

Vertebrate survey of the Marcy South power corridor,
Greenwoods Conservancy, summer 1999

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INTRODUCTION

The goal of this survey is to investigate the effects of the NY Power Authority right-of way (ROW) on vertebrate populations as it crosses Greenwoods Conservancy. To do this, three transects were established during the summer of 1999. The transects were used to study birds and mammals. Unfortunately, the study began too late in the year for an effective study of amphibians. I expect that amphibians will be examined during the early spring of 2000.

METHODS

Birds

Two transects were established in June and a third during July (Fig 1). Each transect consisted of five stations. The third (center) station was in the middle of the ROW. The two adjacent stations (2 and 4) were located 50 meters from the edges of the ROW. Stations 1 and 5 were located an additional 50 meters from stations 2 and 4, respectively.

North and South Transects were sampled on the mornings of 8 June, 3 July and 16 July. The Middle Transect was sampled on 18 July. These dates were after the migrants had passed through the area, but early enough so that the male birds breeding in the area were still singing. A formal observation consisted of listing every bird species heard or seen during a five- minute period at each station. Also, birds seen or heard while walking to stations were recorded. Two additional categories of data were birds actually encountered on the ROW, and those visible in trees along the edge of the ROW.

Mammals

Sherman traps were used to sample small mammals on 19 Aug. I placed two traps at each station on the North Transect line. Each trap was placed on the ground next to cover and baited with sunflower seeds. The traps were only open during the day; night trapping was avoided as to reduce the probability of catching *Peromyscus sp.*, since these rodents vector Hanta virus. The traps were checked three times during the day.

In addition to trapping, sightings of animals, tracks and droppings were recorded during the bird transects.

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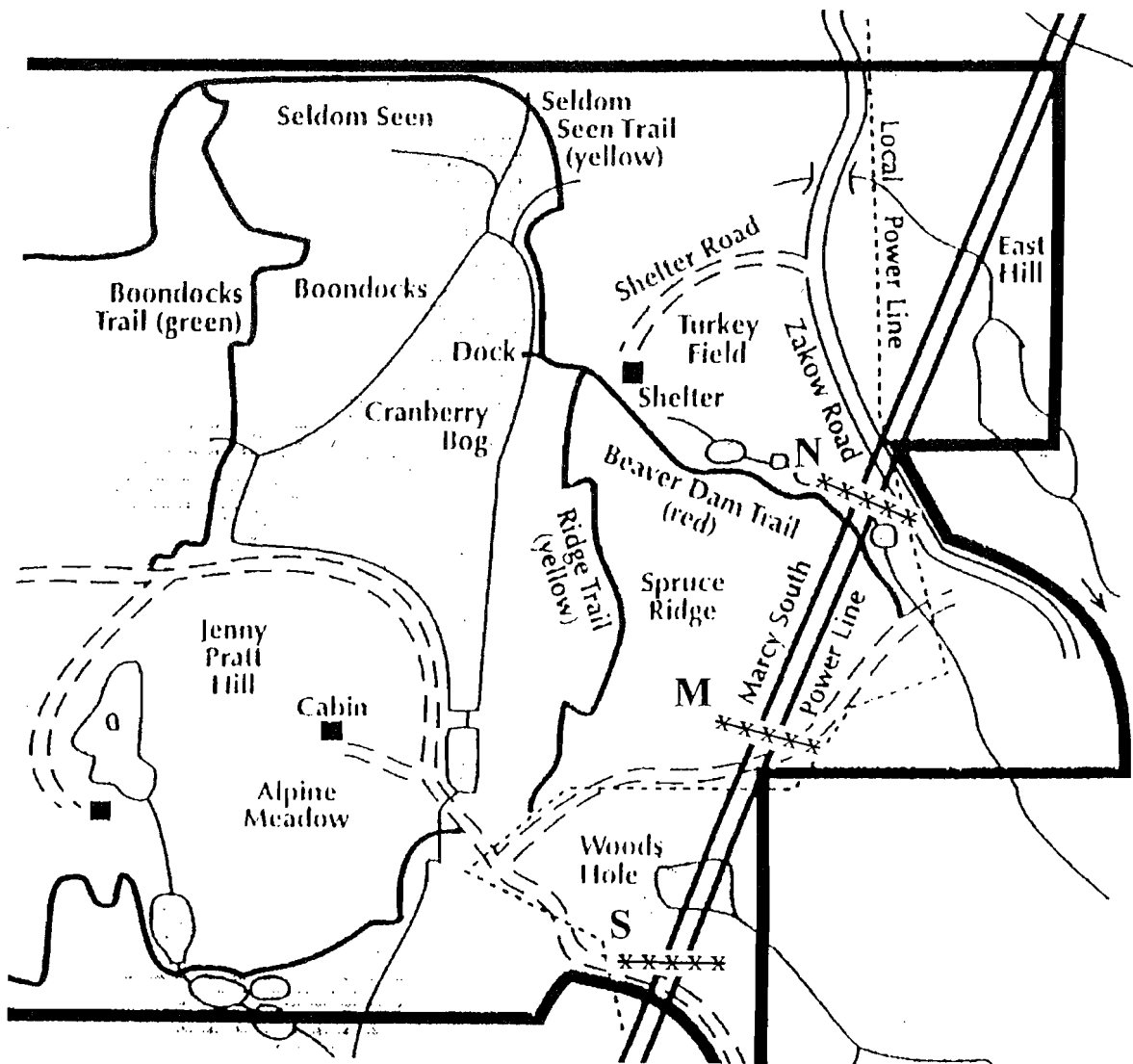


Figure 1. Map showing locations of transects crossing the power line in Greenwood. The x's indicate the stations along the transects. (N= north, M= middle, S= south)

RESULTS

Birds

The 38 species of birds encountered are listed in Table 1. The Blackburnian warbler and raven had not previously been recorded in Greenwoods. Table 2 contains a brief description of each station as well as a list of the bird species encountered at each station.

A comparison of the number of species encountered on the ROW (Station 3) and at the other stations suggests no great differences exist (Table 2). For the North transect, six species were found at Station 3 on each sampling day. Although values for the other stations ranged from two to eight, no other station consistently had as many or more species.

For both Middle and South transects, more birds were encountered at Station 3 than at the other stations. An explanation may be that birds can be seen more easily in the open area and edges of the ROW.

Mammals

The only small mammal trapped was a red squirrel (*Tamiasciurus hudsonicus*) at Station 4. Rabbits (*Sylvilagus floridanus*) were encountered twice on the ROW while checking traps. I saw deer droppings on the North transect at the edge of the ROW, and near stations 2 and 4. On 3 July, two deer (*Odocoileus virginianus*) were seen near station 1. Deer droppings were found near station 3, on the row, of Middle Transect on 18 July.

There is a pond, Woods Hole, just north of Middle Transect (see Fig 1). The pond itself is approximately 75 to 100 m east of the ROW. An active beaver lodge is located in the pond. A series of fresh drag trails and canals extend from the pond onto the ROW itself. It is evident that beaver (*Castor canadensis*) are active in this area.

DISCUSSION

The first impression resulting from establishing and walking the transects is the degree of heterogeneity in habitat that one encounters. In one case, I left the ROW into a stand of spruces, then into deciduous woodland, across a road and finally into more deciduous woodland within 100 meters. This was typical of all three transects. The ROW, then, does not represent the intrusion of a clear cut or scrub zone into otherwise homogeneous forest. Basically, it represents just one more habitat added to a sizable number of habitats. Nor does it provide the only "road" into forest, allowing predators easy access. Greenwoods is already well fragmented in the area of the powerline.

What the ROW does provide is another habitat that probably enhances the diversity of bird species. Mourning warblers (MW) were observed utilizing raspberry thickets on the ROW. Although no nests were seen, it is likely that they were hidden in the berry bushes. Some of the

Table 1. Birds encountered on Greenwoods Right-of-Way survey, summer, 1999.

A. Birds encountered on station:

Red-eyed vireo*	<i>Vireo olivaceus</i>	RV
Yellow-throated vireo	<i>Vireo flavifrons</i>	YV
Blue-headed vireo	<i>Vireo solitarius</i>	BV
Rufous-sided towhee*	<i>Pipilo erythrophthalmus</i>	RT
Song sparrow*	<i>Melospiza melodia</i>	SS
White-throated sparrow	<i>Zonotrichia albicollis</i>	WT
Dark-eyed junco	<i>Junco hyemalis</i>	DJ
American goldfinch*	<i>Carduelis tristis</i>	AG
Grey catbird*	<i>Dumetellia caro; inensis</i>	GC
Black-capped chickadee	<i>Parus atricapillus</i>	CK
White-breasted nuthatch	<i>Sitta carolinensis</i>	WN
Brown creeper	<i>Certhia americana</i>	BC
Winter wren	<i>Troglodytes troglodytes</i>	WW
American robin	<i>Turdus migratorius</i>	AR
Scarlet Tanager	<i>Piranga olivacea</i>	ST
Eastern phoebe	<i>Sayornis phoebe</i>	EP
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	GF
Eastern Wood Peewee	<i>Contopus virens</i>	EP
Indigo bunting*	<i>Passerina cyanea</i>	IB
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	RG
Blackburnian Warbler	<i>Dendroica fusca</i>	BW
Black-throated Blue Warbler	<i>D. caerulescens</i>	BBW
Chestnut-sided Warbler*	<i>D. pensylvanica</i>	CW
Mourning Warbler*	<i>Oporornis philadelphia</i>	MW
Common yellowthroat*	<i>Geothlypis trichas</i>	CY
Ovenbird	<i>Seiurus aurocapillus</i>	OB
Turkey	<i>Meleagris gallopavo</i>	T
Ruffed Grouse*	<i>Bonasa umbellus</i>	RG
Blue jay	<i>Cyanocitta cristata</i>	BJ
Crow	<i>Corvus brachyrhynchos</i>	AC
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	YS
Hairy woodpecker	<i>Picoides villosus</i>	HW
Northern Flicker	<i>Colaptes auratus</i>	NF
Pileated Woodpecker	<i>Dryocopus pileatus</i>	PW
Mourning Dove	<i>Zenaida aurita</i>	MD

B. Additional species encountered walking to stations

Red-Tailed Hawk**	<i>Buteo jamaicensis</i>	RH
Common Raven***	<i>Corvus corax</i>	CR
Magnolia Warbler*	<i>Dendroica. magnolia</i>	MW

* - Bird encountered at least once on the right-of-way.

** - Bird visible in trees at edge of right-of-way.

*** - Bird perched on top of tower.

TABLE 2. Descriptions of sampling stations and synopsis of birds encountered Abbreviations defined in Table 1.

NORTH TRANSECT

Station 1	Station 2	Station 3	Station 4	Station 5
Deciduous forest, with thick understory. Pond nearby.	Same as Station 1	Right-of-way Raspberry thickets and scrubs	Old orchard, pines and dense shrubs.	Edge of road, deciduous trees overhead. Edge of pasture.

8 June 99

RV, OB	RV, OB, CW, RG, SS, CY	RV, OB, CW, ET, IB*, SS*	RV, OB, CB, CW, CY	EV, CW, GF, ST
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3 July 99

RV, OB, CW, SS, AR, CK, RG, GF	RV, OB, CW, SS, RG, AR, CK, ST	RV, CY, AR, MD, SS, CK	AR, GF, MD, BJ, CK	RV, SS, GC, AR, YS, RG*
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16 July 99

AR, SS, AC, CY, NF*	AR, SS, CY, GF	AR, SS, YS, CY, RV*, WS*	RV, CW, AR, CY	RV, SS, NF, MD, EP, DJ, GF, CK
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MIDDLE TRANSECT

Station 1	Station 2	Station 3	Station 4	Station 5
Pine, spruce, little substory, open	Same as Station 1	Right of way. Crown vetch, raspberry thickets, low scrubs, some bare shale	Deciduous woods, little substory, open.	Same as Station 4

18 July 99

CK, CY	Turkey feathers	RV, NT, SS, CW GC, MW*, AG* RT	RV, GC, DJ	CK, CY, OB, YV, AR**
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SOUTH TRANSECT

Station 1	Station 2	Station 3	Station 4	Station 5
Deciduous woods, thick understory, road nearby	Mature spruce with some pines, little understory	Right of way Two long raspberry thickets, grasses, goldenrod	Deciduous woods, moderate understory	Same as Station 4

8 June 99

OB, RV AR*, RG*, CW*, CK*	RV, CW, SS, EP, CK, BJ	CW, SS, EP, BJ, RG, CY, DJ, CK, AR*, ST*, IB*, CR*	CW, BW, DJ, EP, BV, BC, WN	RV, EP, DJ, BC, AC
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3 July 99

CW, OB, EP, WW	CK, ST, CW, BW	SS, OB, CK, , AM MW, ST, CY, GC	OB, ST, CY, WW	ST, RV, WW, SS, BW, GF
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16 July 99

BV, YS	RV, CY, WW*	CY, CK, CW, GF, SS, AG, ST, EP, NF, AR*, PW*, WW*	AG, ST, SS, EP, GF, CK, DJ, HW	ST, CK, GF, EP, BV, SS, WN
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* - Bird seen or heard just before or after timed observation period.

relatively large numbers of common yellowthroats (CY) were seen carrying food to nestlings in the low scrubs on the ROW. These two species nest almost exclusively in low vegetation. Populations of both species are declining in the eastern part of the country.

The only places I saw indigo buntings (IB) were on the ROW and in trees along its edges. This species, which prefers forest edges and scrubs for nesting habitat, is in decline.

Two other species seen only on the ROW were visitors. Goldfinches (AG) fed on thistles. The raven (CR), which was calling from the highest point on a tower, probably was not a resident. However, he did find a high perch for his singing post.

In summary, the bird survey data suggests that the ROW provides a low scrub habitat that is useful for several species and might actually provide valuable breeding habitat for mourning warblers and common yellowthroats. In addition, comparisons of the ROW station to other stations reveals that more species were frequently found on the ROW.

Mammals

It is clear that some of the larger mammals common in the area use the ROW. Deer, beaver and rabbit were evident. No small mammals were trapped on the ROW, and only one red squirrel was captured at other stations. The small mammal trapping aspect of the survey would profit from additional trapping days, especially after dummy trap bodies were employed for several days so that the animals could habituate to them.

CRITIQUE

The methods use in the bird survey provide a crude estimate of diversity of birds in the area. The major advantage is that information can be collected from several stations rapidly. A major disadvantage is that some birds, such as the red-eyed vireo, can be heard for more than 100 meters. Therefore, the same bird is recorded for more than one station. It is also possible to see the same bird as it flies past more than one station. In order to reduce these complicating factors, I suggest that future surveys employ three stations per transect: the center station on the ROW and one on each side, located 100 m from the edge of the ROW. This would correspond to stations 1, 3 and 5 of the current system. The time saved by the elimination of two stations could either be used to increase the time per station or by adding another transect.