

**Breeding Bird Surveys
for the Jericho Rise Wind Farm
Franklin County, New York**

**Final Report
May - July 2015**

Prepared for:

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EXECUTIVE SUMMARY

EDP Renewables North America is developing the Jericho Rise Wind Farm in Franklin County. As proposed the Project would consist of 37 wind turbines with a nameplate capacity of approximately 77.7 megawatts. During 2015, EDPR continued baseline (pre-construction) surveys to monitor wildlife resources at the Project. The studies were designed to meet objectives and recommendations of the New York State Department of Environmental Conservation 2009 Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects and the U.S. Fish and Wildlife Service Land-based Wind Energy Guidelines.

Breeding bird surveys were conducted at the proposed Project during the spring and summer of 2015. The surveys were designed to serve as baseline data and included in a larger before-after control-impact avoidance and habituation study of breeding birds at the Project when combined with similar surveys during the operational (post-construction) period. The methodology of breeding bird studies followed the NYSDEC study guidelines and has been used at other projects in New York State. The study design and survey protocol was developed in partnership between WEST, NYSDEC and the USFWS.

A sample of 18 (approximately 49%) turbine (treatment) and eight non-turbine (reference, located away from turbines) 300-meter long transects were established throughout the Project. Songbird density data and vegetation data were collected in 50-m increments along each transect. One end of the treatment transects was located at a proposed turbine. Mean use (defined as the number of birds per transect per survey) was calculated for each 50-m increment and for each transect. Differences in use (relative abundance) and species composition between reference and turbine transects and between transects in forest cover and open grassland/shrub cover were assessed. Differences between bird abundance for each 50-m block of transect may be calculated and compared statistically to investigate changes in use and species composition as a function of distance from turbine can be made after construction of the Project. This analysis was not completed as there are no turbines at the site.

A total of 104 transect surveys were conducted during four visits between May 29 and July 8, 2015. During the surveys, 1,659 birds within 1,444 separate groups were recorded. Approximately 94% of all bird individuals observed were of passerine species. Overall passerine mean use was (15.01 birds/transect/survey). Passerine mean use values along treatment transects ranged from 2.75 to 25.50 birds/transect/survey, with the highest use occurring at a transect located in forest cover. Passerine mean use at the reference transects ranged from 0 to 27.50 birds/transect/survey, with the highest use also occurring at a transect in forest cover.

Seven species accounted for approximately 46% of all individuals observed: red-eyed vireo (150 individuals), ovenbird (147), bobolink (119), Savannah sparrow (110), cedar waxwing (82), black-capped chickadee (79), and chestnut-sided warbler (72). One sharp-shinned hawk, a state species of special concern, was observed during the surveys.

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REPORT REFERENCE

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INTRODUCTION

EDP Renewables North America (EDPR) is developing the Jericho Rise Wind Farm (JRWF or Project) in northeastern Franklin County, New York. The Project falls within the townships of Belmont and Chateaugay. The proposed Project would consist of 37 wind turbines, along with associated infrastructure (e.g., operations and maintenance [O&M] facility, access roads, underground collector lines, and a substation), with a total capacity of approximately 77.7 megawatts (MW). As proposed each turbine would have a nameplate rating of 2.1 MW, with tower heights of 94 meters (m; 308 feet [ft]), blade lengths of 56.0 m (184 ft), and a maximum vertical height when a blade is in the vertical position of 150 m (492 ft).

During 2015, EDPR continued baseline (pre-construction) surveys to monitor wildlife resources at the Project which included breeding bird surveys (this report). The studies were designed to meet objectives and recommendations of the New York State Department of Environmental Conservation (NYSDEC) 2009 Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects (NYSDEC 2009) and the U.S. Fish and Wildlife Service (USFWS) Land-based Wind Energy Guidelines (USFWS 2012).

STUDY AREA

The Project area, defined as the area encompassed by a one-kilometer (km) buffer around the proposed turbine locations is approximately 11,000 acres (ac; 17 square miles [mi²] in size, and is bordered on the east by the Chateaugay River, which runs through a prominent forested ravine. Smaller tributary streams run throughout the Project Area and most occur within wooded corridors. Topographically, the Project Area is variable from broad relatively flat or low sloping fields to rolling hills. The Project Area is a mosaic of open pastures (livestock grazing), some cultivated agriculture (e.g., corn, potatoes), and deciduous or mixed forest. Low elevation areas are either forested, wetland, or both, while higher flatter elevation areas have been converted to agriculture (Figure 1). The average elevation of the Project is 352.5 m (1,156 feet). The Project is located near the intersection of the Western Adirondack Foothills, Western Adirondack Transition, and Champlain Transition ecozones, just south of the Canada border.

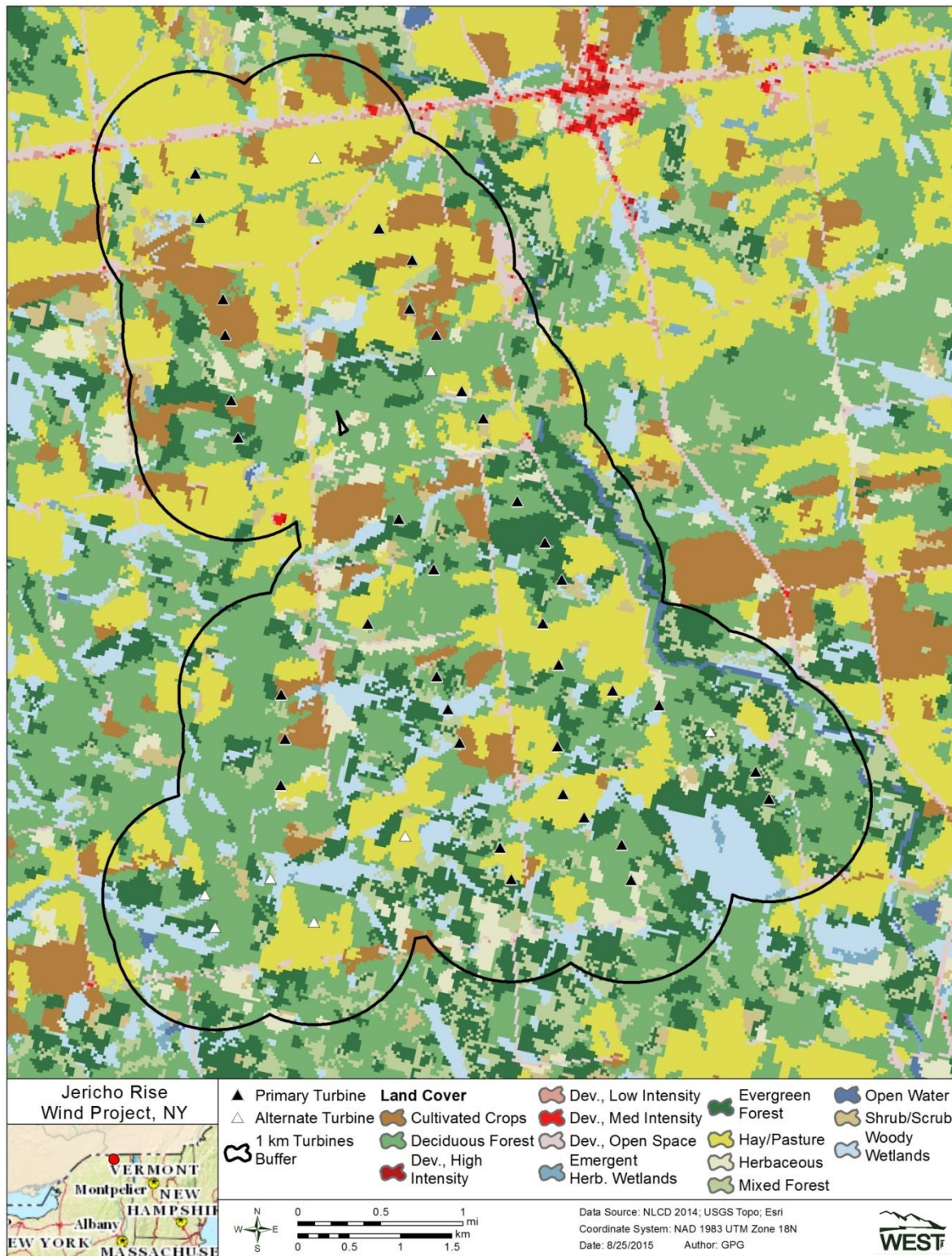


Figure 1. The Jericho Rise Wind Farm vegetation types and landcover map.

METHODS

Breeding Bird Survey

Breeding bird surveys were conducted at the proposed Project during the spring and summer of 2015. The surveys were designed to serve as baseline data and be included in a larger before-after control-impact avoidance and habituation study of breeding birds at the Project when combined with similar surveys during the operational (post-construction) period. The objectives of the larger study are to determine if birds avoid areas near turbines and/or determine if birds habituate to the presence of turbines once the Project is constructed. The methodology of breeding bird studies followed the NYSDEC study guidelines and has been used at other projects in New York State. The study design and survey protocol was developed in partnership between WEST, NYSDEC and the USFWS.

A sample of 18 (approximately 49%) turbine (treatment) and eight non-turbine (reference, located away from turbines) transects were established throughout the Project (Figure 2). Transects were classified as one of two vegetation types; non-forested (predominantly grassland or shrubland) or forested and attempts were made to avoid cultivated fields (Figure 2). Each transect was 300 m (984 ft) in length stretching from the location of a proposed turbine (in the case of treatment transects) or in areas away from turbines in the case of reference transects. Efforts were made to locate reference survey transects in similar vegetation types as turbine transects and at least 500 m away from any proposed turbine.

Observers recorded all birds seen or heard during each survey of a transect, but focused on recording birds within 50 m (164 ft) on either side of transects, thus creating a 300 m by 100 m (984 ft by 328 ft) rectangular survey plot encompassing 30,000 m² (322,917 ft²) bisected by the transect line. Each transect was divided into 50 m blocks, with each 50-m transect block encompassing an area of 5,000 m² (53,820 ft²). Information on dominant habitat type was collected for each 50-m block.



Figure 2. Breeding Bird Survey Transect locations within the Jericho Rise Wind Farm.

Field Surveys

Field surveys were conducted by field biologists with experience identifying New York birds by sight and sound and prior experience conducting similar surveys. The observer recorded all birds; however, the focus of the survey was on songbirds within 50 m of either side of the transect line. Detections of birds either seen or heard were recorded on standard data forms and the 50-m block along the transect in which the observation occurred was noted. The approximate distance to each bird was recorded for each observation. Data recorded for each survey included the start and end time of the observation period and weather information such as temperature, wind speed, wind direction, and cloud cover. Species identification, number of individuals of each species, type of observation (visual or auditory), and behavior (nesting, flying, perching, singing, etc.) were recorded.

Each transect was surveyed four times between May 20 and July 8, 2015. Surveys were conducted during the period between a half-hour before to four hours after sunrise on days without inclement weather (e.g., rain) or strong winds (greater than 10-15 miles per hour [16-24 kilometers per hour]). The field technician varied the order in which transects were surveyed to avoid surveying any one transect at the same time of day for all visits.

Statistical Analysis

Quality Assurance and Quality Control

Quality assurance and quality control (QA/QC) measures were implemented at all stages of the study, including in the field, during data entry and analysis and during report writing. Following field surveys, observers were responsible for inspecting data forms for completeness, accuracy, and legibility. Potentially erroneous data was identified using a series of database queries. Irregular codes or data suspected as questionable were discussed with the observer and/or project manager. Errors, omissions, or problems identified in later stages of analysis or reporting were traced back to the raw data forms, and appropriate changes in all steps were made.

Data Compilation and Storage

A Microsoft® ACCESS database was developed to store, organize, and retrieve data. Data were keyed into the electronic database using pre-defined protocols to facilitate subsequent QA/QC and data analysis. All data forms and electronic data files were retained for reference.

Bird Diversity and Species Richness

Bird diversity was illustrated by the total number of unique species observed. A species list of all observations and the number of groups was generated for each visit and for the study period, regardless of the distance from the transect. In some cases, the tally of observations may represent repeated sightings of the same individual. Species richness was calculated as the mean number of species observed per transect per survey (number of species/transect/survey).

Bird Use, Percent of Use and Frequency of Use

For the standardized bird use estimates, only observations of birds detected within 50 m on either side of the transects were used. Estimates of bird use, calculated as the number of per transect per survey (birds/transect/survey) were calculated by determining the number of birds seen within 50 m on either side of transects for each visit and then averaging by the number of transects surveyed during that visit. A second averaging occurred across the number of visits during the study period. A visit is defined as the time period required to complete a survey at all of the transects.

Percent of use was calculated as the proportion of total mean use that was attributable to a particular bird type or species. Frequency of occurrence was calculated as the percent of surveys in which a particular bird type or species was observed.

Spatial Use

Differences in use (relative abundance) and species composition between transects at turbines and transects in reference areas were assessed to investigate whether there were spatial use patterns across the Project. Differences between bird abundance for each 50 m block of transect was calculated and compared statistically using a Mann-Whitney U test.

Data Summary and Analysis

To examine differences in mean use among transect and vegetation types, only passerine subtypes or species that had thirty or greater individuals observed during the surveys were included in the analysis. Thirty was used to ensure that bird types/species analyzed were abundant enough to provide meaningful results. For subtypes and species that were above this threshold, differences between treatment and reference transects within blocks (i.e., Block 1, Block 2, etc. after controlling for habitat type) and among blocks (i.e., across all 6 blocks after controlling for habitat type) were evaluated using a non-parametric Mann-Whitney U test.

RESULTS

All surveys were timed to occur within the spring and summer breeding bird season for northern New York. A total of 104 transect surveys were conducted during four visits between May 29 and July 8, 2015.

Bird Diversity and Species Richness

A total of 1,659 birds within 1,444 separate groups were recorded during all surveys (Appendix A1). The majority of all birds observed were passerines (94.2%). The most commonly observed passerine subtypes included: warblers and grassland birds/sparrows (Appendix A1). Seven species accounted for approximately 46% of all individuals observed: red-eyed vireo (*Vireo olivaceus*; n=150 observations), ovenbird (*Seiurus aurocapilla*; n=147), bobolink (*Dolichonyx oryzivorus*; n=119), Savannah sparrow (*Passerculus sandwichensis*, n=110), cedar waxwing (*Bombycilla cedrorum*, n=82), black-capped chickadee (*Poecile atricapilla*, n=79), and chestnut-sided warbler (*Setophaga pensylvanica*; n=72; Appendix A1). Species richness was 8.12 species per transect per survey.

Bird Use, Percent of Use, and Frequency of Occurrence

Mean use was 15.92 birds/transect/survey. Passerines comprised 94.3% of all use during the surveys and were observed in 95.2% of all surveys (Table 1). Warblers accounted for 29.4% of all passerine use, and grassland birds/sparrows and blackbirds/orioles accounted for 13.8% and 11.9% of passerine use, respectively. Both warblers and grassland birds/sparrows were each observed in more than 60% of surveys.

Approximately 49% of the overall mean use for passerines was comprised of the same seven species that were observed most frequently. Red-vireos (1.44 birds/transect/survey) had the highest mean use followed by ovenbirds (1.41), bobolinks (1.14), Savannah sparrows (1.06), cedar waxwings (0.79), black-capped chickadees (0.76) and chestnut-sided warblers (0.69; Appendix A2).

Table 1. Mean bird use (number of birds/transect/survey), percent of use, and frequency of occurrence for each bird type and passerine subtype during the breeding bird surveys at the Jericho Rise Wind Farm; May 29 – July 8, 2015.

Bird Type / Species	Mean Use	Percent of Use	Frequency of Occurrence
<u>Waterfowl</u>	0.14	0.9	1.0
<u>Shorebirds</u>	0.08	0.5	4.8
<u>Gulls/Terns</u>	0.05	0.3	2.9
<u>Diurnal Raptors</u>	0.03	0.2	2.9
<u>Upland Game Birds</u>	0.11	0.7	9.6
<u>Doves/Pigeons</u>	0.11	0.7	4.8
<u>Passerines</u>	15.01	94.3	95.2
Unidentified Passerines	<0.01	<0.1	1.0
Blackbirds/Orioles	1.79	11.2	35.6
Creepers/Nuthatches	0.31	1.9	22.1
Finches/Crossbills	0.31	1.9	24.0
Flycatchers	0.27	1.7	20.2
Gnatcatchers/Kinglet	0.12	0.7	6.7
Grassland/Sparrows	2.07	13.0	61.5
Mimids	0.04	0.2	2.9
Swallows	0.09	0.5	4.8
Tanagers	0.26	1.6	18.3
Grosbeaks	0.13	0.8	11.5
Cardinals	<0.01	<0.1	1.0
Thrushes	1.26	7.9	50.0
Titmice/Chickadees	0.76	4.8	33.7
Vireos	1.60	10.0	54.8
Warblers	4.41	27.7	81.7
Waxwings	0.79	5.0	19.2
Wrens	0.25	1.6	16.3
Corvids	0.55	3.4	29.8
<u>Cuckoos</u>	<0.01	<0.1	1.0
<u>Woodpeckers</u>	0.39	2.5	27.9
Overall	15.92	100	

Based on the threshold of 30 or more individuals observed, nine passerine subtypes were further analyzed: in addition to the warblers, and grassland birds/sparrows, blackbirds/orioles, creepers/nuthatches, finches/crossbills, thrushes, titmice/chickadees, vireos, and waxwings were included in more detailed analyses. Creepers/Nuthatches and Finches/Crossbills bird subtypes were analyzed though no individuals species within either subtype was analyzed further. Within the Warbler subtype, four species are represented including the black-throated green warbler (*Setophaga virens*), common yellowthroat (*Geothlypis trichas*), chestnut-sided warbler (*Setophaga pensylvanica*), and ovenbird (*Seiurus aurocapilla*). Three species in the Grassland/Sparrows subtype were analyzed: Savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*) and white-throated sparrow (*Zonotrichia albicollis*). Two species in the Blackbirds/Orioles subtype were analyzed: bobolink (*Dolichonyx oryzivorus*) and

red-winged blackbird (*Agelaius phoeniceus*). Likewise, two species within the Thrushes subtype were analyzed: American robin (*Turdus migratorius*) and hermit thrush (*Catharus guttatus*). One species from each of the following subtypes were analyzed: Titmice/Chickadees, Vireos, and Waxwings, represented by black-capped chickadee (*Poecile atricapilla*), red-eyed vireo (*Vireo olivaceus*), and cedar waxwing (*Bombycilla cedrorum*), respectively (Table 2).

Mean Use at Turbine and Reference Transects

In forest habitats, use by the Blackbirds/Orioles, Creepers/Nuthatches, Finches/Crossbills, Grassland birds/Sparrows, Thrushes, Vireos, and Warbler, passerine subtypes use was higher at reference transects compared to turbine transects, while Titmice/Chickadees and Waxwing subtypes showed higher use at turbine transects. In forested habitats, bobolink, Savannah sparrow, white-throated sparrow, hermit thrush, red-eyed vireo, black-throated green warbler, and common yellowthroat showed increased use at reference transects, while song sparrow, American robin, black-capped chickadee, cedar waxwing and ovenbird showed the opposite change (higher use at turbine transects, Table 2). In forested habitats chestnut-sided warblers showed equal use between turbine and reference transects, and red-winged blackbirds were not observed at forested transects (Table 2).

In non-forested habitats, Blackbirds/Orioles, Creepers/Nuthatches and Grassland birds/Sparrows had higher use at reference transects compared to turbine transects, while Thrushes, Titmice/Chickadees, Vireos, Warblers and Waxwings had higher use at turbine transects (Table 2). Bobolink, Savannah sparrow, white-throated sparrow, hermit thrush and black-throated green warbler species demonstrated a similar result. The Finches/Crossbills subtype was the only passerine subtype that had significantly higher use at turbine transects in non-forested habitats (Table 2), while the ovenbird was the only individual species that showed significantly higher use at turbine transects. Additionally individual species that showed higher use at turbine transects as opposed to reference transects included: song sparrow, black-capped chickadee, red eyed vireo, common yellowthroat, chestnut-sided warbler and cedar waxwing (Table 2). In non-forested habitats red-winged blackbirds and American robin showed equal use between turbine and reference transects (Table 2).

Table 2. Comparison of overall mean use at turbine and reference transects for passerine groups and subtypes observed during breeding bird surveys at the Jericho Rise Wind Farm from May 29 to July 8, 2015. Statistically significant differences found via Mann-Whitney U test are shown in bold type.

Bird Species/Type	Forest Habitat				Non-forested Habitat			
	Mean Use at Turbine Transects	Mean Use at Reference Transects	Difference of Means	P-value	Mean Use at Turbine Transects	Mean Use at Reference Transects	Difference of Means	P-value
<u>Blackbirds/Orioles</u>	<0.01	0.03	-0.03	0.33	0.27	0.38	-0.11	0.68
bobolink	<0.01	0.03	-0.03	0.14	0.18	0.20	-0.02	0.80
red-winged blackbird	0	0	0	NA	0.06	0.06	0.01	0.99
<u>Creepers/Nuthatches</u>	0.05	0.06	-0.01	0.43	<0.01	0.01	< -0.01	0.49
<u>Finches/Crossbills</u>	0.02	0.03	-0.01	0.29	0.04	0.01	0.04	0.05
<u>Grassland/Sparrows</u>	0.08	0.14	-0.06	<0.01	0.25	0.29	-0.03	0.51
Savannah sparrow	0	0.03	-0.03	0	0.16	0.22	-0.06	0.35
song sparrow	0.02	0.01	0.01	0.33	0.07	0.03	0.04	0.22
white-throated sparrow	0.06	0.09	-0.03	0.02	0.01	0.03	-0.02	0.16
<u>Thrushes</u>	0.17	0.21	-0.04	0.30	0.04	0.02	0.02	0.40
American robin	0.04	0.02	0.02	0.49	0.02	0.02	<0.01	0.72
hermit thrush	0.05	0.09	-0.04	0.64	<0.01	0	<0.01	0.54
<u>Titmice/Chickadees</u>	0.13	0.07	0.06	0.11	0.02	0.01	0.01	0.42
black-capped chickadee	0.13	0.07	0.06	0.11	0.02	0.01	0.01	0.42
<u>Vireos</u>	0.23	0.27	-0.04	0.36	0.04	0.03	0.01	0.58
red-eyed vireo	0.20	0.26	-0.06	0.19	0.03	0.02	0.01	0.49
<u>Warblers</u>	0.60	0.73	-0.13	0.41	0.14	0.10	0.04	0.12
black-throated green warbler	0.07	0.15	-0.08	0.02	<0.01	0.01	-0.01	0.14
common yellowthroat	0.02	0.07	-0.05	0.01	0.04	0.02	0.02	0.67
chestnut-sided warbler	0.06	0.06	<0.01	0.85	0.06	0.05	0.01	0.78
ovenbird	0.26	0.16	0.10	0.05	0.02	0	0.02	0.08
<u>Waxwings</u>	0.11	0.08	0.03	0.64	0.04	0.03	0.01	0.47
cedar waxwing	0.11	0.08	0.03	0.64	0.04	0.03	0.01	0.47

The vegetation types for each transect are included in Appendix B1. Overall bird use was highest at reference transect RF4 (29.00 birds/survey, forest classification), and that high use was mainly attributed to use by passerines (Appendix B3). Passerine use values at other reference transects ranged from 0 (reference transect RG2, non-forested classification) to 22.75 (reference transect RF1, forest classification) birds/survey (Appendix B3).

Of transects located at turbines, the overall bird use was highest at turbine transect F3 (26.75 birds/survey; forest classification), and that high use was mainly attributed to use by passerines (Appendix B2). Passerine use values at other turbine transects ranged from 2.75 (turbine transect G2, non-forested classification) to 24.00 (turbine transect F9, forest classification) birds/survey (Appendix B2).

For both the reference and turbine transects use varied across the various landscapes, with no consistent pattern of higher or lower use at transects dominated by either non-forested or forest habitat types (Table 2 and Appendix B).

Difference in Mean Use between Reference and Turbine Transects

Comparisons using non-parametric Mann-Whitney U tests were made between reference and turbine transects in non-forested and forest cover types for passerine subtypes at each 50 m block. The analysis failed to reveal pervasive and consistent patterns. Mean use within 50 m blocks was significantly greater at reference transects for some subtypes. For example, for Grassland birds/Sparrows and Vireos subtypes in forest habitats, the reference transects demonstrated higher mean use in blocks 2, and 3, respectively, than the corresponding treatment transects (Appendix C1 and Appendix D1). Additionally in forest habitats the Titmice/Chickadees subtype showed significantly higher use at turbine transects in blocks 4 and 5 compared to reference transects. On the other hand, in non-forested habitats, warblers showed a significant difference between treatment and reference transects at blocks 2 and 5. Differences between treatment and reference transects at the block level were few and inconsistent (Appendix C1 and Appendix D1). A similar analysis on individual bird species yielded similar results. Five species (black-throated green warbler, bobolink, common yellowthroat, red-eyed vireo, and white-throated sparrow) demonstrated significantly higher use at reference transects compared to turbine transects at a minimum of one block (Appendix C2 and Appendix D2).

Sensitive Species

One sharp-shinned hawk, a state species of special concern, was observed during the breeding bird surveys. The hawk was observed near transect RF4 on June 3rd, 2015.

DISCUSSION

Based on the results from this study, there were no consistent differences detected for use by major bird types at turbine compared to reference transects. While there was some significant differences for some bird types and species between reference and turbine transects these results simply reflect random variation across the landscape at this time because there are no turbines at the site at this time. For example, Grassland birds/Sparrows demonstrated significantly higher mean use at reference transects compared to turbine transects in forest cover types. The Finches/Crossbills subtype showed significantly higher mean use at turbine transects within non-forested cover types. At the species level, selected species that had 30 or more individuals observed were examined for differences between turbine and reference transects. In forest habitats, savannah sparrow, black-throated green warbler, and common yellowthroat showed higher use at reference transects, but ovenbird showed higher use at turbine transects. In non-forested habitat ovenbird showed significantly higher use at turbine transects.

At this time the primary objective of these baseline surveys were to provide information on the species and numbers of breeding birds that will be exposed to the wind farm, investigate the potential presence of sensitive or state listed birds, and provide baseline data that can be used in a before-after-control-impact study when coupled with post-construction monitoring studies using the same methods. To the extent possible, all aspects of study design including transect locations should be replicated during future studies post-construction to allow for meaningful comparisons.

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**Appendix A: All Birds Observed During Breeding Bird Surveys at the Jericho Rise Wind Farm;
May 29 – July 8, 2015**

Appendix A1. Total number of groups and individuals for each bird type, passerine subtype, and species during the breeding bird surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

Bird Type / Species	Scientific Name	Visit 1		Visit 2		Visit 3		Visit 4		Overall	
		Grps	Inds	Grps	Inds	Grps	Inds	Grps	Inds	Grps	Inds
Waterfowl		0	0	1	15	0	0	0	0	1	15
mallard	<i>Anas platyrhynchos</i>	0	0	1	15	0	0	0	0	1	15
Shorebirds		1	2	3	3	3	4	0	0	7	9
killdeer	<i>Charadrius vociferus</i>	1	2	1	1	1	1	0	0	3	4
unidentified shorebird		0	0	1	1	1	2	0	0	2	3
Wilson's snipe	<i>Gallinago delicata</i>	0	0	1	1	1	1	0	0	2	2
Gulls/Terns		0	0	0	0	4	5	0	0	4	5
Herring gull	<i>Larus argentatus</i>	0	0	0	0	1	1	0	0	1	1
ring-billed gull	<i>Larus delawarensis</i>	0	0	0	0	3	4	0	0	3	4
Diurnal Raptors		1	1	1	1	0	0	1	1	3	3
American kestrel	<i>Falco sparverius</i>	0	0	0	0	0	0	1	1	1	1
broad-winged hawk	<i>Buteo platypterus</i>	0	0	1	1	0	0	0	0	1	1
sharp-shinned hawk	<i>Accipiter striatus</i>	1	1	0	0	0	0	0	0	1	1
Upland Game Birds		4	4	4	4	1	1	3	3	12	12
ruffed grouse	<i>Bonasa umbellus</i>	4	4	3	3	1	1	2	2	10	10
wild turkey	<i>Meleagris gallopavo</i>	0	0	1	1	0	0	1	1	2	2
Doves/Pigeons		2	2	2	8	0	0	1	1	5	11
mourning dove	<i>Zenaida macroura</i>	1	1	0	0	0	0	0	0	1	1
rock pigeon	<i>Columba livia</i>	1	1	2	8	0	0	1	1	4	10
Passerines		378	430	415	469	371	430	207	233	1,371	1,562
<u>Unidentified Passerines</u>		<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>
unidentified passerine		0	0	0	0	1	1	0	0	1	1
<u>Blackbirds/Orioles</u>		<i>32</i>	<i>38</i>	<i>41</i>	<i>47</i>	<i>57</i>	<i>70</i>	<i>23</i>	<i>31</i>	<i>153</i>	<i>186</i>
Baltimore oriole	<i>Icterus galbula</i>	1	1	0	0	2	2	0	0	3	3
bobolink	<i>Dolichonyx oryzivorus</i>	20	26	31	36	39	45	8	12	98	119
common grackle	<i>Quiscalus quiscula</i>	1	1	0	0	0	0	5	9	6	10
eastern meadowlark	<i>Sturnella magna</i>	3	3	1	1	6	8	3	3	13	15
European starling	<i>Sturnus vulgaris</i>	0	0	1	1	0	0	0	0	1	1
red-winged blackbird	<i>Agelaius phoeniceus</i>	7	7	8	9	10	15	7	7	32	38
<u>Creepers/Nuthatches</u>		<i>5</i>	<i>5</i>	<i>11</i>	<i>12</i>	<i>6</i>	<i>6</i>	<i>9</i>	<i>9</i>	<i>31</i>	<i>32</i>
brown creeper	<i>Certhia americana</i>	0	0	5	5	2	2	2	2	9	9

Appendix A1. Total number of groups and individuals for each bird type, passerine subtype, and species during the breeding bird surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

Bird Type / Species	Scientific Name	Visit 1		Visit 2		Visit 3		Visit 4		Overall	
		Grps	Inds	Grps	Inds	Grps	Inds	Grps	Inds	Grps	Inds
red-breasted nuthatch	<i>Sitta canadensis</i>	3	3	6	7	1	1	5	5	15	16
white-breasted nuthatch	<i>Sitta carolinensis</i>	2	2	0	0	3	3	2	2	7	7
<u>Finches/Crossbills</u>		4	5	7	9	11	11	6	7	28	32
American goldfinch	<i>Spinus tristis</i>	4	5	6	8	7	7	4	5	21	25
purple finch	<i>Haemorhous purpureus</i>	0	0	1	1	4	4	2	2	7	7
<u>Flycatchers</u>		6	6	11	12	8	8	2	2	27	28
alder flycatcher	<i>Empidonax alnorum</i>	0	0	2	2	0	0	0	0	2	2
eastern kingbird	<i>Tyrannus tyrannus</i>	0	0	1	2	0	0	0	0	1	2
eastern phoebe	<i>Sayornis phoebe</i>	0	0	0	0	2	2	0	0	2	2
eastern wood-pewee	<i>Contopus virens</i>	3	3	5	5	4	4	1	1	13	13
great crested flycatcher	<i>Myiarchus crinitus</i>	3	3	3	3	1	1	1	1	8	8
least flycatcher	<i>Empidonax minimus</i>	0	0	0	0	1	1	0	0	1	1
<u>Gnatcatchers/Kinglet</u>		4	4	2	2	2	4	2	2	10	12
golden-crowned kinglet	<i>Regulus satrapa</i>	4	4	2	2	2	4	2	2	10	12
<u>Grassland/Sparrows</u>		38	46	66	73	48	57	37	39	189	215
chipping sparrow	<i>Spizella passerina</i>	1	3	1	1	1	1	0	0	3	5
dark-eyed junco	<i>Junco hyemalis</i>	0	0	0	0	0	0	1	1	1	1
	<i>Passerculus</i>										
Savannah sparrow	<i>sandwichensis</i>	20	23	32	34	27	30	21	23	100	110
song sparrow	<i>Melospiza melodia</i>	4	4	15	18	13	14	7	7	39	43
unidentified sparrow		2	3	2	3	1	1	0	0	5	7
white-throated sparrow	<i>Zonotrichia albicollis</i>	11	13	16	17	6	11	8	8	41	49
<u>Mimids</u>		0	0	1	1	3	3	0	0	4	4
brown thrasher	<i>Toxostoma rufum</i>	0	0	0	0	1	1	0	0	1	1
gray catbird	<i>Dumetella carolinensis</i>	0	0	0	0	1	1	0	0	1	1
northern mockingbird	<i>Mimus polyglottos</i>	0	0	1	1	1	1	0	0	2	2
<u>Swallows</u>		2	3	1	2	3	3	1	1	7	9
barn swallow	<i>Hirundo rustica</i>	0	0	1	2	2	2	1	1	4	5
tree swallow	<i>Tachycineta bicolor</i>	2	3	0	0	1	1	0	0	3	4
<u>Tanagers</u>		8	8	9	9	5	5	5	5	27	27
indigo bunting	<i>Passerina cyanea</i>	4	4	4	4	2	2	2	2	12	12

Appendix A1. Total number of groups and individuals for each bird type, passerine subtype, and species during the breeding bird surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

Bird Type / Species	Scientific Name	Visit 1		Visit 2		Visit 3		Visit 4		Overall	
		Grps	Inds	Grps	Inds	Grps	Inds	Grps	Inds	Grps	Inds
scarlet tanager	<i>Piranga olivacea</i>	4	4	5	5	3	3	3	3	15	15
<u>Grosbeaks</u>		5	5	2	2	3	3	4	4	14	14
rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	5	5	2	2	3	3	4	4	14	14
<u>Cardinals</u>		0	0	1	1	0	0	0	0	1	1
northern cardinal	<i>Cardinalis cardinalis</i>	0	0	1	1	0	0	0	0	1	1
<u>Thrushes</u>		34	35	37	39	36	37	21	21	128	132
American robin	<i>Turdus migratorius</i>	10	10	8	8	8	9	8	8	34	35
hermit thrush	<i>Catharus guttatus</i>	5	5	16	18	7	7	9	9	37	39
veery	<i>Catharus fuscescens</i>	10	11	9	9	6	6	3	3	28	29
wood thrush	<i>Hylocichla mustelina</i>	9	9	4	4	15	15	1	1	29	29
<u>Titmice/Chickadees</u>		14	21	20	31	9	12	10	15	53	79
black-capped chickadee	<i>Poecile atricapilla</i>	14	21	20	31	9	12	10	15	53	79
<u>Vireos</u>		44	48	44	48	46	47	22	23	156	166
blue-headed vireo	<i>Vireo solitarius</i>	3	3	1	1	3	3	4	5	11	12
red-eyed vireo	<i>Vireo olivaceus</i>	39	43	41	45	43	44	18	18	141	150
warbling vireo	<i>Vireo gilvus</i>	1	1	2	2	0	0	0	0	3	3
yellow-throated vireo	<i>Vireo flavifrons</i>	1	1	0	0	0	0	0	0	1	1
<u>Warblers</u>		152	163	136	137	106	106	52	53	446	459
American redstart	<i>Setophaga ruticilla</i>	1	1	2	2	0	0	2	2	5	5
black-and-white warbler	<i>Mniotilta varia</i>	9	9	3	3	0	0	0	0	12	12
black-throated blue warbler	<i>Setophaga caerulescens</i>	2	2	5	5	3	3	1	1	11	11
black-throated green warbler	<i>Setophaga virens</i>	17	18	19	19	17	17	7	7	60	61
Blackburnian warbler	<i>Setophaga fusca</i>	7	7	8	8	7	7	5	5	27	27
Canada warbler	<i>Cardellina canadensis</i>	3	3	1	1	1	1	0	0	5	5
chestnut-sided warbler	<i>Setophaga pensylvanica</i>	26	28	25	26	12	12	6	6	69	72
common yellowthroat	<i>Geothlypis trichas</i>	16	20	9	9	7	7	4	4	36	40
hooded warbler	<i>Setophaga citrina</i>	1	1	2	2	1	1	0	0	4	4
Louisiana waterthrush	<i>Parkesia motacilla</i>	1	1	0	0	0	0	0	0	1	1
magnolia warbler	<i>Setophaga magnolia</i>	1	1	4	4	4	4	4	4	13	13
mourning warbler	<i>Geothlypis philadelphia</i>	4	5	4	4	2	2	1	1	11	12
Nashville warbler	<i>Oreothlypis ruficapilla</i>	2	2	5	5	2	2	1	2	10	11

Appendix A1. Total number of groups and individuals for each bird type, passerine subtype, and species during the breeding bird surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

Bird Type / Species	Scientific Name	Visit 1		Visit 2		Visit 3		Visit 4		Overall	
		Grps	Inds	Grps	Inds	Grps	Inds	Grps	Inds	Grps	Inds
northern Parula	<i>Setophaga americana</i>	0	0	0	0	1	1	0	0	1	1
ovenbird	<i>Seiurus aurocapilla</i>	44	45	43	43	42	42	17	17	146	147
prairie warbler	<i>Setophaga discolor</i>	2	2	0	0	0	0	0	0	2	2
Tennessee warbler	<i>Oreothlypis peregrina</i>	0	0	0	0	1	1	0	0	1	1
unidentified warbler		6	7	0	0	0	0	0	0	6	7
Wilson's warbler	<i>Cardellina pusilla</i>	2	2	0	0	0	0	0	0	2	2
yellow-rumped warbler	<i>Setophaga coronata</i>	7	8	6	6	5	5	4	4	22	23
yellow warbler	<i>Setophaga petechia</i>	1	1	0	0	1	1	0	0	2	2
<u>Waxwings</u>		8	16	11	28	8	38	0	0	27	82
cedar waxwing	<i>Bombycilla cedrorum</i>	8	16	11	28	8	38	0	0	27	82
<u>Wrens</u>		5	5	7	7	10	10	4	4	26	26
house wren	<i>Troglodytes aedon</i>	0	0	0	0	1	1	0	0	1	1
winter wren	<i>Troglodytes hiemalis</i>	5	5	7	7	9	9	4	4	25	25
<u>Corvids</u>		17	22	8	9	9	9	9	17	43	57
American crow	<i>Corvus brachyrhynchos</i>	6	10	2	3	2	2	4	9	14	24
blue jay	<i>Cyanocitta cristata</i>	9	10	6	6	7	7	4	6	26	29
common raven	<i>Corvus corax</i>	2	2	0	0	0	0	1	2	3	4
Cuckoos		1	1	0	0	0	0	0	0	1	1
	<i>Coccyzus</i>										
black-billed cuckoo	<i>erythrophthalmus</i>	1	1	0	0	0	0	0	0	1	1
Woodpeckers		7	7	10	11	16	16	7	7	40	41
downy woodpecker	<i>Picoides pubescens</i>	2	2	5	6	3	3	1	1	11	12
hairy woodpecker	<i>Picoides villosus</i>	4	4	2	2	1	1	2	2	9	9
northern flicker	<i>Colaptes auratus</i>	1	1	1	1	3	3	1	1	6	6
pileated woodpecker	<i>Dryocopus pileatus</i>	0	0	2	2	1	1	0	0	3	3
unidentified woodpecker		0	0	0	0	2	2	0	0	2	2
yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	0	0	0	0	6	6	3	3	9	9
Overall		394	447	436	511	395	456	219	245	1,444	1,659

Appendix A2. Mean bird use (number of birds/transect/survey), percent of total use, and frequency of occurrence for all bird types, passerine subtypes, and species during the breeding bird surveys at the Jericho Rise Wind Farm; May 29 – July 8, 2015.

Birdy Type / Species	Scientific Name	Mean Use	% of Use	% Frequency
Waterfowl		0.14	0.9	1.0
mallard	<i>Anas platyrhynchos</i>	0.14	0.9	1.0
Shorebirds		0.08	0.5	4.8
killdeer	<i>Charadrius vociferus</i>	0.04	0.2	2.9
unidentified shorebird		0.03	0.2	1.9
Wilson's snipe	<i>Gallinago delicata</i>	<0.01	<0.1	1.0
Gulls/Terns		0.05	0.3	2.9
Herring gull	<i>Larus argentatus</i>	<0.01	<0.1	1.0
ring-billed gull	<i>Larus delawarensis</i>	0.04	0.2	1.9
Diurnal Raptors		0.03	0.2	2.9
American kestrel	<i>Falco sparverius</i>	<0.01	<0.1	1.0
broad-winged hawk	<i>Buteo platypterus</i>	<0.01	<0.1	1.0
sharp-shinned hawk	<i>Accipiter striatus</i>	<0.01	<0.1	1.0
Upland Game Birds		0.11	0.7	9.6
ruffed grouse	<i>Bonasa umbellus</i>	0.10	0.6	8.7
wild turkey	<i>Meleagris gallopavo</i>	<0.01	<0.1	1.0
Doves/Pigeons		0.11	0.7	4.8
mourning dove	<i>Zenaida macroura</i>	<0.01	<0.1	1.0
rock pigeon	<i>Columba livia</i>	0.10	0.6	3.8
Passerines		15.01	94.3	95.2
<u>Unidentified Passerines</u>		<i><0.01</i>	<i><0.1</i>	<i>1.0</i>
Unidentified Passerine		<0.01	<0.1	1.0
<u>Blackbirds/Orioles</u>		1.79	11.2	35.6
Baltimore oriole	<i>Icterus galbula</i>	0.03	0.2	1.9
bobolink	<i>Dolichonyx oryzivorus</i>	1.14	7.2	26.9
common grackle	<i>Quiscalus quiscula</i>	0.10	0.6	5.8
eastern meadowlark	<i>Sturnella magna</i>	0.14	0.9	3.8
European starling	<i>Sturnus vulgaris</i>	<0.01	<0.1	1.0
red-winged blackbird	<i>Agelaius phoeniceus</i>	0.37	2.3	13.5
<u>Creepers/Nuthatches</u>		0.31	1.9	22.1
brown creeper	<i>Certhia americana</i>	0.09	0.5	8.7
red-breasted nuthatch	<i>Sitta canadensis</i>	0.15	1.0	11.5
white-breasted nuthatch	<i>Sitta carolinensis</i>	0.07	0.4	4.8
<u>Finches/Crossbills</u>		0.31	1.9	24.0
American goldfinch	<i>Spinus tristis</i>	0.24	1.5	17.3
purple finch	<i>Haemorhous purpureus</i>	0.07	0.4	6.7
<u>Flycatchers</u>		0.27	1.7	20.2
alder flycatcher	<i>Empidonax alnorum</i>	0.02	0.1	1.9
eastern kingbird	<i>Tyrannus tyrannus</i>	0.02	0.1	1.0
eastern phoebe	<i>Sayornis phoebe</i>	0.02	0.1	1.9
eastern wood-pewee	<i>Contopus virens</i>	0.12	0.8	10.6
great crested flycatcher	<i>Myiarchus crinitus</i>	0.08	0.5	6.7
least flycatcher	<i>Empidonax minimus</i>	<0.01	<0.1	1.0
<u>Gnatcatchers/Kinglet</u>		0.12	0.7	6.7

Appendix A2. Mean bird use (number of birds/transect/survey), percent of total use, and frequency of occurrence for all bird types, passerine subtypes, and species during the breeding bird surveys at the Jericho Rise Wind Farm; May 29 – July 8, 2015.

Birdy Type / Species	Scientific Name	Mean Use	% of Use	% Frequency
golden-crowned kinglet	<i>Regulus satrapa</i>	0.12	0.7	6.7
<u>Grassland/Sparrows</u>		2.07	13.0	61.5
chipping sparrow	<i>Spizella passerina</i>	0.05	0.3	2.9
dark-eyed junco	<i>Junco hyemalis</i>	<0.01	<0.1	1.0
	<i>Passerculus</i>			
Savannah sparrow	<i>sandwichensis</i>	1.06	6.6	33.7
song sparrow	<i>Melospiza melodia</i>	0.41	2.6	26.9
unidentified sparrow		0.07	0.4	4.8
white-throated sparrow	<i>Zonotrichia albicollis</i>	0.47	3.0	26.9
<u>Mimids</u>		0.04	0.2	2.9
brown thrasher	<i>Toxostoma rufum</i>	<0.01	<0.1	1.0
gray catbird	<i>Dumetella carolinensis</i>	<0.01	<0.1	1.0
northern mockingbird	<i>Mimus polyglottos</i>	0.02	0.1	1.9
<u>Swallows</u>		0.09	0.5	4.8
barn swallow	<i>Hirundo rustica</i>	0.05	0.3	2.9
tree swallow	<i>Tachycineta bicolor</i>	0.04	0.2	1.9
<u>Tanagers</u>		0.26	1.6	18.3
indigo bunting	<i>Passerina cyanea</i>	0.12	0.7	9.6
scarlet tanager	<i>Piranga olivacea</i>	0.14	0.9	9.6
<u>Grosbeaks</u>		0.13	0.8	11.5
rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	0.13	0.8	11.5
<u>Cardinals</u>		<0.01	<0.1	1.0
northern cardinal	<i>Cardinalis cardinalis</i>	<0.01	<0.1	1.0
<u>Thrushes</u>		1.26	7.9	50.0
American robin	<i>Turdus migratorius</i>	0.33	2.1	22.1
hermit thrush	<i>Catharus guttatus</i>	0.38	2.4	20.2
veery	<i>Catharus fuscescens</i>	0.28	1.8	13.5
wood thrush	<i>Hylocichla mustelina</i>	0.28	1.8	14.4
<u>Titmice/Chickadees</u>		0.76	4.8	33.7
black-capped chickadee	<i>Poecile atricapilla</i>	0.76	4.8	33.7
<u>Vireos</u>		1.60	10.0	54.8
blue-headed vireo	<i>Vireo solitarius</i>	0.12	0.7	9.6
red-eyed vireo	<i>Vireo olivaceus</i>	1.44	9.1	52.9
warbling vireo	<i>Vireo gilvus</i>	0.03	0.2	2.9
yellow-throated vireo	<i>Vireo flavifrons</i>	<0.01	<0.1	1.0
<u>Warblers</u>		4.41	27.7	81.7
American redstart	<i>Setophaga ruticilla</i>	0.05	0.3	4.8
black-and-white warbler	<i>Mniotilta varia</i>	0.12	0.7	7.7
black-throated blue warbler	<i>Setophaga caerulescens</i>	0.11	0.7	8.7
black-throated green warbler	<i>Setophaga virens</i>	0.59	3.7	27.9
Blackburnian warbler	<i>Setophaga fusca</i>	0.26	1.6	17.3
Canada warbler	<i>Cardellina canadensis</i>	0.05	0.3	3.8
chestnut-sided warbler	<i>Setophaga pensylvanica</i>	0.69	4.3	36.5
common yellowthroat	<i>Geothlypis trichas</i>	0.38	2.4	26.9

Appendix A2. Mean bird use (number of birds/transect/survey), percent of total use, and frequency of occurrence for all bird types, passerine subtypes, and species during the breeding bird surveys at the Jericho Rise Wind Farm; May 29 – July 8, 2015.

Birdy Type / Species	Scientific Name	Mean Use	% of Use	% Frequency
hooded warbler	<i>Setophaga citrina</i>	0.04	0.2	3.8
Louisiana waterthrush	<i>Parkesia motacilla</i>	<0.01	<0.1	1.0
magnolia warbler	<i>Setophaga magnolia</i>	0.12	0.8	8.7
mourning warbler	<i>Geothlypis philadelphia</i>	0.12	0.7	8.7
Nashville warbler	<i>Oreothlypis ruficapilla</i>	0.11	0.7	7.7
northern Parula	<i>Setophaga americana</i>	<0.01	<0.1	1.0
ovenbird	<i>Seiurus aurocapilla</i>	1.41	8.9	51.0
prairie warbler	<i>Setophaga discolor</i>	0.02	0.1	1.0
Tennessee warbler	<i>Oreothlypis peregrina</i>	<0.01	<0.1	1.0
unidentified warbler		0.07	0.4	4.8
Wilson's warbler	<i>Cardellina pusilla</i>	0.02	0.1	1.0
yellow-rumped warbler	<i>Setophaga coronata</i>	0.22	1.4	13.5
yellow warbler	<i>Setophaga petechia</i>	0.02	0.1	1.9
<u>Waxwings</u>		0.79	5.0	19.2
cedar waxwing	<i>Bombycilla cedrorum</i>	0.79	5.0	19.2
<u>Wrens</u>		0.25	1.6	16.3
house wren	<i>Troglodytes aedon</i>	<0.01	<0.1	1.0
winter wren	<i>Troglodytes hiemalis</i>	0.24	1.5	15.4
<u>Corvids</u>		0.55	3.4	29.8
American crow	<i>Corvus brachyrhynchos</i>	0.23	1.4	11.5
blue jay	<i>Cyanocitta cristata</i>	0.28	1.8	20.2
common raven	<i>Corvus corax</i>	0.04	0.2	2.9
Cuckoos		<0.01	<0.1	1.0
	<i>Coccyzus</i>			
black-billed cuckoo	<i>erythrophthalmus</i>	<0.01	<0.1	1.0
Woodpeckers		0.39	2.5	27.9
downy woodpecker	<i>Picoides pubescens</i>	0.12	0.7	8.7
hairy woodpecker	<i>Picoides villosus</i>	0.09	0.5	8.7
northern flicker	<i>Colaptes auratus</i>	0.06	0.4	5.8
pileated woodpecker	<i>Dryocopus pileatus</i>	0.03	0.2	2.9
unidentified woodpecker		0.02	0.1	1.9
yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	0.09	0.5	7.7
Overall		15.92	100	

Appendix B: Mean Use for each Transect Surveyed during the Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

B1. Number of dominant vegetation blocks along each transect surveyed at the Jericho Rise Wind Farm.

Transect	Dominant Vegetation			Transect	Dominant Vegetation		
	Non-forested	Forest	Classification		Non-forested	Forest	Classification
F1	0	6	Forest	G5	6	0	Non-forested
F2	1	5	Forest	G6	6	0	Non-forested
F3	0	6	Forest	G7	6	0	Non-forested
F4	0	6	Forest	G8	6	0	Non-forested
F5	0	6	Forest	G9	6	0	Non-forested
F6	0	6	Forest	RF1	0	6	Forest
F7	0	6	Forest	RF2	0	6	Forest
F8	0	6	Forest	RF3	0	6	Forest
F9	0	6	Forest	RF4	1	5	Forest
G1	6	0	Non-forested	RG1	6	0	Non-forested
G2	6	0	Non-forested	RG2	6	0	Non-forested
G3	6	0	Non-forested	RG3	6	0	Non-forested
G4	6	0	Non-forested	RG4	4	2	Non-forested

F and G = Treatment or turbine transect; RF and RG = reference transect

B2. Mean use for major bird types observed at each forested turbine transect during breeding bird surveys at the Jericho Rise Wind Farm; May 29 – July 8, 2015.

Bird Type	Survey Transect								
	F1	F2	F3	F4	F5	F6	F7	F8	F9
<u>Waterfowl</u>	0	0	0	0	0	0	0	0	0
<u>Shorebirds</u>	0	0	0	0	0	0.25	0	0	0
<u>Gulls/Terns</u>	0	0	0	0	0.25	0	0	0	0
<u>Diurnal Raptors</u>	0	0	0	0	0	0	0	0	0
<u>Upland Game Birds</u>	0.25	0.50	0.50	0	0	0	0	0	0.50
<u>Doves/Pigeons</u>	0	0	0	0	0	0	0.25	0	0
<u>Passerines</u>	18.00	15.25	25.50	18.00	12.50	19.00	20.75	16.00	24.00
Unidentified Passerines	0	0	0	0	0	0	0	0	0
Blackbirds/Orioles	0.25	0.50	0	0	0	0	0	0	0
Creepers/Nuthatches	0.50	0	0.75	1.25	0.25	0.25	0.50	1.25	0.25
Finches/Crossbills	0	0	0.50	0.25	0	0.25	0.25	0.25	0.25
Flycatchers	1.00	0.50	0	1.00	0	0.25	0	0	0.25
Gnatcatchers/Kinglet	0	0	0	0	0	0.50	1.50	0	0.25
Grassland/Sparrows	1.50	1.00	1.75	0	0	0.25	0	1.25	3.00
Mimids	0	0	0	0	0	0	0	0	0
Swallows	0	0	0	0	0	0	0	0	0
Tanagers	0.75	1.00	0.50	0.75	0	0	0	0	0
Grosbeaks	0.25	0.25	1.00	0.50	0	0.75	0.50	0	0.25
Cardinals	0	0	0	0	0	0	0	0	0
Thrushes	3.25	3.00	3.25	1.00	0.75	2.00	3.25	1.50	1.00
Titmice/Chickadees	2.00	0.75	3.00	0.50	1.00	3.00	0.50	2.75	1.00
Vireos	2.25	1.75	3.25	4.75	3.00	4.50	3.25	0	2.75
Warblers	5.50	5.75	11.25	6.75	5.00	6.00	10.00	7.25	7.50
Waxwings	0.50	0.75	0	0.75	2.50	0	0.25	0	7.25
Wrens	0	0	0	0.50	0	0.50	0	0.75	0
Corvids	0.25	0	0.25	0	0	0.75	0.75	1.00	0.25
<u>Cuckoos</u>	0	0	0	0	0	0	0	0.25	0
<u>Woodpeckers</u>	0.50	0.75	0.75	1.00	0.75	1.00	0.50	0.75	0.25
All Birds	18.75	16.50	26.75	19.00	13.50	20.25	21.50	17.00	24.75

B2 (cont). Mean use for major bird types observed at each non-forested turbine transect during breeding bird surveys at the Jericho Rise Wind Farm; May 29 – July 8, 2015.

Bird Type	Survey Transect								
	G1	G2	G3	G4	G5	G6	G7	G8	G9
<u>Waterfowl</u>	3.75	0	0	0	0	0	0	0	0
<u>Shorebirds</u>	0.25	0	0	0	0.50	0	0	0	0
<u>Gulls/Terns</u>	0	0	0	0.25	0	0	0.75	0	0
<u>Diurnal Raptors</u>	0	0	0	0	0.25	0	0	0	0
<u>Upland Game Birds</u>	0	0	0.25	0	0.25	0	0	0	0
<u>Doves/Pigeons</u>	1.50	0	0.75	0	0	0	0	0.25	0
<u>Passerines</u>	18.00	2.75	14.75	15.00	8.50	7.50	12.50	17.75	3.25
Unidentified Passerines	0	0	0	0	0.25	0	0	0	0
Blackbirds/Orioles	7.50	0.25	6.00	4.00	0.25	0.50	6.00	4.25	0
Creepers/Nuthatches	0	0	0	0	0.25	0	0	0	0
Finches/Crossbills	0.25	0.25	0.50	1.00	0.50	0.25	0	1.50	0.50
Flycatchers	0	0	0	0.25	0.50	0	0	0.25	0.25
Gnatcatchers/Kinglet	0	0	0	0	0	0	0	0	0
Grassland/Sparrows	2.25	0	3.25	4.50	2.00	3.75	5.00	6.50	0
Mimids	0.25	0	0	0	0.50	0	0	0	0
Swallows	0	0	0	0	0	1.00	0	0.75	0
Tanagers	0.25	0.25	0	0.25	0	0.25	0.25	0	0
Grosbeaks	0	0	0	0	0	0	0	0	0
Cardinals	0.25	0	0	0	0	0	0	0	0
Thrushes	1.50	1.00	0.75	0	0.50	0	0	0.25	0
Titmice/Chickadees	0	0	0.25	1.00	0	0	0	0.75	0
Vireos	1.25	0.50	0	0	0.50	0	0	0	1.25
Warblers	3.00	0.25	2.00	2.00	2.50	1.25	0.75	2.00	1.00
Waxwings	0.25	0	1.25	1.75	0.25	0	0	0.50	0
Wrens	0.25	0	0.25	0	0	0	0	0	0
Corvids	1.00	0.25	0.50	0.25	0.50	0.50	0.50	1.00	0.25
<u>Cuckoos</u>	0	0	0	0	0	0	0	0	0
<u>Woodpeckers</u>	0	0	0.25	0.25	0	0	0	0.25	0.75
All Birds	23.50	2.75	16.00	15.50	9.50	7.50	13.25	18.25	4.00

B3. Mean use for major bird types observed at each forested (RF) and non-forested (RG) reference transect during breeding bird surveys at the Jericho Rise Wind Farm; May 29 – July 8, 2015.

Bird Type	Survey Transect							
	RF1	RF2	RF3	RF4	RG1	RG2	RG3	RG4
<u>Waterfowl</u>	0	0	0	0	0	0	0	0
<u>Shorebirds</u>	0.50	0	0	0	0.50	0	0	0
<u>Gulls/Terns</u>	0	0	0	0	0	0	0	0
<u>Diurnal Raptors</u>	0	0	0	0.25	0.25	0	0	0
<u>Upland Game Birds</u>	0.25	0.25	0	0	0	0	0	0
<u>Doves/Pigeons</u>	0	0	0	0	0	0	0	0
<u>Passerines</u>	22.75	17.75	10.25	27.50	18.00	0	12.00	13.00
Unidentified Passerines	0	0	0	0	0	0	0	0
Blackbirds/Orioles	0.25	0	0	0	8.75	0	7.00	1.00
Creepers/Nuthatches	0.50	1.00	0	1.25	0	0	0	0
Finches/Crossbills	0.25	0.25	0	0.75	0.25	0	0	0
Flycatchers	0.75	1.50	0	0	0	0	0.50	0
Gnatcatchers/Kinglet	0	0	0	0.75	0	0	0	0
Grassland/Sparrows	0.75	0.75	0.50	2.00	7.75	0	2.25	3.75
Mimids	0	0	0	0	0	0	0.25	0
Swallows	0	0	0	0	0.50	0	0	0
Tanagers	1.25	0.50	0	0	0.25	0	0	0.50
Grosbeaks	0	0	0	0	0	0	0	0
Cardinals	0	0	0	0	0	0	0	0
Thrushes	2.50	2.50	2.25	1.75	0.25	0	0	0.50
Titmice/Chickadees	1.25	0.50	0.50	0.75	0	0	0	0.25
Vireos	3.00	4.25	2.00	3.00	0	0	0	0.25
Warblers	8.25	4.50	5.00	12.5	0.25	0	0.75	3.75
Waxwings	1.00	0	0	2.75	0	0	0.75	0
Wrens	2.00	0.25	0	2.00	0	0	0	0
Corvids	1.00	1.75	0	0	0	0	0.50	3.00
<u>Cuckoos</u>	0	0	0	0	0	0	0	0
<u>Woodpeckers</u>	0.25	0.50	0.25	1.25	0	0	0	0.25
All Birds	23.75	18.50	10.50	29.00	18.75	0	12.00	13.25

**Appendix C: The Difference between Mean Use Recorded at Turbine and Reference Transects by
Vegetation Type for Passerine Subtypes and Passerine Species Observed during Breeding
Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015**

Appendix C1. The Difference between Mean Use Recorded at Turbine and Reference Transects by Vegetation Type for Passerine Subtypes Observed during Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015. Statistically significant differences are shown in bold type.

Passerine Subtype	Vegetation Type	Block	Turbine Mean	Reference Mean	Difference of Means	p-value
Blackbirds/Orioles	Forest	1	0	0	0	NA
		2	0.01	0.18	-0.16	0.13
		3	0.01	0	0.01	0.55
		4	0	0	0	NA
		5	0	0	0	NA
		6	0	0	0	NA
	Non-forested	1	0.43	0.39	0.04	0.93
		2	0.29	0.25	0.04	0.86
		3	0.28	0.36	-0.08	0.66
		4	0.21	0.39	-0.18	0.80
		5	0.22	0.32	-0.10	0.63
		6	0.18	0.54	-0.36	0.16
Creepers/Nuthatches	Forest	1	0.08	0.04	0.05	0.53
		2	0.01	0.04	-0.02	0.50
		3	0.04	0.07	-0.03	0.55
		4	0.03	0.07	-0.04	0.33
		5	0.06	0.07	-0.02	0.77
		6	0.06	0.07	-0.02	0.77
	Non-forested	1	0	0	0	NA
		2	0	0	0	NA
		3	0	0	0	NA
		4	0	0	0	NA
		5	0.01	0	0.01	0.55
		6	0	0.04	-0.04	0.11
Finches/Crossbills	Forest	1	0.01	0.04	-0.02	0.50
		2	0	0	0	NA
		3	0.01	0.07	-0.06	0.14
		4	0.04	0.07	-0.03	0.55
		5	0.03	0	0.03	0.38
		6	0	0	0	NA
	Non-forested	1	0.08	0	0.08	0.16
		2	0.01	0	0.01	0.55
		3	0.01	0	0.01	0.55
		4	0.04	0	0.04	0.38
		5	0.10	0	0.10	0.16
		6	0.01	0.04	-0.02	0.50

Appendix C1. The Difference between Mean Use Recorded at Turbine and Reference Transects by Vegetation Type for Passerine Subtypes Observed during Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015. Statistically significant differences are shown in bold type.

Passerine Subtype	Vegetation Type	Block	Turbine Mean	Reference Mean	Difference of Means	p-value
Grassland Sparrows	Forest	1	0.15	0.11	0.05	0.77
		2	0.04	0.29	-0.24	<0.01
		3	0.07	0.14	-0.07	0.09
		4	0.06	0.14	-0.09	0.54
		5	0.10	0.07	0.03	0.56
		6	0.06	0.07	-0.02	0.77
	Non-forested	1	0.36	0.25	0.11	0.36
		2	0.21	0.04	0.17	0.18
		3	0.35	0.36	-0.01	0.28
		4	0.24	0.68	-0.44	0.02
		5	0.17	0.11	0.06	0.47
		6	0.21	0.29	-0.08	0.90
Thrushes	Forest	1	0.29	0.32	-0.03	1.00
		2	0.18	0.36	-0.18	0.32
		3	0.24	0.25	-0.01	0.55
		4	0.13	0.07	0.05	0.83
		5	0.07	0.07	0.00	0.79
		6	0.14	0.21	-0.08	0.38
	Non-forested	1	0.07	0	0.07	0.21
		2	0.01	0	0.01	0.55
		3	0	0	0	NA
		4	0	0	0	NA
		5	0.06	0.04	0.02	0.86
		6	0.10	0.07	0.03	0.84
Titmice/Chickadees	Forest	1	0.17	0.29	-0.12	0.59
		2	0.18	0.04	0.14	0.51
		3	0.01	0.04	-0.02	0.50
		4	0.21	0	0.21	0.05
		5	0.18	0	0.18	0.07
		6	0.04	0.07	-0.03	0.93
	Non-forested	1	0.06	0	0.06	0.21
		2	0	0	0	NA
		3	0	0	0	NA
		4	0.01	0.04	-0.02	0.50
		5	0.06	0	0.06	0.55
		6	0	0	0	NA

Appendix C1. The Difference between Mean Use Recorded at Turbine and Reference Transects by Vegetation Type for Passerine Subtypes Observed during Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015. Statistically significant differences are shown in bold type.

Passerine Subtype	Vegetation Type	Block	Turbine Mean	Reference Mean	Difference of Means	p-value
Vireos	Forest	1	0.35	0.64	-0.30	0.06
		2	0.19	0.11	0.09	0.44
		3	0.19	0.25	-0.06	0.73
		4	0.21	0.29	-0.08	0.55
		5	0.28	0.07	0.21	0.16
		6	0.17	0.25	-0.08	0.28
	Non-forested	1	0.10	0	0.10	0.12
		2	0.01	0	0.01	0.55
		3	0	0	0	NA
		4	0	0	0	NA
		5	0.01	0.04	-0.02	0.50
		6	0.10	0.14	-0.05	0.70
Warblers	Forest	1	0.82	0.89	-0.07	0.18
		2	0.53	0.43	0.10	0.59
		3	0.57	0.64	-0.07	0.81
		4	0.63	1.18	-0.55	0.39
		5	0.47	0.61	-0.13	0.89
		6	0.58	0.64	-0.06	0.81
	Non-forested	1	0.11	0.11	<0.01	0.60
		2	0.11	0	0.11	0.09
		3	0.13	0.14	-0.02	0.86
		4	0.04	0.14	-0.10	0.11
		5	0.17	0	0.17	0.09
		6	0.28	0.21	0.06	0.35
Waxwings	Forest	1	0.21	0.07	0.14	0.51
		2	0.03	0.14	-0.12	0.49
		3	0.06	0.18	-0.12	0.32
		4	0.04	0.07	-0.03	0.51
		5	0.15	0	0.15	0.38
		6	0.15	0	0.15	0.28
	Non-forested	1	0.07	0	0.07	0.38
		2	0.03	0.11	-0.08	0.49
		3	0	0	0	NA
		4	0.03	0	0.03	0.55
		5	0.10	0	0.10	0.28
		6	0.03	0.07	-0.04	0.83

Appendix C2: The Difference between Mean Use Recorded at Turbine and Reference Transects by Vegetation Type for Passerine Species Observed during Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015. Statistically significant differences are shown in bold type.

Species	Vegetation Type	Block	Turbine Mean	Reference Mean	Difference of Means	p-value
American robin	Forest	1	0.08	0.04	0.05	0.53
		2	0.06	0.04	0.02	0.87
		3	0.06	0.04	0.02	0.89
		4	0.01	0.04	-0.02	0.50
		5	0.01	0	0.01	0.55
		6	0.04	0	0.04	0.28
	Non-forested	1	0.01	0	0.01	0.55
		2	0.01	0	0.01	0.55
		3	0	0	0	NA
		4	0	0	0	NA
		5	0.06	0.04	0.02	0.86
		6	0.03	0.07	-0.04	0.33
black-capped chickadee	Forest	1	0.17	0.29	-0.12	0.59
		2	0.18	0.04	0.14	0.51
		3	0.01	0.04	-0.02	0.50
		4	0.21	0	0.21	0.05
		5	0.18	0	0.18	0.07
		6	0.04	0.07	-0.03	0.93
	Non-forested	1	0.06	0	0.06	0.21
		2	0	0	0	NA
		3	0	0	0	NA
		4	0.01	0.04	-0.02	0.50
		5	0.06	0	0.06	0.55
		6	0	0	0	NA
black-throated green warbler	Forest	1	0.08	0.07	0.01	0.85
		2	0.03	0.14	-0.12	0.03
		3	0.11	0.18	-0.07	0.53
		4	0.08	0.32	-0.24	0.05
		5	0.08	0.07	0.01	0.99
		6	0.06	0.14	-0.09	0.15
	Non-forested	1	0	0	0	NA
		2	0	0	0	NA
		3	0	0	0	NA
		4	0	0	0	NA
		5	0	0	0	NA
		6	0.01	0.07	-0.06	0.14

Appendix C2: The Difference between Mean Use Recorded at Turbine and Reference Transects by Vegetation Type for Passerine Species Observed during Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015. Statistically significant differences are shown in bold type.

Species	Vegetation Type	Block	Turbine Mean	Reference Mean	Difference of Means	p-value
bobolink	Forest	1	0	0	0	NA
		2	0	0.18	-0.18	0.02
		3	0.01	0	0.01	0.55
		4	0	0	0	NA
		5	0	0	0	NA
		6	0	0	0	NA
	Non-forested	1	0.31	0.14	0.16	0.64
		2	0.25	0.14	0.11	0.45
		3	0.15	0.25	-0.10	0.63
		4	0.11	0.14	-0.03	0.88
		5	0.10	0.18	-0.08	0.23
		6	0.18	0.36	-0.18	0.68
cedar waxwing	Forest	1	0.21	0.07	0.14	0.51
		2	0.03	0.14	-0.12	0.49
		3	0.06	0.18	-0.12	0.32
		4	0.04	0.07	-0.03	0.51
		5	0.15	0	0.15	0.38
		6	0.15	0	0.15	0.28
	Non-forested	1	0.07	0	0.07	0.38
		2	0.03	0.11	-0.08	0.49
		3	0	0	0	NA
		4	0.03	0	0.03	0.55
		5	0.10	0	0.10	0.28
		6	0.03	0.07	-0.04	0.83
chestnut-sided warbler	Forest	1	0.14	0.11	0.03	0.85
		2	0.03	0.04	<-0.01	0.85
		3	0.03	0.07	-0.04	0.33
		4	0.04	0.11	-0.07	0.53
		5	0.04	0.04	<0.01	0.90
		6	0.10	0	0.10	0.28
	Non-forested	1	0.06	0.07	-0.02	0.77
		2	0.07	0	0.07	0.21
		3	0.03	0.14	-0.12	0.10
		4	0.01	0.04	-0.02	0.50
		5	0.06	0	0.06	0.28
		6	0.14	0.07	0.07	0.44

Appendix C2: The Difference between Mean Use Recorded at Turbine and Reference Transects by Vegetation Type for Passerine Species Observed during Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015. Statistically significant differences are shown in bold type.

Species	Vegetation Type	Block	Turbine Mean	Reference Mean	Difference of Means	p-value
common yellowthroat	Forest	1	0.03	0.11	-0.08	0.11
		2	0.01	0.04	-0.02	0.50
		3	0.03	0.11	-0.08	0.31
		4	0	0.11	-0.11	0.02
		5	0.01	0	0.01	0.55
		6	0.01	0.04	-0.02	0.50
	Non-forested	1	0.01	0.04	-0.02	0.50
		2	0.01	0	0.01	0.55
		3	0.07	0	0.07	0.16
		4	0.03	0.11	-0.08	0.04
		5	0.06	0	0.06	0.28
		6	0.07	0	0.07	0.38
hermit thrush	Forest	1	0.07	0.07	<-0.01	0.56
		2	0.04	0.21	-0.17	0.20
		3	0.06	0.14	-0.09	0.35
		4	0.07	0.04	0.03	0.68
		5	0.01	0	0.01	0.55
		6	0.07	0.07	<-0.01	0.98
	Non-forested	1	0	0	0	NA
		2	0	0	0	NA
		3	0	0	0	NA
		4	0	0	0	NA
		5	0	0	0	NA
		6	0.01	0	0.01	0.55
ovenbird	Forest	1	0.28	0.29	-0.01	0.42
		2	0.28	0.11	0.17	0.17
		3	0.24	0.07	0.16	0.16
		4	0.35	0.18	0.17	0.21
		5	0.17	0.18	-0.01	0.56
		6	0.25	0.14	0.11	0.31
	Non-forested	1	0.01	0	0.01	0.55
		2	0.03	0	0.03	0.38
		3	0.01	0	0.01	0.55
		4	0	0	0	NA
		5	0.03	0	0.03	0.38
		6	0.03	0	0.03	0.38

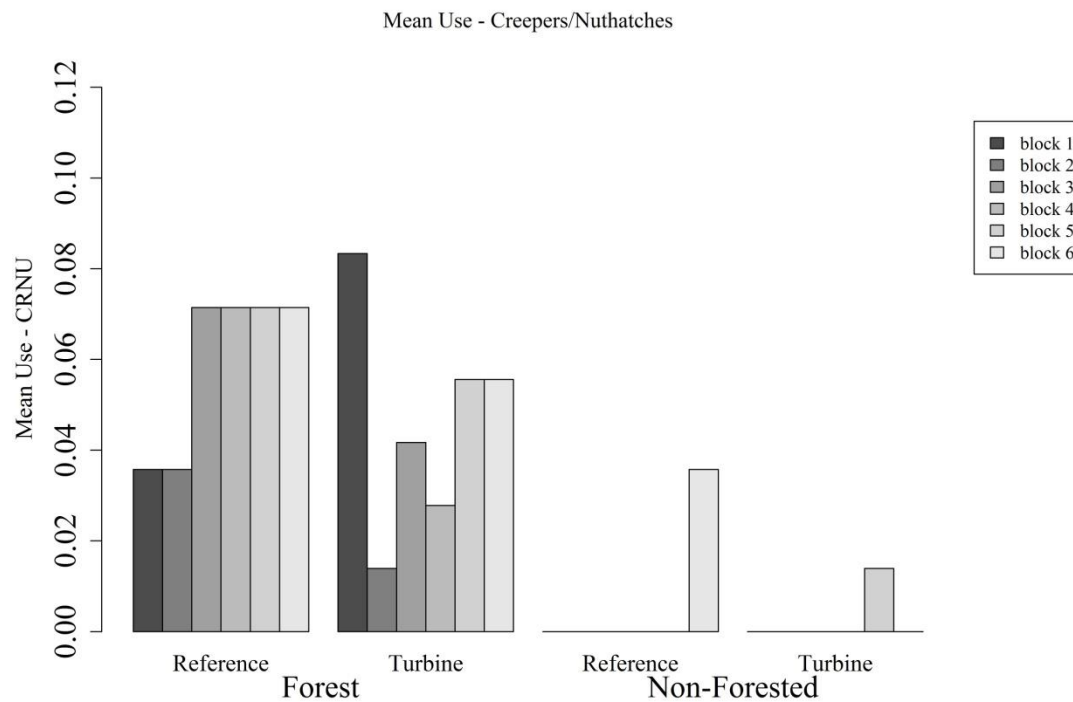
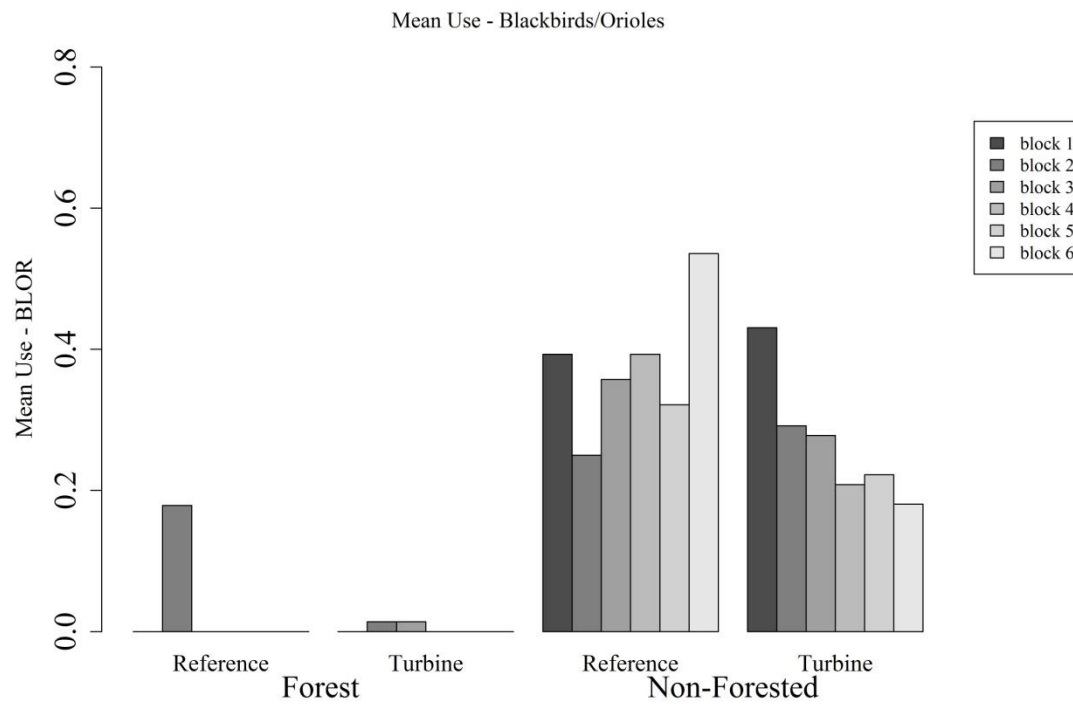
Appendix C2: The Difference between Mean Use Recorded at Turbine and Reference Transects by Vegetation Type for Passerine Species Observed during Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015. Statistically significant differences are shown in bold type.

Species	Vegetation Type	Block	Turbine Mean	Reference Mean	Difference of Means	p-value
red-eyed vireo	Forest	1	0.28	0.64	-0.37	0.02
		2	0.18	0.07	0.11	0.27
		3	0.18	0.25	-0.07	0.60
		4	0.18	0.29	-0.11	0.34
		5	0.24	0.07	0.16	0.26
		6	0.17	0.25	-0.08	0.28
	Non-forested	1	0.08	0	0.08	0.16
		2	0	0	0	NA
		3	0	0	0	NA
		4	0	0	0	NA
		5	0.01	0.04	-0.02	0.50
		6	0.10	0.11	-0.01	0.88
red-winged blackbird	Forest	1	0	0	0	NA
		2	0	0	0	NA
		3	0	0	0	NA
		4	0	0	0	NA
		5	0	0	0	NA
		6	0	0	0	NA
	Non-forested	1	0.13	0.11	0.02	0.77
		2	0.04	0.04	0.01	0.86
		3	0.06	0.11	-0.05	0.84
		4	0.08	0.07	0.01	0.71
		5	0.08	0	0.08	0.21
		6	0	0.04	-0.04	0.11
Savannah sparrow	Forest	1	0	0.04	-0.04	0.11
		2	0	0.14	-0.14	<0.01
		3	0	0	0	NA
		4	0	0	0	NA
		5	0	0	0	NA
		6	0	0	0	NA
	Non-forested	1	0.21	0.21	-0.01	0.57
		2	0.13	0	0.13	0.07
		3	0.25	0.286	-0.04	0.23
		4	0.11	0.54	-0.42	0.13
		5	0.11	0.07	0.04	0.84
		6	0.14	0.21	-0.08	0.98

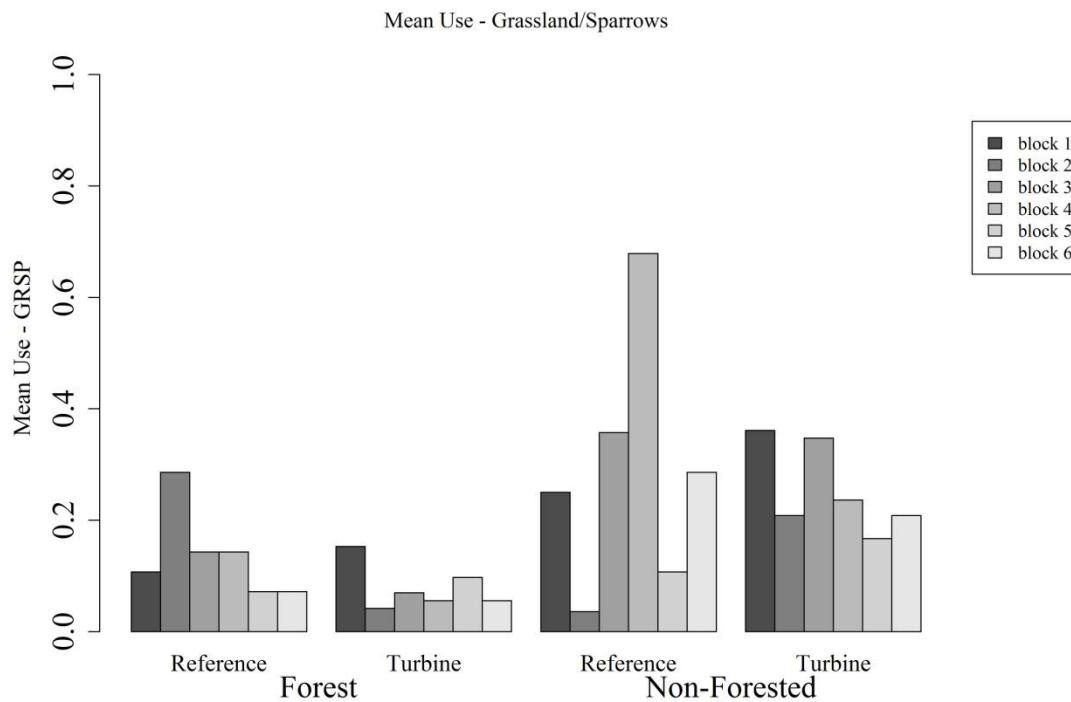
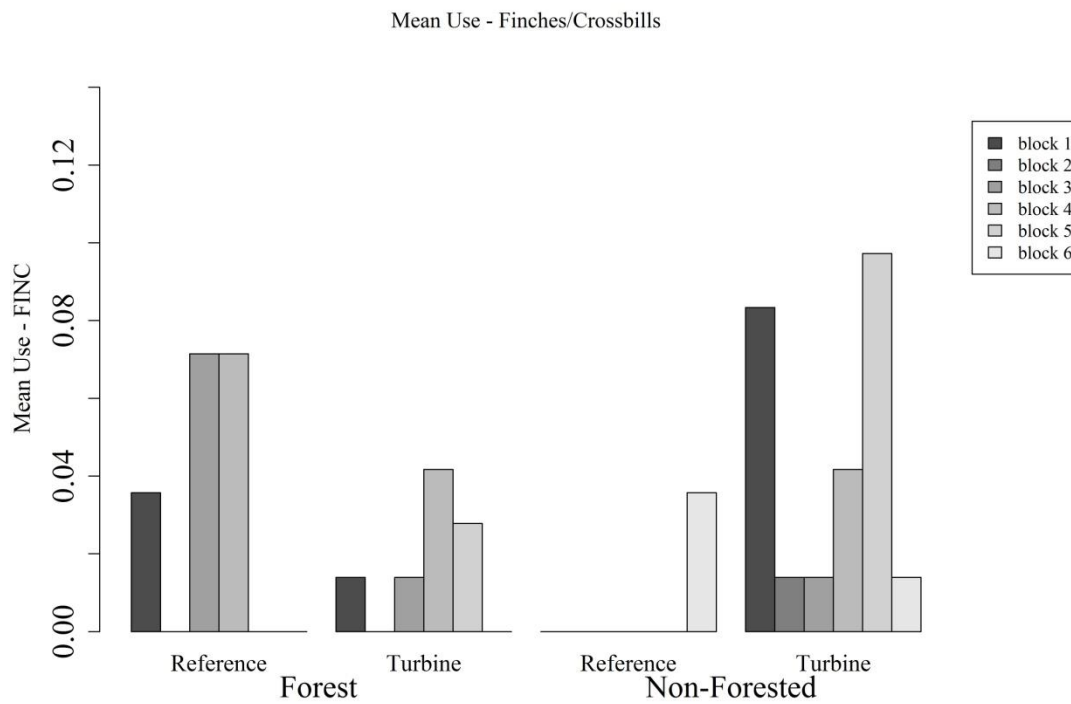
Appendix C2: The Difference between Mean Use Recorded at Turbine and Reference Transects by Vegetation Type for Passerine Species Observed during Breeding Bird Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015. Statistically significant differences are shown in bold type.

Species	Vegetation Type	Block	Turbine Mean	Reference Mean	Difference of Means	p-value
song sparrow	Forest	1	0.03	0	0.03	0.38
		2	0	0.04	-0.04	0.11
		3	0.01	0	0.01	0.55
		4	0.03	0	0.03	0.55
		5	0.01	0	0.01	0.55
		6	0.03	0	0.03	0.38
	Non-forested	1	0.13	0	0.13	0.16
		2	0.07	0.04	0.03	0.53
		3	0.06	0	0.06	0.21
		4	0.07	0.07	<-0.01	0.58
		5	0.03	0	0.03	0.38
		6	0.06	0.07	-0.02	0.77
white-throated sparrow	Forest	1	0.13	0.04	0.09	0.67
		2	0.04	0.07	-0.03	0.34
		3	0.04	0.14	-0.10	0.03
		4	0.03	0.14	-0.12	0.31
		5	0.08	0.07	0.01	0.34
		6	0.03	0.07	-0.04	0.33
	Non-forested	1	0	0	0	NA
		2	0	0	0	NA
		3	0.01	0.07	-0.06	0.49
		4	0	0.07	-0.07	0.02
		5	0.03	0.04	-0.01	0.85
		6	0.01	0	0.014	0.55

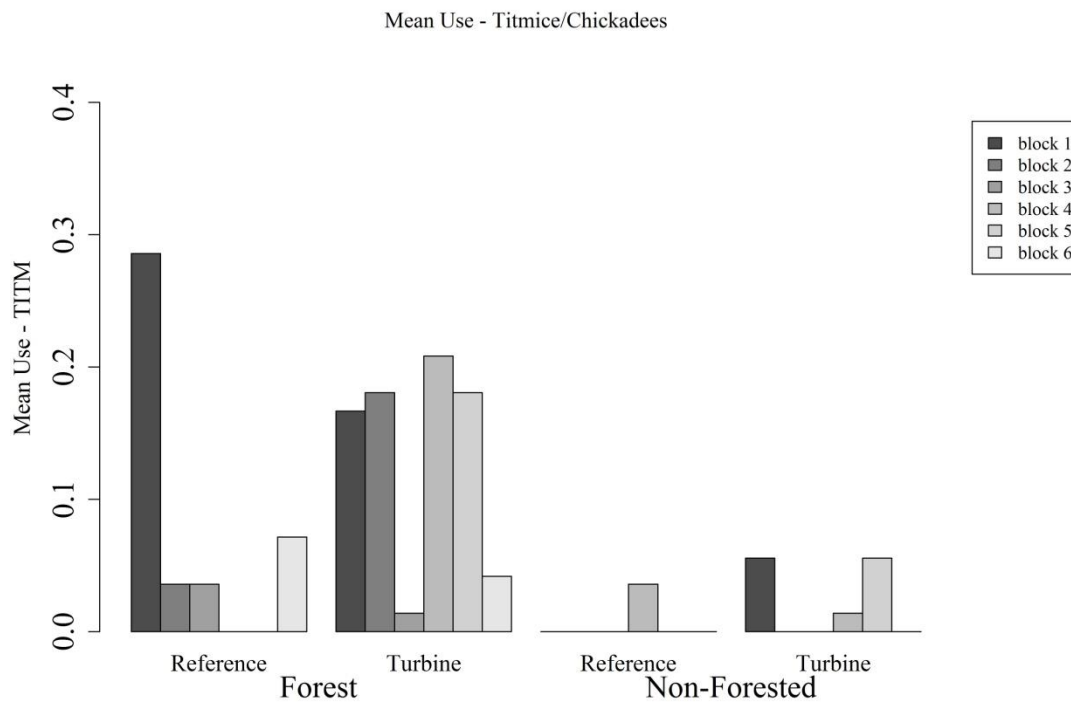
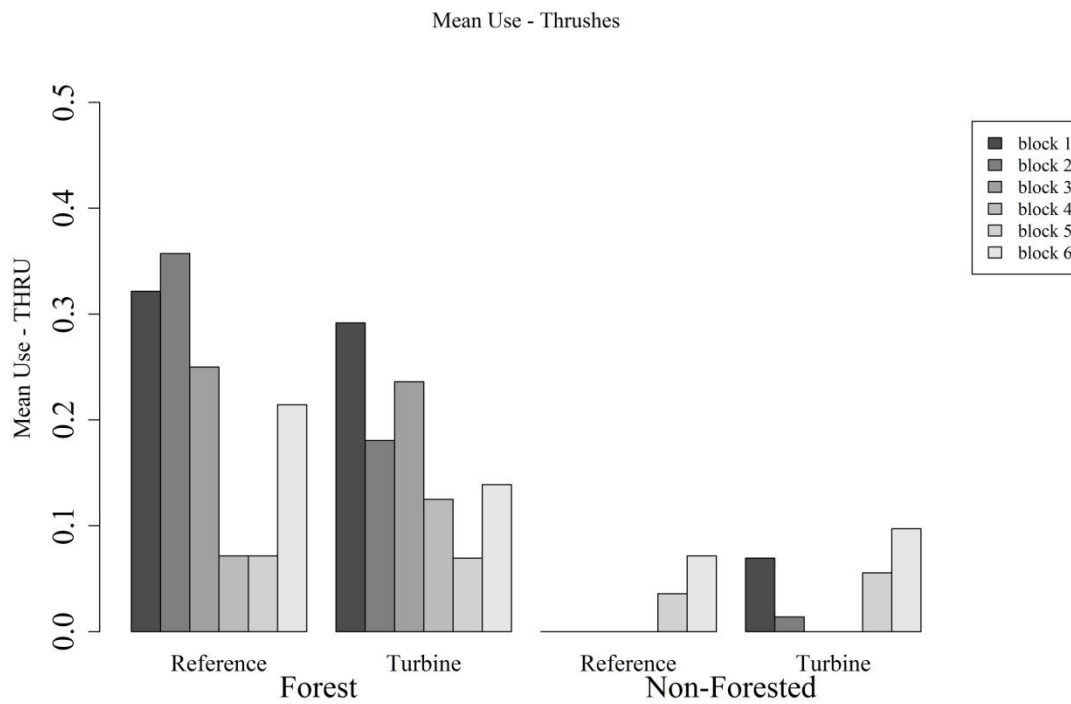
Appendix D: Mean Use by Selected Passerine Subtypes and Species, Separated by Forest and Non-Forest Landcover, at each 50-Meter Block of the Reference and Turbine Transects Surveyed during Transect Surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015



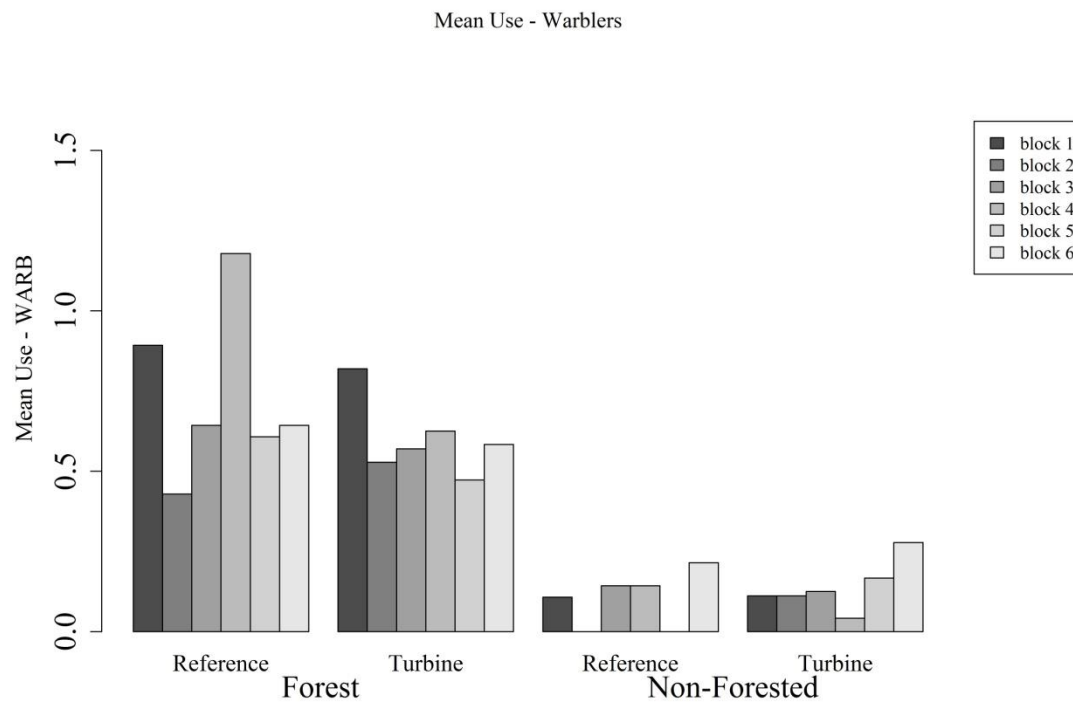
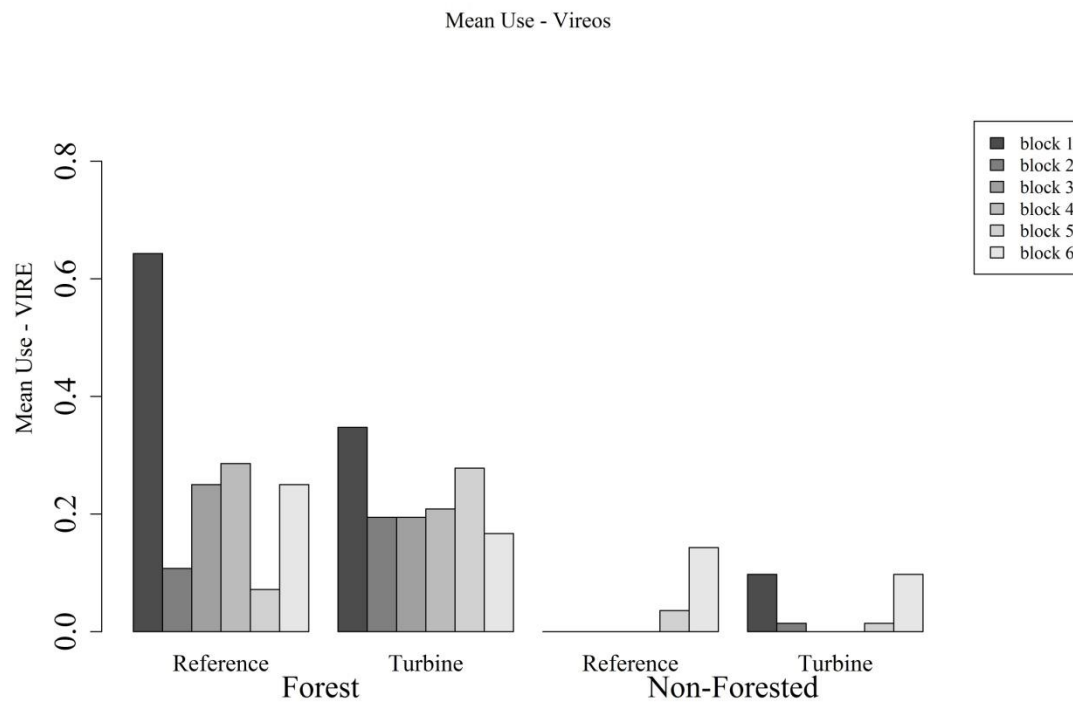
Appendix D1. Mean use by passerine subtypes (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.



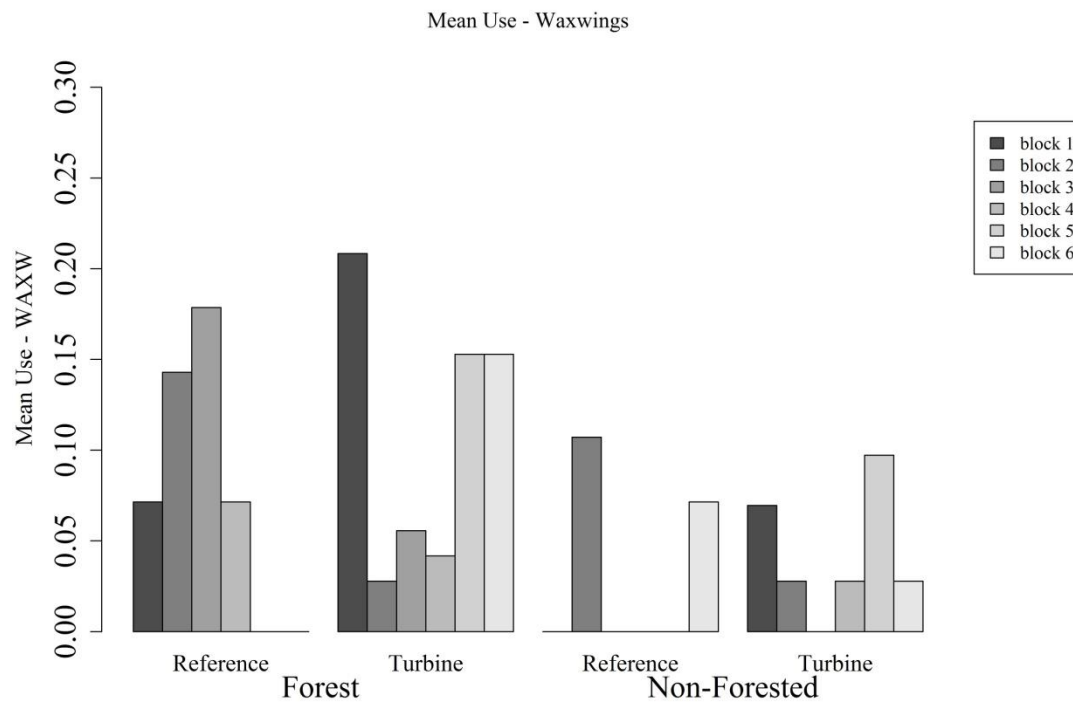
Appendix D1. Mean use by passerine subtypes (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.



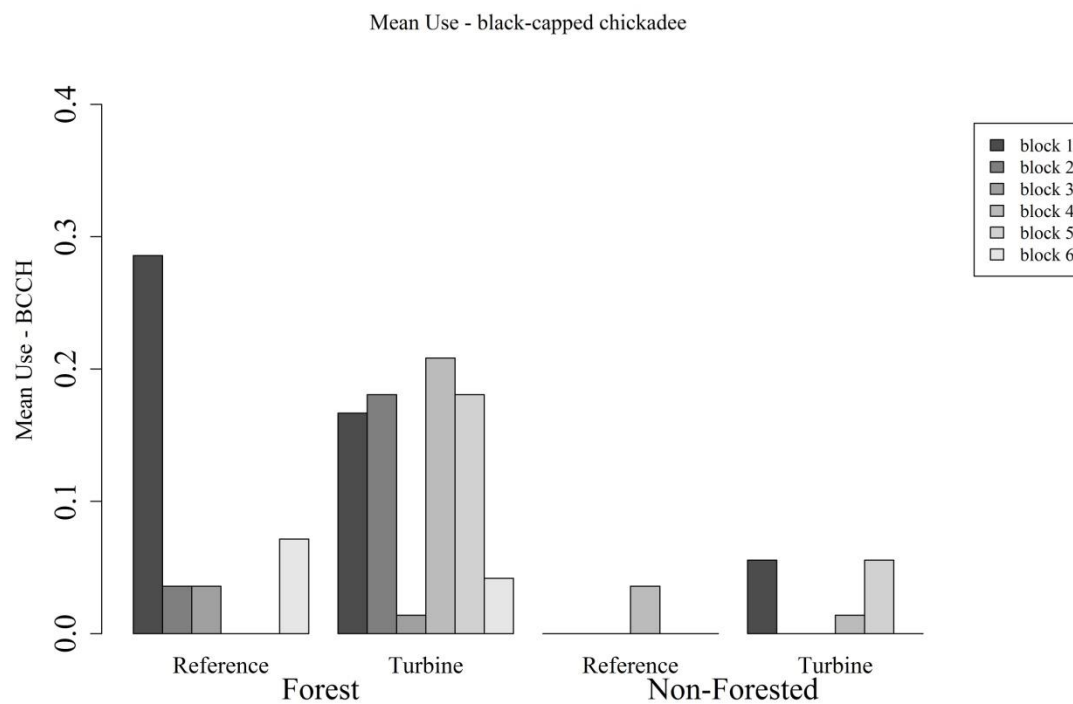
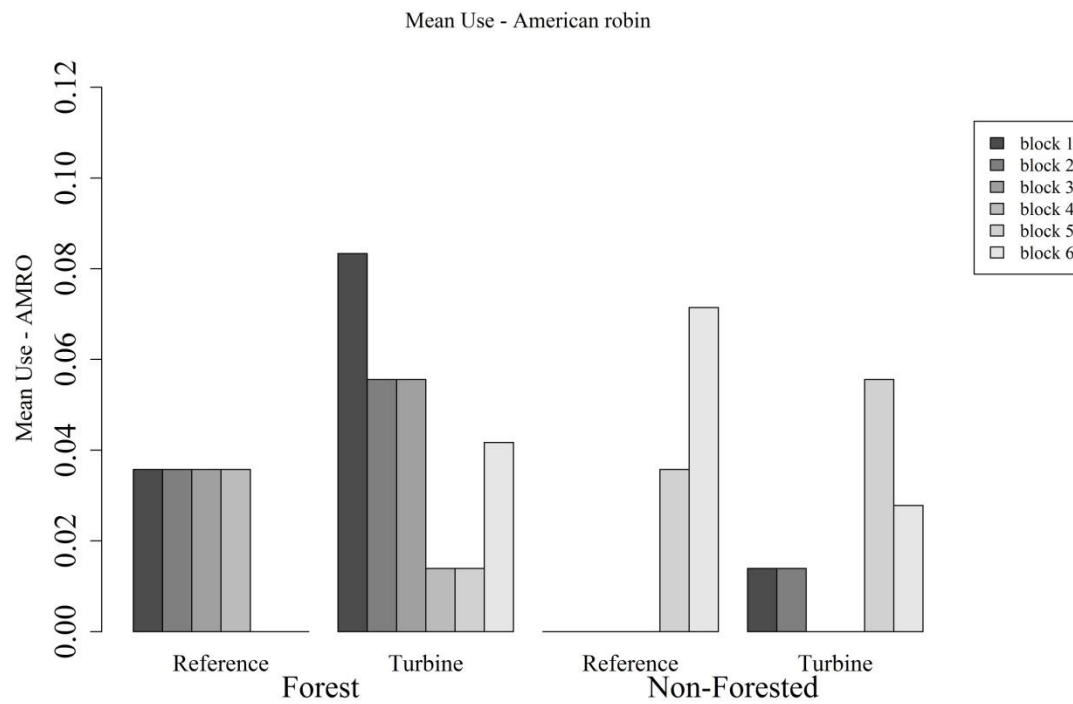
Appendix D1. Mean use by passerine subtypes (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.



Appendix D1. Mean use by passerine subtypes (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

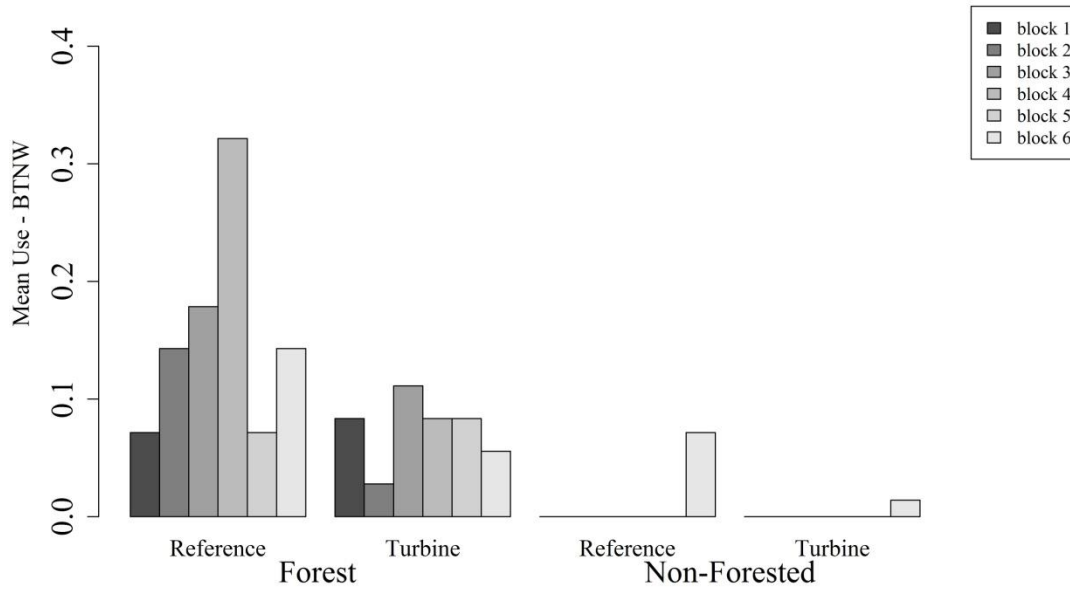


Appendix D1. Mean use by passerine subtypes (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

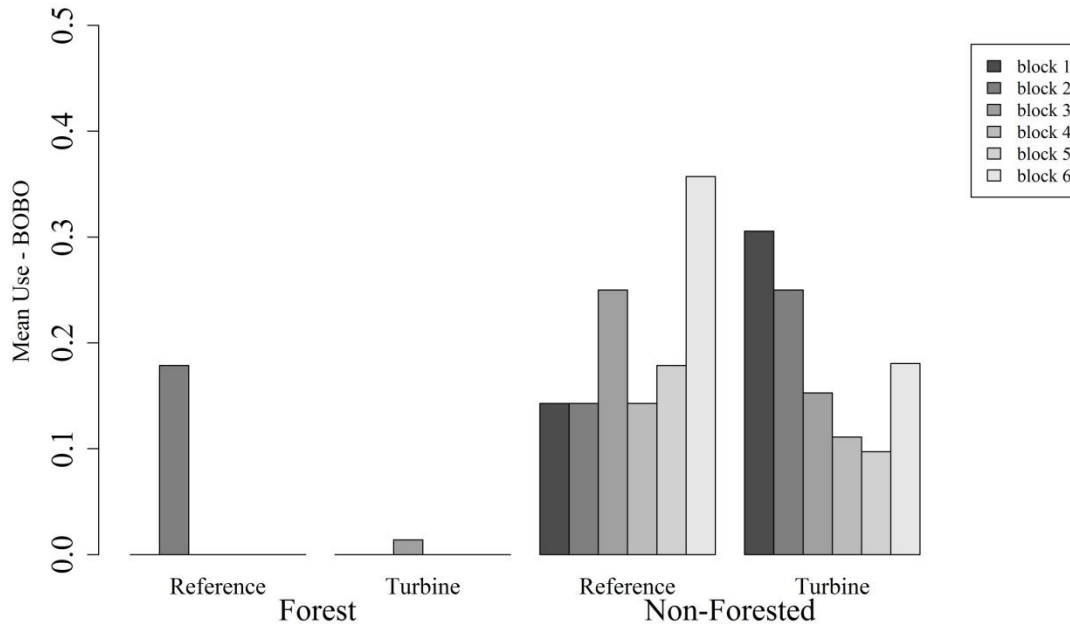


Appendix D2. Mean use by passerine species (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

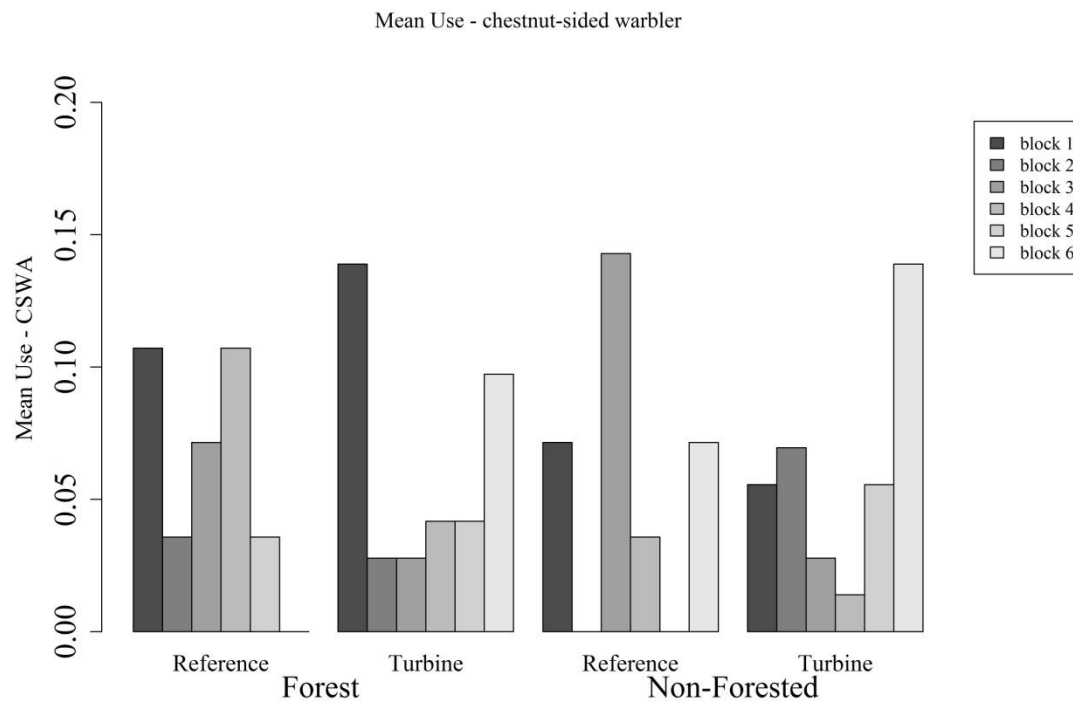
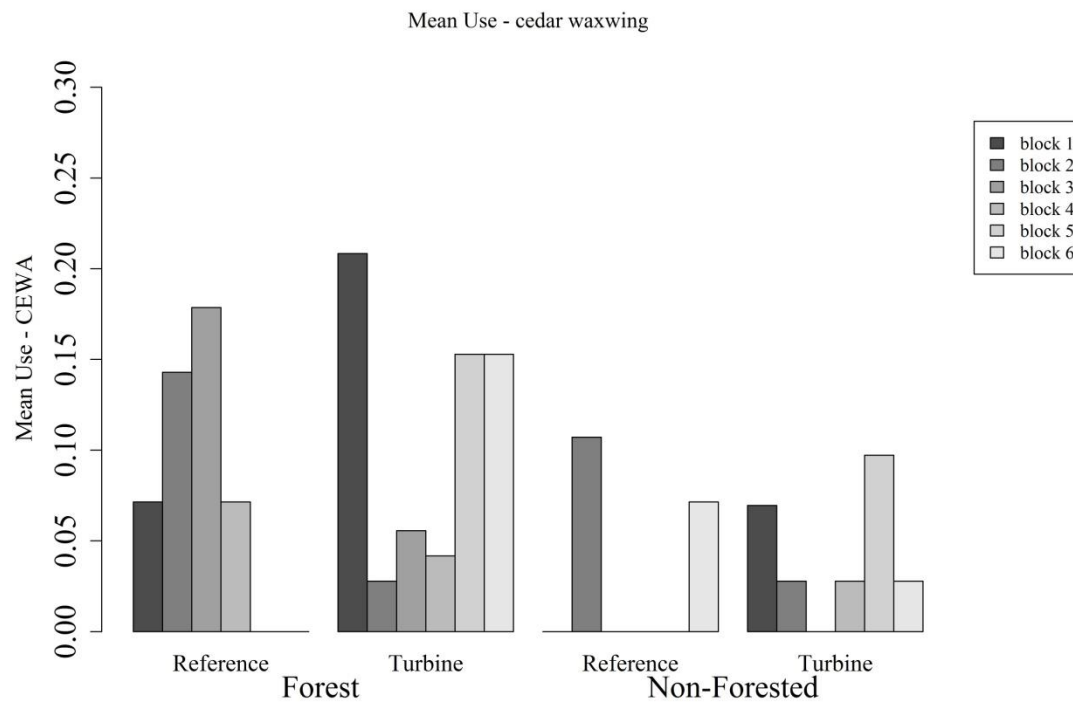
Mean Use - black-throated green warbler



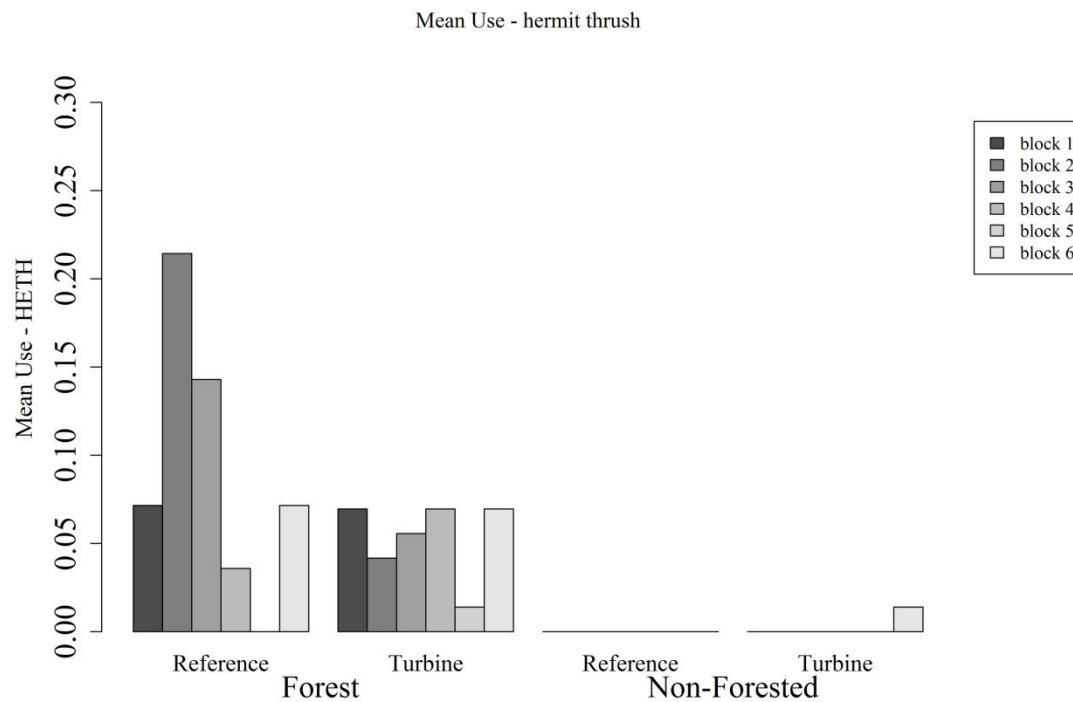
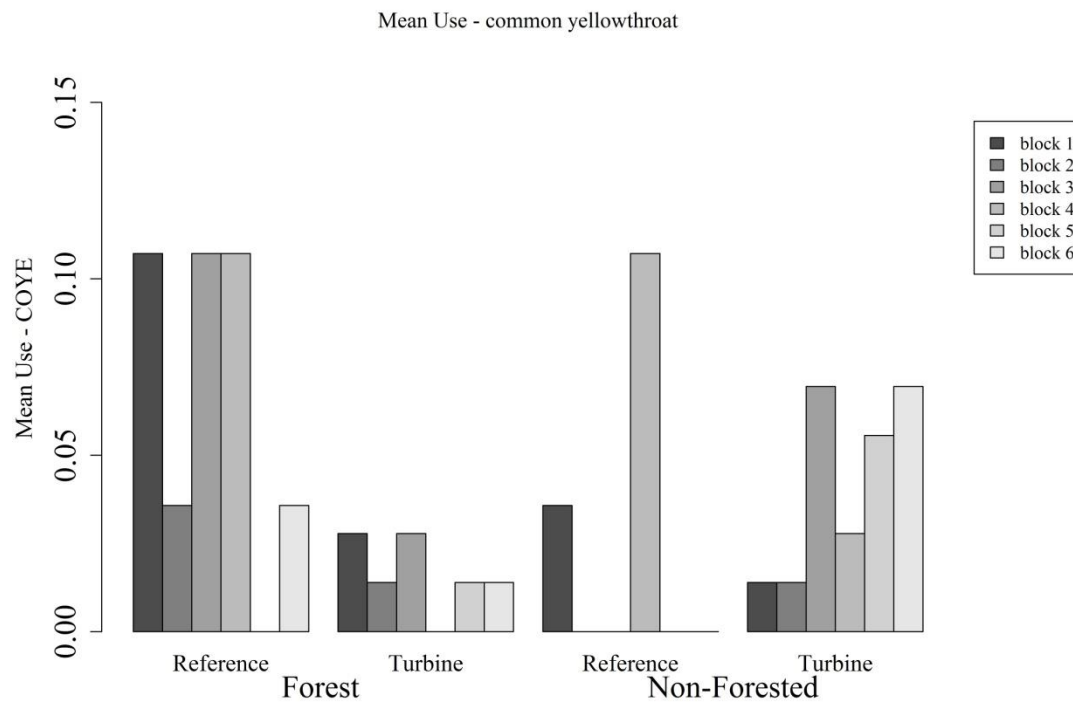
Mean Use - bobolink



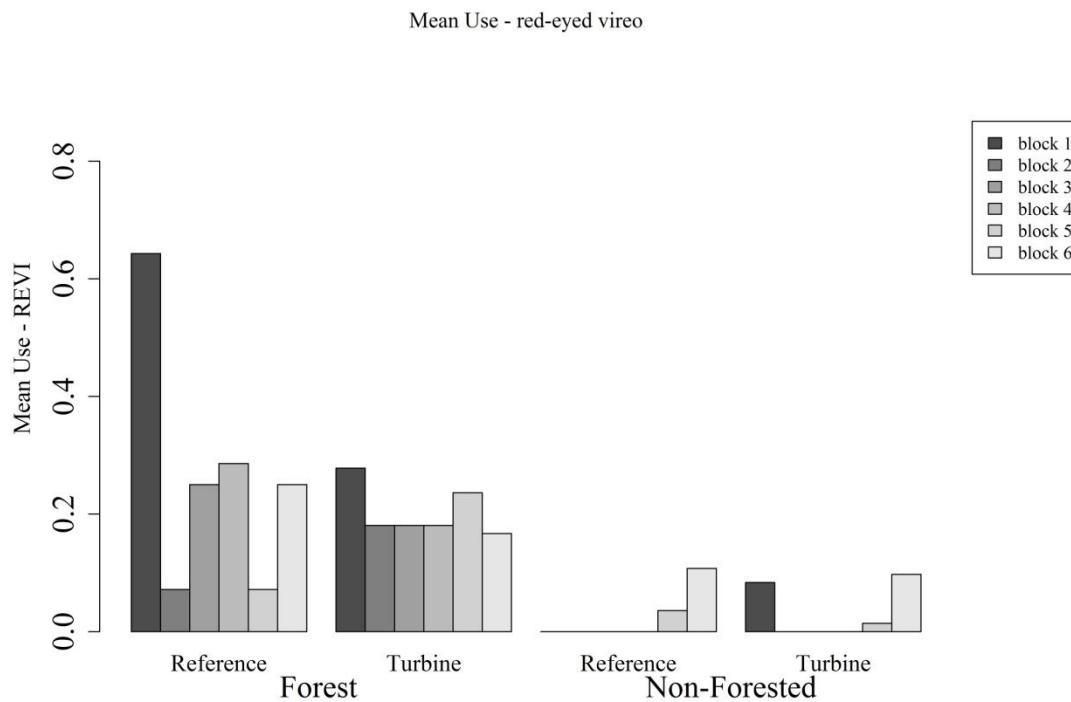
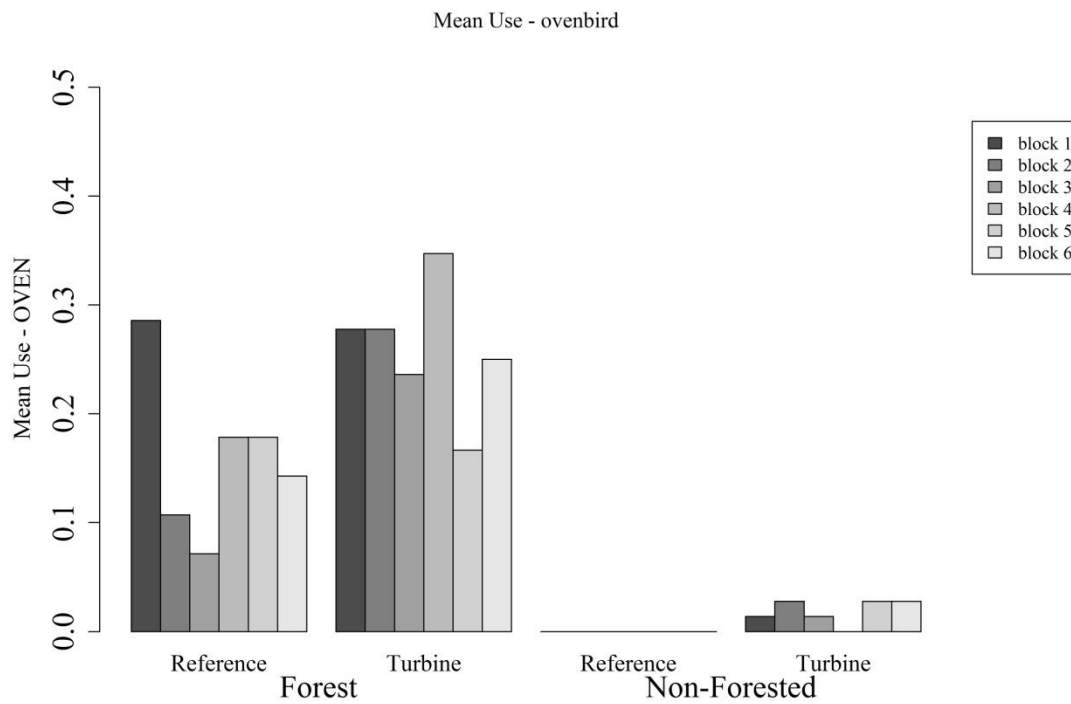
Appendix D2. Mean use by passerine species (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.



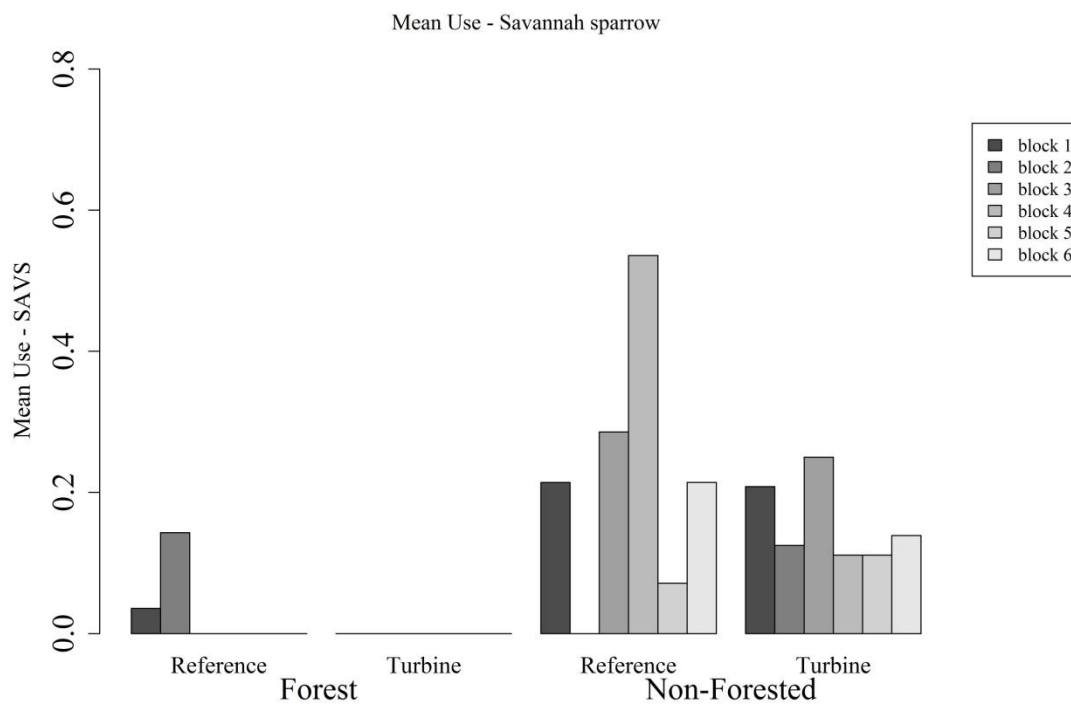
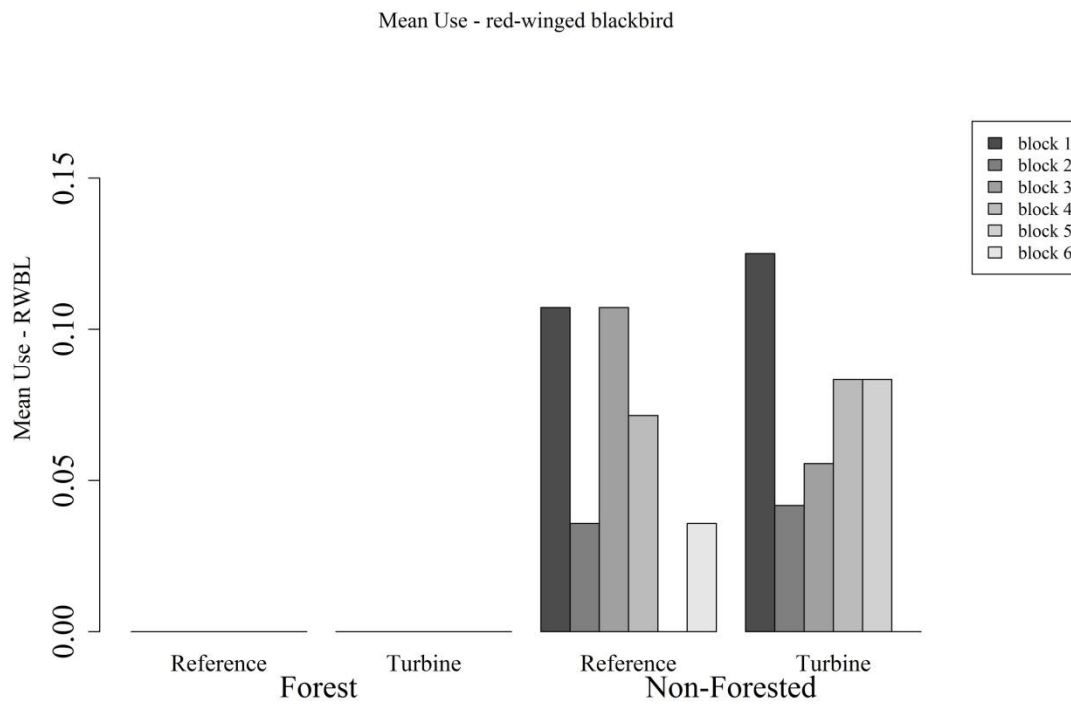
Appendix D2. Mean use by passerine species (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.



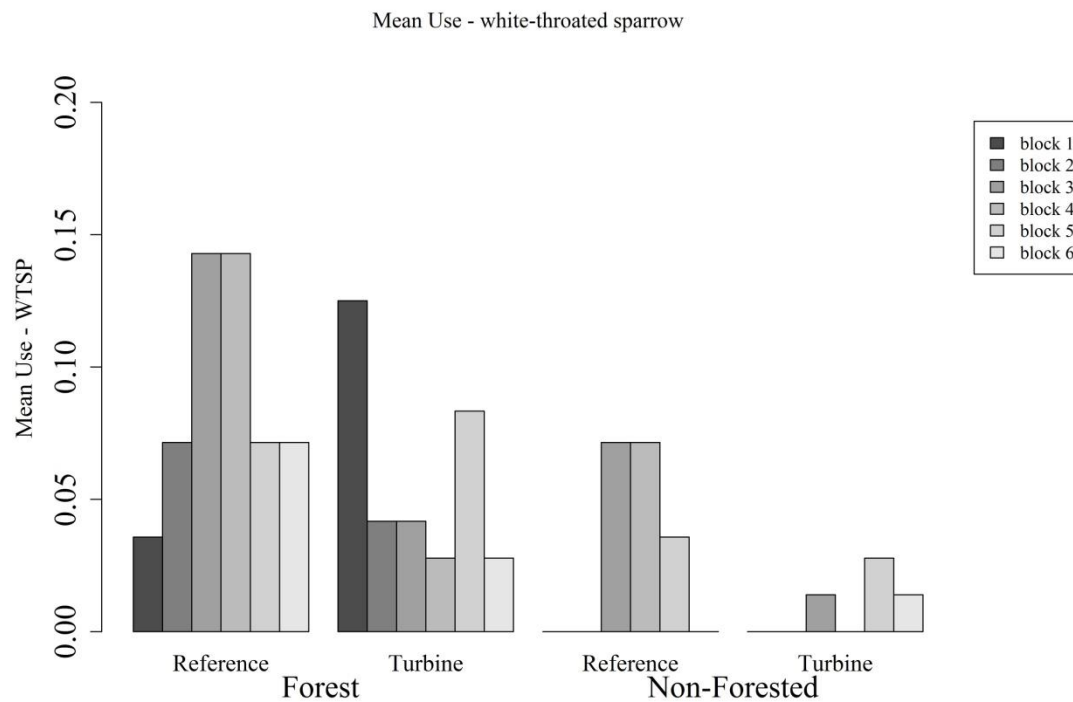
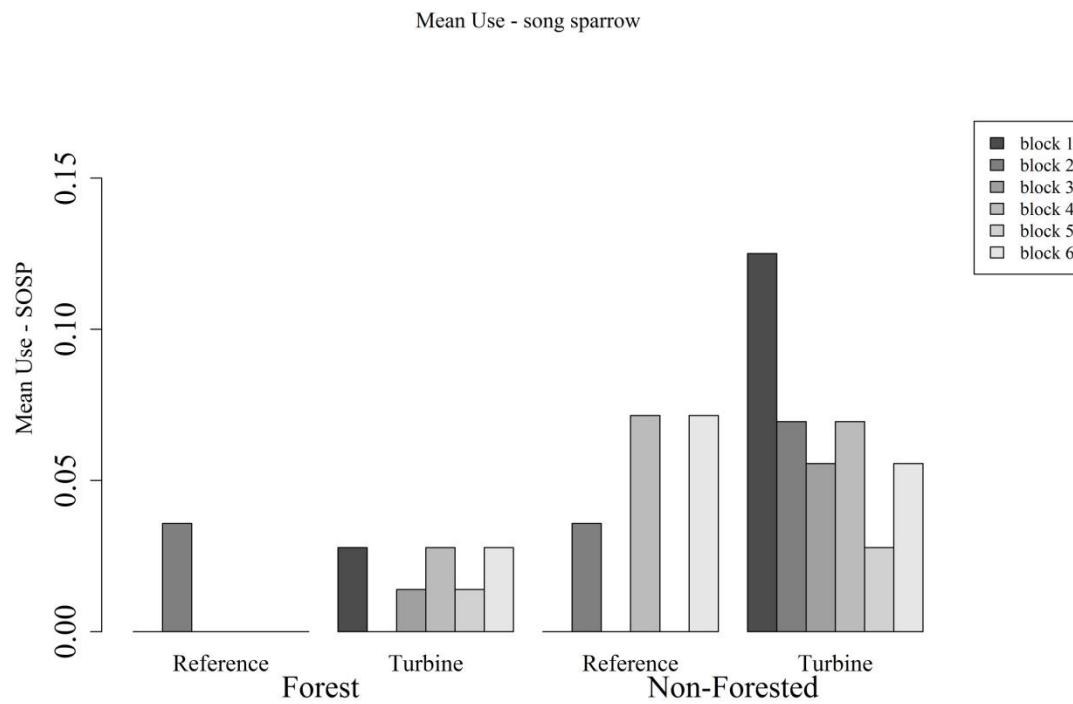
Appendix D2. Mean use by passerine species (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.



Appendix D2. Mean use by passerine species (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.



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Appendix D2. Mean use by passerine species (birds/transect/survey), separated by forest and non-forest landcover, at each 50-meter block of the reference and turbine transects surveyed during transect surveys at the Jericho Rise Wind Farm; May 29 - July 8, 2015.

