

THE BIRDS OF HORN POND AND THE MIDDLESEX FELLS, 1974

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The area chosen for our study is suburban in character, quite small (a circle with a two-mile radius centered in Winchester), and includes: open deciduous woodlands, principally the Fells; coniferous stands, many of these bordering reservoirs; numerous ponds, especially Horn Pond and the Mystic Lakes; several cattail marshes; shallow water areas; a sand pit; mud flats during dry summers; weedy fields; thickets; etc.

Our objective has been to monitor all the bird populations within our area on a day-to-day basis, noting population size, age and sexual composition, habitat, whether migrating or resident, whether breeding, and any unusual behavior. Our study is time consuming and requires several of us working together in order to sample the different habitats with any regularity. Principal observers were Paul Donahue, George and Carolyn Gove, Martha McClellan, Steve Everett, and myself.

I should say something about how we arrive at our monthly population estimates. To begin with, during each month, we try to cover as many habitats on a regular basis as possible, both in order not to miss species and in order to obtain numerous partial counts for each species upon which to base our monthly estimates of true population size. We actively look for species that should be present, but list only those species which we observe during the month. At the end of each month we get together to prepare the summary for that month. The Table appended is simply a compilation of the 12 monthly summaries.

The letter abundance symbols represent numerical categories. For our study, r (rare) means about 1 bird of the species per day during the month, o (occasional) means about 6 birds per day, u (uncommon) 24 birds per day, c (common) 100 per day, and a (abundant) about 400 per day. More precisely, r means that on the average less than 3 birds of a species were present in our area per day during the month; o between 3 and 12 per day; u between 12 and 50 per day; c, 50-200 per day; and a, over 200 per day.

When setting up a study of this sort, the particular choice of numerical categories is quite important. One consideration is that the numerical categories are sufficiently distinct so that the observer has a fair chance of correctly determining into which category a particular species falls for that month. The difficulty in counting woodland species is well known. On the other hand, the numerical categories should not be so far apart that information is lost, i.e., you find yourself able to count more accurately than the categories you are recording. There needs to be a balance.

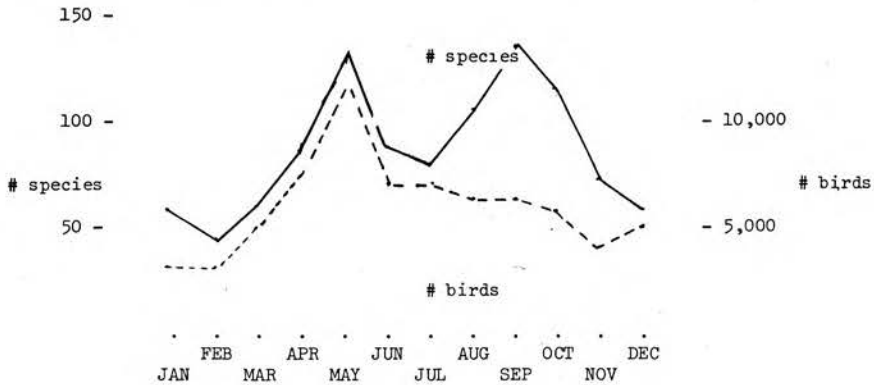
In our case, the categorization we decided upon is rather simply constructed: each next larger category is 4 times the smaller one preceding it. This multiplicative rule also means that if we wish to graph our results we can make use of what is essentially a semi-log scale. If there is a fault with our numerical categories as they pertain to our particular area, it probably is that we need one or more larger categories. For example, we ought to be able to differentiate between 400 and 1600 birds of a species.

From the Table which follows we can derive several summary statistics which describe the bird populations at Horn Pond and the Middlesex Fells in 1974. To begin with, 194 species plus 1 hybrid were observed during the year. (Bonaparte's Gull, 6 September 1974, and Black-backed Three-toed Woodpecker, 16 November 1974, are omitted from the Table and should be added.) Secondly, we can summarize the bird populations month by month both by number of species sighted and by our estimate of the average number of birds present per day during the month. The results are diagrammed in the Figure below.

February had the fewest species and as low an estimated bird population as any month except November. (Starlings, Rock Doves, and House Sparrows were excluded from our study.) Only 3 months later, in May, 3 times as many species were sighted and there were 3 to 4 times as many birds present. Indeed, the last ratio probably underestimates the extent of the increase between February and May, since the actual population of many of the species listed in May as abundant (a) was considerably larger than 400, the single number chosen to represent the abundant, or a, category.

An unexpected result was that our statistics indicate that the total bird population

Graphical Summary of the Number of Species Present and of the Estimated Average Number of Birds Present per day During each Month.



decreased from June through December (again except for November). Put differently, while the occurrence of the fall migration is clearly reflected by the sharp increase in the number of species sighted in August, September and October, the fall migration does not seem to have been associated with an increase in the total bird population.

The Table which follows can also provide answers to such diverse questions as: how many species were listed as abundant (a) each month; how many species were sighted in 10 or more months of the year; how many species were at least uncommon (u) for at least one month of the year; how did the warbler population vary from month to month, etc.?

In addition to answering the kinds of questions suggested in the paragraph above, counting bird populations yields other results. Changes become apparent in the populations from year to year, a start can be made in distinguishing the usual from the unusual, and trends can be noticed. More important, a careful monitoring of populations forces us to become more careful observers, noticing events and relationships that we had missed before.

In conclusion, the Table below is simply a summary of our estimate of the size of the bird populations at Horn Pond and the Middlesex Fells over the course of the year. Behind each species entry is a more detailed narrative. To give three examples:

1. Blue-gray Gnatcatchers bred in the Fells for their second year: 3 nests had been found in 1972, and 4 were located in 1974. From the 7 nests but one young was fledged. We noticed that the nests we observed had an extremely short life expectancy---they usually didn't survive intact long enough for the young to fledge.
2. Though Eastern Bluebirds arrived early in 1974, their breeding population was unusually low. For the first time in 5 years, at most 1-2 breeding pairs were in the area. Usually, 6-12 breeding pairs are present.
3. Brown Creepers bred in the Fells for their 3rd straight year, but what was remarkable in 1974 was the date of their nesting. Creepers were heard singing on February 21, March 2, 7, 20, and April 5, 8 and 26. Fledged young were observed being fed on April 5, 7, 11, and 26. What this means is that in 1974 nesting was ending just when it usually begins in late April (as in 1972 and 1973).

HORN POND AND THE MIDDLESEX FELLS

SPECIES ABUNDANCE: JANUARY-DECEMBER, 1974

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Common Loon					r							
Horned Grebe										r		r
Pied-billed Grebe		o						r	r	o	o	o
Double-crested Cormorant				o				r				
Cormorant (sp?)									r	r		
Great Blue Heron				r	r	r		r	r	r		
Green Heron				r		o	o	o	o	o	r	
Great Egret								r				
Snowy Egret							r	r				
Black-crowned Night Heron				r	o	u	o	o	r			
Yellow-crowned Night Heron									r			
Cattle Egret					r							
Glossy Ibis									r			
Canada Goose		o		o	o	o	o	o	o	u	u	u
Mallard		a	a	a	c	c	c	c	c	a	c	a
Black Duck		c	c	c	u	o	o	u	o	u	u	c
Gadwall				r						r	r	r
Pintail		r	r							r	r	r
Green-winged Teal		r	r	r				r	o	o	r	r
Blue-winged Teal				r				o	u	r		
American Wigeon				r					o	o	o	r
Northern Shoveler		r		r						r	r	r
Wood Duck		r		o	o	o	o	r	r	r		
Redhead		r										
Ring-necked Duck		r	r	o	r					o		
Canvasback		r										r
Greater Scaup										r		
Lesser Scaup		r							r	o		r
Scaup (sp?)				r							o	
Common Goldeneye		r		o	o	r					o	o
Bufflehead										r	r	r
Black Scoter										r		
Ruddy Duck		r		r						o	o	o
Hooded Merganser		r						r		r	o	r
Common Merganser		r	r	r	r						r	r
Sharp-shinned Hawk		r		r					r	r		
Red-tailed Hawk		o	o	o	r	r				o	r	r
Red-shouldered Hawk					r							
Broad-winged Hawk				o	o	o	o	o	o			
Bald Eagle										r		
Osprey				r		r	r	r	r	r	r	r
Merlin									r			
American Kestrel		o	o	o	o	o	o	o	o	o	o	o
Ruffed Grouse		r					o					
Ring-necked Pheasant		c	c	c	c	c	c	c	c	c	c	c
Virginia Rail		r					r					
Common Gallinule							r					
American Coot		c	o	o	o	r			r	u	c	c
Semipalmated Plover								o	r			
Killdeer				o	o	o	o	u	u	o		
American Golden Plover									r			
Ruddy Turnstone								r				
American Woodcock				c	u	o	r	r	r	r	r	o
Common Snipe		o	o	o	u				r	r	r	o
Spotted Sandpiper						o	o	o	o	o	o	
Solitary Sandpiper					r		o	o	o	r		
Greater Yellowlegs							r	r	r	r	r	
Lesser Yellowlegs					r		o	o	o	r		
Pectoral Sandpiper							r	r	r	r		
Baird's Sandpiper									r			

Horn Pond and the Middlesex Fells---Species Abundance, January-December, 1974---p. 2

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Least Sandpiper					r		o	o	o	r		
Semipalmated Sandpiper							r	o	u			
Great Black-backed Gull		c	c	u	o	u	o	u	r	o	o	u
Herring Gull		a	a	c	c	c	c	c	a	a	a	a
Ring-billed Gull		o	o	o	o	o	o	o	u	u	u	u
Mourning Dove		c	c	c	c	c	c	c	c	c	c	c
Yellow-billed Cuckoo					r	o	r					
Black-billed Cuckoo					u	u			r			
Cuckoo (sp?)								o			o	u
Screech Owl		u	u					o	u			
Great Horned Owl			r		r						r	r
Long-eared Owl		r										
Common Nighthawk					o	o		o	o			
Chimney Swift				r	c	a	a	a	u			
Ruby-throated Hummingbird					o			r	o			
Belted Kingfisher		r	r	r	o	o	o	o	o	o	o	r
Common Flicker		o	o	o	a	a	c	c	a	c	u	o
Red-headed Woodpecker		r	r	r	r	r						
Red-bellied Woodpecker									r			
Yellow-bellied Sapsucker				r					r	r		
Hairy Woodpecker		u	c	c	c	u	u	u	u	u	u	u
Downy Woodpecker		c	c	c	c	c	c	c	c	c	c	c
Eastern Kingbird					c	u	c	a	o			
Great Crested Flycatcher					u	u	u	u	o			
Eastern Phoebe				c	o	o	u	u	u	o		
Yellow-bellied Flycatcher					o							
Alder Flycatcher					o							
Willow Flycatcher					o	o	o					
Least Flycatcher					c				r			
Empidonax (sp?)								c	u	r		
Eastern Wood Pewee					u	u	u	u	o			
Olive-sided Flycatcher								r	r			
Tree Swallow				c	u	u	c					
Bank Swallow					o	o	o	r				
Rough-winged Swallow					o	o	o					
Barn Swallow				r	u	o	u	u	o			
Cliff Swallow					r	r		r				
Blue Jay		a	a	a	a	a	a	a	a	a	a	a
Common Crow		c	c	c	c	c	c	c	u	c	c	c
Fish Crow				o	o	o	o	o		r	r	r
Black-capped Chickadee		a	a	a	a	a	a	a	a	a	a	a
Tufted Titmouse		c	c	c	c	c	c	c	c	c	c	c
White-breasted Nuthatch		c	c	c	c	c	c	c	c	c	c	c
Red-breasted Nuthatch		u	u	u	u	o	o	o		o		
Brown Creeper		c	c	c	c	r				o	u	u
House Wren					r	a	a	a	c	u	r	
Winter Wren		o	r	r	u					u	o	o
Long-billed Marsh Wren					r					r		
Mockingbird		u	u	c	c	c	c	c	c	c	c	u
Gray Catbird					a	a	a	a	a	a	u	
Brown Thrasher				u	c	c	c	c	c	r		
American Robin		o	o	u	a	a	a	a	a	a	u	o
Wood Thrush					c	c	c	c	c	r	r	
Hermit Thrush				c	o					u	o	
Swainson's Thrush					a					c		
Gray-checked Thrush					o							
Swainson's or Gray-checked Thrush										r		
Veery					c	o	r	r	u	r		
Eastern Bluebird				r	o	r	r	o	o	o	r	
Blue-gray Gnatcatcher				o	u	u		r				
Golden-crowned Kinglet			o	o	u					c	u	u
Ruby-crowned Kinglet					a	u				u	c	r
Water Pipit									r	o	r	

Horn Pond and the Middlesex Fells---Species Abundance, January-December, 1974---p. 3

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cedar Waxwing					r	u	u	u	u	r	r	r
Northern Shrike				r							r	
Solitary Vireo				r	u				o	o		
Red-eyed Vireo				.	a	c	c	c	c	r		
Philadelphia Vireo					r				r			
Warbling Vireo					u	o	o	o	o			
Black-and-white Warbler				r	c	o	r	o	c	r		
Worm-eating Warbler									r			
Golden-winged Warbler					r			r				
Blue-winged Warbler					o	r	r		r			
Golden-winged x Blue-winged ("Lawrence's")								r				
Tennessee Warbler					a	o		r	o	r		
Orange-crowned Warbler										r		
Nashville Warbler				r	c	o		r	o	r		
Northern Parula					a				c	o		
Yellow Warbler					c	u	u	u	o			
Magnolia Warbler					a			r	u	r		
Cape May Warbler					r			r	r			
Black-throated Blue Warbler					u				o	o		
Yellow-rumped Warbler		o		u	c				o	a	o	
Black-throated Green Warbler					c				c	o		
Cerulean Warbler					r				r			
Blackburnian Warbler					o			r	r			
Chestnut-sided Warbler					u			r	u			
Bay-breasted Warbler					c			r	u	r		
Blackpoll Warbler					a	u			a	c		
Pine Warbler				r								
Prairie Warbler					u	c	c	u	o			
Palm Warbler				c	o			r	o	o		
Ovenbird					c				u	r		
Northern Waterthrush					u			u	o			
Kentucky Warbler					r							
Mourning Warbler					r							
Yellowthroat					a	a	a	c	c	u	r	r
Yellow-breasted Chat										r		
Hooded Warbler					r							
Wilson's Warbler					c				o	r	r	
Canada Warbler					a	o		u	o			
American Redstart					a	o		a	a	o		
Bobolink					u			o	o			
Eastern Meadowlark				r	r					r	r	
Red-winged Blackbird		o	a	a	a	a	a	c	o	c	o	
Orchard Oriole					r							
Northern Oriole				r	a	a	a	c	o			
Rusty Blackbird			o	c	r				o	u	r	r
Common Grackle		r	r	a	a	a	a	a	a	a	u	
Brown-headed Cowbird			r	u	a				o		o	
Scarlet Tanager					c	u	u	o	u	r		
Cardinal		c	c	c	c	c	u	u	c	u	u	u
Rose-breasted Grosbeak					a	u	u	u	c	r		
Blue Grosbeak				r								
Indigo Bunting					c	c	c		o	r		
Evening Grosbeak		o		u	u					r	o	o
Purple Finch				c	c	o	o	o	c	o	o	o
House Finch		r	o	o	u	u	u	r	o	o	o	o
Pine Grosbeak					r							
Common Redpoll			c	a	u							
Pine Siskin		o	u	c	c	u	r				r	
American Goldfinch		c	c	c	a	c	c	c	c	c	c	c
Red Crossbill				r	o							
White-winged Crossbill												
Rufous-sided Towhee			o	c	a	a	a	c	c	c		
Savannah Sparrow				u	u				o	u		

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Vesper Sparrow										r		
Dark-eyed Junco		c	c	a	a	o			r	c	c	a
Tree Sparrow		a	a	c	c					o	c	c
Chipping Sparrow				c	c	u	u	c	c	o		
Field Sparrow		o		r	c	c	c	c	c	c	o	u
White-crowned Sparrow					r					u		
White-throated Sparrow		c	c	c	a	c	o	r		c	a	o
Fox Sparrow			r	u	c					r	r	r
Lincoln's Sparrow					u					o	r	
Swamp Sparrow		o		u	c	o	o			u	a	u
Song Sparrow		c	c	a	a	c	a	a	c	c	a	c
Snow Bunting										o	u	

ORCHARD ORIOLES IN MASSACHUSETTS

Richard Forster, Wellesley

The Orchard Oriole (Icterus spurius) has always been an uncommon bird in Massachusetts although it is present annually during migration and has nested each year in this state. In the last decade, however, there has been a marked increase in numbers for this species.

The increase of the Orchard Oriole is somewhat comparable to that of other Southern birds that have moved northward in recent years, such as the Tufted Titmouse (Parus bicolor), Cardinal (Cardinalis cardinalis) and Mockingbird (Mimus polyglottos), all of which have increased greatly in Massachusetts and New England.

The northward movement of the Tufted Titmouse is discussed by Deborah Howard (1966). Beddal (1963) gives a more complete study of the range expansions of all of these species and suggests three reasons for their recent movements:

- 1) a reforestation of a generally deforested area.
- 2) a warming of the climate in the North.
- 3) population pressures within the traditional ranges of these species.

The history of the Orchard Oriole is roughly parallel to that of the afore-mentioned species. It differs in that the Oriole is a completely migratory species, whereas the Tufted Titmouse and Cardinal are non-migratory, and the Mockingbird is but partially migratory in its range.

TOTAL DISTRIBUTION

The Orchard Oriole occurs as a summer resident throughout the eastern United States to the southern Ontario border, with the exception of northern New England. The range extends westward to include the Plains States. In the South it breeds commonly, but to the North it gradually decreases, occurring as a nesting bird only locally. This species reaches the northeastern edge of its range in Massachusetts, although it does occur as a straggler in northern New England and in Nova Scotia. Forbush (1927) stated that the Orchard Oriole was a rare and local breeding bird, and as recently as 1955 (Bailey; Griscom and Snyder) its status remained unchanged.

MIGRATION

Spring migrants arrive in Massachusetts usually during the first week of May. Migration continues to the end of May with the majority of migrants noted during the third week. There are a few records in April of birds that have come north with other Southern species during storms of southern origin. The earliest record is of a bird recorded on 17 April.

The southward migration begins shortly after breeding and is all but unnoticeable. There are no definite "waves" reported, but a few individuals are occasionally seen in August. There are about a half dozen reports for September, the latest of which is 30 September.