	301	2921	9.7
1984	108	864	8.0
1987	187	1313	7.0
1988	198	1537	7.8

RELATIVE ABUNDANCE OF THE SPECIES STUDIED

Table 3 gives the order of abundance of the warblers for the years 1970 through 1975, 1984, 1987 and 1988. The most common warbler is given the number 1 and the least common number 21. These figures depend not only on how many birds there are but also on the propensity of the bird to sing (e.g. Tennessee Warbler), the habitat (Toronto Parks do not attract many Waterthrushes), and the geographical location of our study. 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.

There are eight more years of data to compile for the intervening years 1976 to 1983. (counts were not taken in 1985 and 1986) and it will be easier to tell if any species has increased or decreased compared to the others when that work is completed.

However some trends are already emerging. The Tennessee Warbler has become much more common since the study began in 1970, improving its position in the hierarchy from 15th to 1st. Nashvilles have fallen since 1975. Magnolias, Black-throated Blues and Blackpolls have changed their position very little over the years. Palm, Northern Waterthrush, and Mourning remain among the least seen on our plots. The erratic performance of the Yellow-rumped is probably due to large numbers moving through our area before our counts begin on some years. In a similar way we almost missed the Blackpolls in 1984 because the migration was so late.

TABLE 3
ORDER OF ABUNDANCE

	1970	'71	'72	'73	'74	'75	'84	'87	'88
Bl. & wh.	3	6	4	9	11	6	13	13	10
Tenness.	15	18	13	6	3	4	3	2	1
Nashville	7	7	2	8	9	1	2	11	13
Yellow	8	12	8	11	13	10	1	8	12

Magnolia	5	3	11	3	2	5	4	5	3
C. May.	20	20	16	17	20	16	17	19	16
B-t Blue	9	9	10	12	12	11	14	15	9
Yel-rump.	2	11	1	3	17	2	6	1	7
B-t Green	13	5	3	10	5	3	12	4	11
Bl'burn.	11	8	7	7	10	12	11	10	6
C.-sided	1	2	9	2	4	8	8	7	2
Bay-br.	16	12	15	4	6	17	10	6	5
Bl'poll	14	15	11	15	15	15	21	14	17
Palm	18	21	20	21	21	20	20	18	21
Ovenbird	10	10	14	13	7	7	5	9	8
N. W'thr.	17	19	19	19	18	18	18	21	18
Mourning	21	17	21	20	19	21	19	20	20
C. Y'thr.	4	13	17	16	14	13	9	12	14
Wilson's	19	14	18	18	16	19	16	17	19
Canada	12	4	12	14	8	14	15	16	15
A. Reds.	6	1	6	5	1	9	7	3	4

OTHER WARBLERS SEEN

Several species of Warblers were noted by the participants. None were in numbers large enough to warrant inclusion in the statistical analyses. They are set out in the following table.

TABLE 4

Species	Number	Date (1988)	Area
Blue-winged Warbler	2	May 9	Rosedale Valley
	1	May 14	Wychwood Park
Golden-winged Warbler	1	May 16	Rosedale Valley
Northern Parula	1	May 12	Rosedale Valley
	1	May 14	Rosedale Valley
	1	May 16	Rosedale Valley
	1	May 20	Wychwood Park
Pine Warbler	1	May 19	Rosedale Valley
	1	May 21	Rosedale Valley
Kentucky Warbler	1	May 19	Wychwood Park
	1	May 20	McCowan Park
	1	June 2	Unwin Ave.
	1		

SUMMARY

Counts were made of 21 species of Warblers plus three other passerine species on the mornings from May 1st to June 5th 1988 on six study areas in Metropolitan Toronto.

The average number of birds per visit was compared with similar averages taken in the years 1970 to 1975, 1984 and 1987. Though there has been small fluctuations from year to year the trend has been markedly downward, with a drop of about one third in the number of warblers visiting our study areas from 1970 to 1988.

The daily averages of all warblers were plotted and a graph prepared showing the peaks and lows of the migration. The graph was examined in relationship to the weather maps of the migration period and an assessment was given of the affect of the weather patterns on the migration.

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

ACKNOWLEDGEMENTS

Assistance with the weather analyses including maps and summaries was provided by the Ontario Climate Control Center of Environment Canada.

I wish to thank R. Griffin and D. Broughton for providing instruction and help on the use of the computer to process the data and create the graphs.

Many thanks also to the observers listed in Table 1 who got up early each morning to count the birds on the study areas. A complete list of those who participated since 1970 will accompany a future publication.

LITERATURE CITED

- Fairfield, George M. The Toronto Spring Warbler Migration Study. Ontario Field Biologist, 25: 34-41. 1971
- Fairfield, George M. Spring Warbler Migration at Toronto, 1972. Ontario Field Biologist, 27:18-24. 1973
- Fairfield, George M. Spring Warbler Migration at Toronto, 1973. Ontario Field Biologist, 28:37-44. 1974

