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THE 1980 BREEDING BIRD CENSUSES

GILBERT S. RAYNOR

September 1980

DEPARTMENT OF ENERGY AND ENVIRONMENT

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ABSTRACT

As part of a program to characterize the plant and animal life of the Laboratory site and the surrounding region, the two breeding bird censuses originated in 1977 were continued in 1980. Coverage was below that of previous years due to illness and travel of some participants, but 11 trips were made to the BNL plot and 8 to the Westhampton plot. Each was censused by separate teams of three volunteer observers. The number of breeding species and number of territorial males on the BNL plot have progressively declined since 1977 but little change has taken place in either number of territories or species composition on the Westhampton plot.

INTRODUCTION

The two breeding bird censuses originated in 1977 to aid in characterizing the plant and animal life of the Brookhaven National Laboratory (BNL) site and the surrounding region were continued in 1980. The plots were described¹ and results of earlier censuses reported previously.¹⁻⁵ No significant change in the vegetation of either plot or in their immediate vicinity was evident. Work on the ISABELLE project west of the BNL plot continued.

The 1980 censuses were conducted by six volunteer observers working on their own time. The BNL plot was covered by James Clinton, Cleveland Dodge, and Kathleen Tuohy; and the Westhampton plot by Robert Adamo, Edward Kemnitzer, and Gilbert Raynor. The bulk of the data analysis was performed by Clinton and Kemnitzer.

1980 RESULTS

A description of the census trips with weather conditions is given in Table 1. Trips and man hours were fewer than in previous years due to several factors. Two previous participants were unable to take part this year. One observer made only two trips before an injury forced discontinuance, and another observer was away for much of the period. However, one new observer was added this year. Man hours at BNL totaled 25 compared to 28, 33, and 28.5 in previous years. At Westhampton, only 15 man hours were spent compared to 32, 28, and 27 in earlier years. However, coverage was concentrated at the height of the breeding season and, from the results, appears to have been adequate.

The species composition and density of territorial males on the BNL plot are given in Table 2 and on the Westhampton plot in Table 3. For the first time, the territories/km² were less at BNL than at Westhampton. Reports on these censuses will also be published in American Birds with others from throughout North America.

Results of the four years are summarized in Table 4. The BNL plot has experienced a continuous decline in breeding species from 18 to 8 and a nearly continuous decline in total territories from 53.5 to 30.5. The reasons for this decline are not evident since no apparent changes have taken place in the habitat and no obviously unfavorable weather conditions have occurred. Qualitative observations in similar habitats in central Long Island indicate that the decline is general and not peculiar to the BNL plot thus suggesting deterioration in some vital but unidentified environmental factor.

Breeding species lost since 1979 are Pine Warbler and Scarlet Tanager. Both appeared on the plot as visitors and probably nested in the area. Other visitors in 1980 included Hairy and Downy Woodpeckers, Common Flicker, E. Wood Pewee, Tufted Titmouse, White-breasted Nuthatch, Robin, Veery, Black and White Warbler, Common Yellowthroat, Redwinged Blackbird, and Common Grackle. Common and Fish Crows flew over the plot.

In contrast to the BNL plot, populations in the Westhampton Pitch Pine-Scrub Oak barrens have remained nearly constant (Table 4). None of the fluctuations are statistically significant and no trends are evident.

Visitors to the Westhampton plot in 1980 included Marsh Hawk, Mourning Dove, Yellow-billed and Black-billed Cuckoos, Blue Jay, Black-capped Chickadee, Mockingbird, Robin, Common Grackle, Brown-headed Cowbird, and Chipping Sparrow.

FUTURE PLANS

As pointed out previously,⁴ birds are among the most sensitive and easily observed indicators of environmental quality. Changes in bird populations usually result from environmental changes either locally or elsewhere within the range of the species. Census data of the type reported here provide the quantitative documentation needed to monitor population changes and causative changes in the environment. Such data become more valuable as the length of record increases. Longer term trends can only be distinguished from shorter period fluctuations by continued measurements. Therefore, this study will be continued as long as feasible.

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Table 1

Description of 1980 Census Trips

Date	Time (EST)	Wind		Temp. (°F)	Weather
		Speed (mps)	Dir.		
<u>BNL</u>					
May 27	0430-0630	0-2.5	NW	41-61	Clear
June 5	0445-0640	2-5	NW	56-60	Clear
June 10	0440-0720	0-2	WNW-NW	52-54	Overcast stratus and cumulus
June 12	0515-0745	0-1	SW	39-60	Clear
June 17	0445-0625	0.5-3	NE	56-60	Overcast stratus
June 19	0440-0700	0-1	SW-WSW	45-67	Clear
June 21	0500-0830	2-5.5	WNW	58-62	Clear
June 24	0550-0700	0.5-2	W	62-78	Clear
June 29	0445-0745	0-3.5	ESE	66-69	Overcast stratus
July 1	0520-0800	0-3	NW	56-70	Clear
July 5	0500-0645	0-1.5	NE	59-74	Clear, light fog to haze
<u>Westhampton</u>					
May 23	0515-0655	0-1.5	NW	57-72	Clear
May 28	0710-0830	1-3	NW	56-64	Scattered strato- cumulus
June 5	0450-0600	3-4.5	NW	56-57	Clear
June 12	0515-0745	0-2	SW	39-56	Clear
June 21	0510-0700	2-5.5	WNW	56-60	Clear
June 23	0515-0655	0-1	NW	68-73	Clear
June 24	0450-0707	0.5-2	W	62-73	Clear
June 28	0500-0825	0-3	NNE	62-65	Broken altocumulus

Table 2

Species Composition and Density of Territorial Males
on BNL Plot in 1980

Species	Territorial males	No./km ²	No./100 acres
Rufous-sided Towhee	17.5	188	76
Ovenbird	4.0	43	17
Brown Thrasher	2.5	26	11
Black-capped Chickadee	2.0	22	9
Blue Jay	1.5	16	7
Great Crested Flycatcher	1.0	11	4
Hermit Thrush	1.0	11	4
Northern Oriole	1.0	11	4
Total	30.5	328	132

Table 3

Species Composition and Density of Territorial Males
on Westhampton Plot in 1980

Species	Territorial males	No./km ²	No./100 acres
Prairie Warbler	16.0	165	67
Rufous-sided Towhee	9.5	98	40
Field Sparrow	6.0	62	25
Brown Thrasher	2.0	21	8
Common Yellowthroat	1.0	10	4
Total	34.5	356	144

Table 4

Summary of 1977-1980 Results

Year	Location	Species	Territories
1977	BNL	18	53.5
1978	BNL	15	40.0
1979	BNL	10	45.0
1980	BNL	8	30.5
1977	Westhampton	5	33.5
1978	Westhampton	6	34.0
1979	Westhampton	7	35.0
1980	Westhampton	5	34.5