

**Exhibit K. Diurnal Bird/Raptor
Migration Survey**



December 2011

**RESULTS OF THE
DIURNAL BIRD/RAPTOR MIGRATION SURVEY
REPUBLIC WIND FARM
SENECA AND SANDUSKY COUNTIES, OHIO**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	2
2.0 METHODS	2
2.1 DIURNAL BIRD / RAPTOR MIGRATION SURVEY	2
3.0 RESULTS	3
3.1 BIRD MIGRATION	3
3.2 SENSITIVE SPECIES AND RAPTOR MIGRATION	3
4.0 DISCUSSION.....	6
5.0 CONCLUSIONS.....	7
6.0 LITERATURE CITED	8

TABLES

- Table 1. National land use/land cover acreages in the Republic Wind, LLC Project Area, Seneca and Sandusky Counties Ohio.
- Table 2. Bird species observed during the Republic Wind Farm Diurnal Bird/Raptor Migration Survey.
- Table 3. Bird species listed by the State of Ohio and recorded during the Republic Wind Farm Diurnal Bird/Raptor Migration Survey.

FIGURES

- Figure 1. Diurnal Bird/Raptor Migration Survey Locations for the Republic Wind Farm Project Area, Seneca and Sandusky counties, Ohio.

APPENDICES

- Appendix A. Diurnal Bird/Raptor Migration Survey Observations.
- Appendix B. Ohio Raptor Migration Maps.
- Appendix C. Photographs of Diurnal Bird/Raptor Migration Survey Locations.

EXECUTIVE SUMMARY

BHE Environmental, Inc. (BHE) was contracted to complete diurnal bird/raptor migration surveys following methods described in the *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio* issued by the Ohio Department of Natural Resources, Division of Wildlife. This report provides data and analysis of results of the diurnal bird/raptor migration surveys conducted by BHE in spring (March 17 through April 30) and fall (September 4 through October 28) 2011. Surveys were conducted by BHE at the proposed Republic Wind Farm project in Seneca and Sandusky counties, Ohio.

A total of 52 species were identified during the migration surveys, including the state-listed endangered northern harrier (*Circus cyaneus*) and sandhill crane (*Grus canadensis*); state threatened osprey (*Pandion haliaetus*) and bald eagle (*Haliaeetus leucocephalus*); and state species of special interest northern pintail (*Anas acuta*). Northern harriers were observed multiple times (13) during the course of the diurnal bird/raptor migration survey; bald eagles were observed four times, and several (18) northern pintails were observed. The remaining two species were observed a single time each.

Due to the limited size of woodlots, wetlands, open water, and potential stopover sites present, and due to an availability of similar habitat in northwestern Ohio, the Project Area does not represent a unique resource for large numbers of diurnal birds and raptors during migration. Diurnal bird/raptor migration monitoring confirmed limited avian migrant use.

The bald eagle was observed during the migration survey. This species is protected by the Bald and Golden Eagle Protection Act. Three bald eagle nests are located within 2.25 miles of the Project Area. The only successful nest in 2011 was located near the proposed power line and is more than 5 miles from the nearest proposed turbine location. In addition, the US Fish and Wildlife Service records indicate 20 bald eagle nests have been documented within 10 miles of the Project boundary. Additional studies on eagle use of the Project Area are ongoing.

1.0 INTRODUCTION

Republic Wind Farm, LLC, a subsidiary of Nordex USA, Inc. (Nordex), proposes construction of the Republic Wind Farm (RWF or Project Area) wind energy generation facility in Seneca and Sandusky counties, Ohio. The Project Area spans approximately 39,627 acres (ac; 16,036 hectares [ha]) northeast of the town of Republic, Ohio (Figure 1). The Project Area represents the maximum area considered for placement of turbines and facility infrastructure. The layout and number of turbines has not yet been selected; however, the actual area disturbed by the turbines and access roads that will comprise the facility will be a very small percentage of the Project Area (less than 1 percent).

BHE Environmental, Inc. (BHE) was contracted by Nordex to conduct diurnal bird/raptor migration surveys at the proposed RWF according to specifications outlined in the Ohio Department of Natural Resources (ODNR) *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio, An Addendum to the Ohio Department of Natural Resource's Voluntary Cooperative Agreement* ("Ohio Protocol"). The purpose of this report is to document the results of the survey.

Raptor collision rates at modern wind farms outside of California are small (NAS 2007; NWCC 2010). Raptors may be affected by wind power development in several ways, including: a) collisions with operating turbine rotors or blades; b) habitat disturbance resulting from construction or new infrastructure on site; and c) disturbance from increased human activity in the vicinity of the turbines. Collision mortality risk on raptor populations are often evaluated because raptors are not numerous and typically reproduce and mature slowly; thus, in contrast to passerine species, raptors cannot absorb mortalities and recover from losses on an annual basis as easily (Kuvlesky et al. 2007).

2.0 METHODS

2.1 DIURNAL BIRD / RAPTOR MIGRATION SURVEY

In order to gauge the rate at which diurnal birds and raptors could potentially come into conflict with wind turbines at RWF, BHE conducted day-long (9:00 a.m. to 4:00 p.m.) diurnal bird/raptor migration surveys three times a week during seasonally favorable weather for migration (northerly winds in fall, southerly winds in spring). The surveys were made from three observation points that afforded largely unobstructed views and were placed in the north, central, and south portions of the Project Area (Figure 1). Point 2 was moved during the spring of 2011 to a location between the Project area and the bald eagle nest south of the Project Area to better determine whether bald eagles from this nest were using the Project Area (Figure 1). Due to species-specific differences in migration, 20 days of surveys were conducted in spring (March 17 through April 30) and 22 days of surveys were completed during fall (September 4 through October 28) 2011. During surveys, migrants were identified to species, and whenever possible, the sex and age class of individuals was recorded. Using the data sheet provided in the Ohio Protocol, the surveyor also recorded the number of individuals, the approximate height of flight, whether the migrant(s) entered the Project Area, an estimate of the time they spent in the rotor-swept zone (between 40 and 180 meters above ground), and general behaviors observed (e.g., foraging, circling in updraft).

3.0 RESULTS

3.1 BIRD MIGRATION

Land use of the Project Area is dominated by cropland (Table 1). The types of birds observed were consistent with the agricultural uses. A total of 12,337 birds were observed from 52 species during migration surveys (Table 2). Forty-six percent of birds were observed during spring surveys (5,725 individuals from 40 species) and 54 percent were observed during fall surveys (6,612 individuals from 40 species; Appendix A).

Red-winged blackbirds (*Agelaius phoeniceus*), European starlings (*Sturnus vulgaris*), and common grackles (*Quiscalus quiscula*) comprised over half of the birds observed. Red-winged blackbirds were the most numerous birds, observed at an average of 119 birds per day for a total of 4,986 birds. European starlings were recorded at an average of 47 birds per day and common grackles at an average of 33 birds per day; 1,974 and 1,376 total birds, respectively. The majority (80 percent [6,614]) of blackbirds, starlings, and grackles observed were at low heights (0 to 40 meters above ground), with 20 percent (1,725) observed between 40 and 180 meters above ground. A flock of Bonaparte's gulls (*Chroicocephalus philadelphia*; 62 birds) observed between 40 and 180 meters on April 7, 2011 was the only other large flock of birds outside of blackbirds, starlings, and grackles.

3.2 SENSITIVE SPECIES AND RAPTOR MIGRATION

Results of the diurnal bird/raptor migration surveys showed limited use of the Project Area by avian species of conservation concern. Two flocks of northern pintails (*Anas acuta*; 18 total birds) were observed during the spring surveys, both flocks were observed between 40 and 180 meters above ground level. A single sandhill crane (*Grus canadensis*) was observed during spring surveys, and a single osprey (*Pandion haliaetus*) was observed during autumn surveys. The sandhill crane was observed low to the ground (less than 40 meters above ground level) and the osprey was observed above the rotor-swept zone (higher than 180 meters above ground level). Northern harriers were observed using the Project Area multiple times during both the spring (10 observations) and autumn (three observations) surveys, averaging 0.30 birds per day. Northern harriers were frequently observed flying in their characteristically close-to-the-ground manner. Out of the 13 total observations, only one bird was observed flying within the rotor-swept zone. Four bald eagles were observed during the spring migration surveys. Three of the observations occurred in the northwestern portion of the Project Area, each of these observations were of a juvenile bird flying between 40 and 180 meters above the ground. A single observation of an adult bird occurred in the southern portion of the Project Area flying between 40 and 180 meters above the ground (Table 3; Appendix A). The average observations per day during the survey were 0.10 birds per day.

Five other species of raptor were observed during the migration surveys. The most common species observed was the turkey vulture (*Cathartes aura*). The highest count in a single day was 16 turkey vultures observed on April 11, 2011. Sightings of turkey vultures averaged 12.55 birds per day for a total of 527 birds. The second most common species observed was the red-tailed hawk (*Buteo jamaicensis*). Red-tailed hawks were observed an average of 1.7 birds per day for a total of 71 birds. Red-tailed hawks were observed soaring at heights ranging from just about the ground to higher than 180 meters above ground. They were also observed perched on telephone poles and in the few trees located on the Project Area. Other raptor species observed include: Cooper's hawk (*Accipiter cooperii*; 28 birds, 0.66

Table 1. National land use/land cover acreages in the Republic Wind, LLC Project Area, Seneca and Sandusky Counties Ohio.

Land Use	Acres	Percent
Cultivated Crops	33,571.5	84.7%
Deciduous Forest	3,012.7	7.6%
Developed, Open Space	2,101.0	5.3%
Hay/Pasture	425.0	1.1%
Herbaceous	209.96	0.5%
Developed, Low Intensity	136.6	0.3%
Open Water	116.1	0.3%
Woody Wetlands	32.0	0.1%
Emergent Herbaceous Wetlands	10.5	<0.1%
Developed, Medium Intensity	8.3	<0.1%
Evergreen Forest	3.2	<0.1%
Total	39,626.6	100.0%

Table 2. Bird species observed during the Republic Wind Farm Diurnal Bird/Raptor Migration Survey.

Common Name	Species Name	Birds Observed			
		Spring	Autumn	Birds/Day^	Total
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1212	3774	118.71	4986
European Starling	<i>Sturnus vulgaris</i>	1094	880	47.00	1974
Common Grackle	<i>Quiscalus quiscula</i>	1183	196	32.83	1379
American Crow	<i>Corvus brachyrhynchos</i>	256	498	17.95	754
American Robin	<i>Turdus migratorius</i>	478	67	12.98	545
Turkey Vulture	<i>Cathartes aura</i>	407	120	12.55	527
Horned Lark	<i>Eremophila alpestris</i>	228	69	7.07	297
House Sparrow	<i>Passer domesticus</i>	0	225	5.36	225
Canada Goose	<i>Branta canadensis</i>	66	156	5.29	222
Killdeer	<i>Charadrius vociferus</i>	166	49	5.12	215
Brown-headed Cowbird	<i>Molothrus ater</i>	182	19	4.79	201
Mourning Dove	<i>Zenaida macroura</i>	35	164	4.74	199
Eastern Bluebird	<i>Sialia sialis</i>	21	93	2.71	114
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	81	0	1.93	81
American Goldfinch	<i>Spinus tristis</i>	12	61	1.74	73
Red-tailed Hawk	<i>Buteo jamaicensis</i>	60	11	1.69	71
Duck sp.	N/A	60	0	1.43	60
Blue Jay	<i>Cyanocitta cristata</i>	5	52	1.36	57
Song Sparrow	<i>Melospiza melodia</i>	11	35	1.10	46
Ring-billed Gull	<i>Larus delawarensis</i>	0	34	0.81	34

Table 2. Bird species observed during the Republic Wind Farm Diurnal Bird/Raptor Migration Survey.

Common Name	Species Name	Birds Observed			
		Spring	Autumn	Birds/Day [^]	Total
Cedar Waxwing	<i>Bombycilla cedrorum</i>	0	32	0.76	32
Cooper's Hawk	<i>Accipiter cooperii</i>	26	2	0.67	28
Mallard	<i>Anas platyrhynchos</i>	19	8	0.64	27
Pectoral Sandpiper	<i>Calidris melanotos</i>	23	0	0.55	23
Barn Swallow	<i>Hirundo rustica</i>	20	0	0.48	20
Northern Pintail*	<i>Anas acuta</i>	18	0	0.43	18
Northern Harrier*	<i>Circus cyaneus</i>	10	3	0.31	13
Great Blue Heron	<i>Ardea herodias</i>	5	7	0.29	12
Northern Flicker	<i>Colaptes auratus</i>	2	10	0.29	12
American Kestrel	<i>Falco sparverius</i>	5	5	0.24	10
Eastern Meadowlark	<i>Sturnella magna</i>	10	0	0.24	10
Northern Cardinal	<i>Cardinalis cardinalis</i>	0	10	0.24	10
American Pipit	<i>Anthus rubescens</i>	3	6	0.21	9
Tree Swallow	<i>Tachycineta bicolor</i>	1	7	0.19	8
Wood Duck	<i>Aix sponsa</i>	8	0	0.19	8
Rock Pigeon	<i>Columba livia</i>	3	3	0.14	6
Bald Eagle*	<i>Haliaeetus leucocephalus</i>	4	0	0.10	4
Chipping Sparrow	<i>Spizella passerina</i>	4	0	0.10	4
Savannah Sparrow	<i>Passerculus sandwichensis</i>	1	3	0.10	4
Wild Turkey	<i>Meleagris gallopavo</i>	2	2	0.10	4
Belted Kingfisher	<i>Ceryle alcyon</i>	0	2	0.05	2
Pileated Woodpecker	<i>Dryocopus pileatus</i>	1	1	0.05	2
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	0	2	0.05	2
Downy Woodpecker	<i>Picoides pubescens</i>	0	1	0.02	1
Field Sparrow	<i>Spizella pusilla</i>	1	0	0.02	1
Osprey*	<i>Pandion haliaetus</i>	0	1	0.02	1
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	0	1	0.02	1
Red-shouldered Hawk	<i>Buteo lineatus</i>	1	0	0.02	1
Sandhill Crane*	<i>Grus canadensis</i>	1	0	0.02	1
Short-billed Dowitcher	<i>Limnodromus griseus</i>	0	1	0.02	1
Tufted Titmouse	<i>Baeolophus bicolor</i>	0	1	0.02	1
White-breasted Nuthatch	<i>Sitta carolinensis</i>	0	1	0.02	1
Total		5,725	6,612	n/a	12,337

[^]42 observation days

*Listed by the State of Ohio, see Table 3.

Table 3. Bird species listed by the State of Ohio and recorded during the Republic Wind Farm Diurnal Bird/Raptor Migration Survey.

Common Name	Ohio Listed Species Classification	Total Number of Birds Observed
Northern Pintail	Species of Special Interest	18
Bald Eagle	Threatened	4
Osprey	Threatened	1
Northern Harrier	Endangered	13
Sandhill Crane	Endangered	1

birds/day); American kestrel (*Falco sparverius*; 10 birds, 0.23 birds/day); and red-shouldered hawk (*Buteo lineatus*; 1 bird, 0.02 birds/day).

All data collected during the spring and fall migration surveys are in Appendix A.

4.0 DISCUSSION

Bird migration is commonly perceived as involving north-south movements of populations on a large scale, typically associated with seasons. However, there are many types of migratory behavior; some are simple, others more complex. Most seasonal movement between northern and southern climes follows a system of flyways and these flyways are loosely defined by geographical features. These physical features include coasts, river valleys, and mountain ranges, and together form the four major North American migratory corridors: the Atlantic, Mississippi, Central, and Pacific flyways. The Project Area lies along the eastern edge of the Mississippi flyway which also includes, although to a lesser extent, the Ohio River Valley and tributaries. The Project Area also lies along known pathways of raptor migration both in the spring and the fall (Appendix B).

The Project Area is largely covered with row crops and does not contain features known to attract large concentrations of migrating birds, i.e., lakes, rivers, large streams, large wetlands, topographic ridges, large forests, or large grasslands (see Appendix C for site photos). However, several woodlots and tree lines of various sizes are interspersed throughout the Project Area. Based upon observations of diurnally-migrating birds and raptors, the Project Area does not appear to be an important diurnal bird and raptor migratory pathway. Large flocks observed using the area consisted of common species (blackbirds, grackles, and starlings) and listed species were not recorded in large numbers.

Several (18) northern pintails were observed flying within the rotor-swept zone during the spring migration surveys. Northern harriers were observed using the Project Area multiple times during spring (10 observations) and autumn (three observations) surveys, but their low-to-the-ground flight pattern largely avoids the rotor-swept zone, suggesting that collision risk is low. Four bald eagles were observed during the spring migration surveys. Additional studies on potential eagle use of the Project Area are ongoing through March 2013 to further evaluate risk.

Mortality studies at operational wind farms outside of California have shown relatively low raptor fatality rates (NRC 2007; NWCC 2010). Of the studies reviewed by the National

Research Council (NRC 2007), 14 were conducted using a survey protocol for all seasons of occupancy for a one-year period and incorporated scavenging and searcher-efficiency biases into estimates. The combined average raptor mortality for the 14 studies was 0.03 raptors/turbine/year and 0.04 raptors/megawatt/year. In a review of bird collisions documented in 31 studies at wind-energy facilities outside California, Erickson et al. (2001) reported that diurnal raptors comprised 2.7 percent of avian fatalities, while 78 percent of birds killed were protected songbirds. In a 3-year study conducted at a 354-turbine facility in Buffalo Ridge, Minnesota, Johnson et al. (2002) found that of 55 documented fatalities, only one was a raptor (red-tailed hawk; 1.8 percent of fatalities; 0.0009/turbine/year). When examined by region (East, Midwest, Pacific Northwest, and Rocky Mountain), raptor fatalities resulting from collision with wind turbines were found to be lowest in the Midwest (NRC 2007).

5.0 CONCLUSIONS

Due to the limited size of woodlots, wetlands, open water, and potential stopover sites present, and due to an availability of similar habitat in northwestern Ohio, the Project Area does not appear to represent a unique resource for large numbers of migratory diurnal birds and raptors. Diurnal bird/raptor migration monitoring and raptor nest searches confirmed limited avian migrant use.

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FIGURES

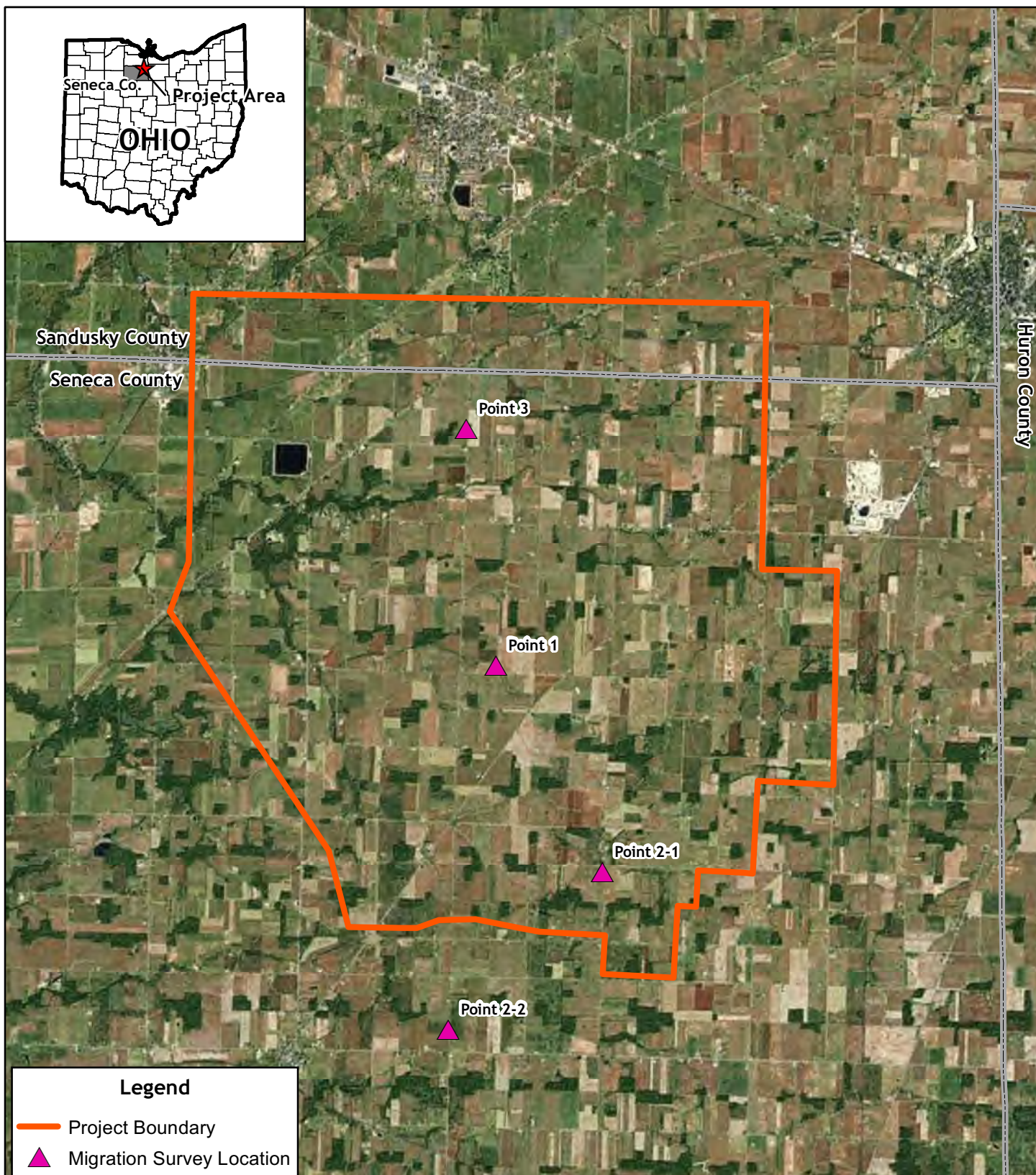


Figure 1. Diurnal Bird/Raptor Migration Survey Locations for the Republic Wind Farm Project Area, Seneca and Sandusky counties, Ohio.

	Miles 1 0 1 2	December 2011	
	Project No. 1953.001	Basemap: NAIP Imagery - Seneca County, OH (2010)	

APPENDIX A

Diurnal Bird/Raptor Migration Survey Observations

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)		Estimated time within rooster area
							Height	Direction		yes/no	yes/no	
17-Mar-11	1	Spring	COGR	Common Grackle	8		0 - 40 m	South	no		yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	East	no		yes	-
		Spring	AMRO	American Robin	7		0 - 40 m	South	no		yes	-
		Spring	MODO	Mourning Dove	1		0 - 40 m	Northwest	no		yes	-
		Spring	COGR	Common Grackle	1		40 - 180 m	West	no		yes	15 min
		Spring	EUST	European Starling	7		40 - 180 m	West	no		yes	5 min
		Spring	AMCR	American Crow	1		0 - 40 m	Southwest	no		yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	Northwest	no		yes	-
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Northwest	yes		yes	-
		Spring	AMRO	American Robin	12		0 - 40 m	South	no		yes	-
		Spring	RWBL	Red-winged Blackbird	30		0 - 40 m	West	no		yes	-
		Spring	EUST	European Starling	6		0 - 40 m	Southeast	no		yes	-
		Spring	COGR	Common Grackle	4		40 - 180 m	East	no		yes	2 min
		Spring	AMRO	American Robin	1		0 - 40 m	North	no		yes	-
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	Northwest	no		yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no		yes	-
		Spring	COGR	Common Grackle	30		0 - 40 m	Southeast	yes		yes	-
		Spring	RWBL	Red-winged Blackbird	30		0 - 40 m	Southeast	yes		yes	-
		Spring	COGR	Common Grackle	7		0 - 40 m	Southeast	no		yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	South	no		yes	-
		Spring	RWBL	Red-winged Blackbird	14		0 - 40 m	Southeast	no		yes	-
		Spring	HOLA	Horned Lark	5		0 - 40 m	South	no		yes	-
		Spring	KILL	Killdeer	1		0 - 40 m	Northwest	no		yes	-
		Spring	RWBL	Red-winged Blackbird	6		0 - 40 m	East/Southeast	no		yes	-
		Spring	NOHA	Northern Harrier	1	Adult	0 - 40 m	Northwest	yes		yes	hunting
		Spring	COGR	Common Grackle	2		0 - 40 m	South	no		yes	-
		Spring	COGR	Common Grackle	8		0 - 40 m	Southwest	no		yes	-
		Spring	TUVU	Turkey Vulture	1	Adult	0 - 40 m	Northwest	yes		yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no		yes	-
		Spring	TUVU	Turkey Vulture	1	Adult	40 - 180 m	Northwest	yes		yes	8 min
		Spring	AMCR	American Crow	2		0 - 40 m	West	no		yes	-
		Spring	AMCR	American Crow	8		0 - 40 m	Northwest	no		yes	-
		Spring	AMRO	American Robin	20		40 - 180 m	Northwest	no		yes	2 min
		Spring	AMCR	American Crow	4		0 - 40 m	Southwest	no		yes	-
		Spring	TUVU	Turkey Vulture	1	Adult	0 - 40 m	East/Northeast	yes		yes	3 min
		Spring	TUVU	Turkey Vulture	1	Adult	0 - 40 m	South/Southeast	no		yes	-
		Spring	COGR	Common Grackle	10		40 - 180 m	West/Northwest	no		yes	1 min
		Spring	RWBL	Red-winged Blackbird	10		40 - 180 m	West/Northwest	no		yes	1 min
		Spring	GBHE	Great Blue Heron	1		40 - 180 m	North	no		yes	3 min
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	East/Southeast	yes		yes	-
		Spring	EUST	European Starling	6		0 - 40 m	South	no		yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	East	no		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North/Northeast	yes		yes	2 min
		Spring	EUST	European Starling	5		0 - 40 m	-	-		-	-
		Spring	HOLA	Horned Lark	3		0 - 40 m	South	no		yes	-
		Spring	RWBL	Red-winged Blackbird	10		40 - 180 m	East/Northeast	yes		yes	2 min
		Spring	COGR	Common Grackle	10		40 - 180 m	East/Northeast	yes		yes	2 min
		Spring	EUST	European Starling	6		40 - 180 m	East	no		yes	1 min

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area	
							Height	Direction				
17-Mar-11	1	Spring	TUVU	Turkey Vulture	1		0 - 40 m	East/Northeast	yes	yes		2 min
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no		yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	South	no		yes	-
		Spring	KILL	Killdeer	8		0 - 40 m	East	yes		yes	-
		Spring	TUVU	Turkey Vulture	3		0 - 40 m	North/Northeast	yes		yes	-
		Spring	TUVU	Turkey Vulture	2		>180 m	Southwest	yes		yes	4 min
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southwest	no		yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no		yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	South/Southeast	no		yes	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	North/Northeast	yes		yes	3 min
		Spring	AMCR	American Crow	2		0 - 40 m	South	no		yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	South	no		yes	-
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	Northwest	no		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	no		yes	2 min
		Spring	NOHA	Northern Harrier	1		40 - 180 m	North/Northeast	yes		yes	1 min
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	East/Northeast	yes		yes	-
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	South	yes		yes	4 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	North	yes		yes	2 min
		Spring	COGR	Common Grackle	15		40 - 180 m	Southwest	no		yes	1 min
		Spring	EUST	European Starling	12		0 - 40 m	West	no		yes	-
		Spring	KILL	Killdeer	1		0 - 40 m	South	no		yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	North/Northeast	no		yes	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	West	yes		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West	yes		yes	2 min
		Spring	KILL	Killdeer	1		0 - 40 m	North/Northeast	no		yes	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	West/Southwest	yes		yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	West	no		yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	North/Northeast	yes		yes	2 min
		Spring	KILL	Killdeer	1		0 - 40 m	South/Southwest	no		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East/Northeast	yes		yes	1 min
		Spring	KILL	Killdeer	1		0 - 40 m	South	no		yes	-
		Spring	EUST	European Starling	60		0 - 40 m	West/Northeast	yes		yes	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	East	yes		yes	-
		Spring	EUST	European Starling	15		0 - 40 m	West/Southwest	no		yes	-
		Spring	AMCR	American Crow	2		0 - 40 m	North	no		yes	-
		Spring	AMRO	American Robin	6		0 - 40 m	South/Southwest	no		yes	-
		Spring	RWBL	Red-winged Blackbird	10		0 - 40 m	Northwest	no		yes	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	Northwest	yes		yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes		yes	2 min
		Spring	AMCR	American Crow	1		40 - 180 m	South	no		yes	1 min
		Spring	AMCR	American Crow	1		0 - 40 m	West/Northeast	no		yes	-
		Spring	BHCO	Brown-headed Cowbird	25		40 - 180 m	Northwest	no		yes	2 min
		Spring	COGR	Common Grackle	25		40 - 180 m	Northeast	no		yes	2 min
		Spring	EUST	European Starling	25		40 - 180 m	Northeast	no		yes	2 min
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northeast	yes		yes	1 min
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	Northeast	yes		yes	2 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes		yes	3 min

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area		Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)		area
17-Mar-11	1	Spring	KILL	Killdeer	2		0 - 40 m	East	yes	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	3 min	-
		Spring	RWBL	Red-winged Blackbird	15		40 - 180 m	East/Northeast	no	yes	1 min	-
		Spring	COGR	Common Grackle	15		40 - 180 m	East/Northeast	no	yes	1 min	-
		Spring	RWBL	Red-winged Blackbird	7		40 - 180 m	East	no	yes	2 min	-
		Spring	COGR	Common Grackle	12		0 - 40 m	East	no	yes	-	-
		Spring	EUST	European Starling	50		0 - 40 m	Northeast	yes	yes	3 min	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northeast	yes	yes	4 min	-
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	Northeast	yes	yes	3 min	-
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North/Northeast	yes	yes	2 min	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	North/Northeast	yes	yes	-	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	West/Southwest	yes	yes	2 min	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West/Southwest	yes	yes	3 min	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	East/Southeast	yes	yes	4 min	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	South	yes	yes	-	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	East	yes	yes	-	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	North/Northeast	yes	yes	-	-
		Spring	COGR	Common Grackle	15		0 - 40 m	North/Northeast	no	yes	-	-
		Spring	EUST	European Starling	15		0 - 40 m	North/Northeast	no	yes	-	-
18-Mar-11	1	Spring	AMRO	American Robin	2		40 - 180 m	East	no	yes	-	-
		Spring	COGR	Common Grackle	12		40 - 180 m	East	no	yes	1 min	-
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	-	-
		Spring	COGR	Common Grackle	5		0 - 40 m	East/Northeast	no	yes	-	-
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	-	-
		Spring	CAGO	Canada Goose	9		40 - 180 m	West	no	yes	2 min	-
		Spring	CAGO	Canada Goose	4		40 - 180 m	North/Northeast	no	yes	2 min	-
		Spring	KILL	Killdeer	2		0 - 40 m	North	no	yes	-	-
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	-	-
		Spring	EUST	European Starling	4		0 - 40 m	East	no	yes	-	-
		Spring	COGR	Common Grackle	7		0 - 40 m	Northeast	no	yes	-	-
		Spring	AMRO	American Robin	3		0 - 40 m	West	no	yes	-	-
		Spring	KILL	Killdeer	1		40 - 180 m	West	no	yes	2 min	-
		Spring	COGR	Common Grackle	3		40 - 180 m	Southwest	no	yes	1 min	-
		Spring	COGR	Common Grackle	5		0 - 40 m	South	no	yes	-	-
		Spring	SOSP	Song Sparrow	1		0 - 40 m	Southeast	no	yes	-	-
		Spring	AMRO	American Robin	4		0 - 40 m	Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	3		40 - 180 m	East/Northeast	no	yes	-	-
		Spring	KILL	Killdeer	1		0 - 40 m	North/Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	2		0 - 40 m	North	no	yes	-	-
		Spring	MODO	Mourning Dove	2		0 - 40 m	North/Northeast	no	yes	-	-
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	2		40 - 180 m	West/Northeast	no	yes	1 min	-
		Spring	HOLA	Horned Lark	4		0 - 40 m	South	no	yes	-	-
		Spring	COGR	Common Grackle	4		0 - 40 m	Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	2		0 - 40 m	East	no	yes	-	-
		Spring	EUST	European Starling	1		0 - 40 m	West	no	yes	-	-
		Spring	COGR	Common Grackle	4		0 - 40 m	North/Northeast	no	yes	-	-
		Spring	RWBL	Red-winged Blackbird	7		0 - 40 m	Northwest	no	yes	-	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area	
							Height	Direction			area	
18-Mar-11	1	Spring	COGR	Common Grackle	3		40 - 180 m	Northwest	no	yes	-	
		Spring	RWBL	Red-winged Blackbird	2		40 - 180 m	Northwest	no	yes	-	
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	-	
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no	yes	-	
		Spring	COGR	Common Grackle	1		0 - 40 m	Southwest	no	yes	-	
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	North/Northwest	no	yes	1 min	
		Spring	COGR	Common Grackle	1		40 - 180 m	West/Northwest	no	yes	1 min	
		Spring	COGR	Common Grackle	1		40 - 180 m	East/Southeast	no	yes	2 min	
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	-	
		Spring	EUST	European Starling	2		0 - 40 m	West	no	yes	-	
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no	yes	-	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	Northwest	yes	yes	3 min	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	North	no	yes	-	
		Spring	COGR	Common Grackle	2		0 - 40 m	South/Southeast	no	yes	-	
		Spring	AMCR	American Crow	1		0 - 40 m	Southwest	no	yes	-	
		Spring	COGR	Common Grackle	8		40 - 180 m	Northwest	no	yes	1 min	
		Spring	RWBL	Red-winged Blackbird	10		40 - 180 m	South	no	yes	2 min	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East	yes	yes	2 min	
		Spring	HOLA	Horned Lark	7		0 - 40 m	North	no	yes	-	
		Spring	AMCR	American Crow	2		0 - 40 m	North	no	yes	-	
		Spring	COGR	Common Grackle	6		40 - 180 m	South	no	yes	3 min	
		Spring	KILL	Killdeer	1		0 - 40 m	Southeast	no	yes	-	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	Northwest	yes	yes	-	
		Spring	COGR	Common Grackle	2		0 - 40 m	Northwest	no	yes	-	
		Spring	COGR	Common Grackle	50		0 - 40 m	South	yes	yes	-	
		Spring	EUST	European Starling	50		0 - 40 m	South	yes	yes	-	
		Spring	BHCO	Brown-headed Cowbird	20		0 - 40 m	South	yes	yes	-	
		Spring	EUST	European Starling	12		0 - 40 m	Northwest	no	yes	-	
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	-	
		Spring	EUST	European Starling	8		40 - 180 m	West	no	yes	1 min	
		Spring	RWBL	Red-winged Blackbird	10		0 - 40 m	Northwest	no	yes	-	
		Spring	RWBL	Red-winged Blackbird	8		0 - 40 m	North	no	yes	-	
		Spring	NOFL	Northern Flicker	2		0 - 40 m	West	no	yes	-	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West	yes	yes	2 min	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southeast	yes	no	3 min	
		Spring	KILL	Killdeer	1		0 - 40 m	Northwest	no	yes	-	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	East/Northeast	yes	yes	2 min	
		Spring	WODU	Wood Duck	2		40 - 180 m	West/Southwest	no	yes	1 min	
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	East	yes	no	2 min	
		Spring	COGR	Common Grackle	20		40 - 180 m	North/Northeast	no	yes	2 min	
		Spring	EUST	European Starling	20		40 - 180 m	North/Northeast	no	yes	2 min	
		Spring	AMGO	American Goldfinch	1		0 - 40 m	Northwest	no	yes	-	
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no	yes	-	
		Spring	COGR	Common Grackle	12		40 - 180 m	West	no	yes	2 min	
		Spring	EUST	European Starling	2		0 - 40 m	Northwest	no	yes	-	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	2 min	
		Spring	AMCR	American Crow	1		40 - 180 m	East/Southeast	no	yes	1 min	
		Spring	COGR	Common Grackle	50		40 - 180 m	East/Northeast	yes	yes	2 min	
		Spring	EUST	European Starling	50		40 - 180 m	East/Northeast	yes	yes	2 min	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within roost area
18-Mar-11	1	Spring	EUST	European Starling	4		0 - 40 m	West	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	South/Southwest	no	yes	-
		Spring	EUST	European Starling	10		0 - 40 m	North/Northwest	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	-
		Spring	EUST	European Starling	4		0 - 40 m	West/Southwest	no	yes	-
		Spring	EUST	European Starling	40		40 - 180 m	West/Northwest	no	yes	1 min
		Spring	COGR	Common Grackle	15		40 - 180 m	Southeast	no	yes	2 min
		Spring	RWBL	Red-winged Blackbird	10		40 - 180 m	Southeast	no	yes	2 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southeast	yes	yes	1 min
		Spring	AMCR	American Crow	2		0 - 40 m	North	no	yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	West	no	yes	-
		Spring	KILL	Killdeer	1		0 - 40 m	Northwest	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes	no	2 min
		Spring	KILL	Killdeer	2		40 - 180 m	West	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	2 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	1 min
		Spring	COGR	Common Grackle	14		0 - 40 m	Northwest	no	yes	-
		Spring	RWBL	Red-winged Blackbird	12		40 - 180 m	East	no	yes	1 min
		Spring	AMRO	American Robin	10		0 - 40 m	Northwest	no	yes	-
		Spring	EUST	European Starling	22		0 - 40 m	East	no	yes	-
		Spring	AMCR	American Crow	2		0 - 40 m	East	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	-
		Spring	COGR	Common Grackle	15		40 - 180 m	Northwest	no	yes	1 min
		Spring	RWBL	Red-winged Blackbird	6		40 - 180 m	Northwest	no	yes	1 min
		Spring	KILL	Killdeer	1		0 - 40 m	North/Northeast	no	yes	-
Spring	AMCR	American Crow	2		40 - 180 m	East/Southeast	no	yes	1 min		
Spring	COGR	Common Grackle	1		0 - 40 m	Southeast	no	yes	-		
Spring	AMCR	American Crow	1		40 - 180 m	Northwest	no	yes	2 min		
Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northwest	yes	yes	2 min		
Spring	MODO	Mourning Dove	1		0 - 40 m	East	no	yes	-		
22-Mar-11	1	Spring	KILL	Killdeer	2		40 - 180 m	Northwest	yes	yes	48 min
		Spring	AMRO	American Robin	4		0 - 40 m	North	no	yes	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	4		40 - 180 m	Northwest	no	yes	1 min
		Spring	AMRO	American Robin	2		0 - 40 m	East	no	yes	-
		Spring	AMRO	American Robin	5		0 - 40 m	East	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes	yes	3 min
		Spring	COGR	Common Grackle	1		40 - 180 m	Northwest	no	yes	2 min
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	South	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no	yes	-
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	Northwest	no	yes	-
		Spring	EUST	European Starling	4		40 - 180 m	West	no	yes	2 min
		Spring	COGR	Common Grackle	6		40 - 180 m	East/Southeast	no	yes	1 min
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	Northwest	yes	yes	2 min
		Spring	CAGO	Canada Goose	2		40 - 180 m	East/Northeast	no	yes	2 min
		Spring	COGR	Common Grackle	3		40 - 180 m	Northwest	no	yes	2 min

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area	
							Height	Direction				
22-Mar-11	1	Spring	AMRO	American Robin	1		40 - 180 m	Northwest	no	yes	1 min	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes	yes	3 min	
		Spring	AMCR	American Crow	2		0 - 40 m	West	no	yes	-	
		Spring	EUST	European Starling	1		0 - 40 m	North	no	yes	-	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	1 min	
		Spring	COGR	Common Grackle	2		0 - 40 m	North	no	yes	-	
		Spring	MALL	Mallard	8		40 - 180 m	Northwest	no	yes	2 min	
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	East	yes	yes	3 min	
		Spring	EABL	Eastern Bluebird	2		0 - 40 m	East	no	yes	-	
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	South/Southeast	yes	yes	3 min	
22-Mar-11	2	Spring	COGR	Common Grackle	6		0 - 40 m	Northwest	no	yes	-	
		Spring	KILL	Killdeer	1		40 - 180 m	East	no	yes	1 min	
		Spring	COGR	Common Grackle	4		40 - 180 m	Southeast	no	yes	2 min	
		Spring	PIWO	Pileated Woodpecker	1		0 - 40 m	North	no	yes	1 min	
		Spring	RTHA	Red-tailed Hawk	2		40 - 180 m	East	yes	yes	3 min	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	East	yes	yes	3 min	
		Spring	AMCR	American Crow	2		0 - 40 m	Southeast	no	yes	-	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	Southwest	no	yes	1 min	
		Spring	AMCR	American Crow	3		0 - 40 m	West/Southwest	no	yes	-	
		Spring	AMCR	American Crow	2		0 - 40 m	West	no	yes	-	
		Spring	AMCR	American Crow	1		40 - 180 m	West	no	yes	1 min	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East	yes	yes	2 min	
		Spring	KILL	Killdeer	1		40 - 180 m	East	no	yes	-	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	1 min	
		Spring	KILL	Killdeer	1		0 - 40 m	East	yes	yes	1 min	
		Spring	AMCR	American Crow	3		0 - 40 m	North/Northwest	no	yes	-	
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	-	
		Spring	COHA	Cooper's Hawk	1		40 - 180 m	South	no	yes	1 min	
		Spring	NOHA	Northern Harrier	1		0 - 40 m	Northwest	no	yes	-	
		Spring	AMCR	American Crow	3		0 - 40 m	Northwest	no	yes	-	
22-Mar-11	3	Spring	AMCR	American Crow	5		40 - 180 m	South	no	yes	2 min	
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	Northwest	no	yes	-	
		Spring	KILL	Killdeer	2		40 - 180 m	Southeast	no	yes	2 min	
		Spring	AMCR	American Crow	3		0 - 40 m	East	no	yes	-	
		Spring	COGR	Common Grackle	4		40 - 180 m	Northwest	no	yes	2 min	
		Spring	RWBL	Red-winged Blackbird	6		0 - 40 m	North	no	yes	-	
		Spring	KILL	Killdeer	1		0 - 40 m	Southwest	no	yes	1 min	
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Southwest	yes	yes	2 min	
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	Northwest	no	yes	-	
		Spring	COGR	Common Grackle	2		40 - 180 m	North	no	yes	1 min	
		Spring	HOLA	Horned Lark	1		0 - 40 m	South	no	yes	-	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	East	yes	yes	2 min	
		Spring	AMRO	American Robin	1		40 - 180 m	Northwest	no	yes	1 min	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	3 min	
		Spring	AMCR	American Crow	2		40 - 180 m	Southwest	yes	yes	2 min	
		Spring	BAEA	Bald Eagle	1	3 yrs	40 - 180 m	West	no	yes	2 min	
		Spring	HOLA	Horned Lark	1		0 - 40 m	North	no	yes	-	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	2 min	
		Spring	COGR	Common Grackle	4		0 - 40 m	East	no	yes	-	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
							Height	Direction			
22-Mar-11	3	Spring	TUVU	Turkey Vulture	2		40 - 180 m	West	yes	yes	1 min
		Spring	COGR	Common Grackle	1		0 - 40 m	Southeast	no	yes	-
		Spring	AMRO	American Robin	2		0 - 40 m	West	no	yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	South	no	yes	-
		Spring	COGR	Common Grackle	4		0 - 40 m	Northwest	no	yes	-
		Spring	AMRO	American Robin	14		0 - 40 m	South/Southwest	no	yes	-
		Spring	KILL	Killdeer	3		40 - 180 m	Northwest	no	yes	2 min
24-Mar-11	1	Spring	COGR	Common Grackle	7		40 - 180 m	North/Northwest	no	yes	1 min
		Spring	AMRO	American Robin	4		0 - 40 m	Northwest	no	yes	-
		Spring	EUST	European Starling	15		0 - 40 m	West/Southwest	no	yes	-
		Spring	BHCO	Brown-headed Cowbird	15		0 - 40 m	West/Southwest	no	yes	-
		Spring	COGR	Common Grackle	10		0 - 40 m	West/Southwest	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southeast	yes	yes	2 min
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	South	yes	yes	3 min
		Spring	AMCR	American Crow	2		0 - 40 m	East	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	-
		Spring	EUST	European Starling	4		40 - 180 m	Northwest	no	yes	1 min
		Spring	COGR	Common Grackle	3		0 - 40 m	Northwest	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	-
		Spring	KILL	Killdeer	3		0 - 40 m	East	no	yes	-
		Spring	COGR	Common Grackle	5		40 - 180 m	South/Southwest	no	yes	1 min
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northwest	yes	yes	2 min
		Spring	COGR	Common Grackle	4		0 - 40 m	Northwest	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	East/Southeast	yes	yes	2 min
		Spring	HOLA	Horned Lark	2		0 - 40 m	Northwest	no	yes	-
		Spring	BHCO	Brown-headed Cowbird	7		0 - 40 m	Northwest	no	yes	-
		Spring	AMCR	American Crow	2		40 - 180 m	North	no	yes	1 min
		Spring	COGR	Common Grackle	1		0 - 40 m	Southeast	no	yes	-
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes	no	2 min
		Spring	CAGO	Canada Goose	2		40 - 180 m	North/Northeast	no	yes	2 min
Spring	AMCR	American Crow	3		0 - 40 m	Southeast	no	yes	-		
24-Mar-11	2	Spring	AMCR	American Crow	4		40 - 180 m	Northwest	no	yes	1 min
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	North	no	yes	-
		Spring	AMRO	American Robin	5		40 - 180 m	South	no	yes	1 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	2 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	West/Northwest	yes	yes	2 min
		Spring	COGR	Common Grackle	14		40 - 180 m	Northwest	no	yes	1 min
		Spring	EABL	Eastern Bluebird	3		0 - 40 m	Southwest	no	yes	-
		Spring	COGR	Common Grackle	5		40 - 180 m	Northwest	no	yes	1 min
		Spring	KILL	Killdeer	2		40 - 180 m	Northwest	yes	yes	10 min
		Spring	COGR	Common Grackle	7		40 - 180 m	North	no	yes	1 min
		Spring	NOHA	Northern Harrier	1		0 - 40 m	Southeast	yes	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	2 min
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	East	no	yes	-
		Spring	WODU	Wood Duck	2		40 - 180 m	South	no	yes	1 min
		Spring	EUST	European Starling	30		0 - 40 m	East	no	yes	-
		Spring	CAGO	Canada Goose	4		40 - 180 m	Southeast	no	yes	2 min
		Spring	EUST	European Starling	20		40 - 180 m	South	no	yes	1 min

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area	
							Height	Direction				
24-Mar-11	2	Spring	N/A	Duck sp.	30		0 - 40 m	Northwest	yes	yes	-	-
		Spring	HOLA	Horned Lark	5		0 - 40 m	East	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southeast	yes	yes	2 min	-
		Spring	AMCR	American Crow	3		0 - 40 m	Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	6		0 - 40 m	Southeast	no	yes	-	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northwest	yes	yes	2 min	-
24-Mar-11	3	Spring	BHCO	Brown-headed Cowbird	10		0 - 40 m	Northwest	no	yes	-	-
		Spring	EUST	European Starling	10		0 - 40 m	Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	6		40 - 180 m	North	no	yes	1 min	-
		Spring	AMRO	American Robin	5		40 - 180 m	East/Southeast	yes	no	1 min	-
		Spring	KILL	Killdeer	3		0 - 40 m	East	no	yes	-	-
		Spring	AMCR	American Crow	2		0 - 40 m	West/Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	3		0 - 40 m	South	no	yes	-	-
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	-	-
		Spring	KILL	Killdeer	1		0 - 40 m	West	no	yes	-	-
		Spring	HOLA	Horned Lark	3		0 - 40 m	Southeast	no	yes	-	-
		Spring	COGR	Common Grackle	1		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	North	no	yes	-	-
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	West	no	yes	-	-
		Spring	BHCO	Brown-headed Cowbird	5		0 - 40 m	North/Northwest	no	yes	-	-
		Spring	AMRO	American Robin	1		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southeast	yes	yes	3 min	-
		Spring	COGR	Common Grackle	7		40 - 180 m	East	no	yes	1 min	-
		Spring	CAGO	Canada Goose	5		40 - 180 m	South	no	yes	1 min	-
		Spring	HOLA	Horned Lark	3		0 - 40 m	Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	4		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	North	yes	yes	2 min	-
25-Mar-11	1	Spring	KILL	Killdeer	2		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	SOSP	Song Sparrow	1		0 - 40 m	South	no	yes	-	-
		Spring	AMCR	American Crow	1		0 - 40 m	South	no	yes	-	-
		Spring	AMCR	American Crow	1		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	2 min	-
		Spring	COGR	Common Grackle	6		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	-	-
		Spring	KILL	Killdeer	3		0 - 40 m	Southeast	yes	yes	-	-
		Spring	EUST	European Starling	25		0 - 40 m	Northwest	no	yes	-	-
		Spring	AMCR	American Crow	1		40 - 180 m	West	no	yes	1 min	-
		Spring	COGR	Common Grackle	3		0 - 40 m	East	no	yes	-	-
		Spring	AMRO	American Robin	8		40 - 180 m	West/Southeast	no	yes	1 min	-
		Spring	COGR	Common Grackle	1		40 - 180 m	Southeast	no	yes	1 min	-
		Spring	AMCR	American Crow	2		40 - 180 m	East	no	yes	1 min	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	West/Southeast	yes	yes	2 min	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	1 min	-
		Spring	TUVU	Turkey Vulture	2		>180 m	South	yes	yes	-	-
		Spring	AMRO	American Robin	11		0 - 40 m	West	no	yes	-	-
		Spring	HOLA	Horned Lark	4		0 - 40 m	South	no	yes	-	-
		Spring	AMCR	American Crow	3		40 - 180 m	North/Northwest	no	yes	1 min	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	South/Southeast	yes	yes	2 min	-
		Spring	COGR	Common Grackle	6		40 - 180 m	Northwest	no	yes	1 min	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area		Estimated time within rooster
							Height	Direction	(yes/no)	(yes/no)	area	area
25-Mar-11	1	Spring	KILL	Killdeer	2		0 - 40 m	East	no	yes	-	-
		Spring	EUST	European Starling	20		0 - 40 m	West/Southwest	no	yes	-	-
		Spring	BHCO	Brown-headed Cowbird	20		0 - 40 m	West/Southwest	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northeast	yes	yes	2 min	-
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Southeast	yes	yes	-	-
		Spring	AMCR	American Crow	3		0 - 40 m	West	no	yes	-	-
		Spring	NOHA	Northern Harrier	1		0 - 40 m	West	no	yes	hunting	-
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	-	-
		Spring	CAGO	Canada Goose	4		40 - 180 m	Northeast	no	yes	1 min	-
		Spring	GBHE	Great Blue Heron	1		40 - 180 m	North/Northeast	no	yes	1 min	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southeast	yes	yes	1 min	-
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	-	-
		Spring	EUST	European Starling	4		0 - 40 m	East	no	yes	-	-
		Spring	KILL	Killdeer	1		0 - 40 m	Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	3		0 - 40 m	North/Northeast	no	yes	-	-
		Spring	EUST	European Starling	5		0 - 40 m	North	no	yes	-	-
		Spring	COGR	Common Grackle	2		0 - 40 m	Northwest	no	yes	-	-
		Spring	AMCR	American Crow	2		0 - 40 m	West/Northwest	no	yes	-	-
		Spring	AMCR	American Crow	1		0 - 40 m	South	no	yes	-	-
		Spring	AMRO	American Robin	6		40 - 180 m	Northeast	no	yes	2 min	-
		Spring	EUST	European Starling	50		40 - 180 m	South	no	yes	1 min	-
25-Mar-11	2	Spring	HOLA	Horned Lark	4		0 - 40 m	Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	12		40 - 180 m	East/Southeast	no	yes	1 min	-
		Spring	COGR	Common Grackle	2		40 - 180 m	East/Southeast	no	yes	1 min	-
		Spring	COGR	Common Grackle	4		0 - 40 m	West	no	yes	-	-
		Spring	RWBL	Red-winged Blackbird	5		40 - 180 m	East/Northeast	no	yes	1 min	-
		Spring	BLJA	Blue Jay	3		40 - 180 m	South	no	yes	1 min	-
		Spring	COGR	Common Grackle	4		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	COGR	Common Grackle	5		40 - 180 m	East	no	yes	1 min	-
		Spring	AMRO	American Robin	3		0 - 40 m	Southeast	no	yes	-	-
		Spring	COGR	Common Grackle	7		40 - 180 m	West	no	yes	1 min	-
		Spring	COGR	Common Grackle	20		40 - 180 m	South	no	yes	2 min	-
		Spring	COGR	Common Grackle	14		40 - 180 m	South	no	yes	1 min	-
		Spring	NOPI	Northern Pintail	12		40 - 180 m	Southeast	no	yes	1 min	-
		Spring	N/A	Duck sp.	30		40 - 180 m	Southeast	yes	yes	2 min	-
		Spring	COGR	Common Grackle	10		40 - 180 m	Southwest	no	yes	2 min	-
		Spring	RWBL	Red-winged Blackbird	10		40 - 180 m	Southwest	no	yes	2 min	-
		Spring	COGR	Common Grackle	12		40 - 180 m	South	no	yes	1 min	-
		Spring	EUST	European Starling	20		40 - 180 m	Southeast	no	yes	-	-
		Spring	EUST	European Starling	50		40 - 180 m	South	no	yes	2 min	-
		Spring	COGR	Common Grackle	2		0 - 40 m	East	no	yes	-	-
25-Mar-11	3	Spring	AMCR	American Crow	3		40 - 180 m	East/Southeast	no	yes	1 min	-
		Spring	HOLA	Horned Lark	4		0 - 40 m	Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	3		0 - 40 m	Southwest	no	yes	-	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northeast	yes	yes	2 min	-
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	North	yes	yes	3 min	-
		Spring	AMRO	American Robin	4		40 - 180 m	Southwest	no	yes	1 min	-
		Spring	COGR	Common Grackle	6		0 - 40 m	North/Northeast	no	yes	-	-
		Spring	AMRO	American Robin	2		0 - 40 m	West	no	yes	-	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
							Height	Direction			
25-Mar-11	3	Spring	KILL	Killdeer	2		40 - 180 m	South	no	yes	1 min
		Spring	EABL	Eastern Bluebird	2		0 - 40 m	East	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	1 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	2 min
		Spring	COGR	Common Grackle	2		0 - 40 m	Northeast	no	yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	North	no	yes	-
		Spring	AMRO	American Robin	4		40 - 180 m	Southwest	no	yes	1 min
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no	yes	-
		Spring	EUST	European Starling	3		0 - 40 m	North/Northwest	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northeast	yes	yes	2 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	East/Northeast	yes	yes	1 min
		Spring	COGR	Common Grackle	5		40 - 180 m	Southwest	no	yes	1 min
		Spring	AMCR	American Crow	4		0 - 40 m	South	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no	yes	-
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	East	no	yes	-
		Spring	HOLA	Horned Lark	2		0 - 40 m	Northeast	no	yes	-
		Spring	COGR	Common Grackle	3		40 - 180 m	North	no	yes	1 min
		Spring	AMRO	American Robin	6		40 - 180 m	Southeast	no	yes	1 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East/Southeast	yes	yes	2 min
		Spring	KILL	Killdeer	2		0 - 40 m	West	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	-
		Spring	COGR	Common Grackle	6		0 - 40 m	Southwest	no	yes	-
		Spring	AMCR	American Crow	1		40 - 180 m	Northeast	no	yes	1 min
27-Mar-11	1	Spring	COGR	Common Grackle	1		40 - 180 m	Northeast	no	yes	1 min
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	-
		Spring	AMCR	American Crow	5		0 - 40 m	East	no	yes	-
		Spring	TUVU	Turkey Vulture	6		40 - 180 m	Southeast	yes	yes	2 min
		Spring	AMCR	American Crow	2		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	1		40 - 180 m	East	no	yes	1 min
		Spring	AMRO	American Robin	1		0 - 40 m	North/Northeast	no	yes	-
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	North	no	yes	-
		Spring	BHCO	Brown-headed Cowbird	15		0 - 40 m	West/Northwest	no	yes	-
		Spring	EUST	European Starling	15		0 - 40 m	West/Northwest	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no	yes	-
		Spring	HOLA	Horned Lark	3		0 - 40 m	North	no	yes	-
		Spring	CAGO	Canada Goose	2		40 - 180 m	Southwest	no	yes	1 min
		Spring	COGR	Common Grackle	1		0 - 40 m	East	no	yes	-
		Spring	COGR	Common Grackle	4		40 - 180 m	East/Northeast	no	yes	2 min
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	-
		Spring	AMCR	American Crow	3		0 - 40 m	North/Northwest	no	yes	-
		Spring	COGR	Common Grackle	2		40 - 180 m	East	no	yes	1 min
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	1		40 - 180 m	South	no	yes	1 min
		Spring	AMRO	American Robin	1		0 - 40 m	East/Southeast	no	yes	-
		Spring	COGR	Common Grackle	8		0 - 40 m	South/Southwest	no	yes	-
Spring	EUST	European Starling	2		0 - 40 m	South/Southeast	no	yes	-		
Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	-		
Spring	HOLA	Horned Lark	2		0 - 40 m	West/Northwest	no	yes	-		

Date	Point	Season	Code	Species	#	Age	Observation	Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
27-Mar-11	1	Spring	EUST	European Starling	3		40 - 180 m	no	yes	1 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	yes	yes	2 min
		Spring	COGR	Common Grackle	1		0 - 40 m	no	yes	-
		Spring	HOLA	Horned Lark	1		0 - 40 m	no	yes	-
		Spring	COGR	Common Grackle	3		40 - 180 m	no	yes	1 min
		Spring	AMRO	American Robin	4		0 - 40 m	no	yes	-
		Spring	COGR	Common Grackle	2		40 - 180 m	no	yes	1 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	yes	yes	2 min
		Spring	AMCR	American Crow	3		0 - 40 m	no	yes	-
		Spring	AMRO	American Robin	1		40 - 180 m	no	yes	-
27-Mar-11	2	Spring	TUVU	Turkey Vulture	2		40 - 180 m	yes	yes	2 min
		Spring	EUST	European Starling	10		0 - 40 m	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	no	yes	-
		Spring	AMRO	American Robin	4		0 - 40 m	no	yes	-
		Spring	HOLA	Horned Lark	4		0 - 40 m	no	yes	-
		Spring	CAGO	Canada Goose	6		40 - 180 m	no	yes	1 min
		Spring	COGR	Common Grackle	6		40 - 180 m	no	yes	1 min
		Spring	AMRO	American Robin	3		0 - 40 m	no	yes	-
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	no	yes	-
		Spring	COGR	Common Grackle	3		40 - 180 m	no	yes	1 min
		Spring	AMCR	American Crow	2		0 - 40 m	no	yes	-
		Spring	AMCR	American Crow	1		40 - 180 m	no	yes	2 min
		Spring	AMRO	American Robin	3		0 - 40 m	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	yes	yes	1 min
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	no	yes	-
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	yes	yes	2 min
		Spring	AMCR	American Crow	2		0 - 40 m	no	yes	-
		Spring	HOLA	Horned Lark	4		0 - 40 m	no	yes	-
27-Mar-11	3	Spring	AMCR	American Crow	3		40 - 180 m	no	yes	1 min
		Spring	EUST	European Starling	20		0 - 40 m	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	yes	yes	3 min
		Spring	AMRO	American Robin	3		40 - 180 m	no	yes	1 min
		Spring	NOHA	Northern Harrier	1		0 - 40 m	no	yes	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	yes	yes	2 min
		Spring	AMRO	American Robin	4		40 - 180 m	no	yes	1 min
		Spring	COGR	Common Grackle	3		0 - 40 m	no	yes	-
		Spring	KILL	Killdeer	2		0 - 40 m	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	yes	yes	2 min
		Spring	COGR	Common Grackle	2		0 - 40 m	no	yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	no	yes	-
		Spring	COGR	Common Grackle	5		40 - 180 m	no	yes	1 min
		Spring	AMRO	American Robin	6		40 - 180 m	no	yes	1 min
		Spring	AMCR	American Crow	1		0 - 40 m	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	yes	yes	2 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	yes	yes	1 min
		Spring	COGR	Common Grackle	2		0 - 40 m	no	yes	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area	Estimated time within rooster	
							Height	Direction	(yes/no)	(yes/no)	area	area
27-Mar-11	3	Spring	AMCR	American Crow	2		40 - 180 m	East/Northeast	no	yes	1 min	1 min
		Spring	AMRO	American Robin	3		40 - 180 m	Southwest	no	yes	1 min	1 min
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North/Northeast	yes	yes	2 min	2 min
		Spring	KILL	Killdeer	2		0 - 40 m	West/Southwest	no	yes	-	-
		Spring	AMRO	American Robin	10		40 - 180 m	East	no	yes	1 min	1 min
		Spring	AMCR	American Crow	1		0 - 40 m	Northeast	no	yes	-	-
		Spring	EUST	European Starling	15		0 - 40 m	Northwest	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West	yes	yes	2 min	2 min
		Spring	AMRO	American Robin	2		0 - 40 m	Southwest	no	yes	-	-
		Spring	COGR	Common Grackle	7		40 - 180 m	East/Southwest	no	yes	1 min	1 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	2 min	2 min
		Spring	AMRO	American Robin	6		40 - 180 m	West/Southwest	no	yes	2 min	2 min
		Spring	AMCR	American Crow	4		40 - 180 m	Northeast	no	yes	1 min	1 min
29-Mar-11	1	Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northeast	yes	yes	2 min	2 min
		Spring	COGR	Common Grackle	4		0 - 40 m	North	no	yes	-	-
		Spring	AMCR	American Crow	3		0 - 40 m	West	no	yes	-	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	South	yes	yes	3 min	3 min
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	-	-
		Spring	COGR	Common Grackle	1		40 - 180 m	Northeast	no	yes	1 min	1 min
		Spring	HOLA	Horned Lark	4		0 - 40 m	South	no	yes	-	-
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	-	-
		Spring	AMRO	American Robin	1		0 - 40 m	East/Northeast	no	yes	-	-
		Spring	HOLA	Horned Lark	20		0 - 40 m	West/Southwest	no	yes	-	-
		Spring	HOLA	Horned Lark	1		0 - 40 m	West/Northeast	no	yes	-	-
		Spring	HOLA	Horned Lark	2		0 - 40 m	West	no	yes	-	-
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	2 min	2 min
		Spring	COGR	Common Grackle	4		40 - 180 m	East	no	yes	1 min	1 min
		Spring	AMCR	American Crow	1		0 - 40 m	South	no	yes	-	-
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North/Northeast	yes	yes	3 min	3 min
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	North/Northeast	yes	yes	5 min	5 min
		Spring	KILL	Killdeer	1		0 - 40 m	Southeast	no	yes	-	-
		Spring	AMCR	American Crow	3		0 - 40 m	West	no	yes	-	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northwest	yes	yes	2 min	2 min
		Spring	AMCR	American Crow	1		0 - 40 m	West	no	yes	-	-
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	West	no	yes	-	-
		Spring	AMCR	American Crow	2		40 - 180 m	West/Southwest	no	yes	1 min	1 min
		Spring	COGR	Common Grackle	3		0 - 40 m	Northeast	no	yes	-	-
29-Mar-11	2	Spring	EUST	European Starling	15		0 - 40 m	North/Northeast	no	yes	-	-
		Spring	AMCR	American Crow	2		0 - 40 m	West/Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	1		0 - 40 m	Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	1		40 - 180 m	Southwest	no	yes	1 min	1 min
		Spring	HOLA	Horned Lark	3		0 - 40 m	West	no	yes	-	-
		Spring	COGR	Common Grackle	6		40 - 180 m	South/Southwest	no	yes	1 min	1 min
		Spring	AMRO	American Robin	2		0 - 40 m	Northeast	no	yes	-	-
		Spring	CAGO	Canada Goose	4		40 - 180 m	North/Northeast	no	yes	1 min	1 min
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-	-
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)		Estimated time within rooster area
							Height	Direction				
29-Mar-11	2	Spring	KILL	Killdeer	2		0 - 40 m	Northwest	no		yes	-
		Spring	MODO	Mourning Dove	3		0 - 40 m	East	no		yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	Northwest	no		yes	-
		Spring	HOLA	Horned Lark	4		0 - 40 m	West/Southwest	no		yes	-
		Spring	EUST	European Starling	8		0 - 40 m	Northwest	no		yes	-
		Spring	AMCR	American Crow	3		40 - 180 m	Northwest	no		yes	1 min
		Spring	COGR	Common Grackle	7		0 - 40 m	South	no		yes	-
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no		yes	-
		Spring	KILL	Killdeer	3		0 - 40 m	Southwest	no		yes	-
		Spring	COGR	Common Grackle	1		40 - 180 m	South	no		yes	-
		Spring	HOLA	Horned Lark	2		0 - 40 m	Northwest	no		yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	Northwest	no		yes	-
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	Southwest	yes		yes	3 min
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Southwest	yes		yes	2 min
		Spring	AMRO	American Robin	3		0 - 40 m	East	no		yes	-
29-Mar-11	3	Spring	COGR	Common Grackle	1		40 - 180 m	West	no		yes	1 min
		Spring	KILL	Killdeer	1		0 - 40 m	Southwest	no		yes	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Southwest	yes		yes	2 min
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no		yes	-
		Spring	AMRO	American Robin	4		40 - 180 m	Northwest	no		yes	1 min
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Southwest	no		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East/Southeast	no		yes	2 min
		Spring	AMCR	American Crow	4		40 - 180 m	North/Northeast	no		yes	1 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northwest	yes		yes	1 min
		Spring	COGR	Common Grackle	3		0 - 40 m	Southwest	no		yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	North	no		yes	-
		Spring	AMRO	American Robin	3		40 - 180 m	Southeast	no		yes	1 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes		yes	2 min
		Spring	AMCR	American Crow	1		0 - 40 m	South	no		yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no		yes	-
31-Mar-11	1	Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southeast	yes		yes	1 min
		Spring	HOLA	Horned Lark	10		0 - 40 m	East/Northeast	no		yes	-
		Spring	AMRO	American Robin	6		40 - 180 m	Northwest	no		yes	1 min
		Spring	COGR	Common Grackle	6		0 - 40 m	South	no		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes		yes	3 min
		Spring	HOLA	Horned Lark	1		0 - 40 m	East/Southeast	no		yes	-
		Spring	KILL	Killdeer	1		0 - 40 m	East	no		yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	North	no		yes	-
		Spring	COGR	Common Grackle	1		40 - 180 m	Southwest	no		yes	1 min
		Spring	HOLA	Horned Lark	1		0 - 40 m	South/Southwest	no		yes	-
		Spring	AMCR	American Crow	1		40 - 180 m	Southeast	no		yes	1 min
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	Northwest	no		yes	-
		Spring	EUST	European Starling	5		0 - 40 m	West/Northeast	no		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North/Northeast	yes		yes	2 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South/Southeast	yes		yes	2 min
		Spring	AMRO	American Robin	3		0 - 40 m	Northwest	no		yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes		yes	2 min
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	East/Northeast	yes		yes	4 min
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no		yes	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
31-Mar-11	1	Spring	TUVU	Turkey Vulture	3		40 - 180 m	South	yes	yes	3 min
		Spring	KILL	Killdeer	1		0 - 40 m	South/Southwest	no	yes	-
		Spring	AMRO	American Robin	25		40 - 180 m	North	no	yes	2 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southeast	yes	yes	1 min
		Spring	TUVU	Turkey Vulture	1		>180 m	Southeast	yes	yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	North	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	-
		Spring	EUST	European Starling	30		40 - 180 m	West/Northwest	no	yes	2 min
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northwest	yes	yes	3 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	2 min
		Spring	AMCR	American Crow	2		0 - 40 m	South	no	yes	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	Northwest	yes	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southeast	yes	yes	2 min
		Spring	AMCR	American Crow	3		0 - 40 m	Southeast	no	yes	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	North/Northeast	yes	yes	1 min
		Spring	HOLA	Horned Lark	2		0 - 40 m	Southeast	no	yes	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	East	yes	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	2 min
		Spring	AMCR	American Crow	2		0 - 40 m	South	no	yes	-
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	South/Southeast	yes	yes	3 min
31-Mar-11	2	Spring	TUVU	Turkey Vulture	1		0 - 40 m	South	yes	yes	-
		Spring	HOLA	Horned Lark	7		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no	yes	-
		Spring	EUST	European Starling	1		0 - 40 m	West	no	yes	-
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	-
		Spring	TUVU	Turkey Vulture	4		0 - 40 m	West/Northwest	yes	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	3 min
		Spring	AMCR	American Crow	1		0 - 40 m	East	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East	yes	yes	2 min
		Spring	AMRO	American Robin	3		0 - 40 m	Northwest	no	yes	-
		Spring	COGR	Common Grackle	4		0 - 40 m	North/Northeast	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	South/Southwest	yes	yes	2 min
		Spring	KILL	Killdeer	2		0 - 40 m	East/Northeast	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	2 min
		Spring	AMCR	American Crow	3		0 - 40 m	Southeast	no	yes	-
		Spring	GBHE	Great Blue Heron	1		0 - 40 m	North	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southeast	yes	yes	2 min
		Spring	AMCR	American Crow	3		0 - 40 m	Northwest	no	yes	-
		Spring	COGR	Common Grackle	4		0 - 40 m	East/Northeast	no	yes	-
		Spring	AMRO	American Robin	2		0 - 40 m	East	no	yes	-
31-Mar-11	3	Spring	COGR	Common Grackle	2		0 - 40 m	North/Northeast	no	yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	North	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	-
		Spring	COGR	Common Grackle	4		0 - 40 m	Northwest	no	yes	-
		Spring	COGR	Common Grackle	5		40 - 180 m	South/Southwest	no	yes	1 min
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes	-
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	South/Southwest	no	yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	South	no	yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	North/Northeast	no	yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	Southwest	no	yes	-
		Spring	COGR	Common Grackle	4		0 - 40 m	Northwest	no	yes	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area	Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)	area
31-Mar-11	3	Spring	HOLA	Horned Lark	2		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-
		Spring	KILL	Killdeer	24		0 - 40 m	Northeast	no	yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	South	no	yes	-
		Spring	RWBL	Red-winged Blackbird	6		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	West	no	yes	-
		Spring	MODO	Mourning Dove	1		0 - 40 m	Northeast	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	South	no	yes	-
		Spring	EUST	European Starling	1		0 - 40 m	North/Northwest	no	yes	-
		Spring	COGR	Common Grackle	10		0 - 40 m	North/Northwest	no	yes	-
		Spring	RWBL	Red-winged Blackbird	10		0 - 40 m	North/Northwest	no	yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	Northwest	no	yes	-
		Spring	MODO	Mourning Dove	4		0 - 40 m	North	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West	yes	yes	1 min
		Spring	COGR	Common Grackle	3		40 - 180 m	South	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	North/Northeast	no	yes	-
		Spring	KILL	Killdeer	3		0 - 40 m	East	no	yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	North	no	yes	-
		Spring	MODO	Mourning Dove	2		0 - 40 m	South/Southwest	no	yes	-
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes	-
		Spring	COGR	Common Grackle	2		0 - 40 m	West/Northwest	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	2 min
		Spring	COGR	Common Grackle	6		0 - 40 m	South	no	yes	-
		Spring	AMRO	American Robin	4		40 - 180 m	Southeast	no	yes	1 min
		Spring	COGR	Common Grackle	3		0 - 40 m	East	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northeast	yes	yes	1 min
		Spring	COGR	Common Grackle	4		0 - 40 m	Southwest	no	yes	-
7-Apr-11	1	Spring	HOLA	Horned Lark	3		0 - 40 m	North	no	yes	-
		Spring	HOLA	Horned Lark	2		0 - 40 m	South	no	yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	North	no	yes	-
		Spring	EUST	European Starling	13		0 - 40 m	Northwest	no	yes	-
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	-
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	Southeast	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	-
		Spring	SOSP	Song Sparrow	1		0 - 40 m	Southwest	no	yes	-
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	East	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	-
		Spring	EUST	European Starling	4		0 - 40 m	Northeast	no	yes	-
		Spring	RWBL	Red-winged Blackbird	7		0 - 40 m	Southeast	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northeast	yes	yes	3 Minutes
		Spring	AMCR	American Crow	1		0 - 40 m	Southwest	no	yes	-
		Spring	HOLA	Horned Lark	1		0 - 40 m	North	no	yes	-
		Spring	AMCR	American Crow	2		0 - 40 m	South	no	yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	Northeast	no	yes	-
		Spring	EUST	European Starling	6		0 - 40 m	North	no	yes	-
		Spring	COGR	Common Grackle	11		0 - 40 m	Southwest	no	yes	-
		Spring	AMRO	American Robin	2		0 - 40 m	South	no	yes	-
		Spring	RWBL	Red-winged Blackbird	8		0 - 40 m	South	no	yes	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)		Estimated time within rooster area
							Height	Direction				
7-Apr-11	1	Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	Northwest	no		yes	
		Spring	EUST	European Starling	1		0 - 40 m	North	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no		yes	
7-Apr-11	2	Spring	EUST	European Starling	2		0 - 40 m	North	no		yes	
		Spring	TUVU	Turkey Vulture	4		0 - 40 m	South	yes		yes	
		Spring	CAGO	Canada Goose	6		40 - 180 m	Northeast	no		yes	1 Minute
		Spring	RWBL	Red-winged Blackbird	12		0 - 40 m	South	no		yes	
		Spring	TUVU	Turkey Vulture	4		0 - 40 m	West	yes		yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	West	no		yes	
		Spring	RWBL	Red-winged Blackbird	272		40 - 180 m	North	no		yes	1 Minute
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no		yes	
		Spring	RWBL	Red-winged Blackbird	27		0 - 40 m	North	no		yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	South	no		yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	North	no		yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	North	no		yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes		yes	2 Minutes
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	North	yes		yes	5 Minutes
		Spring	AMCR	American Crow	2		0 - 40 m	South	no		yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	South	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no		yes	
		Spring	COGR	Common Grackle	4		0 - 40 m	Southwest	no		yes	
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no		yes	
		Spring	AMRO	American Robin	2		0 - 40 m	South	no		yes	
7-Apr-11	3	Spring	NOHA	Northern Harrier	1		0 - 40 m	South/North	yes		yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	North	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	North	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	South	no		yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	North	no		yes	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	East/Northeast	no		yes	1 Minute
		Spring	KILL	Killdeer	1		40 - 180 m	North	yes		yes	1 Minute
		Spring	NOPI	Northern Pintail	6		40 - 180 m	Northeast	no		yes	1 Minute
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	West	no		yes	
		Spring	BOGU	Bonaparte's Gull	62		40 - 180 m	Northeast	no		yes	1 Minute
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	East	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Northeast	no		yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	North	no		yes	
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	Southwest	no		yes	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	Southwest	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	North	no		yes	
		Spring	EUST	European Starling	1		0 - 40 m	North	no		yes	
		Spring	EUST	European Starling	2		0 - 40 m	North	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no		yes	
		Spring	RWBL	Red-winged Blackbird	20		40 - 180 m	South	no		yes	1 Minute
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no		yes	
		Spring	SACR	Sandhill Crane	1		0 - 40 m	North	no		yes	
		Spring	RWBL	Red-winged Blackbird	34		0 - 40 m	South	no		yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
7-Apr-11	3	Spring	BHCO	Brown-headed Cowbird	6		0 - 40 m	South	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	South	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no	yes	
		Spring	EUST	European Starling	1		0 - 40 m	North	no	yes	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	North	no	yes	
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	Northwest	no	yes	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	Southwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	
		Spring	COGR	Common Grackle	1		40 - 180 m	Southeast	no	yes	1 Minute
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	Southeast	yes	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	South	no	yes	
		Spring	MODO	Mourning Dove	1		0 - 40 m	West	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	South	no	yes	
		Spring	COGR	Common Grackle	18		0 - 40 m	North	no	yes	
		Spring	AMRO	American Robin	4		0 - 40 m	North	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	North	no	yes	
		Spring	TUVU	Turkey Vulture	11		40 - 180 m	North	yes	yes	3 Minutes
8-Apr-11	1	Spring	RWBL	Red-winged Blackbird	56		0 - 40 m	Southwest	no	yes	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	Northwest	no	yes	
		Spring	HOLA	Horned Lark	1		40 - 180 m	North	no	yes	1 Minute
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	East	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m	South	no	yes	
		Spring	AMRO	American Robin	3		0 - 40 m	South	no	yes	
		Spring	AMCR	American Crow	1		0 - 40 m	North	no	yes	
		Spring	EUST	European Starling	1		0 - 40 m	North	no	yes	
		Spring	EUST	European Starling	34		0 - 40 m	Northwest	no	yes	
		Spring	BOGU	Bonaparte's Gull	3		0 - 40 m	East	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	East	no	yes	
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	Northwest	no	yes	
		Spring	AMCR	American Crow	1		0 - 40 m	South	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	AMCR	American Crow	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	
		Spring	AMCR	American Crow	1		0 - 40 m	East	no	yes	
		Spring	AMCR	American Crow	1		0 - 40 m	East	no	yes	
8-Apr-11	2	Spring	AMCR	American Crow	1		0 - 40 m	East	no	yes	
		Spring	HOLA	Horned Lark	23		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no	yes	
		Spring	EUST	European Starling	1		0 - 40 m	Southwest	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	Southeast	no	yes	
		Spring	AMRO	American Robin	8		40 - 180 m	Southeast	no	yes	1 Minute
		Spring	KILL	Killdeer	2		0 - 40 m	North	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	South	no	yes	
		Spring	RWBL	Red-winged Blackbird	98		0 - 40 m	South	no	yes	
		Spring	COGR	Common Grackle	5		40 - 180 m	Southeast	no	yes	1 Minute

Date	Point	Season	Code	Species	#	Age	Observation	Circling	Entered Project Area	Estimated time within rooster area
8-Apr-11	2	Spring	RWBL	Red-winged Blackbird	1		0 - 40 m Southwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	8		0 - 40 m Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m North	no	yes	
		Spring	EUST	European Starling	1		0 - 40 m Northwest	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m North	no	yes	
		Spring	EUST	European Starling	9		0 - 40 m North	no	yes	
		Spring	BOGU	Bonaparte's Gull	16		40 - 180 m North	no	yes	1 Minute
		Spring	EUST	European Starling	2		0 - 40 m South	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m North	no	yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m North	no	yes	
		Spring	MODO	Mourning Dove	2		0 - 40 m West	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m North	no	yes	
		Spring	AMRO	American Robin	3		0 - 40 m Northeast	no	yes	
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m Northwest	no	yes	
8-Apr-11	3	Spring	COHA	Cooper's Hawk	1		0 - 40 m East	no	yes	
		Spring	RWBL	Red-winged Blackbird	18		0 - 40 m South	yes	yes	
		Spring	AMRO	American Robin	1		0 - 40 m West	no	yes	
		Spring	RWBL	Red-winged Blackbird	18		40 - 180 m North	no	yes	1 Minute
		Spring	AMRO	American Robin	1		40 - 180 m Southwest	no	yes	1 Minute
		Spring	RWBL	Red-winged Blackbird	7		40 - 180 m Southwest	no	yes	1 Minute
		Spring	AMCR	American Crow	2		0 - 40 m North	no	yes	
		Spring	TUVU	Turkey Vulture	14		40 - 180 m North	yes	yes	3.5 Minutes
		Spring	AMRO	American Robin	2		0 - 40 m South	no	yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m North	no	yes	
11-Apr-11	1	Spring	KILL	Killdeer	3		0 - 40 m Southeast	no	yes	
		Spring	COGR	Common Grackle	3		0 - 40 m South	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m South	no	yes	
		Spring	EUST	European Starling	2		0 - 40 m South	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m North	no	yes	
		Spring	TUVU	Turkey Vulture	1		0 - 40 m Southwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m Northwest	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m North	no	yes	
		Spring	EUST	European Starling	7		0 - 40 m West	no	yes	
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m Southwest	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m East	no	yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m West	no	yes	
		Spring	COGR	Common Grackle	6		0 - 40 m North	no	yes	
		Spring	SOSP	Song Sparrow	1		0 - 40 m East	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m West	no	yes	
		Spring	HOLA	Horned Lark	1		40 - 180 m North	no	yes	1 Minute
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m East	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m South	no	yes	
		Spring	AMRO	American Robin	3		0 - 40 m South	no	yes	
		Spring	AMCR	American Crow	2		0 - 40 m North	no	yes	
		Spring	EUST	European Starling	22		0 - 40 m Northwest	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m East	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
11-Apr-11	2	Spring	TUVU	Turkey Vulture	2		40 - 180 m	North	yes	yes	2 Minutes
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	South	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	South	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	12		0 - 40 m	West	no	yes	
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no	yes	
		Spring	BHCO	Brown-headed Cowbird	4		0 - 40 m	West	no	yes	
		Spring	AMCR	American Crow	2		0 - 40 m	Southeast	no	yes	
		Spring	AMKE	American Kestrel	1		0 - 40 m	East	no	yes	
		Spring	NOHA	Northern Harrier	1		0 - 40 m	Northwest	no	yes	5 Minutes
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	South	no	yes	
		Spring	AMRO	American Robin	6		0 - 40 m	North	no	yes	
		Spring	TUVU	Turkey Vulture	8		>180 m	North	yes	yes	8 Minutes
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Northwest	no	yes	
		Spring	COGR	Common Grackle	6		0 - 40 m	Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	East	no	yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	South	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	
		Spring	BHCO	Brown-headed Cowbird	3		0 - 40 m	Northwest	no	yes	
		Spring	EUST	European Starling	8		0 - 40 m	Southwest	no	yes	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	North	yes	yes	3 Minutes
		Spring	AMRO	American Robin	3		0 - 40 m	West	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	AMCR	American Crow	2		0 - 40 m	Southeast	no	yes	
		Spring	BLJA	Blue Jay	2		0 - 40 m	North	no	yes	
		Spring	EABL	Eastern Bluebird	1		0 - 40 m	South	no	yes	
11-Apr-11	3	Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Northwest	no	yes	
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	
		Spring	COGR	Common Grackle	4		0 - 40 m	East	no	yes	
		Spring	BHCO	Brown-headed Cowbird	7		0 - 40 m	West	no	yes	
		Spring	EUST	European Starling	1		0 - 40 m	South	no	yes	
		Spring	NOHA	Northern Harrier	1		0 - 40 m	Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	8		0 - 40 m	Southeast	no	yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	Southwest	no	yes	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	North	yes	yes	2 Minutes
		Spring	TUVU	Turkey Vulture	16		40 - 180 m	Northwest	yes	yes	5 Minutes
		Spring	COGR	Common Grackle	3		0 - 40 m	North	no	yes	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	Southeast	no	yes	
		Spring	SOSP	Song Sparrow	1		0 - 40 m	South	no	yes	
		Spring	AMRO	American Robin	3		0 - 40 m	North	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	
		Spring	MALL	Mallard	2		40 - 180 m	North	no	yes	1 Minute
		Spring	TUVU	Turkey Vulture	5		40 - 180 m	North	no	yes	1 Minute
		Spring	RWBL	Red-winged Blackbird	7		0 - 40 m	Southwest	no	yes	
		Spring	COGR	Common Grackle	4		0 - 40 m	Northwest	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area	Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)	
11-Apr-11	3	Spring	EUST	European Starling	12		0 - 40 m	Northwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	
		Spring	AMRO	American Robin	2		0 - 40 m	East	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	South	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Northeast	no	yes	
		Spring	AMRO	American Robin	2		0 - 40 m	North	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	
		Spring	AMCR	American Crow	3		0 - 40 m	Southeast	no	yes	
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	Southeast	no	yes	
14-Apr-11	1	Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	North	no	yes	
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	Northwest	yes	yes	4 Minutes
		Spring	AMKE	American Kestrel	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	2		0 - 40 m	East	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	West	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Northwest	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	Northeast	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	North	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m	Northeast	no	yes	
		Spring	CHSP	Chipping Sparrow	1		0 - 40 m	West	no	yes	
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	
		Spring	AMCR	American Crow	4		0 - 40 m	Southeast	no	yes	
		Spring	TUVU	Turkey Vulture	5		40 - 180 m	Southeast	yes	yes	3 Minutes
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	
		Spring	KILL	Killdeer	2		0 - 40 m	East	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no	yes	
		Spring	BHCO	Brown-headed Cowbird	4		0 - 40 m	South	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes	yes	5 Minutes
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	Northeast	no	yes	
		Spring	BHCO	Brown-headed Cowbird	1		0 - 40 m	Southeast	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	Southeast	no	yes	
		Spring	AMCR	American Crow	1		0 - 40 m	West	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	Southwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West	yes	yes	2 Minutes
14-Apr-11	2	Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	
		Spring	EABL	Eastern Bluebird	1		0 - 40 m	East	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	West	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes	yes	3 Minutes
		Spring	SAVS	Savannah Sparrow	1		0 - 40 m	South	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes	yes	5 Minutes
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	East	no	yes	1 Minute
		Spring	COGR	Common Grackle	4		0 - 40 m	Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	7		0 - 40 m	Southeast	no	yes	
		Spring	AMKE	American Kestrel	1		0 - 40 m	Southwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Northeast	no	yes	
		Spring	COGR	Common Grackle	6		0 - 40 m	Southwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area		Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)		
14-Apr-11	2	Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	Southeast	no		yes	
		Spring	AMCR	American Crow	2		0 - 40 m	East	no		yes	
		Spring	TUVU	Turkey Vulture	8		40 - 180 m	West	yes		yes	8 Minutes
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	North	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no		yes	
		Spring	AMRO	American Robin	2		0 - 40 m	South	no		yes	
		Spring	MALL	Mallard	2		0 - 40 m	Southwest	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	North	no		yes	
		Spring	FISP	Field Sparrow	1		0 - 40 m	West	no		yes	
		Spring	COGR	Common Grackle	3		0 - 40 m	East	no		yes	
14-Apr-11	3	Spring	RWBL	Red-winged Blackbird	7		0 - 40 m	Northwest	no		yes	
		Spring	AMRO	American Robin	2		0 - 40 m	Southeast	no		yes	
		Spring	KILL	Killdeer	2		0 - 40 m	Northwest	no		yes	
		Spring	RWBL	Red-winged Blackbird	8		0 - 40 m	North	no		yes	
		Spring	BHCO	Brown-headed Cowbird	3		0 - 40 m	North	no		yes	
		Spring	COGR	Common Grackle	4		0 - 40 m	North	no		yes	
		Spring	AMCR	American Crow	1		0 - 40 m	South	no		yes	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	West	no		yes	
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	Northwest	no		yes	
		Spring	AMRO	American Robin	2		0 - 40 m	Southeast	no		yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Northeast	no		yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	Southeast	no		yes	
		Spring	TUVU	Turkey Vulture	8		40 - 180 m	Northeast	yes		yes	4 Minutes
		Spring	AMRO	American Robin	1		0 - 40 m	West	no		yes	
		Spring	EUST	European Starling	7		0 - 40 m	Northeast	no		yes	
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	North	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no		yes	
		Spring	AMRO	American Robin	3		0 - 40 m	Southeast	no		yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	Northwest	no		yes	
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	South	no		yes	
		Spring	AMCR	American Crow	2		40 - 180 m	East	no		yes	1 Minute
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	East	no		yes	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	East	no		yes	
		Spring	AMCR	American Crow	1		40 - 180 m	Northwest	no		yes	1 Minute
		Spring	EUST	European Starling	2		0 - 40 m	South	no		yes	
		Spring	EABL	Eastern Bluebird	2		0 - 40 m	West	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no		yes	
		Spring	TRES	Tree Swallow	1		0 - 40 m	North	yes		yes	
		Spring	KILL	Killdeer	1		0 - 40 m	East	no		yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	West	yes		yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes		yes	2 Minutes
15-Apr-11	1	Spring	AMCR	American Crow	2		0 - 40 m	North	no		yes	
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no		yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	North	yes		yes	
		Spring	HOLA	Horned Lark	3		0 - 40 m	East	no		yes	
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no		yes	
		Spring	MALL	Mallard	2		0 - 40 m	Northwest	no		yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no		yes	
		Spring	CHSP	Chipping Sparrow	1		0 - 40 m	West	no		yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
15-Apr-11	1	Spring	BHCO	Brown-headed Cowbird	1		0 - 40 m	East	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	North	no	yes	
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	Northeast	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Northeast	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	East	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m	South	no	yes	
		Spring	CHSP	Chipping Sparrow	1		0 - 40 m	East	no	yes	
		Spring	CHSP	Chipping Sparrow	1		0 - 40 m	North	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southeast	yes	yes	6 Minutes
		Spring	AMCR	American Crow	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	Northeast	yes	yes	
		Spring	TUVU	Turkey Vulture	7		0 - 40 m	Southeast	no	yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	East	no	yes	
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Southeast	yes	yes	5 Minutes
		Spring	RSHA	Red-shouldered Hawk	1		0 - 40 m	North	no	yes	
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	North	yes	yes	7 Minutes
		Spring	BRNS	Barn Swallow	1		0 - 40 m	Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	Northwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	
15-Apr-11	2	Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	Southeast	no	yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	Northwest	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southwest	no	yes	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	Southeast	yes	yes	12 Minutes
		Spring	EUST	European Starling	2		0 - 40 m	South	no	yes	
		Spring	EUST	European Starling	8		0 - 40 m	East	no	yes	
		Spring	BAEA	Bald Eagle	1	Adult	40 - 180 m	Northeast	yes	yes	2 Minutes
		Spring	RWBL	Red-winged Blackbird	18		0 - 40 m	North	no	yes	
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	North	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m	West	no	yes	
		Spring	EUST	European Starling	6		0 - 40 m	Northeast	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	West	no	yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Southeast	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	Northeast	no	yes	
		Spring	COHA	Cooper's Hawk	1		0 - 40 m	North	no	yes	
		Spring	AMKE	American Kestrel	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no	yes	
		Spring	COGR	Common Grackle	3		0 - 40 m	Southeast	no	yes	
		Spring	RWBL	Red-winged Blackbird	7		0 - 40 m	North	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	North	no	yes	
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	West	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	Southeast	yes	yes	6 Minutes
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
							Height	Direction			
15-Apr-11	3	Spring	EUST	European Starling	4		0 - 40 m	West	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East	no	yes	1 Minute
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	South	no	yes	
		Spring	WITU	Wild Turkey	1		0 - 40 m	West	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	Northeast	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	East	no	yes	
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	Southeast	yes	yes	2 Minutes
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	3		0 - 40 m	Southeast	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	Southwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	
		Spring	AMCR	American Crow	3		0 - 40 m	Northeast	no	yes	
		Spring	COGR	Common Grackle	4		0 - 40 m	Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	7		0 - 40 m	North	no	yes	
				Spring	RWBL	Red-winged Blackbird	25		40 - 180 m	Southeast	no
Spring	TUVU			Turkey Vulture	1		40 - 180 m	Southwest	yes	yes	3 min
Spring	TUVU			Turkey Vulture	1		40 - 180 m	Northeast	yes	yes	2 min
Spring	HOLA			Horned Lark	5		0 - 40 m	South	no	yes	-
Spring	TUVU			Turkey Vulture	1		40 - 180 m	Southeast	yes	yes	2 min
Spring	WODU			Wood Duck	1		40 - 180 m	West/Northwest	no	yes	1 min
Spring	COGR			Common Grackle	1		40 - 180 m	South/Southeast	no	yes	1 min
Spring	MODO			Mourning Dove	1		0 - 40 m	North/Northeast	no	yes	-
Spring	RWBL			Red-winged Blackbird	2		0 - 40 m	Southwest	no	yes	-
Spring	COGR			Common Grackle	2		0 - 40 m	South/Southwest	no	yes	-
Spring	KILL			Killdeer	2		0 - 40 m	East	no	yes	-
Spring	HOLA			Horned Lark	2		0 - 40 m	East	no	yes	-
Spring	TUVU			Turkey Vulture	1		40 - 180 m	South	yes	yes	2 min
Spring	EUST			European Starling	2		0 - 40 m	North	no	yes	-
Spring	TUVU			Turkey Vulture	1		40 - 180 m	North	yes	yes	8 min
Spring	AMCR			American Crow	1		0 - 40 m	West/Northwest	no	yes	-
20-Apr-11	1			Spring	AMCR	American Crow	1		0 - 40 m	East	no
		Spring	AMCR	American Crow	2		0 - 40 m	North	no	yes	-
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southeast	no	yes	-
		Spring	KILL	Killdeer	1		40 - 180 m	South/Southwest	no	yes	1 min
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	North/Northeast	yes	yes	5 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northeast	yes	yes	3 min
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southeast	no	yes	-
		Spring	EUST	European Starling	5		0 - 40 m	Northwest	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southeast	yes	yes	3 min
		Spring	EUST	European Starling	3		0 - 40 m	North/Northeast	no	yes	-
		Spring	AMRO	American Robin	2		40 - 180 m	North/Northwest	no	yes	-
		Spring	AMKE	American Kestrel	1		40 - 180 m	North	yes	yes	1 min
		Spring	COGR	Common Grackle	2		0 - 40 m	Northeast	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West	yes	yes	5 min
		Spring	HOLA	Horned Lark	3		0 - 40 m	Northwest	no	yes	-
		Spring	GBHE	Great Blue Heron	1		40 - 180 m	North/Northeast	no	yes	1 min

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area	
							Height	Direction				area
20-Apr-11	2	Spring	EUST	European Starling	4		0 - 40 m	Southwest	no	yes	-	-
		Spring	TUVU	Turkey Vulture	5		0 - 40 m	West	no	yes	-	-
		Spring	CAGO	Canada Goose	6		0 - 40 m	North/Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	5		0 - 40 m	North	no	yes	-	-
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	South	yes	yes	2 min	-
		Spring	AMCR	American Crow	1		0 - 40 m	East	no	yes	-	-
		Spring	EUST	European Starling	3		0 - 40 m	West	no	yes	-	-
		Spring	AMRO	American Robin	1		0 - 40 m	Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	1		40 - 180 m	North/Northwest	no	yes	1 min	-
		Spring	AMCR	American Crow	1		0 - 40 m	Northeast	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	3 min	-
		Spring	NOHA	Northern Harrier	1		0 - 40 m	South	no	yes	-	-
		Spring	COGR	Common Grackle	3		40 - 180 m	North/Northeast	no	yes	1 min	-
		Spring	AMCR	American Crow	1		0 - 40 m	North	no	yes	-	-
		Spring	EUST	European Starling	1		0 - 40 m	North/Northwest	no	yes	-	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	North/Northeast	yes	yes	3 min	-
		Spring	RWBL	Red-winged Blackbird	5		0 - 40 m	Southwest	no	yes	-	-
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	-	-
		Spring	EUST	European Starling	6		0 - 40 m	West/Northwest	no	yes	-	-
		Spring	AMPI	American Pipit	3		40 - 180 m	North	no	yes	1 min	-
		Spring	AMRO	American Robin	4		0 - 40 m	North/Northeast	no	yes	-	-
20-Apr-11	3	Spring	TUVU	Turkey Vulture	1		40 - 180 m	West/Southwest	yes	yes	3 min	-
		Spring	COGR	Common Grackle	3		40 - 180 m	East	yes	yes	2 min	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Southwest	no	yes	-	-
		Spring	BAEA	Bald Eagle	1	3 yrs	40 - 180 m	East/Southeast	no	yes	1 min	-
		Spring	AMRO	American Robin	3		0 - 40 m	West	no	yes	-	-
		Spring	COGR	Common Grackle	4		0 - 40 m	Southwest	no	yes	-	-
		Spring	COGR	Common Grackle	7		0 - 40 m	West	no	yes	-	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northeast	yes	yes	2 min	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	2 min	-
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-	-
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	-	-
		Spring	KILL	Killdeer	2		0 - 40 m	East	no	yes	-	-
		Spring	EUST	European Starling	3		0 - 40 m	West	no	yes	-	-
		Spring	BHCO	Brown-headed Cowbird	5		0 - 40 m	Northeast	no	yes	-	-
		Spring	COGR	Common Grackle	3		40 - 180 m	North	no	yes	1 min	-
		Spring	AMCR	American Crow	2		0 - 40 m	East	no	yes	-	-
		Spring	MODO	Mourning Dove	2		0 - 40 m	West	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southeast	yes	yes	2 min	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northwest	yes	yes	2 min	-
		Spring	EUST	European Starling	4		0 - 40 m	West	no	yes	-	-
		Spring	AMCR	American Crow	3		0 - 40 m	Southwest	no	yes	-	-
20-Apr-11	3	Spring	TUVU	Turkey Vulture	1		40 - 180 m	North/Northeast	no	yes	2 min	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes	yes	3 min	-
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no	yes	-	-
		Spring	EUST	European Starling	5		0 - 40 m	West	no	yes	-	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	East	yes	yes	2 min	-
		Spring	BAEA	Bald Eagle	1	3 yrs	40 - 180 m	East/Southeast	no	yes	1 min	-
		Spring	AMRO	American Robin	3		0 - 40 m	West	no	yes	-	-
		Spring	COGR	Common Grackle	4		0 - 40 m	Southwest	no	yes	-	-
		Spring	COGR	Common Grackle	7		0 - 40 m	West	no	yes	-	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northeast	yes	yes	2 min	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	2 min	-
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-	-

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
20-Apr-11	3	Spring	EUST	European Starling	6		0 - 40 m	East	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes	yes	2 min
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no	yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	Southwest	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Northeast	yes	yes	2 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southwest	yes	yes	4 min
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	West	no	yes	-
		Spring	EUST	European Starling	6		40 - 180 m	Southeast	no	yes	1 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes	yes	3 min
21-Apr-11	1	Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes	yes	2 min
		Spring	COGR	Common Grackle	1		40 - 180 m	South	no	yes	1 min
		Spring	CAGO	Canada Goose	4		40 - 180 m	Northwest	no	yes	1 min
		Spring	AMRO	American Robin	2		0 - 40 m	East	no	yes	-
		Spring	KILL	Killdeer	2		0 - 40 m	East	no	yes	-
		Spring	EUST	European Starling	3		40 - 180 m	Northeast	no	yes	1 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North/Northeast	yes	yes	3 min
		Spring	COGR	Common Grackle	3		0 - 40 m	South	no	yes	-
		Spring	AMCR	American Crow	4		0 - 40 m	West	no	yes	-
		Spring	EUST	European Starling	2		0 - 40 m	North	no	yes	-
		Spring	HOLA	Horned Lark	3		0 - 40 m	East	no	yes	-
		Spring	COGR	Common Grackle	1		40 - 180 m	Northwest	no	yes	-
		Spring	MODO	Mourning Dove	2		0 - 40 m	North	no	yes	-
		Spring	AMCR	American Crow	1		40 - 180 m	North	no	yes	1 min
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	North/Northeast	no	yes	-
		Spring	BHCO	Brown-headed Cowbird	8		40 - 180 m	West	no	yes	1 min
		Spring	COGR	Common Grackle	5		40 - 180 m	Northwest	no	yes	1 min
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West	yes	yes	2 min
		Spring	AMRO	American Robin	3		0 - 40 m	North	no	yes	-
		Spring	HOLA	Horned Lark	2		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	3		0 - 40 m	North/Northeast	no	yes	-
		Spring	AMCR	American Crow	2		0 - 40 m	Northeast	no	yes	-
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	South	no	yes	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Southeast	yes	yes	3 min
		Spring	KILL	Killdeer	2		0 - 40 m	East	no	yes	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northwest	yes	yes	2 min
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	-
		Spring	MODO	Mourning Dove	3		0 - 40 m	North	no	yes	-
		Spring	AMCR	American Crow	2		0 - 40 m	Southwest	no	yes	-
		Spring	AMRO	American Robin	1		40 - 180 m	Northeast	no	yes	1 min
		Spring	GBHE	Great Blue Heron	1		40 - 180 m	North	no	yes	1 min
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes	yes	3 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northwest	yes	yes	2 min
		Spring	CAGO	Canada Goose	4		40 - 180 m	North/Northeast	no	yes	1 min
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	Northwest	no	yes	-
		Spring	AMCR	American Crow	1		0 - 40 m	North	no	yes	-
21-Apr-11	2	Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northwest	yes	yes	2 min
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	West	no	yes	-
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	-
		Spring	MODO	Mourning Dove	3		0 - 40 m	North	no	yes	-
		Spring	AMCR	American Crow	2		0 - 40 m	Southwest	no	yes	-
		Spring	AMRO	American Robin	1		40 - 180 m	Northeast	no	yes	1 min
		Spring	GBHE	Great Blue Heron	1		40 - 180 m	North	no	yes	1 min
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no	yes	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southwest	yes	yes	3 min
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northwest	yes	yes	2 min

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area	
							Height	Direction			area	
21-Apr-11	2	Spring	TUVU	Turkey Vulture	1		40 - 180 m	East	yes	yes	2 min	
		Spring	SOSP	Song Sparrow	1		0 - 40 m	West	no	yes	-	
		Spring	AMRO	American Robin	2		0 - 40 m	Northeast	no	yes	-	
		Spring	COGR	Common Grackle	1		0 - 40 m	Southwest	no	yes	-	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Southwest	no	yes	-	
		Spring	COGR	Common Grackle	3		0 - 40 m	Northwest	no	yes	-	
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-	
		Spring	RWBL	Red-winged Blackbird	6		0 - 40 m	South	no	yes	-	
		Spring	AMRO	American Robin	2		0 - 40 m	North	no	yes	-	
		Spring	COGR	Common Grackle	7		0 - 40 m	West/Southwest	no	yes	-	
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	West	yes	yes	4 min	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	East/Southeast	yes	yes	2 min	
21-Apr-11	3	Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	-	
		Spring	COGR	Common Grackle	1		40 - 180 m	North	no	yes	1 min	
		Spring	EUST	European Starling	2		0 - 40 m	West	no	yes	-	
		Spring	EUST	European Starling	4		0 - 40 m	Northeast	no	yes	-	
		Spring	AMCR	American Crow	1		40 - 180 m	Southeast	no	yes	1 min	
		Spring	AMCR	American Crow	3		0 - 40 m	North	no	yes	-	
		Spring	COGR	Common Grackle	2		0 - 40 m	West	no	yes	-	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	West	no	yes	-	
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	-	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	North	yes	yes	2 min	
		Spring	MODO	Mourning Dove	2		0 - 40 m	Northeast	no	yes	-	
		Spring	EUST	European Starling	5		0 - 40 m	East/Northeast	no	yes	-	
		Spring	AMCR	American Crow	1		40 - 180 m	North	no	yes	-	
		Spring	COGR	Common Grackle	2		0 - 40 m	West/Southwest	no	yes	-	
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	-	
		Spring	COGR	Common Grackle	2		0 - 40 m	West/Southwest	no	yes	-	
		Spring	COGR	Common Grackle	9		0 - 40 m	East	no	yes	-	
		Spring	EUST	European Starling	2		0 - 40 m	East	no	yes	-	
		Spring	COGR	Common Grackle	12		0 - 40 m	East	no	yes	-	
		Spring	RWBL	Red-winged Blackbird	10		40 - 180 m	East/Northeast	no	yes	1 min	
		Spring	BAEA	Bald Eagle	1	3 yrs	40 - 180 m	West/Southwest	no	yes	2 min	
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	North	yes	yes	1 min	
		Spring	COGR	Common Grackle	1		0 - 40 m	North	yes	yes	-	
		Spring	COGR	Common Grackle	2		0 - 40 m	West	no	yes	-	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no	yes	-	
		Spring	COHA	Cooper's Hawk	1		40 - 180 m	West/Northwest	no	yes	1 min	
		Spring	COGR	Common Grackle	6		0 - 40 m	East	no	yes	-	
		Spring	EUST	European Starling	3		0 - 40 m	North	no	yes	-	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East	yes	yes	2 min	
22-Apr-11	1	Spring	TUVU	Turkey Vulture	2		40 - 180 m	Northeast	yes	yes	2 min	
		Spring	COGR	Common Grackle	1		0 - 40 m	Northeast	no	yes	-	
		Spring	AMRO	American Robin	2		40 - 180 m	North/Northwest	no	yes	1 min	
		Spring	AMCR	American Crow	1		0 - 40 m	South	no	yes	-	
		Spring	COGR	Common Grackle	3		0 - 40 m	Southeast	no	yes	-	
		Spring	EUST	European Starling	4		0 - 40 m	West	no	yes	-	
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Southwest	yes	yes	2 min	
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area	
22-Apr-11	1	Spring	EUST	European Starling	3		Height	Direction				
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	-	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	South	no	yes	-	-
		Spring	COGR	Common Grackle	1		0 - 40 m	Southeast	yes	yes	2 min	-
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Northwest	no	yes	-	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	West	no	yes	-	-
		Spring	COGR	Common Grackle	3		0 - 40 m	Northwest	yes	yes	3 min	-
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	3		0 - 40 m	North	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		0 - 40 m	Northwest	no	yes	-	-
		Spring	ROPI	Rock Pigeon	3		40 - 180 m	South	yes	yes	2 min	-
		Spring	KILL	Killdeer	1		0 - 40 m	Northwest	no	yes	-	-
22-Apr-11	2	Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Southwest	no	yes	-	-
		Spring	EUST	European Starling	4		0 - 40 m	North/Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	2		0 - 40 m	North/Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	2		0 - 40 m	Southeast	no	yes	-	-
		Spring	COGR	Common Grackle	2		40 - 180 m	East	no	yes	-	-
		Spring	MALL	Mallard	2		0 - 40 m	Southeast	no	yes	-	-
		Spring	COGR	Common Grackle	1		40 - 180 m	East	no	yes	1 min	-
		Spring	AMCR	American Crow	1		0 - 40 m	North	no	yes	-	-
		Spring	COGR	Common Grackle	2		40 - 180 m	South	no	yes	1 min	-
		Spring	HOLA	Horned Lark	1		0 - 40 m	East	no	yes	-	-
		Spring	AMCR	American Crow	2		0 - 40 m	South	no	yes	-	-
		Spring	RWBL	Red-winged Blackbird	5		40 - 180 m	South	no	yes	1 min	-
22-Apr-11	3	Spring	EUST	European Starling	5		40 - 180 m	South	no	yes	1 min	-
		Spring	COGR	Common Grackle	3		0 - 40 m	North	no	yes	-	-
		Spring	COGR	Common Grackle	2		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	AMCR	American Crow	2		0 - 40 m	North	no	yes	-	-
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southwest	no	yes	-	-
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	-	-
		Spring	AMRO	American Robin	2		0 - 40 m	Northwest	no	yes	-	-
		Spring	COGR	Common Grackle	3		0 - 40 m	West	no	yes	-	-
		Spring	RWBL	Red-winged Blackbird	6		0 - 40 m	Northwest	no	yes	-	-
		Spring	AMRO	American Robin	3		40 - 180 m	North	no	yes	1 min	-
		Spring	KILL	Killdeer	2		0 - 40 m	East	no	yes	-	-
		Spring	COGR	Common Grackle	1		0 - 40 m	South	no	yes	-	-
22-Apr-11	3	Spring	MODO	Mourning Dove	2		0 - 40 m	North	no	yes	-	-
		Spring	EUST	European Starling	5		0 - 40 m	Southwest	no	yes	-	-
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	East	no	yes	-	-
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	-	-
		Spring	TUVU	Turkey Vulture	2		40 - 180 m	Southwest	yes	yes	2 min	-
		Spring	RTHA	Red-tailed Hawk	1		40 - 180 m	Northwest	yes	yes	1 min	-
		Spring	COGR	Common Grackle	3		0 - 40 m	Northwest	no	yes	-	-
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	yes	yes	2 min	-
		Spring	CAGO	Canada Goose	2		40 - 180 m	Northwest	no	yes	1 min	-
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	-	-
		Spring	AMCR	American Crow	2		0 - 40 m	Northeast	no	yes	-	-
		Spring							no			

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area			
							Height	Direction						
24-Apr-11	1	Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	West	no	yes	1 Minute			
		Spring	PESA	Pectoral Sandpiper	23		0 - 40 m	East/Northeast	no	yes				
		Spring	HOLA	Horned Lark	2		0 - 40 m	North	no	yes				
		Spring	COGR	Common Grackle	2		0 - 40 m	North	no	yes				
		Spring	AMCR	American Crow	1		0 - 40 m	South	no	yes				
		Spring	KILL	Killdeer	1		0 - 40 m	West	no	yes				
		Spring	CAGO	Canada Goose	2		40 - 180 m	Southeast	no	yes				
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no	yes				
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no	yes				
		Spring	HOLA	Horned Lark	1		0 - 40 m	East	no	yes				
		Spring	BRNS	Barn Swallow	1		0 - 40 m	South	no	yes				
		Spring	KILL	Killdeer	1		0 - 40 m	North	no	yes				
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes				
		Spring	COGR	Common Grackle	1		0 - 40 m	East	no	yes				
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	East/Northeast	no	yes				
		Spring	RWBL	Red-winged Blackbird	2		0 - 40 m	East	no	yes				
		Spring	BRNS	Barn Swallow	6		0 - 40 m	North	yes	yes				
		Spring	AMCR	American Crow	1		0 - 40 m	East/Northeast	no	yes				
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	South	no	yes				
		24-Apr-11	2	Spring	BRNS	Barn Swallow	1		0 - 40 m	Northwest		no	yes	2 Minutes
Spring	RWBL			Red-winged Blackbird	1		0 - 40 m	West	no	yes				
Spring	HOLA			Horned Lark	2		0 - 40 m	South	no	yes				
Spring	KILL			Killdeer	1		0 - 40 m	Southeast	no	yes				
Spring	EUST			European Starling	3		0 - 40 m	North	no	yes				
Spring	HOLA			Horned Lark	1		0 - 40 m	East	no	yes				
Spring	EAME			Eastern Meadowlark	1		0 - 40 m	East	no	yes				
Spring	TUVU			Turkey Vulture	1		40 - 180 m	Southeast	yes	yes				
Spring	KILL			Killdeer	1		0 - 40 m	Southwest	no	yes				
Spring	TUVU			Turkey Vulture	2		40 - 180 m	South	yes	yes				
Spring	EABL			Eastern Bluebird	2		0 - 40 m	West	no	yes				
Spring	AMRO			American Robin	1		0 - 40 m	South	no	yes				
Spring	RWBL			Red-winged Blackbird	9		0 - 40 m	West	no	yes				
Spring	COGR			Common Grackle	2		0 - 40 m	West	no	yes				
Spring	KILL			Killdeer	1		0 - 40 m	North	no	yes				
Spring	EUST			European Starling	2		0 - 40 m	Southwest	no	yes				
Spring	TUVU			Turkey Vulture	3		40 - 180 m	North	yes	yes				
24-Apr-11	3			Spring	WODU	Wood Duck	1		0 - 40 m	West/Southwest	no	yes	2 Minutes	
				Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes		
				Spring	MODO	Mourning Dove	3		0 - 40 m	West	no	yes		
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes				
		Spring	COGR	Common Grackle	1		0 - 40 m	South	no	yes				
		Spring	AMGO	American Goldfinch	1		0 - 40 m	Southeast	no	yes				
		Spring	MALL	Mallard	2		0 - 40 m	East/Northeast	no	yes				
		Spring	BRNS	Barn Swallow	1		0 - 40 m	South	no	yes				
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes				
		Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes				
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes				
		Spring	SOSP	Song Sparrow	2		0 - 40 m	North	no	yes				
		Spring	COGR	Common Grackle	5		0 - 40 m	West	no	yes				

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
27-Apr-11	1	Spring	RWBL	Red-winged Blackbird	3		Height	Direction			
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	North	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m	East	no	yes	
		Spring	COGR	Common Grackle	4		0 - 40 m	South	no	yes	
		Spring	AMCR	American Crow	8		0 - 40 m	Southwest	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	Northwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	West/Northwest	no	yes	
		Spring	RWBL	Red-winged Blackbird	6		0 - 40 m	South/Southeast	no	yes	
		Spring	RWBL	Red-winged Blackbird	4		0 - 40 m	West/Northeast	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southwest	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	Southwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	Northeast	no	yes	
		Spring	HOLA	Horned Lark	3		0 - 40 m	Northeast	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	Northwest	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	East	no	yes	
		Spring	RWBL	Red-winged Blackbird	4		40 - 180 m	West	yes	yes	3 MINUTES
		Spring	EABL	Eastern Bluebird	1		0 - 40 m	East	no	no	
27-Apr-11	2	Spring	EABL	Eastern Bluebird	2		0 - 40 m	West	no	yes	
		Spring	RWBL	Red-winged Blackbird	47		0 - 40 m	Southwest	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southeast	no	yes	
		Spring	TUVU	Turkey Vulture	6		40 - 180 m	South	yes	yes	5 MINUTES
		Spring	EUST	European Starling	4		0 - 40 m	East	no	yes	
		Spring	RWBL	Red-winged Blackbird	5		0 - 40 m	Northwest	no	yes	
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	North	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	Northeast	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	
		Spring	BHCO	Brown-headed Cowbird	3		0 - 40 m	South	no	yes	
		Spring	EABL	Eastern Bluebird	2		0 - 40 m	West	no	yes	
		Spring	EUST	European Starling	1		0 - 40 m	North/Northeast	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no	yes	
		Spring	RTHA	Red-tailed Hawk	1		0 - 40 m	South	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	Southeast	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southwest	no	yes	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	North	yes	yes	2 MINUTES
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	East	yes	yes	2 Minutes
27-Apr-11	3	Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	EUST	European Starling	2		0 - 40 m	Southeast	no	yes	
		Spring	AMGO	American Goldfinch	4		0 - 40 m	Southwest	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	South	no	yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	South	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes	
		Spring	AMRO	American Robin	2		0 - 40 m	West	no	yes	
27-Apr-11	3	Spring	KILL	Killdeer	1		0 - 40 m	West	no	yes	
		Spring	SOSP	Song Sparrow	1		0 - 40 m	Southwest	no	yes	
		Spring	COGR	Common Grackle	3		0 - 40 m	Southwest	no	yes	
		Spring									

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area	Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)	
29-Apr-11	1	Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	West	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	Southeast	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m	West	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	West	no	yes	
		Spring	EUST	European Starling	6		0 - 40 m	East	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes	
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	North	no	yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Southeast	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	East	no	yes	
		Spring	TUVU	Turkey Vulture	7		40 - 180 m	East/Northeast	yes	yes	7 Minutes
		Spring	COHA	Cooper's Hawk	14		0 - 40 m	West	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	Southeast	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	
		Spring	COGR	Common Grackle	6		0 - 40 m	West	no	yes	
29-Apr-11	2	Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	RWBL	Red-winged Blackbird	3		0 - 40 m	Southwest	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m	Southeast	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	North	no	yes	
		Spring	EUST	European Starling	3		0 - 40 m	Northwest	no	yes	
		Spring	COGR	Common Grackle	4		0 - 40 m	Northeast	no	yes	
		Spring	TUVU	Turkey Vulture	3		40 - 180 m	West	yes	yes	3 Minutes
		Spring	TUVU	Turkey Vulture	5		40 - 180 m	West	yes	yes	5 minutes
		Spring	KILL	Killdeer	2		0 - 40 m	Southeast	no	yes	
		Spring	TUVU	Turkey Vulture	5		40 - 180 m	West	yes	yes	2 Minutes
		Spring	EABL	Eastern Bluebird	2		0 - 40 m	West	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	South	no	yes	
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	North	no	yes	
29-Apr-11	3	Spring	WITU	Wild Turkey	1		0 - 40 m	Southeast	no	yes	
		Spring	WODU	Wood Duck	2		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	
		Spring	MODO	Mourning Dove	2		0 - 40 m	South	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	
		Spring	COGR	Common Grackle	3		0 - 40 m	Southeast	no	yes	
		Spring	AMGO	American Goldfinch	3		0 - 40 m	West	no	yes	
		Spring	MALL	Mallard	1		0 - 40 m	Southeast	no	yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	West	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	West	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes	
		Spring	SOSP	Song Sparrow	1		0 - 40 m	North	no	yes	
		Spring	COGR	Common Grackle	2		0 - 40 m	Southeast	no	yes	
30-Apr-11	1	Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	East	no	yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	South	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	North	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no	yes	
		Spring									
		Spring									

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
30-Apr-11	1	Spring	RWBL	Red-winged Blackbird	1		Height	Direction			
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southeast	no	yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	West	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	South	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	North	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	Southeast	no	yes	7 Minutes
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	East	no	yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	East/Northeast	no	yes	
		Spring	AMCR	American Crow	1		0 - 40 m	West	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	Southeast	no	yes	
		Spring	BRNS	Barn Swallow	1		0 - 40 m	North	no	yes	
30-Apr-11	2	Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	Southeast	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	East	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	East/Northeast	no	yes	
		Spring	EUST	European Starling	1		0 - 40 m	West	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southeast	no	yes	
		Spring	EAME	Eastern Meadowlark	1		0 - 40 m	Southeast	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	East	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	East/Northeast	no	yes	
		Spring	TUVU	Turkey Vulture	1		40 - 180 m	West	no	yes	6 Minutes
		Spring	EABL	Eastern Bluebird	1		0 - 40 m	West	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	
		Spring	RWBL	Red-winged Blackbird	1		0 - 40 m	West	no	yes	
30-Apr-11	3	Spring	COGR	Common Grackle	1		0 - 40 m	West	no	yes	
		Spring	KILL	Killdeer	1		0 - 40 m	East	no	yes	
		Spring	EUST	European Starling	1		0 - 40 m	South	no	yes	
		Spring	BHCO	Brown-headed Cowbird	2		0 - 40 m	South	no	yes	
		Spring	COGR	Common Grackle	3		0 - 40 m	North	no	yes	
		Spring	HOLA	Horned Lark	2		0 - 40 m	Southeast	no	yes	
		Spring	MODO	Mourning Dove	1		0 - 40 m	West	no	yes	
		Spring	COGR	Common Grackle	1		0 - 40 m	Southeast	no	yes	
		Spring	AMGO	American Goldfinch	3		0 - 40 m	West	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	West	no	yes	
		Spring	TUVU	Turkey Vulture	4		40 - 180 m	East	yes	yes	5 Minutes
		Spring	KILL	Killdeer	1		0 - 40 m	South	no	yes	
4-Sep-11	1	Spring	AMRO	American Robin	1		0 - 40 m	North	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	Southeast	no	yes	
		Spring	SOSP	Song Sparrow	1		0 - 40 m	East	no	yes	
		Spring	AMRO	American Robin	1		0 - 40 m	East/Northeast	no	yes	
		Spring	AMCR	American Crow	2		0 - 40 m	South	no	yes	
		Spring	HOLA	Horned Lark	1		0 - 40 m	West	no	yes	
		Spring	SBDQ	Short-billed Dowitcher	1		0 - 40 m	North	no	yes	
		Autumn	AMCR	American Crow	7		0 - 40 m	West	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	North	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	West	no	yes	
		Autumn	AMGO	American Goldfinch	1		0 - 40 m	East	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	South	no	yes	
4-Sep-11	2	Autumn	AMCR	American Crow	3		0 - 40 m	Southwest	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	Southwest	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
4-Sep-11	3	Autumn	AMCR	American Crow	3		0 - 40 m	Southwest	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	North/Northwest	no	yes	
		Autumn	HOSP	House Sparrow	5		0 - 40 m	Southwest	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	North/Northeast	no	yes	
		Autumn	AMGO	American Goldfinch	1		0 - 40 m	Southwest	no	yes	
		Autumn	HOSP	House Sparrow	3		0 - 40 m	East	no	yes	
7-Sep-11	1	Autumn	SOSP	Song Sparrow	1		0 - 40 m	North	no	yes	2 Minutes
Autumn		Autumn	TUVU	Turkey Vulture	2		40 - 180 m	Southwest	yes	yes	
7-Sep-11	2	Autumn	No Observations								
7-Sep-11	3	Autumn	MODO	Mourning Dove	3		0 - 40 m	Southwest	no	yes	1 Minute
		Autumn	AMCR	American Crow	5		40 - 180 m	Southwest	no	yes	3 Minutes
		Autumn	TUVU	Turkey Vulture	4		40 - 180 m	South	yes	yes	
9-Sep-11	1	Autumn	AMCR	American Crow	6		0 - 40 m	South/Southeast	no	yes	
		Autumn	EABL	Eastern Bluebird	2		0 - 40 m	East	no	yes	
		Autumn	RBGU	Ring-billed Gull	2		0 - 40 m	North	no	yes	
9-Sep-11	2	Autumn	TUVU	Turkey Vulture	3		40 - 180 m	North	yes	yes	5 Minutes
		Autumn	AMCR	American Crow	7		0 - 40 m	East	no	yes	
		Autumn	HOSP	House Sparrow	12		0 - 40 m	East	no	yes	
9-Sep-11	3	Autumn	AMCR	American Crow	1		0 - 40 m	South	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	North	no	yes	
		Autumn	AMGO	American Goldfinch	3		0 - 40 m	North	no	yes	
11-Sep-11	1	Autumn	NOFL	Northern Flicker	1		0 - 40 m	North	no	yes	
11-Sep-11	2	Autumn	AMCR	American Crow	3		0 - 40 m	East	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	North	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	Southwest	no	yes	
11-Sep-11	3	Autumn	BLJA	Blue Jay	1		0 - 40 m	North/Northeast	no	yes	
		Autumn	AMCR	American Crow	3		>180 m	Northeast	no	yes	
		Autumn	MODO	Mourning Dove	5		0 - 40 m	North/Northwest	no	yes	
		Autumn	CAGO	Canada Goose	7		0 - 40 m	South/Southeast	no	yes	
		Autumn	MODO	Mourning Dove	1		0 - 40 m	South	no	yes	
		Autumn	BLJA	Blue Jay	2		0 - 40 m	North	no	yes	
		Autumn	HOSP	House Sparrow	4		0 - 40 m	West	no	yes	
		Autumn	KILL	Killdeer	2		0 - 40 m	North	no	yes	
		Autumn	BLJA	Blue Jay	3		0 - 40 m	East	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	Northeast	no	yes	
		Autumn	HOSP	House Sparrow	7		0 - 40 m	Northwest	no	yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	Southwest	no	yes	
18-Sep-11	1	Autumn	BLJA	Blue Jay	1		0 - 40 m	South/Southeast	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	East/Northeast	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	East	no	yes	
		Autumn	CAGO	Canada Goose	18		40 - 180 m	West	no	yes	1 Minute
		Autumn	MODO	Mourning Dove	4		0 - 40 m	Southwest	no	yes	
		Autumn	BLJA	Blue Jay	2		0 - 40 m	Northeast	no	yes	
		Autumn	HOSP	House Sparrow	3		0 - 40 m	West	no	yes	
		Autumn	KILL	Killdeer	2		0 - 40 m	West/Southwest	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	Southwest	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	Northeast	no	yes	
		Autumn	HOSP	House Sparrow	7		0 - 40 m	Northwest	no	yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	Southwest	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area		Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)		
18-Sep-11	2	Autumn	TUVU	Turkey Vulture	2		40 - 180 m	Northwest	no		yes	1 Minute
		Autumn	BLJA	Blue Jay	1		0 - 40 m	Northwest	no		yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	South	no		yes	
		Autumn	AMCR	American Crow	9		0 - 40 m	North	no		yes	
18-Sep-11	3	Autumn	RTHA	Red-tailed Hawk	1		>180 m	North	yes		yes	
		Autumn	TUVU	Turkey Vulture	3		40 - 180 m	Northwest	yes		yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	Southwest	no		yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	South/Southeast	no		yes	
		Autumn	BLJA	Blue Jay	2		0 - 40 m	East	no		yes	
		Autumn	EABL	Eastern Bluebird	3		0 - 40 m	West	no		yes	
		Autumn	EUST	European Starling	7		0 - 40 m	West/Southwest	no		yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	North	no		yes	
20-Sep-11	1	Autumn	CAGO	Canada Goose	5		>180 m	Northwest	no		yes	
		Autumn	MODO	Mourning Dove	1		0 - 40 m	Southeast	no		yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	Southwest	no		yes	
		Autumn	HOSP	House Sparrow	3		0 - 40 m	West	no		yes	
		Autumn	KILL	Killdeer	7		0 - 40 m	East/Northeast	no		yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	West	no		yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	North	no		yes	
		Autumn	KILL	Killdeer	1		0 - 40 m	North/Northeast	no		yes	
20-Sep-11	2	Autumn	EUST	European Starling	7		0 - 40 m	West	no		yes	
		Autumn	COGR	Common Grackle	5		0 - 40 m	East	no		yes	
		Autumn	EABL	Eastern Bluebird	1		0 - 40 m	Southeast	no		yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	South	no		yes	
		Autumn	GBHE	Great Blue Heron	1		40 - 180 m	North/Northeast	no		yes	1 Minute
		Autumn	AMCR	American Crow	7		0 - 40 m	South	no		yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	Southeast	no		yes	
		Autumn	AMCR	American Crow	1		0 - 40 m	Northeast	no		yes	
21-Sep-11	1	Autumn	MODO	Mourning Dove	4		0 - 40 m	North/Northeast	no		yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	West	no		yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	North	no		yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	North/Northeast	no		yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	West	no		yes	
		Autumn	MODO	Mourning Dove	5		0 - 40 m	South	no		yes	
		Autumn	TUVU	Turkey Vulture	2		40 - 180 m	Southeast	yes		yes	
		Autumn	KILL	Killdeer	1		0 - 40 m	Southeast	no		yes	2Minutes
21-Sep-11	2	Autumn	EABL	Eastern Bluebird	3		0 - 40 m	Southwest	no		yes	
		Autumn	EUST	European Starling	9		0 - 40 m	North/Northeast	no		yes	
		Autumn	COGR	Common Grackle	2		0 - 40 m	Northwest	no		yes	
		Autumn	EUST	European Starling	6		0 - 40 m	North	no		yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Southeast	no		yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	Northwest	no		yes	
		Autumn	AMCR	American Crow	7		0 - 40 m	North/Northeast	no		yes	
		Autumn	CEDW	Cedar Waxwing	11		0 - 40 m	Southwest	no		yes	
21-Sep-11		Autumn	WITU	Wild Turkey	1		0 - 40 m	South/Southeast	no		yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	West	no		yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
							Height	Direction			
21-Sep-11	3	Autumn	AMCR	American Crow	6		0 - 40 m	North	no	yes	
		Autumn	GBHE	Great Blue Heron	1		40 - 180 m	Southwest	no	yes	1 Minute
		Autumn	TUVU	Turkey Vulture	3		40 - 180 m	North/Northeast	yes	yes	4 Minutes
		Autumn	RTHA	Red-tailed Hawk	1		40 - 180 m	West	yes	yes	8 Minutes
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Southeast	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	North/Northeast	no	yes	
		Autumn	EABL	Eastern Bluebird	3		0 - 40 m	East	no	yes	
		Autumn	EUST	European Starling	9		0 - 40 m	West/Southwest	no	yes	
		Autumn	MODO	Mourning Dove	3		0 - 40 m	South	no	yes	
		Autumn	MODO	Mourning Dove	7		0 - 40 m	South/Southwest	no	yes	
25-Sep-11	1	Autumn	AMCR	American Crow	3		0 - 40 m	North/Northeast	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	Southeast	no	yes	
		Autumn	AMKE	American Kestrel	1		0 - 40 m	East	no	yes	
		Autumn	AMCR	American Crow	7		0 - 40 m	South	no	yes	
		Autumn	TUVU	Turkey Vulture	1		0 - 40 m	Southwest	no	yes	
		Autumn	AMPI	American Pipit	4		0 - 40 m	Southeast	no	yes	
		Autumn	AMCR	American Crow	11		40 - 180 m	Southwest	yes	yes	6 Minutes
		Autumn	HOLA	Horned Lark	2		0 - 40 m	North	no	yes	
		Autumn	TUVU	Turkey Vulture	7		40 - 180 m	South	no	yes	1 Minute
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Northwest	no	yes	
25-Sep-11	2	Autumn	HOSP	House Sparrow	8		0 - 40 m	South/Southwest	no	yes	
		Autumn	EUST	European Starling	42		0 - 40 m	Southwest	yes	yes	
		Autumn	BLJA	Blue Jay	3		0 - 40 m	Southwest	no	yes	
		Autumn	HOSP	House Sparrow	5		0 - 40 m	Southeast	no	yes	
		Autumn	TUVU	Turkey Vulture	4		40 - 180 m	South/Southwest	yes	yes	8 Minutes
		Autumn	COHA	Cooper's Hawk	1		0 - 40 m	West	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	East	no	yes	
		Autumn	HOSP	House Sparrow	7		0 - 40 m	East/Northeast	no	yes	
		Autumn	TUVU	Turkey Vulture	3		40 - 180 m	North	yes	yes	4 Minutes
		Autumn	AMCR	American Crow	4		0 - 40 m	Southeast	no	yes	
28-Sep-11	1	Autumn	MODO	Mourning Dove	5		0 - 40 m	Southwest	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	East	no	yes	
		Autumn	EUST	European Starling	7		0 - 40 m	East/Northeast	no	yes	
		Autumn	KILL	Killdeer	2		0 - 40 m	East	no	yes	
		Autumn	AMRO	American Robin	4		0 - 40 m	Southeast	no	yes	
		Autumn	AMCR	American Crow	8		0 - 40 m	South/Southwest	no	yes	
		Autumn	SAVS	Savannah Sparrow	1		0 - 40 m	Southwest	no	yes	
		Autumn	BLJA	Blue Jay	2		0 - 40 m	South/Southwest	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	Southeast	no	yes	
		Autumn	AMGO	American Goldfinch	4		0 - 40 m	Southeast	no	yes	
28-Sep-11	2	Autumn	EUST	European Starling	1		0 - 40 m	South	no	yes	
		Autumn	AMPI	American Pipit	2		0 - 40 m	Northwest	no	yes	
		Autumn	HOLA	Horned Lark	3		0 - 40 m	West	no	yes	
		Autumn	RWBL	Red-winged Blackbird	1		0 - 40 m	South/Southwest	no	yes	
		Autumn	EUST	European Starling	8		0 - 40 m	Northwest	no	yes	
		Autumn	KILL	Killdeer	2		0 - 40 m	West/Southwest	no	yes	
		Autumn	KILL	Killdeer	1		0 - 40 m	Northeast	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
28-Sep-11	3	Autumn	AMGO	American Goldfinch	1		0 - 40 m	South	no	yes	
		Autumn	HOSP	House Sparrow	3		0 - 40 m	Southeast	no	yes	
		Autumn	AMCR	American Crow	1		0 - 40 m	North	no	yes	
		Autumn	CAGO	Canada Goose	18		40 - 180 m	Northeast	no	yes	2 Minutes
		Autumn	EUST	European Starling	7		0 - 40 m	North/Northeast	no	yes	
		Autumn	HOSP	House Sparrow	5		0 - 40 m	Southwest	no	yes	
		Autumn	RWBL	Red-winged Blackbird	32		40 - 180 m	Northwest	no	yes	2 Minutes
		Autumn	BHCO	Brown-headed Cowbird	7		40 - 180 m	Northwest	no	yes	2 Minutes
		Autumn	COGR	Common Grackle	9		40 - 180 m	Northwest	no	yes	2 Minutes
		Autumn	AMCR	American Crow	7		0 - 40 m	North/Northeast	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	Northeast	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	North	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	Southeast	no	yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	Southwest	no	yes	
30-Sep-11	2	Autumn	TUVU	Turkey Vulture	3		40 - 180 m	South/Southeast	yes	yes	3 Minutes
		Autumn	AMCR	American Crow	7		0 - 40 m	North/Northeast	no	yes	
		Autumn	HOSP	House Sparrow	2		0 - 40 m	North	no	yes	
		Autumn	EUST	European Starling	14		0 - 40 m	Northwest	no	yes	
30-Sep-11	3	Autumn	TUVU	Turkey Vulture	2		0 - 40 m	Northeast	no	yes	
		Autumn	AMCR	American Crow	6		40 - 180 m	Southwest	yes	yes	2 Minutes
		Autumn	AMCR	American Crow	3		0 - 40 m	Northwest	no	yes	
		Autumn	MODO	Mourning Dove	4		0 - 40 m	Southeast	no	yes	
2-Oct-11	1	Autumn	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	
		Autumn	HOSP	House Sparrow	6		0 - 40 m	West	no	yes	
		Autumn	TUVU	Turkey Vulture	3		40 - 180 m	Southeast	yes	yes	8 Minutes
		Autumn	TUVU	Turkey Vulture	5		>180 m	Southeast	yes	yes	
		Autumn	KILL	Killdeer	2		0 - 40 m	South/Southwest	no	yes	
		Autumn	AMCR	American Crow	1		40 - 180 m	South/Southeast	no	yes	2 Minutes
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Northwest	no	yes	
		Autumn	CAGO	Canada Goose	24		40 - 180 m	North	no	yes	2 Minutes
		Autumn	HOLA	Horned Lark	2		0 - 40 m	Northwest	no	yes	
		Autumn	EABL	Eastern Bluebird	5		0 - 40 m	Northeast	no	yes	
		Autumn	TRES	Tree Swallow	4		0 - 40 m	South	yes	yes	
		Autumn	AMCR	American Crow	7		0 - 40 m	Northwest	no	yes	
		Autumn	GBHE	Great Blue Heron	1		40 - 180 m	South/Southeast	no	yes	1 Minutes
		Autumn	AMCR	American Crow	18		40 - 180 m	Southwest	yes	yes	11 Minutes
2-Oct-11	2	Autumn	BLJA	Blue Jay	3		0 - 40 m	North	no	yes	
		Autumn	RWBL	Red-winged Blackbird	14		0 - 40 m	South/Southeast	no	yes	
		Autumn	COGR	Common Grackle	8		0 - 40 m	South/Southeast	no	yes	
		Autumn	BHCO	Brown-headed Cowbird	2		0 - 40 m	South/Southeast	no	yes	
		Autumn	EUST	European Starling	32		0 - 40 m	Southwest	yes	no	
		Autumn	EABL	Eastern Bluebird	2		0 - 40 m	North/Northeast	no	yes	
		Autumn	HOLA	Horned Lark	5		0 - 40 m	Southeast	no	yes	
		Autumn	TUVU	Turkey Vulture	7		40 - 180 m	North/Northeast	yes	no	
		Autumn	SOSP	Song Sparrow	2		0 - 40 m	North/Northwest	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	North	no	yes	
		Autumn	AMGO	American Goldfinch	7		0 - 40 m	Northwest	no	yes	
		Autumn	AMCR	American Crow	2		40 - 180 m	North/Northwest	no	yes	2 Minutes

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area	Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)	
2-Oct-11	3	Autumn	RTHA	Red-tailed Hawk	1		0 - 40 m	East/Northeast	no	yes	
		Autumn	HOSP	House Sparrow	8		0 - 40 m	East/Southeast	no	yes	
		Autumn	AMCR	American Crow	4		40 - 180 m	North	no	yes	1 Minute
		Autumn	TUVU	Turkey Vulture	7		40 - 180 m	South/Southwest	yes	yes	4 Minutes
4-Oct-11	1	Autumn	EABL	Eastern Bluebird	3		0 - 40 m	Northeast	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	North	no	yes	
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	South	no	yes	
		Autumn	AMCR	American Crow	3		40 - 180 m	Southwest	no	yes	2 Minutes
4-Oct-11	2	Autumn	SOSP	Song Sparrow	2		0 - 40 m	West	no	yes	
		Autumn	TUVU	Turkey Vulture	4		40 - 180 m	South/Southwest	yes	yes	5 Minutes
		Autumn	AMKE	American Kestrel	1		0 - 40 m	North/Northwest	no	yes	
		Autumn	EUST	European Starling	9		0 - 40 m	Northeast	no	yes	
4-Oct-11	3	Autumn	AMCR	American Crow	3		0 - 40 m	Southeast	no	yes	
		Autumn	AMGO	American Goldfinch	6		0 - 40 m	South/Southwest	no	yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	South/Southeast	no	yes	
		Autumn	KILL	Killdeer	4		0 - 40 m	North/Northwest	no	yes	
4-Oct-11	3	Autumn	HOSP	House Sparrow	8		0 - 40 m	Southwest	yes	yes	
		Autumn	COGR	Common Grackle	2		0 - 40 m	Southwest	no	yes	
		Autumn	AMCR	American Crow	1		0 - 40 m	Southwest	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	South	no	yes	
7-Oct-11	1	Autumn	HOLA	Horned Lark	2		0 - 40 m	South	no	yes	
		Autumn	KILL	Killdeer	7		0 - 40 m	Northwest	yes	yes	
		Autumn	WBNU	White-breasted Nuthatch	1		0 - 40 m	East	no	yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	North	no	yes	
7-Oct-11	1	Autumn	KILL	Killdeer	2		0 - 40 m	North	no	yes	
		Autumn	NOHA	Northern Harrier	1		0 - 40 m	Northeast	yes	yes	
		Autumn	MODO	Mourning Dove	1		0 - 40 m	Southwest	no	yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	Southeast	no	yes	
7-Oct-11	2	Autumn	HOLA	Horned Lark	1		0 - 40 m	North/Northeast	no	yes	
		Autumn	TUTI	Tufted Titmouse	1		0 - 40 m	West	no	yes	
		Autumn	TUVU	Turkey Vulture	5		40 - 180 m	Southwest	yes	yes	7 Minutes
		Autumn	AMCR	American Crow	2		0 - 40 m	North/Northwest	no	yes	
7-Oct-11	2	Autumn	HOLA	Horned Lark	2		0 - 40 m	North	no	yes	
		Autumn	AMCR	American Crow	7		0 - 40 m	Northwest	no	yes	
		Autumn	BLJA	Blue Jay	3		0 - 40 m	Southeast	no	yes	
		Autumn	TUVU	Turkey Vulture	5		40 - 180 m	South/Southeast	yes	yes	4 Minutes
7-Oct-11	2	Autumn	AMRO	American Robin	2		0 - 40 m	West	no	yes	
		Autumn	EUST	European Starling	19		0 - 40 m	East/Northeast	no	yes	
		Autumn	RWBL	Red-winged Blackbird	6		0 - 40 m	North/Northeast	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	East	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area	Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)	
7-Oct-11	3	Autumn	AMRO	American Robin	2		0 - 40 m	North	no	yes	
		Autumn	HOSP	House Sparrow	3		0 - 40 m	Northeast	no	yes	
		Autumn	EUST	European Starling	5		0 - 40 m	East/Southeast	no	yes	
		Autumn	KILL	Killdeer	2		0 - 40 m	South	no	yes	
		Autumn	RTHA	Red-tailed Hawk	1		0 - 40 m	Southeast	no	yes	
		Autumn	RWBL	Red-winged Blackbird	8		0 - 40 m	Southwest	no	yes	
		Autumn	HOLA	Horned Lark	1		0 - 40 m	South/Southwest	no	yes	
		Autumn	TUVU	Turkey Vulture	6		40 - 180 m	East	no	yes	1 Minute
		Autumn	HOSP	House Sparrow	4		0 - 40 m	East/Southeast	no	yes	
		Autumn	AMCR	American Crow	1		0 - 40 m	North	no	yes	
		Autumn	BLJA	Blue Jay	2		0 - 40 m	Northwest	no	yes	
9-Oct-11	1	Autumn	SOSP	Song Sparrow	1		0 - 40 m	Southwest	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	North	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	South	no	yes	
		Autumn	KILL	Killdeer	1		0 - 40 m	South/Southeast	no	yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	Northwest	no	yes	
		Autumn	EUST	European Starling	18		0 - 40 m	East	no	yes	
		Autumn	BLJA	Blue Jay	2		0 - 40 m	West/Northwest	no	yes	
		Autumn	EABL	Eastern Bluebird	3		0 - 40 m	North	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Northeast	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	Southeast	no	yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	South/Southwest	no	yes	
		Autumn	RWBL	Red-winged Blackbird	18		40 - 180 m	South	no	yes	1 Minute
9-Oct-11	2	Autumn	COGR	Common Grackle	3		40 - 180 m	South	no	yes	1 Minute
		Autumn	AMCR	American Crow	8		0 - 40 m	North/Northeast	no	yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	Southeast	no	yes	
		Autumn	CAGO	Canada Goose	17		40 - 180 m	West	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	Northeast	no	yes	
		Autumn	EABL	Eastern Bluebird	6		0 - 40 m	West	no	yes	
		Autumn	EUST	European Starling	19		0 - 40 m	West	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	East	no	yes	
		Autumn	HOSP	House Sparrow	7		0 - 40 m	North	no	yes	
		Autumn	AMKE	American Kestrel	1		0 - 40 m	Southwest	no	yes	
		Autumn	TUVU	Turkey Vulture	4		40 - 180 m	South	yes	yes	3 Minutes
		Autumn	EUST	European Starling	5		0 - 40 m	East/Northeast	no	yes	
9-Oct-11	3	Autumn	RWBL	Red-winged Blackbird	29		0 - 40 m	West/Northwest	no	yes	
		Autumn	COGR	Common Grackle	7		0 - 40 m	West/Northwest	no	yes	
		Autumn	AMGO	American Goldfinch	4		0 - 40 m	Southeast	no	yes	
		Autumn	AMRO	American Robin	4		0 - 40 m	North	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	Northeast	no	yes	
		Autumn	HOSP	House Sparrow	8		0 - 40 m	Northwest	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	North	no	yes	
		Autumn	MODO	Mourning Dove	5		0 - 40 m	South/Southeast	no	yes	
		Autumn	AMRO	American Robin	2		0 - 40 m	South	no	yes	
		Autumn	RTHA	Red-tailed Hawk	1		0 - 40 m	West	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	Northwest	no	yes	
		Autumn	AMCR	American Crow	7		0 - 40 m	South/Southwest	no	yes	
9-Oct-11	3	Autumn	RTHA	Red-tailed Hawk	1		40 - 180 m	Southeast	yes	yes	4 Minutes
		Autumn	AMGO	American Goldfinch	5		0 - 40 m	West	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	East	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
							Height	Direction			
9-Oct-11	3	Autumn	SOSP	Song Sparrow	1		0 - 40 m	Southeast	no	yes	
		Autumn	KILL	Killdeer	1		0 - 40 m	Southwest	no	yes	
		Autumn	RBGU	Ring-billed Gull	9		40 - 180 m	North/Northeast	yes	yes	11 Minutes
		Autumn	TUVU	Turkey Vulture	3		40 - 180 m	West	yes	yes	4 Minutes
		Autumn	GBHE	Great Blue Heron	1		40 - 180 m	Southwest	no	yes	
		Autumn	MODO	Mourning Dove	4		0 - 40 m	South/Southwest	no	yes	
11-Oct-11	1	Autumn	MODO	Mourning Dove	7		0 - 40 m	North	no	yes	
		Autumn	RTHA	Red-tailed Hawk	1		40 - 180 m	Northeast	no	yes	1 Minute
		Autumn	AMRO	American Robin	2		0 - 40 m	Southeast	no	yes	
		Autumn	BLJA	Blue Jay	3		0 - 40 m	South/Southwest	no	yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	Southwest	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	South	no	yes	
		Autumn	KILL	Killdeer	1		0 - 40 m	East	no	yes	
		Autumn	MALL	Mallard	2		0 - 40 m	West/Southeast	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	East/Southeast	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Southwest	no	yes	
		Autumn	HOLA	Horned Lark	6		0 - 40 m	West	no	yes	
		Autumn	MODO	Mourning Dove	1		0 - 40 m	Northeast	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	Northeast	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	South/Southeast	no	yes	
		Autumn	HOSP	House Sparrow	4		0 - 40 m	Southwest	no	yes	
		Autumn	TUVU	Turkey Vulture	2		40 - 180 m	West	yes	yes	5 Minutes
		Autumn	HOLA	Horned Lark	2		0 - 40 m	East/Northeast	no	yes	
		Autumn	SAVS	Savannah Sparrow	1		0 - 40 m	North/Northeast	no	yes	
11-Oct-11	2	Autumn	AMCR	American Crow	4		0 - 40 m	North	no	yes	
		Autumn	AMGO	American Goldfinch	6		0 - 40 m	Southwest	no	yes	
		Autumn	RWBL	Red-winged Blackbird	45		0 - 40 m	East	no	yes	
		Autumn	COGR	Common Grackle	12		0 - 40 m	West/Southwest	no	yes	
		Autumn	AMCR	American Crow	1		0 - 40 m	West	no	yes	
		Autumn	EABL	Eastern Bluebird	3		0 - 40 m	Northwest	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Southeast	no	yes	
		Autumn	HOSP	House Sparrow	6		0 - 40 m	South/Southwest	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	North	no	yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	East	no	yes	
		Autumn	MODO	Mourning Dove	4		0 - 40 m	Northeast	no	yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	North/Northwest	no	yes	
11-Oct-11	3	Autumn	HOSP	House Sparrow	9		0 - 40 m	Northwest	no	yes	
		Autumn	COGR	Common Grackle	3		0 - 40 m	Southeast	no	yes	
		Autumn	EUST	European Starling	18		0 - 40 m	South/Southeast	no	yes	
		Autumn	ROPI	Rock Pigeon	3		0 - 40 m	West	yes	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	East/Northeast	no	yes	
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	Northwest	no	yes	
		Autumn	TUVU	Turkey Vulture	2		40 - 180 m	South	yes	yes	6 Minutes
		Autumn	HOLA	Horned Lark	2		0 - 40 m	Northwest	no	yes	
		Autumn	MODO	Mourning Dove	3		0 - 40 m	Southwest	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	South	no	yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	North/Northeast	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	East	no	yes	
14-Oct-11	1	Autumn	AMRO	American Robin	3		0 - 40 m	West	no	yes	
		Autumn	HOLA	Horned Lark	3		0 - 40 m	Southwest	no	yes	
		Autumn	HOSP	House Sparrow	3		0 - 40 m	Southwest	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
							Height	Direction			
14-Oct-11	1	Autumn	BEK1	Belted Kingfisher	1		0 - 40 m	West	no	yes	
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	Northwest	no	yes	
		Autumn	DOWO	Downy Woodpecker	1		0 - 40 m	Southeast	no	yes	
		Autumn	MODO	Mourning Dove	6		0 - 40 m	North	no	yes	
		Autumn	KILL	Killdeer	2		0 - 40 m	Southeast	no	yes	
		Autumn	MALL	Mallard	4		0 - 40 m	South/Southeast	no	yes	
		Autumn	RWBL	Red-winged Blackbird	22		0 - 40 m	North	no	yes	
		Autumn	RWBL	Red-winged Blackbird	120		0 - 40 m	Northwest	no	yes	
		Autumn	BHCO	Brown-headed Cowbird	4		0 - 40 m	Northwest	no	yes	
		Autumn	COGR	Common Grackle	16		0 - 40 m	Northwest	no	yes	
14-Oct-11	2	Autumn	HOLA	Horned Lark	1		0 - 40 m	Southeast	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Northwest	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	East	no	yes	
		Autumn	TUVU	Turkey Vulture	5		40 - 180 m	Southeast	yes	yes	3 Minutes
		Autumn	EABL	Eastern Bluebird	1		0 - 40 m	East/Northeast	no	yes	
		Autumn	MODO	Mourning Dove	4		0 - 40 m	Southwest	no	yes	
		Autumn	AMGO	American Goldfinch	3		0 - 40 m	Northwest	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	North	no	yes	
		Autumn	EUST	European Starling	82		0 - 40 m	South	no	yes	
		Autumn	EUST	European Starling	44		0 - 40 m	West	no	yes	
14-Oct-11	3	Autumn	AMCR	American Crow	3		0 - 40 m	Northwest	no	yes	
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	South/Southeast	no	yes	
		Autumn	MODO	Mourning Dove	5		0 - 40 m	North	no	yes	
		Autumn	MODO	Mourning Dove	3		0 - 40 m	East	no	yes	
		Autumn	AMCR	American Crow	13		0 - 40 m	East/Southeast	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	West	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Northwest	no	yes	
		Autumn	HOSP	House Sparrow	9		0 - 40 m	Southwest	no	yes	
		Autumn	TUVU	Turkey Vulture	2		40 - 180 m	South/Southeast	yes	yes	3 Minutes
		Autumn	EUST	European Starling	15		0 - 40 m	East	no	yes	
16-Oct-11	1	Autumn	RWBL	Red-winged Blackbird	27		0 - 40 m	West	no	yes	
		Autumn	RTHA	Red-tailed Hawk	1		40 - 180 m	North	yes	yes	1 Minutes
		Autumn	MODO	Mourning Dove	3		0 - 40 m	North	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	Southwest	no	yes	
		Autumn	MODO	Mourning Dove	5		0 - 40 m	South/Southeast	no	yes	
		Autumn	AMRO	American Robin	6		0 - 40 m	East	no	yes	
		Autumn	EUST	European Starling	82		0 - 40 m	West	yes	yes	
		Autumn	RWBL	Red-winged Blackbird	150		0 - 40 m	North/Northeast	no	yes	
		Autumn	COGR	Common Grackle	12		0 - 40 m	North/Northeast	no	yes	
		Autumn	EUST	European Starling	8		0 - 40 m	North/Northeast	no	yes	
16-Oct-11	2	Autumn	RTHA	Red-tailed Hawk	1		0 - 40 m	North	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	South	no	yes	
		Autumn	AMCR	American Crow	9		0 - 40 m	East/Southeast	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	Southwest	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Northwest	no	yes	
		Autumn	OSPR	Osprey	1		>180 m	South	no	yes	
		Autumn	AMGO	American Goldfinch	5		0 - 40 m	East	no	yes	
		Autumn							no	yes	
		Autumn							no	yes	
		Autumn							no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
							Height	Direction			
16-Oct-11	3	Autumn	SOSP	Song Sparrow	1		0 - 40 m	Southeast	no	yes	
		Autumn	HOSP	House Sparrow	9		0 - 40 m	South	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	Northwest	no	yes	
		Autumn	BLJA	Blue Jay	2		0 - 40 m	North/Northwest	no	yes	
		Autumn	HOLA	Horned Lark	1		0 - 40 m	South	no	yes	
		Autumn	AMRO	American Robin	5		0 - 40 m	East	no	yes	
		Autumn	EUST	European Starling	48		0 - 40 m	East/Northeast	no	yes	
		Autumn	EUST	European Starling	2		0 - 40 m	West/Northwest	no	yes	
18-Oct-11	1	Autumn	RWBL	Red-winged Blackbird	52		0 - 40 m	North	no	yes	
		Autumn	AMGO	American Goldfinch	5		0 - 40 m	East	no	yes	
		Autumn	RWBL	Red-winged Blackbird	81		0 - 40 m	Northeast	no	yes	
		Autumn	COGR	Common Grackle	18		0 - 40 m	Northeast	no	yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	Southwest	no	yes	
		Autumn	AMCR	American Crow	9		0 - 40 m	South/Southeast	no	yes	
		Autumn	RHWO	Red-headed Woodpecker	2		0 - 40 m	East	no	yes	
		Autumn	KILL	Killdeer	1		0 - 40 m	Southwest	no	yes	
		Autumn	MALL	Mallard	2		0 - 40 m	West	no	yes	
		Autumn	HOLA	Horned Lark	3		0 - 40 m	South	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	
		Autumn	RWBL	Red-winged Blackbird	64		0 - 40 m	North/Northeast	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	East/Southeast	no	yes	
		Autumn	TUVU	Turkey Vulture	1		>180 m	South	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	West	no	yes	
18-Oct-11	2	Autumn	TUVU	Turkey Vulture	2		40 - 180 m	South	yes	yes	5 Minutes
		Autumn	AMCR	American Crow	1		0 - 40 m	Southwest	no	yes	
		Autumn	EUST	European Starling	7		0 - 40 m	East	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	Northwest	no	yes	
		Autumn	EUST	European Starling	4		0 - 40 m	Northeast	no	yes	
		Autumn	CAGO	Canada Goose	8		40 - 180 m	South/Southwest	no	yes	
		Autumn	GBHE	Great Blue Heron	2		40 - 180 m	Northeast	no	yes	2 Minutes
		Autumn	HOLA	Horned Lark	3		0 - 40 m	Northwest	no	yes	
18-Oct-11	3	Autumn	HOSP	House Sparrow	12		0 - 40 m	Southeast	no	yes	
		Autumn	EUST	European Starling	55		0 - 40 m	South/Southwest	no	yes	
		Autumn	BLJA	Blue Jay	3		0 - 40 m	Southeast	no	yes	
		Autumn	EABL	Eastern Bluebird	6		0 - 40 m	West/Northwest	no	yes	
		Autumn	HOSP	House Sparrow	5		0 - 40 m	East	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	West	no	yes	
		Autumn	CEDW	Cedar Waxwing	7		0 - 40 m	Northwest	no	yes	
		Autumn	RBWO	Red-bellied Woodpecker	1		0 - 40 m	West/Northeast	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	Southeast	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	North	no	yes	
		Autumn	RTHA	Red-tailed Hawk	1		40 - 180 m	Northwest	yes	yes	3 Minutes
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	South/Southeast	no	yes	
21-Oct-11	1	Autumn	HOLA	Horned Lark	4		0 - 40 m	Southwest	no	yes	
		Autumn	MODO	Mourning Dove	7		0 - 40 m	Northwest	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	East	no	yes	
		Autumn	AMCR	American Crow	3		0 - 40 m	West/Southwest	no	yes	
		Autumn	HOSP	House Sparrow	5		0 - 40 m	North	no	yes	
		Autumn	KILL	Killdeer	1		40 - 180 m	Southwest	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	North/Northwest	no	yes	
		Autumn									

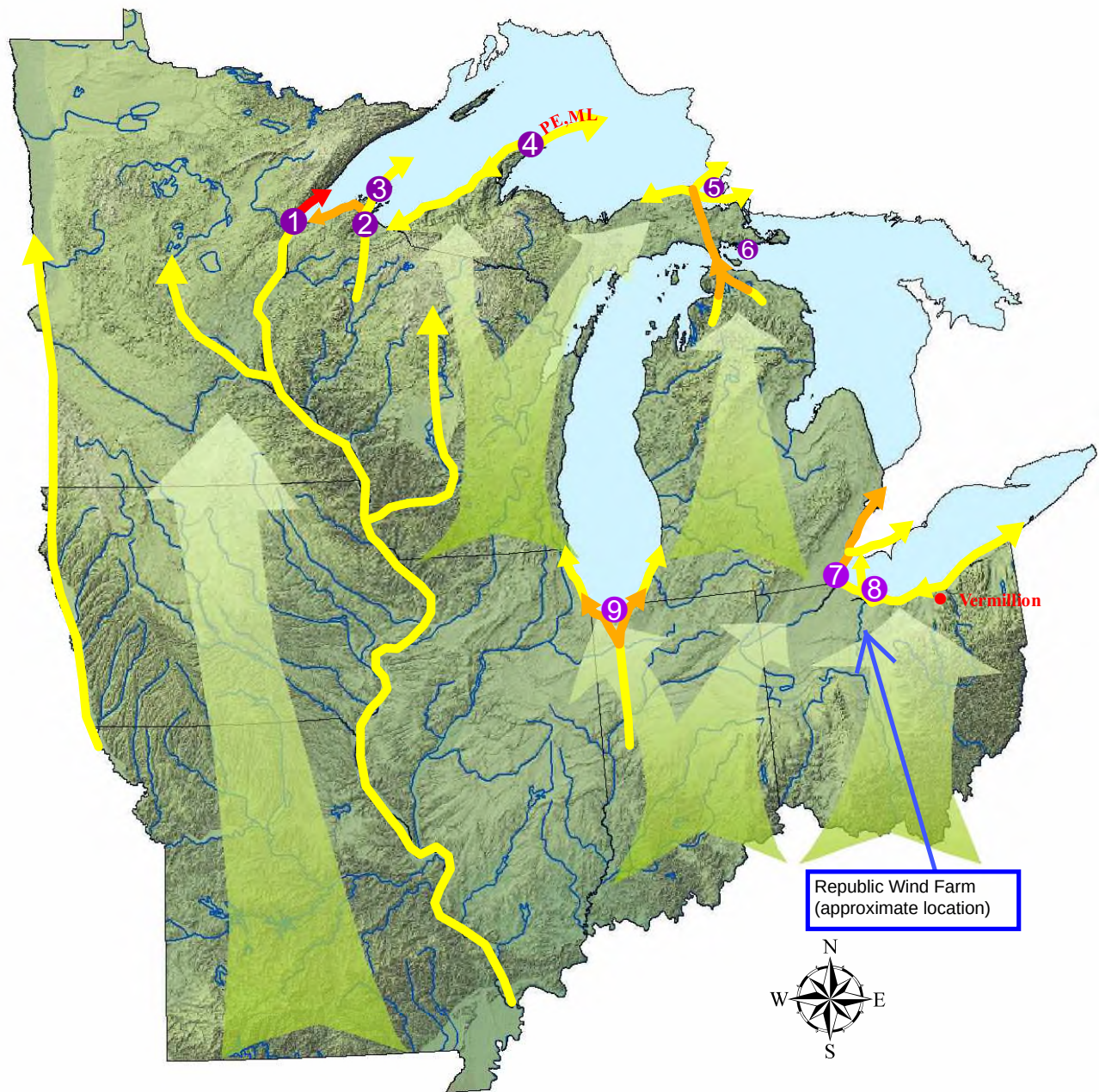
Date	Point	Season	Code	Species	#	Age	Observation		Circling	Entered Project Area		Estimated time within rooster area
							Height	Direction	(yes/no)	(yes/no)		
21-Oct-11	2	Autumn	EUST	European Starling	7		0 - 40 m	Northwest	no		yes	
		Autumn	AMRO	American Robin	2		0 - 40 m	South/Southeast	no		yes	
		Autumn	CEDW	Cedar Waxwing	9		0 - 40 m	South	no		yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	Southwest	no		yes	
		Autumn	MODO	Mourning Dove	8		0 - 40 m	East	no		yes	
		Autumn	MODO	Mourning Dove	1		0 - 40 m	East/Northeast	no		yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	West	no		yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	West/Northwest	no		yes	
		Autumn	EABL	Eastern Bluebird	6		0 - 40 m	Southeast	no		yes	
		Autumn	AMKE	American Kestrel	1		40 - 180 m	South/Southeast	no		yes	1 Minute
		Autumn	AMRO	American Robin	2		0 - 40 m	West	no		yes	
		Autumn	BLJA	Blue Jay	4		0 - 40 m	West/Southwest	no		yes	
		Autumn	NOHA	Northern Harrier	1		0 - 40 m	Northeast	no		yes	
21-Oct-11	3	Autumn	AMCR	American Crow	5		0 - 40 m	Southeast	no		yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	South/Southeast	no		yes	
		Autumn	HOLA	Horned Lark	1		0 - 40 m	East	no		yes	
		Autumn	HOSP	House Sparrow	6		0 - 40 m	West	no		yes	
		Autumn	EABL	Eastern Bluebird	4		0 - 40 m	Northwest	no		yes	
		Autumn	CAGO	Canada Goose	22		0 - 40 m	East/Northeast	no		yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Northeast	no		yes	
		Autumn	RWBL	Red-winged Blackbird	250		0 - 40 m	North	no		yes	
		Autumn	COGR	Common Grackle	18		0 - 40 m	North	no		yes	
		Autumn	RWBL	Red-winged Blackbird	122		40 - 180 m	Southeast	no		yes	2 Minutes
		Autumn	BHCO	Brown-headed Cowbird	6		40 - 180 m	Southeast	no		yes	2 Minutes
		Autumn	MODO	Mourning Dove	1		0 - 40 m	South/Southwest	no		yes	
23-Oct-11	1	Autumn	RBGU	Ring-billed Gull	15		0 - 40 m	Northwest	no		yes	
		Autumn	BEKI	Belted Kingfisher	1		40 - 180 m	North/Northwest	no		yes	
		Autumn	AMRO	American Robin	5		0 - 40 m	North	no		yes	1 Minute
		Autumn	EABL	Eastern Bluebird	8		0 - 40 m	East	no		yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	Northwest	no		yes	
		Autumn	BLJA	Blue Jay	2		0 - 40 m	Northeast	no		yes	
		Autumn	AMRO	American Robin	3		0 - 40 m	South/Southwest	no		yes	
		Autumn	MODO	Mourning Dove	5		0 - 40 m	Southeast	no		yes	
		Autumn	AMCR	American Crow	7		0 - 40 m	East	no		yes	
		Autumn	EABL	Eastern Bluebird	4		0 - 40 m	West/Southwest	no		yes	
		Autumn	HOSP	House Sparrow	9		0 - 40 m	East	no		yes	
		Autumn	TUVU	Turkey Vulture	5		40 - 180 m	South	yes		yes	8 Minutes
		Autumn	RWBL	Red-winged Blackbird	207		0 - 40 m	Southeast	no		yes	
23-Oct-11	2	Autumn	COGR	Common Grackle	5		0 - 40 m	Southeast	no		yes	
		Autumn	SAVS	Savannah Sparrow	1		0 - 40 m	West	no		yes	
		Autumn	CAGO	Canada Goose	13		0 - 40 m	Northwest	no		yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	North/Northeast	no		yes	
		Autumn	RTHA	Red-tailed Hawk	1		40 - 180 m	South	yes		yes	4 Minutes
		Autumn	HOLA	Horned Lark	1		0 - 40 m	Southwest	no		yes	
		Autumn	CEDW	Cedar Waxwing	5		0 - 40 m	East	no		yes	
		Autumn	EABL	Eastern Bluebird	3		0 - 40 m	East/Southeast	no		yes	
		Autumn	AMRO	American Robin	7		0 - 40 m	West	no		yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	West/Northwest	no		yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	North	no		yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	North	no		yes	

Date	Point	Season	Code	Species	#	Age	Observation	Circling	Entered Project Area	Estimated time within rooster area
23-Oct-11	3	Autumn	COHA	Cooper's Hawk	1		40 - 180 m	yes	yes	2 Minutes
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	no	yes	
		Autumn	HOSP	House Sparrow	6		0 - 40 m	no	yes	
		Autumn	NOCA	Northern Cardinal	2		0 - 40 m	no	yes	
		Autumn	AMRO	American Robin	3		0 - 40 m	no	yes	
		Autumn	AMCR	American Crow	16		0 - 40 m	no	yes	
		Autumn	EABL	Eastern Bluebird	2		0 - 40 m	no	yes	
		Autumn	EUST	European Starling	98		0 - 40 m	no	yes	
		Autumn	RWBL	Red-winged Blackbird	160		0 - 40 m	no	yes	
		Autumn	RWBL	Red-winged Blackbird	49		0 - 40 m	no	yes	
		Autumn	COGR	Common Grackle	3		0 - 40 m	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	no	yes	
		Autumn	MODO	Mourning Dove	3		0 - 40 m	no	yes	
		Autumn	AMCR	American Crow	4		0 - 40 m	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	no	yes	
23-Oct-11	3	Autumn	WITU	Wild Turkey	1		0 - 40 m	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	no	yes	
		Autumn	EABL	Eastern Bluebird	5		0 - 40 m	no	yes	
		Autumn	HOSP	House Sparrow	7		0 - 40 m	no	yes	
		Autumn	HOSP	House Sparrow	4		0 - 40 m	no	yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	no	yes	
		Autumn	RWBL	Red-winged Blackbird	350		0 - 40 m	no	yes	
		Autumn	COGR	Common Grackle	14		0 - 40 m	no	yes	
		Autumn	RWBL	Red-winged Blackbird	700		0 - 40 m	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	no	yes	1 Minute
		Autumn	AMCR	American Crow	4		40 - 180 m	no	yes	
		Autumn	HOLA	Horned Lark	1		0 - 40 m	no	yes	
25-Oct-11	1	Autumn	TUVU	Turkey Vulture	7		40 - 180 m	yes	yes	8 Minutes
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	no	yes	
		Autumn	HOLA	Horned Lark	3		0 - 40 m	no	yes	
		Autumn	CAGO	Canada Goose	15		40 - 180 m	no	yes	1 Minute
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	no	yes	
		Autumn	MODO	Mourning Dove	2		0 - 40 m	no	yes	
		Autumn	AMCR	American Crow	9		0 - 40 m	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	no	yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	no	yes	
		Autumn	RWBL	Red-winged Blackbird	500		0 - 40 m	no	yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	no	yes	
		Autumn	CAGO	Canada Goose	9		0 - 40 m	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	no	yes	
		Autumn	RWBL	Red-winged Blackbird	220		40 - 180 m	no	yes	2 Minutes
		Autumn	EUST	European Starling	105		40 - 180 m	no	yes	
25-Oct-11	2	Autumn	RWBL	Red-winged Blackbird	250		0 - 40 m	no	yes	
		Autumn	COGR	Common Grackle	18		0 - 40 m	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	no	yes	
		Autumn	EUST	European Starling	25		0 - 40 m	no	yes	
		Autumn	EABL	Eastern Bluebird	2		0 - 40 m	no	yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	no	yes	
		Autumn	CAGO	Canada Goose	9		0 - 40 m	no	yes	
		Autumn	HOLA	Horned Lark	2		0 - 40 m	no	yes	
		Autumn	RWBL	Red-winged Blackbird	220		40 - 180 m	no	yes	
		Autumn	EUST	European Starling	105		40 - 180 m	no	yes	
		Autumn	RWBL	Red-winged Blackbird	250		0 - 40 m	no	yes	
		Autumn	COGR	Common Grackle	18		0 - 40 m	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	no	yes	
		Autumn	EUST	European Starling	25		0 - 40 m	no	yes	
		Autumn	EABL	Eastern Bluebird	2		0 - 40 m	no	yes	

Date	Point	Season	Code	Species	#	Age	Observation		Circling (yes/no)	Entered Project Area (yes/no)	Estimated time within rooster area
							Height	Direction			
25-Oct-11	3	Autumn	AMCR	American Crow	5		0 - 40 m	Northwest	no	yes	
		Autumn	HOLA	Horned Lark	1		0 - 40 m	North/Northeast	no	yes	
		Autumn	NOHA	Northern Harrier	1		0 - 40 m	South	no	yes	
		Autumn	RWBL	Red-winged Blackbird	45		0 - 40 m	East/Southeast	no	yes	
		Autumn	COGR	Common Grackle	12		0 - 40 m	Southwest	no	yes	
		Autumn	PIWO	Pileated Woodpecker	1		0 - 40 m	South/Southwest	no	yes	
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	Northwest	no	yes	
		Autumn	RBGU	Ring-billed Gull	8		40 - 180 m	South	yes	yes	6 Minutes
		Autumn	AMCR	American Crow	3		0 - 40 m	North	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	East/Northeast	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	East	no	yes	
		Autumn	EABL	Eastern Bluebird	5		0 - 40 m	West	no	yes	
		Autumn	EUST	European Starling	7		0 - 40 m	Northwest	no	yes	
		Autumn	HOSP	House Sparrow	4		0 - 40 m	East/Southeast	no	yes	
28-Oct-11	1	Autumn	EABL	Eastern Bluebird	2		0 - 40 m	Northwest	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	Northwest	no	yes	
		Autumn	AMCR	American Crow	5		0 - 40 m	South	no	yes	
		Autumn	HOLA	Horned Lark	3		0 - 40 m	South/Southwest	no	yes	
		Autumn	EUST	European Starling	22		0 - 40 m	East	no	yes	
		Autumn	RWBL	Red-winged Blackbird	125		0 - 40 m	East	no	yes	
		Autumn	COGR	Common Grackle	18		0 - 40 m	East	no	yes	
		Autumn	COGR	Common Grackle	7		40 - 180 m	Southeast	no	yes	
		Autumn	MODO	Mourning Dove	3		0 - 40 m	Northwest	no	yes	1 Minute
		Autumn	MODO	Mourning Dove	6		0 - 40 m	South/Southwest	no	yes	
		Autumn	AMKE	American Kestrel	1		0 - 40 m	North	no	yes	
		Autumn	HOSP	House Sparrow	3		0 - 40 m	Northwest	no	yes	
		Autumn	SOSP	Song Sparrow	1		0 - 40 m	Northwest	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	East	no	yes	
28-Oct-11	2	Autumn	EUST	European Starling	1		0 - 40 m	Southwest	no	yes	
		Autumn	AMGO	American Goldfinch	1		0 - 40 m	Northwest	no	yes	
		Autumn	GBHE	Great Blue Heron	1		40 - 180 m	South	no	yes	1 Minute
		Autumn	TUVU	Turkey Vulture	1		40 - 180 m	East	yes	yes	3 Minutes
		Autumn	TRES	Tree Swallow	3		0 - 40 m	East	no	yes	
		Autumn	AMCR	American Crow	2		0 - 40 m	South	no	yes	
		Autumn	BLJA	Blue Jay	1		0 - 40 m	Northwest	no	yes	
		Autumn	EUST	European Starling	8		0 - 40 m	Northwest	no	yes	
		Autumn	EABL	Eastern Bluebird	3		0 - 40 m	East/Southeast	no	yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	West	no	yes	
		Autumn	HOSP	House Sparrow	1		0 - 40 m	West	no	yes	
		Autumn	RWBL	Red-winged Blackbird	100		0 - 40 m	Northwest	no	yes	
		Autumn	AMCR	American Crow	6		0 - 40 m	Southwest	no	yes	
		Autumn	TUVU	Turkey Vulture	1		40 - 180 m	South/Southwest	yes	yes	3 Minutes
28-Oct-11	3	Autumn	AMGO	American Goldfinch	9		0 - 40 m	North	no	yes	
		Autumn	AMRO	American Robin	1		0 - 40 m	East	no	yes	
		Autumn	RWBL	Red-winged Blackbird	27		0 - 40 m	East	no	yes	
		Autumn	COGR	Common Grackle	2		0 - 40 m	East	no	yes	
		Autumn	MODO	Mourning Dove	13		0 - 40 m	Southwest	no	yes	
		Autumn	NOCA	Northern Cardinal	1		0 - 40 m	South	no	yes	
		Autumn	EABL	Eastern Bluebird	3		0 - 40 m	South/Southwest	no	yes	
		Autumn	AMCR	American Crow	1		0 - 40 m	West	no	yes	
		Autumn	NOFL	Northern Flicker	1		0 - 40 m	West	no	yes	

APPENDIX B

Ohio Raptor Migration Maps



SPRING RAPTOR MIGRATION ROUTES

SYMBOL	COMMON NAME
AK	American Kestrel
BE	Bald Eagle
BO	Boreal Owl
BW	Broadwing
CH	Cooper's Hawk
GE	Golden Eagle
LEO	Long-eared Owl
ML	Merlin
NG	Northern Goshawk
NH	Northern Harrier
NSWO	Northern Saw-whet Owl
OS	Osprey
PG	Peregrine Falcon
RL	Rough-legged Hawk
RS	Red-shouldered Hawk
RT	Red-tailed Hawk
SEO	Short-eared Owl
SS	Sharp-shinned Hawk
TV	Turkey Vulture

Major Raptor Migration Observation Sites

- ① West Skyline Observatory, Duluth (TV,OS,BE,SS,BW,RT,RL,GE)
- ② Chequamegon Bay, Ashland (TV,SS,BW,RT,GE,BE)
- ③ Apostle Islands (AK,ML,PG)
- ④ Manitou Island/Keewenaw Peninsula (OS,SS,RL,NH,BE,PE,ML)
- ⑤ Whitefish Point (TV,BE,NH,SS,RS,BW,RT,RL,GE,AK,ML,PG,NSWO,BO,LEO)
- ⑥ Straits of Mackinac (TV,BE,SS,CH,RS,RT,RL,BW,GE)
- ⑦ Port Huron (TV,SS,RS,RT,BW)
- ⑧ Lake Erie Islands (TV,SS,BE,NH,OS,ML,PG)
- ⑨ Indiana Dunes NL (OS,NH,SS,RS,BW,RT,AK)

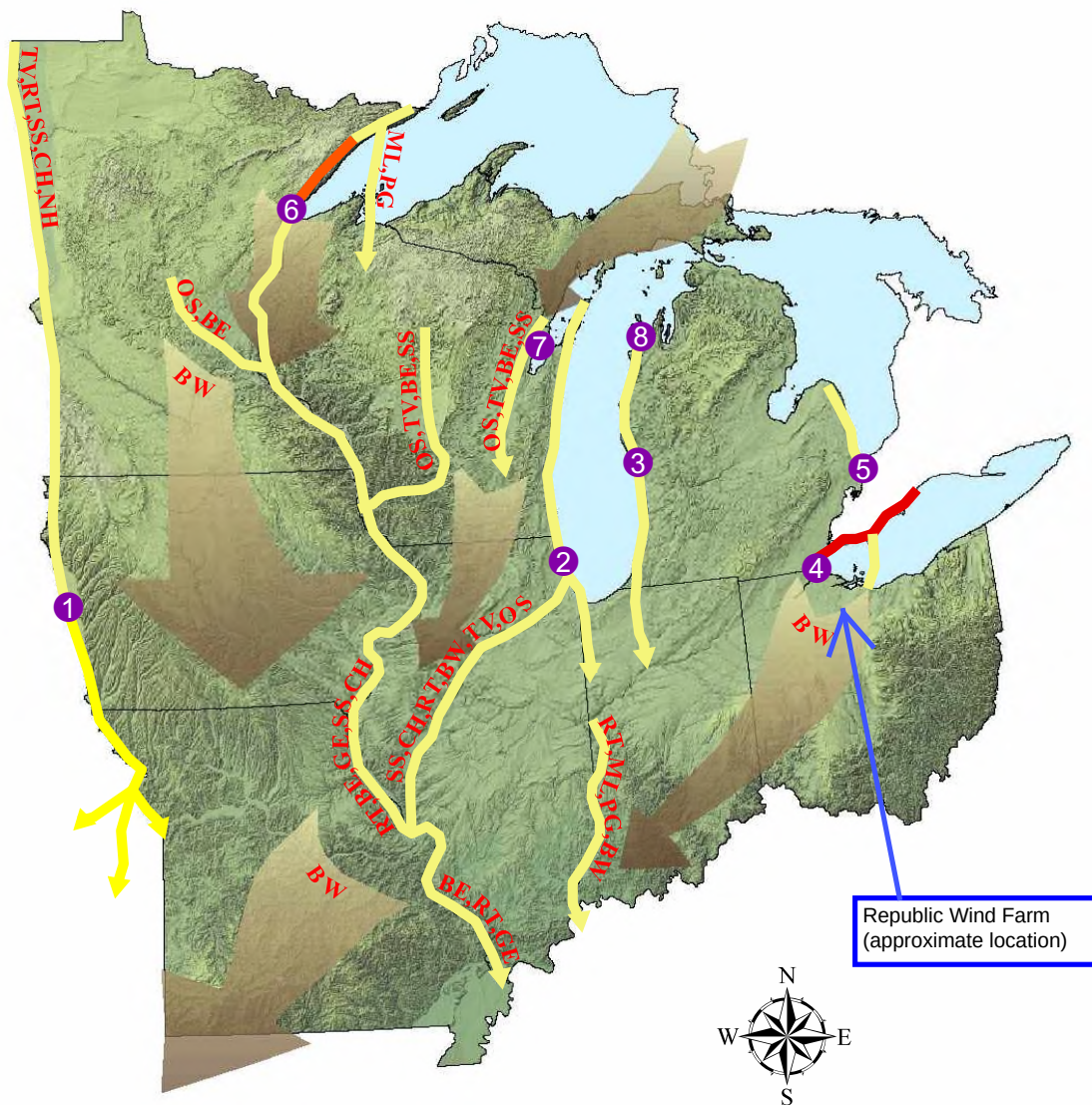
Legend Number of Birds

- 2,500 - 5,000
- 5,000 - 10,000
- 10,000 - 20,000
- >20,000

Map Created for: Division of Migratory Birds
October, 2006
Fall Migratory Bird Information provided by
USFWS Migratory Bird Biologist Bob Russell



U.S. Fish & Wildlife Service
Region 3 NWRS
Division of Conservation Planning
Twin Cities, Minnesota 55111



FALL RAPTOR MIGRATION ROUTES

SYMBOL	COMMON NAME
AK	American Kestrel
BE	Bald Eagle
BO	Boreal Owl
BW	Broadwing
CH	Cooper's Hawk
GE	Golden Eagle
LEO	Long-eared Owl
ML	Merlin
NG	Northern Goshawk
NH	Northern Harrier
NSWO	Northern Saw-whet Owl
OS	Osprey
PG	Peregrine Falcon
RL	Rough-legged Hawk
RS	Red-shouldered Hawk
RT	Red-tailed Hawk
SEO	Short-eared Owl
SS	Sharp-shinned Hawk
TV	Turkey Vulture

Major Raptor Migration Observation Sites

- ① Hitchcock Nature Area (CH,RT,SS,TV,SW,NH)
- ② Illinois Dunes State Park (ML,NH,PG,SEO)
- ③ Muskegon State Park (SS,RL,RT)
- ④ Lake Erie Metropark (TV,OS,BE,NH,SS,CH,RT,RL,GE,AK,ME,PG)
- ⑤ Port Huron (PG,ML)
- ⑥ Hawk Ridge, Duluth (TV,OS,BE,NH,SS,BW,NG,RT,RL,AK,ML,PG,BO,NSWO,LEO)
- ⑦ Little Suemico (SS,BW,NSWO)
- ⑧ Sleeping Bear Dunes NL (RL,RT,SS)



Map Created for: Division of Migratory Birds
October, 2006
Fall Migratory Bird Information provided by
USFWS Migratory Bird Biologist Bob Russell

APPENDIX C

Photographs of Diurnal Bird/Raptor Migration Survey Locations

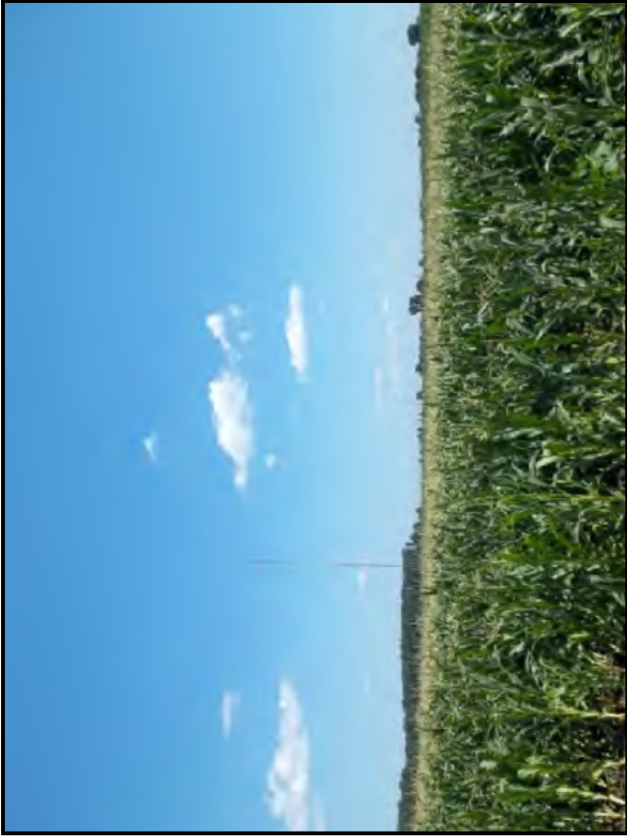


Photo 1. Point 1, facing east.

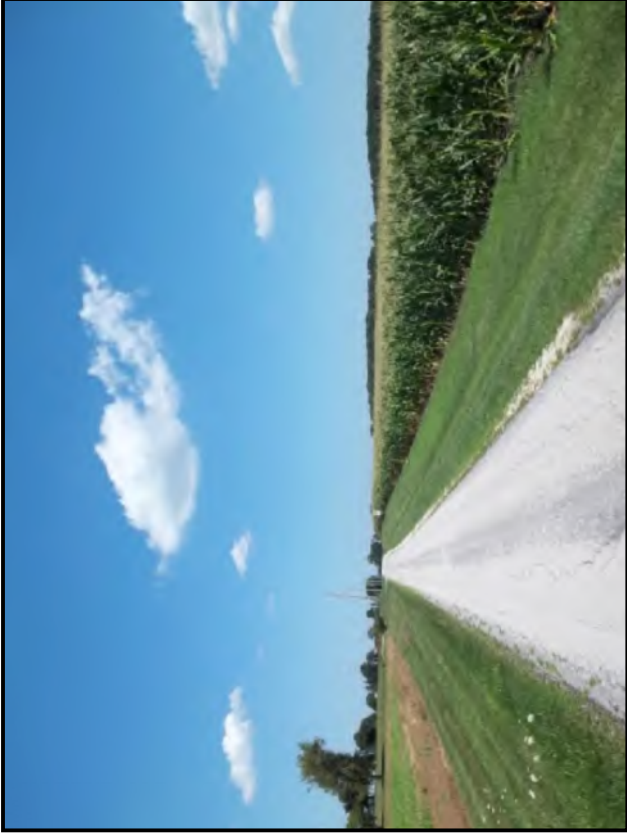


Photo 2. Point 1, facing north.

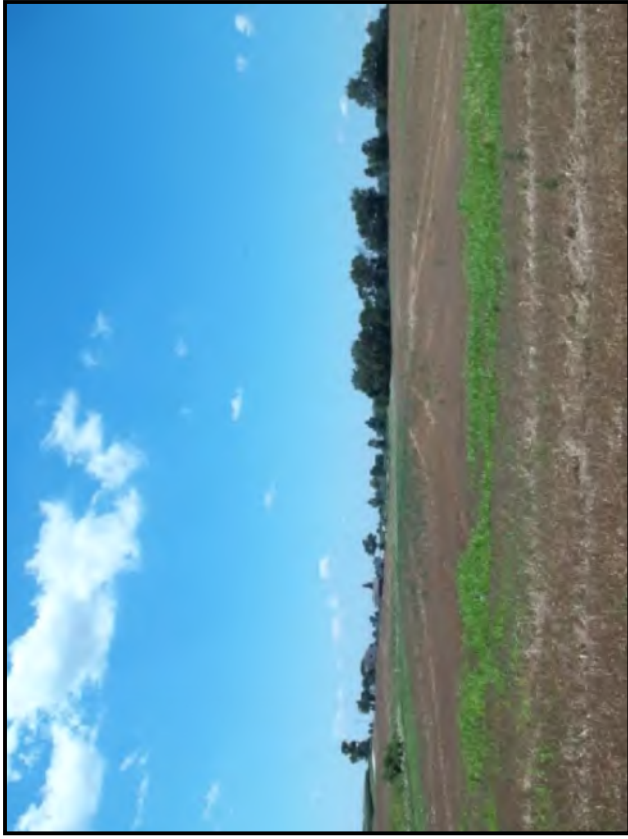


Photo 3. Point 1, facing west.



Photo 4. Point 2, facing east.



Photo 5. Point 2, facing north.



Photo 6. Point 2, facing south.



Photo 7. Point 3, facing east.



Photo 8. Point 3, facing south.



Photo 9. Point 3, facing west.

Exhibit L. Raptor Nest Survey



May 2011

**RAPTOR NEST SURVEY
REPUBLIC WIND FARM
SENECA COUNTY, OHIO**

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Republic Wind, LLC
300 S. Wacker Dr., Suite 1500
Chicago, IL 60606**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	2
2.0 METHODS	2
3.0 RESULTS	4
4.0 DISCUSSION.....	4
5.0 CONCLUSIONS AND RECOMMENDATIONS.....	7
6.0 LITERATURE CITED	8

TABLE

Table 1. Raptor nest and great blue heron breeding colony locations, tree species, nest height, and tree diameter at breast height (DBH) at the Republic Wind, LLC, Republic Wind Farm Project Area and 2-mile buffer surrounding the Project Area boundaries, Seneca County, Ohio.

FIGURE

Figure 1. Locations of raptor nests and great blue heron breeding colony at the Republic Wind, LLC, Republic Wind Farm Project Area and 2-mile buffer surrounding the Project Area boundaries, Seneca County, Ohio.

APPENDIX

Appendix A. Photographs of representative raptor nests and great blue heron breeding colony at the Republic Wind, LLC, Republic Wind Farm Project Area and 2-mile buffer surrounding the Project Area boundaries, Seneca County, Ohio.

EXECUTIVE SUMMARY

BHE Environmental, Inc. (BHE) was contracted to complete a three-day raptor nest survey following methods described in the *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio* ("Ohio Protocol") issued by the Ohio Department of Natural Resources (ODNR), Division of Wildlife in May, 2009. This report provides data and analysis of results of the Raptor Nest Survey conducted March 17-25, 2011 by BHE at the Republic Wind, LLC, (Republic) Republic Wind Farm ("Project Area") in Seneca County, Ohio and the 2-mile surrounding area.

A total of eleven raptor nests and one great blue heron (*Ardea herodias*) breeding colony were identified within the survey area. Two nests had red-tailed hawks (*Buteo jamaicensis*) perched nearby and may have been in the early stages of nesting (i.e., nest construction, egg laying); the same may have been true for a third nest seen with a red-tailed hawk circling above. The remaining eight nests (species unknown) appeared to be inactive.

BHE found no nests of listed or sensitive species within the Project Area or the 2-mile buffer surrounding the Project Area boundaries; therefore, according to the Ohio Protocol, no additional raptor nest monitoring should be required. Monitoring will take place of Bald Eagles at two nest locations just beyond two miles from the site boundary, which will be the subject of a further report. There are no requirements in the Ohio Protocol that specifically address heron breeding colonies. The Diurnal Bird/Raptor Migration Survey currently being conducted by BHE may also provide information regarding great blue heron use of the Project Area, if any. If they are found to be using the Project Area (e.g., as a travel corridor) we recommend further coordination with the ODNR to determine the appropriate next steps. We also recommend that Republic notify ODNR of the presence of the colony, and based upon initial study results, perhaps consider establishing a protective buffer around the colony, at a distance that is consistent with what has been approved at other wind farms in Ohio.

1.0 INTRODUCTION

Republic Wind, LLC (Republic) proposes to install wind turbines on the approximately 12,141 hectare (ha; 30,000 acres [ac]) Republic Wind Farm ("Project Area") in Seneca County, Ohio (Figure 1). The actual area occupied by the turbines and access roads that will comprise the facility will be a very small percentage of the Project Area.

Interactions between wind turbines and raptors have been cause for concern since an unexpectedly large number of raptors were documented as fatalities at one of the first wind turbine facilities in Altamont, California (Hoover and Morrison 2005; Orloff and Flannery 1992; Smallwood and Thelander 2005). Although subsequent Raptor collision rates at modern wind farms have declined significantly, raptors may be affected by wind power development in several ways, including: a) collisions with operating turbine rotors; b) habitat disturbance resulting from construction or new infrastructure on site; and, c) disturbance from increased human activity in the vicinity of the turbines. Collision mortalities associated with wind turbines could have potentially substantial effects on raptor populations because raptors are not numerous and typically reproduce and mature slowly; thus, in contrast to passerine species, raptors cannot absorb mortalities and recover from losses on an annual basis easily (Kuvlesky et al. 2007).

BHE was contracted by Republic to conduct a three-day raptor nest survey of the proposed Project Area according to specifications outlined in the Ohio Department of Natural Resources (ODNR) *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio, An Addendum to the Ohio Department of Natural Resource's Voluntary Cooperative Agreement* (Ohio Protocol). The purpose of this report is to document locations of nesting raptors found during the survey in relation to the Project Area.

2.0 METHODS

In accordance with specifications of the Ohio Protocol, a survey for raptor nests was conducted March 17 - 25, 2011. Observed species and locations of nests were marked on U.S. Geological Survey (USGS) 1:24,000 topographic quadrangles. The survey focused on the location of stick nests. The Ohio Protocol specifies raptor nest surveys should occur between February 1 and March 31 because the majority of deciduous trees are without leaves and nests can be most easily seen at this time. The survey included the proposed Project Area and a 2-mile buffer surrounding the Project Area boundaries. In addition to marking the locations of nest sites on USGS 1:24,000 topographic quadrangles, the BHE biologist recorded the nest location on a global positioning system (GPS) device (if access to the nest location was available) for mapping and potential future nest visits. If access to the nest was not available, the BHE biologist used a GPS to record the location from the nearest publically accessible area and then estimated the distance and bearing to the nest for mapping. The nests were photographed (Appendix A). At the time of the survey, access had been secured for three woodlots in the southern portion of the Project Area, which were searched on foot. The remainder of the survey was conducted by automobile from public roads.

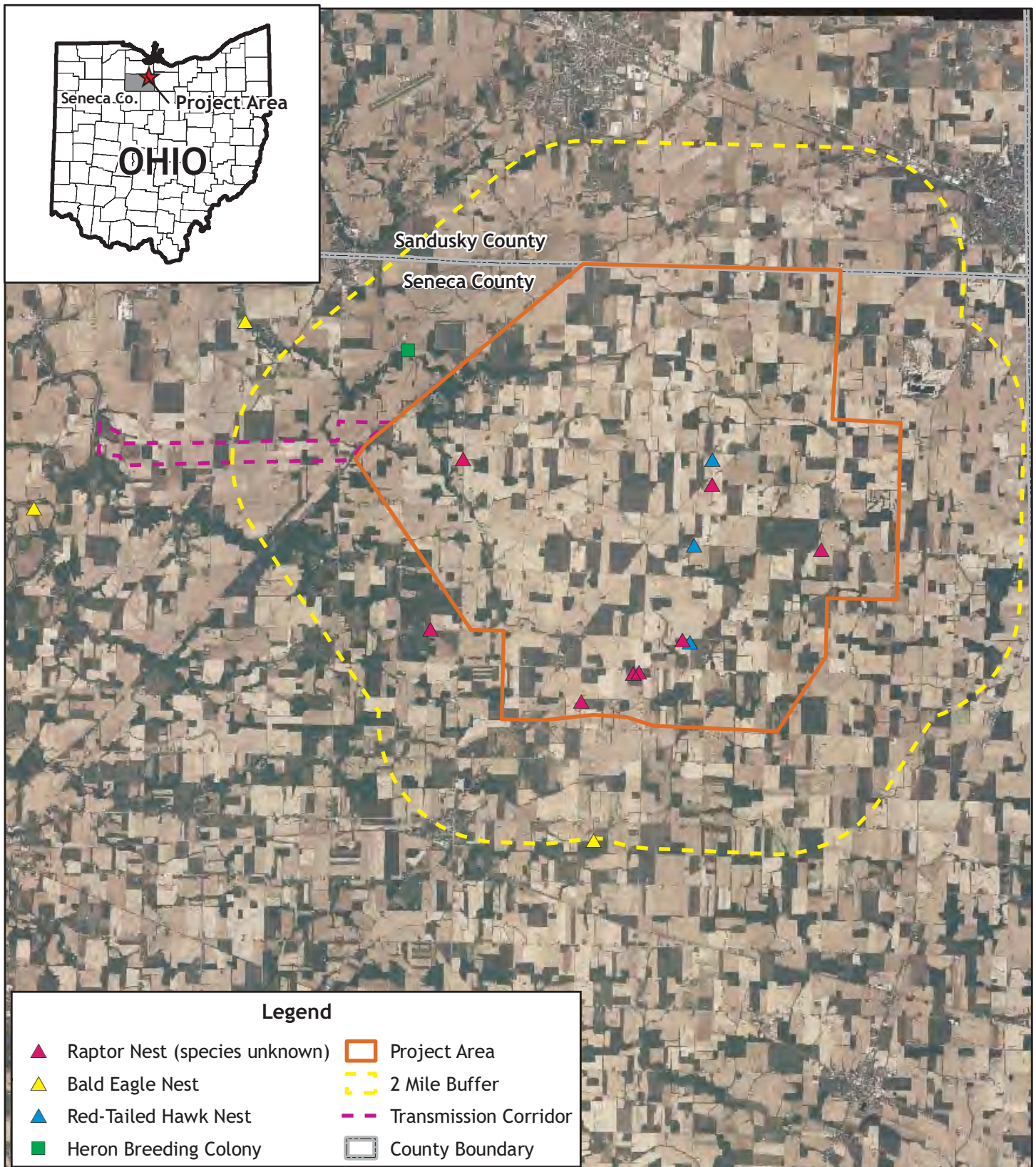


Figure 1. Raptor Nest Locations and Heron Breeding Colony within the Republic Wind, LLC, Republic Wind Farm Project Area and Surrounding 2-Mile Buffer, Seneca County, Ohio.

3.0 RESULTS

Eleven raptor nests and one great blue heron breeding colony were identified during the Survey (Figure 1, Table 1). Two nests had red-tailed hawks (*Buteo jamaicensis*) perched nearby and may have been in the early stages of nesting (i.e., nest construction, egg laying); the same may have been true for a third nest seen with a red-tailed hawk circling above. The remaining eight nests appeared to be inactive and the species associated with these nests are unknown.

A great blue heron breeding colony was located outside the Project Area but within the 2-mile buffer (approximately 0.75 mile west of the northwestern portion of the Project Area), and included 12 to 15 nests; each with an adult great blue heron perched nearby.

4.0 DISCUSSION

The red-tailed hawk is one of the most widespread and commonly observed birds of prey in North America (Preston and Beane 2009). The species occupies a large range in North and Central America and exhibits increasing or stable populations in most areas of the U.S. and Canada (NatureServe 2010, Suaer et al. 2011). In an early assessment of the impact that wind turbines were having on local raptor populations at the Altamont Pass Wind Resource Area (APWRA) in Alameda, California, red-tailed hawks were found to be the raptor species most commonly killed by collisions with wind turbines (Orloff and Flannery 1992). While they were the most commonly observed raptor species at the APWRA, immature red-tailed hawks were killed by colliding with turbines more frequently than would have been predicted by their relative abundance in the population (Orloff and Flannery 1992), suggesting a disproportionately high risk of impact to young of this species.

Mortality studies at operational wind farms outside of California, however, have shown relatively low raptor fatality rates (NRC 2007, NWCC 2010). Of the studies reviewed by the NRC (2007), 14 were conducted using a survey protocol for all seasons of occupancy for a one-year period and incorporated scavenging and searcher-efficiency biases into estimates. The combined average raptor mortality for the 14 studies was 0.03 birds/turbine/year and 0.04 birds/megawatt/year. In a review of bird collisions documented in 31 studies at wind-energy facilities outside California, Erickson et al. (2001) reported that diurnal raptors comprised 2.7 percent of avian fatalities, while 78 percent of birds killed were protected songbirds. In a 3-year study conducted at a 354-turbine facility in Buffalo Ridge, Minnesota, Johnson et al. (2002) found that of 55 documented fatalities only one was a raptor (red-tailed hawk; 1.8 percent of fatalities; .0009/turbine/year). When examined by region (East, Midwest, Pacific Northwest, and Rocky Mountain), raptor fatalities resulting from collision with wind turbines were found to be lowest in the Midwest (NRC 2007).

This reduction in raptor mortality rates may be due to advances in wind turbine technology which have made turbines less likely to impact birds. Specifically, modern wind turbines of the type proposed for the Project Area are on monopole tower structures which, unlike the lattice towers formerly used in California, and do not provide roosting opportunities for avifauna. Further, modern wind turbine blades have a much slower rotational speed which may aid birds in avoiding a collision.

Great blue herons (*Ardea herodias*) will sometimes breed in lone pairs but more often they may be found breeding in colonies ranging in size from several to hundreds of pairs (Butler 1992). The great blue heron is one of the most widespread and adaptable wading birds in North America (NatureServe 2010). Populations generally are stable or increasing in most areas (NatureServe 2010, Suaer et al. 2011). Great blue herons will often fly more than 20

miles from their nest to reach favored feeding areas, typically located in slow moving or calm freshwater. The Sandusky River is located approximately 5.5 miles to the west of the Project Area and many small tributaries are located in the immediate vicinity of the colony, north and west of the Project Area. In addition, the southwestern shores of Lake Erie are located approximately 13.7 miles north-northeast of the Project Area. Great blue herons from the breeding colony would not have to cross the Project Area to access these potential feeding areas.

Table 1. Raptor nest and great blue heron breeding colony locations, tree species, nest height, and tree diameter at breast height (DBH) at the Republic Wind Farm Project Area and 2-mile buffer surrounding the Project Area boundaries, Seneca County, Ohio.

Date	Nest Identification	Latitude	Longitude	Species	Height	Width	Additional Notes
3/17/2011	RAP-1-Ped ^a	41.15299	-82.97667	Quercus rubra	30 - 40 ft	24 - 36"	Red-tailed hawk attending nest
3/23/2011	RAP-2-Ped	41.16756	-82.94311	Q. rubra	60 - 80 ft	20 - 24"	Red-tailed hawk seen nearby
3/23/2011	RAP-3 -Ped	41.16808	-82.94546	Carya Cordiformes	60 - 80 ft	20 - 30"	
3/23/2011	RAP-4 -Ped	41.16007	-82.96008	C. ovata	80 - 100 ft	20 - 24"	Approximately 200 ft east of RAP #5
3/23/2011	RAP-5 -Ped	41.15997	-82.96055	C. ovata	80 - 100 ft	20 - 30"	Approximately 200 ft west of RAP #4
3/25/2011	RAP-6-Auto ^b	41.19009	-82.90284	Unknown	80 - 100 ft	Unknown	
3/25/2011	RAP-7-Auto	41.21069	-82.93734	Unknown	70 - 90 ft	Unknown	Red-tailed hawk attending nest
3/25/2011	RAP-8 -Auto	41.20956	-83.01514	Unknown	Unknown	Unknown	
3/25/2011	RAP-9 -Auto	41.1693	-83.02404	Unknown	Unknown	Unknown	
3/25/2011	RAP-10 -Auto	41.1904	-82.9425	Unknown	Unknown	Unknown	
3/25/2011	RAP-11 -Auto	41.2048	-82.93726	Unknown	Unknown	Unknown	
3/25/2011	NDX-GBH -Auto	41.23491	-83.03299	Unknown	Unknown	Unknown	Approximately 12 to 15 adults observed perched on and nearby nests

^a Ped suffix indicates pedestrian survey.

^b Auto suffix indicates survey conducted from automobile via public roads.

5.0 CONCLUSIONS AND RECOMMENDATIONS

BHE found no nests of listed or sensitive species of raptors within the Project Area or a 2-mile buffer surrounding the Project Area boundaries; therefore, according to the Ohio Protocol, no additional raptor nest monitoring will be required.

There are no requirements stated in the Ohio Protocol regarding heron breeding colonies. ODNR's Division of Natural Areas and Preserves maintains the Ohio Biodiversity Database, a source of information regarding rare and endangered plants and animals, outstanding natural communities and special geological features in the state. Though the great blue heron is a common and widespread species, heron breeding colonies are less common and, thus, are included in the Ohio Biodiversity Database as a breeding concentration area. However, there are no monitoring requirements specifically stated in the Ohio Protocol regarding these breeding colonies. We recommend that Republic notify ODNR of the presence of the colony to identify any potential agency considerations for this resource. A possible approach to address the presence of the great blue heron breeding colony could include establishing a protective buffer around the colony, at a distance that is consistent with what has been approved at other wind farms in Ohio.

The Diurnal Bird/Raptor Migration Survey currently being conducted by BHE may also provide information regarding great blue heron use of the Project Area, if any. If they are found to be using the Project Area (e.g., as a travel corridor) we recommend further coordination with the ODNR to determine appropriate next steps.

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APPENDIX A

Photographs of raptor nests and great blue heron breeding colony at the Republic Wind Farm Project Area and 2-mile buffer surrounding the Project Area boundaries, Seneca County, Ohio



Red-tailed hawk nest (adults away from nest at the time photo was taken) approximately 30-40 feet above ground in a red oak (*Quercus rubra*). Nest found during pedestrian survey of woodlot in southern portion of the Project Area.



Red-tailed hawk nest (note adult in nest) found during survey conducted from an automobile on public roads. Nest was located 70-90 feet above ground in a woodlot approximately 200 feet from Township Road 79 (tree species unidentified).



Raptor nest (species unknown) found during survey conducted from an automobile on public roads. Nest was located 80-100 feet above ground in a woodlot approximately 400 feet from County Road 46 (tree species unidentified).



Great blue heron breeding colony located nearest to Township Road 180, approximately 0.75 mile northwest of the Project Area boundary but within the surveyed 2-mile buffer.



Closer view of great blue heron breeding colony in which adults may be seen attending nests.



Adult great blue herons in full breeding plumage attending nests in breeding colony.

Exhibit M. Bald Eagle Survey



November 2012

**FINAL RESULTS FOR THE
BALD EAGLE SURVEY EFFORT
REPUBLIC WIND FARM,
SENECA AND SANDUSKY COUNTIES, OHIO**

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	BALD EAGLE AND RAPTOR NEST SURVEY	1
3.0	BALD EAGLE NEST MONITORING AND RESULTS	3
4.0	EAGLE POINT COUNT SURVEY AND RESULTS.....	4
5.0	BALD EAGLE OBSERVATIONS DURING DIURNAL BIRD/RAPTOR MIGRATION	7

TABLES

Table 1.	National land use/land cover acreages in the Republic Wind, LLC Project Area, Seneca and Sandusky counties, Ohio.
Table 2.	Bald Eagle Nest Monitoring Dates during the 2011/2012 breeding/nesting seasons.
Table 3.	Bald Eagles Observed During the Diurnal Bird/Raptor Migration.

FIGURES

Figure 1.	Site location and Bald Eagle Nest locations.
Figure 2.	Random Bald Eagle Point Count Locations and 800m buffer.

APPENDIX

Appendix A.	Bald Eagle Point Count Data.
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1.0 INTRODUCTION

Republic Wind Farm, LLC, a subsidiary of Nordex USA, Inc. (Nordex), proposes construction of the Republic Wind Farm (RWF or Project Area) wind energy generation facility in Seneca and Sandusky counties, Ohio. The Project Area spans approximately 39,627 acres (ac; 16,036 hectares [ha]) northeast of the town of Republic, Ohio (Figure 1). The Project Area represents the maximum area considered for placement of turbines and facility infrastructure. Nordex anticipates the nameplate capacity of the RWF will be 200 megawatts (MW) with an anticipated 83 turbines allocated throughout the Project Area. At this time, the layout and final number of turbines has not yet been selected; however, Nordex anticipates that the actual area disturbed by the turbines and access roads will comprise less than 1 percent of the Project Area (less than 1 percent).

BHE Environmental, Inc. (BHE) was contracted by Nordex to conduct Bald Eagle point count monitoring at the proposed RWF according to specifications outlined in the US Fish and Wildlife Service (USFWS) Draft Eagle Conservation Plan Guidance (ECP) point count methodology, with some modifications discussed and approved by USFWS on August 23, 2011. Additionally, BHE conducted raptor/diurnal bird monitoring and raptor nest searches in accordance with the Ohio Department of Natural Resources (ODNR) *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio, An Addendum to the Ohio Department of Natural Resource's Voluntary Cooperative Agreement* (Ohio Protocol) during the 2011 and 2012 survey seasons. The purpose of this interim report is to document the results of the Bald Eagle survey effort to date and provide supplemental information from the raptor/diurnal bird and raptor nest search surveys. This information has been provided to USFWS in order to assist in the preliminary assessment of the potential risk to Bald Eagles posed by the proposed RWF wind energy facility.

Regional Context

The Project Area is heavily influenced by agricultural practices; BHE has calculated utilizing ArcGIS resources that 84.7 percent of the Project Area is devoted to intensive row crop (i.e., corn, soybean, wheat) agricultural production with fragmented woodlots that comprise only 7.6 percent of the Project Area (Table 1). The Project Area lies along the eastern edge of the Mississippi flyway which also includes, although to a lesser extent, the Ohio River Valley and tributaries. The Project Area is approximately 18 miles south of Lake Erie.

2.0 BALD EAGLE AND RAPTOR NEST SURVEY

In accordance with specifications of the Ohio Protocol, a survey for raptor nests was conducted March 17 - 25, 2011. Observed species and locations of nests were marked on US Geological Survey (USGS) 1:24,000 topographic quadrangles. The survey focused on the location of stick nests. The Ohio Protocol specifies raptor nest surveys should occur between February 1 and March 31 because the majority of deciduous trees are without leaves and nests can be most easily seen at this time. The survey included the proposed Project Area and a 2-mile buffer surrounding the Project Area boundaries. In addition to marking the locations of nest sites on USGS 1:24,000 topographic quadrangles, the BHE biologist recorded the nest location on a global positioning system (GPS) device (if access to the nest location

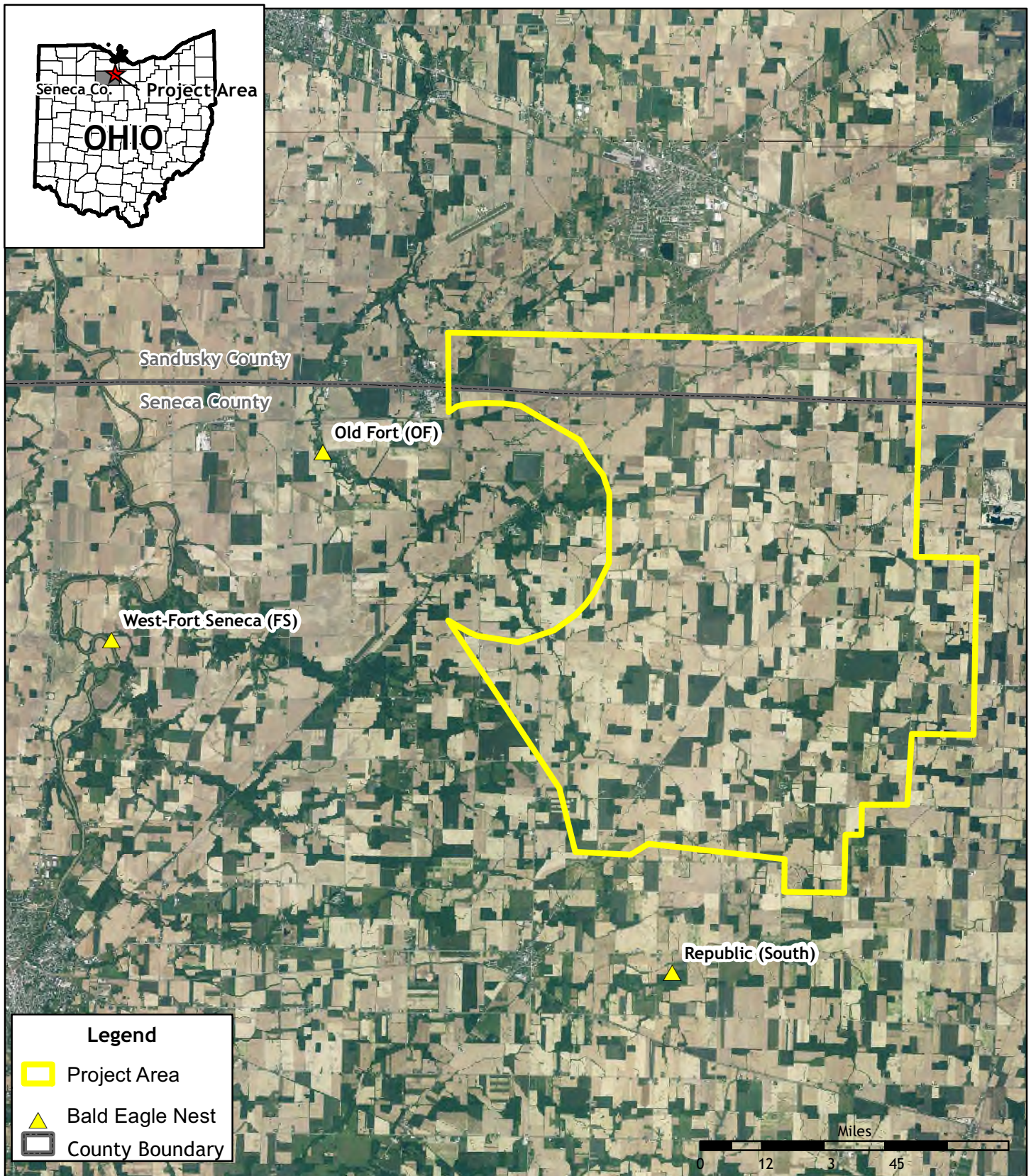


Figure 1. Site location and Bald Eagle Nest locations.

	Republic Wind, LLC Project Area, Seneca and Sandusky Counties, Ohio.		
	Basemap: NAIP Imagery - Seneca and Sandusky Counties, OH (2010)	Project No. 1993.001.002 July 2012	

Table 1. National land use/land cover acreages in the Republic Wind, LLC Project Area, Seneca and Sandusky counties, Ohio.

Land Use	Acres	Percent
Cultivated Crops	33,571.5	84.7%
Deciduous Forest	3,012.7	7.6%
Developed, Open Space	2,101.0	5.3%
Hay/Pasture	425.0	1.1%
Herbaceous	209.96	0.5%
Developed, Low Intensity	136.6	0.3%
Open Water	116.1	0.3%
Woody Wetlands	32.0	0.1%
Emergent Herbaceous Wetlands	10.5	<0.1%
Developed, Medium Intensity	8.3	<0.1%
Evergreen Forest	3.2	<0.1%
Total	39,626.6	100.0%

Source: National Land Cover Database - 2006 (<http://www.mrlc.gov/nlcd2006.php>)

was available) for mapping and potential future nest visits. If access to the nest was not available, the BHE biologist used a GPS to record the location from the nearest publically accessible area and then estimated the distance and bearing to the nest for mapping. At the time of the survey, access had been secured for three woodlots in the southern portion of the Project Area, which were searched on foot. The remainder of the survey was conducted by automobile from public roads.

3.0 BALD EAGLE NEST MONITORING AND RESULTS

During the nest survey, BHE identified three Bald Eagle nests within close proximity (approximately 6 miles) to the Project Area (Figure 1). BHE identified each of the Bald Eagle nests by their given ODNR/USFWS nest location name: Old Fort (OF), Fort Seneca (FS), and Republic (known as South). Figure 1 depicts their location with proximity to the Project Area and their general habitat matrices. BHE biologists monitored each of identified nests during the incubation and rearing stages to assess the daily movement patterns of each breeding pair of adults and in order to attempt to identify the productivity success of each nest location during the 2011 and 2012 breeding/nesting seasons (Table 2).

Each Bald Eagle nest was monitored from a vehicle (serving as a blind) positioned at best point for observation. All eagle movements to and from the nest were recorded and a diagram was produced depicting estimated heights, direction of travel, and flight paths used. The location and behavior of the adult Bald Eagles within the near nest territory were documented for at least four hours, twice per week, during the 2011 and 2012 breeding and nesting seasons. The data collected for each of the nest monitoring events will be provided as an appendix to the final report.

The FS nest produced two eaglets that fledged in 2011. Observations showed the birds used the Sandusky River and its environs almost exclusively. Few observations documented

Table 2. Bald Eagle Nest Monitoring Dates during the 2011/2012 breeding/nesting seasons.

Bald Eagle Nest	2011 Breeding/Nesting Season Observation Dates*	2012 Breeding/Nesting Season Observation Dates **
Old Fort	Inactive/Abandoned	January 18, February 16, March 15, April 15, May 18, June 17, and July TBD
Fort Seneca	March 23 through July 19 (2 times weekly)	January 18, February 16, March 15, April 15, May 18, June 17, and July TBD
Republic	Inactive/Abandoned	January 19, February 15, March 14, April 16, May 16, June 15, and July TBD

*Bald Eagle nest monitoring in accordance with Ohio Protocol.

**Bald Eagle nest monitoring in accordance with modified study plan to incorporate the USFWS Draft ECP guidance.

the birds flying to or from the east where the Project Area lies. The birds using the nest did not appear to be using the Project Area based on these observations.

Due to limited visibility from the observation points and site access constraints at each of the nest locations, BHE biologists were unable to determine the productivity status of any of the observed Bald Eagle nests in the 2012 survey period. One more observation period of the nests is scheduled for July, and should BHE be able to identify the productivity status of the nests, BHE will report the results. Should USFWS and/or ODNR know the productivity status of these nests in 2012, BHE and Nordex request they be provided the productivity status and number of fledglings documented in order to incorporate those items in to the overall risk assessment for the Republic Wind Farm.

4.0 EAGLE POINT COUNT SURVEY AND RESULTS

Using GIS, a random or random-systematic approach was used to distribute twenty points (Figure 2) across the Project Area (approximately one plot per 3.0 square miles) such that suitable habitat was represented in proportion to their extent within the Project Area. Points in the field were marked using a GPS. Points were separated by at least 1,600 meters (m) to avoid overlap among the 800-m radius plots that are centered on the points. When the plots were established, existing natural or man-made landmarks at the perimeter of the 800-m plot were noted to assist observers with distance estimates, where available.

Using best professional judgment, the BHE biologist moved plots from the GIS random-generated point locations up to 800 m to maximize visibility within the plots, to align with access to sites, and to assure all habitats are appropriately represented. After establishment of the plots in the field, Republic sent the map to the USFWS and the ODNR for concurrence of the final plot locations. Points were moved at the request of the USFWS to be more representative of all habitats and compass directions within the RWF project boundary.

Surveys were completed under all weather conditions unless visibility approached 0 (blinding snow or fog) or where visibility was less than 800 m horizontally and 200 m vertically. Surveys

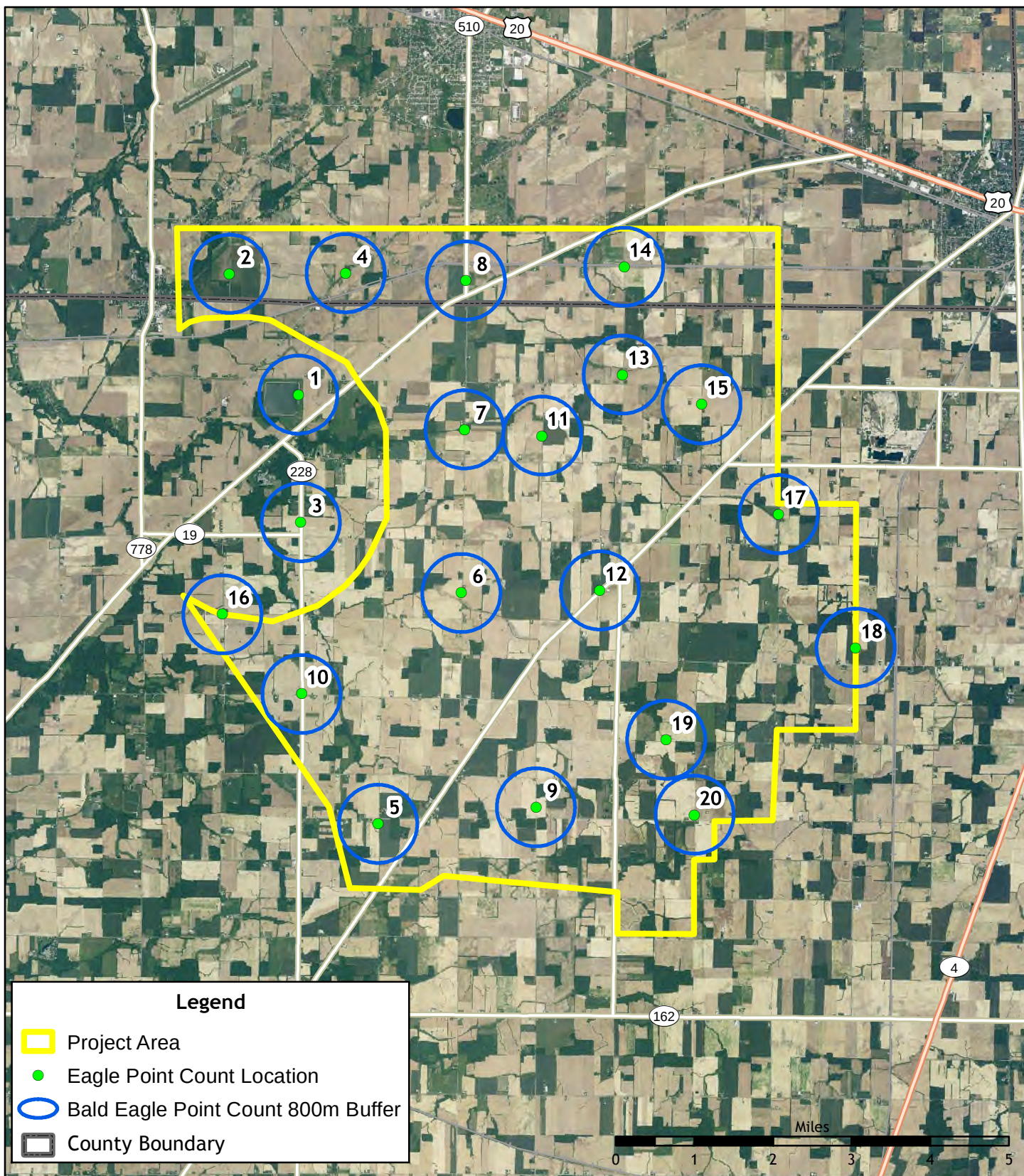


Figure 2. Random Bald Eagle Point Count Locations and 800m buffer

	Republic Wind, LLC Project Area, Seneca and Sandusky Counties, Ohio.	Project No. 1953.001.002	
	Basemap: NAIP Imagery - Seneca and Sandusky Counties, OH (2010)	July 2012	

were conducted during daylight hours and employed a temporally stratified sampling approach. Survey start times varied throughout the course of the study, such that each point was surveyed during a range of daylight hours.

During each survey visit, an observer remained at each point for 20 minutes. The observer recorded the total number of minutes, if any, of eagle flight activity within 800 m. The total 20-minute sample interval was divided into 1-minute intervals during which the observer noted the number of birds in flight within the plot in each interval (such that one eagle in flight in the observation area in a given minute = 1 exposure minute; two eagles in flight in the observation area in a given minute [or the same eagle in flight continuing into a second minute interval] = 2 exposure minutes). One exposure minute was assigned to an eagle perched within a plot during the entire 20-minute survey, but perched birds will be noted as such so perching can be taken into account in the analyses. Incidental observations of eagles outside of survey plots were also recorded, but not included in statistical analysis.

Field data forms included a large circle representing the point count observation area on which the observer can record approximate flight paths and heights of eagles plus ancillary notes on general behavior and activity. Behavior prevalent during each 1-minute interval was recorded as soaring flight (circling broadly with wings outstretched), flapping-gliding, kiting-hovering, stooping or diving at prey, stooping or diving, being mobbed, undulating/territorial flight, or perched.

The age of each eagle was categorized as juvenile (recently fledged or fledged the previous year), subadult, adult, or unknown. An eagle's above-ground height was estimated in 50 m increments for each 1-minute interval record, using broad categories relevant to the height of the rotor-swept zone and other risk-specific considerations. Standard weather data was recorded at each point, i.e., temperature, wind speed, wind direction, precipitation, and cloud cover. In addition, incidental observations of other large birds of conservation interest (raptors, sandhill cranes, and waterfowl) were recorded during the course of this study, however, they are not included in this report.

The point count surveys were conducted from August 2011 through July 2012, with each established point surveyed two times per month.

Results

BHE biologists observed Bald Eagle activity on two occasions within the study area on November 9, 2011 and March 13, 2012 at point count location 19. A total of seven minutes of Bald Eagle exposure was documented with 1 minute on November 9, 2011 and six minutes on March 13, 2012 at heights ranging from 1 to 50 m above ground surface. During each observation period, an adult Bald Eagle was observed in direct flight either flapping or gliding through the point count location and 800-m buffer area (Appendix A).

A total of 9,220 minutes of observation were conducted by BHE biologists. Of the 9,220 minutes, a total of 7 minutes contained Bald Eagle observations. Based on these results, the overall mean Bald Eagle exposure rate (ER) as defined in the USFWS ECP, can be calculated as the number of Bald Eagle observations per minute (7) divided by the total number survey minutes (9,220) across all of the point count locations over the entire survey period. Therefore, the mean Bald Eagle ER for the RWF Project Area was found to be 0.00076. This means that on average, one Bald Eagle was observed during every 1,317 minutes (21 hours and 54 minutes) of survey time across the entire Project Area.

Of the observed 20 point count locations, only one (Point Count Location 19) had any eagle observations documented during the entire survey period. Therefore, 19 of the 20 point count locations exhibited an eagle exposure rate of zero (0). The eagle exposure for point count location 19 can be calculated by dividing the number of Bald Eagle Observation minutes (7) by the total number of survey minutes at Point Count Location 19, which was 460 minutes. Therefore, the eagle exposure rate at Point Count Location 19 can be determined as 0.01521 (approximately 0.015) over the entire survey period. Of the seven eagle minutes observed, none of them were within the assumed rotor swept zone (40 to 120 m) of the proposed wind turbines for the RWF Project Area.

BHE and Nordex's intent is to provide this eagle exposure rate for the entire survey period and Point Count Location 19, in order to assist the USFWS in determining the preliminary collision probability (risk) and annual fatality rate of the proposed Republic Wind Farm based on the results of this survey effort.

5.0 BALD EAGLE OBSERVATIONS DURING DIURNAL BIRD/RAPTOR MIGRATION

During the course of the spring and fall diurnal bird/raptor migration surveys, results were detailed and reported to Nordex in the BHE report, *Results of the Diurnal Bird/Raptor Migration Survey, Republic Wind Farm, Seneca and Sandusky Counties, Ohio*, dated December 2011.

Results

A total of four Bald Eagles were observed during the point counts for a total of 7 minutes of eagle exposure, all during the spring migration period (Table 3).

Three of the observations occurred in the northwestern portion of the Project Area and each of these observations were of a juvenile bird flying between 40 and 180 m above the ground. A single observation of an adult bird occurred in the southern portion of the Project Area flying between 40 and 180 m above the ground.

A total of 17,640 minutes of observation were conducted by BHE biologists during the diurnal bird/raptor migration. Of the 17,640 minutes of observation, a total of 7 minutes contained Bald Eagle observations.

Based on these results, the overall mean Bald Eagle ER as defined in the USFWS ECP, can be calculated as the number of Bald Eagle observations per minute (7) divided by the total number survey minutes (17,640) across all of the diurnal bird/raptor observation points over the entire survey period. Therefore, the mean Bald Eagle ER for the RWF Project Area during the diurnal bird/raptor migration period was found to be 0.00039. This means that on average, one Bald Eagle was observed during every 2,520 minutes (42 hours) of survey time during the diurnal bird/raptor migration survey.

Table 3. Bald Eagles Observed During the Diurnal Bird/Raptor Migration.

Date	Species	#	Time	Age	Observation Height	Estimated time within rooster area
3/22/2011	Bald Eagle	1	2:46 PM	3 yrs	40 - 180 m	2 min
4/15/2011	Bald Eagle	1	12:01 PM	Adult	2	2 min
4/20/2011	Bald Eagle	1	2:21 PM	3 yrs	40 - 180 m	1 min
4/21/2011	Bald Eagle	1	12:47 PM	3 yrs	40 - 180 m	2 min

APPENDIX A

Bald Eagle Point Count Data

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
1	8/28/2011	0:20	0	-	-	-	30	N/A	0	N/A	0
2	8/28/2011	0:20	0	-	-	-	22	N/A	0	N/A	0
3	8/28/2011	0:20	0	-	-	-	30	N/A	0	N/A	0
4	8/28/2011	0:20	0	-	-	-	22	N/A	0	N/A	0
5	8/28/2011	0:20	0	-	-	-	29	N/A	0	N/A	0
6	8/28/2011	0:20	0	-	-	-	30	N/A	0	N/A	0
7	8/28/2011	0:20	0	-	-	-	23	N/A	0	N/A	0
8	8/28/2011	0:20	0	-	-	-	23	N/A	0	N/A	0
9	8/28/2011	0:20	0	-	-	-	28	N/A	0	N/A	0
10	8/28/2011	0:20	0	-	-	-	30	N/A	0	N/A	0
11	8/28/2011	0:20	0	-	-	-	24	N/A	0	N/A	0
12	8/28/2011	0:20	0	-	-	-	29	N/A	0	N/A	0
13	8/28/2011	0:20	0	-	-	-	25	N/A	0	N/A	0
14	8/28/2011	0:20	0	-	-	-	26	N/A	0	N/A	0
15	8/28/2011	0:20	0	-	-	-	25	N/A	0	N/A	0
16	8/28/2011	0:20	0	-	-	-	26	N/A	0	N/A	0
17	8/28/2011	0:20	0	-	-	-	26	N/A	0	N/A	0
18	8/28/2011	0:20	0	-	-	-	27	N/A	0	N/A	0
19	8/28/2011	0:20	0	-	-	-	27	N/A	0	N/A	0
20	8/28/2011	0:20	0	-	-	-	28	N/A	0	N/A	0
1	8/31/2011	0:20	0	-	-	-	19	N/A	0	N/A	0
2	8/31/2011	0:20	0	-	-	-	18	N/A	0	N/A	0
3	8/31/2011	0:20	0	-	-	-	19	N/A	0	N/A	0
4	8/31/2011	0:20	0	-	-	-	18	N/A	0	N/A	0
5	8/31/2011	0:20	0	-	-	-	22	N/A	0	N/A	0
6	8/31/2011	0:20	0	-	-	-	26	N/A	0	N/A	0
7	8/31/2011	0:20	0	-	-	-	27	N/A	0	N/A	0
8	8/31/2011	0:20	0	-	-	-	17	N/A	0	N/A	0
9	8/31/2011	0:20	0	-	-	-	23	N/A	0	N/A	0
10	8/31/2011	0:20	0	-	-	-	21	N/A	0	N/A	0
11	8/31/2011	0:20	0	-	-	-	27	N/A	0	N/A	0
12	8/31/2011	0:20	0	-	-	-	26	N/A	0	N/A	0
13	8/31/2011	0:20	0	-	-	-	28	N/A	0	N/A	0
14	8/31/2011	0:20	0	-	-	-	17	N/A	0	N/A	0
15	8/31/2011	0:20	0	-	-	-	28	N/A	0	N/A	0
16	8/31/2011	0:20	0	-	-	-	21	N/A	0	N/A	0
17	8/31/2011	0:20	0	-	-	-	25	N/A	0	N/A	0
18	8/31/2011	0:20	0	-	-	-	25	N/A	0	N/A	0
19	8/31/2011	0:20	0	-	-	-	25	N/A	0	N/A	0
20	8/31/2011	0:20	0	-	-	-	23	N/A	0	N/A	0
1	9/15/2011	0:20	0	-	-	-	12	N/A	7	north	40
2	9/15/2011	0:20	0	-	-	-	14	N/A	2	north	40

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
3	9/15/2011	0:20	0	-	-	-	12	N/A	7	north	45
4	9/15/2011	0:20	0	-	-	-	14	N/A	7	north	30
5	9/15/2011	0:20	0	-	-	-	11	N/A	5	N/A	10
6	9/15/2011	0:20	0	-	-	-	24	N/A	0	N/A	10
7	9/15/2011	0:20	0	-	-	-	23	0	2	Northwest	10
8	9/15/2011	0:20	0	-	-	-	18	0	2	West/Northwest	35
9	9/15/2011	0:20	0	-	-	-	11	0	2	Norh/Northwest	10
10	9/15/2011	0:20	0	-	-	-	12	0	2	Northwest	15
11	9/15/2011	0:20	0	-	-	-	24	0	0	N/A	10
12	9/15/2011	0:20	0	-	-	-	23	0	7	Northwest	10
13	9/15/2011	0:20	0	-	-	-	19	0	7	North/Northwest	30
14	9/15/2011	0:20	0	-	-	-	19	0	2	North/Northwest	40
15	9/15/2011	0:20	0	-	-	-	21	0	7	Northwest	20
16	9/15/2011	0:20	0	-	-	-	12	0	2	Northwest	45
17	9/15/2011	0:20	0	-	-	-	22	0	2	Northwest	15
18	9/15/2011	0:20	0	-	-	-	23	0	2	Northwest	10
19	9/15/2011	0:20	0	-	-	-	10	0	2	North	10
20	9/15/2011	0:20	0	-	-	-	10	0	2	North	10
1	9/22/2011	0:20	0	-	-	-	19	0	0	N/A	70
2	9/22/2011	0:20	0	-	-	-	19	0	0	N/A	95
3	9/22/2011	0:20	0	-	-	-	17	0	0	N/A	70
4	9/22/2011	0:20	0	-	-	-	19	0	0	N/A	100
5	9/22/2011	0:20	0	-	-	-	14	0	0	N/A	30
6	9/22/2011	0:20	0	-	-	-	23	0	0	N/A	50
7	9/22/2011	0:20	0	-	-	-	22	0	0	N/A	70
8	9/22/2011	0:20	0	-	-	-	20	0	0	N/A	95
9	9/22/2011	0:20	0	-	-	-	14	0	0	N/A	50
10	9/22/2011	0:20	0	-	-	-	15	0	0	N/A	70

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
11	9/22/2011	0:20	0	-	-	-	22	0	0	N/A	95
12	9/22/2011	0:20	0	-	-	-	22	0	0	N/A	90
13	9/22/2011	0:20	0	-	-	-	21	0	0	N/A	85
14	9/22/2011	0:20	0	-	-	-	21	0	0	N/A	95
15	9/22/2011	0:20	0	-	-	-	21	0	0	N/A	75
16	9/22/2011	0:20	0	-	-	-	16	0	0	N/A	60
17	9/22/2011	0:20	0	-	-	-	22	0	0	N/A	90
18	9/22/2011	0:20	0	-	-	-	12	0	0	N/A	5
19	9/22/2011	0:20	0	-	-	-	13	0	0	N/A	40
20	9/22/2011	0:20	0	-	-	-	13	0	0	N/A	30
1	10/13/2011	0:20	0	-	-	-	11	0	1 to 3	East	99
2	10/13/2011	0:20	0	-	-	-	10	0	0	N/A	85
3	10/13/2011	0:20	0	-	-	-	17	0	1 to 3	Southeast	75
4	10/13/2011	0:20	0	-	-	-	7	0	0	N/A	90
5	10/13/2011	0:20	0	-	-	-	18	0	1 to 3	South/Southeast	85
6	10/13/2011	0:20	0	-	-	-	17	0	1 to 3	Southeast	70
7	10/13/2011	0:20	0	-	-	-	12	0	0	N/A	90
8	10/13/2011	0:20	0	-	-	-	9	0	0	N/A	85
9	10/13/2011	0:20	0	-	-	-	17	0	0	N/A	80
10	10/13/2011	0:20	0	-	-	-	18	0	0	N/A	85
11	10/13/2011	0:20	0	-	-	-	12	0	1 to 3	Southeast	75
12	10/13/2011	0:20	0	-	-	-	13	0	0	N/A	80
13	10/13/2011	0:20	0	-	-	-	9	0	0	N/A	90
14	10/13/2011	0:20	0	-	-	-	9	0	0	N/A	90
15	10/13/2011	0:20	0	-	-	-	9	0	1 to 3	East	95
16	10/13/2011	0:20	0	-	-	-	17	0	0	N/A	80
17	10/13/2011	0:20	0	-	-	-	12	0	1 to 3	Southeast	80
18	10/13/2011	0:20	0	-	-	-	14	0	0	N/A	80
19	10/13/2011	0:20	0	-	-	-	14	0	1 to 3	South/Southeast	80
20	10/13/2011	0:20	0	-	-	-	15	0	0	N/A	80
1	10/26/2011	0:20	0	-	-	-	17	0	7	Southwest	90
2	10/26/2011	0:20	0	-	-	-	18	0	5	Southwest	80
3	10/26/2011	0:20	0	-	-	-	11	0	2	North	100
4	10/26/2011	0:20	0	-	-	-	21	0	5	Southwest	100
5	10/26/2011	0:20	0	-	-	-	12	0	5	East/Northeast	100
6	10/26/2011	0:20	0	-	-	-	11	0	5	East	100
7	10/26/2011	0:20	0	-	-	-	17	0	2	South/Southwest	95
8	10/26/2011	0:20	0	-	-	-	21	0	5	Southwest	100
9	10/26/2011	0:20	0	-	-	-	11	0	2	Northeast	100
10	10/26/2011	0:20	0	-	-	-	11	0	5	East	100
11	10/26/2011	0:20	0	-	-	-	16	0	0	N/A	90
12	10/26/2011	0:20	0	-	-	-	12	0	2	Southeast	100

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
13	10/26/2011	0:20	0	-	-	-	12	0	5	East	55
14	10/26/2011	0:20	0	-	-	-	14	0	5	Southwest	45
15	10/26/2011	0:20	0	-	-	-	13	0	5	South	100
16	10/26/2011	0:20	0	-	-	-	11	0	7	North	100
17	10/26/2011	0:20	0	-	-	-	10	0	0	N/A	100
18	10/26/2011	0:20	0	-	-	-	10	0	2	Northeast	100
19	10/26/2011	0:20	0	-	-	-	11	0	5	North	100
20	10/26/2011	0:20	0	-	-	-	10	0	5	Northeast	100
1	11/9/2011	0:20	0	-	-	-	5	0	2	Southeast	55
2	11/9/2011	0:20	0	-	-	-	5	0	2	Southeast	60
3	11/9/2011	0:20	0	-	-	-	6	0	0	N/A	70
4	11/9/2011	0:20	0	-	-	-	5	0	0	N/A	65
5	11/9/2011	0:20	0	-	-	-	6	0	5	South	70
6	11/9/2011	0:20	0	-	-	-	8	0	2	South/Southwest	80
7	11/9/2011	0:20	0	-	-	-	8	0	2	Southwest	85
8	11/9/2011	0:20	0	-	-	-	9	0	2	South/Southwest	90
9	11/9/2011	0:20	0	-	-	-	6	0	0	N/A	60
10	11/9/2011	0:20	0	-	-	-	6	2	0	South	85
11	11/9/2011	0:20	0	-	-	-	9	0	2	Southwest	95
12	11/9/2011	0:20	0	-	-	-	7	0	2	South	75
13	11/9/2011	0:20	0	-	-	-	9	0	2	South/Southwest	95
14	11/9/2011	0:20	0	-	-	-	11	0	5	Southwest	80
15	11/9/2011	0:20	0	-	-	-	10	0	2	Southwest	85
16	11/9/2011	0:20	0	-	-	-	5	0	0	N/A	80
17	11/9/2011	0:20	0	-	-	-	7	0	2	South/Southwest	75
18	11/9/2011	0:20	0	-	-	-	6	0	2	South/Southwest	60
19	11/9/2011	0:20	1	Adult	1 - 25 m	Flapping/Gliding; north out of woodlot and across the field	7	0	2	South/Southwest	45
20	11/9/2011	0:20	0	-	-	-	7	0	0	N/A	50
1	11/27/2011	0:20	0	-	-	-	12	0	0	N/A	0
2	11/27/2011	0:20	0	-	-	-	12	0	1 to 3	South/Southwest	0
3	11/27/2011	0:20	-	-	-	-	12	0	0	N/A	0
4	11/27/2011	0:20	0	-	-	-	13	0	4 to 7	Southwest	0
5	11/27/2011	0:20	0	-	-	-	6	0	3	South	5
6	11/27/2011	0:20	0	-	-	-	12	0	0	N/A	0
7	11/27/2011	0:20	0	-	-	-	13	0	1 to 3	Southwest	0
8	11/27/2011	0:20	0	-	-	-	14	0	0	N/A	0
9	11/27/2011	0:20	0	-	-	-	7	0	0	N/A	5
10	11/27/2011	0:20	0	-	-	-	6	0	1 to 3	South	5
11	11/27/2011	0:20	0	-	-	-	15	0	0	N/A	0
12	11/27/2011	0:20	0	-	-	-	11	0	4 to 7	South/Southeast	0
13	11/27/2011	0:20	0	-	-	-	11	0	4 to 7	South	0

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
14	11/27/2011	0:20	0	-	-	-	14	0	1 to 3	Southwest	0
15	11/27/2011	0:20	0	-	-	-	10	0	0	N/A	0
16	11/27/2011	0:20	0	-	-	-	12	0	0	N/A	0
17	11/27/2011	0:20	0	-	-	-	9	0	1 to 3	South	0
18	11/27/2011	0:20	0	-	-	-	9	0	0	N/A	0
19	11/27/2011	0:20	0	-	-	-	8	0	0	N/A	0
20	11/27/2011	0:20	0	-	-	-	7	0	0	N/A	0
1	12/15/2011	0:20	0	-	-	-	9	0	5	West/Northwest	25
2	12/15/2011	0:20	0	-	-	-	9	0	0	N/A	25
3	12/15/2011	0:20	0	-	-	-	10	0	0	N/A	20
4	12/15/2011	0:20	0	-	-	-	8	0	0	N/A	30
5	12/15/2011	0:20	0	-	-	-	10	0	0	N/A	10
6	12/15/2011	0:20	0	-	-	-	15	0	0	N/A	0
7	12/15/2011	0:20	0	-	-	-	15	0	0	N/A	0
8	12/15/2011	0:20	0	-	-	-	8	0	<1	West	30
9	12/15/2011	0:20	0	-	-	-	11	0	0	N/A	10
10	12/15/2011	0:20	0	-	-	-	9	0	0	N/A	25
11	12/15/2011	0:20	0	-	-	-	14	0	0	N/A	0
12	12/15/2011	0:20	0	-	-	-	16	0	0	N/A	0
13	12/15/2011	0:20	0	-	-	-	14	0	0	N/A	0
14	12/15/2011	0:20	0	-	-	-	14	0	0	N/A	0
15	12/15/2011	0:20	0	-	-	-	13	0	0	N/A	0
16	12/15/2011	0:20	0	-	-	-	10	0	0	N/A	20
17	12/15/2011	0:20	0	-	-	-	12	0	0	N/A	0
18	12/15/2011	0:20	0	-	-	-	12	0	0	N/A	0
19	12/15/2011	0:20	0	-	-	-	11	0	2	N/A	10
20	12/15/2011	0:20	0	-	-	-	11	0	0	N/A	10
1	1/6/2012	0:20	0	-	-	-	7	0	0	N/A	0
2	1/6/2012	0:20	0	-	-	-	9	0	1 to 3	Southwest	0
3	1/6/2012	0:20	0	-	-	-	9	0	1 to 3	Southeast	0
4	1/6/2012	0:20	0	-	-	-	10	0	1 to 3	South	0
5	1/6/2012	0:20	0	-	-	-	6	0	4 to 7	Southeast	5
6	1/6/2012	0:20	0	-	-	-	9	0	0	N/A	0
7	1/6/2012	0:20	0	-	-	-	8	0	0	N/A	0
8	1/6/2012	0:20	0	-	-	-	10	0	1 to 3	Southwest	0
9	1/6/2012	0:20	0	-	-	-	5	0	0	N/A	5
10	1/6/2012	0:20	0	-	-	-	6	0	4 to 7	Southeast	0
11	1/6/2012	0:20	0	-	-	-	9	0	0	N/A	0
12	1/6/2012	0:20	0	-	-	-	9	0	1 to 3	South	0
13	1/6/2012	0:20	0	-	-	-	9	0	4 to 7	South	0
14	1/6/2012	0:20	0	-	-	-	9	0	1 to 3	Southwest	0
15	1/6/2012	0:20	0	-	-	-	8	0	1 to 3	South	0

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
16	1/6/2012	0:20	0	-	-	-	7	0	1 to 3	Southeast	0
17	1/6/2012	0:20	0	-	-	-	8	0	1 to 3	Southeast	0
18	1/6/2012	0:20	0	-	-	-	8	0	4 to 7	South/Southeast	0
19	1/6/2012	0:20	0	-	-	-	5	0	1 to 3	Souh/Southeast	10
20	1/6/2012	0:20	0	-	-	-	4	0	4 to 7	South/Southeast	5
1	1/18/2012	0:20	0	-	-	-	-4	0	4 to 7	North	95
2	1/18/2012	0:20	0	-	-	-	-7	0	8 to 12	North	95
3	1/18/2012	0:20	0	-	-	-	-3	0	1 to 3	North	95
4	1/18/2012	0:20	0	-	-	-	-6	0	8 to 12	North	95
5	1/18/2012	0:20	0	-	-	-	-3	0	1 to 3	North	95
6	1/18/2012	0:20	0	-	-	-	-2	0	1 to 3	North/Northeast	95
7	1/18/2012	0:20	0	-	-	-	-4	0	1 to 3	North	95
8	1/18/2012	0:20	0	-	-	-	-5	0	4 to 7	North	95
9	1/18/2012	0:20	0	-	-	-	-2	0	1 to 3	North	95
10	1/18/2012	0:20	0	-	-	-	-3	0	4 to 7	North	95

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
11	1/18/2012	0:20	0	-	-	-	-4	0	4 to 7	North	95
12	1/18/2012	0:20	0	-	-	-	-2	0	4 to 7	North	95
13	1/18/2012	0:20	0	-	-	-	1	0	8 to 12	North/Northeast	95
14	1/18/2012	0:20	0	-	-	-	-4	0	8 to 12	North	95
15	1/18/2012	0:20	0	-	-	-	1	0	8 to 12	North/Northeast	95
16	1/18/2012	0:20	0	-	-	-	-3	0	4 to 7	North	95
17	1/18/2012	0:20	0	-	-	-	0	0	4 to 7	North	95
18	1/18/2012	0:20	0	-	-	-	-1	0	4 to 7	North/Northeast	95
19	1/18/2012	0:20	0	-	-	-	-2	0	4 to 7	North	95
20	1/18/2012	0:20	0	-	-	-	-1	0	4 to 7	North/Northeast	95
1	2/1/2012	0:20	0	-	-	-	4	0	0	N/A	35
2	2/1/2012	0:20	0	-	-	-	5	0	0	N/A	30
3	2/1/2012	0:20	0	-	-	-	4	0	0	N/A	40
4	2/1/2012	0:20	0	-	-	-	4	0	0	N/A	30
5	2/1/2012	0:20	0	-	-	-	3	0	0	N/A	85
6	2/1/2012	0:20	0	-	-	-	3	0	0	N/A	45
7	2/1/2012	0:20	0	-	-	-	5	0	0	N/A	35
8	2/1/2012	0:20	0	-	-	-	4	0	0	N/A	25
9	2/1/2012	0:20	0	-	-	-	3	0	0	N/A	95
10	2/1/2012	0:20	0	-	-	-	4	0	0	N/A	50
11	2/1/2012	0:20	0	-	-	-	4	0	0	N/A	40
12	2/1/2012	0:20	0	-	-	-	3	0	0	N/A	50
13	2/1/2012	0:20	0	-	-	-	1	0	4 to 7	West	95
14	2/1/2012	0:20	0	-	-	-	2	0	4 to 7	West	90
15	2/1/2012	0:20	0	-	-	-	2	0	0	N/A	90
16	2/1/2012	0:20	0	-	-	-	3	0	0	N/A	45
17	2/1/2012	0:20	0	-	-	-	3	0	0	N/A	95
18	2/1/2012	0:20	0	-	-	-	3	0	5	West	85
19	2/1/2012	0:20	0	-	-	-	3	0	0	N/A	90
20	2/1/2012	0:20	0	-	-	-	3	0	0	N/A	95
1	2/15/2012	0:20	0	-	-	-	4	0	0	N/A	100
2	2/15/2012	0:20	0	-	-	-	4	0	0	N/A	100
3	2/15/2012	0:20	0	-	-	-	4	0	0	N/A	100
4	2/15/2012	0:20	0	-	-	-	4	0	1 to 3	West	100
5	2/15/2012	0:20	0	-	-	-	5	0	0	N/A	50
6	2/15/2012	0:20	0	-	-	-	5	0	0	N/A	40
7	2/15/2012	0:20	0	-	-	-	4	0	0	N/A	100
8	2/15/2012	0:20	0	-	-	-	3	0	0	N/A	100
9	2/15/2012	0:20	0	-	-	-	6	0	0	N/A	50
10	2/15/2012	0:20	0	-	-	-	5	0	0	N/A	60
11	2/15/2012	0:20	0	-	-	-	3	0	0	N/A	100
12	2/15/2012	0:20	0	-	-	-	6	0	0	N/A	45

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
13	2/15/2012	0:20	0	-	-	-	2	0	0	N/A	100
14	2/15/2012	0:20	0	-	-	-	3	0	0	N/A	100
15	2/15/2012	0:20	0	-	-	-	2	0	0	N/A	100
16	2/15/2012	0:20	0	-	-	-	4	0	0	N/A	100
17	2/15/2012	0:20	0	-	-	-	2	0	0	N/A	100
18	2/15/2012	0:20	0	-	-	-	4	Light Mist	0	N/A	100
19	2/15/2012	0:20	0	-	-	-	3	Light Mist	0	N/A	100
20	2/15/2012	0:20	0	-	-	-	4	Light Mist	0	N/A	100
1	3/2/2012	0:20	0	-	-	-	5	0	0	N/A	85
2	3/2/2012	0:20	0	-	-	-	6	0	0	N/A	70
3	3/2/2012	0:20	0	-	-	-	4	Light Drizzle	1 to 3	West	100
4	3/2/2012	0:20	0	-	-	-	6	0	0	N/A	50
5	3/2/2012	0:20	0	-	-	-	3	0	0	N/A	100
6	3/2/2012	0:20	0	-	-	-	6	0	1 to 3	West	100
7	3/2/2012	0:20	0	-	-	-	5	Light Rain	1 to 3	West/Northwest	100
8	3/2/2012	0:20	0	-	-	-	4	0	0	N/A	90
9	3/2/2012	0:20	0	-	-	-	2	0	0	N/A	100
10	3/2/2012	0:20	0	-	-	-	3	0	0	N/A	100
11	3/2/2012	0:20	0	-	-	-	5	Light Rain	4 to 7	West/Northwest	100
12	3/2/2012	0:20	0	-	-	-	1	0	0	N/A	100
13	3/2/2012	0:20	0	-	-	-	5	0	0	N/A	0
14	3/2/2012	0:20	0	-	-	-	6	0	0	N/a	20
15	3/2/2012	0:20	0	-	-	-	5	0	0	N/A	0
16	3/2/2012	0:20	0	-	-	-	4	Light Drizzle	0	N/A	100
17	3/2/2012	0:20	0	-	-	-	1	0	1 to 3	Northwest	95
18	3/2/2012	0:20	0	-	-	-	1	0	1 to 3	Northwest	100
19	3/2/2012	0:20	0	-	-	-	1	0	2	Northwest	95
20	3/2/2012	0:20	0	-	-	-	0	0	2	Northwest	95

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
1	3/13/2012	0:20	0	-	-	-	13	0	<1	South/Southwest	0
2	3/13/2012	0:20	0	-	-	-	13	0	1 to 3	South/Southwest	0
3	3/13/2012	0:20	0	-	-	-	13	0	4 to 7	South/Southwest	0
4	3/13/2012	0:20	0	-	-	-	13	0	1 to 3	South/Southwest	0
5	3/13/2012	0:20	0	-	-	-	11	0	0	N/A	0
6	3/13/2012	0:20	0	-	-	-	7	0	1 to 3	South/Southwest	0
7	3/13/2012	0:20	0	-	-	-	6	0	4 to 7	South/Southwest	0
8	3/13/2012	0:20	0	-	-	-	14	0	0	N/A	0
9	3/13/2012	0:20	0	-	-	-	10	0	0	N/A	0
10	3/13/2012	0:20	0	-	-	-	13	0	1 to 3	South	0
11	3/13/2012	0:20	0	-	-	-	5	0	1 to 3	Southwest	0
12	3/13/2012	0:20	0	-	-	-	7	0	0	N/A	0
13	3/13/2012	0:20	0	-	-	-	6	0	4 to 7	South/Southwest	0
14	3/13/2012	0:20	0	-	-	-	13	0	1 to 3	South/Southwest	0
15	3/13/2012	0:20	0	-	-	-	6	0	4 to 7	South/Southwest	0
16	3/13/2012	0:20	0	-	-	-	12	0	1 to 3	South/Southwest	0
17	3/13/2012	0:20	0	-	-	-	8	0	0	N/A	0
18	3/13/2012	0:20	0	-	-	-	8	0	0	N/A	0
19	3/13/2012	0:20	6	Adult	1 - 50 m	Flapping/Gliding	8	0	0	N/A	0
20	3/13/2012	0:20	0	-	-	-	9	0	0	N/A	0
1	4/3/2012	0:20	0	-	-	-	7	Rain	0	N/A	100
2	4/3/2012	0:20	0	-	-	-	7	Light Drizzle	1 to 3	Northwest	100
3	4/3/2012	0:20	0	-	-	-	8	0	0	N/A	80
4	4/3/2012	0:20	0	-	-	-	6	Light Drizzle	1 to 3	North	100
5	4/3/2012	0:20	0	-	-	-	10	0	1 to 3	Northwest	60
6	4/3/2012	0:20	0	-	-	-	7	0	1 to 3	Northeast	80
7	4/3/2012	0:20	0	-	-	-	7	0	1 to 3	Northeast	85
8	4/3/2012	0:20	0	-	-	-	7	izzle/ Thunder,	1 to 3	North	100
9	4/3/2012	0:20	0	-	-	-	10	0	0	N/A	50
10	4/3/2012	0:20	0	-	-	-	9	0	1 to 3	Northwest	50
11	4/3/2012	0:20	0	-	-	-	7	0	1 to 3	Northeast	90
12	4/3/2012	0:20	0	-	-	-	7	0	1 to 3	Northeast	80
13	4/3/2012	0:20	0	-	-	-	7	0	1 to 3	Northeast	90
14	4/3/2012	0:20	0	-	-	-	7	0	1 to 3	Northeast	100
15	4/3/2012	0:20	0	-	-	-	7	0	0	N/A	100
16	4/3/2012	0:20	0	-	-	-	8	0	1 to 3	Northwest	75
17	4/3/2012	0:20	0	-	-	-	11	0	0	N/A	40
18	4/3/2012	0:20	0	-	-	-	11	0	0	N/A	45
19	4/3/2012	0:20	0	-	-	-	11	0	0	N/A	50
20	4/3/2012	0:20	0	-	-	-	10	0	1 to 3	Northwest	50
TR80Pond	4/3/2012	0:20	0	-	-	-	7	0	1 to 3	Northeast	100
1	4/18/2012	0:20	0	-	-	-	14	0	1 to 3	Southwest	0

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
2	4/18/2012	0:20	0	-	-	-	14	0	0	N/A	0
3	4/18/2012	0:20	0	-	-	-	13	0	1 to 3	Southwest	0
4	4/18/2012	0:20	0	-	-	-	15	0	0	N/A	0
5	4/18/2012	0:20	0	-	-	-	12	0	4 to 7	Southwest	0
6	4/18/2012	0:20	0	-	-	-	4	0	4 to 7	Southwest	0
7	4/18/2012	0:20	0	-	-	-	4	0	4 to 7	Southwest	0
8	4/18/2012	0:20	0	-	-	-	16	0	0	N/A	0
9	4/18/2012	0:20	0	-	-	-	12	0	4 to 7	Southwest	0
10	4/18/2012	0:20	0	-	-	-	12	0	0	N/A	0
11	4/18/2012	0:20	0	-	-	-	5	0	4 to 7	Southwest	0
12	4/18/2012	0:20	0	-	-	-	12	0	4 to 7	Southwest	0
13	4/18/2012	0:20	0	-	-	-	6	0	4 to 7	Southwest	0
14	4/18/2012	0:20	0	-	-	-	7	0	4 to 7	Southwest	0
15	4/18/2012	0:20	0	-	-	-	8	0	1 to 3	Southwest	0
16	4/18/2012	0:20	0	-	-	-	13	0	1 to 3	Southwest	0
17	4/18/2012	0:20	0	-	-	-	8	0	1 to 3	Southwest	0
18	4/18/2012	0:20	0	-	-	-	9	0	4 to 7	Southwest	0
19	4/18/2012	0:20	0	-	-	-	11	0	0	N/A	0
20	4/18/2012	0:20	0	-	-	-	11	0	1 to 3	Southwest	0
1	5/3/2012	0:20	0	-	-	-	21	0	8 to 12	West/Southwest	20
2	5/3/2012	0:20	0	-	-	-	20	0	1 to 3	South/Southwest	15
3	5/3/2012	0:20	0	-	-	-	22	0	1 to 3	South/Southwest	20
4	5/3/2012	0:20	0	-	-	-	19	0	1 to 3	South/Southwest	10
5	5/3/2012	0:20	0	-	-	-	25	0	4 to 7	South/Southwest	40
6	5/3/2012	0:20	0	-	-	-	25	0	4 to 7	West/Southwest	45
7	5/3/2012	0:20	0	-	-	-	28	0	1 to 3	South/Southwest	50
8	5/3/2012	0:20	0	-	-	-	19	0	4 to 7	South	10
9	5/3/2012	0:20	0	-	-	-	26	0	1 to 3	South/Southwest	45
10	5/3/2012	0:20	0	-	-	-	24	0	1 to 3	Southwest	40

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
11	5/3/2012	0:20	0	-	-	-	28	0	1 to 3	South/Southwest	0
12	5/3/2012	0:20	0	-	-	-	29	0	1 to 3	Southwest	45
13	5/3/2012	0:20	0	-	-	-	18	0	1 to 3	South/Southwest	5
14	5/3/2012	0:20	0	-	-	-	18	0	4 to 7	South/Southwest	5
15	5/3/2012	0:20	0	-	-	-	17	0	1 to 3	South/Southwest	5
16	5/3/2012	0:20	0	-	-	-	24	0	1 to 3	Southwest	40
17	5/3/2012	0:20	0	-	-	-	29	0	1 to 3	South/Southwest	40
18	5/3/2012	0:20	0	-	-	-	28	0	4 to 7	South/Southwest	50
19	5/3/2012	0:20	0	-	-	-	26	0	1 to 3	Southwest	50
20	5/3/2012	0:20	0	-	-	-	26	0	1 to 3	Southwest	45
1	5/17/2012	0:20	0	-	-	-	18	0	0	N/A	0
2	5/17/2012	0:20	0	-	-	-	20	0	0	N/A	0
3	5/17/2012	0:20	0	-	-	-	16	0	1 to 3	East	0
4	5/17/2012	0:20	0	-	-	-	21	0	1 to 3	East/Southeast	0
5	5/17/2012	0:20	0	-	-	-	11	0	1 to 3	East	0
6	5/17/2012	0:20	0	-	-	-	23	0	0	N/A	0
7	5/17/2012	0:20	0	-	-	-	23	0	1 to 3	East	0
8	5/17/2012	0:20	0	-	-	-	22	0	0	N/A	0
9	5/17/2012	0:20	0	-	-	-	11	0	1 to 3	East	0
10	5/17/2012	0:20	0	-	-	-	12	0	0	N/A	0
11	5/17/2012	0:20	0	-	-	-	24	0	1 to 3	East/Southeast	0
12	5/17/2012	0:20	0	-	-	-	24	0	0	N/A	0
13	5/17/2012	0:20	0	-	-	-	24	0	1 to 3	East/Southeast	0
14	5/17/2012	0:20	0	-	-	-	22	0	0	N/A	0
15	5/17/2012	0:20	0	-	-	-	22	0	0	N/A	0
16	5/17/2012	0:20	0	-	-	-	14	0	0	N/A	0
17	5/17/2012	0:20	0	-	-	-	7	0	1 to 3	East/Northeast	0
18	5/17/2012	0:20	0	-	-	-	7	0	1 to 3	East/Northeast	0
19	5/17/2012	0:20	0	-	-	-	9	0	0	N/A	0
20	5/17/2012	0:20	0	-	-	-	8	0	0	N/A	0
1	6/10/2012	0:20	0	-	-	-	28	0	< 1	South	0
2	6/10/2012	0:20	0	-	-	-	28	0	< 1	South	0
3	6/10/2012	0:20	0	-	-	-	29	0	< 1	South	0
4	6/10/2012	0:20	0	-	-	-	27	0	< 1	South	0
5	6/10/2012	0:20	0	-	-	-	30	0	0	N/A	0
6	6/10/2012	0:20	0	-	-	-	33	0	< 1	South	0
7	6/10/2012	0:20	0	-	-	-	22	0	< 1	South	0
8	6/10/2012	0:20	0	-	-	-	26	0	< 1	South	0
9	6/10/2012	0:20	0	-	-	-	31	0	0	N/A	0
10	6/10/2012	0:20	0	-	-	-	30	0	0	N/A	0
11	6/10/2012	0:20	0	-	-	-	22	0	< 1	South	0
12	6/10/2012	0:20	0	-	-	-	33	0	< 1	South	0

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
13	6/10/2012	0:20	0	-	-	-	23	0	< 1	South	0
14	6/10/2012	0:20	0	-	-	-	26	0	< 1	South	0
15	6/10/2012	0:20	0	-	-	-	24	0	< 1	South	0
16	6/10/2012	0:20	0	-	-	-	30	0	< 1	South	0
17	6/10/2012	0:20	0	-	-	-	33	0	< 1	South	10
18	6/10/2012	0:20	0	-	-	-	32	0	< 1	South	0
19	6/10/2012	0:20	0	-	-	-	31	0	< 1	South	0
20	6/10/2012	0:20	0	-	-	-	31	0	0	N/A	0
1	6/25/2012	0:20	0	-	-	-	21	0	0	N/A	0
2	6/25/2012	0:20	0	-	-	-	22	0	< 1	Northwest	5
3	6/25/2012	0:20	0	-	-	-	17	0	4 to 7	Northwest	0
4	6/25/2012	0:20	0	-	-	-	23	0	< 1	West/Northwest	5
5	6/25/2012	0:20	0	-	-	-	15	0	1 to 3	Northwest	0
6	6/25/2012	0:20	0	-	-	-	18	0	4 to 7	Northwest	5
7	6/25/2012	0:20	0	-	-	-	20	0	0	N/A	0
8	6/25/2012	0:20	0	-	-	-	23	0	1 to 3	Northwest	0
9	6/25/2012	0:20	0	-	-	-	14	0	1 to 3	Northwest	0
10	6/25/2012	0:20	0	-	-	-	15	0	< 1	North/Northwest	0
11	6/25/2012	0:20	0	-	-	-	19	0	0	N/A	0
12	6/25/2012	0:20	0	-	-	-	18	0	1 to 3	Northwest	10
13	6/25/2012	0:20	0	-	-	-	20	0	< 1	West/Northwest	15
14	6/25/2012	0:20	0	-	-	-	24	0	1 to 3	North/Northwest	0
15	6/25/2012	0:20	0	-	-	-	19	0	< 1	West/Northwest	15
16	6/25/2012	0:20	0	-	-	-	16	0	1 to 3	Northwest	0
17	6/25/2012	0:20	0	-	-	-	19	0	1 to 3	Northwest	5
18	6/25/2012	0:20	0	-	-	-	19	0	1 to 3	North/Northwest	10
19	6/25/2012	0:20	0	-	-	-	12	0	1 to 3	North/Northwest	0
20	6/25/2012	0:20	0	-	-	-	11	0	< 1	West/Northwest	0

BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
1	7/6/2012	0:20	0	-	-	-	33	0	< 1	West	0
2	7/6/2012	0:20	0	-	-	-	31	0	0	N/A	0
3	7/6/2012	0:20	0	-	-	-	24	0	0	N/A	0
4	7/6/2012	0:20	0	-	-	-	30	0	0	N/A	0
5	7/6/2012	0:20	0	-	-	-	25	0	0	N/A	0
6	7/6/2012	0:20	0	-	-	-	22	0	0	N/A	0
7	7/6/2012	0:20	0	-	-	-	33	0	0	N/A	0
8	7/6/2012	0:20	0	-	-	-	29	0	0	N/A	0
9	7/6/2012	0:20	0	-	-	-	25	0	< 1	West	0
10	7/6/2012	0:20	0	-	-	-	24	0	0	N/A	0
11	7/6/2012	0:20	0	-	-	-	34	0	0	N/A	0
12	7/6/2012	0:20	0	-	-	-	21	0	< 1	West	0
13	7/6/2012	0:20	0	-	-	-	28	0	0	N/A	0
14	7/6/2012	0:20	0	-	-	-					
15	7/6/2012	0:20	0	-	-	-	27	0	0	N/A	0
16	7/6/2012	0:20	0	-	-	-	24	0	0	N/A	0
17	7/6/2012	0:20	0	-	-	-	27	0	< 1	West	0
18	7/6/2012	0:20	0	-	-	-	26	0	0	N/A	0
19	7/6/2012	0:20	0	-	-	-	25	0	0	N/A	0
20	7/6/2012	0:20	0	-	-	-	26	0	0	N/A	0
1	7/27/2012	0:20	0	-	-	-	28	0	3 to 5	West	20
2	7/27/2012	0:20	0	-	-	-	25	0	1 to 3	West/Northwest	0
3	7/27/2012	0:20	0	-	-	-	28	0	< 1	N/A	20
4	7/27/2012	0:20	0	-	-	-	25	0	1 to 3	West/Northwest	0
5	7/27/2012	0:20	0	-	-	-	31	0	1 to 3	West/Northwest	60
6	7/27/2012	0:20	0	-	-	-	30	0	< 1	N/A	30
7	7/27/2012	0:20	0	-	-	-	28	0	1 to 3	West	20
8	7/27/2012	0:20	0	-	-	-	25	0	< 1	N/A	0
9	7/27/2012	0:20	0	-	-	-	31	0	1 to 3	West	60
10	7/27/2012	0:20	0	-	-	-	31	0	1 to 3	West/Northwest	60
11	7/27/2012	0:20	0	-	-	-	28	0	< 1	N/A	15
12	7/27/2012	0:20	0	-	-	-	30	0	< 1	N/A	30
13	7/27/2012	0:20	0	-	-	-	27	0	< 1	N/A	15
14	7/27/2012	0:20	0	-	-	-	27	0	< 1	N/A	0
15	7/27/2012	0:20	0	-	-	-	27	0	1 to 3	West	0
16	7/27/2012	0:20	0	-	-	-	29	0	1 to 3	West	20
17	7/27/2012	0:20	0	-	-	-	30	0	1 to 3	West	30
18	7/27/2012	0:20	0	-	-	-	30	0	1 to 3	West	40
19	7/27/2012	0:20	0	-	-	-	31	0	< 1	N/A	60
20	7/27/2012	0:20	0	-	-	-	31	0	< 1	N/A	60

Total:	6:09:40	days/hours/minutes									
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BAEA Point Count Data

Point Count Location	Survey Date	Time Duration	Minutes of Exposure	Age	Height	Behavior	Temp (Celsius)	Precipitation	Wind		Cloud Cover (%)
									Speed (mph)	Direction	
	Total:	9220	minutes								

Exhibit N. Passerine Migration Survey



December 2011

**RESULTS OF THE
PASSERINE MIGRATION SURVEY
REPUBLIC WIND FARM
SENECA AND SANDUSKY COUNTIES, OHIO**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	2
2.0 METHODS	2
2.1 PASSERINE MIGRATION SURVEY	2
3.0 RESULTS	3
3.1 BIRD MIGRATION	3
3.2 SENSITIVE SPECIES	7
4.0 DISCUSSION	7
5.0 CONCLUSIONS AND RECOMMENDATIONS	8
6.0 LITERATURE CITED	9

TABLES

- Table 1. National land use/land cover acreages in the Republic Wind, LLC Project Area, Seneca and Sandusky Counties Ohio.
- Table 2. Bird species observed during the Republic Wind Farm Passerine Migration Survey.
- Table 3. Bird species listed by the State of Ohio and recorded during the Republic Wind Farm Passerine Migration Survey.

FIGURE

- Figure 1. Passerine Migration Survey Locations for the Republic Wind Farm Project Area, Seneca and Sandusky counties, Ohio.

APPENDICES

- Appendix A. Passerine Migration Survey Observations.
- Appendix B. Photographs from Passerine Migration Survey Points.

EXECUTIVE SUMMARY

BHE Environmental, Inc. (BHE) was contracted to complete diurnal passerine migration surveys following methods described in the *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio* issued by the Ohio Department of Natural Resources, Division of Wildlife. This report provides data and analysis of results of the passerine migration surveys conducted by BHE in spring (April 4 through May 30) and fall (August 18 through November 18) 2011. Surveys were conducted by BHE at the proposed Republic Wind Farm project in Seneca and Sandusky counties, Ohio.

A total of 98 species were identified during the migration surveys including the following state-listed species: state endangered northern harrier (*Circus cyaneus*) and yellow-bellied sapsucker (*Sphyrapicus varius*); state threatened dark-eyed junco (*Junco hyemalis*), hermit thrush (*Catharus guttatus*), and least flycatcher (*Empidonax minimus*); state species of special interest green-winged teal (*Anas crecca*), golden crowned kinglet (*Regulus satrapa*), red-breasted nuthatch (*Sitta Canadensis*), and winter wren (*Troglodytes troglodytes*); and state species of concern bobolink (*Dolichonyx oryzivorus*). No federally listed species were observed during passerine migration surveys.

The passerine use survey of the Project Area did not reveal use by an unusual number or assemblage of species; use by sensitive bird species was limited. Due to the limited size of woodlots, wetlands, open water, and potential stopover sites, and due to an availability of similar habitat in northwestern Ohio, the Project Area does not represent a unique resource for large numbers of passerines during migration. The data did not demonstrate a relationship between the passerine use of the Project Area and the passerine migration through Magee Marsh or the western basin of Lake Erie. The survey results did not demonstrate avian use patterns that would indicate it is an essential contributor to passerine migration in the region.

1.0 INTRODUCTION

Republic Wind Farm, LLC, a subsidiary of Nordex USA, Inc. (Nordex), proposes construction of the Republic Wind Farm (RWF or Project Area) wind energy generation facility in Seneca and Sandusky counties, Ohio. The Project Area spans approximately 39,627 acres (ac; 16,036 hectares [ha]) of leased agricultural land northeast of the town of Republic, Ohio (Figure 1). This area represents the maximum area considered for placement of turbines and facility infrastructure; the actual area occupied by the turbines and access roads that will comprise the facility will be less than 1 percent of the Project Area discussed in this document.

BHE Environmental, Inc. (BHE) was contracted by Nordex to conduct passerine migration surveys at the proposed RWF according to specifications outlined in the Ohio Department of Natural Resources (ODNR) *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio, An Addendum to the Ohio Department of Natural Resource's Voluntary Cooperative Agreement* ("Ohio Protocol"). The purpose of this report is to document the results of the survey.

Passerines appear to be especially vulnerable to collision with wind turbines, and in one synthesis, were found to represent 74 percent of all fatalities recorded in existing data sets (Strickland 2008). The same synthesis observed a variety of displacement effects, most of them small-scale: some facilities appeared to have little effect on passerine distribution, while others showed species-specific impacts (Strickland 2008). While passerines are the most susceptible group of bird species, the numbers of bird casualties are low (NWCC 2010). Passerines are known to congregate in large numbers along the southern shore of Lake Erie (ODNR DOW no date); ODNR often recommends passerine migration surveys to evaluate whether a particular wind energy project area is part of that known migration concentration, as was the case in this instance.

2.0 METHODS

2.1 PASSERINE MIGRATION SURVEY

In order to gauge the rate at which nocturnal migrating passerines could potentially come into conflict with wind turbines at RWF, BHE conducted weekly migration surveys during seasonally favorable weather for migration (northerly winds in fall, southerly winds in spring). The surveys were conducted at 11 points within the project area during spring and fall migration (Figure 1). Points were established near wooded areas that are utilized by migrating passerines to forage and replenish fat reserves. Surveys began at dawn and were completed by no later than 10:00 am EST (Eastern Standard Time), per the Protocol. Every bird seen or heard during a 10 minute period at each established survey point was identified to species. Distance from the observer, direction of travel, number of individuals present, and behavior was recorded if possible. Weather conditions, including ambient temperature, wind speed, and cloud cover were recorded. Bird migration surveys were completed in spring (April 4 through May 30) and fall (August 18 through November 18) 2011. The surveys were completed from 11 points chosen near potential suitable stopover habitat (forested and grassed areas) for migrating songbirds (Figure 1).

3.0 RESULTS

3.1 BIRD MIGRATION

The Project Area is heavily influenced by agricultural practices; 84.7 percent of the Project Area is devoted to intensive row crop agriculture production with occasional woodlots that comprise 7.6 percent of the Project Area (Table 1). The Project Area itself likely does not represent an important stopover resource for migrating birds as it is largely in agricultural (row crop) land use. A total of 15,525 birds were observed from 98 species during migration surveys (Table 2). Twenty-two percent of birds were observed during spring surveys (3,225 individuals from 84 species) and 78 percent were observed during fall surveys (12,300 individuals from 69 species; Table 2).

Table 1. National land use/land cover acreages in the Republic Wind, LLC Project Area, Seneca and Sandusky Counties Ohio.

Land Use	Acres	Percent
Cultivated Crops	33,571.5	84.7%
Deciduous Forest	3,012.7	7.6%
Developed, Open Space	2,101.0	5.3%
Hay/Pasture	425.0	1.1%
Herbaceous	209.96	0.5%
Developed, Low Intensity	136.6	0.3%
Open Water	116.1	0.3%
Woody Wetlands	32.0	0.1%
Emergent Herbaceous Wetlands	10.5	<0.1%
Developed, Medium Intensity	8.3	<0.1%
Evergreen Forest	3.2	<0.1%
Total	39,626.6	100.0%

Red-winged blackbirds (*Agelaius phoeniceus*) comprised over half (62 percent) of the birds observed. Red-winged blackbirds were observed at an average of 310.1 birds per day for a total of 9,612 birds. European starling (*Sturnus vulgaris*) was the second most common species encountered. Starlings were observed at an average of 34.3 birds per day for a total of 1,062 birds. Other large numbers of birds encountered were from common species including: American crow (*Corvus brachyrhynchos*; 514 birds, 16.6 birds/day), common grackle (*Quisacalus quiscula*; 510 birds, 16.5 birds/day), American robin (*Turdus migratorius*; 484 birds, 15.6 birds/day), tree swallow (*Tachycineta bicolor*; 450 birds, 14.5 birds/day), and blue jay (*Cyanocitta cristata*; 346 birds, 11.2 birds/day) (Table 1). Large flocks (>100) of birds were limited to red-winged blackbirds, European starlings, and tree swallows. Data collected during the spring and fall migration surveys can be found in Appendix A.

Table 2. Bird species observed during the Republic Wind Farm Passerine Migration Survey.

Common Name	Scientific Name	Observations			
		Spring	Autumn	Birds/Day^	Total
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	501	9,111	310.1	9,612
European Starling	<i>Sturnus vulgaris</i>	119	943	34.3	1,062
American Crow	<i>Corvus brachyrhynchos</i>	321	193	16.6	514
Common Grackle	<i>Quiscalus quiscula</i>	179	331	16.5	510
American Robin	<i>Turdus migratorius</i>	320	164	15.6	484
Tree Swallow	<i>Tachycineta bicolor</i>	0	450	14.5	450
Blue Jay	<i>Cyanocitta cristata</i>	117	229	11.2	346
Mourning Dove	<i>Zenaida macroura</i>	108	106	6.9	214
American Goldfinch	<i>Spinus tristis</i>	109	77	6.0	186
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	115	69	5.9	184
House Sparrow	<i>Passer domesticus</i>	118	59	5.7	177
Tufted Titmouse	<i>Baeolophus bicolor</i>	111	38	4.8	149
Brown-headed Cowbird	<i>Molothrus ater</i>	86	32	3.8	118
Song Sparrow	<i>Melospiza melodia</i>	85	20	3.4	105
Northern Cardinal	<i>Cardinalis cardinalis</i>	67	34	3.3	101
Canada Goose	<i>Branta canadensis</i>	47	38	2.7	85
White-breasted Nuthatch	<i>Sitta carolinensis</i>	31	45	2.5	76
Chipping Sparrow	<i>Spizella passerina</i>	73	2	2.4	75
Northern Flicker	<i>Colaptes auratus</i>	48	19	2.2	67
Eastern Bluebird	<i>Sialia sialis</i>	17	48	2.1	65
Wood Thrush	<i>Hylocichla mustelina</i>	59	0	1.9	59
Baltimore Oriole	<i>Icterus galbula</i>	53	2	1.8	55
Black-capped Chickadee	<i>Poecile atricapillus</i>	33	17	1.6	50
Killdeer	<i>Charadrius vociferus</i>	35	13	1.5	48
Turkey Vulture	<i>Cathartes aura</i>	34	11	1.5	45
Downy Woodpecker	<i>Picoides pubescens</i>	26	18	1.4	44
Field Sparrow	<i>Spizella pusilla</i>	36	7	1.4	43
House Wren	<i>Troglodytes aedon</i>	36	6	1.4	42
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	42	1	1.4	43
Cedar Waxwing	<i>Bombycilla cedrorum</i>	0	41	1.3	41
Horned Lark	<i>Eremophila alpestris</i>	28	12	1.3	40
Yellow-rumped Warbler	<i>Dendroica coronata</i>	26	14	1.3	40
Eastern Wood-Pewee	<i>Contopus virens</i>	23	14	1.2	37
Indigo Bunting	<i>Passerina cyanea</i>	27	10	1.2	37
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	15	18	1.1	33
Gray Catbird	<i>Dumetella carolinensis</i>	17	6	0.7	23

Table 2. Bird species observed during the Republic Wind Farm Passerine Migration Survey.

Common Name	Scientific Name	Observations			
		Spring	Autumn	Birds/Day^	Total
House Finch	<i>Carpodacus mexicanus</i>	3	19	0.7	22
Red-eyed Vireo	<i>Vireo olivaceus</i>	16	5	0.7	21
Dark-eyed Junco*	<i>Junco hyemalis</i>	9	7	0.5	16
Red-tailed Hawk	<i>Buteo jamaicensis</i>	4	10	0.5	14
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	11	2	0.4	13
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	13	0	0.4	13
Barn Swallow	<i>Hirundo rustica</i>	2	7	0.3	9
Chimney Swift	<i>Chaetura pelagica</i>	3	5	0.3	8
Rusty Blackbird	<i>Euphagus carolinus</i>	8	0	0.3	8
Tennessee Warbler	<i>Vermivora peregrina</i>	8	0	0.3	8
Warbling Vireo	<i>Vireo gilvus</i>	5	3	0.3	8
White-throated Sparrow	<i>Zonotrichia albicollis</i>	4	5	0.3	9
Brown Thrasher	<i>Toxostoma rufum</i>	7	0	0.2	7
Carolina Wren	<i>Thryothorus ludovicianus</i>	2	4	0.2	6
Hairy Woodpecker	<i>Picoides villosus</i>	5	2	0.2	7
Mallard	<i>Anas platyrhynchos</i>	5	2	0.2	7
Pileated Woodpecker	<i>Dryocopus pileatus</i>	3	2	0.2	5
Acadian Flycatcher	<i>Empidonax virescens</i>	2	0	0.1	2
American Coot	<i>Fulica americana</i>	3	0	0.1	3
American Redstart	<i>Setophaga ruticilla</i>	3	0	0.1	3
Bobolink*	<i>Dolichonyx oryzivorus</i>	1	2	0.1	3
Common Yellowthroat	<i>Geothlypis trichas</i>	0	2	0.1	2
Eastern Kingbird	<i>Tyrannus tyrannus</i>	2	0	0.1	2
Eastern Meadowlark	<i>Sturnella magna</i>	2	1	0.1	3
Eastern Phoebe	<i>Sayornis phoebe</i>	1	2	0.1	3
Golden-crowned Kinglet*	<i>Regulus satrapa</i>	0	2	0.1	2
Great Blue Heron	<i>Ardea herodias</i>	3	1	0.1	4
Green-winged Teal*	<i>Anas crecca</i>	3	0	0.1	3
Nashville Warbler	<i>Vermivora ruficapilla</i>	3	1	0.1	4
Northern Harrier*	<i>Circus cyaneus</i>	1	1	0.1	2
Ovenbird	<i>Seiurus aurocapilla</i>	2	0	0.1	2
Red-breasted Nuthatch*	<i>Sitta canadensis</i>	2	0	0.1	2
Red-shouldered Hawk	<i>Buteo lineatus</i>	2	0	0.1	2
Savannah Sparrow	<i>Passerculus sandwichensis</i>	3	1	0.1	4
Scarlet Tanager	<i>Piranga olivacea</i>	4	0	0.1	4
Short-billed Dowitcher	<i>Limnodromus griseus</i>	0	2	0.1	2

Table 2. Bird species observed during the Republic Wind Farm Passerine Migration Survey.

Common Name	Scientific Name	Observations			
		Spring	Autumn	Birds/Day [^]	Total
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	0	2	0.1	2
Wild Turkey	<i>Meleagris gallopavo</i>	0	2	0.1	2
Willow Flycatcher	<i>Empidonax traillii</i>	2	0	0.1	2
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	0	2	0.1	2
Yellow-throated Warbler	<i>Dendroica dominica</i>	3	0	0.1	3
American Kestrel	<i>Falco sparverius</i>	0	1	0.0	1
Blue-headed Vireo	<i>Vireo solitarius</i>	1	0	0.0	1
Brown Creeper	<i>Certhia americana</i>	1	0	0.0	1
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	1	0	0.0	1
Cooper's Hawk	<i>Accipiter cooperii</i>	1	0	0.0	1
Gray-cheeked Thrush	<i>Catharus minimus</i>	0	1	0.0	1
Green Heron	<i>Butorides virescens</i>	1	0	0.0	1
Hermit Thrush*	<i>Catharus guttatus</i>	0	1	0.0	1
Least Flycatcher*	<i>Empidonax minimus</i>	1	0	0.0	1
Northern Bobwhite	<i>Colinus virginianus</i>	1	0	0.0	1
Orchard Oriole	<i>Icterus spurius</i>	1	0	0.0	1
Pine Warbler	<i>Dendroica pinus</i>	1	0	0.0	1
Ring-necked Pheasant	<i>Phasianus colchicus</i>	1	0	0.0	1
Rock Pigeon	<i>Columba livia</i>	0	1	0.0	1
Ruby-crowned Kinglet	<i>Regulus calendula</i>	0	1	0.0	1
Swainson's Thrush	<i>Catharus ustulatus</i>	0	1	0.0	1
White-eyed Vireo	<i>Vireo griseus</i>	1	0	0.0	1
Winter Wren*	<i>Troglodytes troglodytes</i>	0	1	0.0	1
Worm-eating Warbler	<i>Helmitheros vermivorum</i>	1	0	0.0	1
Yellow-bellied Sapsucker*	<i>Sphyrapicus varius</i>	0	1	0.0	1
Yellow-throated Vireo	<i>Vireo flavifrons</i>	1	0	0.0	1
Total		3,225	12,300	n/a	15,525

[^] 31 observation days

* Listed by the State of Ohio, see Table 3.

Table 3. Bird species listed by the State of Ohio and recorded during the Republic Wind Farm Passerine Migration Survey.

Common Name	Ohio Listed Species Classification	Total Number of Birds Observed
Northern Harrier	Endangered	2
Yellow-bellied Sapsucker	Endangered	1
Dark-eyed Junco	Threatened	16
Least Flycatcher	Threatened	1
Hermit Thrush	Threatened	1
Bobolink	Species of Concern	3
Green-winged Teal	Species of Special Interest	3
Red-breasted Nuthatch	Species of Special Interest	2
Golden-crowned Kinglet	Species of Special Interest	2
Winter Wren	Species of Special Interest	1

3.2 SENSITIVE SPECIES

Results of the passerine migration surveys showed limited use of the Project Area by listed avian species. No federally listed bird species were observed. Thirty-two individuals representing 10 state-listed species were observed during the surveys representing only 0.19% of the observed individuals (Table 3). Of these, half (n=16) were dark-eyed juncos (*Junco hyemalis*), nine were observed during spring surveys and seven in autumn. Two northern harriers (*Circus cyaneus*) were observed during spring and autumn surveys. A single yellow-bellied sapsucker (*Sphyrapicus varius*) was observed feeding during autumn surveys. One least flycatcher (*Empidonax minimus*) was observed during spring surveys and a single hermit thrush was observed during the autumn surveys. A total of three bobolinks (*Dolichonyx oryzivorus*) were observed, one during spring surveys and two during autumn surveys. A small flock of three green-winged teal (*Anas crecca*) was observed during spring surveys. Two red-breasted nuthatches (*Sitta canadensis*) were recorded during spring surveys and two golden-crowned kinglets (*Regulus satrapa*) were observed during autumn surveys. A single winter wren (*Troglodytes troglodytes*) was recorded during the autumn surveys.

4.0 DISCUSSION

Bird migration is commonly perceived as involving north-south movements of populations on a large scale, typically associated with seasons. However, there are many types of migratory behavior; some are simple, others more complex. Most seasonal movement between northern and southern climes follows a system of flyways and these flyways are loosely defined by geographical features. These physical features include coasts, river valleys, and mountain ranges, and together form the four major North American migratory corridors: the Atlantic, Mississippi, Central, and Pacific flyways. The Project Area lies along the eastern edge of the Mississippi flyway which also includes, although to a lesser extent, the Ohio River Valley and tributaries. Magee Marsh Wildlife Area is a 2,202 acre wetland complex and part of the Lake Erie Western Basin Important Bird area that is located approximately 25 miles northwest of the Project Area. The marsh is a critical feeding and resting habitat for more than 150 species of migrating songbirds in both spring and fall; more than 300 species of birds have been recorded on the area including more than 150 species of migrating songbirds (ODNR DOW).

The Project Area is largely covered with row crops and does not contain features known to attract large concentrations of migrating birds, i.e., lakes, rivers, large streams, large wetlands, topographic ridges, large forests, or large grasslands (see Appendix B for site photos). Passerine use results were consistent with a landscape dominated by row crop monoculture. Based upon observations of migrating passerines, the Project Area does not appear to be an important part of a passerine migratory pathway. One species (red-winged blackbirds) comprised over half of the total birds observed. Large flocks observed using the area consisted of common species (red-winged blackbirds, European starlings, and tree swallows) and listed species were not recorded in large numbers.

Nocturnally migrating passerines are the most abundant species at most wind energy facilities and are the most commonly reported fatalities (NAS 2007). In a review of bird collisions documented in 31 studies at wind-energy facilities outside California, Erickson et al. (2001) reported that songbirds comprised 78 percent of avian fatalities. Bird mortality at wind farms is generally only a few birds per turbine distributed among many species and is influenced by factors that are largely lacking at the Project Area, e.g., rivers, lakes, large wetlands, large forest tracts, large grasslands. In 2007, the NAS reported an average of 2.22 bird fatalities per turbine per year from wind energy facilities in the upper Midwest, the region most comparable to the Project Area. When spread among the many species, the effect of this small mortality level would be reduced even more on any one species.

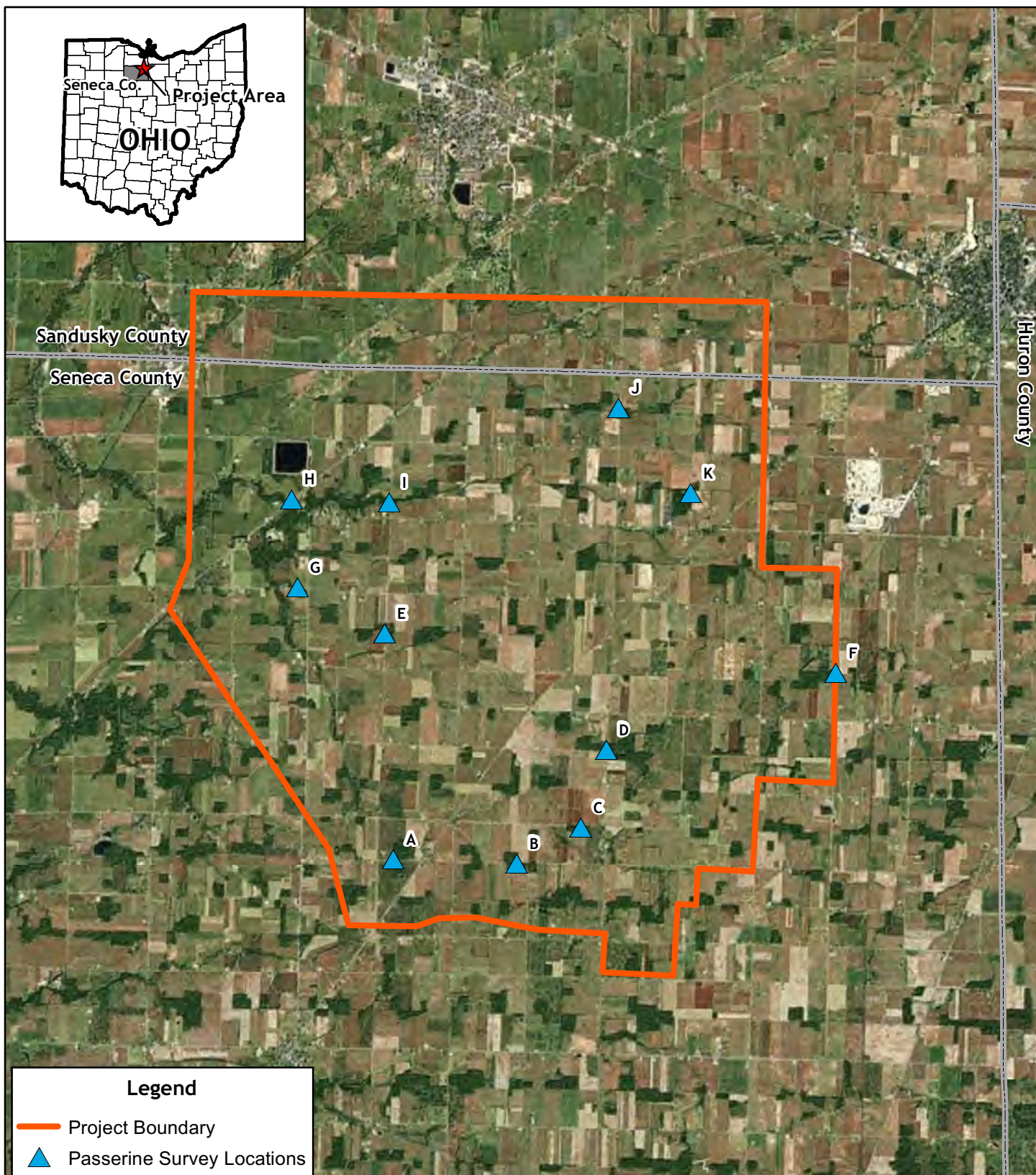
5.0 CONCLUSIONS

The passerine use survey of the Project Area did not reveal use by an unusual number or assemblage of species; use by sensitive bird species was limited. Due to the limited size of woodlots, wetlands, open water, and potential stopover sites, and due to an availability of similar habitat in northwestern Ohio, the Project Area does not represent a unique resource for large numbers of passerines during migration. The data did not demonstrate a relationship between the passerine use of the Project Area and the unique passerine migration through Magee Marsh or the western basin of Lake Erie. The survey results did not demonstrate avian use patterns that would indicate it is an essential contributor to passerine migration in the region.

6.0 LITERATURE CITED

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FIGURE



	Miles 1 0 1 2 Project No. 1953.001	December 2011 Basemap: NAIP Imagery - Seneca County, OH (2010)	
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APPENDIX A

Passerine Migration Survey Observations

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Weather Conditions Wind	Cloud	
4-Apr-11	A	Spring	AMRO	American Robin	6	NE	1							
		Spring	AMRO	American Robin	4	N	1							
		Spring	AMRO	American Robin	6	NE	1							
		Spring	AMRO	American Robin	3	NE	1							
		Spring	SOSP	Song Sparrow	2	NW	1							
		Spring	SOSP	Song Sparrow	3	NW	1							
		Spring	AMRO	American Robin	1	E	1							
		Spring	GBHE	Great Blue Heron	6	SE	1							
		Spring	AMCR	American Crow	100	NW	24							
		Spring	RBWO	Red-bellied Woodpecker	10	S	1							
		Spring	NOCA	Northern Cardinal	10	N	1							
		Spring	AMRO	American Robin	100	NE	1							
4-Apr-11	B	Spring	WBNU	White-breasted Nuthatch	100	S	1							
		Spring	AMRO	American Robin	100	E	1							
		Spring	AMCR	American Crow	100	SE	1							
		Spring	AMCR	American Crow	150	E	1							
		Spring	RBWO	Red-bellied Woodpecker	110	W	1							
		Spring	AMCR	American Crow	120	SW	3							
		Spring	AMRO	American Robin	150	E	1							
		Spring	ETTI	Tufted Titmouse	80	W	1							
		Spring	CAGO	Canada Goose	300	NE	2							
		Spring	AMRO	American Robin	60	NE	1							
		Spring	AMCR	American Crow	50	E	1							
		Spring	EUST	European Starling	50	E	1							
4-Apr-11	C	Spring	AMRO	American Robin	40	NW	1							
		Spring	TUVU	Turkey Vulture	30	E	1							
		Spring	NOCA	Northern Cardinal	60	NE	1							
		Spring	AMCR	American Crow	30	E	1							
		Spring	ETTI	Tufted Titmouse	50	NW	1							
		Spring	AMCR	American Crow	40	N	3							
		Spring	AMCR	American Crow	40	NE	1							
		Spring	AMRO	American Robin	50	NE	1							
		Spring	SOSP	Song Sparrow	60	SE	1							
		Spring	ETTI	Tufted Titmouse	100	E	1							
		Spring	AMRO	American Robin	100	SW	1							
		Spring	SOSP	Song Sparrow	50	S	1							
5-Apr-11	D	Spring	RBWO	Red-bellied Woodpecker	20	E	1							
		Spring	AMCR	American Crow	10	E	1							
		Spring	ETTI	Tufted Titmouse	80	NE	1							
		Spring	COGR	Common Grackle	40		1							
		Spring	RBWO	Red-bellied Woodpecker	100	E	1							
		Spring	ETTI	Tufted Titmouse	120	E	1							
		Spring	NOFL	Northern Flicker	50	SW	1							
		Spring	AMRO	American Robin	60	E	1							
		Spring	BLJA	Blue Jay	80	-	2							
		Spring	RWBL	Red-winged Blackbird	100	-	20							
		Spring	MODO	Mourning Dove	30	N	2							
		Spring	RBWO	Red-bellied Woodpecker	100	SE	1							
5-Apr-11	E	Spring	RBWO	Red-bellied Woodpecker	50	SW	1							
		Spring	MODO	Mourning Dove	40	S	1							
		Spring	DEJU	Dark-eyed Junco	20	SW	1							
		Spring	AMRO	American Robin	60	SW	1							
		Spring	AMCR	American Crow	20	W	1							
		Spring	SOSP	Song Sparrow	50	N	1							
		Spring	NOCA	Northern Cardinal	30	N	1							
		Spring	ETTI	Tufted Titmouse	100	S	1							
		Spring	AMRO	American Robin	60	S	1							
		Spring	GWTE	Green-winged Teal	20		3							
		Spring	CARW	Carolina Wren	60	SW	1							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							
		Spring	AMRO	American Robin	20	SW	3							

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
5-Apr-11	F	Spring	AMCR	American Crow	100	W	1						
		Spring	AMRO	American Robin	60	W	1						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	COGR	Common Grackle	20		1						
		Spring	NOFL	Northern Flicker	60	NW	1		7:51	7:56	4	10	
		Spring	BHCO	Brown-headed Cowbird	15		1						
		Spring	FISP	Field Sparrow	70	NW	1						
		Spring	WBNU	White-breasted Nuthatch	90	W	1						
		Spring	RWBL	Red-winged Blackbird	30		30						
5-Apr-11	G	Spring	AMRO	American Robin	10	SW	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	COGR	Common Grackle	30	S	1						
		Spring	AMRO	American Robin	40	E	1						
		Spring	BCCH	Black-capped Chickadee	20	S	1		8:10	8:15	4	0	100%
		Spring	NOCA	Northern Cardinal	40	S	1						
		Spring	SOSP	Song Sparrow	40	N	1						
		Spring	SOSP	Song Sparrow	60	SW	1						
		Spring	SOSP	Song Sparrow	100	N	1						
		Spring	AMRO	American Robin	20	S	1						
5-Apr-11	H	Spring	AMRO	American Robin	10	N	1						
		Spring	COGR	Common Grackle	50	W	1						
		Spring	WBNU	White-breasted Nuthatch	30	E	1						
		Spring	SOSP	Song Sparrow	10	S	1		8:21		4	0	100%
		Spring	RWBL	Red-winged Blackbird	40	N	1						
		Spring	RBWO	Red-bellied Woodpecker	30	SE	1						
		Spring	NOCA	Northern Cardinal	20	NW	1						
		Spring	EUST	European Starling	30	S	1						
		Spring	CAGO	Canada Goose	10	NW	2						
		Spring	ETTI	Tufted Titmouse	20	W	1						
5-Apr-11	I	Spring	AMRO	American Robin	30	E	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	WBNU	White-breasted Nuthatch	20	W	1						
		Spring	NOCA	Northern Cardinal	50	W	1						
		Spring	AMRO	American Robin	50	N	1		8:24	8:32	4	0	100%
		Spring	AMCR	American Crow	30	W	2						
		Spring	COGR	Common Grackle	20	W	1						
		Spring	MODO	Mourning Dove	100	N	1						
		Spring	SOSP	Song Sparrow	20	N	1						
		Spring	HOFI	House Finch	10	S	1						
5-Apr-11	J	Spring	BHCO	Brown-headed Cowbird	30	SW	1						
		Spring	SOSP	Song Sparrow	30	NW	1						
		Spring	RBWO	Red-bellied Woodpecker	40	SW	1						
		Spring	NOCA	Northern Cardinal	20	W	1						
		Spring	SOSP	Song Sparrow	40	SW	1						
		Spring	COGR	Common Grackle	20		2						
		Spring	KILL	Killdeer	60	N	2						
		Spring	SOSP	Song Sparrow	30	SW	1		8:51	8:56	4	0	95%
		Spring	AMRO	American Robin	20	SE	1						
		Spring	AMRO	American Robin	40	E	1						
5-Apr-11	K	Spring	DOWO	Downy Woodpecker	10	S	1						
		Spring	ETTI	Tufted Titmouse	20	NW	1						
		Spring	AMRO	American Robin	40	W	1						
		Spring	NOCA	Northern Cardinal	10	W	1						
		Spring	RWBL	Red-winged Blackbird	10		150						
		Spring	AMRO	American Robin	20	S	1						
		Spring	AMRO	American Robin	10	E	4						
		Spring	AMRO	American Robin	5	NE	9		9:03	9:08	4	0	100%
		Spring	BLJA	Blue Jay	40	NW	1						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	RBWO	Red-bellied Woodpecker	20	W	1						
		Spring	SOSP	Song Sparrow	30	E	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Stop	Survey Temp (C)	Wind	Cloud	
11-Apr-11	A	Spring	CAGO	Canada Goose	20	N	1	Walking in middle of woodlot	808	818	19	2	100%	
		Spring	AMCR	American Crow	20	W	1							
		Spring	NOFL	Northern Flicker	60	NW	1							
		Spring	AMRO	American Robin	40	W	1							
		Spring	NOCA	Northern Cardinal	80	SE	1							
11-Apr-11	B	Spring	RWBL	Red-winged Blackbird	10	W	8		753	803	19	5	100%	
		Spring	COGR	Common Grackle	10	W	3							
		Spring	CHSP	Chipping Sparrow	20	W	1							
		Spring	RUBL	Rusty Blackbird	10	W	4							
		Spring	AMRO	American Robin	40	E	1							
		Spring	NOFL	Northern Flicker	70	W	1							
		Spring	AMCR	American Crow	80	S	2							
		Spring	NOFL	Northern Flicker	40	SW	1							
		Spring	RBWO	Red-bellied Woodpecker	80	S	1							
		Spring	DEJU	Dark-eyed Junco	30	SW	1							
11-Apr-11	C	Spring	NOFL	Northern Flicker	30	SW	1		735	745	19	2	100%	
		Spring	NOFL	Northern Flicker	30	SE	1							
		Spring	EAME	Eastern Meadowlark	100	NW	1							
		Spring	AMCR	American Crow	60	S	1							
		Spring	AMRO	American Robin	25	W	1							
		Spring	EATO	Eastern Towhee	70	SW	1							
		Spring	EABL	Eastern Bluebird	10	S	2							
		Spring	AMRO	American Robin	20	W	1							
		Spring	MALL	Mallard	40	SW	2							
		Spring	RBWO	Red-bellied Woodpecker	40	W	1							
11-Apr-11	D	Spring	NOCA	Northern Cardinal	60	E	1		720	730	19	2	100%	
		Spring	BLJA	Blue Jay	80	NE	1							
		Spring	COGR	Common Grackle	10	N	3							
		Spring	NOCA	Northern Cardinal	20	W	1							
		Spring	CHSP	Chipping Sparrow	5	E	1							
		Spring	RBWO	Red-bellied Woodpecker	60	E	1							
		Spring	RWBL	Red-winged Blackbird	40	N	18							
		Spring	ETTI	Tufted Titmouse	60	NW	2							
		Spring	DOWO	Downy Woodpecker	30	E	1							
		Spring	RBWO	Red-bellied Woodpecker	50	SE	1							
		Spring	AMRO	American Robin	20	W	1							
11-Apr-11	E	Spring	EUST	European Starling	20	NW	4		823	833	19	2	100%	
		Spring	COGR	Common Grackle	10	W	1							
		Spring	KILL	Killdeer	30	SW	1							
		Spring	NOCA	Northern Cardinal	60	W	1							
		Spring	SAVS	Savannah Sparrow	40	SE	1							
		Spring	AMRO	American Robin	20	W	1							
		Spring	COGR	Common Grackle	40	S	1							
		Spring	AMRO	American Robin	50	NW	1							
		Spring	BHCO	Brown-headed Cowbird	20	N	3							
		Spring	NOFL	Northern Flicker	100	SE	1							
11-Apr-11	F	Spring	COGR	Common Grackle	10	W	6		702	712	19	7	100%	
		Spring	RWBL	Red-winged Blackbird	10	E	14							
		Spring	RWBL	Red-winged Blackbird	10	S	26							
		Spring	AMRO	American Robin	50	NW	1							
		Spring	AMRO	American Robin	30	E	1							
		Spring	RBWO	Red-bellied Woodpecker	20	E	1							
		Spring	AMCR	American Crow	100	SW	3							
		Spring	KILL	Killdeer	60	NE	2							
		Spring	NOFL	Northern Flicker	60	NW	1							
		Spring	BCCH	Black-capped Chickadee	30	W	1							
10-Apr-11	H	Spring	AMRO	American Robin	70	E	1		750	800	15	2	100%	
		Spring	RWBL	Red-winged Blackbird	40	W	1							
		Spring	AMRO	American Robin	50	S	1							
		Spring	COGR	Common Grackle	50	N	1							
		Spring	DOWO	Downy Woodpecker	40	SW	1							
		Spring	RBWO	Red-bellied Woodpecker	50	E	1							
		Spring	BLJA	Blue Jay	30	N	3							
		Spring												
		Spring												
		Spring												
		Spring												

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Survey Weather Conditions
10-Apr-11	I	Spring	ETTI	Tufted Titmouse	40	SW	1						
		Spring	FISP	Field Sparrow	60	S	1						
		Spring	CAGO	Canada Goose	100	SW	8						
		Spring	AMRO	American Robin	50	W	1						
		Spring	ETTI	Tufted Titmouse	50	NW	1						
		Spring	NOCA	Northern Cardinal	40	S	1						
		Spring	DOWO	Downy Woodpecker	35	SW	1						
		Spring	BLJA	Blue Jay	90	W	1						
		Spring	DEJU	Dark-eyed Junco	30	E	5						
		Spring	AMCR	American Crow	100	SE	3						
10-Apr-11	J	Spring	ETTI	Tufted Titmouse	20	SW	1						
		Spring	AMRO	American Robin	20	NW	2						
		Spring	NOFL	Northern Flicker	40	E	1						
		Spring	MODO	Mourning Dove	10	E	1						
		Spring	RBWO	Red-bellied Woodpecker	30	SW	1						
		Spring	HOLA	Horned Lark	50	NE	1						
		Spring	EUST	European Starling	10	NE	5						
		Spring	DOWO	Downy Woodpecker	30	E	1						
		Spring	KILL	Killdeer	40	NW	1						
		Spring	AMRO	American Robin	10	NE	1						
10-Apr-11	K	Spring	RWBL	Red-winged Blackbird	60	E	32						
		Spring	COGR	Common Grackle	20	W	1						
		Spring	EUST	European Starling	10	W	6						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	RBWO	Red-bellied Woodpecker	50	NW	1						
		Spring	COGR	Common Grackle	10	W	1						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	RBWO	Red-bellied Woodpecker	50	NW	1						
		Spring	COGR	Common Grackle	10	W	1						
		Spring	EATO	Eastern Towhee	70	N	1						
20-Apr-11	A	Spring	AMCR	American Crow	5	S	1						
		Spring	AMCR	American Crow	30	E	5						
		Spring	AMRO	American Robin	10	NW	1						
		Spring	BCCH	Black-capped Chickadee	20	NE	1						
		Spring	ETTI	Tufted Titmouse	10	N	1						
		Spring	ETTI	Tufted Titmouse	30	SW	1						
		Spring	EATO	Eastern Towhee	1	N	1						
		Spring	COGR	Common Grackle	6	SW	1						
		Spring	AMCR	American Crow	40	SE	1						
		Spring	MYWA	Yellow-rumped Warbler	1	N	3	Foraging					
20-Apr-11	B	Spring	NOFL	Northern Flicker	20	W	1						
		Spring	AMRO	American Robin	50	S	1						
		Spring	AMRO	American Robin	20	SE	1						
		Spring	COGR	Common Grackle	10	W	1						
		Spring	AMCR	American Crow	30	E	1						
		Spring	COGR	Common Grackle	-	W	3						
		Spring	NOFL	Northern Flicker	100	E	1						
		Spring	RBWO	Red-bellied Woodpecker	10	N	1						
		Spring	RBWO	Red-bellied Woodpecker	100	W	1						
		Spring	ETTI	Tufted Titmouse	5	N	1						
20-Apr-11	B	Spring	ETTI	Tufted Titmouse	25	SW	1						
		Spring	AMRO	American Robin	30	NE	1						
		Spring	AMRO	American Robin	10	SE	1						
		Spring	MYWA	Yellow-rumped Warbler	2	W	4	Foraging					
		Spring	DOWO	Downy Woodpecker	40	NW	1						
		Spring	EATO	Eastern Towhee	50	E	1						
		Spring	EATO	Eastern Towhee	100	SW	1						
		Spring	AMRO	American Robin	10	W	1						
		Spring	BCCH	Black-capped Chickadee	20	N	5						
		Spring	TUVU	Turkey Vulture	150	NNW	12						
20-Apr-11	B	Spring	AMCR	American Crow	25	N	1						
		Spring	AMCR	American Crow	30	SSW	4						
		Spring	AMCR	American Crow	30	SSW	4						
		Spring	AMCR	American Crow	30	SSW	4						
		Spring	AMCR	American Crow	30	SSW	4						
		Spring	AMCR	American Crow	30	SSW	4						
		Spring	AMCR	American Crow	30	SSW	4						
		Spring	AMCR	American Crow	30	SSW	4						
		Spring	AMCR	American Crow	30	SSW	4						
		Spring	AMCR	American Crow	30	SSW	4						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
20-Apr-11	C	Spring	MYWA	Yellow-rumped Warbler	1	N	5						
		Spring	YTWA	Yellow-throated Warbler	1	N	3						
		Spring	EATO	Eastern Towhee	30	SW	1						
		Spring	AMRO	American Robin	10	NE	1						
		Spring	AMRO	American Robin	100	E	1						
		Spring	ETTI	Tufted Titmouse	100	S	1						
		Spring	ETTI	Tufted Titmouse	20	W	1						
		Spring	BHCO	Brown-headed Cowbird	1	N	4						
		Spring	BRGR	Brown Creeper	1	E	1		8:00	8:10	13	7	100%
		Spring	BCCH	Black-capped Chickadee	10	NW	1						
		Spring	RBWO	Red-bellied Woodpecker	30	SE	1						
		Spring	RBWO	Red-bellied Woodpecker	50	S	1						
		Spring	AMCR	American Crow	10	S	1						
		Spring	AMRO	American Robin	25	N	1						
		Spring	DOWO	Downy Woodpecker	10	W	1						
		Spring	PWVO	Pileated Woodpecker	100	S	1						
		Spring	RWBL	Red-winged Blackbird	-	SE	20						
		Spring	AMRO	American Robin	20	NW	1						
		Spring	AMRO	American Robin	100	E	1						
		Spring	ETTI	Tufted Titmouse	20	E	1						
20-Apr-11	D	Spring	SOSP	Song Sparrow	5	S	1						
		Spring	COGR	Common Grackle	10	NE	1						
		Spring	AMRO	American Robin	100	N	1						
		Spring	MODO	Mourning Dove	30	SW	1						
		Spring	TUVU	Turkey Vulture	-	NW	4						
		Spring	COGR	Common Grackle	30	W	1						
		Spring	HAWO	Hairy Woodpecker	20	W	1		8:30	8:40	13	7	100%
		Spring	ETTI	Tufted Titmouse	100	N	1						
		Spring	BCCH	Black-capped Chickadee	5	SE	1						
		Spring	RBWO	Red-bellied Woodpecker	10	NE	1						
		Spring	RTHA	Red-tailed Hawk	-	N	1						
		Spring	SOSP	Song Sparrow	10	NW	1						
		Spring	COGR	Common Grackle	15	NW	1						
		Spring	ETTI	Tufted Titmouse	40	E	1						
		Spring	BCCH	Black-capped Chickadee	10	E	1						
		Spring	AMRO	American Robin	5	NE	1						
		Spring	AMCR	American Crow	20	NW	1						
		Spring	CHSP	Chipping Sparrow	3	E	1						
		Spring	AMRO	American Robin	10	NE	1						
21-Apr-11	E	Spring	BLJA	Blue Jay	3	E	1						
		Spring	AMRO	American Robin	15	NW	1						
		Spring	AMRO	American Robin	30	NNE	1						
		Spring	NOCA	Northern Cardinal	50	W	1						
		Spring	BLJA	Blue Jay	20	N	1						
		Spring	EATO	Eastern Towhee	10	SW	1						
		Spring	RBWO	Red-bellied Woodpecker	100	W	1						
		Spring	HAWO	Hairy Woodpecker	3	NE	1						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	AMRO	American Robin	10	NW	1		7:05	7:15	4	3	0%
		Spring	AMCR	American Crow	100	W	1						
		Spring	RBWO	Red-bellied Woodpecker	20	SE	1						
		Spring	NOFL	Northern Flicker	10	SW	1						
		Spring	EATO	Eastern Towhee	100	W	1						
		Spring	NOCA	Northern Cardinal	50	NE	1						
		Spring	KILL	Killdeer	3	W	1						
		Spring	COGR	Common Grackle	-	NNW	5						
		Spring	RWBL	Red-winged Blackbird	30	E	1						
		Spring	BHCO	Brown-headed Cowbird	10	E	1						
		Spring	COGR	Common Grackle	30	NW	1						
		Spring	NOFL	Northern Flicker	100	NNW	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Survey Weather Conditions
21-Apr-11	F	Spring	AMRO	American Robin	30	NE	1						
		Spring	AMRO	American Robin	50	N	1						
		Spring	AMCR	American Crow	100	SW	1						
		Spring	AMCR	American Crow	30	W	1						
		Spring	AMRO	American Robin	100	S	1						
		Spring	NOCA	Northern Cardinal	100	NW	1						
		Spring	FISP	Field Sparrow	20	NW	1						
		Spring	RBWO	Red-bellied Woodpecker	30	W	1						
		Spring	NOFL	Northern Flicker	40	SW	1						
		Spring	BCCH	Black-capped Chickadee	10	W	1		6:45	6:55	4	3	0%
		Spring	AMRO	American Robin	5	N	1						
		Spring	RTHA	Red-tailed Hawk	30	W	1						
		Spring	BLJA	Blue Jay	10	N	1						
		Spring	NOFL	Northern Flicker	20	NW	1						
		Spring	BHCO	Brown-headed Cowbird	-	S	10						
		Spring	EUST	European Starling	-	S	10						
		Spring	ETTI	Tufted Titmouse	40	WSW	1						
		Spring	AMRO	American Robin	30	WSW	1						
		Spring	ETTI	Tufted Titmouse	100	NW	1						
21-Apr-11	G	Spring	CHSP	Chipping Sparrow	2	E	1						
		Spring	CHSP	Chipping Sparrow	40	NW	1						
		Spring	AMRO	American Robin	30	E	1						
		Spring	AMRO	American Robin	100	NE	1						
		Spring	RBWO	Red-bellied Woodpecker	40	S	1						
		Spring	MODO	Mourning Dove	10	SW	1						
		Spring	AMRO	American Robin	5	S	1						
		Spring	BLJA	Blue Jay	50	S	1						
		Spring	COGR	Common Grackle	-	S	1						
		Spring	AMCR	American Crow	100	SE	1						
		Spring	FISP	Field Sparrow	150	SE	1						
		Spring	KILL	Killdeer	20	SW	1						
		Spring	COGR	Common Grackle	-	NW	4						
		Spring	SOSP	Song Sparrow	1	S	1						
		Spring	RBWO	Red-bellied Woodpecker	10	N	1						
		Spring	AMCR	American Crow	2	N	1						
		Spring	AMRO	American Robin	10	E	1						
		Spring	RBWO	Red-bellied Woodpecker	5	NW	1						
		Spring	HAWO	Hairy Woodpecker	20	SE	1						
21-Apr-11	H	Spring	SOSP	Song Sparrow	10	N	1						
		Spring	CHSP	Chipping Sparrow	5	W	1						
		Spring	NOFL	Northern Flicker	30	SW	1						
		Spring	AMRO	American Robin	40	NE	1						
		Spring	ETTI	Tufted Titmouse	10	E	1						
		Spring	BCCH	Black-capped Chickadee	15	NW	1						
		Spring	SOSP	Song Sparrow	5	W	1						
		Spring	AMCR	American Crow	10	SE	1						
		Spring	RTHA	Red-tailed Hawk	-	NE	1						
		Spring	TUVU	Turkey Vulture	-	N	3						
		Spring	ETTI	Tufted Titmouse	30	SW	1						
		Spring	ETTI	Tufted Titmouse									
21-Apr-11	H	Spring	AMCR	American Crow	2	N	1						
		Spring	AMRO	American Robin	10	E	1						
		Spring	RBWO	Red-bellied Woodpecker	5	NW	1						
		Spring	HAWO	Hairy Woodpecker	20	SE	1						
		Spring	SOSP	Song Sparrow	10	N	1						
		Spring	CHSP	Chipping Sparrow	5	W	1						
		Spring	NOFL	Northern Flicker	30	SW	1						
		Spring	AMRO	American Robin	40	NE	1						
		Spring	ETTI	Tufted Titmouse	10	E	1						
		Spring	BCCH	Black-capped Chickadee	15	NW	1						
		Spring	SOSP	Song Sparrow	5	W	1						
		Spring	AMCR	American Crow	10	SE	1						
21-Apr-11	H	Spring	RTHA	Red-tailed Hawk	-	NE	1						
		Spring	TUVU	Turkey Vulture	-	N	3						
		Spring	ETTI	Tufted Titmouse	30	SW	1						
		Spring	ETTI	Tufted Titmouse									
		Spring	AMCR	American Crow	2	N	1						
		Spring	AMRO	American Robin	10	E	1						
		Spring	RBWO	Red-bellied Woodpecker	5	NW	1						
		Spring	HAWO	Hairy Woodpecker	20	SE	1						
		Spring	SOSP	Song Sparrow	10	N	1						
		Spring	CHSP	Chipping Sparrow	5	W	1						
		Spring	NOFL	Northern Flicker	30	SW	1						
		Spring	AMRO	American Robin	40	NE	1						
21-Apr-11	H	Spring	ETTI	Tufted Titmouse	10	E	1						
		Spring	BCCH	Black-capped Chickadee	15	NW	1						
		Spring	SOSP	Song Sparrow	5	W	1						
		Spring	AMCR	American Crow	10	SE	1						
		Spring	RTHA	Red-tailed Hawk	-	NE	1						
		Spring	TUVU	Turkey Vulture	-	N	3						
		Spring	ETTI	Tufted Titmouse	30	SW	1						
		Spring	ETTI	Tufted Titmouse									
		Spring	AMCR	American Crow	2	N	1						
		Spring	AMRO	American Robin	10	E	1						
		Spring	RBWO	Red-bellied Woodpecker	5	NW	1						
		Spring	HAWO	Hairy Woodpecker	20	SE	1						
21-Apr-11	H	Spring	SOSP	Song Sparrow	10	N	1						
		Spring	CHSP	Chipping Sparrow	5	W	1						
		Spring	NOFL	Northern Flicker	30	SW	1						
		Spring	AMRO	American Robin	40	NE	1						
		Spring	ETTI	Tufted Titmouse	10	E	1						
		Spring	BCCH	Black-capped Chickadee	15	NW	1						
		Spring	SOSP	Song Sparrow	5	W	1						
		Spring	AMCR	American Crow	10	SE	1						
		Spring	RTHA	Red-tailed Hawk	-	NE	1						
		Spring	TUVU	Turkey Vulture	-	N	3						
		Spring	ETTI	Tufted Titmouse	30	SW	1						
		Spring	ETTI	Tufted Titmouse									

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Survey Cloud
21-Apr-11	I	Spring	NOCA	Northern Cardinal	40	E	1						
		Spring	AMRO	American Robin	10	NW	1						
		Spring	RBWO	Red-bellied Woodpecker	30	NE	1						
		Spring	ETTI	Tufted Titmouse	10	W	1						
		Spring	AMRO	American Robin	40	NW	1						
		Spring	TUVU	Turkey Vulture	-	N	2						
		Spring	DOWO	Downy Woodpecker	20	W	1						
		Spring	SOSP	Song Sparrow	30	E	1		7:35	7:45	4	3	0%
		Spring	BLJA	Blue Jay	50	SE	1						
		Spring	COGR	Common Grackle	-	SW	4						
		Spring	AMRO	American Robin	100	NW	1						
		Spring	EAPH	Eastern Phoebe	4	S	1						
		Spring	ETTI	Tufted Titmouse	20	W	1						
		Spring	NOCA	Northern Cardinal	10	NW	1						
21-Apr-11	J	Spring	AMRO	American Robin	50	SE	1						
		Spring	BHCO	Brown-headed Cowbird	-	SE	2						
		Spring	SOSP	Song Sparrow	10	NW	1						
		Spring	FISP	Field Sparrow	5	E	1						
		Spring	CARW	Carolina Wren	30	S	1						
		Spring	AMRO	American Robin	50	SE	1						
		Spring	AMCR	American Crow	10	NE	1						
		Spring	DOWO	Downy Woodpecker	10	W	1						
		Spring	AMRO	American Robin	5	W	1						
		Spring	RBWO	Red-bellied Woodpecker	30	NW	1		8:10	8:20	4	5	10%
		Spring	EUST	European Starling	5	S	10						
		Spring	RWBL	Red-winged Blackbird	15	S	1						
		Spring	COGR	Common Grackle	10	E	1						
		Spring	SOSP	Song Sparrow	30	SE	1						
21-Apr-11	K	Spring	ETTI	Tufted Titmouse	5	N	1						
		Spring	AMCR	American Crow	5	W	1						
		Spring	ETTI	Tufted Titmouse	20	W	1						
		Spring	AMRO	American Robin	10	NE	1						
		Spring	AMRO	American Robin	5 to 10	NNE	15	Foraging					
		Spring	MYWA	Yellow-rumped Warbler	3	NW	5	Foraging					
		Spring	SOSP	Song Sparrow	20	NE	1						
		Spring	AMRO	American Robin	15	SW	1						
		Spring	RWBL	Red-winged Blackbird	50	SW	10						
		Spring	CHSP	Chipping Sparrow	10	S	1						
		Spring	RBWO	Red-bellied Woodpecker	30	W	1		8:25	8:35	4	5	10%
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	BCCH	Black-capped Chickadee	15	W	1						
		Spring	ETTI	Tufted Titmouse	5	NW	1						
24-Apr-11	A	Spring	AMRO	American Robin	30	W	1						
		Spring	RBWO	Red-bellied Woodpecker	5	W	1						
		Spring	TUVU	Turkey Vulture	-	NE	3	Flyover					
		Spring	COGR	Common Grackle	10	W	6						
		Spring	AMCR	American Crow	50	NW	3						
		Spring	AMRO	American Robin	40	W	1						
		Spring	NOCA	Northern Cardinal	60	S	1		7:15	7:24	10	0	75%
		Spring	RBWO	Red-bellied Woodpecker	30	N	1						
		Spring	ETTI	Tufted Titmouse	40	SE	1						
		Spring	ETTI	Tufted Titmouse	70	7W	1						
		Spring	COGR	Common Grackle	10	W	3						
		Spring	CHSP	Chipping Sparrow	20	W	1						
		Spring	RUBL	Rusty Blackbird	10	W	4						
		Spring	AMRO	American Robin	40	E	1						
24-Apr-11	B	Spring	NOCA	Northern Cardinal	20	NW	1		6:59	7:08	10	2	75%
		Spring	AMRO	American Robin	35	SE	1						
		Spring	BHCO	Brown-headed Cowbird	40	E	1						
		Spring	ETTI	Tufted Titmouse	30	SW	1						
		Spring	AMRO	American Robin	20	WNW	3						
		Spring	CHSP	Chipping Sparrow	20	W	1						
		Spring	RUBL	Rusty Blackbird	10	W	4						
		Spring	AMRO	American Robin	40	E	1						
		Spring	NOCA	Northern Cardinal	20	NW	1						
		Spring	AMRO	American Robin	35	SE	1						
		Spring	BHCO	Brown-headed Cowbird	40	E	1						
		Spring	ETTI	Tufted Titmouse	30	SW	1						
		Spring	AMRO	American Robin	20	WNW	3						
		Spring	CHSP	Chipping Sparrow	20	W	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
24-Apr-11	C	Spring	AMRO	American Robin	60	SW	1						
		Spring	RBGR	Rose-breasted Grosbeak	50	W	1						
		Spring	FISP	Field Sparrow	50	NW	1						
		Spring	BLJA	Blue Jay	25	SW	2		645	654	11	0	80%
		Spring	SOSP	Song Sparrow	30	NW	1						
		Spring	RWBL	Red-winged Blackbird	15	W	6						
		Spring	AMRO	American Robin	25	SE	1						
		Spring	ETTI	Tufted Titmouse	40	E	1						
		Spring	AMRO	American Robin	50	NE	1						
		Spring	EABL	Eastern Bluebird	30	SW	2						
24-Apr-11	D	Spring	RBWO	Red-bellied Woodpecker	20	NW	1						
		Spring	FISP	Field Sparrow	50	N	1		641	650	11	0	85%
		Spring	AMGO	American Goldfinch	40	N	4						
		Spring	RBWO	Red-bellied Woodpecker	40	NW	1						
		Spring	ELST	European Starling	40	SW	6						
		Spring	BLJA	Blue Jay	10	W	1						
		Spring	RWBL	Red-winged Blackbird	50	NW	2						
		Spring	ETTI	Tufted Titmouse	20	NE	1						
		Spring	DOWO	Downy Woodpecker	15	S	1						
		Spring	RBWO	Red-bellied Woodpecker	60	SW	1		730	739	11	0	85%
24-Apr-11	E	Spring	MODO	Mourning Dove	15	S	2						
		Spring	WBND	White-breasted Nuthatch	40	NE	1						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	RBWO	Red-bellied Woodpecker	45	NW	1						
		Spring	NOCA	Northern Cardinal	60	W	1						
		Spring	SAVS	Savannah Sparrow	40	SE	1						
		Spring	AMRO	American Robin	20	W	1						
		Spring	COGR	Common Grackle	40	S	1						
		Spring	AMRO	American Robin	50	NW	1		627	636	9	0	75%
		Spring	BHCO	Brown-headed Cowbird	20	N	3						
24-Apr-11	F	Spring	NOFL	Northern Flicker	100	SE	1						
		Spring	COGR	Common Grackle	10	W	6						
		Spring	AMRO	American Robin	50	NW	1						
		Spring	RWBL	Red-winged Blackbird	45	SW	1						
		Spring	COGR	Common Grackle	10	N	1						
		Spring	AMCR	American Crow	100	SW	3						
		Spring	KILL	Killdeer	60	NE	2						
		Spring	CHSP	Chipping Sparrow	20	W	1						
		Spring	RBGR	Rose-breasted Grosbeak	40	NW	1		744	752	11	0	90%
		Spring	FISP	Field Sparrow	60	NW	1						
24-Apr-11	G	Spring	RWBL	Red-winged Blackbird	30	NW	1						
		Spring	ETTI	Tufted Titmouse	50	S	1						
		Spring	BCCH	Black-capped Chickadee	70	S	1						
		Spring	AMRO	American Robin	30	NW	1						
		Spring	NOFL	Northern Flicker	60	NW	1						
		Spring	COGR	Common Grackle	50	N	1						
		Spring	DOWO	Downy Woodpecker	40	SW	1						
		Spring	RWBL	Red-winged Blackbird	40	W	1		758	807	11	0	85%
		Spring	AMRO	American Robin	50	S	1						
		Spring	COGR	Common Grackle	50	N	1						
24-Apr-11	H	Spring	DOWO	Downy Woodpecker	40	SW	1						
		Spring	RBWO	Red-bellied Woodpecker	50	E	1						
		Spring	BLJA	Blue Jay	30	N	3						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	MODO	Mourning Dove	80	S	1						
		Spring	BAOR	Baltimore Oriole	30	SW	1						
		Spring	FISP	Field Sparrow	30	SW	1		813	822	11	0	90%
		Spring	AMRO	American Robin	40	NW	1						
		Spring	BHCO	Brown-headed Cowbird	40	W	1						
		Spring	AMCR	American Crow	30	S	3						
24-Apr-11	I	Spring	BLJA	Blue Jay	30	E	1						
		Spring	MODO	Mourning Dove	80	S	1						
		Spring	BAOR	Baltimore Oriole	30	SW	1						
		Spring	FISP	Field Sparrow	30	SW	1		813	822	11	0	90%
		Spring	AMRO	American Robin	40	NW	1						
		Spring	BHCO	Brown-headed Cowbird	40	W	1						
		Spring	AMCR	American Crow	30	S	3						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	MODO	Mourning Dove	80	S	1						
		Spring	BAOR	Baltimore Oriole	30	SW	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Temp (C)	Wind	Cloud
24-Apr-11	J	Spring	GRCA	Gray Catbird	5	E	1						
		Spring	ETTI	Tufted Titmouse	15	NW	1						
		Spring	ETTI	Tufted Titmouse	60	W	1						
		Spring	RBWO	Red-bellied Woodpecker	30	SW	1						
		Spring	HOLA	Horned Lark	50	NE	1						
		Spring	EUST	European Starling	10	NE	5						
		Spring	DOWO	Downy Woodpecker	30	E	1						
		Spring	HOWR	House Wren	30	SE	1						
		Spring	RBWO	Red-bellied Woodpecker	4	SW	1						
		Spring	MODO	Mourning Dove	30	N	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	NOFL	Northern Flicker	40	SW	1						
		Spring	AMCR	American Crow	60	W	1						
		Spring	GRCA	Gray Catbird	5	E	1						
		Spring	ETTI	Tufted Titmouse	15	NW	1						
		Spring	ETTI	Tufted Titmouse	60	W	1						
		Spring	RBWO	Red-bellied Woodpecker	30	SW	1						
		Spring	HOLA	Horned Lark	50	NE	1						
		Spring	EUST	European Starling	10	NE	5						
		Spring	DOWO	Downy Woodpecker	30	E	1						
24-Apr-11	K	Spring	AMRO	American Robin	70	NW	1						
		Spring	NOFL	Northern Flicker	50	E	1						
		Spring	KILL	Killdeer	40	NW	1						
		Spring	AMRO	American Robin	10	NE	1						
		Spring	RWBL	Red-winged Blackbird	60	E	32						
		Spring	COGR	Common Grackle	20	W	1						
		Spring	EUST	European Starling	10	W	6						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	AMRO	American Robin	5	NW	1						
		Spring	ETTI	Tufted Titmouse	15	NW	1						
		Spring	HOSP	House Sparrow	10	SE	3						
		Spring	BAOR	Baltimore Oriole	10	S	1						
		Spring	BLJA	Blue Jay	15	SW	2						
		Spring	COGR	Common Grackle	20	W	2						
		Spring	RBWO	Red-bellied Woodpecker	30	N	1						
		Spring	RWBL	Red-winged Blackbird	20	N	4						
		Spring	BHCO	Brown-headed Cowbird	15	SW	1						
		Spring	NOFL	Northern Flicker	50	S	1						
27-Apr-11	A	Spring	DOWO	Downy Woodpecker	10	W	1						
		Spring	CAGO	Canada Goose	60	N	3						
		Spring	NAVA	Nashville Warbler	30	S	1						
		Spring	NOFL	Northern Flicker	50	S	1						
		Spring	DOWO	Downy Woodpecker	10	W	1						
		Spring	AMCR	American Crow	50	N	4						
		Spring	AMCR	American Crow	80	NE	4						
		Spring	BLJA	Blue Jay	50	W	1						
		Spring	ETTI	Tufted Titmouse	40	NE	1						
		Spring	RWBL	Red-winged Blackbird	5	S	8						
		Spring	HOSP	House Sparrow	3	S	4						
		Spring	CHSP	Chipping Sparrow	5	W	4						
		Spring	RWBL	Red-winged Blackbird	10	W	1						
		Spring	AMRO	American Robin	15	SE	1						
		Spring	AMCR	American Crow	50	S	1						
		Spring	BHCO	Brown-headed Cowbird	40	W	1						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	NOFL	Northern Flicker	50	NW	1						
		Spring	AMRO	American Robin	30	E	1						
27-Apr-11	C	Spring	WOTH	Wood Thrush	50	SE	1						
		Spring	AMCR	American Crow	60	SE	3						
		Spring	NOFL	Northern Flicker	40	S	1						
		Spring	RSHA	Red-shouldered Hawk	30	S	1						
		Spring											

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Survey Cloud
27-Apr-11	D	Spring	ETTI	Tufted Titmouse	20	NW	2						
		Spring	WTSP	White-throated Sparrow	40	SW	1		646	655	14	4	55%
		Spring	AMCR	American Crow	50	NE	2						
27-Apr-11	E	Spring	AMRO	American Robin	30	N	1						
		Spring	BLJA	Blue Jay	40	NE	1						
		Spring	HOSP	House Sparrow	50	NW	7						
		Spring	CHSP	Chipping Sparrow	40	S	1		735	744	14	6	50%
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	BLJA	Blue Jay	40	E	1						
		Spring	AMGO	American Goldfinch	20	W	2						
27-Apr-11	F	Spring	AMCR	American Crow	20	SW	3						
		Spring	AMRO	American Robin	50	NW	1		634	643	14	0	40%
		Spring	MODO	Mourning Dove	60	S	1						
27-Apr-11	G	Spring	AMGO	American Goldfinch	20	NW	2						
		Spring	BAOR	Baltimore Oriole	30	N	1						
		Spring	COGR	Common Grackle	15	N	4						
		Spring	ETTI	Tufted Titmouse	45	SW	1						
		Spring	COGR	Common Grackle	50	E	2						
27-Apr-11	H	Spring	AMGO	American Goldfinch	20	NW	2		747	756	15	0	50%
		Spring	NOCA	Northern Cardinal	40	NW	1						
		Spring	CHSP	Chipping Sparrow	30	W	1						
		Spring	BLJA	Blue Jay	50	NE	1						
		Spring	AMRO	American Robin	50	SW	1						
		Spring	COGR	Common Grackle	40	N	1						
		Spring	DOWO	Downy Woodpecker	40	S	1						
		Spring	RBWO	Red-bellied Woodpecker	50	ENE	1						
		Spring	BLJA	Blue Jay	40	N	3		800	809	15	2	60%
		Spring	BCCH	Black-capped Chickadee	50	S	1						
27-Apr-11	I	Spring	AMRO	American Robin	30	NW	1						
		Spring	NOCA	Northern Cardinal	40	SE	1						
		Spring	EUST	European Starling	30	SW	1						
		Spring	ETTI	Tufted Titmouse	40	W	1						
		Spring	WBNU	White-breasted Nuthatch	30	N	1		812	821	16	2	50%
27-Apr-11	J	Spring	MODO	Mourning Dove	80	S	3						
		Spring	BAOR	Baltimore Oriole	20	SW	1						
		Spring	AMRO	American Robin	50	NW	1						
		Spring	FISP	Field Sparrow	30	SW	1						
		Spring	KILL	Killdeer	30	SE	1						
		Spring	AMRO	American Robin	50	W	1						
		Spring	AMRO	American Robin	35	NW	1						
		Spring	AMRO	American Robin	40	NE	1						
		Spring	RWBL	Red-winged Blackbird	60	S	1						
		Spring	BHCO	Brown-headed Cowbird	20	E	3						
27-Apr-11	K	Spring	AMRO	American Robin	20	E	1		602	611	15	0	50%
		Spring	COGR	Common Grackle	40	NW	1						
		Spring	ETTI	Tufted Titmouse	50	W	1						
		Spring	WBNU	White-breasted Nuthatch	60	W	1						
		Spring	EUST	European Starling	30	N	4						
		Spring	SOSP	Song Sparrow	10	N	1						
		Spring	DEJU	Dark-eyed Junco	10	N	2						
		Spring	BLJA	Blue Jay	60	NE	1						
		Spring	BLJA	Blue Jay	60	E	2						
		Spring	AMRO	American Robin	50	E	1						
27-Apr-11		Spring	AMRO	American Robin	30	NW	1		616	625	16	0	50%
		Spring	AMRO	American Robin	10	W	1						
		Spring	ETTI	Tufted Titmouse	45	E	1						
		Spring	KILL	Killdeer	70	SE	1						
		Spring	MODO	Mourning Dove	20	E	1						
		Spring	NOFL	Northern Flicker	100	SE	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start Stop	Survey Weather Conditions Temp (C) Wind Cloud
2-May-11	A	Spring	DOWO	Downy Woodpecker	20	E	1			
		Spring	AMRO	American Robin	30	SE	1			
		Spring	COGR	Common Grackle	20	E	1			
		Spring	NAVA	Nashville Warbler	30	S	1			
		Spring	NOFL	Northern Flicker	50	S	1			
		Spring	DOWO	Downy Woodpecker	10	W	1			
		Spring	CAGO	Canada Goose	60	N	5			
		Spring	AMCR	American Crow	80	NE	4		659	708 10 5 90%
		Spring	BLJA	Blue Jay	50	W	1			
		Spring	ETTI	Tufted Titmouse	40	NE	1			
		Spring	SCTA	Scarlet Tanager	30	S	1			
		Spring	BHCO	Brown-headed Cowbird	10	W	1			
		Spring	NOFL	Northern Flicker	60	W	1			
		Spring	AMCR	American Crow	60	N	1			
		Spring	AMCR	American Crow	30	SW	1			
2-May-11	B	Spring	RWBL	Red-winged Blackbird	10	SW	7			
		Spring	NOCA	Northern Cardinal	30	NE	1			
		Spring	AMRO	American Robin	50	NE	1		646	655 10 5 95%
		Spring	BHCO	Brown-headed Cowbird	60	N	1			
		Spring	ETTI	Tufted Titmouse	80	NE	1			
		Spring	AMRO	American Robin	40	W	1			
		Spring	BLJA	Blue Jay	40	W	1			
		Spring	CHSP	Chipping Sparrow	30	E	1			
		Spring	AMRO	American Robin	20	E	1			
		Spring	GCFL	Great Crested Flycatcher	30	S	1			
		Spring	ETTI	Tufted Titmouse	25	E	1			
		Spring	FISP	Field Sparrow	50	NW	1			
		Spring	BHCO	Brown-headed Cowbird	90	NW	1		634	643 10 15 95%
		Spring	BLJA	Blue Jay	30	SW	1			
		Spring	SOSP	Song Sparrow	20	NW	1			
		Spring	AMRO	American Robin	60	SW	1			
2-May-11	C	Spring	RBGR	Rose-breasted Grosbeak	50	W	1			
		Spring	BRTH	Brown Thrasher	70	W	1			
		Spring	RBWO	Red-bellied Woodpecker	30	E	2			
		Spring	RBWO	Red-bellied Woodpecker	20	NW	1			
		Spring	FISP	Field Sparrow	50	N	1			
		Spring	AMRO	American Robin	70	NE	1		619	628 10 4 90%
		Spring	AMGO	American Goldfinch	20	E	1			
		Spring	KILL	Killdeer	25	SW	1			
		Spring	NOFL	Northern Flicker	40	W	1			
		Spring	AMGO	American Goldfinch	20	W	3			
		Spring	SOSP	Song Sparrow	30	SW	1			
		Spring	BLJA	Blue Jay	40	E	1			
		Spring	AMRO	American Robin	40	N	1			
		Spring	MODO	Mourning Dove	30	NW	1			
		Spring	MODO	Mourning Dove	15	S	1			
		Spring	RBGR	Rose-breasted Grosbeak	40	E	1		712	721 9 4 95%
2-May-11	E	Spring	BLJA	Blue Jay	35	E	1			
		Spring	RBWO	Red-bellied Woodpecker	60	SW	1			
		Spring	RBWO	Red-bellied Woodpecker	100	W	1			
		Spring	HOSP	House Sparrow	50	NW	8			
		Spring	WBNU	White-breasted Nuthatch	60	NE	1			
		Spring	CHSP	Chipping Sparrow	40	S	1			
		Spring	BAOR	Baltimore Oriole	30	SE	1			
		Spring								
		Spring								
		Spring								
		Spring								
		Spring								
		Spring								
		Spring								
		Spring								
		Spring								

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Temp (C)	Wind	Cloud
2-May-11	F	Spring	NOCA	Northern Cardinal	30	NE	2						
		Spring	RHWO	Red-headed Woodpecker	40	W	2						
		Spring	AMRO	American Robin	50	NW	1						
		Spring	WOTH	Wood Thrush	45	WSW	1						
		Spring	COGR	Common Grackle	10	N	1						
		Spring	AMGO	American Goldfinch	10	NW	2		604	613	9	4	90%
		Spring	RBGR	Rose-breasted Grosbeak	15	N	1						
		Spring	BAOR	Baltimore Oriole	20	NW	1						
		Spring	MODO	Mourning Dove	60	S	1						
		Spring	AMCR	American Crow	70	SW	1						
2-May-11	G	Spring	FISP	Field Sparrow	100	SE	1						
		Spring	CHSP	Chipping Sparrow	20	W	1						
		Spring	RBGR	Rose-breasted Grosbeak	40	NW	1						
		Spring	FISP	Field Sparrow	60	NW	1						
		Spring	RWBL	Red-winged Blackbird	30	NW	1						
		Spring	ETTL	Tufted Titmouse	50	S	1		725	734	10	9	85%
		Spring	BLJA	Blue Jay	40	E	1						
		Spring	COGR	Common Grackle	40	E	2						
		Spring	AMGO	American Goldfinch	20	NW	1						
		Spring	NOCA	Northern Cardinal	100	W	1						
2-May-11	H	Spring	BCCH	Black-capped Chickadee	70	S	1						
		Spring	AMRO	American Robin	30	NW	1						
		Spring	NOCA	Northern Cardinal	40	SE	1						
		Spring	EUST	European Starling	30	SW	1		738	747	11	2	100%
		Spring	NAVA	Nashville Warbler	20	S	1						
		Spring	WIFL	Willow Flycatcher	40	W	1						
		Spring	BAOR	Baltimore Oriole	50	N	1						
		Spring	GBHE	Great Blue Heron	20	S	1						
		Spring	NOCA	Northern Cardinal	40	S	1						
		Spring	BLJA	Blue Jay	60	SW	2						
2-May-11	I	Spring	ETTL	Tufted Titmouse	60	W	1						
		Spring	WBNU	White-breasted Nuthatch	30	NW	1						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	MODO	Mourning Dove	80	S	1						
		Spring	BAOR	Baltimore Oriole	30	SW	1		805	814	11	2	95%
		Spring	NOHA	Northern Harrier	60	NW	1						
		Spring	PBNJ	Red-breasted Nuthatch	40	NW	1						
		Spring	BHCO	Brown-headed Cowbird	40	W	1						
		Spring	AMRO	American Robin	20	E	1						
		Spring	HOWR	House Wren	30	SE	1						
2-May-11	J	Spring	RBWO	Red-bellied Woodpecker	4	SW	1						
		Spring	MODO	Mourning Dove	30	N	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	NOFL	Northern Flicker	40	SW	1						
		Spring	AMCR	American Crow	60	W	1		537	546	10	9	95%
		Spring	GRCA	Gray Catbird	5	E	1						
		Spring	ETTL	Tufted Titmouse	15	NW	1						
		Spring	ETTL	Tufted Titmouse	60	W	1						
		Spring	AMRO	American Robin	5	E	1						
		Spring	ETTL	Tufted Titmouse	15	NW	1						
2-May-11	K	Spring	HOSP	House Sparrow	10	SE	3						
		Spring	BAOR	Baltimore Oriole	10	S	1						
		Spring	BLJA	Blue Jay	15	SW	2		550	559	10	6	90%
		Spring	COGR	Common Grackle	20	W	2						
		Spring	RBWO	Red-bellied Woodpecker	30	N	1						
		Spring	RWBL	Red-winged Blackbird	20	N	4						
		Spring	BHCO	Brown-headed Cowbird	15	SW	1						
		Spring	AMRO	American Robin	15	NW	1						
		Spring	ETTL	Tufted Titmouse	15	NW	1						
		Spring	AMRO	American Robin	15	SE	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Temp (C)	Wind	Cloud
4-May-11	A	Spring	AMRO	American Robin	20	S	2						
		Spring	CHSP	Chipping Sparrow	20	N	1						
		Spring	ETTL	Tufted Titmouse	5	NE	1						
		Spring	AMCR	American Crow	5	S	4						
		Spring	MYWA	Yellow-rumped Warbler	10	W	1						
		Spring	BCCH	Black-capped Chickadee	2	SW	1						
		Spring	MYWA	Yellow-rumped Warbler	20	W	2						
		Spring	RBWO	Red-bellied Woodpecker	60	SW	1						
		Spring	RWB	Red-winged Blackbird	20	SW	8						
		Spring	ETTL	Tufted Titmouse	50	NE	1						
4-May-11	B	Spring	WOTH	Wood Thrush	60	NE	1						
		Spring	REVI	Red-eyed Vireo	30	NE	1						
		Spring	AMCR	American Crow	80	S	1						
		Spring	EUST	European Starling	60	SW	12						
		Spring	PIWO	Pileated Woodpecker	20	N	1						
		Spring	BAOR	Baltimore Oriole	40	NE	1						
		Spring	HOSP	House Sparrow	10	S	1						
		Spring	NOCA	Northern Cardinal	5	S	1						
		Spring	BAOR	Baltimore Oriole	30	S	1						
		Spring	AMCR	American Crow	10	W	1						
4-May-11	C	Spring	BCCH	Black-capped Chickadee	30	S	1						
		Spring	HOLA	Horned Lark	50	NW	1						
		Spring	MODO	Mourning Dove	20	S	1						
		Spring	FISP	Field Sparrow	50	N	1						
		Spring	HOWR	House Wren	20	E	1						
		Spring	WOTH	Wood Thrush	50	SW	1						
		Spring	RBWO	Red-bellied Woodpecker	20	NE	1						
		Spring	ETTL	Tufted Titmouse	15	N	1						
		Spring	BLJA	Blue Jay	20	NW	1						
		Spring	AMRO	American Robin	5	N	1						
4-May-11	D	Spring	NOFL	Northern Flicker	5	E	2						
		Spring	CHSP	Chipping Sparrow	10	S	1						
		Spring	AMRO	American Robin	10	N	1						
		Spring	REVI	Red-eyed Vireo	30	E	1						
		Spring	AMRO	American Robin	15	S	1						
		Spring	BAOR	Baltimore Oriole	50	E	1						
		Spring	AMRO	American Robin	5	W	1						
		Spring	WTSP	White-throated Sparrow	40	W	3						
		Spring	AMRO	American Robin	30	W	1						
		Spring	SOSP	Song Sparrow	20	S	1						
4-May-11	E	Spring	AMCR	American Crow	40	NW	1						
		Spring	HOWR	House Wren	40	W	1						
		Spring	AMRO	American Robin	20	NW	1						
		Spring	HOLA	Horned Lark	20	E	2						
		Spring	KILL	Killdeer	30	NW	1						
		Spring	BHCO	Brown-headed Cowbird	20	NW	2						
		Spring	AMRO	American Robin	5	S	2						
		Spring	WBNU	White-breasted Nuthatch	5	E	1						
		Spring	BLJA	Blue Jay	20	NW	1						
		Spring	WOTH	Wood Thrush	60	S	1						
4-May-11	F	Spring	AMGO	American Goldfinch	10	W	2						
		Spring	AMCR	American Crow	100	NW	1						
		Spring	BCCH	Black-capped Chickadee	30	W	1						
		Spring	CHSP	Chipping Sparrow	30	NE	1						
		Spring	AMRO	American Robin	60	E	1						
		Spring	MODO	Mourning Dove	40	NE	1						
		Spring	BHCO	Brown-headed Cowbird	30	W	1						
		Spring	YTVI	Yellow-throated Vireo	20	W	1						
		Spring	RWB	Red-winged Blackbird	10	S	1						
		Spring	NOCA	Northern Cardinal	50	SW	1						
4-May-11	G	Spring	SOSP	Song Sparrow	60	NW	1						
		Spring	WBNU	White-breasted Nuthatch	50	W	1						
		Spring	CHSP	Chipping Sparrow	30	NE	1						
		Spring	AMRO	American Robin	30	NE	1						
		Spring	AMCR	American Crow	40	NE	1						
		Spring	BHCO	Brown-headed Cowbird	30	W	1						
		Spring	YTVI	Yellow-throated Vireo	20	W	1						
		Spring	RWB	Red-winged Blackbird	10	S	1						
		Spring	NOCA	Northern Cardinal	50	SW	1						
		Spring	SOSP	Song Sparrow	60	NW	1						
4-May-11	H	Spring	WBNU	White-breasted Nuthatch	50	W	1						
		Spring	CHSP	Chipping Sparrow	30	NE	1						
		Spring	AMRO	American Robin	60	E	1						
		Spring	MODO	Mourning Dove	40	NE	1						
		Spring	BHCO	Brown-headed Cowbird	30	W	1						
		Spring	YTVI	Yellow-throated Vireo	20	W	1						
		Spring	RWB	Red-winged Blackbird	10	S	1						
		Spring	NOCA	Northern Cardinal	50	SW	1						
		Spring	SOSP	Song Sparrow	60	NW	1						
		Spring	WBNU	White-breasted Nuthatch	50	W	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Cloud
4-May-11	I	Spring	REVI	Red-eyed Vireo	15	W	1						
		Spring	BCCH	Black-capped Chickadee	30	NE	1						
		Spring	EAKI	Eastern Kingbird	10	W	1						
		Spring	BAOR	Baltimore Oriole	20	SW	1						
		Spring	NOCA	Northern Cardinal	30	W	1						
		Spring	HOWR	House Wren	40	NE	1						
		Spring	BAOR	Baltimore Oriole	25	SW	1						
		Spring	WBNU	White-breasted Nuthatch	40	NW	1						
		Spring	SOSP	Song Sparrow	50	S	1		807	816	9	0	100%
		Spring	NOCA	Northern Cardinal	60	SW	1						
		Spring	BLJA	Blue Jay	40	S	1						
		Spring	AMCR	American Crow	70	N	4						
		Spring	GRHE	Green Heron	20	S	1						
		Spring	COGR	Common Grackle	70	N	2						
		Spring	EWPE	Eastern Wood-Pewee	80	NW	1						
		Spring	CHSP	Chipping Sparrow	50	SW	1						
4-May-11	J	Spring	WOTH	Wood Thrush	30	E	1						
		Spring	AMRO	American Robin	30	SE	1						
		Spring	WBNU	White-breasted Nuthatch	40	S	1						
		Spring	ETTI	Tufted Titmouse	55	S	1						
		Spring	WOTH	Wood Thrush	30	S	1						
		Spring	AMCR	American Crow	100	W	2		545	554	7	5	100%
		Spring	MYWA	Yellow-rumped Warbler	30	SW	1						
		Spring	HOWR	House Wren	40	SW	1						
		Spring	MODO	Mourning Dove	30	N	1						
		Spring	DOWO	Downy Woodpecker	20	W	1						
		Spring	BHCO	Brown-headed Cowbird	20	NW	1						
		Spring	AMRO	American Robin	10	E	2						
		Spring	AMRO	American Robin	30	NE	1						
		Spring	CHSP	Chipping Sparrow	20	N	1						
		Spring	RWBL	Red-winged Blackbird	10	N	2						
		Spring	COGR	Common Grackle	10	N	1						
4-May-11	K	Spring	MODO	Mourning Dove	30	NW	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	BCCH	Black-capped Chickadee	40	SW	1		559	608	7	0	100%
		Spring	AMRO	American Robin	40	NW	3						
		Spring	HOSP	House Sparrow	10	NW	6						
		Spring	SOSP	Song Sparrow	5	W	1						
		Spring	WBNU	White-breasted Nuthatch	40	NW	1						
		Spring	SOSP	Song Sparrow	10	NW	1						
		Spring	CHSP	Chipping Sparrow	25	N	1						
		Spring	MYWA	Yellow-rumped Warbler	20	W	1						
		Spring	AMRO	American Robin	25	S	1						
		Spring	AMRO	American Robin	30	NE	1						
		Spring	RBWO	Red-bellied Woodpecker	50	SW	1		709	718	17	9	95%
		Spring	AMCR	American Crow	20	W	3						
		Spring	WAVI	Warbling Vireo	10	N	1						
		Spring	INBU	Indigo Bunting	15	NE	1						
		Spring	ETTI	Tufted Titmouse	10	NE	1						
10-May-11	B	Spring	RWBL	Red-winged Blackbird	20	SW	6						
		Spring	COGR	Common Grackle	25	SW	2						
		Spring	REVI	Red-eyed Vireo	25	NE	1						
		Spring	ETTI	Tufted Titmouse	40	NE	1						
		Spring	WOTH	Wood Thrush	70	NE	1						
		Spring	AMCR	American Crow	100	S	3		655	704	17	4	100%
		Spring	EUST	European Starling	50	E	4						
		Spring	BAOR	Baltimore Oriole	30	NE	1						
		Spring	HOSP	House Sparrow	10	S	6						
		Spring	NOCA	Northern Cardinal	10	N	1						
		Spring	AMRO	American Robin	25	W	1						

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Survey Weather Conditions	
10-May-11	C	Spring	WOTH	Wood Thrush	60	SW	1							
		Spring	CHSP	Chipping Sparrow	50	E	1							
		Spring	AMRO	American Robin	30	SW	1							
		Spring	ETTL	Tufted Titmouse	25	W	1							
		Spring	BHCO	Brown-headed Cowbird	35	W	1							
		Spring	WBNU	White-breasted Nuthatch	30	W	1							
		Spring	EWPE	Eastern Wood-Pewee	40	SE	1			641	650	16	9	95%
		Spring	INBU	Indigo Bunting	30	W	1							
		Spring	AMGO	American Goldfinch	10	W	1							
		Spring	HOWR	House Wren	50	NW	1							
		Spring	AMCR	American Crow	10	WNW	3							
		Spring	HOLA	Horned Lark	60	NW	2							
10-May-11	D	Spring	MODO	Mourning Dove	25	S	2							
		Spring	SOSP	Song Sparrow	40	SE	1							
		Spring	GCFL	Great Crested Flycatcher	60	NE	1							
		Spring	BRTH	Brown Thrasher	40	N	1							
		Spring	RBWO	Red-bellied Woodpecker	100	E	1							
		Spring	EUST	European Starling	20	NE	6			628	637	16	9	90%
		Spring	EABL	Eastern Bluebird	30	S	2							
		Spring	BLJA	Blue Jay	25	NNW	1							
		Spring	RBWO	Red-bellied Woodpecker	40	E	2							
		Spring	AMRO	American Robin	30	N	1							
		Spring	WOTH	Wood Thrush	50	E	1							
		10-May-11	E	Spring	BLJA	Blue Jay	40	NE	1					
Spring	AMRO			American Robin	10	NE	1							
Spring	SOSP			Song Sparrow	20	S	1							
Spring	WOTH			Wood Thrush	50	N	1							
Spring	ETTL			Tufted Titmouse	30	SE	1							
Spring	AMGO			American Goldfinch	20	W	4							
Spring	CHSP			Chipping Sparrow	10	SW	1							
Spring	MODO			Mourning Dove	15	S	2							
Spring	MYWA			Yellow-rumped Warbler	25	W	2			723	732	17	5	95%
Spring	RBWO			Red-bellied Woodpecker	100	W	1							
Spring	NOFL			Northern Flicker	15	E	1							
Spring	HOSP			House Sparrow	40	NE	5							
10-May-11	F	Spring	AMRO	American Robin	5	NW	1							
		Spring	COGR	Common Grackle	30	W	1							
		Spring	EWPE	Eastern Wood-Pewee	40	E	1							
		Spring	KILL	Killdeer	60	NE	2							
		Spring	EUST	European Starling	5	W	1							
		Spring	AMRO	American Robin	40	NE	1							
		Spring	HOWR	House Wren	50	SE	1							
		Spring	WBNU	White-breasted Nuthatch	50	NE	1							
		Spring	AMGO	American Goldfinch	25	N	3							
		Spring	BHCO	Brown-headed Cowbird	15	N	1							
		Spring	ETTL	Tufted Titmouse	100	E	1							
		Spring	CAGO	Canada Goose	10	W	2							
10-May-11	G	Spring	AMCR	American Crow	15	SW	2							
		Spring	RBGR	Rose-breasted Grosbeak	20	N	1			614	623			
		Spring	WOTH	Wood Thrush	60	NW	1							
		Spring	SOSP	Song Sparrow	40	N	1							
		Spring	EUST	European Starling	30	N	1							
		Spring	RBWO	Red-bellied Woodpecker	30	SW	1							
		Spring	RBWO	Red-bellied Woodpecker	50	SE	1							
		Spring	INBU	Indigo Bunting	20	SE	1							
		Spring	AMGO	American Goldfinch	10	SW	4							
		Spring	AMRO	American Robin	50	S	1			738	747	18	9	100%
		Spring	WOTH	Wood Thrush	60	NW	1							
		Spring	MODO	Mourning Dove	70	N	2							
Spring	CHSP	Chipping Sparrow	25	W	1									
Spring	KILL	Killdeer	40	NW	1									
Spring	BLJA	Blue Jay	40	E	1									
Spring	AMCR	American Crow	100	NNW	3									

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
10-May-11	H	Spring	GRCA	Gray Catbird	20	W	1						
		Spring	EUST	European Starling	10	S	3						
		Spring	AMRO	American Robin	30	NE	1						
		Spring	EWPE	Eastern Wood-Pewee	15	SE	1						
		Spring	RBGR	Rose-breasted Grosbeak	10	W	1						
		Spring	BAOR	Baltimore Oriole	15	S	1						
		Spring	BRNS	Barn Swallow	5	W	1						
		Spring	BLJA	Blue Jay	15	S	1						
		Spring	NOCA	Northern Cardinal	50	SW	1						
		Spring	CHSP	Chipping Sparrow	40	E	1						
		Spring	RWBL	Red-winged Blackbird	70	NNW	2						
		Spring	MODO	Mourning Dove	50	NE	1						
		Spring	ETTI	Tufted Titmouse	50	W	1						
		Spring	NOCA	Northern Cardinal	50	S	1						
		Spring	SOSP	Song Sparrow	50	SE	1						
		Spring	MODO	Mourning Dove	90	S	2						
10-May-11	I	Spring	HOWR	House Wren	30	NE	1						
		Spring	WBNU	White-breasted Nuthatch	30	NW	1						
		Spring	EWPE	Eastern Wood-Pewee	60	NW	1						
		Spring	REVI	Red-eyed Vireo	20	W	1						
		Spring	AMCR	American Crow	50	N	5						
		Spring	BLJA	Blue Jay	20	E	1						
		Spring	BHCO	Brown-headed Cowbird	50	SW	2						
		Spring	BLJA	Blue Jay	60	SW	1						
		Spring	ETTI	Tufted Titmouse	30	S	1						
		Spring	GRCA	Gray Catbird	35	N	1						
		Spring	BHCO	Brown-headed Cowbird	15	N	2						
		Spring	GRCA	Gray Catbird	10	SE	2						
		Spring	HOWR	House Wren	50	N	1						
		Spring	NOFL	Northern Flicker	45	SW	1						
		Spring	CHSP	Chipping Sparrow	40	N	1						
		Spring	AMRO	American Robin	30	N	1						
10-May-11	J	Spring	AMGO	American Goldfinch	15	SE	2						
		Spring	RBWO	Red-bellied Woodpecker	70	SW	1						
		Spring	COGR	Common Grackle	10	N	1						
		Spring	ETTI	Tufted Titmouse	20	NW	1						
		Spring	MODO	Mourning Dove	30	N	2						
		Spring	DOWO	Downy Woodpecker	20	W	1						
		Spring	WOTH	Wood Thrush	50	NW	1						
		Spring	AMGO	American Goldfinch	20	E	2						
		Spring	RWBL	Red-winged Blackbird	70	NW	4						
		Spring	COGR	Common Grackle	90	N	3						
		Spring	HOLA	Horned Lark	30	E	1						
		Spring	MODO	Mourning Dove	30	W	2						
		Spring	HOWR	House Wren	20	SW	1						
		Spring	RWBL	Red-winged Blackbird	15	S	1						
		Spring	RWBL	Red-winged Blackbird	20	E	2						
		Spring	BAOR	Baltimore Oriole	15	S	1						
10-May-11	K	Spring	HAWO	Harry Woodpecker	15	NW	1						
		Spring	CHSP	Chipping Sparrow	15	NW	1						
		Spring	AMRO	American Robin	20	E	4						
		Spring	COGR	Common Grackle	30	E	2						
		Spring	HOSP	House Sparrow	15	NW	7						
		Spring	MODO	Mourning Dove	30	N	2						
		Spring	BLJA	Blue Jay	20	NW	1						
		Spring	RBWO	Red-bellied Woodpecker	50	NW	1						
		Spring											
		Spring											
		Spring											
		Spring											
		Spring											
		Spring											
		Spring											
		Spring											

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud	
12-May-11	A	Spring	RBWO	Red-bellied Woodpecker	50	SW	1							
		Spring	AMCR	American Crow	20	W	4							
		Spring	DOWO	Downy Woodpecker	20	NE	1							
		Spring	ETTI	Tufted Titmouse	45	NE	1							
		Spring	AMRO	American Robin	30	SE	1							
		Spring	BLJA	Blue Jay	40	SW	1							
		Spring	COGR	Common Grackle	20	E	2							
		Spring	NOFL	Northern Flicker	70	SSE	1							
		Spring	WOTH	Wood Thrush	50	SW	1							
		Spring	AMGO	American Goldfinch	30	W	3							
		Spring	RBWO	Red-bellied Woodpecker	30	SE	1							
		Spring	RBGR	Rose-breasted Grosbeak	10	NE	1							
12-May-11	B	Spring	RWBL	Red-winged Blackbird	15	W	4							
		Spring	SOSP	Song Sparrow	20	W	1							
		Spring	WEVI	White-eyed Vireo	15	NW	1							
		Spring	AMCR	American Crow	20	SE	3							
		Spring	CHSP	Chipping Sparrow	30	W	1							
		Spring	BRTH	Brown Thrasher	20	NW	1							
		Spring	NOCA	Northern Cardinal	20	W	1							
		Spring	RBGR	Rose-breasted Grosbeak	40	N	1							
		Spring	WBNU	White-breasted Nuthatch	20	N	1							
		Spring	PIWA	Pine Warbler	40	E	1							
		Spring	AMRO	American Robin	15	W	2							
		Spring	AMCR	American Crow	100	W	2							
12-May-11	C	Spring	ETTI	Tufted Titmouse	30	N	1							
		Spring	INBU	Indigo Bunting	5	W	2							
		Spring	CAGO	Canada Goose	100	NW	5							
		Spring	COGR	Common Grackle	5	N	1							
		Spring	SCTA	Scarlet Tanager	20	SW	1							
		Spring	BAOR	Baltimore Oriole	15	S	1							
		Spring	EAME	Eastern Meadowlark	40	NW	1							
		Spring	INBU	Indigo Bunting	30	W	1							
		Spring	AMGO	American Goldfinch	10	W	1							
		Spring	HOWR	House Wren	50	NW	1							
		Spring	AMCR	American Crow	70	S	2							
		Spring	WOTH	Wood Thrush	60	SW	1							
12-May-11	D	Spring	CHSP	Chipping Sparrow	50	E	1							
		Spring	COHA	Cooper's Hawk	30	SW	1							
		Spring	ETTI	Tufted Titmouse	25	W	1							
		Spring	BHCO	Brown-headed Cowbird	35	W	1							
		Spring	WBNU	White-breasted Nuthatch	30	W	1							
		Spring	EWPE	Eastern Wood-Pewee	40	SE	1							
		Spring	EABL	Eastern Bluebird	40	W	2							
		Spring	RBGR	Rose-breasted Grosbeak	30	W	1							
		Spring	BOBO	Bobolink	30	W	1							
		Spring	CHSP	Chipping Sparrow	20	W	1							
		Spring	AMRO	American Robin	40	NW	1							
		Spring	EUST	European Starling	15	NE	1							
12-May-11	E	Spring	HOWR	House Wren	50	NW	1							
		Spring	ETTI	Tufted Titmouse	40	NW	1							
		Spring	MYWA	Yellow-rumped Warbler	30	NE	1							
		Spring	RBWO	Red-bellied Woodpecker	40	E	2							
		Spring	AMRO	American Robin	30	N	1							
		Spring	OROR	Orchard Oriole	10	N	1							
		Spring	RBGR	Rose-breasted Grosbeak	40	NE	1							
		Spring	EABL	Eastern Bluebird	30	SE	1							
		Spring	BAOR	Baltimore Oriole	50	NE	1							
		Spring	FISP	Field Sparrow	70	N	1							
		Spring	CAGO	Canada Goose	60	N	6							
		Spring	SOSP	Song Sparrow	50	SE	1							
Spring	GCFL	Great Crested Flycatcher	60	NE	1									
Spring	CSWA	Chestnut-sided Warbler	15	NE	1									
12-May-11	F						741	750	17	0	100%			
							728	737	17	0	80%			
							715	724	18	0	80%			

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Cloud
12-May-11	E	Spring	CHSP	Chipping Sparrow	20	N	1						
		Spring	AMRO	American Robin	30	E	1						
		Spring	TEWA	Tennessee Warbler	25	NW	1						
		Spring	EUST	European Starling	5	W	1						
		Spring	AMRO	American Robin	40	NE	1						
		Spring	HOWR	House Wren	50	SE	1						
		Spring	GRCA	Gray Catbird	30	NE	1						
		Spring	RBWO	Red-bellied Woodpecker	70	W	1						
		Spring	SOSP	Song Sparrow	40	W	1						
		Spring	BLJA	Blue Jay	40	NW	1						
		Spring	ETIT	Tufted Titmouse	50	NW	1						
		Spring	BLJA	Blue Jay	40	N	1						
		Spring	AMRO	American Robin	5	NW	1						
		Spring	COGR	Common Grackle	30	W	1						
		Spring	EWPE	Eastern Wood-Pewee	40	E	1						
		Spring	KILL	Killdeer	60	NE	2						
		Spring	NOFL	Northern Flicker	70	SE	1						
		Spring	RHWO	Red-headed Woodpecker	15	N	1						
		Spring	HOHI	House Finch	20	W	1						
		Spring	RWBL	Red-winged Blackbird	25	NW	3						
Spring	COGR	Common Grackle	15	NW	2								
Spring	AMGO	American Goldfinch	20	W	3								
Spring	CAGO	Canada Goose	10	W	2								
Spring	AMCR	American Crow	15	SW	2								
Spring	RSHA	Red-shouldered Hawk	15	SW	1								
Spring	BHVI	Blue-headed Vireo	30	W	1								
Spring	AMGO	American Goldfinch	40	N	1								
Spring	BHCO	Brown-headed Cowbird	15	N	1								
Spring	ETIT	Tufted Titmouse	100	E	1								
Spring	SCTA	Scarlet Tanager	70	W	1								
Spring	GCFL	Great Crested Flycatcher	100	E	1								
Spring	WOTH	Wood Thrush	80	NW	1								
Spring	SOSP	Song Sparrow	50	N	1								
Spring	EUST	European Starling	30	N	1								
Spring	MODO	Mourning Dove	30	N	1								
Spring	LEFL	Least Flycatcher	30	N	1								
Spring	RBWO	Red-bellied Woodpecker	40	W	1								
Spring	AMGO	American Goldfinch	10	W	3								
Spring	AMRO	American Robin	50	S	1								
Spring	WOTH	Wood Thrush	50	NW	1								
Spring	RBWO	Red-bellied Woodpecker	50	SE	1								
Spring	INBU	Indigo Bunting	30	SE	1								
Spring	AMRE	American Redstart	15	SE	1								
Spring	TUVU	Turkey Vulture	10	E	1								
Spring	COGR	Common Grackle	20	N	1								
Spring	INBU	Indigo Bunting	30	W	1								
Spring	GCFL	Great Crested Flycatcher	60	S	1								
Spring	MODO	Mourning Dove	30	NW	1								
Spring	AMRO	American Robin	40	W	1								
Spring	RBWO	Red-bellied Woodpecker	30	W	1								
									759	808	18	0	100%
									655	704	17	0	80%
									810	819	18	0	100%

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Cloud
12-May-11	H	Spring	AMRO	American Robin	15	E	2						
		Spring	EWPE	Eastern Wood-Pewee	20	SE	1						
		Spring	AMRO	American Robin	30	NE	1						
		Spring	AMRO	American Robin	45	NW	1						
		Spring	NOCA	Northern Cardinal	50	S	1						
		Spring	RBGR	Rose-breasted Grosbeak	30	SW	1						
		Spring	ETTI	Tufted Titmouse	40	SW	1						
		Spring	COGR	Common Grackle	30	S	2						
		Spring	EUST	European Starling	40	NW	4						
		Spring	RBGR	Rose-breasted Grosbeak	10	W	1						
		Spring	BAOR	Baltimore Oriole	15	W	1						
		Spring	BRNS	Barn Swallow	5	W	1						
		Spring	GRCA	Gray Catbird	10	W	1						
		Spring	EUST	European Starling	10	S	1						
		Spring	BLJA	Blue Jay	10	S	1						
		12-May-11	I	Spring	EWPE	Eastern Wood-Pewee	40	NW	1				
Spring	REVI			Red-eyed Vireo	20	W	1						
Spring	AMCR			American Crow	50	N	3						
Spring	NOCA			Northern Cardinal	45	S	1						
Spring	BHCO			Brown-headed Cowbird	50	W	2						
Spring	BLJA			Blue Jay	30	W	1						
Spring	MODO			Mourning Dove	70	S	1						
Spring	ETTI			Tufted Titmouse	60	W	1						
Spring	HOWR			House Wren	40	NE	1						
Spring	SOSP			Song Sparrow	50	SE	1						
Spring	COGR			Common Grackle	50	N	2						
Spring	BAOR			Baltimore Oriole	20	NW	1						
Spring	CHSP			Chipping Sparrow	40	SW	1						
Spring	AMRO			American Robin	20	N	1						
Spring	AMRO			American Robin	50	SW	1						
Spring	REVI			Red-eyed Vireo	10	E	1						
Spring	RBWO	Red-bellied Woodpecker	70	NW	1								
Spring	RWBL	Red-winged Blackbird	90	N	3								
Spring	AMRO	American Robin	20	N	1								
Spring	WOTH	Wood Thrush	50	Start Time	1								
Spring	AMRO	American Robin	30	SW	1								
Spring	AMGO	American Goldfinch	15	SE	2								
Spring	RBWO	Red-bellied Woodpecker	70	SW	1								
Spring	COGR	Common Grackle	10	N	1								
Spring	ETTI	Tufted Titmouse	50	NW	1								
Spring	AMCO	American Coot	60	W	3								
Spring	RWBL	Red-winged Blackbird	20	N	2								
Spring	AMRO	American Robin	30	W	2								
Spring	HOWR	House Wren	40	N	1								
Spring	HOSP	House Sparrow	40	N	1								
Spring	CHSP	Chipping Sparrow	30	N	1								
Spring	BLJA	Blue Jay	100	NE	1								
Spring	ACFL	Acadian Flycatcher	40	SW	1								
Spring	BHCO	Brown-headed Cowbird	30	SW	1								
Spring	GRCA	Gray Catbird	15	N	1								
Spring	BHCO	Brown-headed Cowbird	15	N	2								
Spring	GRCA	Gray Catbird	10	E	2								
Spring	TEWA	Tennessee Warbler	25	SE	2								
Spring	OVEN	Ovenbird	40	W	1								
Spring	WBNU	White-breasted Nuthatch	40	S	1								
Spring	WOTH	Wood Thrush	60	WNW	1								
Spring	AMGO	American Goldfinch	10	E	5								
12-May-11	J	Spring	AMRO	American Robin	20	N	1						
		Spring	WOTH	Wood Thrush	50	Start Time	1						
		Spring	AMRO	American Robin	30	SW	1						
		Spring	AMGO	American Goldfinch	15	SE	2						
		Spring	RBWO	Red-bellied Woodpecker	70	SW	1						
		Spring	COGR	Common Grackle	10	N	1						
		Spring	ETTI	Tufted Titmouse	50	NW	1						
		Spring	AMCO	American Coot	60	W	3						
		Spring	RWBL	Red-winged Blackbird	20	N	2						
		Spring	AMRO	American Robin	30	W	2						
		Spring	HOWR	House Wren	40	N	1						
		Spring	HOSP	House Sparrow	40	N	1						
		Spring	CHSP	Chipping Sparrow	30	N	1						
		Spring	BLJA	Blue Jay	100	NE	1						
		Spring	ACFL	Acadian Flycatcher	40	SW	1						
		Spring	BHCO	Brown-headed Cowbird	30	SW	1						
Spring	GRCA	Gray Catbird	15	N	1								
Spring	BHCO	Brown-headed Cowbird	15	N	2								
Spring	GRCA	Gray Catbird	10	E	2								
Spring	TEWA	Tennessee Warbler	25	SE	2								
Spring	OVEN	Ovenbird	40	W	1								
Spring	WBNU	White-breasted Nuthatch	40	S	1								
Spring	WOTH	Wood Thrush	60	WNW	1								
Spring	AMGO	American Goldfinch	10	E	5								
Spring	AMRO	American Robin	20	N	1								
Spring	WOTH	Wood Thrush	50	Start Time	1								
Spring	AMRO	American Robin	30	SW	1								
Spring	AMGO	American Goldfinch	15	SE	2								
Spring	RBWO	Red-bellied Woodpecker	70	SW	1								
Spring	COGR	Common Grackle	10	N	1								
Spring	ETTI	Tufted Titmouse	50	NW	1								
Spring	AMCO	American Coot	60	W	3								
Spring	RWBL	Red-winged Blackbird	20	N	2								
Spring	AMRO	American Robin	30	W	2								
Spring	HOWR	House Wren	40	N	1								
Spring	HOSP	House Sparrow	40	N	1								
Spring	CHSP	Chipping Sparrow	30	N	1								
Spring	BLJA	Blue Jay	100	NE	1								
Spring	ACFL	Acadian Flycatcher	40	SW	1								
Spring	BHCO	Brown-headed Cowbird	30	SW	1								
Spring	GRCA	Gray Catbird	15	N	1								
Spring	BHCO	Brown-headed Cowbird	15	N	2								
Spring	GRCA	Gray Catbird	10	E	2								
Spring	TEWA	Tennessee Warbler	25	SE	2								
Spring	OVEN	Ovenbird	40	W	1								
Spring	WBNU	White-breasted Nuthatch	40	S	1								
Spring	WOTH	Wood Thrush	60	WNW	1								
Spring	AMGO	American Goldfinch	10	E	5								
Spring	AMRO	American Robin	20	N	1								
Spring	WOTH	Wood Thrush	50	Start Time	1								
Spring	AMRO	American Robin	30	SW	1								
Spring	AMGO	American Goldfinch	15	SE	2								
Spring	RBWO	Red-bellied Woodpecker	70	SW	1								
Spring	COGR	Common Grackle	10	N	1								
Spring	ETTI	Tufted Titmouse	50	NW	1								
Spring	AMCO	American Coot	60	W	3								
Spring	RWBL	Red-winged Blackbird	20	N	2								
Spring	AMRO	American Robin	30	W	2								
Spring	HOWR	House Wren	40	N	1								
Spring	HOSP	House Sparrow	40	N	1								
Spring	CHSP	Chipping Sparrow	30	N	1								
Spring	BLJA	Blue Jay	100	NE	1								
Spring	ACFL	Acadian Flycatcher	40	SW	1								
Spring	BHCO	Brown-headed Cowbird	30	SW	1								
Spring	GRCA	Gray Catbird	15	N	1								
Spring	BHCO	Brown-headed Cowbird	15	N	2								
Spring	GRCA	Gray Catbird	10	E	2								
Spring	TEWA	Tennessee Warbler	25	SE	2								
Spring	OVEN	Ovenbird	40	W	1								
Spring	WBNU	White-breasted Nuthatch	40	S	1								
Spring	WOTH	Wood Thrush	60	WNW	1								
Spring	AMGO	American Goldfinch	10	E	5								
Spring	AMRO	American Robin	20	N	1								
Spring	WOTH	Wood Thrush	50	Start Time	1								
Spring	AMRO	American Robin	30	SW	1								
Spring	AMGO	American Goldfinch	15	SE	2								
Spring	RBWO	Red-bellied Woodpecker	70	SW	1								
Spring	COGR	Common Grackle	10	N	1								
Spring	ETTI	Tufted Titmouse	50	NW	1								
Spring	AMCO	American Coot	60	W	3								
Spring	RWBL	Red-winged Blackbird	20	N	2								
Spring	AMRO	American Robin	30	W	2								
Spring	HOWR	House Wren	40	N	1								
Spring	HOSP	House Sparrow	40	N	1								
Spring	CHSP	Chipping Sparrow	30	N	1								
Spring	BLJA	Blue Jay	100	NE	1								
Spring	ACFL	Acadian Flycatcher	40	SW	1								
Spring	BHCO	Brown-headed Cowbird	30	SW	1								
Spring	GRCA	Gray Catbird	15	N	1								
Spring	BHCO	Brown-headed Cowbird	15	N	2								
Spring	GRCA	Gray Catbird	10	E	2								
Spring	TEWA	Tennessee Warbler	25	SE	2								
Spring	OVEN	Ovenbird	40	W	1								
Spring	WBNU	White-breasted Nuthatch	40	S	1								
Spring	WOTH	Wood Thrush	60	WNW	1								
Spring	AMGO	American Goldfinch	10	E	5								
Spring	AMRO	American Robin	20	N	1								
Spring	WOTH	Wood Thrush	50	Start Time	1								
Spring	AMRO	American Robin	30	SW	1								
Spring	AMGO	American Goldfinch	15	SE	2								
Spring	RBWO	Red-bellied Woodpecker	70	SW	1								
Spring	COGR	Common Grackle	10	N	1								
Spring	ETTI	Tufted Titmouse	50	NW	1								
Spring	AMCO	American Coot	60	W	3								
Spring	RWBL	Red-winged Blackbird	20	N	2								
Spring	AMRO	American Robin	30	W	2								
Spring	HOWR	House Wren	40	N	1								
Spring	HOSP	House Sparrow	40	N	1								
Spring	CHSP	Chipping Sparrow	30	N	1								
Spring	BLJA	Blue Jay	100	NE	1								
Spring	ACFL	Acadian Flycatcher	40	SW	1								
Spring	BHCO	Brown-headed Cowbird	30	SW	1								
Spring	GRCA	Gray Catbird	15	N	1								
Spring	BHCO	Brown-headed Cowbird	15	N	2								
Spring	GRCA	Gray Catbird	10	E	2								
Spring	TEWA												

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
12-May-11	K	Spring	AMRO	American Robin	15	SW	1						
		Spring	WAVI	Warbling Vireo	20	W	1						
		Spring	MODO	Mourning Dove	30	W	2						
		Spring	HOWR	House Wren	15	SW	1						
		Spring	RWBL	Red-winged Blackbird	15	S	1						
		Spring	NOBW	Northern Bobwhite	35	W	1	Probably Domestic					
		Spring	AMRO	American Robin	25	SW	1						
		Spring	FISP	Field Sparrow	40	NE	1						
		Spring	RPHE	Ring-necked Pheasant	25	NW	1	Probably Domestic	636	645	17	0	70%
		Spring	KILL	Killdeer	50	SE	3						
		Spring	TEWA	Tennessee Warbler	20	S	1						
		Spring	RWBL	Red-winged Blackbird	20	E	1						
		Spring	BAOR	Baltimore Oriole	15	S	1						
		Spring	HAOW	Hairy Woodpecker	5	NW	1						
		Spring	CHSP	Chipping Sparrow	15	NW	1						
15-May-11	A	Spring	EUST	European Starling	20	NW	3						
		Spring	CAGO	Canada Goose	100	NW	4						
		Spring	SOSP	Song Sparrow	20	N	1						
		Spring	WEWA	Worm-eating Warbler	30	NW	1						
		Spring	ETTI	Tufted Titmouse	40	N	1						
		Spring	NOCA	Northern Cardinal	25	NE	2						
		Spring	RHWO	Red-headed Woodpecker	20	W	2						
		Spring	COGR	Common Grackle	25	N	2						
		Spring	WOTH	Wood Thrush	40	SW	1						
		Spring	AMRO	American Robin	50	N	1						
		Spring	WBNL	White-breasted Nuthatch	60	E	1						
		Spring	AMCR	American Crow	70	SSW	8		626	635	18	2	50%
		Spring	AMGO	American Goldfinch	30	W	4						
		Spring	SCTA	Scarlet Tanager	60	SW	1						
		Spring	MYWA	Yellow-rumped Warbler	15	W	1						
		Spring	RBWO	Red-bellied Woodpecker	60	SW	1						
15-May-11	B	Spring	PBGR	Rose-breasted Grosbeak	20	N	1						
		Spring	EWPE	Eastern Wood-Pewee	15	E	1						
		Spring	RWBL	Red-winged Blackbird	20	SW	7						
		Spring	AMCR	American Crow	30	SW	4						
		Spring	WOTH	Wood Thrush	50	NE	1						
		Spring	CHSP	Chipping Sparrow	40	W	1						
		Spring	AMRO	American Robin	15	S	2						
		Spring	EUST	European Starling	20	W	2						
		Spring	BAOR	Baltimore Oriole	40	NE	1		613	622	18	2	65%
		Spring	HOLA	Horned Lark	70	NW	1						
		Spring	HOSP	House Sparrow	10	S	3						
		Spring	REVI	Red-eyed Vireo	30	NNE	1						
		Spring	BLJA	Blue Jay	50	SE	1						
		Spring	AMCR	American Crow	70	NW	2						
		Spring	TEWA	Tennessee Warbler	15	NE	2						
		Spring	HOLA	Horned Lark	60	NW	2						
15-May-11	C	Spring	BHCO	Brown-headed Cowbird	50	W	2						
		Spring	FISP	Field Sparrow	50	NW	1						
		Spring	AMRO	American Robin	30	E	1						
		Spring	AMRO	American Robin	40	SW	1						
		Spring	RBGR	Rose-breasted Grosbeak	10	S	2						
		Spring	ETTI	Tufted Titmouse	20	E	1		557	606	17	0	50%
		Spring	BCCH	Black-capped Chickadee	20	S	2						
		Spring	AMCR	American Crow	30	W	4						
		Spring	BLJA	Blue Jay	25	S	1						
		Spring	CHSP	Chipping Sparrow	25	E	1						
		Spring	BHCO	Brown-headed Cowbird	30	SE	1						
		Spring	SOSP	Song Sparrow	25	NW	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Weather Conditions
15-May-11	D	Spring	AMGO	American Goldfinch	30	E	3						
		Spring	HOWR	House Wren	20	E	1						
		Spring	AMRO	American Robin	10	N	1						
		Spring	RBWO	Red-bellied Woodpecker	20	NNE	1						
		Spring	AMRO	American Robin	70	NE	1						
		Spring	FISP	Field Sparrow	40	N	1						
		Spring	MODO	Mourning Dove	30	S	2						
		Spring	RBWO	Red-bellied Woodpecker	20	W	1						
		Spring	EABL	Eastern Bluebird	50	S	2						
		Spring	RBWO	Red-bellied Woodpecker	60	W	1						
15-May-11	E	Spring	AMRO	American Robin	30	N	1						
		Spring	CHSP	Chipping Sparrow	10	S	1						
		Spring	MODO	Mourning Dove	20	S	2						
		Spring	RBWO	Red-bellied Woodpecker	60	SW	1						
		Spring	NOFL	Northern Flicker	50	W	1						
		Spring	RBGR	Rose-breasted Grosbeak	30	E	1						
		Spring	BLJA	Blue Jay	15	SW	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	AMRO	American Robin	40	SW	1						
		Spring	BAOR	Baltimore Oriole	40	E	1						
15-May-11	F	Spring	REVI	Red-eyed Vireo	30	E	1						
		Spring	RBWO	Red-bellied Woodpecker	100	W	1						
		Spring	MODO	Mourning Dove	40	W	1						
		Spring	WOTH	Wood Thrush	50	W	1						
		Spring	BRTH	Brown Thrasher	40	N	1						
		Spring	NOCA	Northern Cardinal	40	NE	1						
		Spring	AMRO	American Robin	40	NW	1						
		Spring	WOTH	Wood Thrush	50	SW	1						
		Spring	HOLA	Horned Lark	30	E	2						
		Spring	HOWR	House Wren	40	W	1						
15-May-11	G	Spring	RBGR	Rose-breasted Grosbeak	20	NW	1						
		Spring	MODO	Mourning Dove	20	S	3						
		Spring	AMCR	American Crow	80	E	8						
		Spring	FISP	Field Sparrow	60	SW	1						
		Spring	COGR	Common Grackle	10	S	8						
		Spring	FISP	Field Sparrow	80	SE	1						
		Spring	TUVU	Turkey Vulture	15	E	1						
		Spring	COGR	Common Grackle	20	N	1						
		Spring	INBU	Indigo Bunting	40	W	1						
		Spring	GCFL	Great Crested Flycatcher	60	S	1						
15-May-11	G	Spring	MODO	Mourning Dove	30	N	1						
		Spring	AMRO	American Robin	40	W	1						
		Spring	RBWO	Red-bellied Woodpecker	20	W	1						
		Spring	CHSP	Chipping Sparrow	25	W	1						
		Spring	KILL	Killdeer	40	NW	1						
		Spring	BLJA	Blue Jay	70	E	1						
		Spring	AMCR	American Crow	100	W	4						
		Spring	AMGO	American Goldfinch	10	W	3						
		Spring	INBU	Indigo Bunting	30	SE	1						
		Spring	AMGO	American Goldfinch	10	SW	2						
15-May-11	G	Spring	AMRO	American Robin	50	S	1						
		Spring	WOTH	Wood Thrush	50	NW	1						
		Spring	MODO	Mourning Dove	70	N	2						
		Spring	CHSP	Chipping Sparrow	15	W	1						
		Spring	KILL	Killdeer	40	NW	1						
		Spring	BLJA	Blue Jay	20	E	1						
		Spring	AMGO	American Goldfinch	10	W	3						
		Spring	INBU	Indigo Bunting	30	SE	1						
		Spring	AMGO	American Goldfinch	10	SW	2						
		Spring	AMRO	American Robin	50	S	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
15-May-11	H	Spring	EWPE	Eastern Wood-Pewee	20	E	1						
		Spring	AMRO	American Robin	30	E	1						
		Spring	EUST	European Starling	30	SW	1						
		Spring	PBGR	Rose-breasted Grosbeak	40	W	1						
		Spring	MODO	Mourning Dove	40	NE	1						
		Spring	RWBL	Red-winged Blackbird	60	NNW	4						
		Spring	COGR	Common Grackle	50	NW	2						
		Spring	NOCA	Northern Cardinal	15	SE	1						
		Spring	BAOR	Baltimore Oriole	30	SW	1						
		Spring	GRCA	Gray Catbird	30	SW	1						
		Spring	SOSP	Song Sparrow	60	S	1						
		Spring	ETTI	Tufted Titmouse	40	W	1						
		Spring	NOCA	Northern Cardinal	30	W	1						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	MODO	Mourning Dove	80	S	2						
15-May-11	I	Spring	BHCO	Brown-headed Cowbird	50	W	1						
		Spring	COGR	Common Grackle	50	N	2						
		Spring	EWPE	Eastern Wood-Pewee	50	N	1						
		Spring	CHSP	Chipping Sparrow	50	SW	1						
		Spring	BLJA	Blue Jay	50	SW	1						
		Spring	RBWO	Red-bellied Woodpecker	70	NW	1						
		Spring	ETTI	Tufted Titmouse	60	W	1						
		Spring	BAOR	Baltimore Oriole	30	SSW	1						
		Spring	NOCA	Northern Cardinal	50	S	1						
		Spring	HOWR	House Wren	30	NE	1						
		Spring	SOSP	Song Sparrow	40	S	1						
		Spring	COGR	Common Grackle	25	S	3						
		Spring	ETTI	Tufted Titmouse	15	NW	1						
		Spring	AMRO	American Robin	20	NE	1						
		Spring	WOTH	Wood Thrush	30	S	1						
15-May-11	J	Spring	MODO	Mourning Dove	30	N	2						
		Spring	ETTI	Tufted Titmouse	60	S	1						
		Spring	AMCR	American Crow	80	W	2						
		Spring	DOWO	Downy Woodpecker	10	W	1						
		Spring	BHCO	Brown-headed Cowbird	20	S	2						
		Spring	NOFL	Northern Flicker	40	SW	1						
		Spring	RBWO	Red-bellied Woodpecker	10	SW	1						
		Spring	AMRO	American Robin	50	N	1						
		Spring	AMRO	American Robin	10	E	2						
		Spring	BAOR	Baltimore Oriole	20	S	1						
		Spring	COGR	Common Grackle	30	W	2						
		Spring	BHCO	Brown-headed Cowbird	15	SSW	1						
		Spring	RWBL	Red-winged Blackbird	20	N	5						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	CHSP	Chipping Sparrow	20	N	1						
15-May-11	K	Spring	RBWO	Red-bellied Woodpecker	40	NW	1						
		Spring	BLJA	Blue Jay	30	SW	1						
		Spring	HOSP	House Sparrow	20	NW	9						
		Spring	BCCH	Black-capped Chickadee	10	W	1						
		Spring	CAGO	Canada Goose	30	NW	3						
		Spring	AMCR	American Crow	30	S	3						
		Spring	SOSP	Song Sparrow	40	NW	1						
		Spring	AMRO	American Robin	10	W	1						
		Spring	SAVS	Savannah Sparrow	50	W	1						
		Spring	ETTI	Tufted Titmouse	40	E	1						
		Spring	BHCO	Brown-headed Cowbird	40	SE	1						
		Spring	AMRO	American Robin	40	E	1						
		Spring	BAOR	Baltimore Oriole	70	WNW	1						
		Spring	AMRO	American Robin	30	NW	3						
		Spring	SOSP	Song Sparrow	40	NW	1						
16-May-11	A	Spring	AMRO	American Robin	10	W	1						
		Spring	SAVS	Savannah Sparrow	50	W	1						
		Spring	ETTI	Tufted Titmouse	40	E	1						
		Spring	BHCO	Brown-headed Cowbird	40	SE	1						
		Spring	AMRO	American Robin	40	E	1						
		Spring	BAOR	Baltimore Oriole	70	WNW	1						
		Spring	AMRO	American Robin	30	NW	3						
		Spring	AMCR	American Crow	30	S	3						
		Spring	SOSP	Song Sparrow	40	NW	1						
		Spring	AMRO	American Robin	10	W	1						
		Spring	SAVS	Savannah Sparrow	50	W	1						
		Spring	ETTI	Tufted Titmouse	40	E	1						
		Spring	BHCO	Brown-headed Cowbird	40	SE	1						
		Spring	AMRO	American Robin	40	E	1						
		Spring	BAOR	Baltimore Oriole	70	WNW	1						
		Spring	AMRO	American Robin	30	NW	3						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Temp (C)	Wind	Cloud
16-May-11	B	Spring	RWBL	Red-winged Blackbird	10	SW	3						
		Spring	INBU	Indigo Bunting	20	W	1						
		Spring	WAVI	Warbling Vireo	15	W	1						
		Spring	AMCR	American Crow	40	ESE	1						
		Spring	EUST	European Starling	20	W	1						
		Spring	SOSP	Song Sparrow	40	W	1						
		Spring	HOHI	House Finch	10	W	1						
		Spring	BHCO	Brown-headed Cowbird	40	NW	1						
		Spring	BAOR	Baltimore Oriole	20	NW	1						
		Spring	TEWA	Tennessee Warbler	20	S	1						
16-May-11	C	Spring	RWBL	Red-winged Blackbird	60	NW	1						
		Spring	MALL	Mallard	20	W	3						
		Spring	RTHA	Red-tailed Hawk	50	NW	1						
		Spring	CHSP	Chipping Sparrow	30	E	1						
		Spring	AMRO	American Robin	20	E	1						
		Spring	GCFL	Great Crested Flycatcher	30	S	1						
		Spring	ETTI	Tufted Titmouse	30	E	1						
		Spring	FISP	Field Sparrow	60	NW	1						
		Spring	BHCO	Brown-headed Cowbird	90	NW	1						
		Spring	BLJA	Blue Jay	30	SW	1						
16-May-11	D	Spring	SOSP	Song Sparrow	10	NW	1						
		Spring	AMRO	American Robin	60	SW	1						
		Spring	RBGR	Rose-breasted Grosbeak	50	W	1						
		Spring	RBWO	Red-bellied Woodpecker	70	W	1						
		Spring	BAOR	Baltimore Oriole	30	W	1						
		Spring	WBNU	White-breasted Nuthatch	40	E	1						
		Spring	SOSP	Song Sparrow	5	S	1						
		Spring	EABL	Eastern Bluebird	20	S	1						
		Spring	HOSP	House Sparrow	20	NW	6						
		Spring	WOTH	Wood Thrush	60	E	1						
16-May-11	E	Spring	BLJA	Blue Jay	40	E	1						
		Spring	BAOR	Baltimore Oriole	50	S	2						
		Spring	RBNU	Red-breasted Nuthatch	20	E	1						
		Spring	CHSP	Chipping Sparrow	30	W	1						
		Spring	AMGO	American Goldfinch	10	NW	2						
		Spring	AMRO	American Robin	35	E	1						
		Spring	HOWR	House Wren	40	NE	1						
		Spring	SOSP	Song Sparrow	60	NW	1						
		Spring	BLJA	Blue Jay	20	E	1						
		Spring	AMRO	American Robin	60	S	1						
16-May-11	F	Spring	BLJA	Blue Jay	20	E	1						
		Spring	AMCR	American Crow	20	N	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	TEWA	Tennessee Warbler	5	W	1						
		Spring	AMRE	American Redstart	5	W	1						
		Spring	AMCR	American Crow	15	SW	2						
		Spring	RBGR	Rose-breasted Grosbeak	20	N	1						
		Spring	WOTH	Wood Thrush	60	NW	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	FISP	Field Sparrow	60	SW	1						
16-May-11	G	Spring	COGR	Common Grackle	30	NE	1						
		Spring	AMRO	American Robin	100	N	1						
		Spring	ETTI	Tufted Titmouse	50	S	1						
		Spring	AMCR	American Crow	60	W	3						
		Spring	AMGO	American Goldfinch	25	S	2						
		Spring	INBU	Indigo Bunting	60	N	1						
		Spring	BLJA	Blue Jay	50	E	1						
		Spring	GCFL	Great Crested Flycatcher	40	S	1						
		Spring	AMRO	American Robin	20	SE	1						
		Spring	CHSP	Chipping Sparrow	20	W	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Weather Conditions
16-May-11	H	Spring	OVEN	Ovenbird	50	W	1						
		Spring	AMCR	American Crow	80	S	1						
		Spring	AMRO	American Robin	30	E	1		623	632	4	7	100%
		Spring	PBGR	Rose-breasted Grosbeak	40	SW	1						
		Spring	RWBL	Red-winged Blackbird	60	NNW	1						
16-May-11	I	Spring	AMRO	American Robin	30	E	1						
		Spring	AMRO	American Robin	50	NE	2						
		Spring	EATO	Eastern Towhee	40	S	1						
		Spring	AMCR	American Crow	30	W	1						
		Spring	AMCR	American Crow	40	E	1		610	619	4	9	100%
16-May-11	J	Spring	ACFL	Acadian Flycatcher	50	WSW	1						
		Spring	COGR	Common Grackle	30	SW	2						
		Spring	BAOR	Baltimore Oriole	40	S	1						
		Spring	AMRO	American Robin	20	N	1						
		Spring	MOOD	Mourning Dove	40	N	1						
16-May-11	K	Spring	PBWO	Red-bellied Woodpecker	25	SW	1		555	604	15	9	100%
		Spring	AMRO	American Robin	40	NW	1						
		Spring	WOTH	Wood Thrush	40	SW	1						
		Spring	INBU	Indigo Bunting	25	N	1						
		Spring	AMRO	American Robin	20	W	1						
22-May-11	A	Spring	AMRO	American Robin	30	NW	1		808	817			75%
		Spring	HOSP	House Sparrow	20	N	4						
		Spring	CHSW	Chimney Swift	15	SE	1						
		Spring	AMRO	American Robin	10	E	1						
		Spring	COGR	Common Grackle	20	E	2						
22-May-11	B	Spring	AMCR	American Crow	60	SW	3						
		Spring	PBGR	Rose-breasted Grosbeak	25	NE	1						
		Spring	EWPE	Eastern Wood-Pewee	20	ESE	1						
		Spring	AMGO	American Goldfinch	30	WSW	3						
		Spring	RHWO	Red-headed Woodpecker	10	W	1		529	538	13	2	100%
22-May-11	C	Spring	NOFL	Northern Flicker	60	SW	1						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	CHSP	Chipping Sparrow	50	N	1						
		Spring	AMRO	American Robin	40	E	1						
		Spring	SOSP	Song Sparrow	40	NW	1						
22-May-11	C	Spring	BHCO	Brown-headed Cowbird	40	SSE	1						
		Spring	HOLA	Horned Lark	60	NW	1						
		Spring	BLJA	Blue Jay	50	SE	1						
		Spring	RWBL	Red-winged Blackbird	10	SE	2						
		Spring	SOSP	Song Sparrow	40	W	1						
22-May-11	C	Spring	INBU	Indigo Bunting	20	NW	1						
		Spring	ETTI	Tufted Titmouse	40	NE	1		639	648	13	0	100%
		Spring	BAOR	Baltimore Oriole	50	NE	1						
		Spring	WOTH	Wood Thrush	60	NE	1						
		Spring	BLJA	Blue Jay	45	W	1						
22-May-11	C	Spring	NOCA	Northern Cardinal	30	NE	1						
		Spring	AMRO	American Robin	70	W	1						
		Spring	PBGR	Rose-breasted Grosbeak	10	S	1						
		Spring	AMCR	American Crow	30	SW	4						
		Spring	SOSP	Song Sparrow	25	NW	1						
22-May-11	C	Spring	AMRO	American Robin	30	E	1						
		Spring	BLJA	Blue Jay	30	SSW	1		626	635	12	2	100%
		Spring	BHCO	Brown-headed Cowbird	70	NW	1						
		Spring	ETTI	Tufted Titmouse	20	W	1						
		Spring	AMRO	American Robin	50	NW	1						
22-May-11	C	Spring	FISP	Field Sparrow	60	NW	1						
		Spring	RWBL	Red-winged Blackbird	40	NW	3						
		Spring											
		Spring											
		Spring											

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
22-May-11	D	Spring	RBWO	Red-bellied Woodpecker	30	NNE	1						
		Spring	AMRO	American Robin	80	NE	1						
		Spring	FISP	Field Sparrow	30	N	1						
		Spring	MODO	Mourning Dove	30	S	2						
		Spring	RBWO	Red-bellied Woodpecker	20	W	1						
		Spring	BLJA	Blue Jay	40	N	1						
		Spring	RWBL	Red-winged Blackbird	30	S	2						
		Spring	RBWO	Red-bellied Woodpecker	20	W	1						
		Spring	EABL	Eastern Bluebird	50	S	2						
		Spring	SOSP	Song Sparrow	60	W	1						
		Spring	WOTH	Wood Thrush	60	SW	1						
		Spring	KILL	Killdeer	30	SE	1						
		Spring	CHSP	Chipping Sparrow	20	S	1						
		Spring	RBWO	Red-bellied Woodpecker	50	SW	1						
		Spring	RBGR	Rose-breasted Grosbeak	40	E	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
22-May-11	E	Spring	BAOR	Baltimore Oriole	30	E	1						
		Spring	RBWO	Red-bellied Woodpecker	90	W	1						
		Spring	WOTH	Wood Thrush	40	W	1						
		Spring	NOFL	Northern Flicker	15	SE	1						
		Spring	AMRO	American Robin	20	N	1						
		Spring	AMRO	American Robin	15	S	1						
		Spring	AMRO	American Robin	40	NW	1						
		Spring	BLJA	Blue Jay	40	E	1						
		Spring	MODO	Mourning Dove	30	NW	1						
		Spring	HOSP	House Sparrow	40	NW	6						
		Spring	CHSP	Chipping Sparrow	30	SE	1						
		Spring	AMGO	American Goldfinch	10	NW	4						
		Spring	HOWR	House Wren	50	NE	1						
		Spring	BLJA	Blue Jay	20	E	1						
		Spring	NOCA	Northern Cardinal	50	NE	1						
		Spring	WOTH	Wood Thrush	50	SW	1						
22-May-11	F	Spring	HOWR	House Wren	30	W	1						
		Spring	MODO	Mourning Dove	25	S	2						
		Spring	FISP	Field Sparrow	70	SW	1						
		Spring	AMCR	American Crow	30	NE	3						
		Spring	AMRE	American Redstart	20	W	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	SOSP	Song Sparrow	30	S	1						
		Spring	AMRO	American Robin	20	NW	1						
		Spring	HOLA	Horned Lark	30	E	1						
		Spring	RBGR	Rose-breasted Grosbeak	20	N	1						
		Spring	COSR	Common Grackle	30	NW	3						
		Spring	INBU	Indigo Bunting	40	W	1						
		Spring	MODO	Mourning Dove	40	NW	2						
		Spring	CHSP	Chipping Sparrow	25	W	1						
		Spring	KILL	Killdeer	50	NW	1						
		Spring	BLJA	Blue Jay	50	E	1						
22-May-11	G	Spring	AMCR	American Crow	90	W	5						
		Spring	WOTH	Wood Thrush	50	NW	1						
		Spring	RBWO	Red-bellied Woodpecker	40	SE	1						
		Spring	MODO	Mourning Dove	80	NW	1						
		Spring	INBU	Indigo Bunting	30	SE	1						
		Spring	GCFL	Great Crested Flycatcher	30	SW	1						
		Spring			30		1						
		Spring											
		Spring											
		Spring											

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
22-May-11	H	Spring	AMRO	American Robin	30	E	1						
		Spring	RBGR	Rose-breasted Grosbeak	50	W	1						
		Spring	RWBL	Red-winged Blackbird	60	NW	1						
		Spring	COGR	Common Grackle	40	NW	2						
		Spring	NOCA	Northern Cardinal	20	SE	1						
		Spring	BAOR	Baltimore Oriole	30	W	1						
		Spring	GRCA	Gray Catbird	40	SW	1						
		Spring	ETTI	Tufted Titmouse	40	W	1						
		Spring	CHSP	Chipping Sparrow	30	NE	1						
		Spring	BHCO	Brown-headed Cowbird	40	W	2						
		Spring	SOSP	Song Sparrow	50	W	1						
		Spring	BCCH	Black-capped Chickadee	50	S	1						
		Spring	AMCR	American Crow	90	S	3						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	BHCO	Brown-headed Cowbird	50	W	2						
		Spring	EWPE	Eastern Wood-Pewee	40	N	1						
22-May-11	I	Spring	BLJA	Blue Jay	50	SW	1						
		Spring	ETTI	Tufted Titmouse	40	W	1						
		Spring	NOCA	Northern Cardinal	40	W	1						
		Spring	SOSP	Song Sparrow	30	S	1						
		Spring	REVI	Red-eyed Vireo	20	W	1						
		Spring	BAOR	Baltimore Oriole	20	SW	1						
		Spring	HOWR	House Wren	50	NE	1						
		Spring	NOCA	Northern Cardinal	60	NW	1						
		Spring	AMCR	American Crow	80	N	5						
		Spring	COGR	Common Grackle	50	NW	3						
		Spring	CHSP	Chipping Sparrow	50	SW	1						
		Spring	AMRO	American Robin	20	N	1						
		Spring	WBNU	White-breasted Nuthatch	20	NW	1						
		Spring	MODO	Mourning Dove	90	S	1						
		Spring	AMRO	American Robin	30	SE	1						
		Spring	ETTI	Tufted Titmouse	50	S	1						
22-May-11	J	Spring	AMCR	American Crow	90	W	4						
		Spring	HOWR	House Wren	40	SW	1						
		Spring	MODO	Mourning Dove	30	N	1						
		Spring	DOWO	Downy Woodpecker	30	W	1						
		Spring	BHCO	Brown-headed Cowbird	20	NW	1						
		Spring	RBWO	Red-bellied Woodpecker	10	SW	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	NOFL	Northern Flicker	40	SW	1						
		Spring	ETTI	Tufted Titmouse	15	NW	1						
		Spring	WOTH	Wood Thrush	40	SW	1						
		Spring	INBU	Indigo Bunting	30	N	1						
		Spring	MODO	Mourning Dove	50	S	1						
		Spring	NOFL	Northern Flicker	30	SW	1						
		Spring	AMRO	American Robin	10	E	1						
		Spring	BAOR	Baltimore Oriole	20	S	1						
		Spring	COGR	Common Grackle	20	W	4						
22-May-11	K	Spring	RWBL	Red-winged Blackbird	30	N	2						
		Spring	BHCO	Brown-headed Cowbird	20	SW	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	BLJA	Blue Jay	40	SW	1						
		Spring	BCCH	Black-capped Chickadee	20	W	1						
		Spring	AMRO	American Robin	30	NE	1						
		Spring	CHSP	Chipping Sparrow	20	N	1						
		Spring	MODO	Mourning Dove	40	NW	1						
		Spring	HOSP	House Sparrow	10	NW	4						
		Spring	SOSP	Song Sparrow	5	N	1						
		Spring	RBWO	Red-bellied Woodpecker	40	NW	1						
		Spring	WAVI	Warbling Vireo	25	N	1						
		Spring											
		Spring											
		Spring											
		Spring											
		Spring											

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
23-May-11	A	Spring	NOC	Northern Cardinal	25	NE	2						
		Spring	RHWO	Red-headed Woodpecker	20		2						
		Spring	COGR	Common Grackle	25	N	2						
		Spring	RBGR	Rose-breasted Grosbeak	25	NE	1						
		Spring	EWPE	Eastern Wood-Pewee	20	ESE	1						
		Spring	AMGO	American Goldfinch	30	WSW	3						
		Spring	RHWO	Red-headed Woodpecker	10	W	1						
		Spring	NOFL	Northern Flicker	60	SW	1						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	EWPE	Eastern Wood-Pewee	15	E	1		533	542	17	9	75%
		Spring	RBWO	Red-bellied Woodpecker	50	SW	1						
		Spring	AMCR	American Crow	20	W	4						
		Spring	BHCO	Brown-headed Cowbird	40	SSE	1						
		Spring	WOTH	Wood Thrush	50	SW	1						
		Spring	WOTH	Wood Thrush	40	SW	1						
23-May-11	B	Spring	AMRO	American Robin	50	N	1						
		Spring	WBNU	White-breasted Nuthatch	60	E	1						
		Spring	AMCR	American Crow	70	SSW	6						
		Spring	AMGO	American Goldfinch	30	W	2						
		Spring	RWBL	Red-winged Blackbird	20	SW	7						
		Spring	AMCR	American Crow	30	SW	4						
		Spring	WOTH	Wood Thrush	50	NE	1						
		Spring	CHSP	Chipping Sparrow	40	W	1						
		Spring	AMRO	American Robin	15	S	2						
		Spring	EUST	European Starling	20	W	2						
		Spring	BAOR	Baltimore Oriole	40	NE	1						
		Spring	HOLA	Horned Lark	70	NW	1						
		Spring	HOSP	House Sparrow	10	S	3						
		Spring	REVI	Red-eyed Vireo	30	NNE	1		644	653	17	0	85%
		Spring	BLJA	Blue Jay	50	SE	1						
23-May-11	C	Spring	AMCR	American Crow	70	NW	2						
		Spring	BLJA	Blue Jay	45	W	1						
		Spring	NOC	Northern Cardinal	30	NE	1						
		Spring	AMRO	American Robin	70	W	1						
		Spring	INBU	Indigo Bunting	10	SE	1						
		Spring	SOSP	Song Sparrow	40	W	1						
		Spring	INBU	Indigo Bunting	20	NW	1						
		Spring	BHCO	Brown-headed Cowbird	40	W	1						
		Spring	AMRO	American Robin	30	SW	1						
		Spring	RBGR	Rose-breasted Grosbeak	20	S	1						
		Spring	BLJA	Blue Jay	30	S	1						
		Spring	SOSP	Song Sparrow	30	NW	1		632	641	17	9	80%
		Spring	AMRO	American Robin	20	E	1						
		Spring	ETTI	Tufted Titmouse	20	E	1						
		Spring	CHSP	Chipping Sparrow	30	E	1						
		Spring	RBWO	Red-bellied Woodpecker	60	WNNW	1						
23-May-11	D	Spring	AMGO	American Goldfinch	30	E	1						
		Spring	AMRO	American Robin	20	N	1						
		Spring	FISP	Field Sparrow	40	N	1						
		Spring	EABL	Eastern Bluebird	40	S	1						
		Spring	RBWO	Red-bellied Woodpecker	50	W	1						
		Spring	BAOR	Baltimore Oriole	20	W	1		619	628	15	5	90%
		Spring	SOSP	Song Sparrow	10	S	1						
		Spring	MODO	Mourning Dove	30	S	2						
		Spring	AMRO	American Robin	50	SW	1						
		Spring	KILL	Killdeer	40	SW	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Survey Cloud
23-May-11	E	Spring	CHSP	Chipping Sparrow	15	S	1						
		Spring	RBWO	Red-bellied Woodpecker	50	SW	1						
		Spring	RBGR	Rose-breasted Grosbeak	30	E	1						
		Spring	AMRO	American Robin	40	SW	1						
		Spring	REVI	Red-eyed Vireo	30	E	1						
		Spring	MODO	Mourning Dove	40	W	2						
		Spring	WOTH	Wood Thrush	60	W	1						
		Spring	NOFL	Northern Flicker	10	E	1		711	720	16	9	75%
		Spring	AMRO	American Robin	15	S	1						
		Spring	AMGO	American Goldfinch	20	W	1						
		Spring	MODO	Mourning Dove	50	S	1						
23-May-11	F	Spring	BLJA	Blue Jay	40	E	1						
		Spring	HOWR	House Wren	40	NE	1						
		Spring	HOSP	House Sparrow	20	NW	5						
		Spring	BRTH	Brown Thrasher	40	N	1						
		Spring	AMRO	American Robin	40	NW	1						
		Spring	HOLA	Horned Lark	50	E	2						
		Spring	RBGR	Rose-breasted Grosbeak	20	NW	1						
		Spring	MODO	Mourning Dove	30	S	1						
		Spring	FISP	Field Sparrow	60	SW	1						
		Spring	AMCR	American Crow	40	N	3		605	614	17	9	80%
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	AMCR	American Crow	15	SW	1						
23-May-11	G	Spring	WOTH	Wood Thrush	50	NW	1						
		Spring	HOWR	House Wren	40	W	1						
		Spring	HOLA	Horned Lark	70	SE	1						
		Spring	NOCA	Northern Cardinal	50	N	1						
		Spring	INBU	Indigo Bunting	40	W	1						
		Spring	MODO	Mourning Dove	30	N	1						
		Spring	RBWO	Red-bellied Woodpecker	30	W	1						
		Spring	KILL	Killdeer	50	NW	1						
		Spring	AMCR	American Crow	90	W	5						
		Spring	MODO	Mourning Dove	60	N	2						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	AMRO	American Robin	60	S	1		726	735	16	9	75%
23-May-11	H	Spring	WOTH	Wood Thrush	50	NW	1						
		Spring	CHSP	Chipping Sparrow	30	W	1						
		Spring	WOTH	Wood Thrush	50	NW	1						
		Spring	TUVU	Turkey Vulture	100	S	3						
		Spring	GCFL	Great Crested Flycatcher	40	S	1						
		Spring	ETTI	Tufted Titmouse	50	S	1						
		Spring	AMRO	American Robin	30	E	1						
		Spring	RBGR	Rose-breasted Grosbeak	40	W	1						
		Spring	MODO	Mourning Dove	30	NE	1						
		Spring	RWBL	Red-winged Blackbird	50	NW	3						
		Spring	BAOR	Baltimore Oriole	40	SW	1						
		Spring	ETTI	Tufted Titmouse	50	W	1						
23-May-11	H	Spring	EWPE	Eastern Wood-Pewee	30	E	1						
		Spring	EUST	European Starling	20	SW	3						
		Spring	RWBL	Red-winged Blackbird	60	NW	1						
		Spring	SOSP	Song Sparrow	50	S	1						
		Spring	NOCA	Northern Cardinal	30	SW	1						
		Spring	WIFL	Willow Flycatcher	50	W	1						
		Spring	AMRO	American Robin	60	W	1						
		Spring											
		Spring											
		Spring											
		Spring											
		Spring											

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Temp (C)	Wind	Cloud	
23-May-11	I	Spring	BLJA	Blue Jay	30	NE	1							
		Spring	MODO	Mourning Dove	70	S	1							
		Spring	COGR	Common Grackle	40	NE	2							
		Spring	CHSP	Chipping Sparrow	50	SW	1							
		Spring	ETTI	Tufted Titmouse	50	W	1							
		Spring	BAOR	Baltimore Oriole	30	SW	1			755	804	17	5	90%
		Spring	HOWR	House Wren	40	NE	1							
		Spring	COGR	Common Grackle	20	S	1							
		Spring	BCCH	Black-capped Chickadee	30	NE	1							
		Spring	EWPE	Eastern Wood-Pewee	40	NW	1							
		Spring	AMCR	American Crow	60	N	1							
		Spring	NOCA	Northern Cardinal	40	S	1							
23-May-11	J	Spring	AMRO	American Robin	30	SE	1							
		Spring	ETTI	Tufted Titmouse	50	S	1							
		Spring	WOTH	Wood Thrush	40	S	1							
		Spring	HOWR	House Wren	50	SW	1							
		Spring	BHCO	Brown-headed Cowbird	20	NW	1							
		Spring	RBWO	Red-bellied Woodpecker	10	SW	1							
		Spring	GRCA	Gray Catbird	10	NW	1							
		Spring	ETTI	Tufted Titmouse	15	NW	1							
		Spring	MODO	Mourning Dove	30	N	1							
		Spring	INBU	Indigo Bunting	20	N	1							
		Spring	RWBL	Red-winged Blackbird	40	SE	1							
		Spring	AMCR	American Crow	90	W	6							
23-May-11	K	Spring	ETTI	Tufted Titmouse	20	NW	1							
		Spring	HOSP	House Sparrow	10	SE	4							
		Spring	BLJA	Blue Jay	20	SW	1							
		Spring	RBWO	Red-bellied Woodpecker	40	NW	1							
		Spring	BHCO	Brown-headed Cowbird	20	SW	1							
		Spring	AMRO	American Robin	10	E	1							
		Spring	CHSP	Chipping Sparrow	20	NW	1							
		Spring	MODO	Mourning Dove	40	NW	2							
		Spring	HOSP	House Sparrow	20	NW	5							
		Spring	SOSP	Song Sparrow	10	N	1							
		Spring	AMRO	American Robin	30	NW	1							
		Spring	CHSW	Chimney Swift	20	SW	2							
Spring	COGR	Common Grackle	30	W	4									
Spring	BLJA	Blue Jay	40	NW	2									
Spring	BAOR	Baltimore Oriole	20	S	1									
29-May-11	A	Spring	WOTH	Wood Thrush	40	SW	1							
		Spring	AMRO	American Robin	50	N	1							
		Spring	WBNU	White-breasted Nuthatch	60	E	1							
		Spring	AMCR	American Crow	70	SSW	8							
		Spring	NOCA	Northern Cardinal	40	SE	1							
		Spring	AMGO	American Goldfinch	30	WSW	3							
		Spring	RHWO	Red-headed Woodpecker	10	W	1							
		Spring	NOFL	Northern Flicker	60	SW	1							
		Spring	BLJA	Blue Jay	40	W	1							
		Spring	CHSP	Chipping Sparrow	50	N	1							
		Spring	AMRO	American Robin	40	E	1							
		Spring	SOSP	Song Sparrow	40	NW	1							
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	WOTH	Wood Thrush	40	W	1									
Spring	CHSP	Chipping Sparrow	50	N	1									
Spring	AMRO	American Robin	40	E	1									
Spring	SOSP	Song Sparrow	40	NW	1									
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	WOTH	Wood Thrush	40	W	1									
Spring	CHSP	Chipping Sparrow	50	N	1									
Spring	AMRO	American Robin	40	E	1									
Spring	SOSP	Song Sparrow	40	NW	1									
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	WOTH	Wood Thrush	40	W	1									
Spring	CHSP	Chipping Sparrow	50	N	1									
Spring	AMRO	American Robin	40	E	1									
Spring	SOSP	Song Sparrow	40	NW	1									
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	WOTH	Wood Thrush	40	W	1									
Spring	CHSP	Chipping Sparrow	50	N	1									
Spring	AMRO	American Robin	40	E	1									
Spring	SOSP	Song Sparrow	40	NW	1									
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	WOTH	Wood Thrush	40	W	1									
Spring	CHSP	Chipping Sparrow	50	N	1									
Spring	AMRO	American Robin	40	E	1									
Spring	SOSP	Song Sparrow	40	NW	1									
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	WOTH	Wood Thrush	40	W	1									
Spring	CHSP	Chipping Sparrow	50	N	1									
Spring	AMRO	American Robin	40	E	1									
Spring	SOSP	Song Sparrow	40	NW	1									
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	WOTH	Wood Thrush	40	W	1									
Spring	CHSP	Chipping Sparrow	50	N	1									
Spring	AMRO	American Robin	40	E	1									
Spring	SOSP	Song Sparrow	40	NW	1									
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	WOTH	Wood Thrush	40	W	1									
Spring	CHSP	Chipping Sparrow	50	N	1									
Spring	AMRO	American Robin	40	E	1									
Spring	SOSP	Song Sparrow	40	NW	1									
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	COGR	Common Grackle	20	E	2									
Spring	AMCR	American Crow	60	SW	3									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	EWPE	Eastern Wood-Pewee	20	ESE	1									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Gr												

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Survey Cloud
29-May-11	B	Spring	HOLA	Horned Lark	60	NW	1						
		Spring	WOTH	Wood Thrush	50	SE	1						
		Spring	RWBL	Red-winged Blackbird	10	SE	2						
		Spring	SOSP	Song Sparrow	40	W	1						
		Spring	INBU	Indigo Bunting	20	NW	1						
		Spring	ETTI	Tufted Titmouse	40	NE	1						
		Spring	BAOR	Baltimore Oriole	40	NE	1						
		Spring	HOLA	Horned Lark	70	NW	1						
		Spring	HOSP	House Sparrow	10	S	3						
		Spring	REVI	Red-eyed Vireo	30	NNE	1						
		Spring	WAVI	Warbling Vireo	20	W	1						
		Spring	AMCR	American Crow	70	NW	2						
		Spring	WOTH	Wood Thrush	45	W	1						
		Spring	NOCA	Northern Cardinal	30	NE	1						
		Spring	AMRO	American Robin	70	W	1						
29-May-11	C	Spring	BHCO	Brown-headed Cowbird	50	W	1						
		Spring	FISP	Field Sparrow	40	NW	1						
		Spring	RBGR	Rose-breasted Grosbeak	20	S	1						
		Spring	BCCH	Black-capped Chickadee	20	S	1						
		Spring	BLJA	Blue Jay	20	S	1						
		Spring	SOSP	Song Sparrow	30	NW	1						
		Spring	GCFL	Great Crested Flycatcher	30	S	1						
		Spring	BHCO	Brown-headed Cowbird	100	NW	1						
		Spring	AMRO	American Robin	50	SW	1						
		Spring	BRTH	Brown Thrasher	60	W	1						
		Spring	CHSP	Chipping Sparrow	30	E	1						
		Spring	RBGR	Rose-breasted Grosbeak	50	W	1						
		Spring	RBWO	Red-bellied Woodpecker	40	W	1						
		Spring	AMGO	American Goldfinch	30	E	2						
		Spring	AMRO	American Robin	15	N	1						
29-May-11	D	Spring	AMRO	American Robin	80	NE	1						
		Spring	AMRO	American Robin	30	SW	1						
		Spring	MODO	Mourning Dove	30	SW	1						
		Spring	EABL	Eastern Bluebird	50	S	2						
		Spring	WBNU	White-breasted Nuthatch	40	E	1						
		Spring	FISP	Field Sparrow	60	N	1						
		Spring	WOTH	Wood Thrush	60	SW	1						
		Spring	BLJA	Blue Jay	30	W	1						
		Spring	RBWO	Red-bellied Woodpecker	30	E	1						
		Spring	KILL	Killdeer	30	SW	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	MODO	Mourning Dove	20	S	2						
		Spring	NOFL	Northern Flicker	40	W	1						
		Spring	BLJA	Blue Jay	20	S	1						
		Spring	AMRO	American Robin	50	SW	1						
29-May-11	E	Spring	REVI	Red-eyed Vireo	25	E	1						
		Spring	MODO	Mourning Dove	30	W	1						
		Spring	CHSP	Chipping Sparrow	20	S	1						
		Spring	BAOR	Baltimore Oriole	50	E	1						
		Spring	AMGO	American Goldfinch	20	W	1						
		Spring	RBWO	Red-bellied Woodpecker	60	SW	1						
		Spring	WBNU	White-breasted Nuthatch	50	NE	1						
		Spring	BLJA	Blue Jay	40	E	1						
		Spring	AMRO	American Robin	30	N	1						
		Spring	MODO	Mourning Dove	20	S	2						
		Spring	NOFL	Northern Flicker	40	W	1						
		Spring	BLJA	Blue Jay	20	S	1						
		Spring	AMRO	American Robin	50	SW	1						
		Spring	REVI	Red-eyed Vireo	25	E	1						
		Spring	MODO	Mourning Dove	30	W	1						
		Spring	CHSP	Chipping Sparrow	20	S	1						
		Spring	BAOR	Baltimore Oriole	50	E	1						
		Spring	AMGO	American Goldfinch	20	W	1						
		Spring	RBWO	Red-bellied Woodpecker	60	SW	1						
		Spring	WBNU	White-breasted Nuthatch	50	NE	1						
		Spring	BLJA	Blue Jay	40	E	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
29-May-11	F	Spring	BRTH	Brown Thrasher	40	N	1						
		Spring	AMRO	American Robin	50	NW	1						
		Spring	HOLA	Horned Lark	40	E	2						
		Spring	RBGR	Rose-breasted Grosbeak	20	NW	1						
		Spring	AMCR	American Crow	80	E	4						
		Spring	COGR	Common Grackle	20	S	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	WOTH	Wood Thrush	60	NW	1						
		Spring	FISP	Field Sparrow	60	SW	1						
		Spring	AMCR	American Crow	40	W	2						
		Spring	NOCA	Northern Cardinal	25	NE	1						
		Spring	COGR	Common Grackle	10	N	2						
		Spring	AMGO	American Goldfinch	10	NW	3						
		Spring	FISP	Field Sparrow	100	SE	1						
		Spring	TUVU	Turkey Vulture	20	E	3						
29-May-11	G	Spring	INBU	Indigo Bunting	40	W	1						
		Spring	MODO	Mourning Dove	35	N	2						
		Spring	RBWO	Red-bellied Woodpecker	20	W	1						
		Spring	KILL	Killdeer	40	NW	1						
		Spring	AMCR	American Crow	100	W	1						
		Spring	INBU	Indigo Bunting	40	SE	1						
		Spring	WOTH	Wood Thrush	50	NW	1						
		Spring	MODO	Mourning Dove	70	S	2						
		Spring	BLJA	Blue Jay	20	E	1						
		Spring	INBU	Indigo Bunting	20	SE	1						
		Spring	CHSP	Chipping Sparrow	30	W	1						
		Spring	AMRO	American Robin	50	S	1						
		Spring	GCFL	Great Crested Flycatcher	60	S	1						
		Spring	AMRO	American Robin	40	W	1						
		Spring	EWPE	Eastern Wood-Pewee	20	E	1						
29-May-11	H	Spring	EUST	European Starling	30	SW	2						
		Spring	MODO	Mourning Dove	40	NE	1						
		Spring	COGR	Common Grackle	50	NW	2						
		Spring	BAOR	Baltimore Oriole	30	SW	1						
		Spring	SOSP	Song Sparrow	50	S	1						
		Spring	BCCH	Black-capped Chickadee	30	W	1						
		Spring	RWBL	Red-winged Blackbird	10	S	3						
		Spring	SOSP	Song Sparrow	60	NW	1						
		Spring	AMRO	American Robin	30	NW	1						
		Spring	GBHE	Great Blue Heron	70	N	1						
		Spring	RWBL	Red-winged Blackbird	60	NW	3						
		Spring	AMRO	American Robin	30	E	1						
		Spring	NOCA	Northern Cardinal	30	W	1						
		Spring	MODO	Mourning Dove	70	S	2						
		Spring	COGR	Common Grackle	50	N	1						
		Spring	CHSP	Chipping Sparrow	50	SW	1						
29-May-11	I	Spring	RBWO	Red-bellied Woodpecker	60	NW	1						
		Spring	BAOR	Baltimore Oriole	25	SW	1						
		Spring	HOWR	House Wren	20	NE	1						
		Spring	COGR	Common Grackle	30	S	4						
		Spring	BCCH	Black-capped Chickadee	30	NE	1						
		Spring	WBNU	White-breasted Nuthatch	40	W	1						
		Spring	COGR	Common Grackle	70	S	5						
		Spring	NOCA	Northern Cardinal	40	S	1						
		Spring	BHCO	Brown-headed Cowbird	40	W	1						
		Spring	EATO	Eastern Towhee	30	S	2						
		Spring	RWBL	Red-winged Blackbird	20	NE	1						
		Spring											
		Spring											
		Spring											
		Spring											
		Spring											

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud	
29-May-11	J	Spring	WOTH	Wood Thrush	30	E	1							
		Spring	WBNU	White-breasted Nuthatch	40	S	1							
		Spring	AMCR	American Crow	100	W	5							
		Spring	MODO	Mourning Dove	30	N	2							
		Spring	BHCO	Brown-headed Cowbird	20	NW	1							
		Spring	HOWR	House Wren	30	SE	1							
		Spring	NOFL	Northern Flicker	60	W	1			556	605	18	0	0%
		Spring	ETTI	Tufted Titmouse	60	W	1							
		Spring	AMRO	American Robin	40	NW	1							
		Spring	INBU	Indigo Bunting	20	N	1							
		Spring	AMRO	American Robin	50	N	1							
		Spring	RBWO	Red-bellied Woodpecker	10	SW	1							
29-May-11	K	Spring	AMRO	American Robin	25	SW	1							
		Spring	FISP	Field Sparrow	40	NE	1							
		Spring	PIWO	Pileated Woodpecker	60	NW	1							
		Spring	KILL	Killdeer	50	SE	3							
		Spring	MODO	Mourning Dove	20	S	1							
		Spring	RWBL	Red-winged Blackbird	20	E	1							
		Spring	BAOR	Baltimore Oriole	15	S	1							
		Spring	DOWO	Downy Woodpecker	5	NW	1							
		Spring	CHSP	Chipping Sparrow	15	NW	1							
		Spring	EUST	European Starling	20	NW	3							
		Spring	CAGO	Canada Goose	100	NW	4							
		Spring	SOSP	Song Sparrow	20	N	1							
Spring	ETTI	Tufted Titmouse	20	NW	1									
Spring	SOSP	Song Sparrow	30	SW	1									
Spring	WBNU	White-breasted Nuthatch	30	NNW	1									
30-May-11	A	Spring	NOCA	Northern Cardinal	25	NE	2							
		Spring	RHWO	Red-headed Woodpecker	20	W	2							
		Spring	COGR	Common Grackle	25	N	2							
		Spring	RBGR	Rose-breasted Grosbeak	25	NE	1							
		Spring	EWPE	Eastern Wood-Pewee	20	ESE	1							
		Spring	AMGO	American Goldfinch	30	W	5							
		Spring	RHWO	Red-headed Woodpecker	20	W	1							
		Spring	WOTH	Wood Thrush	60	SW	1							
		Spring	BLJA	Blue Jay	40	W	1							
		Spring	CHSP	Chipping Sparrow	15	E	1							
		Spring	BHCO	Brown-headed Cowbird	50	SW	1							
		Spring	AMCR	American Crow	20	W	4							
Spring	BHCO	Brown-headed Cowbird	40	SSE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	WOTH	Wood Thrush	40	NW	1									
Spring	AMRO	American Robin	50	N	1									
Spring	WBNU	White-breasted Nuthatch	60	E	1									
Spring	AMCR	American Crow	70	SSW	8									
Spring	AMGO	American Goldfinch	30	W	4									
Spring	AMRO	American Robin	10	E	1									
Spring	COGR	Common Grackle	30	E	2									
Spring	AMCR	American Crow	45	SW	3									
Spring	ETTI	Tufted Titmouse	20	SW	1									
Spring	AMCR	American Crow	30	SW	4									
Spring	AMRO	American Robin	20	E	1									
Spring	CHSP	Chipping Sparrow	40	W	1									
Spring	AMRO	American Robin	15	S	2									
Spring	EUST	European Starling	20	W	2									
Spring	BAOR	Baltimore Oriole	40	NE	1									
Spring	HOLA	Horned Lark	70	NW	1									
Spring	HOSP	House Sparrow	10	S	3									
Spring	REVI	Red-eyed Vireo	30	NNE	1									
Spring	BLJA	Blue Jay	50	SE	1									
Spring	AMCR	American Crow	70	NW	2									
30-May-11	B								645	654	18	9	85%	

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Weather	Conditions	
30-May-11	C	Spring	HOLA	Horned Lark	50	NW	2							
		Spring	AMRO	American Robin	30	E	1							
		Spring	ETTI	Tufted Titmouse	20	E	1							
		Spring	AMCR	American Crow	40	W	1							
		Spring	CHSP	Chipping Sparrow	30	E	1							
		Spring	AMRO	American Robin	50	NW	1			632	641	18	9	80%
		Spring	FISP	Field Sparrow	50	NW	1							
		Spring	BLJA	Blue Jay	30	SW	1							
		Spring	RBGR	Rose-breasted Grosbeak	40	W	1							
		Spring	RWBL	Red-winged Blackbird	50	NW	2							
		Spring	SOSP	Song Sparrow	15	NW	1							
		Spring	RBWO	Red-bellied Woodpecker	60	W	1							
		Spring	HOWR	House Wren	20	E	1							
		Spring	RBWO	Red-bellied Woodpecker	30	NE	1							
		30-May-11	D	Spring	FISP	Field Sparrow	40	N	1					
Spring	RBWO			Red-bellied Woodpecker	40	SW	1							
Spring	BAOR			Baltimore Oriole	20	W	1			617	626	17	9	90%
Spring	SOSP			Song Sparrow	10	S	1							
Spring	HOWR			House Wren	30	E	1							
Spring	ETTI			Tufted Titmouse	20	W	1							
Spring	AMRO			American Robin	10	N	1							
Spring	AMGO			American Goldfinch	20	E	1							
Spring	CHSP			Chipping Sparrow	10	S	1							
Spring	RBWO			Red-bellied Woodpecker	50	SW	1							
Spring	RBGR			Rose-breasted Grosbeak	30	E	1							
Spring	SOSP			Song Sparrow	30	SW	1							
Spring	BAOR			Baltimore Oriole	30	E	1							
Spring	RBWO			Red-bellied Woodpecker	90	W	1							
30-May-11	E			Spring	WOTH	Wood Thrush	50	W	1					
		Spring	AMRO	American Robin	20	S	1			715	724	18	4	85%
		Spring	NOFL	Northern Flicker	40	W	1							
		Spring	BLJA	Blue Jay	30	E	1							
		Spring	HOSP	House Sparrow	40	NW	6							
		Spring	WOTH	Wood Thrush	60	E	1							
		Spring	HOWR	House Wren	40	NE	1							
		Spring	EWPE	Eastern Wood-Pewee	40	NE	1							
		Spring	AMCR	American Crow	100	NW	4							
		Spring	NOCA	Northern Cardinal	40	NE	1							
		Spring	WOTH	Wood Thrush	50	SW	1							
		Spring	HOWR	House Wren	50	W	1							
		Spring	MODO	Mourning Dove	30	S	1							
		Spring	FISP	Field Sparrow	60	SW	1							
		30-May-11	F	Spring	AMCR	American Crow	25	NE	2					
Spring	RBGR			Rose-breasted Grosbeak	25	NE	1							
Spring	AMRO			American Robin	40	NE	1							
Spring	AMRO			American Robin	30	W	1							
Spring	HOLA			Horned Lark	20	E	1							
Spring	RHOW			Red-headed Woodpecker	30	W	1							
Spring	NOCA			Northern Cardinal	40	NE	1							
Spring	WOTH			Wood Thrush	50	SW	1							
Spring	HOWR			House Wren	50	W	1							
Spring	MODO			Mourning Dove	30	S	1							
Spring	FISP			Field Sparrow	60	SW	1							
Spring	AMCR			American Crow	25	NE	2							
Spring	RBGR			Rose-breasted Grosbeak	25	NE	1							
Spring	AMRO			American Robin	40	NE	1							
Spring	AMRO			American Robin	30	W	1							
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									
Spring	NOCA	Northern Cardinal	40	NE	1									
Spring	WOTH	Wood Thrush	50	SW	1									
Spring	HOWR	House Wren	50	W	1									
Spring	MODO	Mourning Dove	30	S	1									
Spring	FISP	Field Sparrow	60	SW	1									
Spring	AMCR	American Crow	25	NE	2									
Spring	RBGR	Rose-breasted Grosbeak	25	NE	1									
Spring	AMRO	American Robin	40	NE	1									
Spring	AMRO	American Robin	30	W	1									
Spring	HOLA	Horned Lark	20	E	1									
Spring	RHOW	Red-headed Woodpecker	30	W	1									

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Temp (C)	Wind	Cloud
30-May-11	G	Spring	COGR	Common Grackle	20	N	1						
		Spring	GCFL	Great Crested Flycatcher	50	S	1						
		Spring	AMRO	American Robin	40	W	1						
		Spring	CHSP	Chipping Sparrow	30	W	1						
		Spring	BLJA	Blue Jay	70	E	1						
		Spring	AMGO	American Goldfinch	10	W	3						
		Spring	AMRO	American Robin	50	S	1						
		Spring	MODO	Mourning Dove	10	N	2						
		Spring	KILL	Killdeer	50	NW	1						
		Spring	RBWO	Red-bellied Woodpecker	50	SE	1						
		Spring	WOTH	Wood Thrush	60	NW	1						
		Spring	BLJA	Blue Jay	40	W	1						
		Spring	TUVU	Turkey Vulture	10	E	1						
		Spring	MODO	Mourning Dove	30	NW	1						
		Spring	ETTL	Tufted Titmouse	50	S	1						
30-May-11	H	Spring	AMRO	American Robin	20	SE	1						
		Spring	AMRO	American Robin	30	E	1						
		Spring	RBGR	Rose-breasted Grosbeak	40	W	1						
		Spring	RWBL	Red-winged Blackbird	50	NW	5						
		Spring	NOCA	Northern Cardinal	15	SE	1						
		Spring	GRCA	Gray Catbird	40	SW	1						
		Spring	ETTL	Tufted Titmouse	40	W	1						
		Spring	CHSP	Chipping Sparrow	30	NE	1						
		Spring	NOCA	Northern Cardinal	50	SW	1						
		Spring	BCCH	Black-capped Chickadee	70	S	1						
		Spring	BAOR	Baltimore Oriole	50	N	1						
		Spring	AMCR	American Crow	80	S	1						
		Spring	BLJA	Blue Jay	30	E	1						
		Spring	BHCO	Brown-headed Cowbird	50	W	1						
		Spring	EWPE	Eastern Wood-Pewee	50	N	1						
30-May-11	I	Spring	BLJA	Blue Jay	50	SW	1						
		Spring	ETTL	Tufted Titmouse	60	W	1						
		Spring	NOCA	Northern Cardinal	50	S	1						
		Spring	SOSP	Song Sparrow	40	S	1						
		Spring	REVI	Red-eyed Vireo	20	W	1						
		Spring	EAKI	Eastern Kingbird	20	W	1						
		Spring	AMCR	American Crow	60	N	3						
		Spring	CHSP	Chipping Sparrow	50	SW	1						
		Spring	MODO	Mourning Dove	80	S	1						
		Spring	AMRO	American Robin	50	NE	1						
		Spring	AMCR	American Crow	30	W	1						
		Spring	AMRO	American Robin	30	SE	1						
		Spring	ETTL	Tufted Titmouse	50	S	1						
		Spring	HOWR	House Wren	30	SW	1						
		Spring	DOWO	Downy Woodpecker	20	W	1						
30-May-11	J	Spring	AMRO	American Robin	20	E	1						
		Spring	RBWO	Red-bellied Woodpecker	10	W	1						
		Spring	GRCA	Gray Catbird	10	E	1						
		Spring	AMRO	American Robin	20	N	1						
		Spring	INBU	Indigo Bunting	40	W	1						
		Spring	WOTH	Wood Thrush	30	S	1						
		Spring	ETTL	Tufted Titmouse	20	NW	1						
		Spring	HOSP	House Sparrow	20	SE	6						
		Spring	BLJA	Blue Jay	15	SW	1						
		Spring	BHCO	Brown-headed Cowbird	20	SW	2						
		Spring	AMRO	American Robin	30	E	4						
		Spring	MODO	Mourning Dove	30	NW	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	BCCH	Black-capped Chickadee	40	S	1						
		Spring	AMRO	American Robin	50	S	1						
30-May-11	K	Spring	BAOR	Baltimore Oriole	25	S	1						
		Spring	RBWO	Red-bellied Woodpecker	50	NW	1						
		Spring	ETTL	Tufted Titmouse	30	W	1						
		Spring	AMRO	American Robin	30	SE	1						
		Spring	HOWR	House Wren	30	SW	1						
		Spring	DOWO	Downy Woodpecker	20	W	1						
		Spring	AMRO	American Robin	20	E	1						
		Spring	RBWO	Red-bellied Woodpecker	10	W	1						
		Spring	GRCA	Gray Catbird	10	E	1						
		Spring	AMRO	American Robin	20	N	1						
		Spring	INBU	Indigo Bunting	40	W	1						
		Spring	WOTH	Wood Thrush	30	S	1						
		Spring	ETTL	Tufted Titmouse	20	NW	1						
		Spring	HOSP	House Sparrow	20	SE	6						
		Spring	BLJA	Blue Jay	15	SW	1						
30-May-11	K	Spring	BHCO	Brown-headed Cowbird	20	SW	2						
		Spring	AMRO	American Robin	30	E	4						
		Spring	MODO	Mourning Dove	30	NW	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	BCCH	Black-capped Chickadee	40	S	1						
		Spring	AMRO	American Robin	50	S	1						
		Spring	BAOR	Baltimore Oriole	25	S	1						
		Spring	RBWO	Red-bellied Woodpecker	50	NW	1						
		Spring	ETTL	Tufted Titmouse	30	W	1						
		Spring	AMRO	American Robin	30	SE	1						
		Spring	HOWR	House Wren	30	SW	1						
		Spring	DOWO	Downy Woodpecker	20	W	1						
		Spring	AMRO	American Robin	20	E	1						
		Spring	RBWO	Red-bellied Woodpecker	10	W	1						
		Spring	GRCA	Gray Catbird	10	E	1						
		Spring	AMRO	American Robin	20	N	1						
		Spring	INBU	Indigo Bunting	40	W	1						
		Spring	WOTH	Wood Thrush	30	S	1						
		Spring	ETTL	Tufted Titmouse	20	NW	1						
		Spring	HOSP	House Sparrow	20	SE	6						
		Spring	BLJA	Blue Jay	15	SW	1						
		Spring	BHCO	Brown-headed Cowbird	20	SW	2						
		Spring	AMRO	American Robin	30	E	4						
		Spring	MODO	Mourning Dove	30	NW	1						
		Spring	SOSP	Song Sparrow	30	SW	1						
		Spring	BCCH	Black-capped Chickadee	40	S	1						
		Spring	AMRO	American Robin	50	S	1						
		Spring	BAOR	Baltimore Oriole	25	S	1						
		Spring	RBWO	Red-bellied Woodpecker	50	NW	1						

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Temp (C)	Wind	Cloud
18-Aug-11	A	Autumn	NOCA	Northern Cardinal	5	W	1						
		Autumn	AMRO	American Robin	5	S	1						
		Autumn	INBU	Indigo Bunting	10	E	2						
		Autumn	BLJA	Blue Jay	25	SW	2		816	825	21	0	0%
		Autumn	INBU	Indigo Bunting	70	NW	1						
		Autumn	BAOR	Baltimore Oriole	40	E	1						
18-Aug-11	B	Autumn	MODO	Mourning Dove	60	W	2						
		Autumn	AMCR	American Crow	30	W	2						
		Autumn	WITU	Wild Turkey	80	W	1						
		Autumn	SOSP	Song Sparrow	20	SW	1		832	841	22	2	0%
		Autumn	AMRO	American Robin	20	W	1						
		Autumn	AMRO	American Robin	70	E	4						
18-Aug-11	C	Autumn	AMCR	American Crow	100	SE	4						
		Autumn	NOCA	Northern Cardinal	45	SW	1						
		Autumn	RTHA	Red-tailed Hawk	70	W	1		846	855	22	0	0%
		Autumn	RBWO	Red-bellied Woodpecker	30	SE	1						
		Autumn	AMCR	American Crow	30	NW	3						
		Autumn	AMCR	American Crow	70	NW	1						
18-Aug-11	D	Autumn	EWPE	Eastern Wood-Pewee	20	N	1		903	912	21	2	0%
		Autumn	SOSP	Song Sparrow	30	S	1						
		Autumn	FISP	Field Sparrow	30	SW	1						
		Autumn	BLJA	Blue Jay	20	NW	2						
		Autumn	AMGO	American Goldfinch	5	S	2						
		Autumn	MODO	Mourning Dove	70	N	4						
18-Aug-11	E	Autumn	EUST	European Starling	80	N	2						
		Autumn	MODO	Mourning Dove	30	W	2						
		Autumn	EWPE	Eastern Wood-Pewee	25	NW	1						
		Autumn	MODO	Mourning Dove	40	S	1		800	809	20	0	0%
		Autumn	EUST	European Starling	60	S	4						
		Autumn	AMRO	American Robin	30	SE	1						
18-Aug-11	F	Autumn	SOSP	Song Sparrow	20	SW	1						
		Autumn	CHSP	Chipping Sparrow	10	S	1						
		Autumn	EWPE	Eastern Wood-Pewee	40	S	1						
		Autumn	GHSW	Chimney Swift	5	W	1						
		Autumn	SOSP	Song Sparrow	50	SW	1						
		Autumn	EATO	Eastern Towhee	60	NW	1						
18-Aug-11	G	Autumn	FISP	Field Sparrow	10	NW	1						
		Autumn	SOSP	Song Sparrow	5	W	2		632	641	16	0	5%
		Autumn	FISP	Field Sparrow	60	E	1						
		Autumn	NOCA	Northern Cardinal	60	S	1						
		Autumn	YBCU	Yellow-billed Cuckoo	40	W	1						
		Autumn	AMRO	American Robin	70	E	1						
18-Aug-11	H	Autumn	AMCR	American Crow	100	SW	2						
		Autumn	AMCR	American Crow	90	N	1						
		Autumn	HOSP	House Sparrow	30	NW	3		745	754	21	0	0%
		Autumn	INBU	Indigo Bunting	20	NW	1						
		Autumn	GRCA	Gray Catbird	2	N	1						
		Autumn	CARW	Carolina Wren	40	S	1						
18-Aug-11	I	Autumn	GRCA	Gray Catbird	30	SW	1						
		Autumn	AMGO	American Goldfinch	40	SW	4						
		Autumn	HOWR	House Wren	20	SW	2		732	741	21	0	0%
		Autumn	MODO	Mourning Dove	40	SE	1						
		Autumn	NOCA	Northern Cardinal	30	S	1						
		Autumn	CARW	Carolina Wren	60	NW	1						
18-Aug-11	J	Autumn	BHCO	Brown-headed Cowbird	5	S	1						
		Autumn	AMCR	American Crow	90	E	1						
		Autumn	NOCA	Northern Cardinal	30	NE	1						
		Autumn	NOCA	Northern Cardinal	20	S	1						
		Autumn	DOWO	Downy Woodpecker	30	SW	1		715	724	18	0	0%
		Autumn	RBWO	Red-bellied Woodpecker	40	SW	1						
18-Aug-11	K	Autumn	ETTU	Tufted Titmouse	15	W	1						
		Autumn											
		Autumn											
		Autumn											
		Autumn											
		Autumn											

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Temp (C)	Wind	Cloud
18-Aug-11	J	Autumn	BLJA	Blue Jay	20	NW	1						
		Autumn	AMRO	American Robin	30	N	4						
		Autumn	INBU	Indigo Bunting	20	SE	1						
		Autumn	AMRO	American Robin	25	NW	1						
		Autumn	WBNU	White-breasted Nuthatch	10	E	1						
		Autumn	SOSP	Song Sparrow	25	NE	1						
		Autumn	AMGO	American Goldfinch	30	NW	1						
		Autumn	MODO	Mourning Dove	30	N	3						
		Autumn	REVI	Red-eyed Vireo	10	W	1						
		Autumn	EWPE	Eastern Wood-Pewee	20	E	1						
18-Aug-11	K	Autumn	BLJA	Blue Jay	30	W	2						
		Autumn	BLJA	Blue Jay	40	SW	1						
		Autumn	HOFI	House Finch	20	W	4						
		Autumn	BLJA	Blue Jay	50	N	1						
		Autumn	BLJA	Blue Jay	40	S	1						
		Autumn	AMRO	American Robin	60	NNE	1						
		Autumn	HOSP	House Sparrow	20	N	2						
		Autumn	NOCA	Northern Cardinal	5	W	1						
		Autumn	AMRO	American Robin	5	S	1						
		Autumn	INBU	Indigo Bunting	10	E	2						
1-Sep-11	A	Autumn	BLJA	Blue Jay	25	SW	2						
		Autumn	INBU	Indigo Bunting	70	NW	1						
		Autumn	BAOR	Baltimore Oriole	40	E	1						
		Autumn	MODO	Mourning Dove	60	W	2						
		Autumn	AMCR	American Crow	30	W	2						
		Autumn	WITU	Wild Turkey	80	W	1						
		Autumn	SOSP	Song Sparrow	20	SW	1						
		Autumn	AMRO	American Robin	20	W	1						
		Autumn	AMRO	American Robin	70	E	4						
		Autumn	AMCR	American Crow	100	SE	4						
1-Sep-11	C	Autumn	NOCA	Northern Cardinal	45	SW	1						
		Autumn	RTHA	Red-tailed Hawk	70	W	1						
		Autumn	RBWO	Red-bellied Woodpecker	30	SE	1						
		Autumn	AMCR	American Crow	30	NW	3						
		Autumn	AMCR	American Crow	70	NW	1						
		Autumn	EWPE	Eastern Wood-Pewee	20	N	1						
		Autumn	SOSP	Song Sparrow	30	S	1						
		Autumn	FISP	Field Sparrow	30	SW	1						
		Autumn	BLJA	Blue Jay	20	NW	2						
		Autumn	AMGO	American Goldfinch	5	S	2						
1-Sep-11	E	Autumn	MODO	Mourning Dove	70	NW	4						
		Autumn	EUST	European Starling	80	NW	2						
		Autumn	MODO	Mourning Dove	30	W	2						
		Autumn	EWPE	Eastern Wood-Pewee	25	NW	1						
		Autumn	MODO	Mourning Dove	40	S	1						
		Autumn	EUST	European Starling	60	S	4						
		Autumn	AMRO	American Robin	30	SE	1						
		Autumn	SOSP	Song Sparrow	20	SW	1						
		Autumn	CHSP	Chipping Sparrow	10	S	1						
		Autumn	EWPE	Eastern Wood-Pewee	40	S	1						
1-Sep-11	F	Autumn	CHSW	Chimney Swift	5	W	1						
		Autumn	SOSP	Song Sparrow	50	SW	1						
		Autumn	EATO	Eastern Towhee	60	NW	1						
		Autumn	FISP	Field Sparrow	10	NW	1						
		Autumn	SOSP	Song Sparrow	5	W	2						
		Autumn	FISP	Field Sparrow	60	E	1						
		Autumn	NOCA	Northern Cardinal	60	S	1						
		Autumn	YBCU	Yellow-billed Cuckoo	40	W	1						
		Autumn	AMRO	American Robin	70	E	1						
		Autumn	AMCR	American Crow	90	N	1						
1-Sep-11	G	Autumn	AMCR	American Crow	100	SW	2						
		Autumn	HOSP	House Sparrow	30	NW	3						
		Autumn	INBU	Indigo Bunting	20	NW	1						
		Autumn	AMCR	American Crow	754	21	0						

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Weather Conditions
1-Sep-11	H	Autumn	GRCA	Gray Catbird	20	N	1					
		Autumn	CARW	Carolina Wren	40	S	1					
		Autumn	GRCA	Gray Catbird	30	SW	1					
		Autumn	AMGO	American Goldfinch	40	SW	4					
		Autumn	HOWR	House Wren	20	SW	2		732	741	20	0 0%
		Autumn	MODO	Mourning Dove	40	SE	1					
		Autumn	NOCA	Northern Cardinal	30	S	1					
		Autumn	CARW	Carolina Wren	60	NW	1					
		Autumn	BHCO	Brown-headed Cowbird	5	S	1					
		Autumn	AMCR	American Crow	90	E	1					
1-Sep-11	I	Autumn	NOCA	Northern Cardinal	30	NE	1					
		Autumn	NOCA	Northern Cardinal	20	S	1		715	724	19	0 0%
		Autumn	NOCA	Northern Cardinal	40	SE	1					
		Autumn	DOWO	Downy Woodpecker	30	SW	1					
		Autumn	RBWO	Red-bellied Woodpecker	40	SW	1					
		Autumn	ETIT	Tufted Titmouse	15	W	1					
		Autumn	BLJA	Blue Jay	20	NW	1					
		Autumn	AMRO	American Robin	30	NW	4					
		Autumn	INBU	Indigo Bunting	20	SE	1					
		Autumn	AMRO	American Robin	25	NW	1					
1-Sep-11	J	Autumn	WBRU	White-breasted Nuthatch	10	E	1					
		Autumn	SOSP	Song Sparrow	25	NE	1		701	710	18	0 0%
		Autumn	AMGO	American Goldfinch	30	NW	1					
		Autumn	MODO	Mourning Dove	30	N	3					
		Autumn	REVI	Red-eyed Vireo	10	W	1					
		Autumn	EWPE	Eastern Wood-Pewee	20	E	1					
		Autumn	BLJA	Blue Jay	30	W	2					
		Autumn	HOFI	House Finch	20	SW	1					
		Autumn	BLJA	Blue Jay	50	N	4		646	655	16	0 0%
		Autumn	BLJA	Blue Jay	40	S	1					
6-Sep-11	A	Autumn	AMRO	American Robin	60	NNE	1					
		Autumn	HOSP	House Sparrow	20	N	2					
		Autumn	ROPI	Rock Pigeon	70	NW	1		753	802	13	2 100%
		Autumn	RBWO	Red-bellied Woodpecker	60	N	1		740	749	12	7 100%
		Autumn	BLJA	Blue Jay	50	E	1					
		Autumn	NOCA	Northern Cardinal	20	NW	1					
		Autumn	-	-	20	-	-		727	736	12	7 100%
		Autumn	EWPE	Eastern Wood-Pewee	20	W	1					
		Autumn	AMCR	American Crow	120	S	8		714	723	13	10 100%
		Autumn	AMRO	American Robin	10	N	1					
6-Sep-11	E	Autumn	BLJA	Blue Jay	20	N	2					
		Autumn	BLJA	Blue Jay	30	S	1		814	823	13	7 100%
		Autumn	HOSP	House Sparrow	40	SW	4					
		Autumn	TUVU	Turkey Vulture	30	SW	1					
		Autumn	AMRO	American Robin	30	NE	2					
		Autumn	AMCR	American Crow	60	SW	3					
		Autumn	BLJA	Blue Jay	50	W	2		658	707	13	7 100%
		Autumn	BLJA	Blue Jay	60	N	1					
		Autumn	MODO	Mourning Dove	10	NW	1					
		Autumn	TUVU	Turkey Vulture	120	W	3		830	839	12	10 95%
6-Sep-11	H	Autumn	MODO	Mourning Dove	30	N	1					
		Autumn	MODO	Mourning Dove	10	NW	3					
		Autumn	TUVU	Turkey Vulture	50	N	2		843	852	14	2 100%
		Autumn	AMGO	American Goldfinch	5	N	5					
		Autumn	MODO	Mourning Dove	60	W	1					
		Autumn	MODO	Mourning Dove	50	E	1		858	907	14	7 100%
		Autumn	BLJA	Blue Jay	70	E	1					
		Autumn	RWBL	Red-winged Blackbird	70	S	5		917	926	14	7 100%
		Autumn	BRNS	Barn Swallow	70	S	7					
		Autumn	MODO	Mourning Dove	70	N	1					
6-Sep-11	K	Autumn	-	-	-	-	-		935	944	15	2 100%

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Weather Conditions
12-Sep-11	A	Autumn	AMCR	American Crow	70	WNW	1					
		Autumn	BLJA	Blue Jay	70	WNW	1					
		Autumn	ETTI	Tufted Titmouse	5	NW	3					
		Autumn	WBNU	White-breasted Nuthatch	20	N	1					
		Autumn	BLJA	Blue Jay	20	SW	1					
		Autumn	BCCH	Black-capped Chickadee	10	W	4					
		Autumn	RBWO	Red-bellied Woodpecker	80	S	1					
		Autumn	NOFL	Northern Flicker	40	N	1					
		Autumn	CEDW	Cedar Waxwing	20	SW	9					
		Autumn	HOWR	House Wren	10	N	2					
		Autumn	DOWO	Downy Woodpecker	20	W	1					
		Autumn	AMCR	American Crow	30	E	4					
		Autumn	AMGO	American Goldfinch	20	W	3					
		Autumn	RTHA	Red-tailed Hawk	50	W	1	Perched				
		Autumn	BLJA	Blue Jay	30	S	1					
12-Sep-11	B	Autumn	AMCR	American Crow	80	NE	3					
		Autumn	BLJA	Blue Jay	60	W	1					
		Autumn	NOCA	Northern Cardinal	20	S	1					
12-Sep-11	C	Autumn	EAPH	Eastern Phoebe	10	W	1					
		Autumn	EWPE	Eastern Wood-Pewee	50	S	1					
		Autumn	AMCR	American Crow	90	SE	1					
		Autumn	ETTI	Tufted Titmouse	50	SSW	1					
		Autumn	TUVU	Turkey Vulture	120	NNW	1					
		Autumn	BOBO	Bobolink	30	NW	2					
		Autumn	WBNU	White-breasted Nuthatch	40	W	1					
		Autumn	AMCR	American Crow	100	NW	3					
		Autumn	BLJA	Blue Jay	20	NW	2					
		Autumn	EWPE	Eastern Wood-Pewee	40	NW	1					
12-Sep-11	D	Autumn	AMCR	American Crow	15	S	1					
		Autumn	EUST	European Starling	10	S	4					
		Autumn	EUST	European Starling	20	N	6					
		Autumn	EUST	European Starling	40	E	32					
		Autumn	AMCR	American Crow	50	E	5					
		Autumn	MODO	Mourning Dove	40	S	1					
		Autumn	BLJA	Blue Jay	40	NE	2					
		Autumn	AMRO	American Robin	20	NE	1					
		Autumn	AMGO	American Goldfinch	10	W	2					
		Autumn	MODO	Mourning Dove	60	NE	1					
12-Sep-11	E	Autumn	DOWO	Downy Woodpecker	50	NE	1					
		Autumn	RHWO	Red-headed Woodpecker	30	NE	3					
		Autumn	EUST	European Starling	40	NW	4					
		Autumn	HOSP	House Sparrow	30	NE	2					
		Autumn	BLJA	Blue Jay	40	W	3					
		Autumn	EWPE	Eastern Wood-Pewee	60	W	1					
		Autumn	WBNU	White-breasted Nuthatch	30	NW	2					
		Autumn	EABL	Eastern Bluebird	30	NW	1					
		Autumn	CEDW	Cedar Waxwing	30	NW	10					
		Autumn	BCCH	Black-capped Chickadee	40	W	1					
12-Sep-11	F	Autumn	PWOW	Pileated Woodpecker	30	S	1					
		Autumn	NOCA	Northern Cardinal	20	NW	1					
		Autumn	WBNU	White-breasted Nuthatch	10	S	2					
		Autumn	AMCR	American Crow	70	NW	1					
		Autumn	BLJA	Blue Jay	40	NW	1					
		Autumn	DOWO	Downy Woodpecker	50	E	1					
		Autumn	RBWO	Red-bellied Woodpecker	30	E	1					
		Autumn	AMCR	American Crow	60	E	3					
		Autumn	ETTI	Tufted Titmouse	30	E	2					
		Autumn	AMGO	American Goldfinch	50	E	2					
12-Sep-11	G	Autumn	RWBL	Red-winged Blackbird	80	E	4					
		Autumn	AMRO	American Robin	40	E	2					
		Autumn										
		Autumn										
		Autumn										
		Autumn										
		Autumn										
		Autumn										
		Autumn										
		Autumn										

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Temp (C)	Wind	Cloud
12-Sep-11	H	Autumn	MODO	Mourning Dove	5	N	2						
		Autumn	MODO	Mourning Dove	50	N	1						
		Autumn	WAVI	Warbling Vireo	60	NW	1						
		Autumn	BLJA	Blue Jay	60	SE	2						
		Autumn	GRCA	Gray Catbird	5	W	2		909	918	19	2	5%
		Autumn	AMRO	American Robin	5	E	2						
		Autumn	RHWO	Red-headed Woodpecker	5	E	1						
		Autumn	AMGO	American Goldfinch	5	W	2						
		Autumn	AMRO	American Robin	40	S	12						
		Autumn	BLJA	Blue Jay	20	NE	1						
12-Sep-11	I	Autumn	ETTI	Tufted Titmouse	10	N	2						
		Autumn	REVI	Red-eyed Vireo	40	WSW	1						
		Autumn	EWPE	Eastern Wood-Pewee	50	NW	1		922	931	20	2	5%
		Autumn	NAVA	Nashville Warbler	10	N	1						
		Autumn	AMRO	American Robin	10	N	3						
		Autumn	RBWO	Red-bellied Woodpecker	20	E	2						
		Autumn	MODO	Mourning Dove	60	S	4						
		Autumn	NOFL	Northern Flicker	50	SE	1						
		Autumn	TUVU	Turkey Vulture	30	W	3						
		Autumn	AMRO	American Robin	10	W	2						
12-Sep-11	J	Autumn	HOSP	House Sparrow	20	N	2						
		Autumn	MODO	Mourning Dove	30	N	2						
		Autumn	MODO	Mourning Dove	100	N	2		939	948	20	0	5%
		Autumn	BLJA	Blue Jay	40	N	1						
		Autumn	AMGO	American Goldfinch	10	N	2						
		Autumn	KILL	Killdeer	20	W	2						
		Autumn	AMKE	American Kestrel	30	N	1						
		Autumn	MODO	Mourning Dove	50	S	3						
		Autumn	AMGO	American Goldfinch	30	S	6		953	1002	19	2	10%
		Autumn	BLJA	Blue Jay	10	W	2						
19-Sep-11	A	Autumn	AMRO	American Robin	20	N	2						
		Autumn	BLJA	Blue Jay	30	SW	3						
		Autumn	AMCR	American Crow	100	WNW	3						
		Autumn	RBWO	Red-bellied Woodpecker	20	N	2						
		Autumn	DOWO	Downy Woodpecker	10	N	1		848	857	14	0	100%
		Autumn	DOWO	Downy Woodpecker	15	S	1						
		Autumn	RBWO	Red-bellied Woodpecker	40	WSW	1						
		Autumn	NOFL	Northern Flicker	5	N	1						
		Autumn	COYE	Common Yellowthroat	5	N	1						
		Autumn	WBNU	White-breasted Nuthatch	30	E	2						
19-Sep-11	B	Autumn	BLJA	Blue Jay	20	W	1						
		Autumn	AMRO	American Robin	40	W	1						
		Autumn	RBWO	Red-bellied Woodpecker	10	E	1						
		Autumn	WBNU	White-breasted Nuthatch	40	SW	1		903	914	14	0	100%
		Autumn	AMRO	American Robin	20	E	1						
		Autumn	EWPE	Eastern Wood-Pewee	50	NE	1						
		Autumn	GCTH	Gray-cheeked Thrush	5	NE	1						
		Autumn	ETTI	Tufted Titmouse	20	NE	2						
		Autumn	BLJA	Blue Jay	90	NW	2						
		Autumn	WBNU	White-breasted Nuthatch	20	SE	2						
19-Sep-11	C	Autumn	AMCR	American Crow	120	NNW	2		919	928	14	0	100%
		Autumn	ETTI	Tufted Titmouse	10	SE	3						
		Autumn	RBWO	Red-bellied Woodpecker	80	NE	1						
19-Sep-11	D	Autumn	AMCR	American Crow	100	ENE	2	Excessive noise, road work in progress.	933	942	14	0	100%

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Time Start	Stop	Temp (C)	Wind	Cloud
19-Sep-11	E	Autumn	AMRO	American Robin	20	E	2						
		Autumn	BLJA	Blue Jay	40	W	1						
		Autumn	DOWO	Downy Woodpecker	30	W	1						
		Autumn	BLJA	Blue Jay	20	E	1						
		Autumn	DOWO	Downy Woodpecker	30	N	1						
		Autumn	AMGO	American Goldfinch	15	S	2						
		Autumn	BLJA	Blue Jay	10	S	1						
		Autumn	MODO	Mourning Dove	110	W	5		829	838	13	0	100%
		Autumn	RBWO	Red-bellied Woodpecker	30	S	1						
		Autumn	BLJA	Blue Jay	30	N	4						
		Autumn	WBNU	White-breasted Nuthatch	40	SW	1						
		Autumn	AMGO	American Goldfinch	25	SW	3						
		Autumn	RHWO	Red-headed Woodpecker	15	NW	1						
		Autumn	MODO	Mourning Dove	10	E	2						
19-Sep-11	F	Autumn	EUST	European Starling	30	SW	3						
		Autumn	BLJA	Blue Jay	20	NW	4						
		Autumn	BLJA	Blue Jay	60	NE	2		948	957	14		100%
		Autumn	AMRO	American Robin	60	NE	1						
19-Sep-11	G	Autumn	DOWO	Downy Woodpecker	30	NW	1						
		Autumn	AMCR	American Crow	30	S	1						
		Autumn	BLJA	Blue Jay	100	SW	1						
		Autumn	AMCR	American Crow	100	E	4						
		Autumn	MODO	Mourning Dove	20	E	1						
		Autumn	EABL	Eastern Bluebird	60	E	1						
		Autumn	BLJA	Blue Jay	100	NNW	1		816	825	13	0	100%
		Autumn	BLJA	Blue Jay	40	S	1						
		Autumn	AMRO	American Robin	30	W	1						
		Autumn	COGR	Common Grackle	20	N	1						
		Autumn	AMRO	American Robin	40	W	2						
		Autumn	EUST	European Starling	30	SE	5						
		Autumn	MODO	Mourning Dove	10	S	4						
		Autumn	WAVI	Warbling Vireo	30	W	1		801	810	13	0	100%
19-Sep-11	H	Autumn	RBWO	Red-bellied Woodpecker	50	W	1						
		Autumn	ETTI	Tufted Titmouse	80	W	1						
		Autumn	MODO	Mourning Dove	15	S	1						
		Autumn	NOCA	Northern Cardinal	5	E	1						
		Autumn	AMRO	American Robin	30	SW	3						
		Autumn	DOWO	Downy Woodpecker	10	S	1		747	756	13	0	100%
		Autumn	WAVI	Warbling Vireo	30	E	1						
		Autumn	RHWO	Red-headed Woodpecker	20	N	1						
		Autumn	EUST	European Starling	10	E	1						
		Autumn	AMRO	American Robin	20	W	1						
		Autumn	REVI	Red-eyed Vireo	20	SW	1		1022	1034	15	0	100%
		Autumn	BLJA	Blue Jay	40	NW	1						
		Autumn	BLJA	Blue Jay	50	NNE	1						
		Autumn	BLJA	Blue Jay	10	NW	3		1008	1017	15	0	100%
27-Sep-11	A	Autumn	DOWO	Downy Woodpecker	30	W	1						
		Autumn	EUST	European Starling	50	ESE	12						
		Autumn	BLJA	Blue Jay	15	S	4						
		Autumn	RBWO	Red-bellied Woodpecker	30	SW	2						
		Autumn	WBNU	White-breasted Nuthatch	5	S	1						
		Autumn	ETTI	Tufted Titmouse	5	W	1						
		Autumn	AMGO	American Goldfinch	10	W	4		804	813	11	2	100%
		Autumn	RBWO	Red-bellied Woodpecker	25	NE	1						
		Autumn	BCCH	Black-capped Chickadee	5	W	4						
		Autumn	COYE	Common Yellowthroat	5	NE	1						
		Autumn	GBHE	Great Blue Heron	30	NE	1						
		Autumn						Fly By					

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Cloud
27-Sep-11	B	Autumn	AMCR	American Crow	80	ENE	4						
		Autumn	WBNU	White-breasted Nuthatch	20	NE	2						
		Autumn	RWBL	Red-winged Blackbird	30	WSW	36						
		Autumn	BLJA	Blue Jay	60	ENE	1						
		Autumn	AMCR	American Crow	50	S	1						
		Autumn	BLJA	Blue Jay	80	SE	3						
		Autumn	AMGO	American Goldfinch	30	SW	1						
		Autumn	RBWO	Red-bellied Woodpecker	20	N	1						
		Autumn	AMCR	American Crow	30	WSW	2						
		Autumn	BLJA	Blue Jay	50	WSW	1						
27-Sep-11	C	Autumn	BLJA	Blue Jay	40	SW	1						
		Autumn	RBWO	Red-bellied Woodpecker	20	ESE	1						
		Autumn	AMRO	American Robin	30	S	1						
		Autumn	RBGR	Rose-breasted Grosbeak	20	ESE	1						
		Autumn	NOFL	Northern Flicker	40	SSW	2						
		Autumn	WBNU	White-breasted Nuthatch	25	S	2						
		Autumn	AMCR	American Crow	110	E	2						
		Autumn	AMCR	American Crow	100	W	2						
		Autumn	REVI	Red-eyed Vireo	10	W	1						
		Autumn	CAGO	Canada Goose	100	NE	8						
27-Sep-11	D	Autumn	AMCR	American Crow	100	E	3						
		Autumn	NOFL	Northern Flicker	30	E	1						
		Autumn	AMCR	American Crow	50	E	3						
		Autumn	RBWO	Red-bellied Woodpecker	40	SW	1						
		Autumn	AMRO	American Robin	60	E	1						
		Autumn	AMGO	American Goldfinch	30	W	3						
		Autumn	HOSP	House Sparrow	5	N	1						
		Autumn	WBNU	White-breasted Nuthatch	10	N	1						
		Autumn	BLJA	Blue Jay	50	NE	1						
		Autumn	MODO	Mourning Dove	90	W	4						
27-Sep-11	E	Autumn	BLJA	Blue Jay	60	S	1						
		Autumn	BLJA	Blue Jay	40	S	3						
		Autumn	KILL	Killdeer	10	S	1						
		Autumn	NOCA	Northern Cardinal	10	E	1						
		Autumn	BLJA	Blue Jay	40	NW	2						
		Autumn	RBWO	Red-bellied Woodpecker	30	NW	1						
		Autumn	BLJA	Blue Jay	20	W	7						
		Autumn	MODO	Mourning Dove	100	E	2						
		Autumn	WBNU	White-breasted Nuthatch	30	NW	1						
		Autumn	EABL	Eastern Bluebird	20	S	1						
27-Sep-11	G	Autumn	AMCR	American Crow	100	SE	1						
		Autumn	AMRO	American Robin	90	SW	2						
		Autumn	EABL	Eastern Bluebird	20	E	2						
		Autumn	BLJA	Blue Jay	30	N	1						
		Autumn	MODO	Mourning Dove	20	SW	2						
		Autumn	MODO	Mourning Dove	5	E	1						
		Autumn	EABL	Eastern Bluebird	5	W	4						
		Autumn	CEDW	Cedar Waxwing	5	W	3						
		Autumn	MODO	Mourning Dove	70	S	7						
		Autumn	AMRO	American Robin	70	S	4						
27-Sep-11	H	Autumn	BLJA	Blue Jay	30	SW	1						
		Autumn	EUST	European Starling	80	S	8						
		Autumn	AMRO	American Robin	40	N	3						
		Autumn	MODO	Mourning Dove	20	N	1						
		Autumn	NOFL	Northern Flicker	15	NW	2						
		Autumn	WBNU	White-breasted Nuthatch	5	W	2						
		Autumn	AMRO	American Robin	40	SE	1						
		Autumn	BLJA	Blue Jay	40	N	2						
		Autumn	BLJA	Blue Jay	10	W	1						
		Autumn	AMCR	American Crow	70	E	3						
27-Sep-11	I	Autumn	HOSP	House Sparrow	30	NW	7						
		Autumn	AMCR	American Crow	100	E	1						
		Autumn	AMRO	American Robin	90	SW	2						
		Autumn	EABL	Eastern Bluebird	20	E	2						
		Autumn	BLJA	Blue Jay	30	N	1						
		Autumn	MODO	Mourning Dove	20	SW	2						
		Autumn	MODO	Mourning Dove	5	E	1						
		Autumn	EABL	Eastern Bluebird	5	W	4						
		Autumn	CEDW	Cedar Waxwing	5	W	3						
		Autumn	MODO	Mourning Dove	70	S	7						
27-Sep-11	J	Autumn	AMRO	American Robin	70	S	4						
		Autumn	BLJA	Blue Jay	30	SW	1						
		Autumn	EUST	European Starling	80	S	8						
		Autumn	AMRO	American Robin	40	N	3						
		Autumn	MODO	Mourning Dove	20	N	1						
		Autumn	NOFL	Northern Flicker	15	NW	2						
		Autumn	WBNU	White-breasted Nuthatch	5	W	2						
		Autumn	AMRO	American Robin	40	SE	1						
		Autumn	BLJA	Blue Jay	40	N	2						
		Autumn	BLJA	Blue Jay	10	W	1						
27-Sep-11	K	Autumn	AMRO	American Robin	5	W	1						
		Autumn	AMCR	American Crow	70	E	3						
		Autumn	HOSP	House Sparrow	30	NW	7						
		Autumn	AMCR	American Crow	100	E	1						
		Autumn	AMRO	American Robin	90	SW	2						
		Autumn	EABL	Eastern Bluebird	20	E	2						
		Autumn	BLJA	Blue Jay	30	N	1						
		Autumn	MODO	Mourning Dove	20	SW	2						
		Autumn	MODO	Mourning Dove	5	E	1						
		Autumn	EABL	Eastern Bluebird	5	W	4						

Date	Point	Season	Species		Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time		Survey Weather Conditions				
			Code	Name					Start	Stop	Temp (C)	Wind	Cloud		
3-Oct-11	A	Autumn	RTHA	Red-tailed Hawk	60	E	1	Light Drizzle							
		Autumn	BLJA	Blue Jay	20	S	1								
		Autumn	BLJA	Blue Jay	80	WNW	3								
		Autumn	YRWA	Yellow-rumped Warbler	15	W	1		936	945	12	2	100%		
		Autumn	AMCR	American Crow	50	E	2								
		Autumn	BLJA	Blue Jay	30	N	1								
		Autumn	RBWO	Red-bellied Woodpecker	40	W	1								
		Autumn	BLJA	Blue Jay	20	NW	1								
		Autumn	WBNU	White-breasted Nuthatch	30	E	2								
		Autumn	RBWO	Red-bellied Woodpecker	40	N	1	948	957	12	0	100%			
3-Oct-11	B	Autumn	WBNU	White-breasted Nuthatch	30	E	2								
		Autumn	RBWO	Red-bellied Woodpecker	60	SSE	2								
		Autumn	ETTI	Tufted Titmouse	40	NW	1								
		Autumn	RWBL	Red-winged Blackbird	50	WSW	3								
		Autumn	AMCR	American Crow	80	W	7								
3-Oct-11	C	Autumn	NOFL	Northern Flicker	20	ESE	1								
		Autumn	BCCH	Black-capped Chickadee	60	S	1								
		Autumn	BLJA	Blue Jay	70	S	1								
		Autumn	RBWO	Red-bellied Woodpecker	30	W	1	1000	1009	13	2	100%			
		Autumn	NOFL	Northern Flicker	40	W	1								
3-Oct-11	D	Autumn	BLJA	Blue Jay	40	E	2	Light Drizzle							
		Autumn	CAGO	Canada Goose	90	S	6								
		Autumn	MODO	Mourning Dove	30	S	1								
		Autumn	YRWA	Yellow-rumped Warbler	5	E	2								
		Autumn	RCKI	Ruby-crowned Kinglet	5	E	1		1012	1021	14	0	100%		
		Autumn	ETTI	Tufted Titmouse	5	E	1								
		Autumn	RBWO	Red-bellied Woodpecker	20	S	1								
		Autumn	WBNU	White-breasted Nuthatch	20	N	1								
		Autumn	BLJA	Blue Jay	100	N	1								
		Autumn	BLJA	Blue Jay	30	S	1								
3-Oct-11	E	Autumn	RBWO	Red-bellied Woodpecker	50	SW	1								
		Autumn	AMCR	American Crow	110	SE	2								
		Autumn	RHWO	Red-headed Woodpecker	30	W	2	919	928	14	2	100%			
		Autumn	AMRO	American Robin	20	E	1								
		Autumn	BLJA	Blue Jay	40	N	1								
		Autumn	RBWO	Red-bellied Woodpecker	30	N	1								
		Autumn	EABL	Eastern Bluebird	60	W	2								
		Autumn	NOFL	Northern Flicker	60	NW	1								
		Autumn	BLJA	Blue Jay	40	NW	1	919	928	14	2	100%			
		Autumn	FSP	Field Sparrow	10	E	1								
3-Oct-11	F	Autumn	BLJA	Blue Jay	10	S	1								
		Autumn	NOCA	Northern Cardinal	60	NW	1								
3-Oct-11	G	Autumn	AMRO	American Robin	40	N NW	1								
		Autumn	AMGO	American Goldfinch	5	S	3								
		Autumn	AMCR	American Crow	100	NW	2								
		Autumn	SOSP	Song Sparrow	60	N	1								
		Autumn	SWTH	Swainson's Thrush	5	E	1								
		Autumn	RBWO	Red-bellied Woodpecker	40	SE	1								
		Autumn	EABL	Eastern Bluebird	60	N	2								
		Autumn	RBWO	Red-bellied Woodpecker	50	W	1								
		Autumn	CHSW	Chimney Swift	20	S	3								
		Autumn	BLJA	Blue Jay	60	NW	1								
3-Oct-11	H	Autumn	AMRO	American Robin	70	S	3								
		Autumn	HOSP	House Sparrow	40	E	4								
		Autumn	NOFL	Northern Flicker	50	SE	1								
		Autumn	HAWO	Hairy Woodpecker	40	S	1								
		Autumn	BLJA	Blue Jay	70	E	1	855	904	14	0	100%			
		Autumn	MODO	Mourning Dove	10	NW	3								
		Autumn	NOCA	Northern Cardinal	30	E	2								
		Autumn	AMRO	American Robin	70	N	1								
		Autumn	RBWO	Red-bellied Woodpecker	20	SSW	1								
		Autumn	AMRO	American Robin	30	SW	2	842	851	14	0	100%			
3-Oct-11	I	Autumn	EUST	European Starling	60	N	6								

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # In Flock	Behavior/notes	Survey Time Start	Survey Time Stop	Survey Temp (C)	Survey Wind	Cloud	
3-Oct-11	J	Autumn	MODO	Mourning Dove	100	N	4							
		Autumn	MODO	Mourning Dove	30	N	2							
		Autumn	BLJA	Blue Jay	40	N	1			823	832	14	0	100%
		Autumn	NOCA	Northern Cardinal	30	W	1							
		Autumn	AMRO	American Robin	40	N	2							
3-Oct-11	K	Autumn	BLJA	Blue Jay	60	S	1							
		Autumn	MODO	Mourning Dove	100	S	2	Light Drizzle						
		Autumn	BLJA	Blue Jay	60	NNW	1							
		Autumn	RBWO	Red-bellied Woodpecker	10	W	2							
		Autumn	BLJA	Blue Jay	30	W	1							
10-Oct-11	A	Autumn	NOFL	Northern Flicker	50	SW	1			759	808	12	0	95%
		Autumn	BLJA	Blue Jay	80	NNW	2							
		Autumn	AMRO	American Robin	40	N	1							
		Autumn	AMGO	American Goldfinch	30	E	1							
		Autumn	RWBL	Red-winged Blackbird	90	ENE	4							
10-Oct-11	B	Autumn	EABL	Eastern Bluebird	30	S	3	P						
		Autumn	BLJA	Blue Jay	30	W	3	F/G						
		Autumn	RBWO	Red-bellied Woodpecker	20	NE	2	Perched, Calling	1000	1009	21	0	50%	
		Autumn	EUST	European Starling	30	N	5	F						
		Autumn	MYWA	Yellow-rumped Warbler	10	W	2	Feeding						
10-Oct-11	C	Autumn	AMGO	American Goldfinch	10	S	2	In Flight						
		Autumn	BLJA	Blue Jay	25	W	2	Perched						
		Autumn	BLJA	Blue Jay	40	NE	11	Calling						
		Autumn	RBWO	Red-bellied Woodpecker	30	E	1	Calling, Perched						
		Autumn	BLJA	Blue Jay	20	NW	1	Calling, Perched						
10-Oct-11	D	Autumn	BLJA	Blue Jay	50	N	1	Calling						
		Autumn	BLJA	Blue Jay	50	W	1	Flying	1013	1022	21	2	70%	
		Autumn	RWBL	Red-winged Blackbird	60	W	1	Flying						
		Autumn	AMCR	American Crow	40	E	4	Flying						
		Autumn	NOFL	Northern Flicker	30	E	2	Flying						
10-Oct-11	E	Autumn	COGR	Common Grackle	10	NE	1	Flying						
		Autumn	PIWO	Pileated Woodpecker	60	SE	1	Calling						
		Autumn	EAME	Eastern Meadowlark	90	W	1	Perched						
		Autumn	BLJA	Blue Jay	80	E	2	Calling						
		Autumn	RBWO	Red-bellied Woodpecker	40	E	2	Perched	1025	1034	22	0	75%	
10-Oct-11	F	Autumn	WBNU	White-breasted Nuthatch	50	SW	1	Feeding, Calling						
		Autumn	ETTI	Tufted Titmouse	40	E	2	Feeding, Calling						
		Autumn	AMCR	American Crow	70	E	4	Flying, Calling						
		Autumn	AMCR	American Crow	90	ENE	3	Flying, Calling						
		Autumn	AMCR	American Crow	70	NNW	3	Calling						
10-Oct-11	G	Autumn	SOSP	Song Sparrow	40	SE	1	Flying						
		Autumn	AMCR	American Crow	10	SW	2	Flying, Calling						
		Autumn	CAGO	Canada Goose	80	S	3	Flying, Calling	745	754	14	2	35%	
		Autumn	BLJA	Blue Jay	70	N	2	Flying, Calling						
		Autumn	CAGO	Canada Goose	110	S	21	Flying, Calling						
10-Oct-11	H	Autumn	NOCA	Northern Cardinal	50	N	2	Perched, Singing						
		Autumn	RWBL	Red-winged Blackbird	30	E	1000	Flying						
		Autumn	RWBL	Red-winged Blackbird	30	NW	500	Flying						
		Autumn	BLJA	Blue Jay	30	W	2	Perched, Calling						
		Autumn	AMCR	American Crow	80	SW	2	Flying						
10-Oct-11	I	Autumn	COGR	Common Grackle	30	E	6	Flying						
		Autumn	KILL	Killdeer	50	SE	5	Flying						
		Autumn	SOSP	Song Sparrow	10	SW	1	Perched						
		Autumn	RBWO	Red-bellied Woodpecker	20	S	1	Perched						
		Autumn	BLJA	Blue Jay	30	S	2	Flying, Calling	943	952	21	0	50%	
10-Oct-11	J	Autumn	RHWO	Red-headed Woodpecker	30	NE	2	Feeding						
		Autumn	EUST	European Starling	40	S	800	Flying, Perched						
		Autumn	RWBL	Red-winged Blackbird	40	S	1200	Flying						
		Autumn	COGR	Common Grackle	40	S	80	Flying						
		Autumn	BHCO	Brown-headed Cowbird	40	S	10	Flying						
10-Oct-11	K	Autumn	RWBL	Red-winged Blackbird	20	S	4	Flying						
		Autumn	MODO	Mourning Dove	90	N	1	Perched						
		Autumn	AMCR	American Crow	70	E	4	Flying, Calling						
		Autumn	AMCR	American Crow	70	E	4	Flying, Calling						
		Autumn	AMCR	American Crow	70	E	4	Flying, Calling						

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (bearing)	Flyover # in flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Weather Conditions
10-Oct-11	F	Autumn	AMCR	American Crow	5	E	2	Perched					
		Autumn	AMCR	American Crow	100	SW	4	Calling					
		Autumn	AMGO	American Goldfinch	20	W	2	Flying					
		Autumn	AMRO	American Robin	20	SW	1	Perched, Calling	807	816	15	0	40%
		Autumn	RBWO	Red-bellied Woodpecker	40	S	1	Perched, Calling					
		Autumn	BLJA	Blue Jay	50	W	1	Calling					
		Autumn	SAVS	Savannah Sparrow	40	SE	1	Perched, Feeding					
		Autumn	HOLA	Horned Lark	30	E	2	Flying					
		Autumn	AMCR	American Crow	80	S	2	Calling					
		Autumn	RWBL	Red-winged Blackbird	70	E	950	Flying					
10-Oct-11	G	Autumn	COGR	Common Grackle	70	E	20	Flying					
		Autumn	MODO	Mourning Dove	70	W	2	Flying					
		Autumn	RWBL	Red-winged Blackbird	70	W	700	Flying	928	937	18	0	20%
		Autumn	COGR	Common Grackle	100	NE	3	Flying					
		Autumn	MALL	Mallard	90	E	2	Flying					
		Autumn	RBWO	Red-bellied Woodpecker	40	S	1	Flying					
		Autumn	AMRO	American Robin	30	W	4	Perched, Calling					
		Autumn	ETTI	Tufted Titmouse	20	W	3	Feeding					
		Autumn	YBSA	Yellow-bellied Sapsucker	10	W	1	Feeding					
		Autumn	AMRO	American Robin	15	SE	6	Perched, Calling					
10-Oct-11	H	Autumn	AMRO	American Robin	40	NW	2	Perched, Calling	914	923	18	0	
		Autumn	EUST	European Starling	50	W	7	Flying					
		Autumn	AMRO	American Robin	40	S	3	Perched, Calling					
		Autumn	CEDW	Cedar Waxwing	30	W	4	Flying					
		Autumn	NOFL	Northern Flicker	60	W	1	Calling					
		Autumn	NOCA	Northern Cardinal	5	SSE	1	Flying					
		Autumn	KILL	Killdeer	10	W	1	Flying					
		Autumn	AMRO	American Robin	30	SW	5	Perched, Calling					
		Autumn	RWBL	Red-winged Blackbird	70	S	1	Flying					
		Autumn	AMRO	American Robin	40	W	4	Perched, Calling					
10-Oct-11	I	Autumn	BLJA	Blue Jay	20	SW	1	Perched, Calling					
		Autumn	BLJA	Blue Jay	10	W	3	Perched, Calling					
		Autumn	EUST	European Starling	100	N	3	Flying	902	911	17	0	30%
		Autumn	BLJA	Blue Jay	40	N	1	Perched, Calling					
		Autumn	ETTI	Tufted Titmouse	80	W	1	Feeding					
		Autumn	EABL	Eastern Bluebird	40	E	6	Flying					
		Autumn	EAPH	Eastern Phoebe	20	S	1	Flycatching					
		Autumn	WBNU	White-breasted Nuthatch	30	N	2	Feeding					
		Autumn	MODO	Mourning Dove	10	N	1	Perched					
		Autumn	COGR	Common Grackle	70	S	2	Flying					
10-Oct-11	J	Autumn	HETH	Hermit Thrush	40	E	1	Feeding					
		Autumn	RBWO	Red-bellied Woodpecker	40	N	1	Feeding					
		Autumn	AMRO	American Robin	40	SSW	2	Perched, Calling					
		Autumn	AMRO	American Robin	30	W	1	Perched, Calling	1043	1052	16	0	40%
		Autumn	REWO	Red-bellied Woodpecker	30	W	1	Feeding					
		Autumn	MODO	Mourning Dove	10	N	2	Perched					
		Autumn	EABL	Eastern Bluebird	60	N	3	Flying, Calling					
		Autumn	AMGO	American Goldfinch	50	N	6	Flying, Calling					
		Autumn	BLJA	Blue Jay	50	N	2	Flying					
		Autumn	BLJA	Blue Jay	50	NW	1	Calling					
10-Oct-11	K	Autumn	ETTI	Tufted Titmouse	40	N	2	Feeding					
		Autumn	SCSP	Song Sparrow	50	NE	1	Singing					
		Autumn	NOFL	Northern Flicker	50	E	1	Calling					
		Autumn	SEDO	Short-billed Dowitcher	60	NE	2	Flying					
		Autumn	REWO	Red-bellied Woodpecker	30	N	1	Feeding					
		Autumn	ETTI	Tufted Titmouse	100	E	1	Feeding	827	836	16	0	45%
		Autumn	BLJA	Blue Jay	100	ESE	2	Calling					
		Autumn	NOFL	Northern Flicker	30	N	1	Flying					
		Autumn	COGR	Common Grackle	20	N	1	Flying					
		Autumn	KILL	Killdeer	50	S	2	Flying, Calling					
10-Oct-11		Autumn	HOFL	House Finch	20	W	2	Flying					

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Cloud
10-Oct-11	Between F & 20-Oct-11	Autumn	RTHA	Red-tailed Hawk				41 11' 24.3" Perched on Wire at the side of the road Corner of TR80 and CE46	803	0	20	0	45%
20-Oct-11	A	Autumn	BCGH	Black-capped Chickadee	30	NE	1	Feeding	930	939	10	2	100%
20-Oct-11	B	Autumn	AMCR	American Crow	30	W	2	Perched	942	951	10	10	100%
20-Oct-11		Autumn	REWO	Red-bellied Woodpecker	20	N	1	Feeding					
20-Oct-11		Autumn	BLJA	Blue Jay	10	W	2	Calling/Flying	956	1005	11	2	100%
20-Oct-11	C	Autumn	BLJA	Blue Jay	40	S	1	Calling	1008	1017	11	2	100%
20-Oct-11	D	Autumn	No Observations										
20-Oct-11		Autumn	AMRO	American Robin	10	N	2	Flying/Perched					
20-Oct-11		Autumn	BLJA	Blue Jay	50	W	3	Calling/Flying					
20-Oct-11	E	Autumn	AMRO	American Robin	20	W	1	Calling/Perched	916	925	10	0	100%
20-Oct-11		Autumn	AMCR	American Crow	30	SE	1	Calling/Flying					
20-Oct-11		Autumn	COGR	Common Grackle	20	E	1	Perched					
20-Oct-11		Autumn	BLJA	Blue Jay	10	E	2	Perched					
20-Oct-11	F	Autumn	BLJA	Blue Jay	20	W	1	Perched	1024	1033	11	7	100%
20-Oct-11	G	Autumn	No Observations						903	912	10	2	100%
20-Oct-11	H	Autumn	No Observations						849	858	10	2	100%
20-Oct-11	I	Autumn	No Observations						836	845	10	2	100%
20-Oct-11	J	Autumn	NOCA	Northern Cardinal	15	W	1	Perched	819	828	10	7	100%
20-Oct-11		Autumn	MODO	Mourning Dove	90	N	1	Perched					
20-Oct-11	K	Autumn	No Observations						804	813	10	0	100%
20-Oct-11		Autumn	AMCR	American Crow	40	S	3	Calling					
20-Oct-11		Autumn	REWO	Red-bellied Woodpecker	15	SE	1	Perched					
20-Oct-11		Autumn	REWO	Red-bellied Woodpecker	30	W	1	Calling					
20-Oct-11	A	Autumn	RWBL	Red-winged Blackbird	80	NW	220	Flying	808	817	11	2	100%
20-Oct-11		Autumn	BLJA	Blue Jay	40	W	2	Flying					
20-Oct-11		Autumn	MYWA	Yellow-rumped Warbler	20	NW	2	Calling					
20-Oct-11		Autumn	WTSP	White-throated Sparrow	10	NE	2	Calling					
20-Oct-11		Autumn	WCSP	White-crowned Sparrow	25	SW	2	Singing					
20-Oct-11		Autumn	REWO	Red-bellied Woodpecker	20	SW	1	Perched					
20-Oct-11	B	Autumn	BLJA	Blue Jay	40	W	2	Flying					
20-Oct-11		Autumn	RWBL	Red-winged Blackbird	70	NE	75	Flying	1001	1011	12	2	100%
20-Oct-11		Autumn	COGR	Common Grackle	70	NE	10	Flying					
20-Oct-11		Autumn	DOWO	Downy Woodpecker	10	S	1	Feeding					
20-Oct-11		Autumn	AMRO	American Robin	20	SE	1	Perched					
20-Oct-11		Autumn	REWO	Red-bellied Woodpecker	40	SW	1	Feeding					
20-Oct-11		Autumn	BLJA	Blue Jay	30	NW	2	Flying					
20-Oct-11	C	Autumn	BCGH	Black-capped Chickadee	10	S	3	Feeding					
20-Oct-11		Autumn	ETTI	Tufted Titmouse	10	S	2	Feeding					
20-Oct-11		Autumn	WBNU	White-breasted Nuthatch	10	S	2	Feeding					
20-Oct-11		Autumn	AMCR	American Crow	100	W	4	Flying	948	958	12	0	100%
20-Oct-11		Autumn	WIWR	Winter Wren	20	SE	1	Flying					
20-Oct-11		Autumn	TLVU	Turkey Vulture	5	W	1	Soaring					
20-Oct-11	D	Autumn	RWBL	Red-winged Blackbird	70	N	70	Feeding	1014	1023	11	7	100%
20-Oct-11		Autumn	GCKI	Golden-crowned Kinglet	10	W	2	Feeding					
20-Oct-11		Autumn	TRES	Tree Swallow	70	N	120	Feeding, Flying					
20-Oct-11		Autumn	RHWO	Red-headed Woodpecker	40	NW	2	Calling					
20-Oct-11		Autumn	HOSP	House Sparrow	30	NW	8	Flying					
20-Oct-11	E	Autumn	BLJA	Blue Jay	40	S	1	Calling					
20-Oct-11		Autumn	BLJA	Blue Jay	20	N	2	Calling	823	832	10	0	100%
20-Oct-11		Autumn	COGR	Common Grackle	20	N	2	Flying					
20-Oct-11		Autumn	AMRO	American Robin	40	W	3	Calling					
20-Oct-11		Autumn	RHWO	Red-headed Woodpecker	5	E	1	Feeding					
20-Oct-11	F	Autumn	BLJA	Blue Jay	100	ENE	2	Calling	1030	1039	13	0	90%
20-Oct-11		Autumn	BLJA	Blue Jay	50	W	3	Calling					
20-Oct-11		Autumn	BLJA	Blue Jay	90	SW	1	Calling					
20-Oct-11	G	Autumn	RWBL	Red-winged Blackbird	40	E	22	Flying	836	845	10	2	100%
20-Oct-11		Autumn	AMCR	American Crow	10	S	1	Perched					
20-Oct-11		Autumn	AMCR	American Crow	110	N	2	Flying					

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Cloud
24-Oct-11	H	Autumn	AMRO	American Robin	10	W	6	Perched					
		Autumn	AMRO	American Robin	40	S	4	Perched, Calling					
		Autumn	NOCA	Northern Cardinal	10	E	1	Perched					
		Autumn	RBWO	Red-bellied Woodpecker	30	N	1	Feeding					
		Autumn	BLJA	Blue Jay	50	N	1	Feeding	849	858	10	2	100%
		Autumn	BLJA	Blue Jay	5	E	1	Feeding					
		Autumn	TRES	Tree Swallow	35	NW	330	Flying/Feeding					
		Autumn	MYWA	Yellow-rumped Warbler	10	W	2	Perched					
		Autumn	CEDW	Cedar Waxwing	10	W	8	Feeding					
		Autumn	MYWA	Yellow-rumped Warbler	30	N	3	Feeding	903	912	11	2	100%
24-Oct-11	I	Autumn	RWBL	Red-winged Blackbird	5	W	5	Flying					
		Autumn	BLJA	Blue Jay	60	E	1	Feeding					
		Autumn	RHWO	Red-headed Woodpecker	20	E	1	Feeding					
		Autumn	MODO	Mourning Dove	80	N	2	Perched					
		Autumn	BLJA	Blue Jay	10	NW	2	Flying					
		Autumn	NOCA	Northern Cardinal	20	SE	1	Perched					
		Autumn	AMRO	American Robin	30	S	1	Flying	917	926	12	0	100%
		Autumn	REWO	Red-bellied Woodpecker	70	W	2	Feeding					
		Autumn	AMCR	American Crow	80	SW	3	Flying					
		Autumn	REWO	Red-bellied Woodpecker	30	W	1	Feeding					
24-Oct-11	K	Autumn	BLJA	Blue Jay	20	NW	2	Feeding					
		Autumn	AMRO	American Robin	30	N	2	Perched					
		Autumn	AMCR	American Crow	100	N	4	Flying	931	940	12	2	100%
		Autumn	MODO	Mourning Dove	80	S	2	Perched					
		Autumn	SCSP	Song Sparrow	20	ENE	1	Flying					
		Autumn	AMRO	American Robin	20	SW	1	Flying					
		Autumn	DOWO	Downy Woodpecker	20	W	1	Feeding					
		Autumn	EABL	Eastern Bluebird	80	W	3	Feeding					
		Autumn	MYWA	Yellow-rumped Warbler	30	W	1	Feeding					
		Autumn	RWBL	Red-winged Blackbird	50	W	200	Flying					
3-Nov-11	A	Autumn	COGR	Common Grackle	50	W	50	Flying					
		Autumn	REWO	Red-bellied Woodpecker	60	SE	1	Feeding					
		Autumn	BLJA	Blue Jay	90	NW	1	Feeding	854	903	14	2	100%
		Autumn	EUST	European Starling	10	W	2	Flying					
		Autumn	COGR	Common Grackle	20	SW	1	Flying					
		Autumn	ETTI	Tufted Titmouse	70	S	1	Feeding					
		Autumn	AMGO	American Goldfinch	10	W	1	Flying					
		Autumn	BLJA	Blue Jay	60	NE	2	Feeding					
		Autumn	AMRO	American Robin	40	S	2	Feeding					
		Autumn	AMCR	American Crow	60	NE	5	Feeding					
3-Nov-11	B	Autumn	ETTI	Tufted Titmouse	20	NE	1	Feeding	842	851	14	5	95%
		Autumn	REWO	Red-bellied Woodpecker	10	SE	1	Feeding					
		Autumn	COGR	Common Grackle	30	E	1	Flying					
		Autumn	AMCR	American Crow	100	S	6	Feeding					
		Autumn	WBNU	White-breasted Nuthatch	30	SSW	1	Feeding					
		Autumn	RWBL	Red-winged Blackbird	50	W	8	Flying					
		Autumn	RWBL	Red-winged Blackbird	100	W	250	Flying					
		Autumn	COGR	Common Grackle	100	W	30	Flying					
		Autumn	NOCA	Northern Cardinal	10	S	1	Flying	827	836	14	0	95%
		Autumn	AMCR	American Crow	60	SE	1	Feeding					
3-Nov-11	C	Autumn	AMGO	American Goldfinch	10	N	1	Feeding					
		Autumn	RWBL	Red-winged Blackbird	70	W	1200	Flying					
		Autumn	COGR	Common Grackle	70	W	50	Flying					
		Autumn	BHCO	Brown-headed Cowbird	70	W	20	Flying					
		Autumn	AMCR	American Crow	100	SE	3	Feeding					
		Autumn	AMGO	American Goldfinch	20	S	4	Flying	814	823	9	5	80%
		Autumn	COGR	Common Grackle	10	SW	1	Flying					
		Autumn	RWBL	Red-winged Blackbird	5	E	200	Perched					
		Autumn	HOSP	House Sparrow	10	W	17	Perched					
		Autumn	COGR	Common Grackle	5	N	2	Flying	912	921	16	0	100%
3-Nov-11	E	Autumn	BLJA	Blue Jay	40	NE	2	Feeding					
		Autumn	AMGO	American Goldfinch	30	NW	4	Flying					
		Autumn	BLJA	Blue Jay	20	W	1	Feeding					
		Autumn	AMCR	American Crow	100	SE	3	Feeding					
		Autumn	AMGO	American Goldfinch	20	S	4	Flying					
		Autumn	COGR	Common Grackle	10	SW	1	Flying					
		Autumn	RWBL	Red-winged Blackbird	5	E	200	Perched					
		Autumn	HOSP	House Sparrow	10	W	17	Perched					
		Autumn	COGR	Common Grackle	5	N	2	Flying					
		Autumn	BLJA	Blue Jay	40	NE	2	Feeding					

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Cloud
3-Nov-11	F	Autumn	AMCR	American Crow	100	NW	1	Calling					
		Autumn	NOCA	Northern Cardinal	15	N	1	Calling	754	803	16	2	50%
		Autumn	RWBL	Red-winged Blackbird	40	S	60	Flying					
		Autumn	COGR	Common Grackle	10	S	3	Flying, Calling					
3-Nov-11	G	Autumn	AMRO	American Robin	20	S	1	Calling					
		Autumn	AMCR	American Crow	10	S	1	Flying	926	935	16	0	100%
		Autumn	REWO	Red-bellied Woodpecker	20	NW	1	Flying					
		Autumn	DOWO	Downy Woodpecker	10	SW	1	Calling					
3-Nov-11	H	Autumn	REWO	Red-bellied Woodpecker	30	W	1	Calling					
		Autumn	BCCH	Black-capped Chickadee	10	W	1	Feeding					
		Autumn	ETTI	Tufted Titmouse	40	S	1	Calling					
		Autumn	HOFI	House Finch	30	S	3	Perched	940	949	17	0	70%
		Autumn	RWBL	Red-winged Blackbird	5	S	140	Flying					
		Autumn	BLJA	Blue Jay	20	S	1	Calling					
		Autumn	EUST	European Starling	10	S	20	Flying					
		Autumn	HAWO	Hairy Woodpecker	5	E	1	Perched					
		Autumn	EABL	Eastern Bluebird	90	N	8	Perched	954	1003	17	0	80%
		Autumn	WBNU	White-breasted Nuthatch	20	E	1	Feeding, Calling					
3-Nov-11	J	Autumn	BLJA	Blue Jay	40	NE	2	Calling					
		Autumn	REWO	Red-bellied Woodpecker	40	S	1	Feeding, Calling	1008	1017	18	0	75%
		Autumn	RWBL	Red-winged Blackbird	70	N	75	Flying					
		Autumn	AMCR	American Crow	90	SW	4	Calling					
		Autumn	COGR	Common Grackle	70	N	12	Flying					
		Autumn	REWO	Red-bellied Woodpecker	20	WSW	1	Perched					
3-Nov-11	K	Autumn	BLJA	Blue Jay	40	W	2	Calling					
		Autumn	SCSP	Song Sparrow	50	E	1	Singing	1023	1032	19	0	90%
		Autumn	AMRO	American Robin	20	N	5	Calling					
		Autumn	EABL	Eastern Bluebird	60	SE	3	Flying					
10-Nov-11	A	Autumn	MODO	Mourning Dove	100	S	4	Perched					
		Autumn	RWBL	Red-winged Blackbird	40	NW	30	Flying	808	817	4	5	70%
		Autumn	RTHA	Red-tailed Hawk	70	E	1	Flapping/Gliding	755	804	4	2	85%
		Autumn	RWBL	Red-winged Blackbird	80	W	650	Flying					
10-Nov-11	C	Autumn	REWO	Red-bellied Woodpecker	60	SW	1	Calling	742	751	4	0	90%
		Autumn	RWBL	Red-winged Blackbird	40	W	700	Flying					
		Autumn	BLJA	Blue Jay	20	N	1	Flying					
		Autumn	WBNU	White-breasted Nuthatch	20	N	1	Feeding					
10-Nov-11	D	Autumn	DOWO	Downy Woodpecker	10	N	1	Feeding	730	739	4	5	50%
		Autumn	MYWA	Yellow-rumped Warbler	20	N	1	Feeding					
		Autumn	ETTI	Tufted Titmouse	30	W	2	On Roadside					
		Autumn	BLJA	Blue Jay	10	W	1	Flying					
10-Nov-11	E	Autumn	HOFI	House Finch	15	W	6	Flying					
		Autumn	BLJA	Blue Jay	40	NE	5	Calling					
		Autumn	AMCR	American Crow	40	NE	7	Calling					
		Autumn	RHWO	Red-headed Woodpecker	30	NE	1	Perched	826	835	5	2	50%
		Autumn	HOSP	House Sparrow	20	W	3	Flying					
		Autumn	RWBL	Red-winged Blackbird	30	N	30	Flying					
		Autumn	WBNU	White-breasted Nuthatch	20	E	1	Feeding					
		Autumn	RTHA	Red-tailed Hawk	40	S	1	Feeding					
		Autumn	RTHA	Red-tailed Hawk	30	W	1	Flying					
		Autumn	RTHA	Red-tailed Hawk	90	N	1	Feeding					
10-Nov-11	F	Autumn	COGR	Common Grackle	5	W	2	Flying					
		Autumn	WBNU	White-breasted Nuthatch	30	WNW	2	Feeding					
		Autumn	NOCA	Northern Cardinal	10	NW	1	Perched	726	725	4	0	60%
		Autumn	RWBL	Red-winged Blackbird	20	E	120	Flying					
10-Nov-11	G	Autumn	AMRO	American Robin	5	NW	1	Perched					
		Autumn	No Observations						840	849	5	2	60%
		Autumn	WBNU	White-breasted Nuthatch	30	S	1	Feeding					
		Autumn	REWO	Red-bellied Woodpecker	20	WSW	1	Perched					
10-Nov-11	H	Autumn	NOCA	Northern Cardinal	10	S	2	Calling	853	902	6	2	60%
		Autumn	BLJA	Blue Jay	50	W	1	Calling					
		Autumn	HOSP	House Sparrow	40	S	1	Perched					
		Autumn	HOSP	House Sparrow	40	S	1	Perched					

Passerine Migration Field Data.

Date	Point	Season	Code	Species Name	Estimated Distance (m)	Direction (Bearing)	Flyover # in Flock	Behavior/notes	Survey Start	Survey Stop	Survey Temp (C)	Survey Wind	Survey Weather Conditions
10-Nov-11	I	Autumn	EABL	Eastern Bluebird	40	SE	2	Calling					
		Autumn	BLA	Blue Jay	30	S	1	Flying					
		Autumn	BLA	Blue Jay	40	W	2	Calling	907	916	7	2	80%
		Autumn	WBNU	White-breasted Nuthatch	20	W	1	Calling					
		Autumn	AMRO	American Robin	30	N	2	Calling					
10-Nov-11	J	Autumn	RWBL	Red-winged Blackbird	50	E	125	Flying					
		Autumn	WBNU	White-breasted Nuthatch	30	S	1	Calling	925	934	7	2	80%
		Autumn	RWBL	Red-winged Blackbird	30	N	75	Flying					
		Autumn	BLA	Blue Jay	10	W	1	Flying					
		Autumn	COGR	Common Grackle	5	E	20	Flying					
10-Nov-11	K	Autumn	EUST	European Starling	15	S	4	Perched					
		Autumn	RWBL	Red-winged Blackbird	30	N	18	Flying					
		Autumn	AMRO	American Robin	50	NW	2	Calling					
		Autumn	AMRO	American Robin	20	W	3	Calling	700	709	3	0	60%
		Autumn	RWBL	Red-winged Blackbird	70	S	350	Flying					
		Autumn	MODO	Mourning Dove	60	NE	1	Calling					
		Autumn	COGR	Common Grackle	70	S	20	Flying					
		Autumn	WBNU	White-breasted Nuthatch	5	SW	1	Feeding					
		Autumn	AMGO	American Goldfinch	10	W	4	Flying					
		Autumn	NOCA	Northern Cardinal	10	N	1	Perched					
		Autumn	DOWO	Downy Woodpecker	5	N	1	Calling					
		Autumn	ETTI	Tufted Titmouse	15	E	3	Feeding					
		Autumn	WBNU	White-breasted Nuthatch	20	E	2	Calling	731	740	9	0	0%
		Autumn	RBWO	Red-bellied Woodpecker	20	E	1	Feeding					
		Autumn	DEIU	Dark-eyed Junco	25	E	2	Feeding					
15-Nov-11	C	Autumn	AMRO	American Robin	40	NE	2	Calling					
		Autumn	HOLA	Horned Lark	40	N	4	Feeding					
		Autumn	RWBL	Red-bellied Woodpecker	50	SE	1	Calling					
		Autumn	NOFL	Northern Flicker	30	W	1	Calling	757	806	9	0	0%
		Autumn	BLA	Blue Jay	30	W	2	Flying					
15-Nov-11	D	Autumn	BCCH	Black-capped Chickadee	10	S	2	Feeding					
		Autumn	WBNU	White-breasted Nuthatch	10	N	1	Feeding					
		Autumn	EABL	Eastern Bluebird	40	S	2	Perched	810	819	9	0	0%
		Autumn	BLA	Blue Jay	20	W	2	Calling					
		Autumn	DEIU	Dark-eyed Junco	40	N	5	Feeding					
15-Nov-11	E	Autumn	BLA	Blue Jay	30	E	1	Calling					
		Autumn	RHWO	Red-headed Woodpecker	50	NW	3	Calling					
		Autumn	AMCR	American Crow	60	N	5	Flying	716	725	9	0	10%
		Autumn	NOHA	Northern Harrier	100	S	1	Flying					
		Autumn	KILL	Killdeer	100	S	1	Calling					
15-Nov-11	F	Autumn	HOLA	Horned Lark	40	S	6	Flying					
		Autumn	BLA	Blue Jay	10	NW	3	Perched					
		Autumn	KILL	Killdeer	20	S	1	Calling	826	835	10	0	5%
		Autumn	RWBL	Red-winged Blackbird	5	E	80	Flying					
		Autumn	COGR	Common Grackle	5	E	12	Flying					
15-Nov-11	G	Autumn	No Observations						703	712	9	0	5%
15-Nov-11	H	Autumn	EABL	Eastern Bluebird	40	N	3	Perched					
		Autumn	RWBL	Red-bellied Woodpecker	10	SE	1	Calling					
		Autumn	AMRO	American Robin	30	S	3	Calling	928	937	11	0	0%
		Autumn	CEDW	Cedar Waxwing	10	W	7	Feeding					
		Autumn	BLA	Blue Jay	40	SW	2	Calling					
15-Nov-11	I	Autumn	AMRO	American Robin	10	N	1	Perched	915	924	11	0	0%
		Autumn	EUST	European Starling	100	S	9	Perched					
		Autumn	RTHA	Red-tailed Hawk	30	NE	2	Flying					
		Autumn	RBWO	Red-bellied Woodpecker	20	SE	1	Calling	858	907	11	0	0%
		Autumn	BLA	Blue Jay	40	N	1	Perched					
15-Nov-11	J	Autumn	WTSP	White-throated Sparrow	30	E	3	Feeding					
		Autumn	AMRO	American Robin	30	N	2	Calling					
		Autumn	BLA	Blue Jay	40	N	1	Flying					
		Autumn	DOWO	Downy Woodpecker	5	W	1	Feeding	844	853	11	2	5%
		Autumn	AMCR	American Crow	40	N	7	Flying					

APPENDIX B

Photographs from Passerine Migration Survey Points



Photo 1. Point A, facing east.



Photo 2. Point A, facing west.



Photo 3. Point B, facing east.

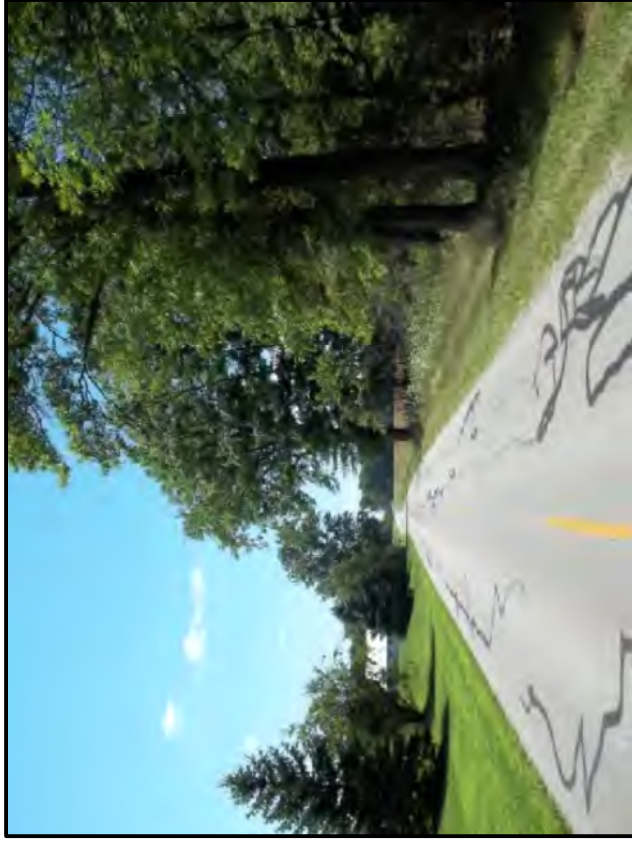


Photo 4. Point B, facing west.

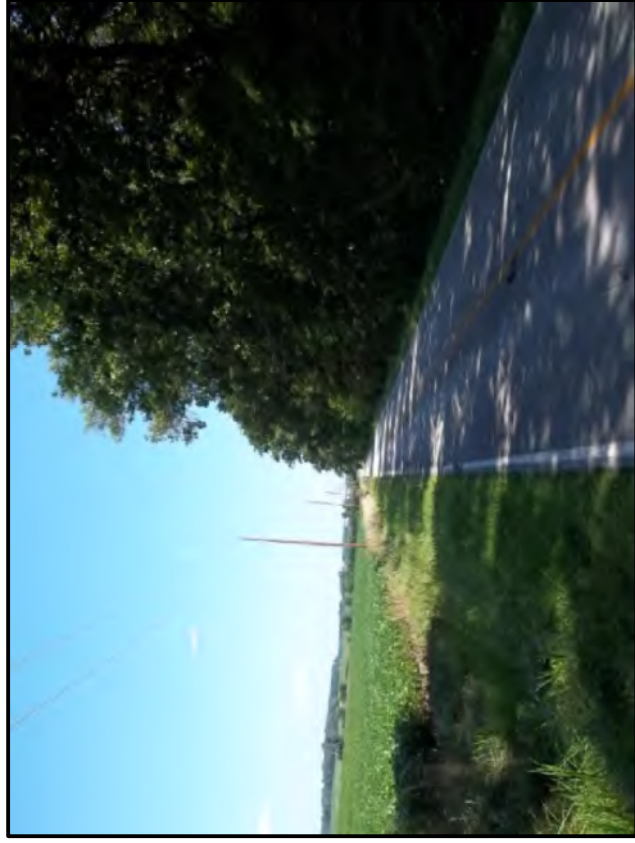


Photo 5. Point C, facing east.

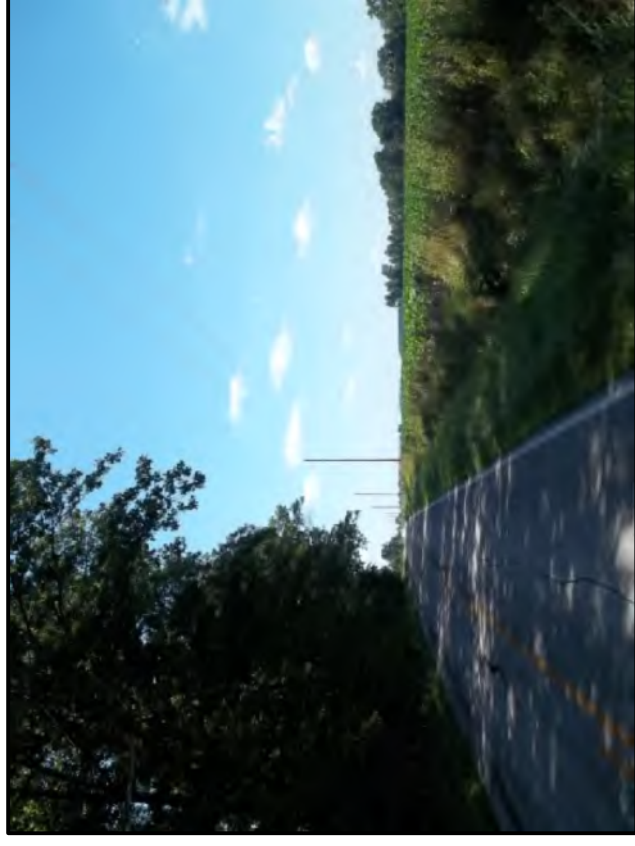


Photo 6. Point C, facing west.



Photo 7. Point D, facing north.



Photo 8. Point D, facing west.



Photo 9. Point E, facing east.



Photo 10. Point E, facing west.



Photo 11. Point F, facing north.

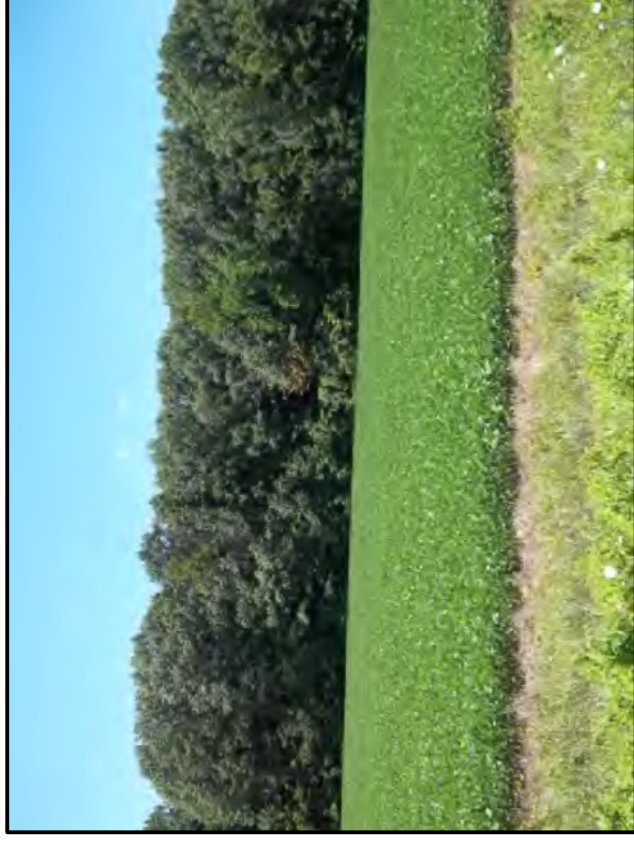


Photo 12. Point F, facing west.

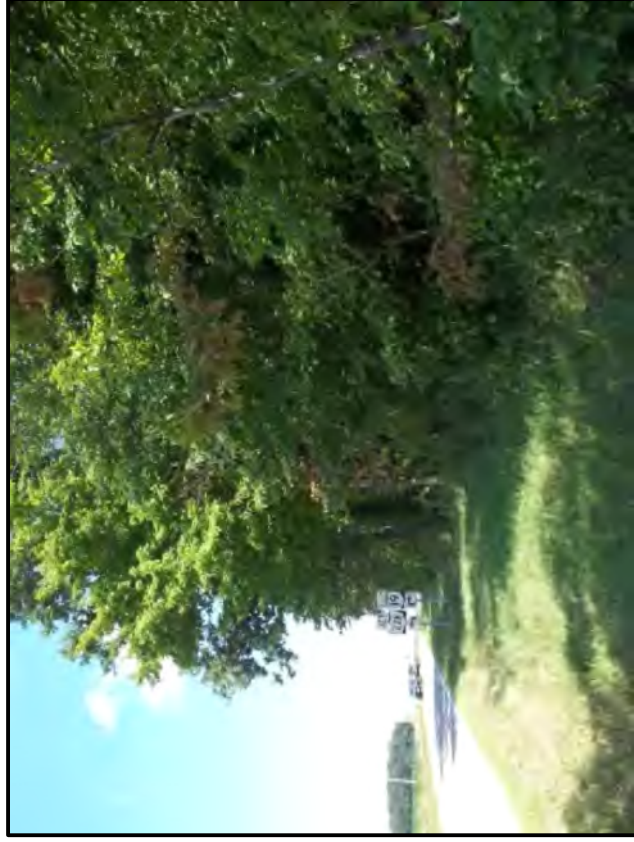


Photo 13. Point G, facing east.



Photo 14. Point G, facing west.



Photo 15. Point H, facing north.

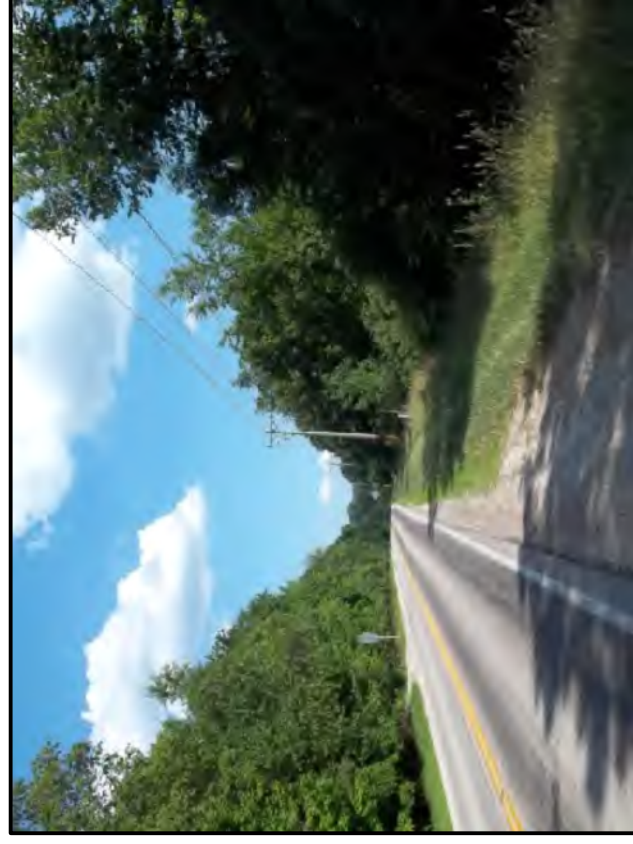


Photo 16. Point H, facing south.



Photo 17. Point I, facing north.



Photo 18. Point I, facing south.



Photo 19. Point J, facing north.



Photo 20. Point J, facing south.



Photo 21. Point K, facing north.

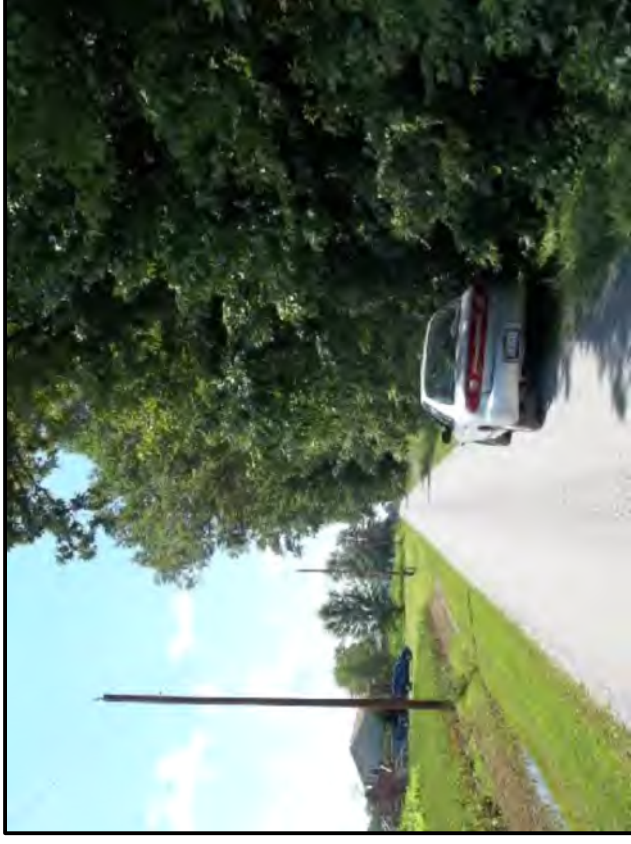


Photo 22. Point K, facing south.

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Case No(s). 17-2295-EL-BGN

Summary: Application Exhibits K, L, M and N electronically filed by Teresa Orahod on behalf of Sally W. Bloomfield