

FOREST BIRD SURVEYS ON MT. MANSFIELD AND UNDERHILL STATE PARK
1996 REPORT TO THE VERMONT FOREST ECOSYSTEM MONITORING

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In 1996, breeding bird censuses were conducted for the sixth consecutive year at two permanent study sites on Mt. Mansfield. One site, in Underhill State Park at an elevation of 2200 feet, consisted of mature northern hardwoods, while the second site on the Mt. Mansfield ridgeline at 3800 feet consisted of subalpine spruce-fir. These two study sites are part of a long-term Forest Bird Monitoring Program (FBMP) conducted by the Vermont Institute of Natural Science (VINS). This program was initiated in 1989 with the primary goals of conducting habitat-specific monitoring of forest interior breeding bird populations in Vermont and tracking long-term changes. As of 1996, VINS has established 27 monitoring sites in 9 different forested habitats in Vermont.

On the Mt. Mansfield ridgeline plot in 1996, both overall numerical abundance and species diversity increased to their highest levels since 1992 (Table 1). One hundred and sixty individuals of 15 species were detected, up from 134 individuals of 13 species in 1995. Of the 8 species recorded in each year since 1991, 5 showed increases over 1995 totals, and 6 were above the five-year average (Table 2). Yellow-rumped Warbler numbers reached their highest level in 1996 ($n=28$), as did Blackpoll Warbler ($n=30$), which had shown a steady decline since 1991. On the other hand, Winter Wren numbers bottomed out at an all time low of 4 individuals after rebounding slightly last year from a downward trend recorded between 1991-1994.

At Underhill State Park, overall numerical abundance dropped slightly from 1995's record high, while species diversity equaled last year's five-year high (Table 3). Twenty species were recorded, with a maximum count of 135 individuals (151 in 1995). Five of the seven most common species, Red-eyed Vireo, Black-throated Blue Warbler, Black-throated Green Warbler, Canada Warbler, and Ovenbird, were recorded above their 1991-1995 average (Table 4). Two of these species, Canada Warbler and Black-throated Green Warbler, were observed at or above their maximum counts. Both Hermit Thrush and Winter Wren however, dropped below their five-year average after increasing in 1995 from a downward trend.

The population fluctuations detected at both Mt. Mansfield and Underhill State Park, underscore the need for continued monitoring and development of a long-term database. With only 6 years of data at these two sites, detection of meaningful population trends is not yet possible. Changes in population trends may simply reflect natural fluctuations, variable detection rates, and/or a variety of dynamic factors, such as prey abundance, overwinter survival, and habitat change. Several years of additional data collection, their correlation with other VFEM data, and comparison with census data from other ecologically similar sites will be necessary to elucidate population trends of various species at these two sites. This winter, VINS will be pooling data from the 17 original FBMP sites and calculating population trends for each breeding species using a route regression program. This analysis will reveal broad scale trends from an 8-year data set which includes the Mansfield and Underhill State Park sites.

Table 1. Maximum counts of individual birds recorded on Mt. Mansfield site, 1991-1996.

Species	Mansfield					
	91	92	93	94	95	96
Northern Flicker						
Hairy Woodpecker						
Yellow-bellied Flycatcher			2		1	3
Blue Jay						
Common Raven						1
Red-breasted Nuthatch		2	3		3	
Winter Wren	20	18	14	8	10	4
Ruby-crowned Kinglet		4			2	
Bicknell's Thrush	10	23	15	9	15	20
Swainson's Thrush	6	16	2	2	5	13
American Robin	2	7	2	4	4	4
Cedar Waxwing		1	4			
Nashville Warbler	4					4
Magnolia Warbler	2	4				8
Yellow-rumped Warbler	22	21	16	18	16	28
Blackpoll Warbler	20	18	18	14	14	30
Ovenbird				2		
Lincoln's Sparrow	4					2
White-throated Sparrow	14	28	26	21	24	28
Dark-eyed Junco	8	17	10	4	10	10
Purple Finch	2	8	2	4		4
White-winged Crossbill					8	
Pine Siskin		1			22	
Evening Grosbeak		2				
Number of individuals	114	171	118	86	134	160
Number of species	12	16	15	11	13	15

Table 2. Maximum counts of the 8 most common species on Mt. Mansfield site, 1991-1996.

SPECIES	YEAR						91-95
	1991	1992	1993	1994	1995	1996	avg.
Winter Wren	20	18	14	8	10	4	14.0
Bicknell's Thrush	10	23	15	9	15	20	20.0
Swainson's Thrush	6	16	2	2	5	13	6.2
American Robin	2	7	2	4	4	4	3.8
Yellow-rumped Warbler	22	21	16	18	16	28	18.6
Blackpoll Warbler	20	18	18	14	14	30	16.8
White-throated Sparrow	14	28	26	21	24	28	22.6
Dark-eyed Junco	8	17	10	4	10	10	9.8

Table 3. Maximum counts of individual birds recorded at Underhill State Park, 1991-1996.

Species	Underhill					
	91	92	93	94	95	96
Northern Flicker			2			
Yellow-bellied Sapsucker		2		2		
Hairy Woodpecker				1		
Pileated woodpecker						
Blue Jay				1		4
Common Raven				4		
Brown Creeper						
Black-capped Chickadee		2	1		4	5
Winter Wren		12	4	2	10	6
American Robin					5	4
Veery	2	2				
Swainson's Thrush		2		4	8	8
Hermit Thrush		7	2	11	14	5
Wood Thrush		2				
Solitary Vireo	1	4				2
Red-eyed Vireo	5	8	8	12	18	16
Black-throated Blue Warbler	11	17	10	12	14	16
Yellow-rumped Warbler			4	4		4
Magnolia Warbler					2	
Black-throated Green Warbler	9	14	12	14	14	15
Blackpoll Warbler						2
Black-and-white Warbler		6	4	4	8	4
American Redstart		6			2	2
Ovenbird	7	20	22	22	26	20
Canada Warbler	5	8	8	10	4	10
Rose-breasted Grosbeak	7	3		2	6	2
White-throated Sparrow	2		2	2	2	
Dark-eyed Junco		6	2	6	8	6
Pine Siskin						
Scarlet Tanager						
Purple Finch						2
Number of individuals	52	112	83	114	151	135
Number of species	11	18	14	18	20	20

Table 4. Maximum counts of the 7 most common species at Underhill State Park, 1991-1996.

SPECIES	YEAR						91-95
	1991	1992	1993	1994	1995	1996	avg.
Winter Wren	0	12	4	2	10	6	5.6
Hermit Thrush	0	7	2	11	14	5	6.8
Red-eyed Vireo	5	8	8	12	18	16	10.2
Black-throated Blue Warbler	11	17	10	12	14	16	12.8
Black-thr. Green Warbler	9	14	12	14	14	15	12.6
Ovenbird	7	20	22	22	26	20	19.4
Canada Warbler	5	8	8	10	4	10	7.0