Spring Raptor Migration Survey Report

Hoffman Falls Wind Project

Towns of Fenner, Nelson, and Smithfield, Madison County, New York

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Liberty Renewables Inc. (the Applicant), Environmental Design & Research, D.P.C. (EDR) has prepared this Spring Raptor Migration Survey Report for the Hoffman Falls Wind Project, a proposed wind energy generation facility and associated infrastructure (herein, the Facility) located in Madison County, New York. This report will be incorporated into an Application for a siting permit that is being prepared in accordance with New York's Accelerated Renewable Energy Growth and Community Benefit Act, Executive Law §94-c (Section 94-c) regulations.[1] The information included in this report is intended to inform the Applicant in the development of the Facility and assist the New York State Office of Renewable Energy Siting (ORES) and the New York State Department of Environmental Conservation (NYSDEC) in their review of the Facility's potential impacts on state-listed endangered and threatened bird species in accordance with the requirements of the Section 94-c and 6 NYCRR Part 182 (Part 182) regulations.

The purpose of the spring raptor migration surveys was to identify and document raptors (including eagles, falcons, harriers, hawks, ospreys, owls, and vultures) that move through the area including and surrounding the Facility Area during the spring migration season (defined by the NYSDEC as March 1 to May 31). All raptors were targeted for the study, along with large flocks of non-raptor birds (e.g., waterfowl, corvids, icterids) and any special status species (i.e., endangered or threatened species, species of special concern, and species of greatest conservation need [NYSDEC, 2015a; NYSDEC, 2015b]). The spring raptor surveys were conducted by qualified biologists following the methodology established in the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects* (NYSDEC Survey Protocol). The scope of these surveys was defined in a Spring Raptor Migration Survey Work Plan that was submitted for ORES staff review in February 2021 (see Appendix A).

1.2 Facility Location and Description

The Applicant is proposing to construct an up to 72-megawatt (MW) wind-powered electric generating facility and associated infrastructure within the Towns of Fenner, Nelson, and Smithfield in Madison County, New York. The regional Facility location and the Facility Area are depicted in Figures 1 and 2, respectively. The Facility Area totals approximately 6,700 acres and is composed primarily of open agricultural fields, along with mixed-evergreen and evergreen forestland, woody wetlands, early successional communities, and disturbed/developed areas (e.g., roadways, residences, commercial buildings). Within the Facility Area, a much more limited subset of land will be selected for the siting, design, construction, and operation of the Facility. Much of the Facility will be constructed in areas where disturbance has already occurred (e.g., agricultural fields that are used for crop cultivation) in order to minimize the need for vegetation removal within forested and wetland areas.

[1] Chapter XVIII, Title 19 of the New York Codes, Rules and Regulations (NYCRR) Part 900. Available at: https://ores.ny.gov/regulations

2.0 BACKGROUND INFORMATION

2.1 Survey Location

EDR conducted a desktop review of the Facility Area using a Geographic Information System (GIS) to evaluate topography, vegetative communities, land cover, and access constraints. The results of this analysis were used to identify the best single survey location for the spring raptor migration surveys. Current National Agriculture Imagery Program (NAIP) and New York Statewide Digital Orthoimagery Program (NYSDOP) aerial imagery were reviewed as part of this effort, along with topographic contours generated from New York State GIS Program Office (NYSGPO) lidar data. Based on this analysis, EDR identified one survey location for the Facility Area that was used throughout the survey period (Figure 3, see Section 3.2 below for details).

2.2 Agency Database Review and Consultation

The Applicant has engaged in consultation with federal and state agencies regarding the potential presence of threatened and endangered species within the Facility Area. This has included database review via the U.S. Fish and Wildlife Service (USFWS) online Information for Planning and Consultation (IPaC) system, as well as correspondence with the New York Natural Heritage Program (NYNHP), NYSDEC, and ORES. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** Correspondence with the NYNHP began with the submittal of a formal request for information regarding state and federally-listed endangered and threatened species within the Facility Area on April 1, 2021. A response letter received from the NYNHP on May 14, 2021 listed several threatened bird species found within 10 miles of the Facility Area. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** In June 2021, ORES provided a Pre-application Wildlife Site Characterization Consultation letter, which included initial findings of occupied habitat. ORES indicated that the Facility is not sited within areas of mapped occupied habitat for any state-listed species, but recommended that the Applicant conduct breeding bird surveys and winter raptor surveys (Appendix B).

EDR also engaged in additional agency consultations and conducted reviews of other open-access databases (e.g., eBird, Christmas Bird Count) as part of preparing a Wildlife Site Characterization Report for the Facility. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION**

3.0 SPRING RAPTOR MIGRATION SURVEYS

As noted above, spring raptor migration surveys for the Facility were conducted based on the NYSDEC Survey Protocol. The surveys were intended to document the species, number, and flight height/direction of migrating raptors in order to allow for potential impact evaluation and inform the Facility development and permitting process.

3.1 Survey Period and Frequency

The survey period corresponded with the typical spring migratory period for the majority of New York avian species that may pass by or through the Facility Area during the spring migration season. As noted above, the NYSDEC defines the spring migration season as beginning on March 1 and continuing through May 31. Therefore, surveys were conducted from March 4, 2021 to May 26, 2021, for a total of 13 surveys (representing more than 125 survey-hours).

Surveys were conducted once per week between 8:00 a.m. and until at least two hours prior to sunset, which ranged from approximately 2:00 p.m. to approximately 6:00 p.m. as the season progressed. To the greatest extent practicable, surveys were not conducted on days when weather conditions would limit visibility (e.g., heavy rain, fog, snow, or excessive cloud cover). Weather forecasts were reviewed regularly in order to select the most appropriate survey days.

3.2 Survey Methodology

The primary method for surveying migrating raptors consisted of a daytime survey conducted from a single survey location. As described above, EDR conducted a GIS analysis to select a survey location with optimal, representative views of the area including and surrounding the Facility Area. The suitability of the survey location was also field-verified and micro-sited during the first field survey. The survey location was established at the edge of an open agricultural field and along South Road in the west-central portion of the Facility Area (see Figure 3). This location afforded open views of the sky and the Facility Area in multiple directions.

During surveys, biologists stood and/or sat at the stationary survey location and conducted systematic visual scans of the sky in all directions in order to detect raptors and other birds passing through the area and/or utilizing habitat within the Facility Area. Binoculars of 8x or 10x magnification were used as the primary visual aid for avian identification and counts. Biologists recorded detailed information for all raptors observed, as well as large flocks of non-raptor birds (i.e., more than 50 individuals). In addition, any special status (i.e., endangered, threatened, special concern, species of greatest conservation need [SGCN]) species observations were documented, regardless of number.

Survey data were recorded in a standardized and organized fashion using data sheets and a mobile GIS application that allowed for digitization of flight path lines and perch locations. Data recorded for each spring raptor migration survey included:

- Observer initials;
- Date;
- Start and end time;
- Hourly weather conditions (temperature, cloud cover, prevailing wind direction, wind speed, precipitation type [if any], and visibility);
- The number of individuals and identification of each species observed;
- The start and end time of each observation;
- Sex and age of individuals (when possible);
- Average flight height and direction;
- Behavior(s) (e.g., flying, perched, foraging); and
- Descriptions and additional notes.

Non-raptor bird species flocks composed of more than 50 individuals and all non-raptor special status species were also noted and mapped in a similar manner to raptor observations. All other non-raptor bird species that did not meet those criteria were noted as incidental species simply for their presence (the number of individuals was not recorded). Locations of all raptor species were indicated on an aerial-based map of the survey area. All observations of special status species (including detailed behavioral descriptions) were recorded.

3.2.1 Data Analysis

Several metrics were calculated for each raptor species observed during the spring migration surveys. First, the total number of observations was identified for each species including observations of raptors in flight or perched at any distance relative to the survey location. Observations were considered equivalent to individuals for the purpose of the analysis, as it is not always possible to discern among individuals of the same species during surveys (i.e., the same individuals may or may not be present at the same locations from week to week). Frequency was then calculated for each species by dividing the number of survey days during which observations were recorded by the total number of survey days. Mean and median flight heights for each species were calculated using the average flight height for each individual of that species recorded in the field. Percent of individuals in flight was calculated based on the total number of individuals perched and the total number of individuals in flight observed for each species. The dominant flight direction was determined by reviewing flight paths and recorded flight pattern data; in some cases, there was no obvious dominant flight direction. Temporal use was tabulated for raptor types based on the time of observation for every individual.

3.3 Survey Results

A total of 13 surveys were conducted between March 4, 2021 and May 26, 2021, resulting in more than 125 observer-hours (more than 7,500 observer-minutes). A summary of completed survey information is provided below in Table 1. Overall, a total of 476 raptors were recorded throughout the season. **BEGIN CONFIDENTIAL INFORMATION<** [redacted]

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Several additional observations were made of unidentified hawks (*Buteo* sp.) and raptors. Turkey vulture and red-tailed hawk were the most commonly observed species, with the former noted most frequently. A summary of raptor observations is provided below in Table 2, and raptor observations are presented in Figure 4. All raptor observations are listed in Appendix C and survey data sheets are provided in Appendix D.

The observed flight paths for some raptor species averaged in a northeast or north-dominant direction. Unknown raptors had the highest average flight height at 358 feet. **BEGIN CONFIDENTIAL INFORMATION**<[redacted]>**END CONFIDENTIAL INFORMATION** The overall average flight height for all observations was 169 feet. Most of the raptors observed were seen in flight, though red-tailed hawks and American kestrels were routinely observed perching. A summary of raptor flight metrics is provided below in Table 3.

Table 1. Completed Survey Information

Survey Date	Start Time (a.m.)	End Time (p.m.)	Survey Duration[1]	Temp. Range (°F)	Cloud Cover Range (%)	Wind Direction(s)	Wind Speed Range (mph)	Precip.[2]	Visibility Range (mi)	Number of Raptor Species Observed	Number of Raptor Individuals Observed
3/4/2021	8:00	3:56	7:56	21-24	10-100	NW	6-14	SN	2-17	1	8
3/9/2021	8:00	4:03	8:03	36-42	25-100	WNW,W	9-10		8-10	4	22
3/19/2021	8:00	5:15	9:15	18-30	0-10	NNW,N	7-9		19-29	4	37
3/25/2021	8:00	5:22	9:22	50-71	0-25	SSE,SSW, SW,S	5-12		10-29	5	67
3/30/2021	8:00	5:27	9:27	40-62	0-10	ESE,SSE,S	10-22		16-37	4	67
4/7/2021	8:00	5:36	9:36	45-65	0-90	E,ESE,ENE, NE,NNE	3-9		21-33	7	73
4/14/2021	7:56	5:44	9:48	43-63	0-90	S,SW,WSW, W,WNW,NW	2-8		9-10	6	27
4/23/2021	8:00	5:55	9:55	35-54	0-10	W	12-17		10	7	39
4/28/2021	8:00	6:01	10:01	54-74	90-100	N	2-9	R	10	7	63
5/4/2021	7:56	6:07	10:11	52-70	50-100	E,ESE,WSW, W,SW,S,SE	3-6	D	4-10	6	23
5/12/2021	8:00	6:16	10:16	42-58	10-100	WNW,W, E,NW	10-15		10	4	11
5/19/2021	8:00	6:24	10:24	64-81	0-90	W,N,NNW	2-6		10	3	15
5/26/2021	8:00	6:30	10:30	71-84	0-100	SW,S,SE	8-16	R,D	5-10	4	24

[1]Time spent at survey location (hh:mm); [2]D = drizzle; R = rain; SL = sleet; H = hail; SN = snow; F = fog

Table 2. Summary of Raptors Observed

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Raptor Group/Species	Scientific Name	Number of Survey Days Observed	Frequency[1]	Number of Individuals
[redacted]				
[redacted]	[redacted]	5	0.38	9
[redacted]	[redacted]	5	0.38	15
Buteos				
broad-winged hawk	*Buteo platypterus*	2	0.15	16
red-tailed hawk	*Buteo jamaicensis*	13	1.00	124
rough-legged hawk	*Buteo lagopus*	2	0.15	2
unidentified buteo	*Buteo* spp.	5	0.38	13
[redacted]				
[redacted]	[redacted]	6	0.46	8
[redacted]				
[redacted]	[redacted]	3	0.23	3
Falcons			0.00	
American kestrel	*Falco sparverius*	6	0.46	15
merlin	*Falco columbarius*	3	0.23	3
[redacted]				
[redacted]	[redacted]	5	0.38	11
Vultures				
turkey vulture	*Cathartes aura*	12	0.92	251
Unknown				
unidentified raptor		2	0.15	6

[1]Represents the number of survey days the species was observed divided by the total number of survey days (13).

Table 3. Summary of Raptor Flight Metrics

Raptor Group/Species	Total Number of Individuals[1]	Mean Flight Height (feet)	Median Flight Height (feet)	Percent of Individuals in Flight	Dominant Flight Direction
[redacted]					
	9	64	70	100	North
	15	118	90	100	Variable
Buteos					
broad-winged hawk	16	263	300	100	Northeast
red-tailed hawk	124	146	120	99	Variable
rough-legged hawk	2	190	190	100	Variable
unidentified buteo	13	302	300	100	North
[redacted]					
	8	30	18	100	West
	3	150	150	100	East
Falcons					
American kestrel	15	60	30	100	Variable
merlin	3	37	40	100	Variable
[redacted]					
	11	277	250	100	North
Vultures					
turkey vulture	251	178	150	100	North
Unknown					
unidentified raptor	6	358	450	100	Variable
Total	476	169	130	99	Variable

[1]Number of individuals observed over the course of the season. Observations were considered equivalent to individuals for the purpose of this table, though the same individuals may or may not have been observed multiple times.

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The time period (24-hour) with the most raptor observations was 12:00-13:00, with 94 individuals. The second most productive time period was 13:00-14:00, with 72 individuals. These two hours (12:00-14:00) accounted for approximately 35% of all observations. A summary of raptor temporal use is provided below in Table 4.

Table 4. Summary of Raptor Temporal Use

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Species	Time Period (24-hour)									
	8:00-9:00	9:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00
All raptors	16	36	61	61	94	72	55	56	46	22
red-tailed hawk	3	4	16	23	32	16	18	13	9	3
broad-winged hawk	7	11	2	0	1	0	1	0	0	1
rough-legged hawk	0	0	0	0	0	1	1	0	0	0
unknown *Buteo*	0	1	2	5	1	2	1	2	0	0
[redacted]	0	5	2	2	2	0	0	2	2	0
	0	3	0	0	0	2	3	0	1	0
merlin	0	1	0	0	0	1	0	1	0	0
American kestrel	4	1	5	3	5	2	2	2	1	0
[redacted]	2	0	1	1	2	0	0	0	2	0
	0	1	0	0	1	5	0	2	1	1
	0	0	0	0	0	1	1	1	0	0
turkey vulture	0	9	32	27	49	42	28	33	26	14
unknown raptor	0	0	1	0	1	0	0	0	4	3

Note: Temporal use values represent the total number of birds observed during each time period.

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3.3.1 Special-Status Species, Large Flocks, and Incidental Species

A total of five state-listed raptor species were observed throughout the survey period. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** A summary of state-listed threatened species observations is provided below in Table 5.

Table 5: State-Listed Threatened Species Observations

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Species Common Name	Species Scientific Name	Conservation Status in New York	Date	Time	Number of Individuals	Flight Height (feet)	Description
[redacted]	[redacted]	Threatened	3/30/2021	9:30 a.m.	1	400	[redacted]
		Threatened	4/7/2021	3:23 p.m.	2	300-400	
		Threatened	4/23/2021	1:46 p.m.	3	200	

Species Common Name	Species Scientific Name	Conservation Status in New York	Date	Time	Number of Individuals	Flight Height (feet)	Description
[redacted]	[redacted]	Threatened	4/28/2021	1:09 p.m.	2	250	[redacted]
		Threatened	4/28/2021	12:49 p.m.	1	200	
		Threatened	5/4/2021	5:34 p.m.	1	300	
		Threatened	5/4/2021	4:10 p.m.	1	350	

Species Common Name	Species Scientific Name	Conservation Status in New York	Date	Time	Number of Individuals	Flight Height (feet)	Description
[redacted]	[redacted]	Threatened	3/30/2021	12:38 p.m.	1	50	[redacted]
		Threatened	4/14/2021	8:21 a.m.	1	40	
		Threatened	5/4/2021	12:22 p.m.	1	10	
		Threatened	5/12/2021	11:35 a.m.	2	20	

Species Common Name	Species Scientific Name	Conservation Status in New York	Date	Time	Number of Individuals	Flight Height (feet)	Description
[redacted]	[redacted]	Threatened	5/12/2021	10:54 a.m.	1	15	[redacted]
		Threatened	5/19/2021	8:17 a.m.	1	10	
		Threatened	5/26/2021	4:13 p.m.	1	15	
		Threatened	5/26/2021	4:39 p.m.	1	80	

Species Common Name	Species Scientific Name	Conservation Status in New York	Date	Time	Number of Individuals	Flight Height (feet)	Description
[redacted]	[redacted]	Threatened	4/7/2021	9:52 a.m.	1	n/a	[redacted]
[redacted]	[redacted]	Threatened	4/14/2021	10:00 a.m.	1	n/a	[redacted]

>END CONFIDENTIAL INFORMATION

Large mixed flocks of red-winged blackbirds (*Agelaius phoeniceus*), common grackles (*Quiscalus quiscula*), and European starlings (*Sturnus vulgaris*), were observed on several occasions in March and April. Non-raptor bird species that did not meet the criteria of large flocks or individuals of special status species were noted as incidental species simply for their presence (the number of individuals was not recorded). A summary of incidental avian species observed during the survey season is presented below in Table 6.

Table 6. Summary of Incidental Avian Species Observed

BEGIN CONFIDENTIAL INFORMATION<

Taxonomic Family (Group Name)	Species Common Name	Species Scientific Name	Alpha Code[1]
Anatidae (Waterfowl)	Canada Goose	*Branta canadensis*	CANG
	Wood Duck	*Aix sponsa*	WODU
	Mallard	*Anas platyrhynchos*	MALL
Phasianidae (Grouse and Turkey)	Wild Turkey	*Meleagris gallopavo*	WITU
Columbidae (Pigeons and Doves)	Rock Pigeon	*Columba livia*	ROPI
	Mourning Dove	*Zenaida macroura*	MODO
Charadriidae (Plovers)	Killdeer	*Charadrius vociferus*	KILL
Laridae (Gulls, Terns and Skimmers)	Ring-billed Gull	*Larus delawarensis*	RBGU
Picidae (Woodpecker)	Red-bellied Woodpecker	*Melanerpes carolinus*	RBWO
	Northern Flicker	*Colaptes auratus*	NOFL
Ardeidae (Bitterns and Herons)	Great Blue Heron	*Ardea herodias*	GBHE
Alcedinidae (Kingfishers)	Belted Kingfisher	*Megaceryle alcyon*	BEKI
Tyrannidae (Flycatchers)	Eastern Kingbird	*Tyrannus tyrannus*	EAKI
	Eastern Phoebe	*Sayornis phoebe*	EAPH
Corvidae (Crows and Jays)	Blue Jay	*Cyanocitta cristata*	BLJA
	American Crow	*Corvus brachyrhynchos*	AMCR
	Common Raven	*Corvus corax*	CORA
Hirundinidae (Swallows)	Tree Swallow	*Tachycineta bicolor*	TRES
	Barn Swallow	*Hirundo rustica*	BARS
Paridae (Tits, Chickadees, and Titmice)	Black-capped Chickadee	*Poecile atricapillus*	BCCH
	Tufted Titmouse	*Baeolophus bicolor*	TUTI
Sittidae (Nuthatches)	White-breasted Nuthatch	*Sitta carolinensis*	WBNU
Troglodytidae (Wrens)	House Wren	*Troglodytes aedon*	HOWR
Turdidae (Thrushes)	Eastern Bluebird	*Sialia sialis*	EABL
	American Robin	*Turdus migratorius*	AMRO
Mimidae (Mockingbirds, Thrashers)	Gray Catbird	*Dumetella carolinensis*	GRCA
	Brown Thrasher	*Toxostoma rufum*	BRTH
Sturnidae (Starlings)	European Starling	*Sturnus vulgaris*	EUST

Taxonomic Family (Group Name)	Species Common Name	Species Scientific Name	Alpha Code[1]
Passeridae (Old World Sparrows)	House Sparrow	*Passer domesticus*	HOSP
Fringillidae (True Finches)	House Finch	*Haemorhous mexicanus*	HOFI
	Common Redpoll	*Acanthis flammea*	CORE
	American Goldfinch	*Spinus tristis*	AMGO
Calcariidae (Buntings and Longspurs)	Snow Bunting	*Plectrophenax nivalis*	SNBU
Passerellidae (Towhees and Sparrows)	Chipping Sparrow	*Spizella passerina*	CHSP
	Dark-eyed Junco	*Junco hyemalis*	DEJU
	White-throated Sparrow	*Zonotrichia albicollis*	WTSP
	Savannah Sparrow	*Passerculus sandwichensis*	SAVS
	Song Sparrow	*Melospiza melodia*	SOSP
Icteridae (Blackbirds)	Bobolink	*Dolichonyx oryzivorus*	BOBO
	Eastern Meadowlark	*Sturnella magna*	EAME
	Baltimore Oriole	*Icterus galbula*	BAOR
	Red-winged Blackbird	*Agelaius phoeniceus*	RWBL
	Brown-headed Cowbird	*Molothrus ater*	BHCO
	Common Grackle	*Quiscalus quiscula*	COGR
Parulidae (Wood Warblers)	Common Yellowthroat	*Geothlypis trichas*	COYE
	Yellow Warbler	*Setophaga petechia*	YEWA
	Chestnut-sided Warbler	*Setophaga pensylvanica*	CSWA
	Yellow-rumped Warbler	*Setophaga coronata*	YRWA
Cardinalidae (Cardinals)	Northern Cardinal	*Cardinalis cardinalis*	NOCA

[1]Species Codes are based on standardized four-letter AOU alpha codes defined by the Institute for Bird Populations (Pyle & DeSante, 2020) (https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf).

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4.0 CONCLUSIONS

Spring raptor migration surveys were conducted at a single survey location within the Facility Area between March 4, 2021 and May 26, 2021, totaling more than 125 observer-hours over the course of 13 survey days. Surveys were conducted from 8:00 am until two hours before sunset. Overall, a total of 476 raptors of 11 species were observed. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** The remaining raptor species observed included American kestrel (a SGCN), broad-winged hawk, merlin, rough-legged hawk, red-tailed hawk, and turkey vulture. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** As recommended by ORES and NYSDEC, breeding bird surveys are being conducted in 2021 to further evaluate state-listed species presence and determine if occupied breeding habitat may be present within the Facility Area. Winter raptor surveys are also planned for the 2021-2022 season to evaluate the potential presence of occupied wintering habitat.

5.0 REFERENCES

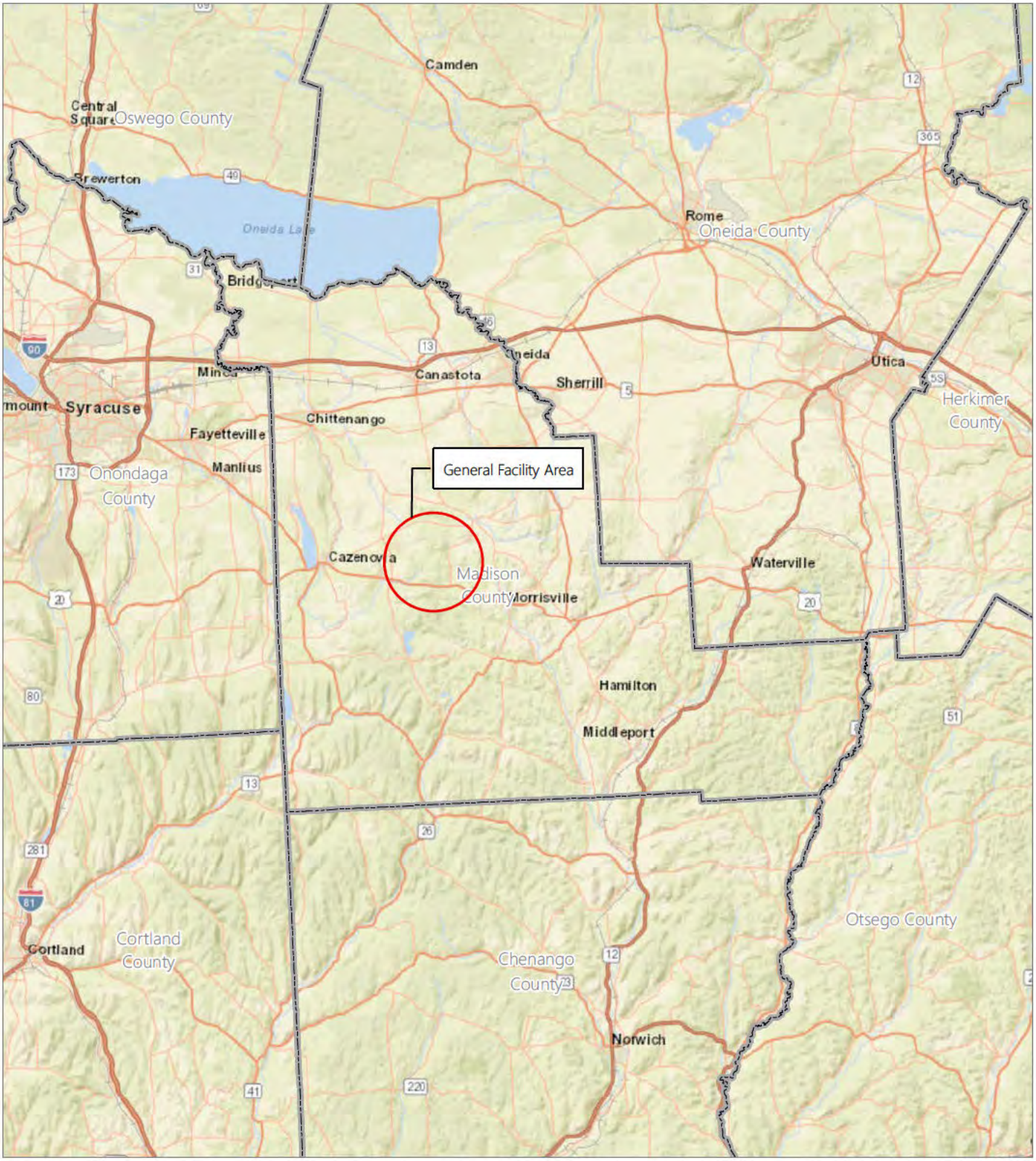
New York State Department of Environmental Conservation (NYSDEC). 2015a. *List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State*. Available at: http://www.dec.ny.gov/animals/7494.html (Accessed July 2021).

NYSDEC. 2015b. *Species of Greatest Conservation Need (SGCN)*. Available at: https://www.dec.ny.gov/animals/9406.html (Accessed July 2021).

Pyle, P., and D.F. DeSante. 2020. *Four-letter (English Name) Alpha Codes for 2143 Bird Species*. The Institute for Bird Populations. Available at: https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf (Accessed March 2021).

FIGURES

Figure 1. Regional Facility Location



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Madison County, New York

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Basemap Esri ArcGIS Online "USGS Topo" map service.

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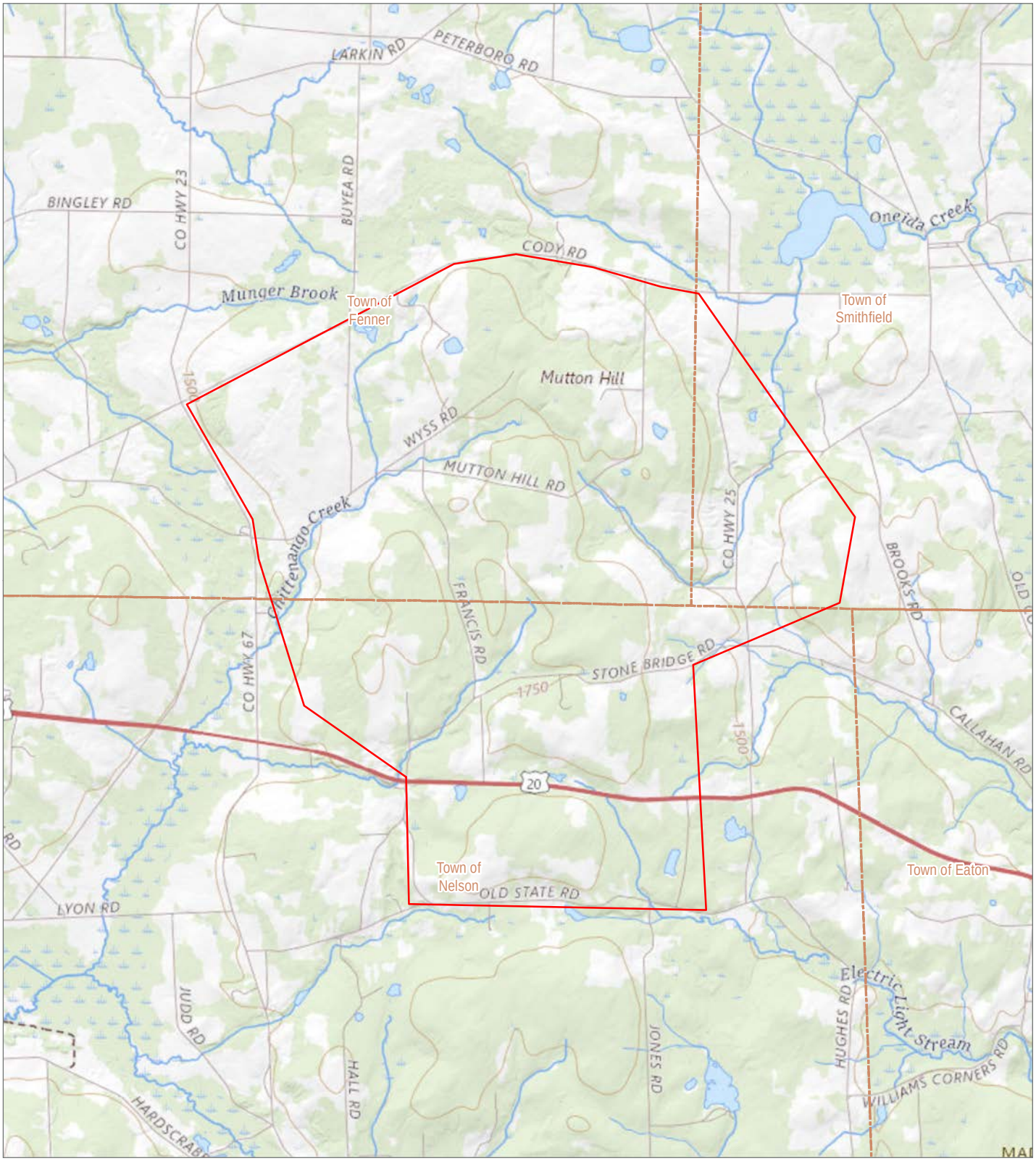
Figure 2. Facility Area



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Facility Area

0 0.5 1 2
Miles

Prepared July 14, 2021
Basemap Esri ArcGIS Online "USGS Topo" map service.

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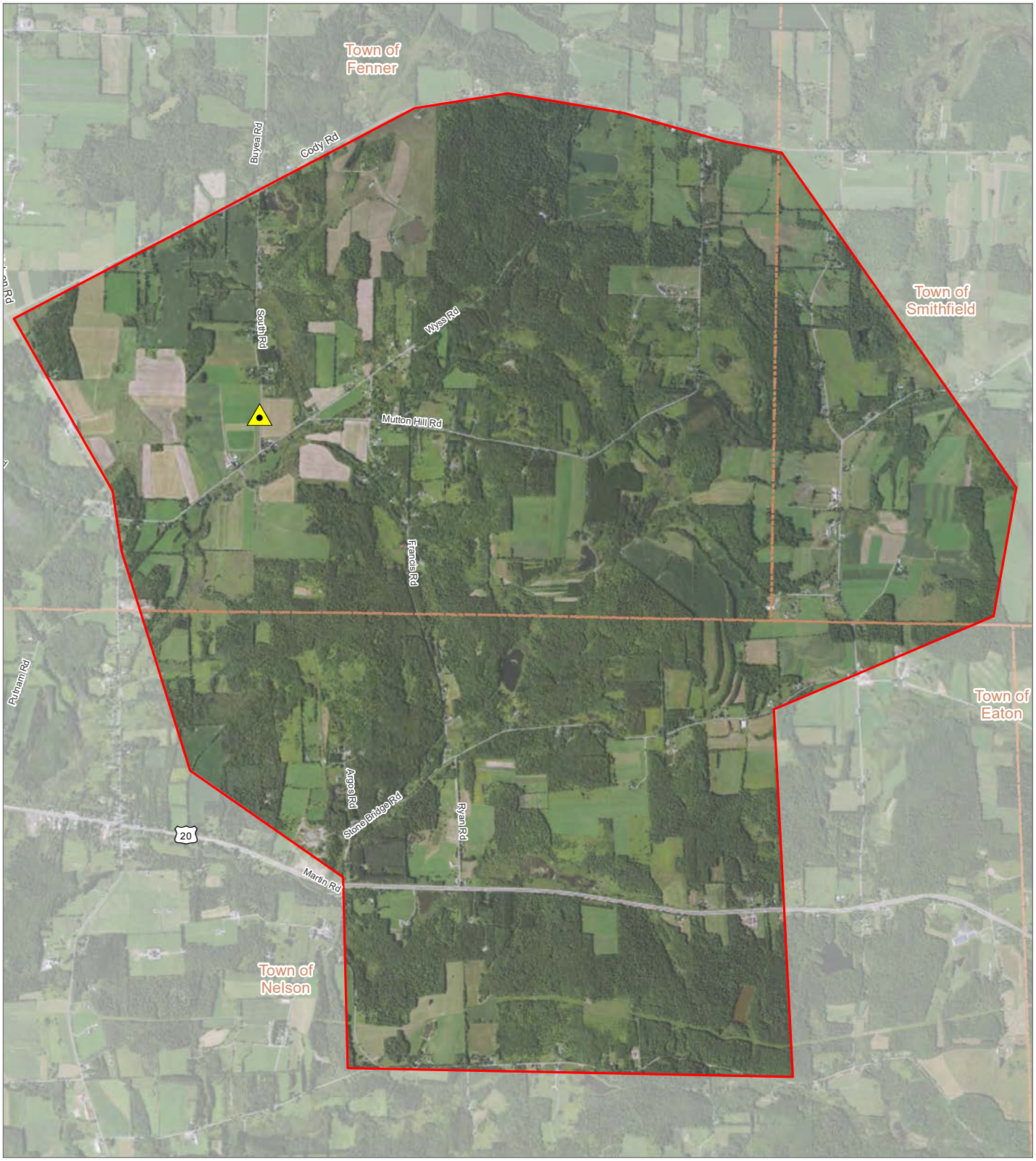
Figure 3. Survey Location



Hoffman Falls Wind Project

Towns of Fenner, Nelson, and Smithfield, Madison County, New York

Spring Raptor Migration Survey Report

Survey Location

Facility Area

0 0.25 0.5 1

Miles

Prepared July 14, 2021

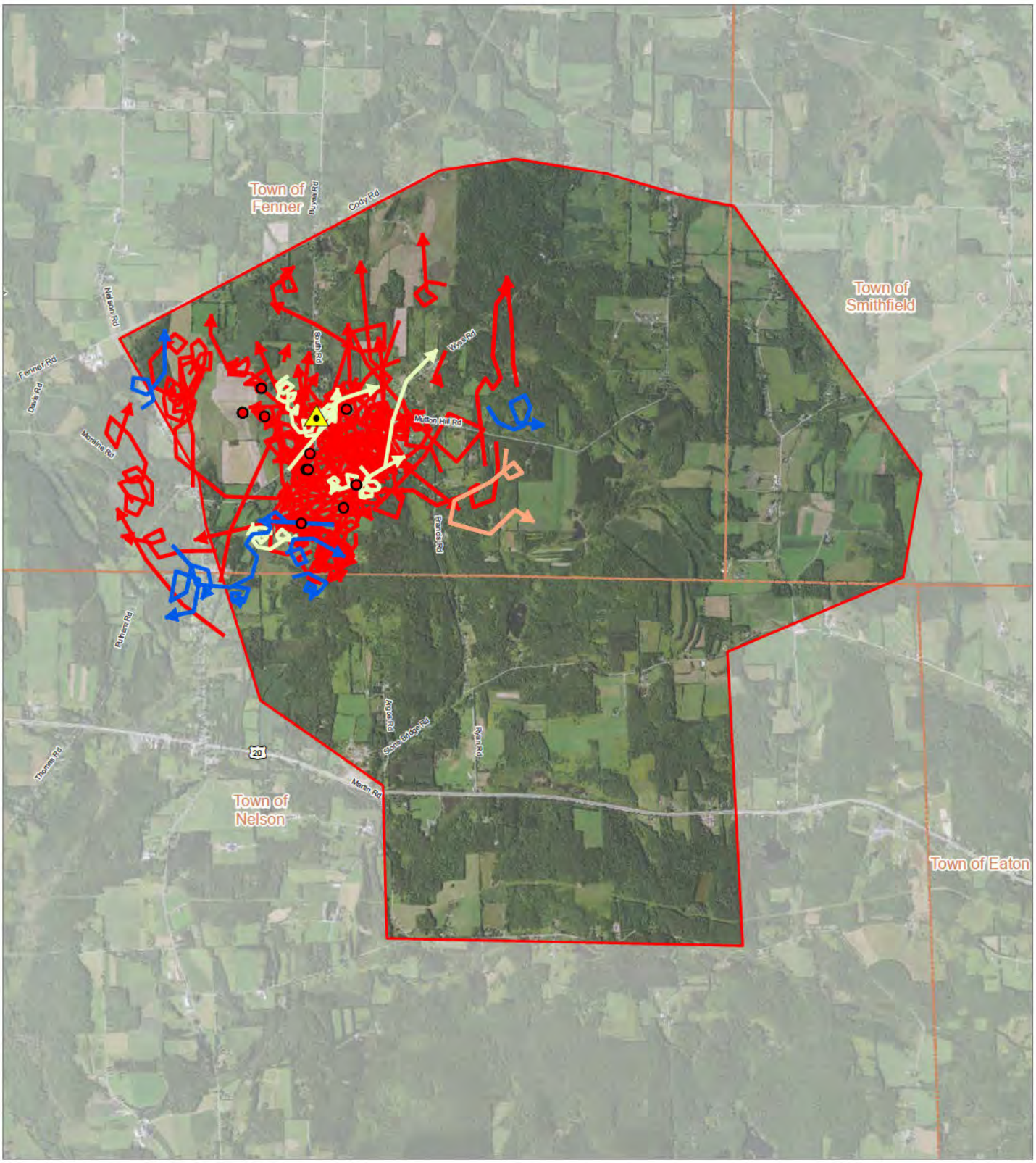
Basemap NYSDOP 2017 orthoimagery map service.

EDR

This figure has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

This figure has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Figure 4. Raptor Observations - Buteos



Hoffman Falls Wind Project

Towns of Fenner, Nelson, and Smithfield
Madison County, New York

Spring Raptor Migration Survey Report

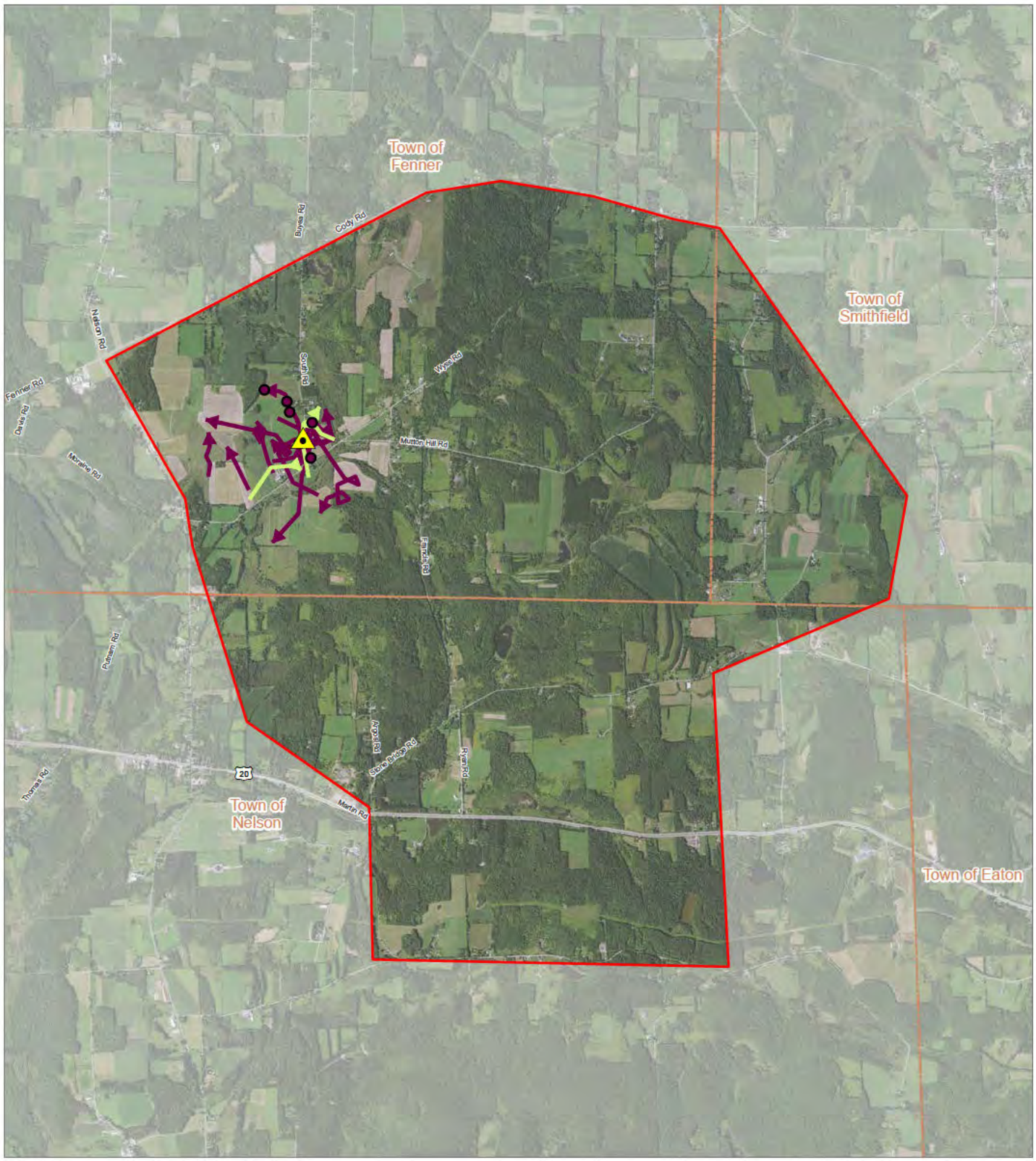
- Survey Location
- Red-tailed Hawk Perch Point
- Broad-winged Hawk Flight Path
- Rough-legged Hawk Flight Path
- Red-tailed Hawk Flight Path
- Unknown Buteo Flight Path
- Facility Area

0 1,000 2,000 4,000
Feet

Prepared July 14, 2021
Basemap NYSDOP 2017 orthoimagery map service.

EDR

Figure 4. Raptor Observations - Falcons



Hoffman Falls Wind Project

Towns of Fenner, Nelson, and Smithfield
Madison County, New York

Spring Raptor Migration Survey Report

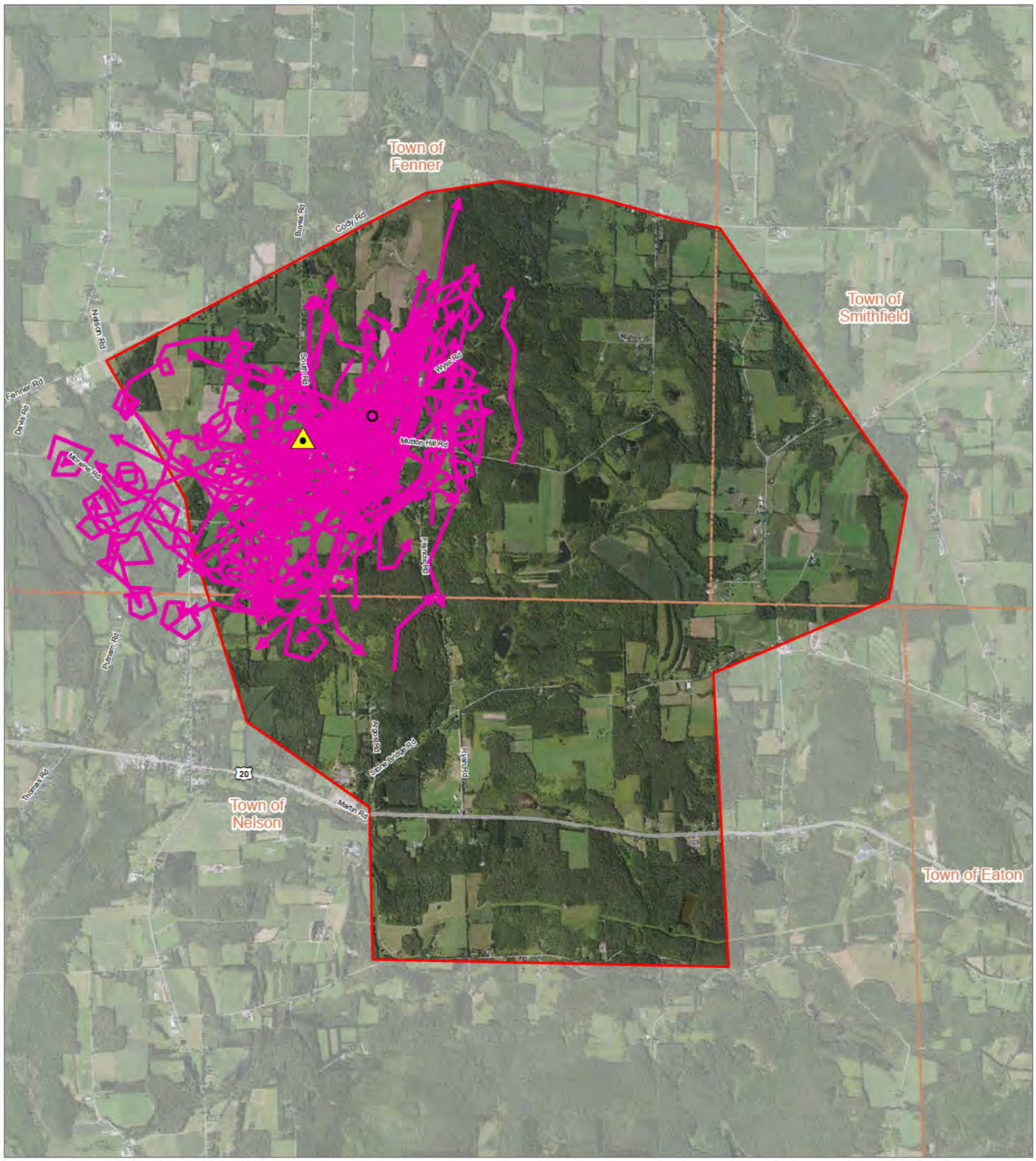
- Survey Location
- American Kestrel Perch Point
- American Kestrel Flight Path
- Merlin Flight Path
- Facility Area

0 1,000 2,000 4,000
Feet

Prepared July 14, 2021
Basemap NYSDOP 2017 orthoimagery map service.

EDR

Figure 4. Raptor Observations - Vultures



Hoffman Falls Wind Project

Towns of Fenner, Nelson, and Smithfield
Madison County, New York

Spring Raptor Migration Survey Report

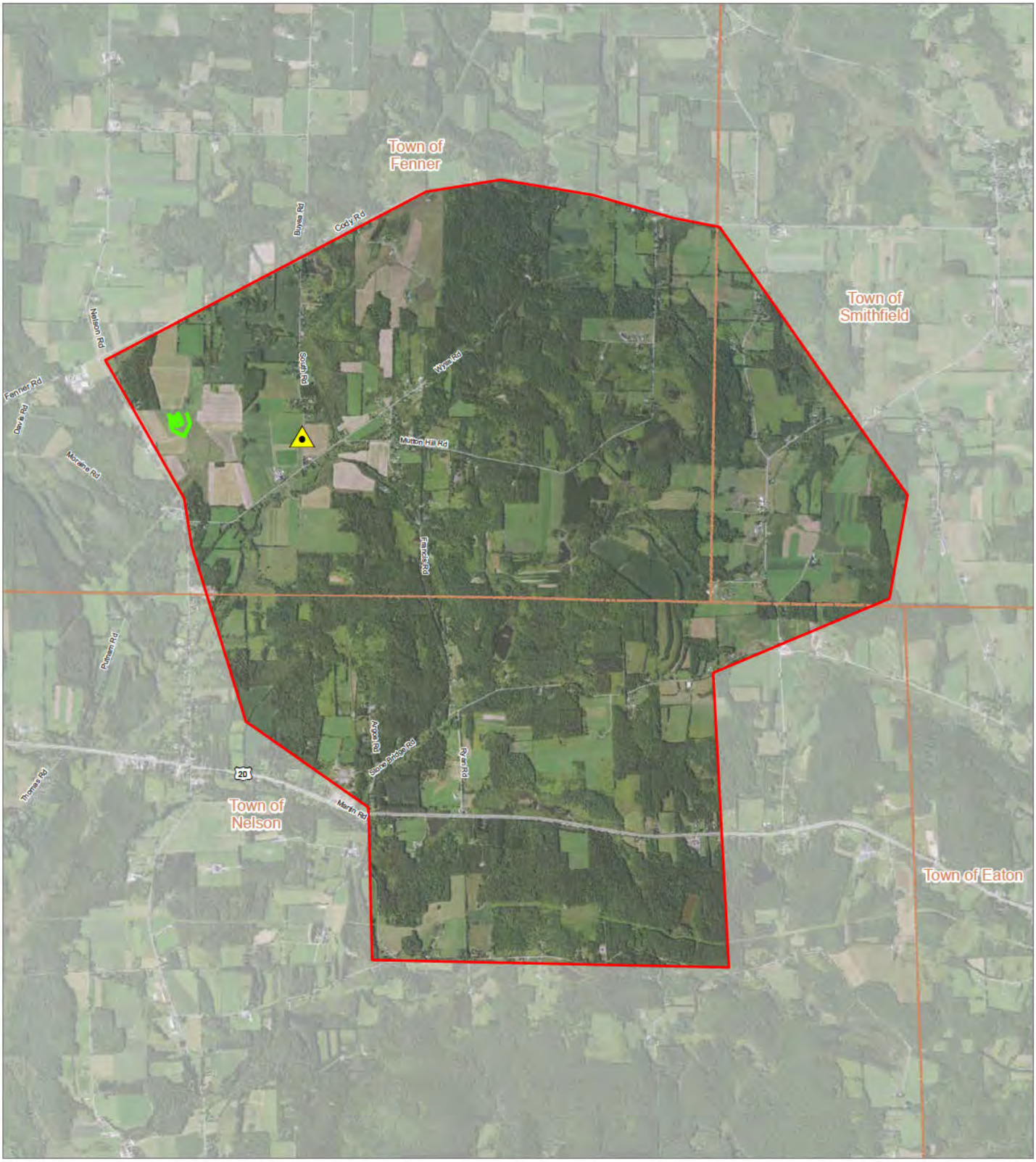
Survey Location
Turkey Vulture Perch Point
Turkey Vulture Flight Path
Facility Area

0 1,000 2,000 4,000
Feet

Prepared July 14, 2021
Basemap NYSDOP 2017 orthoimagery map service.

EDR

Figure 4. Raptor Observations - Unknown Raptors



Hoffman Falls Wind Project

Towns of Fenner, Nelson, and Smithfield
Madison County, New York

Spring Raptor Migration Survey Report

Survey Location
Unknown Raptor Flight Path
Facility Area

0 1,000 2,000 4,000
Feet

Prepared July 14, 2021
Basemap NYSDOP 2017 orthoimagery map service.

EDR

This figure has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

APPENDIX A

Spring Raptor Migration Work Plan

Spring Raptor Migration Survey Work Plan

Hoffman Falls Wind Project

Towns of Fenner and Smithfield
Madison County, New York

Prepared for:

Liberty Renewables Inc.
90 State Street, Suite 700
Albany, NY 12207

Prepared by:

Environmental Design & Research,
Landscape Architecture, Engineering, & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000
Syracuse, New York 13202
www.edrdpc.com

February 2021

MANAGEMENT SUMMARY

Primary Involved Agencies:	Office of Renewable Energy Siting (ORES) New York State Department of Environmental Conservation (NYSDEC)
Survey Type:	Spring Raptor Migration Survey
Location Information:	Towns of Fenner and Smithfield, Madison County, New York
Project Description:	Proposed Wind Powered Electric Generating Facility
Generating Capacity:	Up to 55 MW
Facility Area:	Approximately 6,700 acres
USGS 7.5-Minute Quadrangle Map:	Cazenovia, NY and Morrisville, NY
Report Authors:	Max Baber, Ravyn Neville, and Samouel Beguin
Date of Report:	February 2021

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Liberty Renewables, Inc. (Liberty, or the Applicant), Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) has prepared this Spring Raptor Survey Work Plan (Work Plan) for the Hoffman Falls Wind Project (herein, the Facility), an approximately 55-megawatt (MW) wind energy generating facility proposed on approximately 6,700 acres of rural land (the Facility Area) in the Towns of Fenner and Smithfield, Madison County, New York.

This Work Plan supports an Application for a siting permit under New York's Accelerated Renewable Energy Growth and Community Benefit Act, Executive Law § 94-c (Section 94-c) regulations established in Chapter XVIII, Title 19 of NYCRR Part 900[1] for construction of a wind energy generating facility. The information included in this Work Plan is intended to inform the Applicant in the development of the Facility, and also assist the Office of Renewable Energy Siting (ORES) and the New York State Department of Environmental Conservation (NYSDEC) in their review of the proposed Facility's potential impacts on state-listed threatened and/or endangered species in accordance with the requirements of the draft Section 94-c and 6 NYCRR Part 182 regulations.

Under Section 94-c, the state-listed species pre-application procedures and permitting process (subparts 900-1.3(g) and 900-6.4(o)) require preparation of a Wildlife Site Characterization Report to evaluate publicly available data pertaining to wildlife species (including those that are state-listed), as well as pre-application consultation with ORES and NYSDEC staff to discuss state-listed species known to occur at or in the vicinity of a proposed facility, the agencies' determination regarding the presence or absence of state-listed species occupied habitat, and the need for species-specific habitat assessments and/or field surveys. Though the Applicant has not yet prepared or submitted a Wildlife Site Characterization Report to ORES and the NYSDEC, spring raptor migration surveys are proposed in 2021 so as to avoid potential Facility schedule delays in the event that ORES and the NYSDEC require spring raptor migration surveys to be conducted.

Therefore, the purpose of the proposed spring raptor migration surveys is to identify and document raptors (including eagles, falcons, harriers, hawks, ospreys, owls, and vultures) that move through the area including and surrounding the Facility Area during the spring migration period (defined as March 1 to May 31). The spring raptor migration surveys will target all raptors observed, as well as large flocks of non-raptor birds (e.g., waterfowl, corvids, icterids) and any special status species (i.e., endangered or threatened species, species of special concern, and species of greatest

[1] The Section 94-c draft regulations (and uniform standards and conditions) were released on September 16, 2020 by the Office of Renewable Energy Siting (ORES or Office), and are defined in Chapter XVIII, Title 19 of NYCRR Part 900. Available at: https://ores.ny.gov/regulations.

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

3.0 SPRING RAPTOR MIGRATION SURVEY WORK PLAN

As stated previously, spring raptor migration surveys for the Facility will be conducted based on the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects*. The surveys are intended to document the species, number, and flight height/direction of migrating raptors in order to allow for potential impact evaluation and inform the Facility development and permitting process. A detailed description for the proposed surveys is provided below and consists of: (1) the survey period and frequency; (2) the proposed survey location; (3) surveyor qualifications; and (4) survey methodology.

3.1 Survey Period and Frequency

The proposed survey period corresponds with the typical spring migratory period for the majority of New York avian species that may pass by or through the Facility Area during the spring migration season. As noted above, the spring migration season begins on March 1 and continues through May 31. Therefore, surveys are proposed to begin the week of March 1, 2021 and will be performed once per week through the week of May 24, 2021.

Surveys will be conducted once every other week between 8:00 a.m. and until at least two hours prior to sunset (i.e., until as early as approximately 3:53 p.m. or as late as approximately 6:29 p.m. as the sunset time changes throughout the season). Surveys will not be conducted on days when weather conditions would limit visibility, such as heavy rain, fog, snow or excessive cloud cover. Weather forecasts will be reviewed regularly in order to select the most appropriate survey days.

3.2 Proposed Survey Location

The primary method for surveying migrating raptors will consist of a daytime survey conducted from a single survey location. EDR conducted a GIS analysis and a site visit to select a survey location with optimal views of the Facility Area, and that will also be accessible to surveyors throughout the survey period. The proposed survey location is located is positioned along the edge of an open agricultural field west of South Road in the west-central portion of the Facility Area (see Figure 3). This location is expected to afford open views of the sky and the Facility Area in multiple directions.

3.3 Surveyor Qualifications

Spring raptor migration surveys will be conducted by experienced, trained consulting biologists to ensure compliance with this Work Plan. EDR biologists Max Baber, Tiffany Clay, Ravyn Neville, and Samouel Beguin will provide support and technical direction for the survey effort and ensure that quality assurance and quality control procedures are followed.

Mr. Baber is an Environmental Analyst with more than eight years of experience in wildlife biology, wildlife management, and scientific research. He received a Bachelor of Science degree in wildlife biology from The Evergreen State College. Mr. Baber's experience includes threatened and endangered wildlife species surveys, habitat assessments, scientific study design, scientific writing, and statistical analysis. Mr. Baber's professional focus is on avian research and advocacy. He has designed, overseen, and conducted avian surveys implementing a broad range of research methods including nest searching and monitoring, territory mapping, mist netting and banding, point count surveys, radio telemetry and tracking, migratory bird counts, and bioacoustic recording and monitoring. Mr. Baber has also taught these methods to technicians, interns, volunteers and students. At EDR, Mr. Baber has conducted breeding bird surveys, fall raptor migration surveys, and wintering raptor surveys, and supports the design and implementation of avian surveys for renewable energy projects.

Ms. Clay is an Environmental Analyst with more than six years of experience in the natural resources field. She received a Bachelor of Science in Environmental Science and Biology from The College at Brockport State University of New York (SUNY Brockport) and a master's degree in Environmental Science and Ecology from SUNY Brockport. Prior to joining EDR, Ms. Clay spent two field seasons as a crew leader conducting avian community surveys (acoustic and visual) for the Great Lakes Coastal Wetland Monitoring Project. As a long-term volunteer, Ms. Clay has also conducted point count surveys for breeding birds at Montezuma National Wildlife Refuge. Ms. Clay is a member of The Rochester Birding Association and is an avid bird watcher in her free time. At EDR, Ms. Clay has been involved in designing, conducting, and managing avian surveys and habitat assessments for numerous utility- and community-scale renewable energy projects.

Mrs. Neville is an Environmental Analyst with more than five years of experience in wildlife biology and management and scientific research. She received a Bachelor of Science degree in Biology from Salisbury University and a Master of Science degree in Environmental and Forest Biology from the State University of New York College of Environmental Science and Forestry. Mrs. Neville's experience includes threatened and endangered wildlife species surveys, habitat assessments, wildlife management planning, scientific study design, scientific writing, GIS mapping, statistical analysis, and wildlife habitat use. Specializing in avian research, Mrs. Neville has planned, oversaw, and conducted avian research projects that involve nest searching and surveys, hatchling surveys, mistnetting and banding, point counts, and observational focal follows. At EDR, Mrs. Neville has been involved in designing, preparing, and conducting breeding bird surveys and wintering grassland raptor surveys for numerous renewable energy projects.

Mr. Beguin is a Senior Environmental Analyst with more than seven years of experience in environmental consulting, wildlife biology, and scientific research. He received a Master of Science degree in Environmental and Forest Biology from the State University of New York College of Environmental Science and Forestry and a Bachelor of Arts degree in Biology and Environmental Studies from Middlebury College. Mr. Beguin's experience includes threatened and endangered wildlife species surveys, habitat assessments, environmental permitting, mitigation planning, agency consultation, GIS mapping and data analysis, and bioacoustic monitoring of avian communities. At EDR, Mr. Beguin has been involved in designing, conducting, and managing avian surveys and habitat assessments for numerous utility- and community-scale renewable energy projects.

3.4 Survey Methodology

The spring raptor migration surveys will be conducted by qualified biologists and will be substantively compliant with the recommendations for standard pre-construction spring raptor migration surveys described in the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects* (see Appendix A). Biologists will visit the Facility Area one day per week to conduct the surveys, for a total of 13 surveys throughout the survey period. As mentioned above, each survey will be conducted at a single observation location that has been chosen for optimal visibility and coverage.

Biologists will stand and/or sit at the stationary survey location and conduct systematic visual scans of the sky in all directions in order to detect raptors and other birds passing through the area and/or utilizing habitat within the Facility Area. Binoculars of 8x or 10x magnification will be used as the primary visual aid for avian identification and counts. If necessary, a spotting scope may also be used. Biologists will record detailed information for all raptors observed, as well as large flocks of non-raptor birds (i.e., more than 50 individuals). In addition, any special status (i.e., endangered, threatened, special concern, species of greatest conservation need) species observations will be documented, regardless of number.

Survey data will be recorded in a standardized and organized fashion using data sheets and a mobile GIS application that will allow for digitization of flight path lines and perch locations. A sample data sheet is provided in Appendix C. Data recorded for each spring raptor migration survey will include observer initials, date, start and end time, weather conditions for the previous day, hourly weather conditions (temperature, cloud cover, prevailing wind direction, wind speed, precipitation type [if any], and visibility), the number of individuals and identification of each species observed, the start and end time of each observation, sex and age of individuals (when possible), average flight height and direction, behavior(s) (e.g., flying, perched, foraging) and additional notes. Locations of all special status species will be indicated on an aerial-based map of the survey area. All observations of special status species (including detailed behavioral descriptions) will be recorded and summarized in the final report.

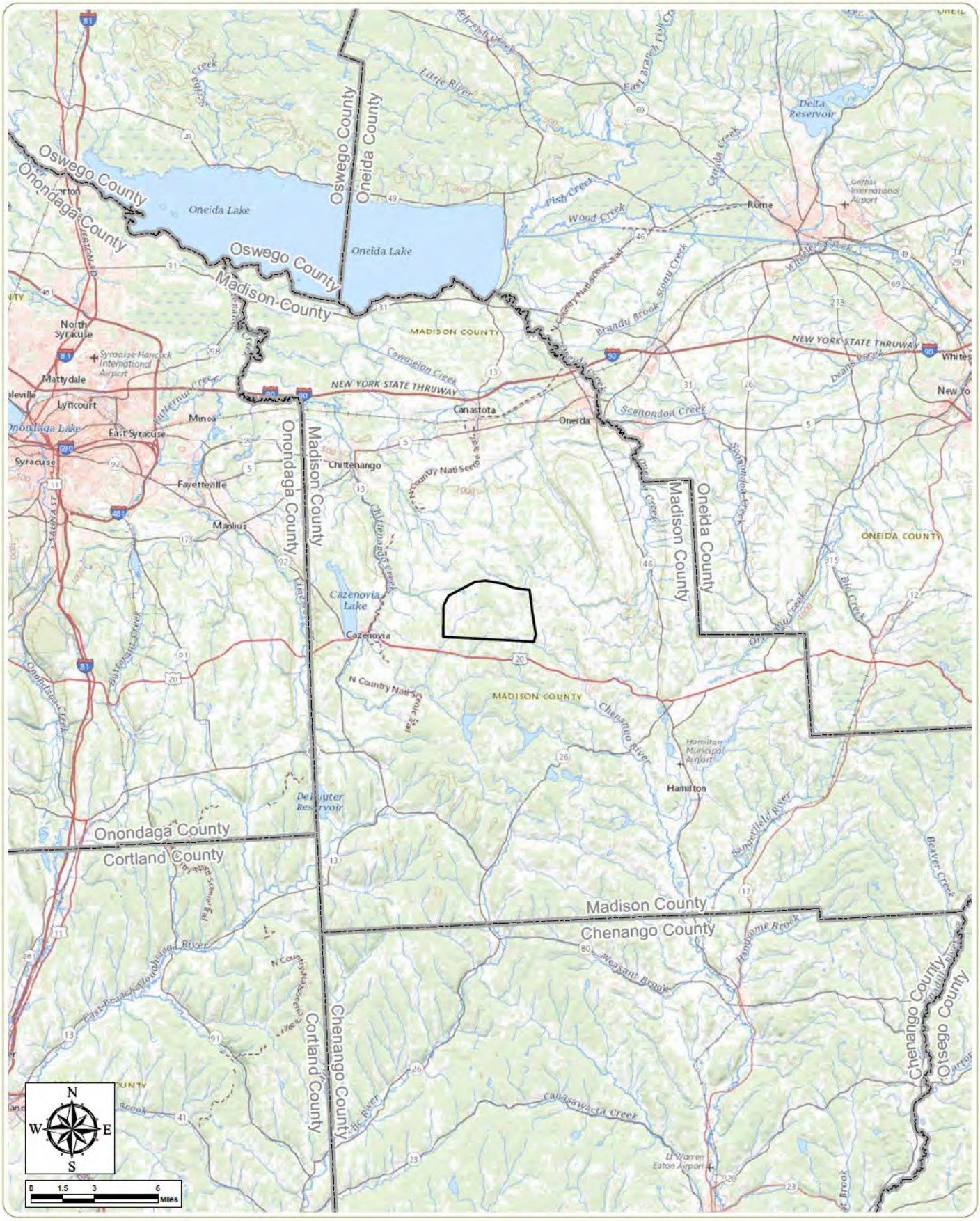
3.5 Reporting

A final report will be prepared and submitted to ORES and the NYSDEC on behalf of the Applicant after the surveys have been completed. The report will summarize all observations of migrating raptors, large flocks of non-raptors, and all special status species observed during the surveys. Summary information will include:

- The total number of species observed throughout the survey period;
- The total number of individuals of each species observed;
- An indication of the dates, times, and locations for each observation;
- The observed height, direction, and flight path for each observation;
- An indication of which directions and distance classes had the highest and lowest number of species; and
- Species diversity, frequency, and abundance for each survey and for the full survey period.

The report will also include supporting tables, maps, photographs, and appendices. In addition, GIS shapefiles will be provided to ORES and the NYSDEC for the survey location, the Facility Area boundary, flight path lines, and perch point locations. For any observations of state-listed threatened and endangered species, the report will provide the date, time observed, number of individuals, behavior(s), flight height, flight direction, and other relevant information, as applicable. Location coordinates and GIS shapefiles will be provided for all threatened and endangered species observations (including points for any perching/roosting locations, flight path lines, and/or polygons for on-site use areas).

Figures



Hoffman Falls Wind Project

Towns of Fenner and Smithfield, Madison County, New York

Spring Raptor Migration Survey Work Plan

Figure 1: Regional Facility Location

Notes: 1. Basemap: ESRI ArcGIS Online "USGS Topo Map" map service. **2.** This map was generated in ArcMap on February 18, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

Facility Area

County Boundary

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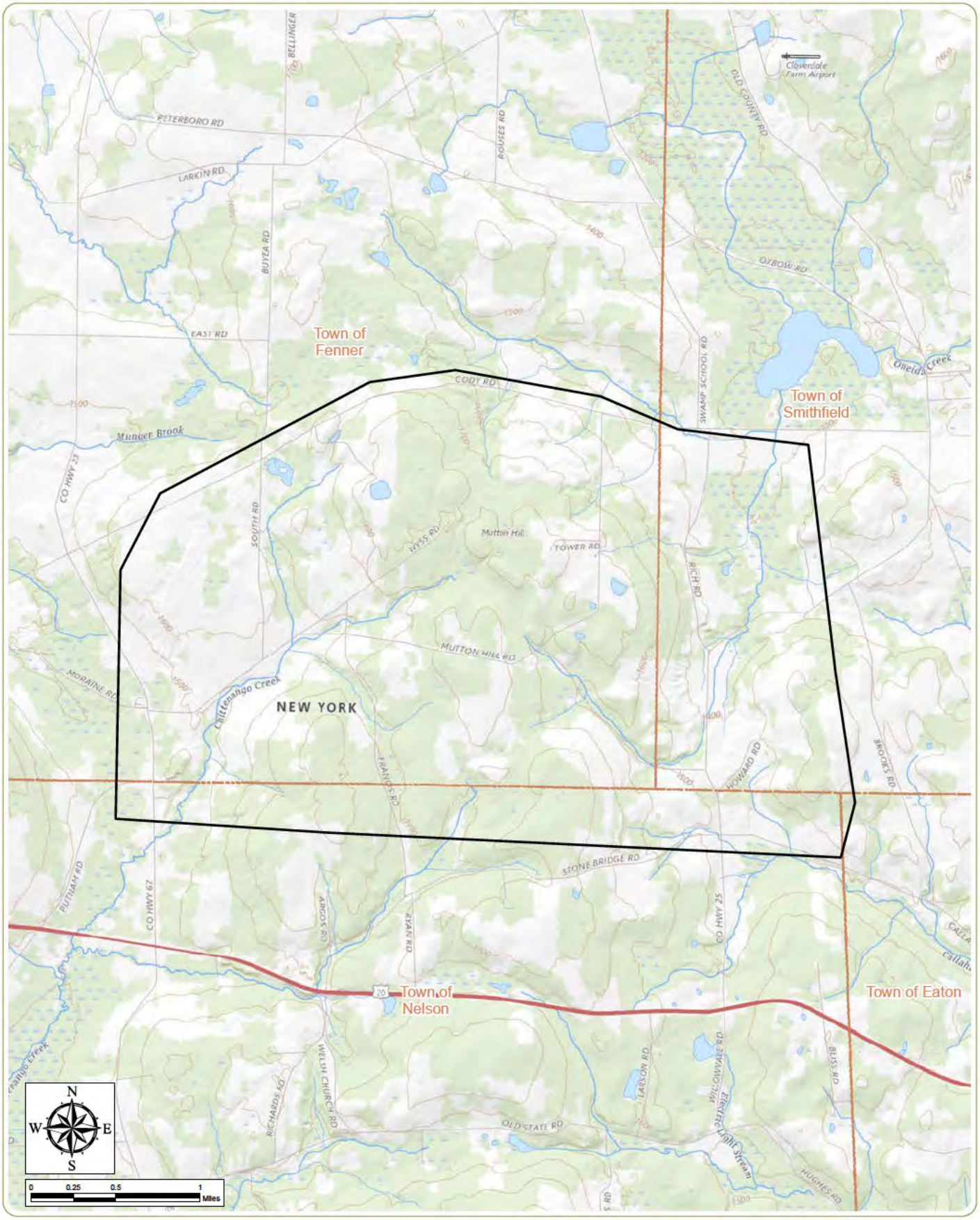


Hoffman Falls Wind Project

Towns of Fenner and Springfield, Madison County, New York

Spring Raptor Migration Survey Work Plan

Figure 2: Facility Area

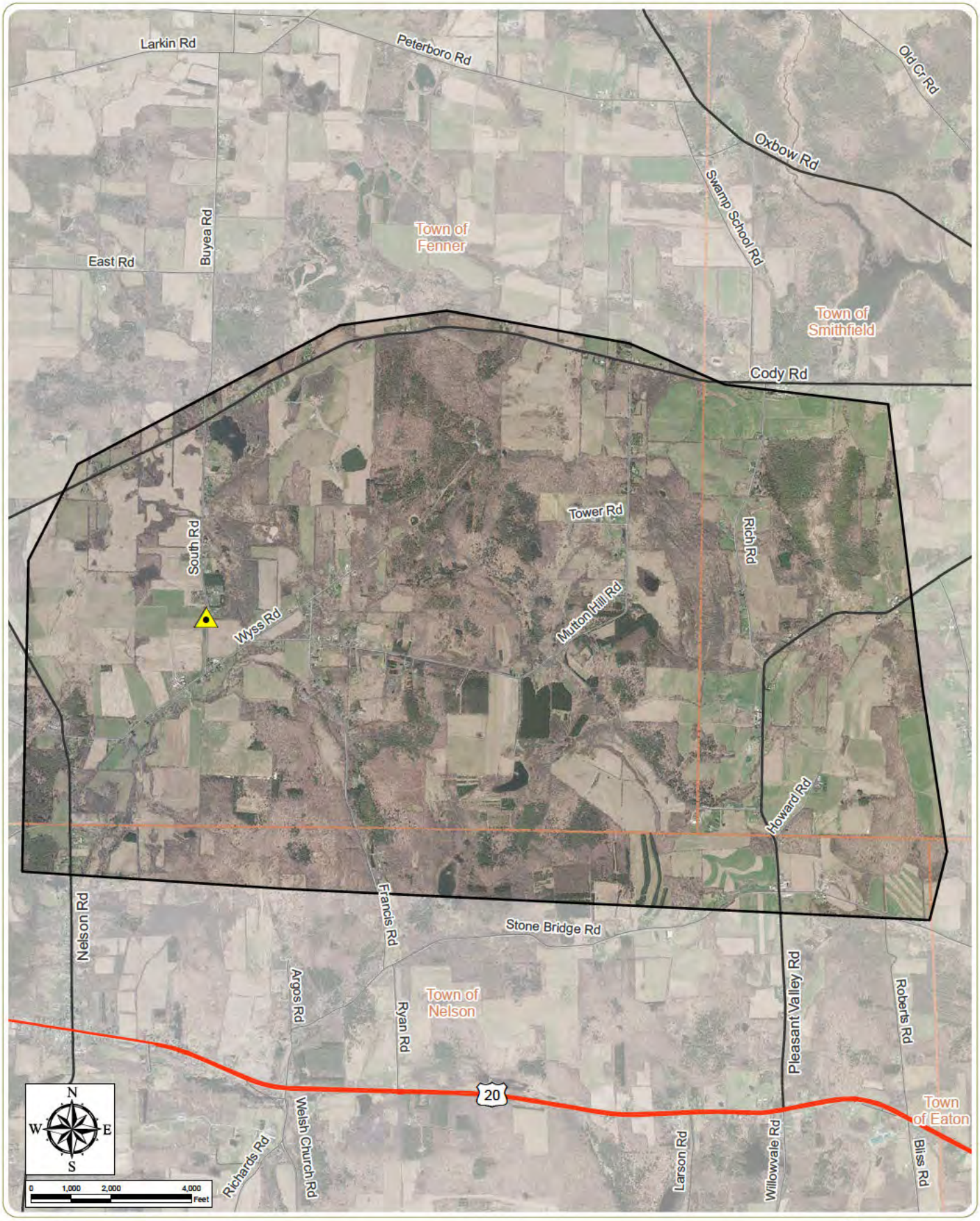
Notes: 1. Basemap: ESRI ArcGIS Online "USGS Topo Maps" map service. **2.** This map was generated in ArcMap on February 18, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

Facility Area

Town Boundary

edr

www.edrdpc.com



Hoffman Falls Wind Project

Towns of Fenner and Springfield, Madison County, New York

Spring Raptor Migration Survey Work Plan

Figure 3: Survey Location

Notes: 1. Basemap: NYSDOP "2018" orthoimagery map service. **2.** This map was generated in ArcMap on February 18, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

Survey Location

Facility Area

Town Boundary

edr

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Appendix A

NYSDEC Survey Guidelines

NEW YORK STATE OF OPPORTUNITY. | Department of Environmental Conservation

GUIDELINES FOR CONDUCTING BIRD AND BAT STUDIES AT COMMERCIAL WIND ENERGY PROJECTS

June 2016

Prepared by New York State Department of Environmental Conservation
Division of Fish and Wildlife

www.dec.ny.gov

Contents

Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects

To help meet our increasing demand for electricity, the 2015 New York State Energy Plan places a priority on increased energy diversity and the use of renewable energy sources, with a goal of 50% of the state's energy generation coming from carbon-free renewable sources by 2030. While wind energy has significant emissions benefits when compared to energy produced from fossil fuel, the New York State Department of Environmental Conservation (DEC or Department) must also consider the potential negative environmental impacts of wind energy production when evaluating proposed projects. Currently, the nature and severity of both site-specific and cumulative impacts that commercial wind energy projects may have on birds and bats and their habitats in New York State is DEC's most pressing issue related to wind energy development. The Department's concern for and jurisdiction over these natural resources derives from the Environmental Conservation Law (ECL) which articulates the policies of the DEC (Article 1), the powers and duties of the Commissioner (Article 3), and the requirements for the protection of fish and wildlife and their habitats (Article 11).

This document sets forth DEC's guidance for commercial wind energy developers on how to characterize bird and bat resources at on-shore wind energy sites, estimate and document impacts resulting from the construction and operation of wind energy projects, and reduce mortality levels through turbine siting and operational modifications. These guidelines provide a general framework for the developer to propose site-specific studies needed to evaluate the potential and/or actual effects of a given wind energy project, and outline consistent and predictable methodologies, based on the latest scientific knowledge, to assist developers in the planning, development, and monitoring process. It should be recognized that the effort required to fully understand the movement of and impact to birds and bats at any given locale would be monumental and would take many years. Therefore, the studies described here are considered the minimum effort necessary to characterize bird and bat activity at a specific project location within a reasonable time frame relative to construction.

This guidance provides two tracks for pre-construction and post-construction studies: "standard" and "expanded." It is anticipated that all sites will warrant at least the standard studies. However, where site-specific conditions or other information suggest the potential for substantial adverse impacts to birds and/or bats, or their habitats, expanded studies and/or additional years of study designed to further evaluate the specific concerns may be necessary.

Along with providing essential data for evaluation of project operation, the protocols set forth herein are intended to allow for comparability of data collection among sites and between years such that the information from each site may contribute to a statewide understanding of the ecological effects of wind energy generation. A list

of web sites, published papers, and other references and information sources is included at the end of the document.

1. Purpose and Definitions

The purpose of this document is to set forth the protocols for conducting bird and bat studies at wind energy projects to provide information necessary for DEC to:

a. assess and understand the ongoing or expected environmental impact of a specific wind energy project; and

b. make a recommendation to the State Environmental Quality Review Act (SEQRA) lead agency or the Public Service Law Article 10 (PSL Article 10) New York State Board on Electric Generation Siting and the Environment (Siting Board), as appropriate, regarding the construction and operation of the project in order to avoid or minimize adverse environmental impact.

c. determine the possible need for an incidental take permit for impacts to state listed species during construction and/or operation of the project, per 6 NYCRR Part 182.

These guidelines are not intended to cover survey recommendations for, or the evaluation of, potential impacts to species other than birds and bats. Developers should coordinate with DEC to determine if other wildlife resources may warrant investigation during the development, construction, and operation of a proposed project.

The following terms are used as defined here:

Adverse impact means 1) mortality of birds or bats due to collision or other possible effects such as barotrauma (sudden, potentially fatal, pressure changes that may rupture or otherwise injure ears, lungs, or other internal organs) caused by a wind turbine; 2) displacement of birds or bats from their habitat due to the presence and/or operation of a wind energy project; 3) a detectable reduction in bird or bat use of the site due to construction or operation of the project; or 4) repeated or continuous disruption of the natural feeding, roosting, breeding, wintering, or migratory behaviors of birds or bats as a result of the construction or operation of the project.

Bird and bat resources includes all species of native and protected birds (Class *Aves*) and bats (Order *Chiroptera*) that use or may use the site, as well as the habitats that support them.

Site, project site, or *project area* means not only the real property boundaries or outline of proposed turbine locations and other project-related infrastructure on the ground, but includes the air space over and surrounding the entire project.

Study area or *surrounding area* is defined as all land and air space within the project area and at least five miles outside of the edge of the project area. The study area may be extended out to fifteen miles, depending on the conditions and landscape of the project area, the proximity of the project to resources of concern and other proposed and existing wind energy projects, and which species are known or suspected to be present within or near the site.

Project components includes all proposed or existing turbines, overhead and underground collection lines and transmission lines, new or expanded public and private roads, substations and transfer areas, meteorological (met) towers, permanent and temporary staging, storage and laydown areas, operation and maintenance buildings, and any other building or infrastructure related to the construction and operation of the project.

As part of its environmental review, DEC must consider information pertaining to the presence and activity of birds and bats at the site and in the study area. One of the most effective means of reducing direct and indirect impacts to birds and bats is to site turbines in a location that will avoid disturbance to migrating, breeding, wintering, roosting, and feeding birds and bats. In addition to direct and indirect mortality caused by turbines, other negative effects from factors such as habitat loss or fragmentation, introduction or spread of invasive species, avoidance of otherwise potentially suitable habitat, increased human activity and development, and increased predator and parasite presence can result from the construction and operation of a wind energy project and should also be considered.

As wind energy development continues to expand throughout New York, more information is needed about the temporal and spatial use of habitats and the species composition of birds and bats using those habitats in order to relate wind energy production to its potential impacts. The studies described in these guidelines are based on DEC's current knowledge of the best procedures for conducting thorough and scientifically meaningful pre- and post-construction studies. As studies are conducted at more projects throughout the state, these guidelines may be fine-tuned to incorporate the most efficient, effective and accurate methodologies to fill data needs. When planning a project, developers should contact DEC as early as possible for the most current recommendations, which may differ from this document. Figure 1 (page 33) illustrates the steps described below for conducting pre- and post-construction studies.

2. Site and Project Description

A characterization of bird and bat resources includes documenting pertinent existing information, and collecting and analyzing additional field data on bird and bat use of the site and surrounding area. Several years of studies have been conducted to date gathering site-specific data on where, when, and how birds and bats use various habitats within the state. These guidelines are intended to provide a template for gathering further information and to aid DEC in assessing impacts and making recommendations to the lead agency, or Article 10 Siting Board, as necessary.

a. *Compile existing information on bird and bat resources*

Prior to expending significant effort in planning a wind energy project, the developer should compile existing information on bird and bat resources at the site and in the surrounding area, including available relevant information from other existing or proposed wind energy projects. The following sources should be consulted:

i. The DEC Central Office Division of Environmental Permits (DEP) and Division of Fish, Wildlife and Marine Resources (DFWMR) should be the initial point of contact for information regarding the environmental review and assessment process for wind energy development;
ii. The New York Natural Heritage Program (NYNHP) should be contacted for information on known state and federally listed endangered, threatened, and special concern species and sensitive ecological communities that may be located in or near the proposed project site and surrounding area;
iii. Screen the project and surrounding area using New York's Environmental Resource Mapper, Nature Explorer, and Biodiversity and Wind Siting Mapping Tool
iv. Biologists in the DEC Regional office(s), as applicable to the project location, should be contacted for available information on specific resources within the site and in the surrounding area;
v. To the extent required by the US Fish and Wildlife Service (USFWS), information collected through the use of DEC's guidelines should be provided to the USFWS. The USFWS Ecological Services New York Field Office should also be contacted for information on federally listed species that may be present within or near a proposed project area;
vi. Local ornithologists, Audubon Societies, birding clubs, hawk watches, and nature centers can provide specific information about bird and bat resources, as well as further information on data from the New York Breeding Bird Survey (BBS), Breeding Bird Atlas (BBA), eBird, and Christmas Bird Count (CBC);
vii. Biologists in the Bureau of Wildlife's Wildlife Diversity Unit can provide site specific information regarding the proximity of bat hibernacula and summer roosting areas, as well as information on technical research being conducted within New York; and
viii. Bat Conservation International (BCI) can provide general information about bats and bat biology.

b. *Identify landscape features and resources of potential concern*

The relative proximity of certain landscape features and/or ecological resources to a site can increase the likelihood that substantial adverse impacts to bird and bat resources will result from a proposed wind energy project. The developer should identify any of the following features or resources within the proposed project site or surrounding area:

i. Habitat of a listed bird or bat species per 6 NYCRR Part 182 (e.g., species of special concern, threatened or endangered). The project sponsor should be aware that if a threatened or endangered species, or habitat known to support those species, is present within or adjacent to the site and/or likely to be impacted by a project, the permit requirements of ECL Article 11-0535 may be applicable. Incidental take of a listed species is prohibited without a permit;

ii. Proximity of the project (approximately 5 miles) to the Atlantic coastline, the shoreline of one of the Great Lakes, Lake Champlain, Oneida Lake, the Finger Lakes, or the corridor of large rivers (e.g. the Delaware, Hudson, St. Lawrence, Niagara);

iii. The presence of, or proximity to, areas that concentrate raptors, waterfowl, or other specifically identified species of concern for the site (approximately 2 miles); or a major bat hibernaculum (approximately 40 miles); and

iv. The presence of any specifically identified habitat or landscape feature that may function to funnel or concentrate birds or bats during migration or for feeding, breeding, wintering, or roosting activities, such as National Wildlife Refuges (NWR), Wildlife Management Areas (WMA), grassland focus areas (Morgan and Burger, 2008), core forest blocks (contiguous areas 150 acres or larger), high elevation mountaintops, prominent ridgelines, or other significant habitat areas.

c. *Provide project information to DEC*

Once existing information is compiled, the developer should meet with DEC to discuss an overview of the proposal, the bird and bat resources of potential concern, and the application of these guidelines to the environmental assessment of the project. DEC understands that some of the information requested below in part 2(c) i-xiii may be considered proprietary, or is likely to evolve as project planning progresses, and may need to be submitted as confidential information/business trade secrets, not subject to public disclosure under the Freedom of Information Law (FOIL) pursuant to Public Officer's Law § 87. To aid in project planning, the project sponsor should prepare a complete description of the project site and surrounding area prior to meeting with DEC, including:

i. Description of the geographical, topographical and other physical features of the site and within 15 miles of the site, even if the proposed project is further than 5 miles from a shoreline, 2 miles from a wildlife concentration area, or 40 miles from a bat hibernaculum;

ii. Identification of federal, state, or locally-regulated wetlands, streams, waterbodies, drainage patterns, and publicly-owned forests, parks, and wildlife or forest management areas;

iii. Location of contiguous or core forest areas, expanses of grassland, large waterbodies, and wetland habitat located within the proposed project township(s) and surrounding study area;
iv. Location of all meteorological (met) towers, a summary of local weather patterns (e.g., annual precipitation, prevailing winds, etc.), and a summary of the wind resource at the site and in the study area; and
v. Maps with vegetation types, soils/bedrock, elevation, land use, and other information relevant to siting the project.

Prior to developing the pre-construction study work plan, additional information regarding the proposed project should be provided including:

vi. Maps of the proposed preliminary turbine layout;
vii. Description of turbine type, size and rotor swept area; and
viii. Figures or maps showing existing and proposed roads, electric line routes, substation location(s), and other project components as defined in Section 1.

Data regarding proposed site development should be provided in the form of shapefiles, for use in Geographical Information Systems (GIS) software via ESRI's ArcGIS suite of software (e.g. ArcMap) including:

ix. Polygon shapefile(s) showing the total project area;
x. Line shapefile(s) for the transmission and interconnect lines, as well as all proposed temporary and permanent access and maintenance roads;
xi. Polygon shapefile(s) of any proposed concrete and building structures, storage and lay down areas;
xii. Point shapefile(s) for all turbine and met tower locations, and any other structures that would be best represented as a point; and
xiii. Polygon shapefile(s) showing all areas proposed to be cleared around turbines, access roads, electric lines, and all other project components.

d. *Select and implement a standard or expanded pre-construction study protocol*

Sites that contain, are within, or are in close proximity to the features or resources of concern listed in 2(b) above have the potential to cause substantial adverse impacts to bird and bat resources. Therefore, for such sites, project sponsors should anticipate conducting expanded pre- and post-construction studies to identify and quantify potential or actual impacts associated with the specific features or resources of concern. In particular, a proposal to site a wind energy project in proximity to a bat hibernaculum (40 miles), wildlife concentration area (2 miles), along a coastline (5 miles), on a prominent ridgeline, or near a known location of a state or federally listed threatened or endangered species will likely justify a need for expanded pre-construction studies. In preparation for conducting either standard or expanded studies:

i. Contact the DEC Bureau of Fish and Wildlife Services' Special Licenses Unit regarding any necessary licenses or permits for collection and possession of birds and bats, or special licenses to handle threatened and endangered species that may be needed;
ii. Contact the USFWS regarding species covered by the Migratory Bird Treaty Act (MBTA), and Endangered Species Act (ESA) permits; and
iii. Engage an individual or firm knowledgeable about New York state fauna, natural history, and sensitive species habitat requirements, with experience in wildlife biology, ecology, and habitat assessment methodologies, and who possesses the ability and means to conduct appropriate studies.

3. Study Objectives and Rationale

The overall goal of the studies described in this document is to determine the potential for a specific wind energy project to have an adverse impact on bird and bat resources by characterizing the use of the site and surrounding area by birds and bats under a variety of environmental conditions throughout the year, and by estimating the mortality rate of birds and bats due to collisions and other effects associated with the project. The effects of construction and operation on habitat, and changes in wildlife use of the site will also be studied to determine any displacement or loss of species related to project construction or operation. Data collected prior to construction can be compared to information collected in a similar manner after construction to determine what impact, if any, the project has on migrating and resident breeding and wintering birds and bats. With regard to migratory bats, the data collected as outlined in this document may assist DEC in quantifying the impact of wind power development on bat populations. DEC may also advise that separate studies be conducted to evaluate the presence of, and potential impacts to, species not covered by this document, including mammals other than bats, reptiles, turtles, amphibians, invertebrates, or aquatic organisms. Ultimately, information gained from pre- and post-construction studies will be used to identify appropriate locations to site a project, and measures that may be used to minimize direct and indirect impacts from project construction and operation. See Appendix A (page 34) for more information on potential methods to reduce bat mortality from turbines, and on-going efforts researching bat population size, distribution, and movement patterns across the landscape.

a. *Pre-construction studies*

The objectives of the pre-construction studies are to determine:

i. To what extent the area of the proposed project is used by migrating, breeding, and wintering birds and bats and how the physical and biological features of the proposed site and surrounding area may influence such use;
ii. The expected and potential direct impact to birds and bats as a result of using the site during operation of the project;

iii. The expected and potential indirect impact to birds, bats, and their habitats as a result of construction and operation of the project;
iv. The best possible siting of turbines and other project components with the least likelihood of adversely impacting birds and bats; and
v. Areas to avoid siting any project components or facilities.

b. *Post-construction studies*

The objectives of the post-construction studies are:

i. To estimate direct impacts of the operating project in terms of the species composition, seasonal timing, and mortality rates of birds and bats caused by collisions or other effects of the turbines;
ii. To document any indirect impacts of construction and operation of the project in the form of habitat fragmentation and habituation/avoidance behavior of birds and bats in the area;
iii. To determine how daily weather events and/or conditions may correlate with the number and species composition of dead or injured animals found beneath daily-searched turbines; and
iv. To determine what types of operational regimes or technological designs would result in the lowest bird and bat mortality levels.

c. *Bird Studies*

Migrating birds, particularly neo-tropical migrants, are sensitive to changes occurring across the landscape that alter the amount and quality of habitat available to them during migration. Many aspects of the biology, population structure, and ecology of these birds are poorly understood. In a general sense, the following is known:

i. Most songbirds, and many shorebirds and waterfowl migrate at night, while raptors, swallows, corvids, and some shorebirds and waterfowl move during the day;
ii. The exact spatial and temporal distribution of this migration is affected by weather patterns, food availability, and geographic features;
iii. Concentrations of species and individual birds vary with the habitat, season, and year;
iv. Birds are much more physiologically vulnerable during migration than at other times of the year; and
v. The effects of human-caused habitat and landscape alterations are persistent over time.

Types of bird surveys include habitat surveys for sensitive and listed species, breeding bird surveys, nest searches and monitoring, migration surveys, eagle use surveys, wintering raptor surveys, waterfowl surveys, and marine radar surveys. The radar surveys provide information on target passage rate, flight altitude, and flight direction. Acoustic monitoring of migratory birds can also be used to identify some species that vocalize in flight, and may provide a rough estimate of flight height for these species. DEC will recommend one or more of these methods based on the

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depending on the species (Rich et al, 1994; Robinson and Wilcove, 1994). As these studies did not include the presence of a turbine, indirect impacts may extend further into the forest than reported. Therefore, *minimally*, all forested habitat within 300 feet from the edge of a cleared area is considered to suffer indirect impacts, as pertaining to interior forest breeding birds. Larger distances may be needed for some projects, depending on the species present, forest quality, and surrounding habitat.

Indirect impacts in forests and grasslands are likely species-specific and habitat dependent, and include: avoidance of novel tall structures (Shaffer and Buhl, 2015; Stevens et al, 2013; Leddy et al, 1999); increased presence of predators (Keyser et al, 1998), and nest parasites such as brown-headed cowbirds (Howell et al, 2007); the introduction or spread of invasive species; and human disturbance. These, as well as changes in temperature, light penetration, humidity, soil moisture, plant composition, noise levels, prey availability, and other factors may cause birds to avoid forest edges and grasslands during nesting, feeding, and migration periods. This can then lead to increased intra-and inter-species competition for preferred undisturbed habitat, changes in food availability, decreased fledging rates, and increased energy expenditure during foraging and territory defense in sub-par habitat (Wilcove et al, 1986). Every project that impacts interior forest habitat and core grassland areas across the landscape puts cumulative stress on bird and bat populations in New York and across the northeast, which may cause a gradual decline in the overall number and diversity of interior forest- and grassland-dependent species.

c. *Raptor migration surveys*

Raptor migration surveys should be conducted from one or more prominent locations with a clear view of the entire project area during spring and fall migration periods (March 1 to May 31; August 15 to December 15). The size, location, and topography of the proposed project will influence the total number of, and distance between, survey points that DEC recommends. Observations should take place starting at 8:00 a.m. and last until two hours prior to sunset, or later if birds are continuing to move through the area. Surveys should be done at least once every seven days during each season, on days without heavy rain, snow, fog or excessive cloud cover that would limit visibility. Information on the species, number of individuals, sex and age class (if possible), behavior, flight height and direction, time of sighting, and location of each bird relative to the project area should be recorded. Project developers should coordinate with the USFWS for the latest recommendations on conducting eagle use surveys in the project site and surrounding area.

Concurrent with the information described above, observations of the movements of any other large flocks or individual birds (waterfowl, waders, corvids, icterids, swallows, etc.) should be recorded in a similar manner. However, preference should be given to observing and recording data on raptors. The presence and movement of groups or large numbers of individuals of non-raptor species could indicate the area is an important staging, feeding or migratory area.

d. *Breeding and migrating bird surveys*

Breeding bird surveys should be conducted a minimum of once per week from approximately May 15 until June 30 or July 20, depending on the habitat and expected

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migration, and fall swarming times may also be recommended. Analysis of the data and call identification by software and experienced personnel should focus on determining the presence and species of any Myotis bats detected. At least two different software packages should be utilized to filter recorded calls, with a person(s) experienced in distinguishing and identifying bat calls conducting a visual inspection of all Myotis or other suspect calls flagged by software.

5. **Expanded Pre-construction Studies**

If a developer proposes to construct a wind energy project in or near one of the features or resources of concern identified in Section 2(b), then at least two years of pre-construction study may be needed, incorporating one or more expanded pre-construction studies to provide in-depth information on the bird and bat resources of the site. Similarly, if post-construction study results from a wind energy project in a locale with similar physiographic or ecological features to the proposed project have shown that pre-construction predictions under-estimated the actual post-construction impacts, expanded pre-construction studies may be warranted. Following are examples of the type of expanded studies that DEC may recommend based on site-specific conditions.

a. *Radar studies*

Radar studies include the use of remote sensing marine radar to determine the use of the project and surrounding area by nocturnally migrating birds and bats. The radar should sample concurrently in both horizontal and vertical modes to collect information on target passage rate, flight height, direction, and speed. Radar units should be operated from at least one hour prior to sunset to one hour after sunrise, minimally during the migration periods of March 1 to May 31 and August 1 to October 31. Different date ranges and/or daily sampling times may be recommended, depending on the goal of the study and resources of concern at a particular site. Data should be recorded in digital format, and include weather information, airspace not sampled due to ground clutter or other interference, and all information on targets corrected for the volume of airspace actually sampled and the density of targets detected at various altitudes. Nocturnal visual observations may be undertaken for a minimum of ten minutes each hour during radar operation to estimate the proportion of birds and bats using the airspace immediately over or adjacent to the radar unit. Moon watching, spotlighting, and/or thermal imaging are the most commonly used methods. Project sponsors should consult with DEC biologists to determine an appropriate location, duration, intensity, and time frame for these surveys, as well as the latest data analysis and reporting methods.

An analysis of archived and current Next-Generation Radar (NEXRAD) data from one of the six radar stations that cover land in New York may provide information on mass movements of migrants relative to major nightly weather patterns. Due to limitations in NEXRAD coverage, only projects near the cities of Buffalo (BUF), Binghamton (BGM), Montague (TYX), Burlington, Vermont (CXX), Albany (ENX), or New York City (OKX) are able to utilize this type of information. As NEXRAD largely samples a portion of the airspace far above the highest turbine height, this method does

not generally provide any kind of estimate for number of targets within the rotor swept zone or a likelihood of collision.

b. *Raptor migration surveys*

Expanded raptor migration surveys may be justified for projects proposed to be sited on a ridgeline, in a known or suspected raptor migration route (e.g. close to the shores of Lakes Erie and Ontario), or near an established spring or fall hawk watch. In addition, if observations during a standard study detected migrating raptor species listed by the state or federal government as threatened or endangered, expanded raptor surveys may be recommended. Even in areas known to concentrate raptors during migration, site-specific information on species' flight height, direction, and timing of movement is important in understanding and evaluating the potential risk to birds at a proposed wind project. Surveys should be conducted from one or more prominent locations within the project area during spring and fall migration periods (March 1 to May 31; August 15 to December 31). If standard surveys have already been conducted, expanded surveys should be done from the same observation point(s). Every favorable weather day should be surveyed during the migration periods. All other data and information collected should be the same as for standard raptor migration surveys. Project sponsors should consult with DEC biologists to determine an appropriate survey time frame and frequency for specific target species, which may differ from the above dates.

c. *Waterfowl surveys*

Waterfowl surveys may be recommended if the project is in close proximity to a recognized major waterfowl concentration area, National Wildlife Refuge, or State Wildlife Management Area used for feeding, roosting, wintering, breeding, or migration staging. Surveys should include both driving and static observations in a variety of seasons and weather conditions. Driving surveys consist of slowly driving roads throughout the project site and surrounding area at various times during the day to observe and record the species, numbers, and behavior of birds in wetlands, rivers, fields and other habitats. For static surveys, an observer is stationed for a designated period of time at a given location and recording the same observations as driving surveys. Project sponsors should consult with DEC biologists to determine appropriate location(s), duration, intensity, and time frame for these surveys.

d. *Breeding bird surveys*

Targeted breeding bird surveys for state or federally listed threatened or endangered species, species of concern, or SGCN may be recommended if the project is in close proximity to a wetland, grassland, forest or other habitat area that may harbor marsh birds, nightjars, forest raptors, owls, or other birds that would not easily be detected during a morning survey, either because they are not active during the morning, or are not typically vocal. These surveys may incorporate playback of species-specific songs and calls and/or mobbing calls, and take place in the very early morning and/or in the evening hours until after sunset, depending on the target species. A number of points should be designated in appropriate habitat, where an observer should listen for calling birds before broadcasting a recording and listening again for a

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projects that have applied for an Incidental Take Permit (ITP) for state or federally listed threatened or endangered species may differ from those described here, per conditions of the permit and agency requirements. All collection and possession permits must be obtained at the state and federal level prior to the commencement of searches. Should a state or federally listed species be found dead or injured anywhere in the project area by any person, either during a regular survey period or incidentally at any time during the life of the project, DEC and USFWS, respectively, are to be notified as soon as possible but no later than 24 hours after the discovery, for direction on how to proceed with handling the animal.

i. Turbine searches – A standardized turbine-search regime should be designed such that one third of the total number of turbines in the project are searched daily, and one third of the total number of turbines in the project are searched weekly, from April 15 to November 15 during the first year of study. At any project with 10 or fewer total turbines, all turbines must be searched daily. At any project with between 11 and 29 turbines, at least 10 turbines must be searched daily, and one third of the remaining number searched weekly. Whether the second and third year of study are done in sequence or postponed to later years (e.g., the fifth or sixth year of operation) will be determined following analysis of data from the first year. Should the project expand to include more turbines, the number and location of turbines in the search pattern will be altered accordingly.

ii. Area to be searched – The area to be searched beneath each turbine should be no less than 1.5 times the rotor diameter. Although plot size will be dependent on specific turbine height and rotor diameter, 120 meters by 120 meters should be adequate for most modern turbines currently being used in New York. Transects should be five (5) meters apart, allowing for a visual search area of approximately 2.5 meters on either side of the centerline. These distances may vary slightly from one site to another, due to varying ground conditions. Full plots are necessary for at least the first study year to produce the most accurate mortality estimate possible. After the first year of study, DEC may discuss with the developer the possibility of a portion of the study turbines being searched only on the cleared gravel road and pad area. If so, the number of carcasses found on the road and pad may be used to estimate fatality rates when compared with full plot searched turbines during the same year.

iii. Ground cover – The type and amount of ground cover under each turbine should be recorded every day that searches occur. Vegetation growth, crop harvesting and other changes in the substrate could greatly alter the efficiency of carcass recovery.

Mowing and/or brush-hogging some or all of the search plots, each in their entirety, is recommended to increase searcher efficiency and provide a relatively consistent ground cover throughout the study area and between projects. Mowing should take place as often as necessary to maintain vegetation height suitable for seeing small, dark, potentially wet or decomposing carcasses at a distance of 2.5 meters. Early notification to and coordination with landowners holding study turbines is essential to ensure an agreement can be made that will be satisfactory to all parties.

iv. Search conditions – Searches should begin as close to sunrise as possible. Overnight weather conditions greatly affect the number of animals that will fly and how they are distributed in the airspace, and thus their exposure to turbine blades. The standard weather data collection noted in Section 4(a) need only be collected on a daily basis for ground searches.

v. Photographs – Digital photographs should be taken of each carcass found. At least one picture of each carcass should include a ruler or other standard item used for scale. These photos, along with all field data information described in 6(a)i-vi, should be sent with the final report to DEC. The file name or folder for each photo or set of photos should be clearly marked with the date and turbine number. At a minimum, documentation for each carcass should include photos showing:
   (1) the position in which it was found;
   (2) the dorsal and ventral sides;
   (3) photos that indicate the gender and reproductive condition of bats (if possible); and
   (4) any identifying characteristics such as bill, foot, wing or tail shape, and plumage coloration for birds.

vi. Data collection – The following data should be recorded for each carcass found during standard searches or incidentally:
   (1) date, time, project name, and turbine number;
   (2) location on plot marked with GPS coordinates;
   (3) distance and cardinal direction from turbine;
   (4) distance and bearing from transect from which it was first spotted;
   (5) condition of carcass (whole or partial, extent of injury and some measure of decomposition and/or scavenging to estimate time of death);
   (6) position of carcass (face-up/down, sprawled, balled up, etc.);
   (7) species, age and sex, if determinable:
   (8) substrate conditions when found (gravel, short/long grass, crops, brush, etc.);

(9) identification of searcher/collector; and
(10) for all carcasses found incidentally (associated with a turbine outside of the study area, under a study turbine during non-survey times, or by someone other than a trained searcher), as much information as possible from 1-9 above should be recorded, and the carcasses labeled and stored in the same manner as a study carcass, with a marker identifying is it as an incidental find.

b. *Searcher efficiency and carcass removal trials*

To accurately estimate mortality rates, searcher efficiency tests, and scavenger removal tests should be conducted throughout the study period for each year of post-construction monitoring, using carcasses of various sizes and species that breed and migrate through the project area. Factors such as ground topography, vegetation cover, current weather conditions, searcher experience and fatigue level, and scavenging rates all affect the overall efficiency of carcass detection for a given project area. Searcher efficiency trials should be conducted to estimate search accuracy, and should take place unbeknownst to the searcher(s). Recovery rates should be calculated separately for bats and small, medium, large and all birds combined. Methodologies for this type of study may evolve as new information is gathered. The following is a standard process for conducting the trials:

i. Carcass placement – A person not performing searches that day should place bird and bat carcasses throughout the search areas under various turbines representing different types of ground cover early in the morning that a trial is to occur. This person should record the location of each carcass within the study area, and any not found by the searchers should be removed at the completion of the day's trial. Carcasses should be discreetly marked with a non-reflective material to identify them as test animals. If enough bat carcasses are not readily available, fresh brown mice may be used as a surrogate for searcher efficiency trials.

ii. Carcass recovery – Information collected on trial carcasses should be identical to all non-test carcasses as outlined in section 6(a)(vi). The number of test carcasses recovered and the accuracy of data recorded will be determined for each searcher, and an efficiency rate calculated for each trial conducted throughout the course of the study.

iii. Carcass removal trials – Most mammalian and avian scavengers quickly recognize easy food sources, can readily incorporate wind projects in their daily routes, and are often active at pre-dawn hours. Insect scavengers are active mostly in warmer months, and in some cases can drastically deteriorate a carcass in a matter hours. Carcass removal trials should continue throughout post-

construction monitoring, as scavenging rates change in response to a steady source of food.

iv. Number and condition of carcasses – Trial carcasses should be as fresh as possible, since long-frozen carcasses may be much more difficult to find and are possibly less attractive to scavengers. The number of carcasses used should not cause an excessive attraction to bring scavengers into the area. Carcasses should be placed in a variety of habitats and checked daily for the first week, and every two days thereafter until the carcass disappears (due to scavenging or decomposition). On each check, the location and condition of the carcass should be recorded to determine if any scavenging has occurred. Any tracks, scat, marks, or other signs that may indicate the type of scavenger should be noted. Scavenging rates for each season, animal taxa, and habitat type in the project area will be calculated.

d. *Bird habituation and avoidance studies*

The pre-construction breeding and migrating bird surveys described in sections 4(d) and 5(d) should be repeated during the first and second years of mortality monitoring. Additional years of study may be recommended for the third, fourth, or fifth year of project operation as determined through consultation with DEC. Post-construction survey transects, points, and methods should be as close as possible to those used during pre-construction surveys. At pre-construction sample locations that become actual turbine sites, surveys should, to the greatest extent possible, take place during a period when turbine noise does not interfere with the observer's ability to hear, see, and record birds. If expanded pre-construction breeding bird surveys were conducted, developers should consult with DEC to determine the scope, methods, and focus species post-construction breeding bird surveys will have. Any land use or habitat changes that may have occurred since pre-construction or the previous post-construction survey was conducted should be noted, as this could potentially alter the bird species composition, density, and distribution within the project area. Information from this post-construction survey is intended to be comparable to pre-construction surveys, and will examine whether the wind project is having any effect on bird use of the site during breeding and migration periods, and whether habituation or avoidance is occurring.

7. Expanded Post-construction Studies

For wind energy projects constructed in or near one of the features or resources of concern identified in section 2(b), and for projects that DEC determines may adversely affect a state or federally listed species, expanded post-construction monitoring studies may be needed to provide additional in-depth information to further understand the specific impacts to bird and bat resources of the site. Exact details of these components of post-construction monitoring will be determined on a site-specific basis through discussions between DEC and the project developer.

a. *Radar surveys*

If radar studies during pre-construction surveys showed high passage rates, low flight altitudes, or if other unanticipated conditions that may affect the results and conclusions of the study were observed, then a radar survey may be recommended during the first year of post-construction mortality surveys. The use of radar during subsequent years of post-construction surveys will be contingent on the results of the first year of post-construction study. For any project where post-construction monitoring reveals a higher than expected level of mortality based on pre-construction data and analysis, the use of radar may be recommended for the second year of post-construction study regardless of whether radar surveys were conducted during pre-construction studies. The timing and duration of post-construction radar studies should be determined in consultation with DEC staff.

b. *Raptor migration surveys*

Raptor migration surveys should be repeated during at least the first year of post-construction monitoring if: expanded raptor surveys were conducted during pre-construction surveys; the results of post-construction studies from other projects estimate impacts to raptors that are not consistent with pre-construction expectations; or as recommended by DEC. Raptor migration surveys should be done using the methods described under the expanded pre-construction survey section 5(b), or as recommended by DEC staff.

c. *Waterfowl surveys*

Waterfowl surveys should be repeated during at least the first year of post-construction monitoring if: they were conducted during pre-construction surveys; results of post-construction studies estimate impacts to waterfowl are not consistent with pre-construction expectations; or as recommended by DEC. Waterfowl surveys should be done using the methods described under the expanded pre-construction survey section 5(c), or as recommended by DEC staff.

d. *Wintering bird surveys*

Wintering bird surveys should be repeated during at least the first year of post-construction monitoring if: they were conducted during pre-construction surveys; the results of post-construction studies estimate impacts to wintering birds that are not consistent with pre-construction expectations; or as recommended by DEC. Wintering bird surveys should be done using the methods described under the expanded pre-construction survey section 5(e), or as recommended by DEC staff.

e. *Bat acoustic monitoring*

Bat acoustic monitoring may be recommended on a site-specific basis. If pre-existing data, information collected on site during pre-construction surveys, current conditions, or agency determination indicate a potential for undue impact to Myotis species, post-construction acoustic monitoring may be warranted. Consultation with DEC staff is recommended to determine the most appropriate methods for each site.

8. **Planning and Reporting**

a. *Work plans*

After discussions with DEC staff regarding the application of these guidelines to a particular site, the developer should submit a draft work plan incorporating the necessary elements for study at the site. The work plan should include the site description and maps of the most up to date project layout, as well as shapefiles indicating the locations of all project components, points, and transects used for bird and bat surveys. This information will assist DEC in reviewing the data and evaluating potential impacts to sensitive species and their habitats using GIS software. Pre-construction work plans and shapefiles should be submitted to DEC with enough lead time for all parties to discuss and agree upon the details of the plan before implementation of the proposed field work. A comprehensive post-construction study plan should be developed and submitted to DEC for review prior to completion of project construction, and all work should be conducted in consultation with DEC. Project sponsors should work closely with DEC to provide a work plan detailing the search regime, bias corrections, bat acoustic monitoring, bird displacement/habituation surveys, reporting techniques, and other aspects of a project's post-construction mortality study.

b. *Reports*

After completion of the agreed-upon studies, the developer should prepare a report presenting the results. A description of the proposed project should be provided including maps of the proposed or existing turbine layout and other project components, topography, state and federal wetlands, and any other relevant information and environmental features on or near the site. A composite map containing all project and study information (turbine locations, raptor observations points, breeding and migratory bird transects with observation points, radar unit location (if applicable), wintering bird and waterfowl survey points/routes, acoustic detector locations, and habitat types) should be provided. The preferred format for reporting is described below.

i. Habitat surveys: The habitat survey report should minimally include the following:
   (1) a description of the habitat types found on site, including the location and identity of any invasive species;
   (2) a description of what state and/or federally listed species are associated with each habitat type and may occur in the area;
   (3) a layout map of ground cover (grassland, forest interior/edge, old field, shrub/scrub, young forest, wetland, agricultural/grazing land, developed areas, etc.), and their respective proportions on the landscape within the project site and surrounding area;
   (4) one or more map, as needed, showing the locations of habitat suitable for any listed, special concern or SGCN species, as well as the locations of any actual observations made of listed or sensitive species; and

(5) a detailed discussion of the methods, results, and recommendations, including a description of the listed species presence/absence survey results.

ii. Breeding and migrating bird surveys: The breeding and migrating bird survey report should minimally include the following:

(1) the number, location and length of each turbine, electric line, and control transect;
(2) the overall survey period, and date, time, and duration of surveys conducted at each point;
(3) a description of the habitat surrounding each transect;
(4) the number of species observed overall;
(5) the total number of individuals of each species observed overall;
(6) the number of individuals of each species observed at each transect point;
(7) a summary of the number and behavior of birds seen (e.g. individual, moving in a small flock, feeding, resting, carrying nesting material, food, or fecal sac, etc.), and whether any active nests or recently fledged young were observed;
(8) which birds were identified visually or via vocalizations;
(9) the point(s) and transect(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
(10) the habitat type(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
(11) a description of the weather conditions during and immediately prior to survey days;
(12) a list of all species with the dates and points where they were observed;
(13) the number and identification of the observer(s) conducting each survey;
(14) a description of any disruptions and/or distractions that occurred during each sampling period that may have precluded an adequate survey;
(15) a detailed discussion of all methods, results, and recommendations;
(16) one or more table and graph, as needed, depicting the above information, as well as all species with the dates and points where they were observed, the location proposed or existing turbines and other project components;
(17) one or more map, as needed, which displays all observations of all individuals of state and federally listed species, species of concern, SGCN, and any other species targeted at the site. Detailed information on the location, method of detection, behavior, flight paths, and all other

relevant data should be clearly shown on the map, or otherwise made available in the report; and

(18) shapefiles depicting the date, location and behavior of each individual of all state and federally listed species observed on site, and shapefiles of all transects and point locations.

iii. Raptor migration surveys: The raptor migration report should minimally include the following:

(1) the number and location of observation point(s);
(2) the overall survey period, and date, time, and duration of surveys conducted at each point;
(3) a general description of the viewshed from each point, including any area with limited or no visibility of the horizon and sky;
(4) the number of species observed overall;
(5) the total number of individuals of each species observed overall;
(6) the number of individuals of each species observed on each survey;
(7) the flight height and direction of each raptor and vulture, including any changes observed;
(8) the average and median flight height and direction of each raptor and vulture species, and any notable behavior observed;
(9) a description of the weather conditions during each hour of and immediately prior to survey days;
(10) the number and identification of the observer(s) conducting each survey;
(11) a description of any disruptions and/or distractions that occurred during each hour that may have precluded an adequate survey;
(12) a detailed discussion of all methods, results, and recommendations;
(13) one or more table or graph, as needed, depicting the above information;
(14) one or more map, as needed, depicting survey location(s), viewshed(s), the overall mean raptor and vulture flight paths, and locations of any listed species observations; and
(15) shapefiles depicting the date, location and behavior of each individual of all state and federally listed species observed on site, and shapefiles of all observation point locations.

iv. Radar studies: The radar report should minimally include the following:

(1) the radar unit location, elevation, and characteristics of the surrounding vegetation and topography;

(2) the total number of days surveyed overall, and in each season;
(3) the date, time, and number of hours per night and day that surveys took place each season;
(4) the mean, median, minimum and maximum values recorded each hour and overall each season for: target flight height, direction, passage rate in targets/km/hour, and percentage of targets detected below the maximum height of the proposed turbines, all corrected for the volume of airspace actually sampled and density of targets within that space;
(5) the elevation and total height of the proposed turbines;
(6) a detailed discussion of all methods, results, and recommendations;
(7) a discussion and evaluation of results describing the type of equipment used, including capabilities, limitations, and settings used for all equipment, as well as the amount of down time, failures, or suspected malfunctions that may have occurred during the survey periods. All equipment performance data should be reported to better assess the efficiency and accuracy of the units being used at each location;
(8) one or more picture from both the horizontal and vertical screen views indicating the location and amount of ground clutter surrounding the radar unit; and
(9) one or more table or graph, as needed, depicting the above information, as well as times and number of hours actually sampled each night and day in both horizontal and vertical modes, and hourly weather information (particularly wind speed and direction, percent cloud cover, ceiling height, and the presence of fog and/or precipitation).

v. Wintering bird surveys: The wintering bird survey report should minimally include the following:
(1) the number, location and length of all observation points and routes surveyed;
(2) the overall survey period, and date, time, and duration of surveys conducted at each point and driving route;
(3) a general description of the viewshed from each observation point, including areas with limited or no visibility of the targeted habitat;
(4) the number of species observed overall;
(5) the total number of individuals of each species observed overall;
(6) the number of individuals of each species observed on each survey, and at each point;

(7) a description of the behavior (feeding, perching, soaring, flocking, etc.) of the birds observed and the habitat they occupied;
(8) which birds were identified visually or via vocalizations;
(9) the point(s)/route(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
(10) a description of the weather conditions during an immediately prior to survey days;
(11) any disruptions and/or distractions that occurred during each survey that may have precluded an adequate collection of data;
(12) the number and identification of the observer(s) conducting each survey;
(13) a detailed discussion of all methods, results, and recommendations;
(14) one or more table or graph, as needed, depicting the above information, as well as all species and individuals with the dates and points where they were observed;
(15) one or more map, as needed, showing the locations of the sightings relative to proposed or existing turbine locations and from the survey point/driving route;
(16) any other information as requested by NYSDEC 2014(b); and
(17) shapefiles depicting all survey locations, the viewshed from each, and the date, location, flight direction, and behavior of each individual of all state and federally listed species observed.

vi. Waterfowl surveys: The waterfowl survey report should minimally include the following:
(1) the number, location and length of all observation points and routes surveyed;
(2) the overall survey period, and date, time, and duration of surveys conducted at each point and driving route;
(3) a description of the habitat surrounding each observation point and along routes surveyed;
(4) the number of species observed overall;
(5) the number of individuals of each species observed overall;
(6) the number of individuals of each species observed on each survey and at each point;
(7) a description of the behavior (feeding, resting, flying, flocking, etc.) of birds observed, the habitat they occupied, and any movements of birds within or across the project area;
(8) detailed descriptions of the location and behavior of all state or federally listed species observed;

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

viii. Mortality studies: An interim progress report should be submitted to DEC no later than mid-July summarizing the post-construction survey results from spring of that year. The interim report is not intended to be an exhaustive analysis of methods, results and estimates. At a minimum, this report should include:

(1) the number and species of all dead or injured birds and bats found to date during standardized searches and incidentally, including any state or federally listed species found anywhere on site;
(2) the turbine number at which each animal was found;
(3) the date each animal was found;
(4) an overview of the searcher efficiency and carcass removal trials conducted to date;
(5) one or more map, as needed, identifying each turbine number and location; and
(6) any other notable bird or bat observations made on site.

A draft final report, to be submitted by January 31 following the end of the fall study period, should minimally include the following:

(7) the results of the daily and weekly ground searches;
(8) a description of the habitat type and ground cover height surrounding each turbine, including details of any vegetation management that was done at each turbine;
(9) the cardinal direction and distance from the turbine, in 10 meter increments, each carcass was found during standardized searches and incidentally;
(10) the size class of each carcass (small or large bat, small, medium or large bird);
(11) the condition of each carcass found;
(12) the date each carcass was found;
(13) photographs of all carcasses found;
(14) the age and sex of each carcass, if determinable;
(15) the total area beneath each turbine actually searched;
(16) a description of daily weather conditions prior to and during each search;
(17) the number and identification of people conducting each survey;
(18) the results of the searcher efficiency tests and scavenger removal study. The estimated searcher efficiency should be reported by carcass size, ground cover type, and season for each searcher. Estimated scavenging rate should be reported for each carcass size, habitat type, and season. This should include the types of scavengers present on site (avian, mammalian, insect) and the frequency at which each occurs;
(19) a discussion of all methods, results, and recommendations;

(20) one or more table or graph, as needed, depicting all the above information, as well as showing the number and identification of birds and bats found, and at which turbine, during standardized searches and incidentally; and
(21) one or more map, as needed, identifying each turbine number and location, and the area searched beneath each turbine.

If operational curtailment of all or a portion of the turbines occurred at any time during the survey period, the final report should include detailed information on the following:
(22) which turbines were feathered;
(23) the wind speed at which curtailment took place, and whether that varied between turbines;
(24) the dates and times of curtailment events, as well as total time of curtailment;
(25) a detailed discussion on how the curtailment effort impacted the estimated bird and bat mortality rates; and
(26) any other information relevant to changes in operational cut-in speeds.

All statistical methodologies should be fully explained and justified, and the most appropriate and accurate model used for estimating mortality rates. Project developers should consult with DEC and USFWS to determine the statistical model(s) to be used. Mortality rates should be calculated using at least a 95% confidence interval. Estimates should be made of overall mortality during the study period on a per turbine, per megawatt rated, per megawatt produced, and per rotor swept area for bats and birds (including small, medium and large birds, and all birds together). A separate estimate of bat mortality during the late summer/fall period (approximately mid-July through September) should also be provided, to allow for comparison of results with studies that only evaluated this time frame. All of these estimates should take into account:
(27) searcher efficiency rate;
(28) scavenger removal rate;
(29) the overall search plot size under each turbine;
(30) the amount of area actually searched under each turbine and throughout the project;
(31) the frequency of searches;
(32) operational curtailment, if any;
(33) the number of birds and bats estimated to have fallen outside of the search plot; and
(34) a discussion of any other factor that may have influenced the search regime and results.

ix. Other post-construction surveys: Either inclusive with the mortality report, or as a separate document, information on the post-construction bat surveys, bird habituation/avoidance studies, bird and raptor migration surveys, and/or radar surveys should be reported as described above in 8(b) i-vii, with the following additions: specific avoidance behavior of flying birds and/or bats observed in the project area; and any other information relevant to how birds and bats are using or avoiding the operating project area, especially with respect to the level of habitat restoration that has occurred at the time.

9. References and Sources of Information

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New York Natural Heritage Program
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NYSDEC Breeding Bird Atlas
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http://www.dec.ny.gov/about/642.html

NYSDEC Division of Fish, Wildlife, and Marine Resources
http://www.dec.ny.gov/about/634.html

NYSDEC Grassland Focus Areas
http://www.dec.ny.gov/pubs/32975.html

NYSDEC Operating and Proposed Wind Energy Projects in New York State
http://www.dec.ny.gov/energy/48089.html

NYSDEC Regional Office Information
http://www.dec.ny.gov/about/255.html

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Endangered Species: http://www.dec.ny.gov/permits/25012.html

NYSDEC Species of Greatest Conservation Need (SGCN)
http://www.dec.ny.gov/animals/9406.html

NYSDEC State Listed Species Information
http://www.dec.ny.gov/animals/7494.html

NYSDEC Wind Energy Information
http://www.dec.ny.gov/energy/40966.html

New York Environmental Resource Mapper
http://www.dec.ny.gov/animals/38801.html

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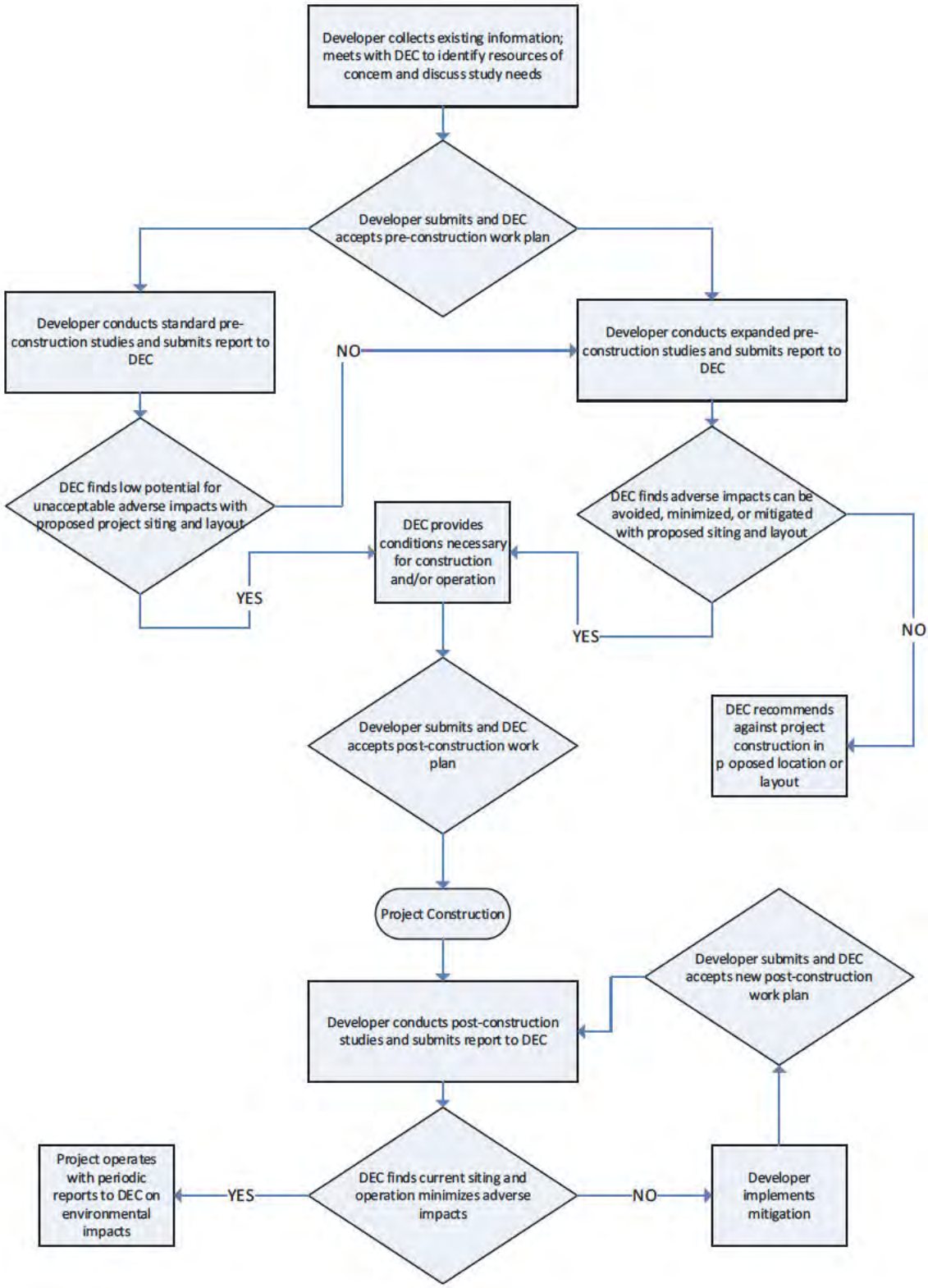
Figure 1. General Process for Conducting Bird and Bat Studies at Wind Energy Projects in New York



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Appendix B

Results of Agency Consultation and Database Review

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To:
Consultation Code: 05E1NY00-2021-SLI-0600
Event Code: 05E1NY00-2021-E-01809
Project Name: Smokey Ave Wind (Fenner)_1

November 30, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

[redacted]

eagle_guidance.html). Additionally, wind energy projects should follow the Services wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2021-SLI-0600

Event Code: 05E1NY00-2021-E-01809

Project Name: Smokey Ave Wind (Fenner)_1

Project Type: POWER GENERATION

Project Description: The Study Area is located in the Town of Fenner, Madison County, New York. The Study Area is 15.91 square miles, and will consist of 16 wind turbines. The attached image represents the Study Area surrounded by a 5-mile buffer.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.93232698294378N75.7537871543499W

Counties: Madison, NY | Onondaga, NY

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Environmental Resource Mapper

The coordinates of the point you clicked on are:

UTM 18	**Easting:**	439427.60745404434	**Northing:**	4754917.796188805
Longitude/Latitude	**Longitude:**	-75.74247597320431	**Latitude:**	42.944497442186886

The approximate address of the point you clicked on is:
Town of Fenner, New York

County: Madison
Town: Fenner
USGS Quad: MORRISVILLE

DEC Region

Region 7:
(Central New York) Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga and Tompkins counties. For more information visit http://www.dec.ny.gov/about/615.html.

National Wetands Inventory

Attribute: undefined
Type: undefined
Acres: undefined

For more information about the National Wetands Inventory wetlands visit http://www.fws.gov/wetlands/

If your project or acon is within or near an ar ea with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the acon ma y be harmful to the species or its habitat.

If your project or acon is within or near an ar ea with rare plants and/or significant natural communies, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (ie. a wetland) and thus be subject to permit jurisdicon.

Please refer to the "Need a Permit?" tab for permit informaon or other authoriz aons r egarding these natural resources.

Disclaimer: If you are considering a project or acon in, or near , a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreaonal Riv ers, are currently not included on the maps.

Appendix C

Sample Data Sheet

Spring Raptor Migration Survey Data Sheet

Observer Initials:	Project:	Town(s)/County:	Survey Date:
Overall Start Time:	Overall End Time:	Survey Duration (hh:mm):	Weather Conditions (Previous Day):

Hourly Weather Conditions

Time	8-9 a.m.	9-10 a.m.	10-11 a.m.	11-12 p.m.	12-1 p.m.	1-2 p.m.	2-3 p.m.	3-4 p.m.	4-5 p.m.	5-6 p.m.	6-7 p.m.
Temperature Range (°F)											
Cloud Cover (%)											
Prevailing Wind Direction											
Wind Speed Range (mph)											
Precipitation[1]											
Visibility[2]											

[1]If none, leave blank. Otherwise, provide using the following codes: D = drizzle; R = rain; SL = sleet; H = hail; SN = snow; O = other (write in).
[2]Report in miles, estimated based on visible landmarks at known distances from the survey location (or nearest weather station).

Raptor, Large Flock, and Special Status Species Observations

Time Period[1]	Species[2]	Number	Sex/Age (If Known)[3]	Behavior(s)[4]	Average Flight Height (feet)	Initial Distance (feet)	Closest Distance (feet)	Average Flight Direction	Notes

[1]Provide the start and end times for the observation (time first visible/audible and time last visible/audible).
[2]Provide the standardized alpha code if species can be identified (https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf); otherwise provide the most specific taxonomic level possible (e.g., U – accipiter; U – buteo; U – duck; U – falcon; U - sandpiper).
[3]If sex and/or age can be identified, provide using the following codes: M = male; F = female; A = adult; J = juvenile. If not, leave blank.
[4]List all applicable behavioral codes: F = flying; P = perched; H = hunting (foraging); V = vocalizing; O= Other (describe in "Notes").

Time Period[1]	Species[2]	Number	Sex/Age (If Known)[3]	Behavior(s)[4]	Average Flight Height (feet)	Initial Distance (feet)	Closest Distance (feet)	Average Flight Direction	Notes

Additional Notes and Detailed Behavioral Information for Special Status Species

[1]Provide the start and end times for the observation (time first visible/audible and time last visible/audible).
[2]Provide the standardized alpha code if species can be identified (https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf); otherwise provide the most specific taxonomic level possible (e.g., U – accipiter; U – buteo; U – duck; U – falcon; U - sandpiper).
[3]If sex and/or age can be identified, provide using the following codes: M = male; F = female; A = adult; J = juvenile. If not, leave blank.
[4]List all applicable behavioral codes: F = flying; P = perched; H = hunting (foraging); V = vocalizing; O= Other (describe in "Notes").

APPENDIX B

Results of Agency Database Review and Consultation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: March 04, 2021
Consultation Code: 05E1NY00-2021-SLI-1758
Event Code: 05E1NY00-2021-E-05601
Project Name: Hoffman Falls Wind

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

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Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2021-SLI-1758
Event Code: 05E1NY00-2021-E-05601
Project Name: Hoffman Falls Wind
Project Type: POWER GENERATION
Project Description: Proposed Wind project consisting of up to 15 turbines.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.9461749,-75.74006415914408,14z

Counties: Madison County, New York

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

May 14, 2021

Benjamin Roosa
EDR
41 State Street, Suite 806
Albany, NY 12207

Re: Proposed Hoffman Falls Wind Project (EDR Project No. 21028)
County: Madison Town/City: Fenner, Nelson, Smithfield

Dear Benjamin Roosa:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project area.

Also enclosed is a report of rare birds documented within 10 miles of the project area and rare bats documented within 40 miles of the project area, for use in assessing potential impacts of bird and bat collisions. For information on NYSDEC's environmental review of proposed wind energy projects, and for the document entitled *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects,* follow this link:

https://www.dec.ny.gov/regulations/28693.html

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the Permits staff at the NYSDEC Region 7 Office, dep.r7@dec.ny.gov, 315-426-7438.

Sincerely,

Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program

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* Conservation status in NYS as ranked by NY Natural Heritage Program on a 1 to 5 scale:
  S1 = Critically imperiled
  S2 = Imperiled
  S3 = Rare or vulnerable
  S4 = Abundant and apparently secure
  S5 = Demonstrably abundant and secure

B after one of the above ranks indicates the status rank is for breeding populations only.

N after one of the above ranks indicates the status rank is for nonbreeding wintering populations only.

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Please note that these initial findings are based on an initial review of the Wildlife Site Characterization Report provided by Liberty. ORES will update these findings upon receipt and review of the above referenced reports and associated shapefiles.

Recommended Habitat Assessments and/or Field Surveys

Habitat assessments (field surveys) are recommended in the appropriate seasonal windows within one year. In general, all fields greater than 25 acres within the facility area boundary should be surveyed for breeding birds and wintering raptors following an approved work plan. Habitat assessments for breeding grassland birds should include a description of the current landcover and the crop history for the most recent 5 years for any fields greater than 25 acres in size where components may be sited.

If Liberty concurs with these recommendations and agrees to conduct the habitat assessments and field surveys described above, please develop appropriate pre-construction study work plans and submit for review by the Office and DEC prior to the commencement of field work, in compliance with §900-1.3(g)(4). If the Applicant opts not to conduct the recommended surveys and believes that suitable habitat for a given species is not present at the site, please provide a detailed description of the methodology used to determine that no suitable habitat exists in compliance with §900-1.3(g)(3).

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APPENDIX C

Spring Raptor Migration Survey Observations

Appendix C. Spring Raptor Migration Survey Observations

Date	Time First Observed	Time Last Observed	Species[1]	Total Number	Number of Males	Number of Females	Number of Adults	Number of Juveniles	Behaviors[2]	Average Flight Height	Average Flight Direction	Notes
3/4/2021	14:54	14:57	RTHA	1	0	0	0	0	F	150	N	Flew slowly above forest; gradually gained altitude
3/4/2021	14:25	14:28	RTHA	1	0	0	0	1	F	120	NW	Kiting and gliding into wind; flew gradually over fields and continued northwest
3/4/2021	12:18	12:20	RTHA	2	0	0	2	0	F	60	SW	One individual following another; flew along forested ridge; continued SW over open field
3/4/2021	12:34	12:37	RTHA	1	0	0	1	0	F	100	N	Flew over forested ridge; kiting then gliding; continued N out of view; followed by AMCR
3/4/2021	15:15	15:46	RTHA	1	0	0	1	0	H, F, P	50	Variable	First seen in steep dive; flew S kiting over forest; diving to center of field; hovered for a minute; abrupt turn; flew to perch on ground briefly; flew to south end of field; kiting/hunting over field; perched in tree; flew E then S
3/4/2021	11:35	11:36	Unk. Buteo	2	0	0	0	0	F	300	N	Very far away and high up; circling and gradually gaining altitude
3/9/2021	14:25	14:29	RLHA	1	0	0	1	0	F	80	Variable	Circling over forested ridge; flew SW, circled again, then flew back and away to E; light morph, likely juvenile or adult female
3/9/2021	10:52	10:52	RTHA	1	0	0	1	0	P, F	30	W	Flew away out of view from perch on utility tower
3/9/2021	14:17	14:17	RTHA	1	0	0	0	0	F	30	NW	Seen briefly; chased/mobbed by multiple crows; continued to wooded area out of view
3/9/2021	8:46	20:50	RTHA	1	0	0	0	1	F, P	50	SW	Flew over field; perched in tree along hedgerow; mobbed by crows; flew away to SW
3/9/2021	11:05	12:30	RTHA	1	0	0	1	0	F, H, P	50	E	Flew over hillslope; appeared to be scanning for prey; perched in tree for over an hour before flying away to S
3/9/2021	13:49	13:53	RTHA	2	0	0	0	0	F	150	Variable	Two individuals circled higher and higher over field
3/9/2021	12:17	12:17	RTHA	1	0	0	0	0	F	250	Variable	Briefly visible circling very high above field;
3/9/2021	15:03	15:07	RTHA	1	0	0	0	0	F	100	W	Circling higher and higher over fields; continued away to the west
3/9/2021	11:39	11:43	RTHA	1	0	0	0	0	F	120	W	Circling higher and higher over field with another RTHA
3/9/2021	14:43	14:45	RTHA	2	0	0	2	0	F	200	Variable	Two individuals circling close together over fields; climbed out of view above clouds
3/9/2021	10:03	10:09	RTHA	1	0	0	1	0	F	80	NE	Flew over fields and along edge of woodland; mobbed by crows to NE of survey location

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Appendix C. Spring Raptor Migration Survey Observations

Date	Time First Observed	Time Last Observed	Species[1]	Total Number	Number of Males	Number of Females	Number of Adults	Number of Juveniles	Behaviors[2]	Average Flight Height	Average Flight Direction	Notes
3/19/2021	12:24	12:27	RTHA	1	0	0	1	0	F	90	Variable	Flew S over forested ridge, circling; mobbed by AMCRs; turned N and flew E of ridge
3/19/2021	12:43	12:43	RTHA	1	0	0	1	0	F, H	30	SW	Flew low along field edge; continued beyond barn/trees; potential hunting behavior
3/19/2021	12:44	12:56	RTHA	2	0	0	0	1	F	400	N	Circled high above fields and moving very gradually N
3/19/2021	12:55	12:56	RTHA	1	0	0	0	0	F, H	60	SW	Flew far from survey point along transmission line ROW; appeared to be hunting
3/19/2021	12:58	13:05	RTHA	2	0	0	2	0	F	30	E	First RTHA circled over field; joined by a second flying W, both then flew E behind trees
3/19/2021	13:17	13:18	RTHA	1	0	0	1	0	F, P	20	E	Pursued by a CORA; perched briefly in tree before flying away toward forest
3/19/2021	13:31	13:34	RTHA	1	0	0	1	0	F	300	NW	Circled higher and higher over field; lost sight at 500+ feet; heading NW
3/19/2021	13:58	14:13	RTHA	2	0	0	2	0	F	125	Variable	One individual flew southwest over fields toward forest; diving/stooping flight and appeared to be going to perch; joined by a second adult; both then circled higher and higher above hillslope; one flew west over field then back east; circling above hill
3/19/2021	14:44	14:50	RTHA	1	0	0	1	0	F	150	SW	Circled over fields and gained altitude over forested hillslope; flew over field and joined by another RTHA; both circled together then flew away in opposite directions
3/19/2021	14:46	14:49	RTHA	1	0	0	1	0	F	120	E	Flew E and joined another RTHA; both circled together then flew in opposite directions
3/19/2021	15:53	15:56	RTHA	1	0	0	1	0	F	300	N	Circled/kited high above fields, moving steadily higher and gradually northward
3/19/2021	16:21	16:22	RTHA	1	0	0	1	0	F	50	W	Gliding about 100 feet above field; then dove to west decreasing in height
3/19/2021	16:57	16:59	RTHA	2	0	0	0	0	F	150	Variable	Two individuals circling/soaring high above field
3/19/2021	11:50	11:53	TUVU	1	0	0	1	0	F	90	N	Wobbly flight with dihedral heading N; struggled in wind; lost sight E beyond forest ridge
3/19/2021	12:41	12:44	TUVU	1	0	0	1	0	F, H	40	SE	Flew SE over fields, circled low over field searching for food; then circled upward before continuing to SE
3/19/2021	10:08	10:11	Unk. Buteo	1	0	0	1	0	F	100	N	Flew N over valley; battling wind; continued out of view; RSHA or RTHA

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Appendix C. Spring Raptor Migration Survey Observations

Date	Time First Observed	Time Last Observed	Species[1]	Total Number	Number of Males	Number of Females	Number of Adults	Number of Juveniles	Behaviors[2]	Average Flight Height	Average Flight Direction	Notes
3/30/2021	12:57	13:24	RTHA	1	0	0	1	0	F, H	80	Variable	Flew S over fields, circled near road, continued S and circled higher over fields; returned N, then completed another similar "loop" but at lower height; flew at flock of EUSTs twice, then circled over forested hillslope; continued beyond
3/30/2021	14:45	14:49	RTHA	1	0	0	0	0	F	200	N	Flew N; tail posture and glare from sun prohibited definitive identification of age
3/30/2021	15:52	15:54	RTHA	1	0	0	1	0	F	50	SW	Flew along field edge in direct path; lost sight behind trees
3/30/2021	16:29	16:35	RTHA	1	0	0	1	0	H, F, P	40	Variable	Flew S toward aerial flock of passerines; turned SE and circled; diving/swooping flight to SW; circled, dove low, turned, gained height, and perched in a tree; did not see leave
3/30/2021	10:04	10:11	TUVU	1	0	0	1		F	80	SW	Wavering/gliding flight gradually along hillslope, over hedgerow, and over fields
3/30/2021	10:16	10:30	TUVU	1	0	0	1	0	F, P	100	Variable	Flew in relatively direct flight and perched on roof briefly before taking off and flying W, then S, then E, then S, then N; circling and gaining height
3/30/2021	10:17	10:26	TUVU	1	0	0	1	0	F, P	120	Variable	Flew in from N to perch briefly with another individual; took off, circling, and flying E
3/30/2021	10:53	10:55	TUVU	1	0	0	1	0	F	100	SW	
3/30/2021	10:51	10:59	TUVU	2	0	0	2	0	F	200	Variable	Circling over fields; gradually moved N
3/30/2021	11:16	11:19	TUVU	4	0	0	4	0	F	250	N	Circling together high above fields, then rode wind N
3/30/2021	11:30	11:45	TUVU	6	0	0	0	0	F	300	N	Circling high above forested hills; gradually moved northward; two split from the others and flew lower over fields near survey location continuing northeast
3/30/2021	11:28	11:29	TUVU	1	0	0	1	0	F	80	NE	Saw briefly flying over forested hillside; continued NE out of view
3/30/2021	11:56	11:58	TUVU	1	0	0	1	0	F	70	W	Wavering flight over field; then flew more quickly/directly away to W out of view
3/30/2021	11:59	12:00	TUVU	1	0	0	1	0	F	30	W	Wavering flight low over fields following similar path to previous individual
3/30/2021	12:03	12:04	TUVU	1	0	0	1	0	F	90	W	Flew over fields; then continued to W out of view; similar path to the two previous TUVUs
3/30/2021	12:13	12:27	TUVU	2	0	0	2	0	F	70	Variable	Flew NE, turned and flew SW; gained height and circled over fields to S of survey location
3/30/2021	12:27	12:30	TUVU	1	0	0	1	0	F	150	S	Flew gradually south along forested ridgeline

Appendix C. Spring Raptor Migration Survey Observations

Date	Time First Observed	Time Last Observed	Species[1]	Total Number	Number of Males	Number of Females	Number of Adults	Number of Juveniles	Behaviors[2]	Average Flight Height	Average Flight Direction	Notes
3/30/2021	12:36	12:37	TUVU	4	0	0	4	0	F, H	40	Variable	Group circling and dropping in height, potentially to a carcass (did not see reappear)
3/30/2021	12:50	12:55	TUVU	2	0	0	2	0	F	80	Variable	One individual flew SW then joined by a second briefly over barn buildings; first individual then flew back to NE and circled many times
3/30/2021	13:14	13:16	TUVU	2	0	0	2	0	F	450	Variable	Circling very far away and high above ground
3/30/2021	14:06	14:09	TUVU	1	0	0	1	0	F	130	NE	
3/30/2021	14:05	14:14	TUVU	1	0	0	1	0	F	90	S	Circling relatively low; then flew S; joined by another; circled back N; then both gained height and went S
3/30/2021	14:06	14:13	TUVU	1	0	0	1	0	F	90	S	Flew NE to join another individual; circled S then N; then both gained height and went S
3/30/2021	14:20	14:25	TUVU	4	0	0	4	0	F	700	N	Circling together very high up moving gradually N
3/30/2021	14:25	14:27	TUVU	2	0	0	2	0	F	60	N	Flew in direct path over fields
3/30/2021	14:35	14:41	TUVU	3	0	0	3	0	F	150	Variable	Circling over fields; then going N/S over forested ridge line
3/30/2021	14:52	14:57	TUVU	2	0	0	2	0	F	150	Variable	First individual flew N then joined by second over woodlot; both circled and flew S gaining height; one continued out of view to W, the other kited facing S, gaining height
3/30/2021	15:12	15:14	TUVU	1	0	0	1	0	F	100	N	
3/30/2021	15:16	15:17	TUVU	1	0	0	1	0	F	70	Variable	First saw flying S, low near field edge; turned N and circled over wooded area; lost sight behind trees; may have perched
3/30/2021	15:17	15:25	TUVU	2	0	0	2	0	F	300	Variable	Circling; flying back and forth over forested ridgeline
3/30/2021	15:37	15:40	TUVU	3	0	0	3	0	F	200	S	Group of three flying S; probably the same individuals as early observations this same hour
3/30/2021	16:18	16:20	TUVU	2	0	0	0	0	F	250	N	Two individuals circling gradually N over fields
3/30/2021	16:45	16:47	TUVU	1	0	0	1	0	F	130	N	Flying gradually higher along forested ridgeline
3/30/2021	16:40	16:47	TUVU	2	0	0	0	0	F	300	Variable	Circling very high up and far away; no clear dominant direction
4/7/2021	10:52	10:55	AMKE	1	1	0	1	0	F, H, P	40	E	Flew in low direct flight over field to perch on top of silo from 10:53 to 10:55; briefly took off, circled and perched on side of silo out of view; did not see leave or which direction it went after perching
4/7/2021	12:12	12:13	AMKE	1	0	0	1	0	F	50	NW	Direct flapping flight over fields; continued out of view beyond hill slope

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4/7/2021	10:53	10:56	RTHA	1	0	0	1	0	F	150	W	Circling gradually higher over fields and road; the flew W
4/7/2021	11:58	12:06	RTHA	2	0	0	2	0	F	800	N	Circling together very high up; gradually moving Nward
4/7/2021	12:53	13:10	RTHA	2	0	0	2	0	F	250	W	First individual circling low over field, then AMKE flew to it and they both circled higher; joined by second RTHA; all circled higher and higher moving W; continued to circled slowly high above fields
4/7/2021	13:35	13:38	RTHA	1	0	0	1	0	F	600	NE	Circling, kiting, and fanning tail; flying gradually NE against wind; very high up and far away
4/7/2021	14:46	14:49	RTHA	2	0	0	2	0		130	SE	Two individuals circling and continuing S beyond forested hills slope; one followed by another
4/7/2021	14:53	14:53	RTHA	1	0	0	1	0	F, C, P	50	Variable	Heard vocalizing; may have been responding crows that were flying nearby; turned and perched in tree
4/7/2021	16:15	16:16	RTHA	1	0	0	1	0	F	20	N	Saw briefly flying low to ground pursued/mobbed by four crows
4/7/2021	9:50	9:55	TUVU	2	0	0	2	0	F	50	SW	Flying over fields
4/7/2021	10:23	10:24	TUVU	1	0	0	1	0	F	200	NE	Saw very briefly; far away
4/7/2021	10:37	10:39	TUVU	2	0	0	2	0	F	70	NW	
4/7/2021	10:23	10:24	TUVU	1	0	0	1	0	F	40	NE	Saw very briefly; dropping in height, potentially to land on ground
4/7/2021	10:52	10:56	TUVU	1	0	0	1	0	F	30	W	Flying over over fields; circled/dipped; continued W out of view
4/7/2021	11:27	11:39	TUVU	1	0	0	0	0	F	300	NE	Circling very high up and far away with buteo, then lost sight; reappeared circling further to NE; continued but out of view beyond hill slope; then saw again further NE
4/7/2021	11:57	11:59	TUVU	2	0	0	2	0	F	600	Variable	Circling high above forested hill
4/7/2021	12:26	12:34	TUVU	8	0	0	8	0	F	75	Variable	Group circling together over fields; appearing in and out of view above hill slope; gradually gaining height; initially 40-100 feet high but then rose to 100-200 feet; three then flew E
4/7/2021	12:35	12:37	TUVU	6	0	0	0	0	F	500	W	Group circling together very far away; appeared to move W
4/7/2021	12:58	13:09	TUVU	1	0	0	1	0	F	140	W	Saw briefly; flying relatively low over forested hills; saw again further away to SW

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Date	Time First Observed	Time Last Observed	Species[1]	Total Number	Number of Males	Number of Females	Number of Adults	Number of Juveniles	Behaviors[2]	Average Flight Height	Average Flight Direction	Notes
5/26/2021	10:22	10:24	TUVU	2	0	0	0	0	F	80	SE	2 TUVU came from the NE and followed the far treeline before heading E
5/26/2021	11:10	11:12	TUVU	1	0	0	0	0	F	50	S	1 TUVU came over the W hillside and then turned S and went out of sight
5/26/2021	12:15	12:18	TUVU	2	0	0	0	0	F	80	N	2 TUVU flew along the W hillside heading N
5/26/2021	13:30	13:37	TUVU	12	0	0	0	0	F	70	N	12 TUVU all flying together and in a line came up over the SE treeline and followed it slowly N out of sight.

[1]Species codes are based on standardized four-letter AOU alpha codes defined by the Institute for Bird Populations (https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf).

[2]Behavior codes reflect behaviors documented for each observation: F = flying; P = perched; H = hunting (foraging); C = calling; CC = courtship/copulation.

APPENDIX D

Survey Data Sheets

EDR

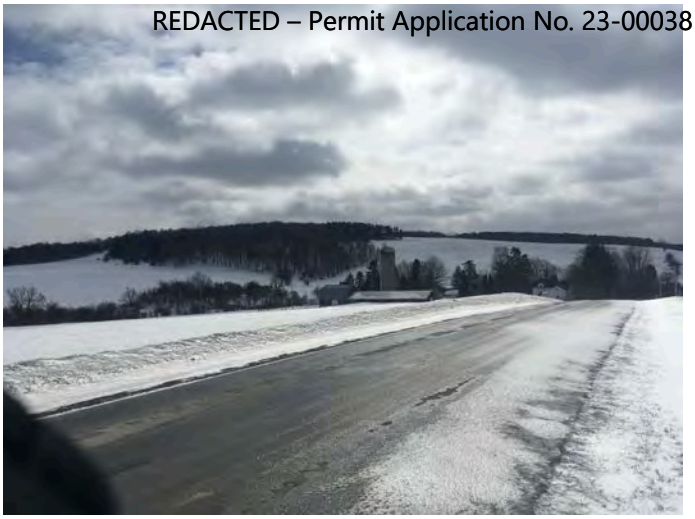
21028 Hoffman Falls Wind Checklist

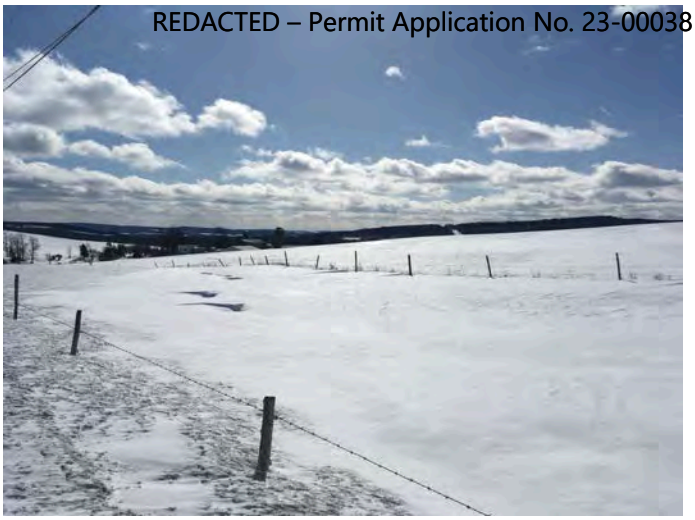
Spring Raptor Migration Survey 1

Project	21028 Hoffman Falls Wind
ID	134127
Survey Date	03/04/2021
User	Sam Beguin
Observer Initials:	SB







Start Time:	08:00
End Time:	15:56
Survey Duration (hr:min):	7:56

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	24
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE

	[X] NW [ ] S [ ] SE [ ] SW [ ] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [X] SN = Snow
"Other" Precipitation Notes	Light snow
Visibility (miles):	1.75

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S

	☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☒ SN = Snow
"Other" Precipitation Notes	Light snow
Visibility (miles):	3

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW

	☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☒ SN = Snow
"Other" Precipitation Notes	Light snow
Visibility (miles):	2

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	21
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☒ SN = Snow
"Other" Precipitation Notes	Light snow tapering off at about 11:00
Visibility (miles):	3

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	22
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	11

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	22
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet

	☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	13

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	

Visibility (miles):	14

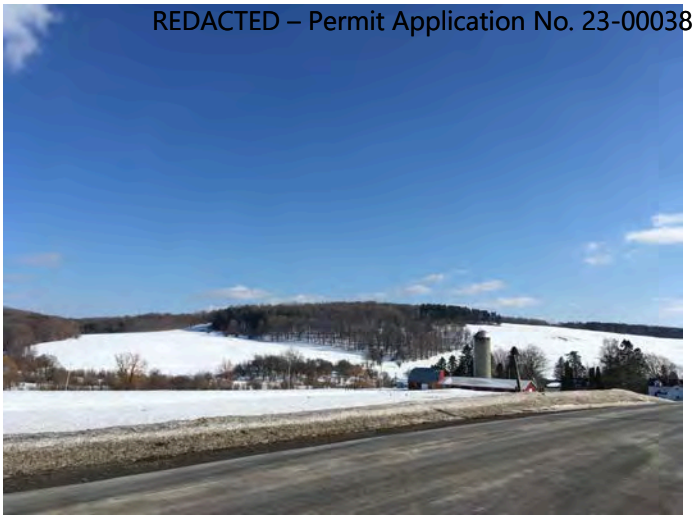
Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	17
Incidental Species (Common Names):	Rock Pigeon, American Crow, Northern Cardinal, Blue Jay,

	European Starling, Mourning Dove, American Robin
Notes:	Wind speeds ranged from 6-14 mph, with gusts from 16-23 mph

Spring Raptor Migration Survey 1

Project	21028 Hoffman Falls Wind
ID	134649
Survey Date	03/09/2021
User	Sam Beguin
Observer Initials:	SB



Start Time:	08:00
End Time:	16:03
Survey Duration (hr:min):	8:03

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	36
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE

	[X] NW [ ] S [ ] SE [ ] SW [X] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	Wind speed 10 mph
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	36
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S

	☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Wind speed 10 mph
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	36
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW

	[X] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	Wind speed 9 mph
Visibility (miles):	8

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	37
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Precipitation Code(s):	[ ] D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Wind speed 9 mph
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	38
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Wind speed 9 mph
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	40
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet

	☐ SN = Snow
"Other" Precipitation Notes	Wind speed 10 mph
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	42
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Wind speed 10 mph

Visibility (miles):	9

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	42
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Wind speed 9 mph
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	42
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Wind speed 9 mph
Visibility (miles):	9
Incidental Species (Common Names):	Blue Jay, American Crow, Rock Pigeon, Northern Cardinal, European Starling, House Finch, Black-capped Chickadee, Canada Goose, American Robin, Mourning Dove, Killdeer, Northern Flicker, House Sparrow,

Snow Bunting, Dark-eyed Junco, Common Raven, Ring-billed Gull

Notes:

Project	21028 Hoffman Falls Wind
ID	136497
Survey Date	03/19/2021
User	Sam Beguin
Observer Initials:	SB

Start Time:	08:00
End Time:	17:15
Survey Duration (hr:min):	9:15

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	18
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE

	☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	19

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	19
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW

	☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	21

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	20
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S

	☐ SE ☐ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	23

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	22
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☒ NW ☐ S ☐ SE

	☐ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	25

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW

	☐ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	25

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	25
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W

Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	27

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	27
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	8

Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	25

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	29
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	28

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	30
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	7
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail

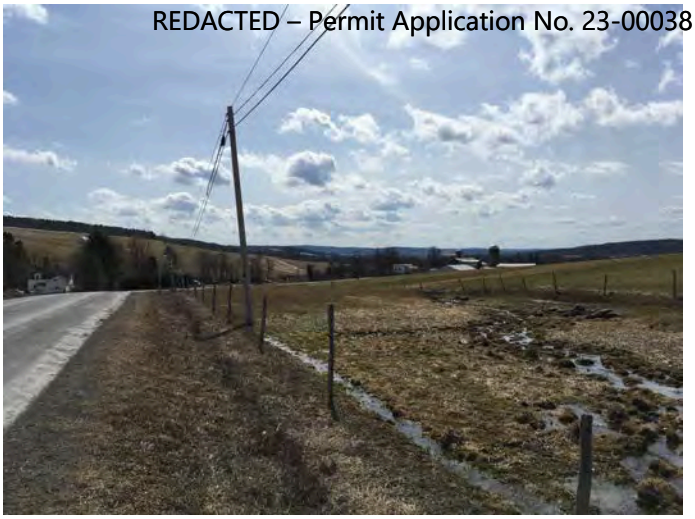
	☐ O = other (write in)
	☐ R = Rain
	☐ SL = Sleet
	☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	28

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	30
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	7
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	29
Incidental Species (Common Names):	Red-winged Blackbird, European Starling, Blue Jay, American Crow, Rock Pigeon, Canada Goose, Common Grackle, Killdeer, House Finch, Northern Cardinal, American Robin, House Sparrow, Eastern Bluebird, Common Raven, Northern Flicker, Tufted Titmouse
Notes:	Two large military helicopters flew over northern portion of site 8:45-8:51 which prompted many birds to take flight; winds gusting from 14-19 mph throughout survey.

Project	21028 Hoffman Falls Wind
ID	137733
Survey Date	03/25/2021
User	Sam Beguin
Observer Initials:	SB



Start Time:	08:00
End Time:	17:22
Survey Duration (hr:min):	9:22

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	50
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE

	☐ NW ☒ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW

	[X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	10
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	56
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S

	☐ SE ☒ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	12

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE

	[X] SW [ ] W
Wind Speed (mph):	9
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	14

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	64
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [X] SW

	☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	15

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	67
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W

Wind Speed (mph):	11
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	20

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	69
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	12

Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	22

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	70
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☒ W
Wind Speed (mph):	11
Precipitation Code(s):	☐ D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	26

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	71
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail

	☐ O = other (write in)
	☐ R = Rain
	☐ SL = Sleet
	☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	29

Hourly Conditions (At start of each **hour** block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	70
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	29
Incidental Species (Common Names):	Song Sparrow, Blue Jay, Killdeer, Red-winged Blackbird, American Crow, Northern Cardinal, American Robin, Canada Goose, European Starling, Common Grackle, Rock Pigeon, House Finch, Mallard, Mourning Dove, Red-bellied Woodpecker, Ring-billed Gull, White-breasted Nuthatch, Eastern Meadowlark, Eastern Bluebird, Brown-headed Cowbird, Black-capped Chickadee
Notes:	Helicopter flew over far southern portion of site at about 1:10 PM (west to east)

Project	21028 Hoffman Falls Wind
ID	138733
Survey Date	03/30/2021
User	Sam Beguin
Observer Initials:	SB






Start Time:	08:00
End Time:	17:27
Survey Duration (hr:min):	9:27

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	40
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE

	☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	16

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	42
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW

	[X] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	10
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	19

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	46
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S

	[X] SE [ ] SW [ ] W
Wind Speed (mph):	14
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	20

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	50
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE

	☐ SW
	☐ W
Wind Speed (mph):	16
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	20

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW

	☐ W
Wind Speed (mph):	20
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	25

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	56
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W

Wind Speed (mph):	21
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	28

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	59
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	20

Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	31

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	21
Precipitation Code(s):	☐ D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	37

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	62
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	22
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail

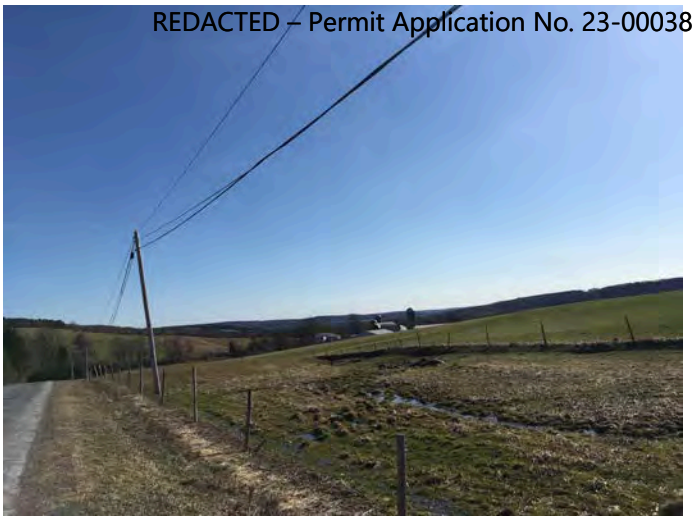
	☐ O = other (write in)
	☐ R = Rain
	☐ SL = Sleet
	☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	37

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	62
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	21
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	34
Incidental Species (Common Names):	Red-winged Blackbird, Killdeer, Rock Pigeon, Northern Cardinal, American Robin, Tufted Titmouse, Common Grackle, American Crow, Canada Goose, European Starling, Wood Duck, Eastern Meadowlark, Eastern Bluebird, Great Blue Heron, Northern Flicker, Common Redpoll, Black-capped Chickadee, Mourning Dove
Notes:	

Project	21028 Hoffman Falls Wind
ID	140511
Survey Date	04/07/2021
User	Sam Beguin
Observer Initials:	SB



Start Time:	08:00
End Time:	17:36
Survey Duration (hr:min):	9:36

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am
- [ ] 11:00 am to 12:00 pm
- [ ] 12:00 pm to 1:00 pm
- [ ] 1:00 pm to 2:00 pm
- [ ] 2:00 pm to 3:00 pm
- [ ] 3:00 pm to 4:00 pm
- [ ] 4:00 pm to 5:00 pm
- [ ] 5:00 pm to 6:00 pm
- [ ] 6:00 pm to 7:00 pm

Temperature (F): 45

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [X] Mostly Cloudy = 50-90%
- [ ] Partly Cloudy = 25-50%
- [ ] Overcast = 90-100%

Wind Direction(s):

- [X] E
- [ ] N
- [ ] NE

	☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	26

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	49
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW

	☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	3
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	21

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	53
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW ☐ S

	☐ SE ☐ SW ☐ W
Wind Speed (mph):	3
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	24

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	58
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☒ NE ☐ NW ☐ S ☐ SE

	☐ SW
	☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	22

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW

	☐ W
Wind Speed (mph):	7
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	22

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	62
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W

Wind Speed (mph):	
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	24

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	64
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	8

Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	28

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	64
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	31

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	65
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail

	☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	32

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	65
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	7
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Project	21028 Hoffman Falls Wind
ID	142264
Survey Date	04/14/2021
User	Max Baber
Observer Initials:	MDB
Site Photos (4):	

West

South

East

North

Start Time:	07:56 AM
End Time:	05:44 PM
Survey Duration (hr:min):	9:48

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am

	☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	43
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	2
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am

	☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	50
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	3
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each **hour** block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm

	☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	55
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm

	☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	59
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm

	☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☒ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm

	☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☒ W
Wind Speed (mph):	7
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	7
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm

	☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm

	☐ 6:00 pm to 7:00 pm
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	7
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Project	21028 Hoffman Falls Wind
ID	147734
Survey Date	04/22/2021
User	Nick Pusateri
Observer Initials:	
Site Photos (4):	None
Start Time:	
End Time:	
Survey Duration (hr:min):	

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- ☐ 8:00 am to 9:00 am
- ☐ 9:00 am to 10:00 am
- ☐ 10:00 am to 11:00 am
- ☐ 11:00 am to 12:00 pm
- ☐ 12:00 pm to 1:00 pm
- ☐ 1:00 pm to 2:00 pm
- ☐ 2:00 pm to 3:00 pm
- ☐ 3:00 pm to 4:00 pm
- ☐ 4:00 pm to 5:00 pm
- ☐ 5:00 pm to 6:00 pm
- ☐ 6:00 pm to 7:00 pm

Temperature (F):

Cloud Cover (%):

- ☐ Clear = 0-10%
- ☐ Mostly Clear = 10-25%
- ☐ Mostly Cloudy = 50-90%
- ☐ Partly Cloudy = 25-50%
- ☐ Overcast = 90-100%

Wind Direction(s):

- ☐ E
- ☐ N
- ☐ NE
- ☐ NW
- ☐ S
- ☐ SE
- ☐ SW

- [ ] W

Wind Speed (mph):

Precipitation Code(s):

- [ ] D = Drizzle
- [ ] H = Hail
- [ ] O = other (write in)
- [ ] R = Rain
- [ ] SL = Sleet
- [ ] SN = Snow

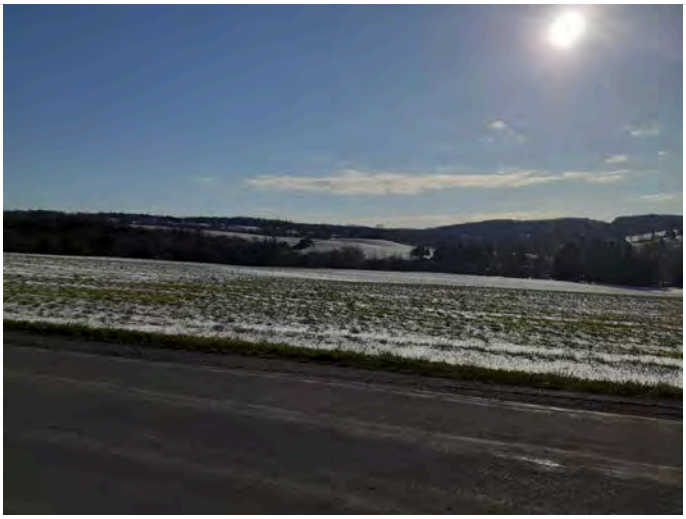
"Other" Precipitation Notes

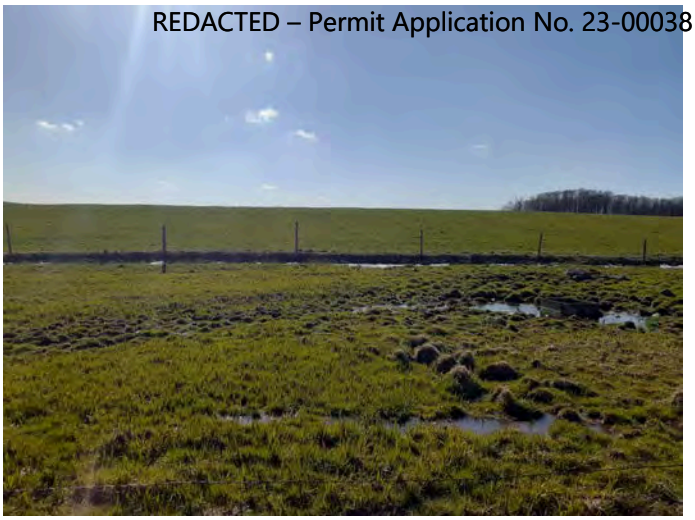
Visibility (miles):

Incidental Species (Common Names):

Notes:

Project	21028 Hoffman Falls Wind
ID	144908
Survey Date	04/23/2021
User	Nick Pusateri
Observer Initials:	NP





Start Time:	08:00 AM
End Time:	05:55 PM
Survey Duration (hr:min):	09:55

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am
- [ ] 11:00 am to 12:00 pm
- [ ] 12:00 pm to 1:00 pm
- [ ] 1:00 pm to 2:00 pm
- [ ] 2:00 pm to 3:00 pm
- [ ] 3:00 pm to 4:00 pm
- [ ] 4:00 pm to 5:00 pm
- [ ] 5:00 pm to 6:00 pm
- [ ] 6:00 pm to 7:00 pm

Temperature (F): 35

Cloud Cover (%):

- [X] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Mostly Cloudy = 50-90%
- [ ] Partly Cloudy = 25-50%
- [ ] Overcast = 90-100%

Wind Direction(s):

- [ ] E
- [ ] N
- [ ] NE

	☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	15
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None, snow still covering about 75% of the ground
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	41
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW

	☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	12
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None, still 75% snow cover on fields
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	45
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S

	[ ] SE [ ] SW [X] W
Wind Speed (mph):	14
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None, still about 60% snow cover on fields
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	44
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE

	[ ] SW [X] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None, 50% snow cover on fields
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	49
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW

	[X] W
Wind Speed (mph):	16
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None, 20% snow cover on fields
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	52
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W

Wind Speed (mph):	17
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None, 5% snow cover on field
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	52
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	17

Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None, 1% snow cover on fields
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	53
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	17
Precipitation Code(s):	☐ D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None, 1% snow cover on fields
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	17
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail

	☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None, 1% snow cover on fields
Visibility (miles):	10

Hourly Conditions (At start of each **hour** block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	16
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None, 1% snow cover. Very little left
Visibility (miles):	10
Incidental Species (Common Names):	AMCR, ROPI, AMRO, EUST, CANG, SAVS, NOCA, SOSP, BCCH, RWBL, COGR, SOSP, DEJU, COGR, KILL, CORA, TRES, WITU
Notes:	At 8am the fields were still about 75% covered in snow with very clear skies and strong winds. At 11am the fields had about 50% snow cover. At 1pm the fields had about 5% snow cover. By 3pm there was 1% snow cover. Strong winds throughout the entire survey. There are 4 pictures at 08:00am and 4 at 05:00 to show the difference.

Project	21028 Hoffman Falls Wind
ID	146192
Survey Date	04/28/2021
User	Nick Pusateri
Observer Initials:	NP
Site Photos (4):	




Start Time:	08:00 AM
End Time:	06:01 PM
Survey Duration (hr:min):	10:01

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am

	☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	3
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None but hazey
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm

	☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	2
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None but hazey
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm

	☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None but hazey
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm

	☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	68
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None but hazey
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm

	☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	70
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None, but less hazey
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	71
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm

	☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	73
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Rain began at 02:15 drizzle to light for 45 mins
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm

	☐ 6:00 pm to 7:00 pm
Temperature (F):	74
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Very light drizzle on and off. There appeared to be heavier rain in areas around the survey point
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm

	☐ 6:00 pm to 7:00 pm
Temperature (F):	72
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Very light drizzle
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm

Temperature (F):	65
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Heavy rain for most of the hour
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 11

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☒ 6:00 pm to 7:00 pm
Temperature (F):	65

Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [X] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	Raining moderately as the survey ended
Visibility (miles):	10
Incidental Species (Common Names):	SAVS, RWBL, MODO, EUST, AMRO, NOCA, SOSP, ROPI, COGR, CANG, KILL, CORA, BHCO, AMGO, BLJA, NOFL, BARS, WITU,
Notes:	Warm morning with quite a bit of haze. Visibility was still good but haze played a factor in visibility of high birds. Throughout the morning the flight line was relatively steady to the far E. At 11:00AM the wind had shifted to the N and the flight seemed to slow significantly. It picked back up until it began raining at about 02:15PM. It was a drizzle to light until it stopped at about 03:00PM. During the 03:00PM hour there appeared to be heavier rain to the W of the survey point. From 04:00PM until the end of the survey, there was heavy to moderate rain that shut down the flight.

Project	21028 Hoffman Falls Wind
ID	149013
Survey Date	05/04/2021
User	Max Baber
Observer Initials:	MDB
Site Photos (4):	None
Start Time:	07:56 AM
End Time:	06:07 PM
Survey Duration (hr:min):	10:11

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am
- [ ] 11:00 am to 12:00 pm
- [ ] 12:00 pm to 1:00 pm
- [ ] 1:00 pm to 2:00 pm
- [ ] 2:00 pm to 3:00 pm
- [ ] 3:00 pm to 4:00 pm
- [ ] 4:00 pm to 5:00 pm
- [ ] 5:00 pm to 6:00 pm
- [ ] 6:00 pm to 7:00 pm

Temperature (F): 52

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Mostly Cloudy = 50-90%
- [ ] Partly Cloudy = 25-50%
- [X] Overcast = 90-100%

Wind Direction(s):

- [ ] E
- [ ] N
- [ ] NE
- [ ] NW
- [ ] S
- [X] SE
- [ ] SW

	☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☒ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W

Wind Speed (mph):	3
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	4

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	55
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [X] SW [ ] W
Wind Speed (mph):	3
Precipitation Code(s):	[X] D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	4

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	55
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail

	☐ O = other (write in)
	☐ R = Rain
	☐ SL = Sleet
	☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	57
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	8

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain

	☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	64
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet

	☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	66
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow

"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	66
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☒ W
Wind Speed (mph):	3
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	70
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

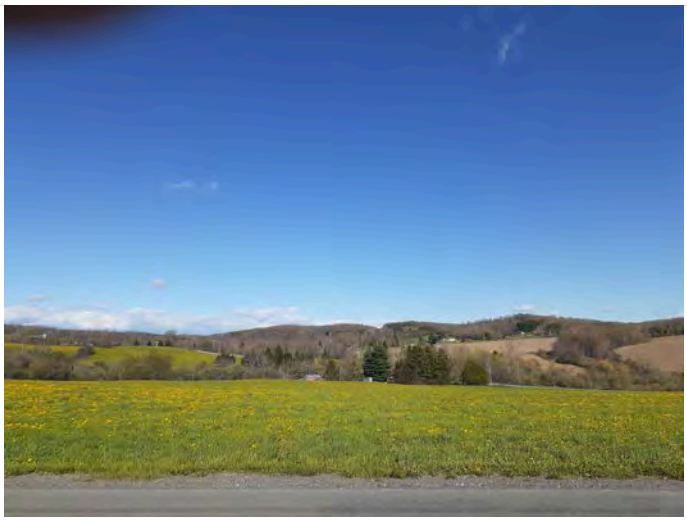
Hourly Conditions (At start of each hour block) 11

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☒ 6:00 pm to 7:00 pm
Temperature (F):	70
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	COGR, RWBL, MALL, WITU, ROPI, MODO, SAVS (copulation), CANG, KILL, BCCH, SOSP, AMRO, BHCO, BRTH, BARS, WTSP, CHSP, YEWA, NOCA, AMCR, EUST, HOWR, NOFL,

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Project	21028 Hoffman Falls Wind
ID	149727
Survey Date	05/12/2021
User	Nick Pusateri
Observer Initials:	NP

Site Photos (4):

Start Time:	08:00 AM
End Time:	06:16 PM
Survey Duration (hr:min):	10:16

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am

	☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	42
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm

	☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	45
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm

	☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	43
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm

	☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	50
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	12
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm

	☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	12
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm

	☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	57
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	13
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm

	☐ 6:00 pm to 7:00 pm
Temperature (F):	55
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	15
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm

Temperature (F):	58
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	13
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	57

Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	13
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 11

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [X] 6:00 pm to 7:00 pm
Temperature (F):	57
Cloud Cover (%):	[ ] Clear = 0-10%

	[X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	10
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	SAVS, EUST, AMRO, AMCR, SOSP, COGR, MODO, RWBL, ROPI, CANG, AMGO, CORA, BARS, BHCO, NOCA, KILL, BOBO, GBHE, EAPH, NOFI, TRES, UNWO, GRCA, CHSP, EAKI
Notes:	It started as a chilly overcast day. The sky cleared significantly and it warmed up to almost 60F. Strong NW wind at about 15mph for most of the day.

Project	21028 Hoffman Falls Wind
ID	151801
Survey Date	05/19/2021
User	Nick Pusateri
Observer Initials:	NP

Site Photos (4):




Start Time:	08:00 AM
End Time:	06:24 PM
Survey Duration (hr:min):	10:24

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am

	☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	64
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	2
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each **hour** block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm

	☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	66
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each **hour** block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm

	☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	71
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm

	☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	75
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm

	☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	12
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	79
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm

	☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	81
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm

	☐ 6:00 pm to 7:00 pm
Temperature (F):	81
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm

Temperature (F):	82
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	81

Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 11

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☒ 6:00 pm to 7:00 pm
Temperature (F):	80
Cloud Cover (%):	☐ Clear = 0-10%

	☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	RWBL, COGR, EUST, AMCR, AMRO, ROPI, SAVS, SOSP, EAKI, NOFL, KILL, AMGO, BAOR, BOBO, MODO, CHSP, GBHE, BARS, BLJA, NOCA, CORA, HOWR, YEWA, COYE, YRWA, BEKI, TRES, UNWO, CANG,
Notes:	Clear skies and sunny for most of the day. Got hot with temperatures breaking 80F. Light breeze at about 5mph from the NW for most of the day. Skies became partly cloudy at around 03:45 PM.

Project	21028 Hoffman Falls Wind
ID	154112
Survey Date	05/26/2021
User	Nick Pusateri
Observer Initials:	NP
Site Photos (4):	




Start Time:	08:00 AM
End Time:	06:30 PM
Survey Duration (hr:min):	10:30

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am

	☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	71
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each **hour** block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	74
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	10
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	78
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm

	☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	80
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	13
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm

	☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	82
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	16
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	83
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	14
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm

	☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	84
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	14
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	thunderstorm that started at 1:45PM
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm

	☐ 6:00 pm to 7:00 pm
Temperature (F):	83
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	15
Precipitation Code(s):	☒ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	light rain
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm

Temperature (F):	81
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	14
Precipitation Code(s):	☒ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Drizzle at 4:25
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	78

Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	rained for most of the hour
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 11

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☒ 6:00 pm to 7:00 pm
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10%

	☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	rained until I left at 6:30PM
Visibility (miles):	10
Incidental Species (Common Names):	RWBL, AMCR, EUST, ROPI, YRWA, SAVS, AMRO, COGR, HOSP, AMGO, MODO, BOBO, SOSP, KILL, CANG, TRES, GBHE, CORA, WITU, BARS, HOWR, YEWA, BAOR, CHSP, NOCA, EAPH, UNWO, BLJA, MALL,
Notes:	It was a warm and very clear morning with a light breeze. The wind picked up to around 15mph from the SW and the sky shifted between clear and partly cloudy throughout the morning. The skies darkened and the wind picked up with gusts over 20mph from the SW leading to a thunderstorm starting at 1:45PM. The rain stopped at about 3:15PM. It remained overcast and rained again briefly from 4:25-4:50PM. It started again from 5:05-6:30PM continuing through the duration of the survey.

Spring Raptor Migration Survey Report

Blue Hill Wind Project

Town of Eaton, Madison County, New York

Prepared for:

Liberty Renewables Inc.
90 State Street, Suite 700
Albany, NY 12207
https://liberty-renewables.com/bluehillwind/

Prepared by:

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July 2021

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Liberty Renewables Inc. (the Applicant), Environmental Design & Research, D.P.C. (EDR) has prepared this Spring Raptor Migration Survey Report for the Blue Hill Wind Project, a proposed wind energy generation facility and associated infrastructure (the Facility) located in Madison County, New York. This report will be incorporated into an Application for a siting permit that is being prepared in accordance with New York's Accelerated Renewable Energy Growth and Community Benefit Act, Executive Law §94-c (Section 94-c) regulations.[1] The information included in this report is intended to inform the Applicant in the development of the Facility and assist the New York State Office of Renewable Energy Siting (ORES) and the New York State Department of Environmental Conservation (NYSDEC) in their review of the Facility's potential impacts on state-listed endangered and threatened bird species in accordance with the requirements of the Section 94-c and 6 NYCRR Part 182 (Part 182) regulations.

The purpose of the spring raptor migration surveys was to identify and document raptors (including eagles, falcons, harriers, hawks, ospreys, owls, and vultures) that move through the area including and surrounding the Facility Area during the spring migration season (defined by the NYSDEC as March 1 to May 31). All raptors were targeted for the study, along with large flocks of non-raptor birds (e.g., waterfowl, corvids, icterids) and any special status species (i.e., endangered or threatened species, species of special concern, and species of greatest conservation need [NYSDEC, 2015a; NYSDEC, 2015b]). The spring raptor surveys were conducted by qualified biologists following the methodology established in the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects* (NYSDEC Survey Protocol). The scope of these surveys was defined in a Spring Raptor Migration Survey Work Plan that was submitted for ORES staff review in February 2021 (see Appendix A).

1.2 Facility Location and Description

The Applicant is proposing to construct an up to 27-megawatt (MW) wind-powered electric generating facility and associated infrastructure within the Town of Eaton in Madison County, New York. The regional Facility location and the Facility Area are depicted on Figures 1 and 2, respectively. The Facility Area totals approximately 1,500 acres and is composed primarily of open agricultural fields, along with deciduous, evergreen, and mixed forestland, woody wetlands, and disturbed/developed areas (e.g., roadways, residences, commercial buildings). Within the Facility Area, a much more limited subset of land will be selected for the siting, design, construction, and operation of the Facility. Much of the Facility will be constructed in areas where disturbance has already occurred (e.g., agricultural fields that are used for crop cultivation) in order to minimize the need for vegetation removal within forested and wetland areas.

[1] Chapter XVIII, Title 19 of the New York Codes, Rules and Regulations (NYCRR) Part 900. Available at: https://ores.ny.gov/regulations

2.0 BACKGROUND INFORMATION

2.1 Survey Location

EDR conducted a desktop review of the Facility Area using a Geographic Information System (GIS) to evaluate topography, vegetative communities, land cover, and access constraints. The results of this analysis were used to identify the best single survey location for the spring raptor migration surveys. Current National Agriculture Imagery Program (NAIP) and New York Statewide Digital Orthoimagery Program (NYSDOP) aerial imagery were reviewed as part of this effort, along with topographic contours generated from New York State GIS Program Office (NYSGPO) lidar data. Based on this analysis, EDR identified one survey location for the Facility Area that was used throughout the survey period (Figure 3, see Section 3.2 below for details).

2.2 Agency Database Review and Consultation

The Applicant has engaged in consultation with federal and state agencies regarding the potential presence of threatened and endangered species within the Facility Area. This has included database review via the U.S. Fish and Wildlife Service (USFWS) online Information for Planning and Consultation (IPaC) system, as well as correspondence with the New York Natural Heritage Program (NYNHP), NYSDEC, and ORES. A letter received from the USFWS on March 4, 2021, indicated that no federally threatened, endangered, or candidate species are known to occur in the Facility Area (Appendix B). Correspondence with the NYNHP began with the submittal of a formal request for information regarding state and federally-listed endangered and threatened species within the Facility Area on February 1, 2021. A response letter received from the NYNHP on March 17, 2021, stated that the NYNHP database does not currently contain any records of rare birds within 10 miles of the Facility Area (Appendix B). **BEGIN CONFIDENTIAL INFORMATION**<[redacted]>**END CONFIDENTIAL INFORMATION** In June 2021, ORES provided a Pre-application Wildlife Site Characterization Consultation letter, which included initial findings of occupied habitat. ORES indicated that the Facility is not sited within areas of mapped occupied habitat for any state-listed species, but recommended that the Applicant conduct breeding bird surveys and winter raptor surveys (Appendix B).

EDR also engaged in additional agency consultations and conducted reviews of other open-access databases (e.g., eBird, Christmas Bird Count) as part of preparing a Wildlife Site Characterization Report for the Facility. **BEGIN CONFIDENTIAL INFORMATION**<[redacted]>**END CONFIDENTIAL INFORMATION**

3.0 SPRING RAPTOR MIGRATION SURVEYS

As noted above, spring raptor migration surveys for the Facility were conducted based on the NYSDEC Survey Protocol. The surveys were intended to document the species, number, and flight height/direction of migrating raptors in order to allow for potential impact evaluation and inform the Facility development and permitting process.

3.1 Survey Period and Frequency

The survey period corresponded with the typical spring migratory period for the majority of New York avian species that may pass by or through the Facility Area during the spring migration season. As noted above, NYSDEC defines the spring migration season as beginning on March 1 and continuing through May 31. Therefore, surveys were conducted from March 4, 2021 to May 27, 2021, for a total of 13 surveys (representing more than 120 survey-hours).

Surveys were conducted once per week between 8:00 a.m. and until at least two hours prior to sunset, which ranged from approximately 2:00 p.m. to approximately 6:00 p.m. as the season progressed. To the greatest extent practicable, surveys were not conducted on days when weather conditions would limit visibility (e.g., heavy rain, fog, snow or excessive cloud cover). Weather forecasts were reviewed regularly in order to select the most appropriate survey days.

3.2 Survey Methodology

The primary method for surveying migrating raptors consisted of a daytime survey conducted from a single survey location. As described above, EDR conducted a GIS analysis to select a survey location with optimal, representative views of the area including and surrounding the Facility Area. The suitability of the survey location was also field-verified and micro-sited during the first field survey. The survey location was established at the edge of an open agricultural field east of Davis Corners Road (County Highway 45) in the central portion of the Facility Area (see Figure 3). This location afforded open views of the sky and the Facility Area in multiple directions.

During surveys, biologists stood and/or sat at the stationary survey location and conducted systematic visual scans of the sky in all directions in order to detect raptors and other birds passing through the area and/or utilizing habitat within the Facility Area. Binoculars of 8x or 10x magnification were used as the primary visual aid for avian identification and counts. Biologists recorded detailed information for all raptors observed, as well as large flocks of non-raptor birds (i.e., more than 50 individuals). In addition, any special status (i.e., endangered, threatened, special concern, species of greatest conservation need) species observations were documented, regardless of number.

Survey data were recorded in a standardized and organized fashion using data sheets and a mobile GIS application that allowed for digitization of flight path lines and perch locations. Data recorded for each spring raptor migration survey included:

- Observer initials;
- Date;
- Start and end time;
- Hourly weather conditions (temperature, cloud cover, prevailing wind direction, wind speed, precipitation type [if any], and visibility);
- The number of individuals and identification of each species observed;
- The start and end time of each observation;
- Sex and age of individuals (when possible);
- Average flight height and direction;
- Behavior(s) (e.g., flying, perched, foraging); and
- Descriptions and additional notes.

Non-raptor bird species flocks composed of more than 50 individuals and all non-raptor special status species were also noted and mapped in a similar manner to raptor observations. All other non-raptor bird species that did not meet those criteria were noted as incidental species simply for their presence (the number of individuals was not recorded). Locations of all raptor species were indicated on an aerial-based map of the survey area. All observations of special status species (including detailed behavioral descriptions) were recorded.

3.2.1 Data Analysis

Several metrics were calculated for each raptor species observed during the spring migration surveys. First, the total number of observations was identified for each species including observations of raptors in flight or perched at any distance relative to the survey location. Observations were considered equivalent to individuals for the purpose of the analysis, as it is not always possible to discern among individuals of the same species during surveys (i.e., the same individuals may or may not be present at the same locations from week to week). Frequency was then calculated for each species by dividing the number of survey days during which observations were recorded by the total number of survey days. Mean and median flight heights for each species were calculated using the average flight height for each individual of that species recorded in the field. Percent of individuals in flight was calculated based on the total number of individuals perched and the total number of individuals in flight observed for each species. The dominant flight direction was determined by reviewing flight paths and recorded flight pattern data; in some cases, there was no obvious dominant flight direction. Temporal use was tabulated for raptor types based on the time of observation for every individual.

3.3 Survey Results

A total of 13 surveys were conducted between March 4, 2021 and May 27, 2021, resulting in more than 120 observer-hours (more than 7,200 observer-minutes). A summary of completed survey information is provided below in Table 1. Overall, a total of 129 raptors were recorded throughout the season. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION**

[redacted]>**END CONFIDENTIAL INFORMATION** Turkey vulture and red-tailed hawk were the most commonly observed species, with the former noted most frequently. A summary of raptor observations is provided below in Table 2, and raptor observations are presented in Figure 4. All raptor observations are listed in Appendix C and survey data sheets are provided in Appendix D.

The observed flight paths for some raptor species averaged in a north/northeast-dominant direction. The species with the highest average flight height was broad-winged hawk at 210 feet, and the species with the lowest average flight height was American kestrel at 25 feet. The overall average flight height for all observations was 96 feet. Nearly all raptors observed were seen in flight. A summary of raptor flight metrics is provided below in Table 3.

Table 1. Completed Survey Information

Survey Date	Start Time (a.m.)	End Time (p.m.)	Survey Duration[1]	Temp. Range (°F)	Cloud Cover Range (%)	Wind Direction(s)	Wind Speed Range (mph)	Precip.[2]	Visibility Range (mi)	Number of Raptor Species Observed	Number of Raptor Individuals Observed
3/04/2021	8:00	3:54	7:54	22-24	0-100	NW	12-17	SN	5-10	0	0
3/09/2021	8:00	4:02	8:02	35-43	50-100	W,NW	4-11		8-10	0	0
3/19/2021	8:00	5:14	9:14	18-32	0-25	N,NW	9-15		10	0	0
3/26/2021	8:00	5:25	9:25	59-66	50-100	S,SW,W	11-24	D,R	7-10	0	0
3/31/2021	8:00	5:28	9:28	50-54	90-100	S,SW	10-15	D,R	7-10	2	2
4/08/2021	8:00	5:37	9:37	46-78	0-10	SE,E	6-16		10	1	1
4/13/2021	8:00	5:43	9:43	39-60	10-100	SW,SE,E,NE,N	2-5		6-10	0	0
4/22/2021	8:00	5:53	9:53	29-38	90-100	WNW	15-22	SN	5-10	2	3
4/27/2021	8:00	5:59	9:59	39-68	10-100	NNE	2-6		10	4	44
5/04/2021	8:00	6:06	10:06	54-68	25-100	E,ESE	2-10	D,F	0.5-5	3	27
5/11/2021	8:00	6:14	10:14	42-52	0-100	WNW,W	9-22	D,SL	10	4	17
5/18/2021	8:00	6:22	10:22	49-73	0-25	W,NW,WNW	6-9		10	3	21
5/27/2021	8:00	6:31	10:31	58-64	25-100	W,WNW	8-13	SN	10	2	13

[1]Time spent at survey location (hh:mm).

[2]D = drizzle; R = rain; SL = sleet; H = hail; SN = snow; F = fog

BEGIN CONFIDENTIAL INFORMATION<

Table 2. Summary of Raptors Observed

Raptor Group/Species	Scientific Name	Number of Survey Days Observed	Frequency[1]	Number of Individuals
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Buteos				
broad-winged hawk	*Buteo platypterus*	1	0.08	18
red-tailed hawk	*Buteo jamaicensis*	5	0.38	14
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Falcons				
American kestrel	*Falco sparverius*	2	0.15	2
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Vultures				
turkey vulture	*Cathartes aura*	7	0.54	85

[1]Represents the number of survey days the species was observed divided by the total number of survey days (13).

Table 3. Summary of Raptor Flight Metrics

Raptor Group/Species	Total Number of Individuals[1]	Mean Flight Height (feet)	Median Flight Height (feet)	Percent of Individuals in Flight	Dominant Flight Direction
[redacted]					
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Buteos					
broad-winged hawk	18	210	200	100	N
red-tailed hawk	14	129	125	100	NE
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Falcons					
American kestrel	2	25	25	100	Variable
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Vultures					
turkey vulture	85	87	75	100	Variable
Total	129	106	75	100	Variable

[1]Number of individuals observed over the course of the season. Observations were considered equivalent to individuals for the purpose of this table, though the same individuals may or may not have been observed multiple times.

>END CONFIDENTIAL INFORMATION

The time period (24-hour) with the most raptor observations was 13:00-14:00, with 35 individuals. The second most productive time period was 14:00-15:00, with 21 individuals. These two hours (13:00-15:00) accounted for approximately 43% of all observations. A summary of raptor temporal use is provided below in Table 4.

BEGIN CONFIDENTIAL INFORMATION<

Table 4. Summary of Raptor Temporal Use

Time	All Raptors	[redacted]	BWHA	RTHA	[redacted]	[redacted]	AMKE	[redacted]	TUVU
8:00-9:00	0								
9:00-10:00	3								3
10:00-11:00	[redacted]			1				[redacted]	9
11:00-12:00	15			1					14
12:00-13:00	[redacted]		3	3	[redacted]				11
13:00-14:00	[redacted]	[redacted]	15	4	[redacted]				14
14:00-15:00	[redacted]			2		[redacted]			18
15:00-16:00	10			1			1		8
16:00-17:00	[redacted]	[redacted]		1			1		3
17:00-18:00	[redacted]	[redacted]		1	[redacted]				5

Notes: Temporal use values represent the total number of birds observed during each time period. Species Codes are based on standardized four-letter AOU alpha codes defined by the Institute for Bird Populations (Pyle & DeSante, 2020) (https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf): [redacted]; BWHA = broad-winged hawk; RTHA = red-tailed hawk; [redacted]; AMKE = American kestrel; [redacted]; TUVU = turkey vulture.

>END CONFIDENTIAL INFORATION

3.3.1 Special-Status Species, Large Flocks, and Incidental Species

A total of four state-listed raptor species were observed throughout the survey period. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** A summary of state-listed threatened raptor observations is provided below in Table 5. No large flocks were observed during surveys. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION**

Table 5. State-Listed Threatened Raptor Observations

BEGIN CONFIDENTIAL INFORMATION<

Species Common Name	Species Scientific Name	Conservation Status[1]	Date	Time	Number of Individuals	Flight Height (feet)	Description
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

>END CONFIDENTIAL INFORMATION

Non-raptor bird species that did not meet the criteria of large flocks or individuals of special status species were noted as incidental species simply for their presence (the number of individuals was not recorded). A summary of incidental avian species observed during the survey season is presented below in Table 6.

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Table 6. Summary of Incidental Avian Species Observed

Taxonomic Family (Group Name)	Species Common Name	Species Scientific Name	Alpha Code[1]
Anatidae (Waterfowl)	Canada Goose	*Branta canadensis*	CANG
	Wood Duck	*Aix sponsa*	WODU
	Mallard	*Anas platyrhynchos*	MALL
Phasianidae (Grouse and Turkey)	Wild Turkey	*Meleagris gallopavo*	WITU
Columbidae (Pigeons and Doves)	Rock Pigeon	*Columba livia*	ROPI
	Mourning Dove	*Zenaida macroura*	MODO
Charadriidae (Plovers)	Killdeer	*Charadrius vociferus*	KILL
Picidae (Woodpecker)	Red-bellied Woodpecker	*Melanerpes carolinus*	RBWO
	Northern Flicker	*Colaptes auratus*	NOFL
Tyrannidae (Flycatchers)	Eastern Phoebe	*Sayornis phoebe*	EAPH
Corvidae (Crows and Jays)	Blue Jay	*Cyanocitta cristata*	BLJA
	American Crow	*Corvus brachyrhynchos*	AMCR
	Common Raven	*Corvus corax*	CORA
Alaudidae (Larks)	[redacted]	[redacted]	[redacted]
Hirundinidae (Swallows)	Tree Swallow	*Tachycineta bicolor*	TRES
	Barn Swallow	*Hirundo rustica*	BARS
Paridae (Tits, Chickadees, and Titmice)	Black-capped Chickadee	*Poecile atricapillus*	BCCH
Turdidae (Thrushes)	American Robin	*Turdus migratorius*	AMRO
Mimidae (Mockingbirds, Thrashers)	Gray Catbird	*Dumetella carolinensis*	GRCA
Sturnidae (Starlings)	European Starling	*Sturnus vulgaris*	EUST
Passeridae (Old World Sparrows)	House Sparrow	*Passer domesticus*	HOSP
Fringillidae (True Finches)	American Goldfinch	*Spinus tristis*	AMGO
Passerellidae (Towhees and Sparrows)	Dark-eyed Junco	*Junco hyemalis*	DEJU
	Savannah Sparrow	*Passerculus sandwichensis*	SAVS
	Song Sparrow	*Melospiza melodia*	SOSP
Icteridae (Blackbirds)	Red-winged Blackbird	*Agelaius phoeniceus*	RWBL
	Brown-headed Cowbird	*Molothrus ater*	BHCO
	Common Grackle	*Quiscalus quiscula*	COGR
Parulidae (Wood Warblers)	Common Yellowthroat	*Geothlypis trichas*	COYE
	Yellow Warbler	*Setophaga petechia*	YEWA
	Yellow-rumped Warbler	*Setophaga coronata*	YRWA
Cardinalidae (Cardinals)	Northern Cardinal	*Cardinalis cardinalis*	NOCA

[1]Species Codes are based on standardized four-letter AOU alpha codes defined by the Institute for Bird Populations (Pyle & DeSante, 2020) (https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf).

>END CONFIDENTIAL INFORMATION

4.0 CONCLUSIONS

Spring raptor migration surveys were conducted at a single survey location within the Facility Area between March 4, 2021 and May 27, 2021, totaling more than 120 observer-hours over the course of 13 survey days. Surveys were conducted from 8:00 a.m. until two hours before sunset. Overall, a total of 129 raptors of eight species were observed. **BEGIN CONFIDENTIAL INFORMATION**<[redacted]>**END CONFIDENTIAL INFORMATION** The remaining raptor species observed included American kestrel (species of greatest conservation need [SGCN]), broad-winged hawk, red-tailed hawk, and turkey vulture. **BEGIN CONFIDENTIAL INFORMATION**<[redacted]>**END CONFIDENTIAL INFORMATION** However, as recommended by ORES and NYSDEC, breeding bird surveys are being conducted in 2021 to further evaluate state-listed species presence and determine if occupied breeding habitat may be present within the Facility Area. Winter raptor surveys are also planned for the 2021-2022 season to evaluate the potential presence of occupied wintering habitat.

5.0 REFERENCES

Bird Studies Canada. 2017. *Wind energy bird and bat monitoring database, summary of the findings from post construction monitoring reports*. Canadian Wind Energy Association, Environment Canada, Ontario Ministry of Natural Resources. 2017 (July).

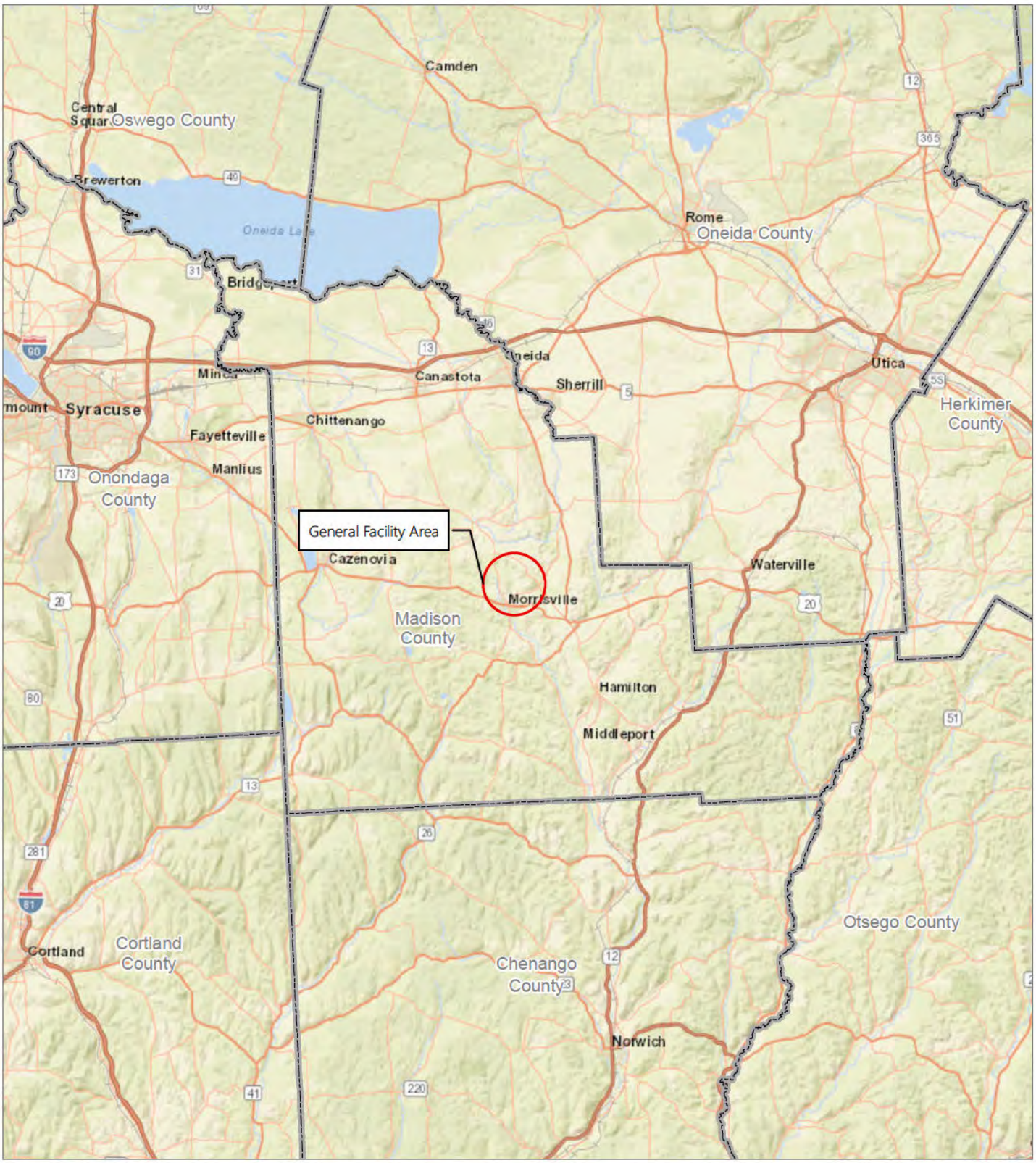
New York State Department of Environmental Conservation (NYSDEC). 2015a. *List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State*. Available at: http://www.dec.ny.gov/animals/7494.html (Accessed March 2021).

NYSDEC. 2015b. *Species of Greatest Conservation Need (SGCN)*. Available at: https://www.dec.ny.gov/animals/9406.html (Accessed March 2021).

Pyle, P., and D.F. DeSante. 2020. *Four-letter (English Name) Alpha Codes for 2143 Bird Species*. The Institute for Bird Populations. Available at: https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf (Accessed March 2021).

FIGURES

Figure 1: Regional Facility Location



Blue Hill Wind Project

Town of Eaton, Madison County, New York

Spring Raptor Migration Survey Report

Facility Area

0 2.5 5 10

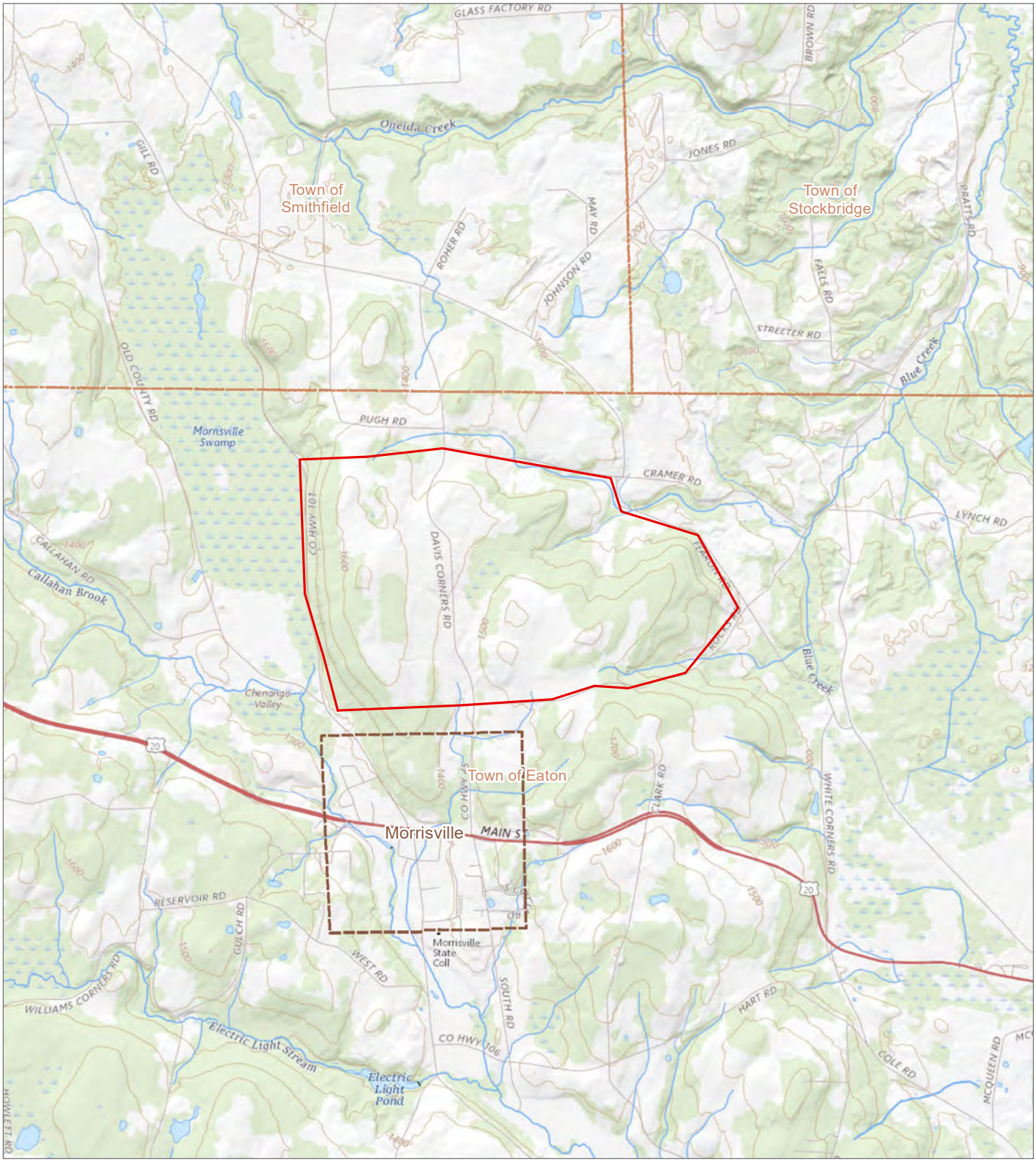
Miles

Prepared July 14, 2021

Basemap Esri ArcGIS Online "USGS Topo" map service.

EDR

Figure 2. Facility Area



Blue Hill Wind Project

Town of Eaton, Madison County, New York

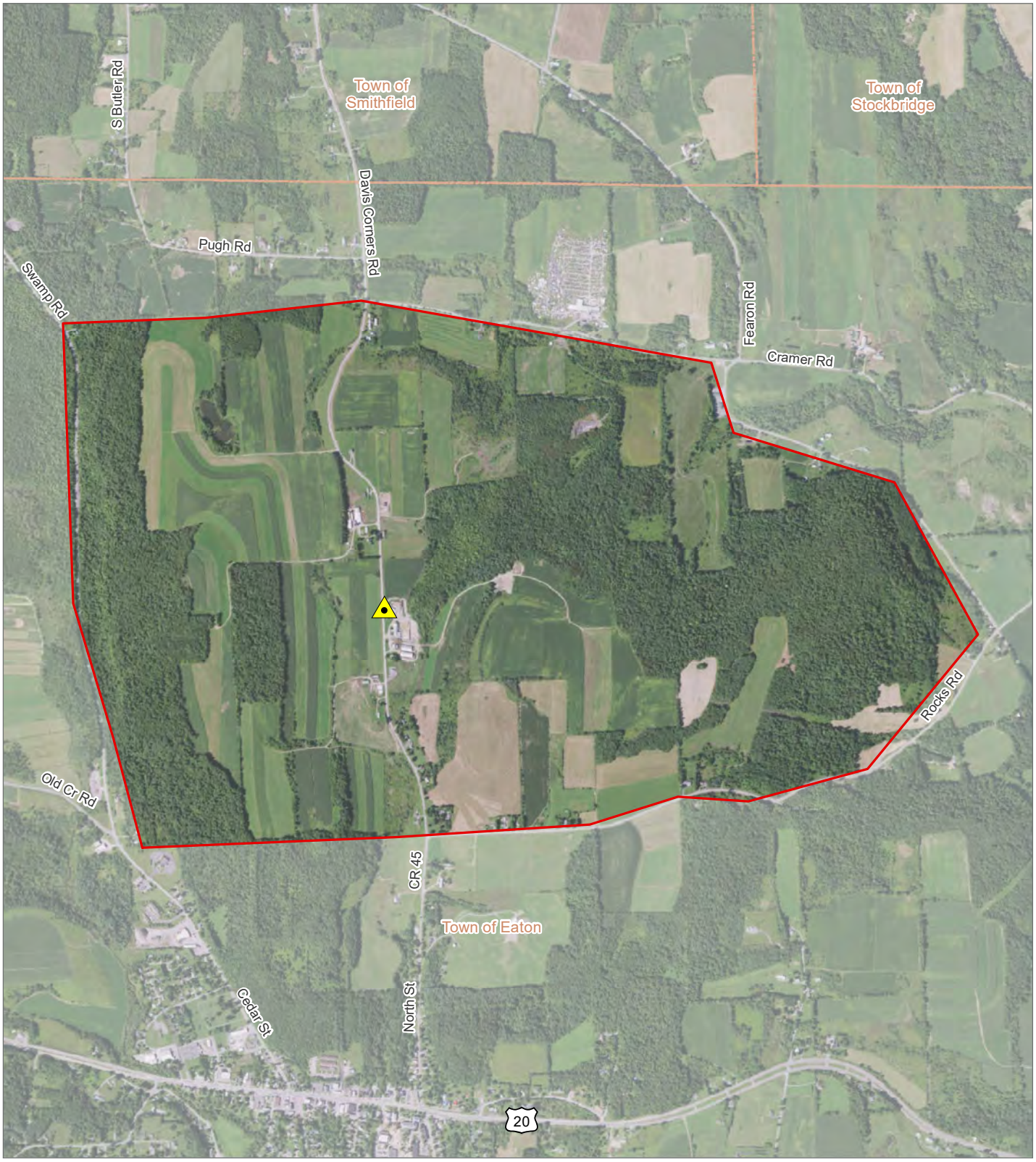
Spring Raptor Migration Survey Report

Facility Area

0 1,000 2,000 4,000
Feet

Prepared July 14, 2021
Basemap Esri ArcGIS Online "USGS Topo" map service.

Figure 3: Survey Location



Blue Hill Wind Project

Town of Eaton, Madison County, New York

Spring Raptor Migration Survey Report

Survey Location

Facility Area

0 500 1,000 2,000

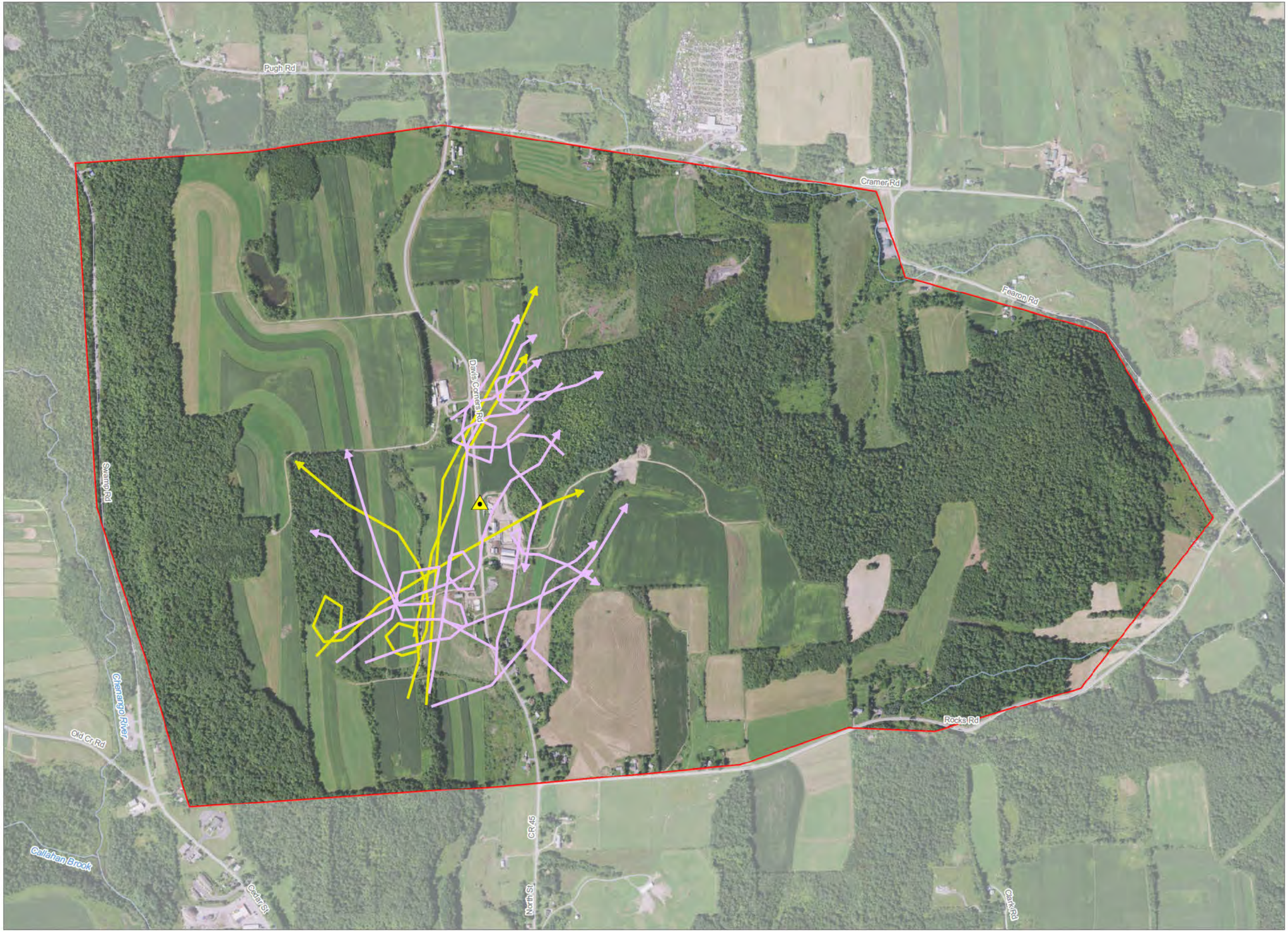
Feet

Prepared July 14, 2021

Basemap USDA NAIP "2019 New York 60cm" orthoimagery map service.

This figure has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Figure 4. Raptor Observations - Buteos



Blue Hill Wind Project

Town of Eaton
Madison County, New York

Spring Raptor Migration Survey Report

- Survey Location
- Red-Tailed Hawk Flight Path
- Broad-Winged Hawk Flight Path
- Facility Area

0 500 1,000
Feet

Prepared July 14, 2021
Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service.

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This figure has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Figure 4. Raptor Observations - Falcons

Blue Hill Wind Project

Town of Eaton
Madison County, New York

Spring Raptor Migration Survey Report

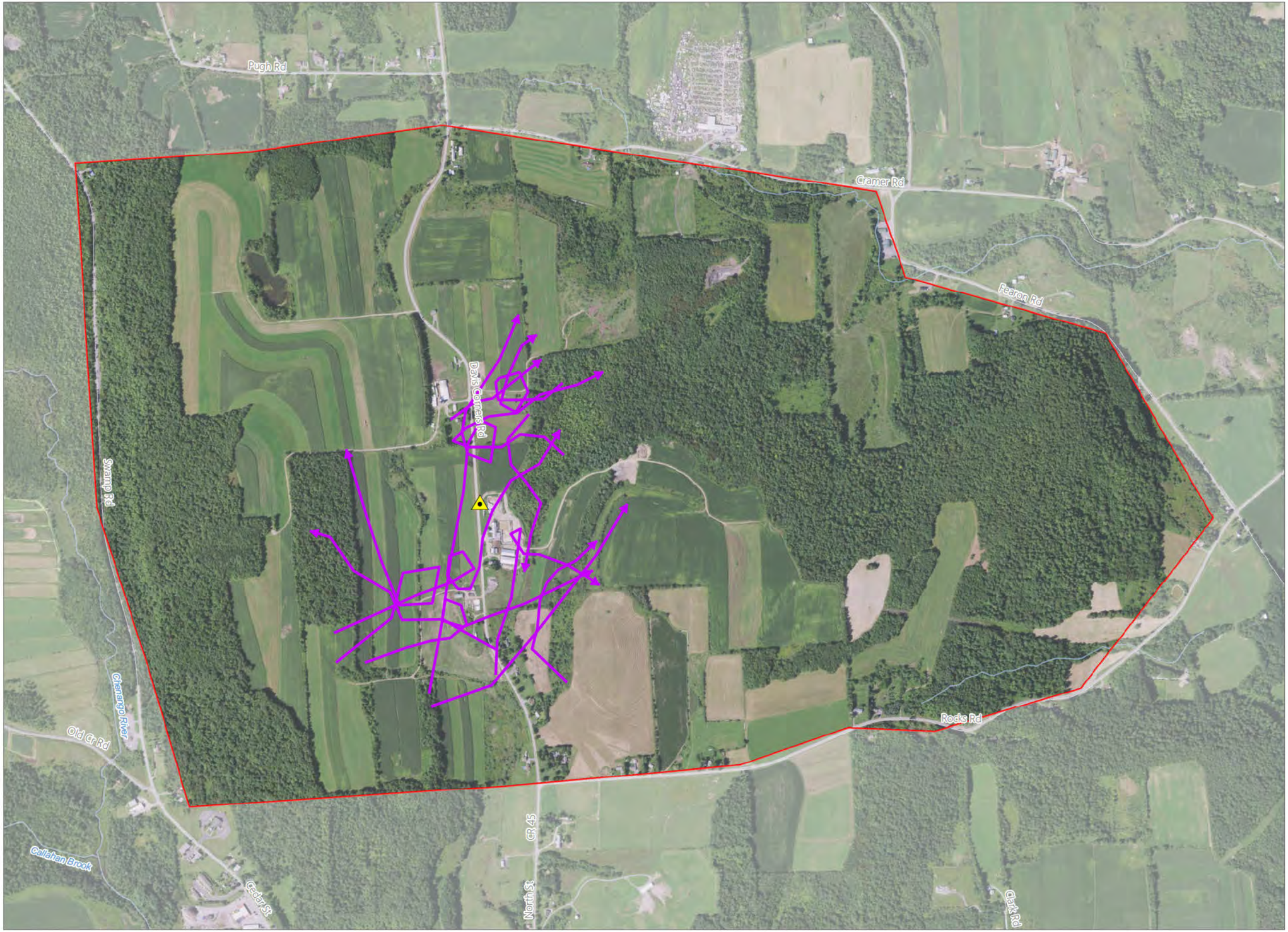
Survey Location
American Kestrel Flight Path
Facility Area

0 500 1,000
Feet

Prepared July 14, 2021
Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service.

EDR

Figure 4. Raptor Observations - Vultures



Blue Hill Wind Project

Town of Eaton
Madison County, New York

Spring Raptor Migration Survey Report

Survey Location
Turkey Vulture Flight Path
Facility Area

0 500 1,000
Feet

Prepared July 14, 2021
Basemap USDA NAIP "2019 New York 60cm" orthoimagery map service.

EDR

APPENDIX A

Spring Raptor Migration Work Plan

Spring Raptor Migration Survey Work Plan

Blue Hill Wind Project

Town of Eaton
Madison County, New York

Prepared for:

Liberty Renewables Inc.
90 State Street, Suite 700
Albany, NY 12207

Prepared by:

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February 2021

MANAGEMENT SUMMARY

Primary Involved Agencies:	Office of Renewable Energy Siting (ORES) New York State Department of Environmental Conservation (NYSDEC)
Survey Type:	Spring Raptor Migration Survey
Location Information:	Town of Eaton, Madison County, New York
Project Description:	Proposed Wind Powered Electric Generating Facility
Generating Capacity:	Up to 25 MW
Facility Area:	Approximately 1,500 acres
USGS 7.5-Minute Quadrangle Map:	Morrisville, NY
Report Authors:	Max Baber, Ravyn Neville, and Samouel Beguin
Date of Report:	February 2021

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Liberty Renewables, Inc. (Liberty, or the Applicant), Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) has prepared this Spring Raptor Survey Work Plan (Work Plan) for the Blue Hill Wind Project (herein, the Facility), an approximately 25-megawatt (MW) wind energy generating facility proposed on approximately 1,500 acres of rural land (the Facility Area) in the Town of Eaton, Madison County, New York.

This Work Plan supports an Application for a siting permit under New York's Accelerated Renewable Energy Growth and Community Benefit Act, Executive Law § 94-c (Section 94-c) regulations established in Chapter XVIII, Title 19 of NYCRR Part 900[1] for construction of a wind energy generating facility. The information included in this Work Plan is intended to inform the Applicant in the development of the Facility, and also assist the Office of Renewable Energy Siting (ORES) and the New York State Department of Environmental Conservation (NYSDEC) in their review of the proposed Facility's potential impacts on state-listed threatened and/or endangered species in accordance with the requirements of the draft Section 94-c and 6 NYCRR Part 182 regulations.

Under Section 94-c, the state-listed species pre-application procedures and permitting process (subparts 900-1.3(g) and 900-6.4(o)) require preparation of a Wildlife Site Characterization Report to evaluate publicly available data pertaining to wildlife species (including those that are state-listed), as well as pre-application consultation with ORES and NYSDEC staff to discuss state-listed species known to occur at or in the vicinity of a proposed facility, the agencies' determination regarding the presence or absence of state-listed species occupied habitat, and the need for species-specific habitat assessments and/or field surveys. Though the Applicant has not yet prepared or submitted a Wildlife Site Characterization Report to ORES and the NYSDEC, spring raptor migration surveys are proposed in 2021 so as to avoid potential Facility schedule delays in the event that ORES and the NYSDEC require spring raptor migration surveys to be conducted.

Therefore, the purpose of the proposed spring raptor migration surveys is to identify and document raptors (including eagles, falcons, harriers, hawks, ospreys, owls, and vultures) that move through the area including and surrounding the Facility Area during the spring migration period (defined as March 1 to May 31). The spring raptor migration surveys will target all raptors observed, as well as large flocks of non-raptor birds (e.g., waterfowl, corvids, icterids) and any special status species (i.e., endangered or threatened species, species of special concern, and species of greatest

[1] The Section 94-c draft regulations (and uniform standards and conditions) were released on September 16, 2020 by the Office of Renewable Energy Siting (ORES or Office), and are defined in Chapter XVIII, Title 19 of NYCRR Part 900. Available at: https://ores.ny.gov/regulations.

conservation need). The spring raptor migration surveys will be conducted by qualified biologists and have been designed based on the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects* (included as Appendix A).

1.2 Facility Location and Description

The Applicant is proposing to construct an up to 25-megawatt (MW) community-scale wind energy generating facility within the Facility Area. The regional Facility location and the Facility Area are depicted on Figures 1 and 2, respectively. The Facility Area totals approximately 1,500 acres, and is composed primarily of open agricultural fields, along with deciduous, evergreen, and mixed forestland, woody wetlands, and disturbed/developed areas (e.g., roadways, residences, commercial buildings).

2.0 BACKGROUND INFORMATION

In order to identify the optimal survey location, EDR performed a desktop review of the Facility Area using a Geographic Information System (GIS) to evaluate topography, vegetative communities, and land cover. In addition, EDR conducted a site visit in early February 2021 to further evaluate on-site conditions. Current National Agriculture Imagery Program (NAIP) and New York Statewide Digital Orthoimagery Program (NYSDOP) aerial imagery were reviewed as part of the desktop analysis, along with current ESRI and United States Geological Survey (USGS) topographic mapping. During the site visit, EDR systematically visited potential survey locations identified during the desktop analysis, and field-verified suitability. Based on these efforts, EDR identified one survey location that will be used throughout the survey period (see Section 3.2 below for details).

The Applicant has also initiated consultation with federal and state agencies regarding the potential presence of listed species within the Facility Area. This has included database review via the U.S. Fish and Wildlife Service (USFWS) online Information for Planning and Consultation (IPaC) system, as well as review of the NYSDEC Environmental Resource Mapper (ERM) and correspondence with the New York Natural Heritage Program (NYNHP).**BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** The NYSDEC ERM was reviewed on February 18, 2021 and there was no overlap between the Facility Area and the rare plant/animal layer (see Appendix B). Finally, correspondence with the NYNHP was initiated with the submittal of a formal request for information regarding listed species within the Facility Area on February 2, 2021.

3.0 SPRING RAPTOR MIGRATION SURVEY WORK PLAN

As stated previously, spring raptor migration surveys for the Facility will be conducted based on the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects*. The surveys are intended to document the species, number, and flight height/direction of migrating raptors in order to allow for potential impact evaluation and inform the Facility development and permitting process. A detailed description for the proposed surveys is provided below and consists of: (1) the survey period and frequency; (2) the proposed survey location; (3) surveyor qualifications; and (4) survey methodology.

3.1 Survey Period and Frequency

The proposed survey period corresponds with the typical spring migratory period for the majority of New York avian species that may pass by or through the Facility Area during the spring migration season. As noted above, the spring migration season begins on March 1 and continues through May 31. Therefore, surveys are proposed to begin the week of March 1, 2021 and will be performed once per week through the week of May 24, 2021.

Surveys will be conducted once every other week between 8:00 a.m. and until at least two hours prior to sunset (i.e., until as early as approximately 3:52 p.m. or as late as approximately 6:28 p.m. as the sunset time changes throughout the season). Surveys will not be conducted on days when weather conditions would limit visibility, such as heavy rain, fog, snow or excessive cloud cover. Weather forecasts will be reviewed regularly in order to select the most appropriate survey days.

3.2 Proposed Survey Location

The primary method for surveying migrating raptors will consist of a daytime survey conducted from a single survey location. EDR conducted a GIS analysis and a site visit to select a survey location with optimal views of the Facility Area, and that will also be accessible to surveyors throughout the survey period. The proposed survey location is positioned along the edge of an open agricultural field east of Davis Corners Road (County Highway 45) in the central portion of the Facility Area (see Figure 3). This location is expected to afford open views of the sky and the Facility Area in multiple directions.

3.3 Surveyor Qualifications

Spring raptor migration surveys will be conducted by experienced, trained consulting biologists to ensure compliance with this Work Plan. EDR biologists Max Baber, Tiffany Clay, Ravyn Neville, and Samouel Beguin will provide support

and technical direction for the survey effort and ensure that quality assurance and quality control procedures are followed.

Mr. Baber is an Environmental Analyst with more than eight years of experience in wildlife biology, wildlife management, and scientific research. He received a Bachelor of Science degree in wildlife biology from The Evergreen State College. Mr. Baber's experience includes threatened and endangered wildlife species surveys, habitat assessments, scientific study design, scientific writing, and statistical analysis. Mr. Baber's professional focus is on avian research and advocacy. He has designed, overseen, and conducted avian surveys implementing a broad range of research methods including nest searching and monitoring, territory mapping, mist netting and banding, point count surveys, radio telemetry and tracking, migratory bird counts, and bioacoustic recording and monitoring. Mr. Baber has also taught these methods to technicians, interns, volunteers and students. At EDR, Mr. Baber has conducted breeding bird surveys, fall raptor migration surveys, and wintering raptor surveys, and supports the design and implementation of avian surveys for renewable energy projects.

Ms. Clay is an Environmental Analyst with more than six years of experience in the natural resources field. She received a Bachelor of Science in Environmental Science and Biology from The College at Brockport State University of New York (SUNY Brockport) and a master's degree in Environmental Science and Ecology from SUNY Brockport. Prior to joining EDR, Ms. Clay spent two field seasons as a crew leader conducting avian community surveys (acoustic and visual) for the Great Lakes Coastal Wetland Monitoring Project. As a long-term volunteer, Ms. Clay has also conducted point count surveys for breeding birds at Montezuma National Wildlife Refuge. Ms. Clay is a member of The Rochester Birding Association and is an avid bird watcher in her free time. At EDR, Ms. Clay has been involved in designing, conducting, and managing avian surveys and habitat assessments for numerous utility- and community-scale renewable energy projects.

Mrs. Neville is an Environmental Analyst with more than five years of experience in wildlife biology and management and scientific research. She received a Bachelor of Science degree in Biology from Salisbury University and a Master of Science degree in Environmental and Forest Biology from the State University of New York College of Environmental Science and Forestry. Mrs. Neville's experience includes threatened and endangered wildlife species surveys, habitat assessments, wildlife management planning, scientific study design, scientific writing, GIS mapping, statistical analysis, and wildlife habitat use. Specializing in avian research, Mrs. Neville has planned, supervised, and conducted avian research projects that involve nest searching and surveys, hatchling surveys, mistnetting and banding, point counts, and observational focal follows. At EDR, Mrs. Neville has been involved in designing, preparing, and conducting breeding bird surveys and wintering grassland raptor surveys for numerous renewable energy projects.

Mr. Beguin is a Senior Environmental Analyst with more than seven years of experience in environmental consulting, wildlife biology, and scientific research. He received a Master of Science degree in Environmental and Forest Biology from the State University of New York College of Environmental Science and Forestry and a Bachelor of Arts degree in Biology and Environmental Studies from Middlebury College. Mr. Beguin's experience includes threatened and endangered wildlife species surveys, habitat assessments, environmental permitting, mitigation planning, agency consultation, GIS mapping and data analysis, and bioacoustic monitoring of avian communities. At EDR, Mr. Beguin has been involved in designing, conducting, and managing avian surveys and habitat assessments for numerous utility- and community-scale renewable energy projects.

3.4 Survey Methodology

The spring raptor migration surveys will be conducted by qualified biologists and will be substantively compliant with the recommendations for standard pre-construction spring raptor migration surveys described in the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects* (see Appendix A). Biologists will visit the Facility Area one day per week to conduct the surveys, for a total of 13 surveys throughout the survey period. As mentioned above, each survey will be conducted at a single observation location that has been chosen for optimal visibility and coverage.

Biologists will stand and/or sit at the stationary survey location and conduct systematic visual scans of the sky in all directions in order to detect raptors and other birds passing through the area and/or utilizing habitat within the Facility Area. Binoculars of 8x or 10x magnification will be used as the primary visual aid for avian identification and counts. If necessary, a spotting scope may also be used. Biologists will record detailed information for all raptors observed, as well as large flocks of non-raptor birds (i.e., more than 50 individuals). In addition, any special status (i.e., endangered, threatened, special concern, species of greatest conservation need) species observations will be documented, regardless of number.

Survey data will be recorded in a standardized and organized fashion using data sheets and a mobile GIS application that will allow for digitization of flight path lines and perch locations. A sample data sheet is provided in Appendix C. Data recorded for each spring raptor migration survey will include observer initials, date, start and end time, weather conditions for the previous day, hourly weather conditions (temperature, cloud cover, prevailing wind direction, wind speed, precipitation type [if any], and visibility), the number of individuals and identification of each species observed, the start and end time of each observation, sex and age of individuals (when possible), average flight height and direction, behavior(s) (e.g., flying, perched, foraging) and additional notes. Locations of all special status species will be indicated on an aerial-based map of the survey area. All observations of special status species (including detailed behavioral descriptions) will be recorded and summarized in the final report.

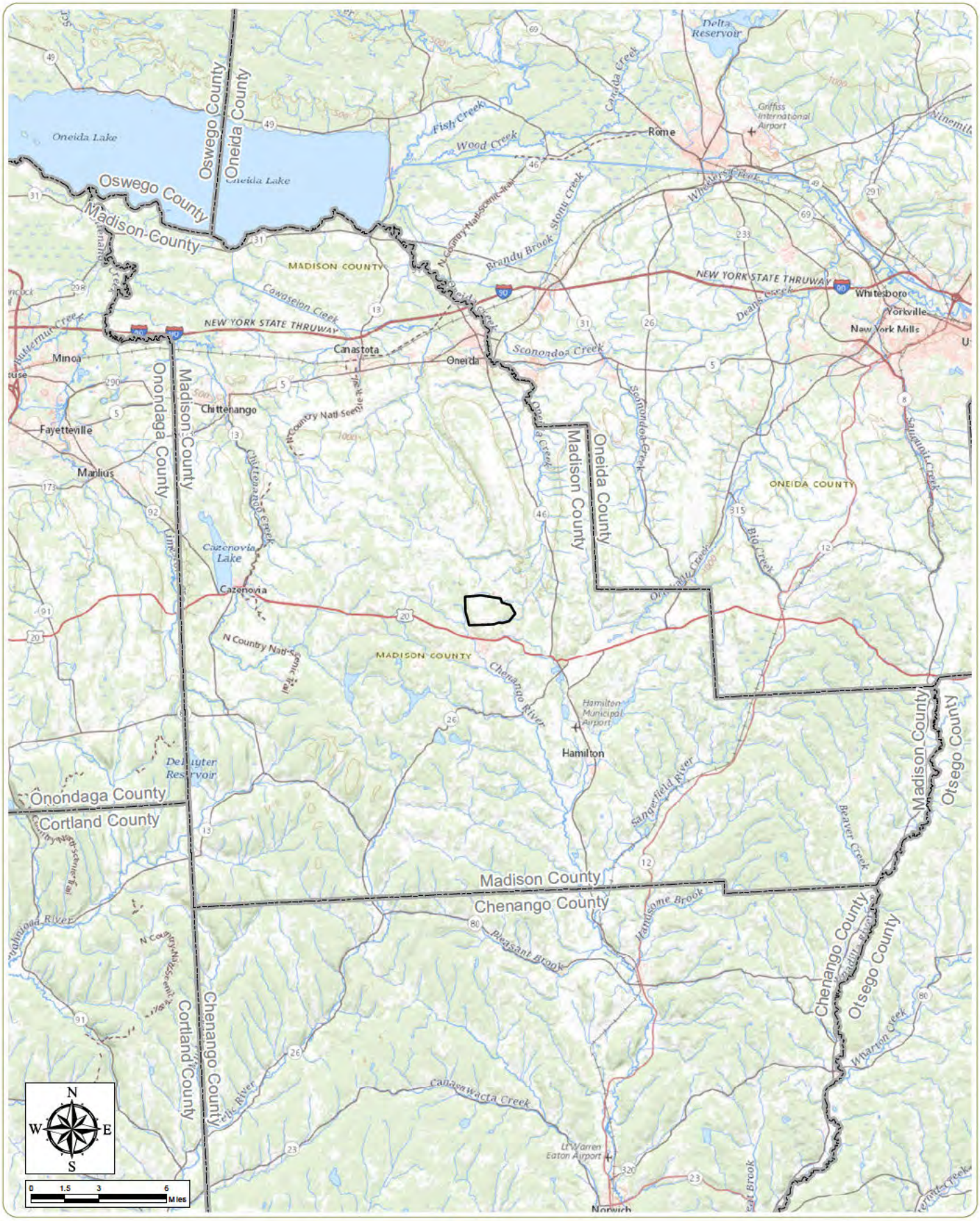
3.5 Reporting

A final report will be prepared and submitted to ORES and the NYSDEC on behalf of the Applicant after the surveys have been completed. The report will summarize all observations of migrating raptors, large flocks of non-raptors, and all special status species observed during the surveys. Summary information will include:

- The total number of species observed throughout the survey period;
- The total number of individuals of each species observed;
- An indication of the dates, times, and locations for each observation;
- The observed height, direction, and flight path for each observation;
- An indication of which directions and distance classes had the highest and lowest number of species; and
- Species diversity, frequency, and abundance for each survey and for the full survey period.

The report will also include supporting tables, maps, photographs, and appendices. In addition, GIS shapefiles will be provided to ORES and the NYSDEC for the survey location, the Facility Area boundary, flight path lines, and perch point locations. For any observations of state-listed threatened and endangered species, the report will provide the date, time observed, number of individuals, behavior(s), flight height, flight direction, and other relevant information, as applicable. Location coordinates and GIS shapefiles will be provided for all threatened and endangered species observations (including points for any perching/roosting locations, flight path lines, and/or polygons for on-site use areas).

Figures



Blue Hill Wind Project

Town of Eaton, Madison County, New York

Spring Raptor Migration Survey Work Plan

Figure 1: Regional Facility Location

Facility Area

County Boundary

Notes: 1. Basemap: ESRI ArcGIS Online "USGS Topo Map" map service. **2.** This map was generated in ArcMap on February 18, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

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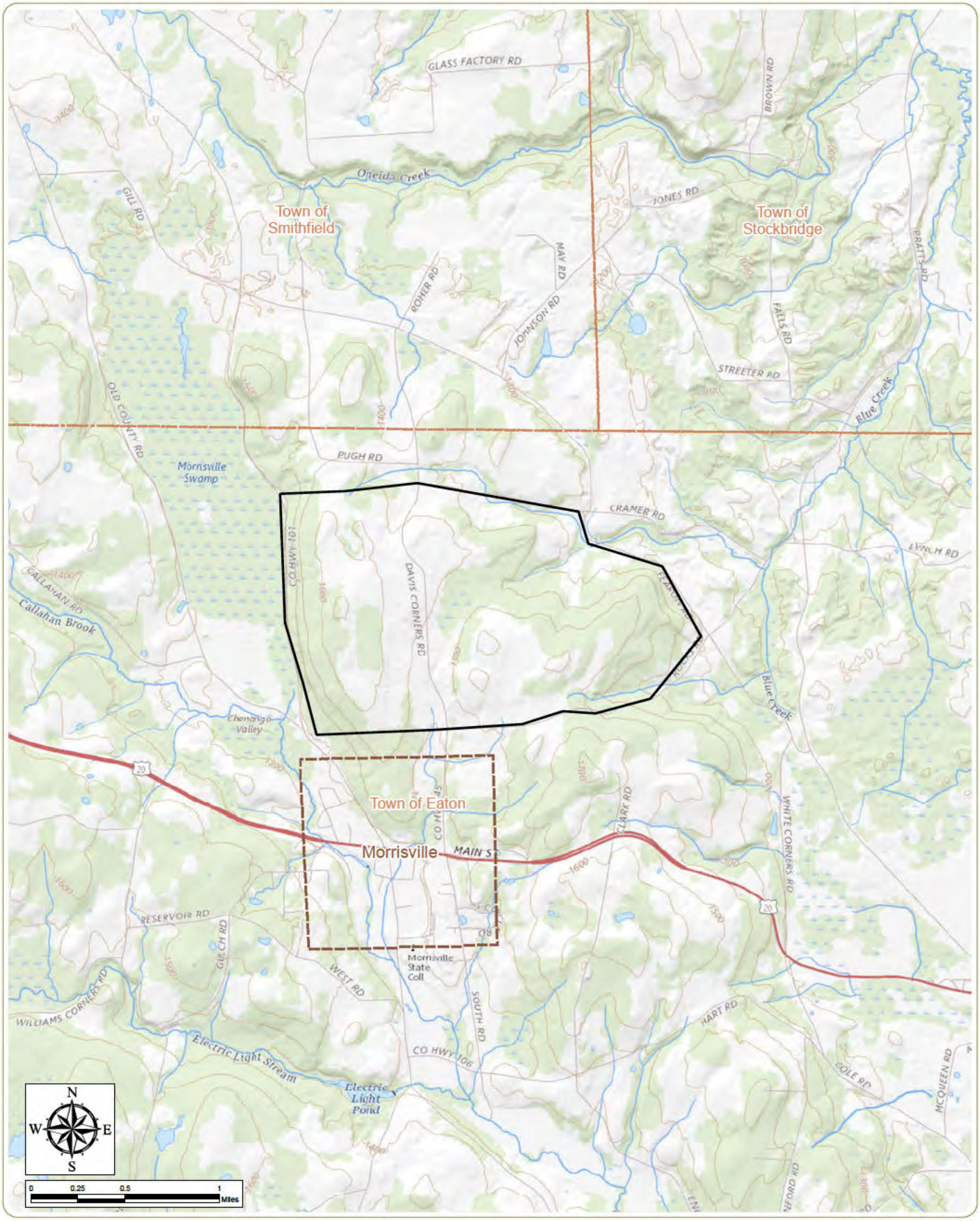

Blue Hill Wind Project

Town of Eaton, Madison County, New York

Spring Raptor Migration Survey Work Plan

Figure 2: Facility Area

Notes: 1. Basemap: ESRI ArcGIS Online "USGS Topo Maps" map service. **2.** This map was generated in ArcMap on February 18, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

Facility Area

Town Boundary

City/Village Boundary

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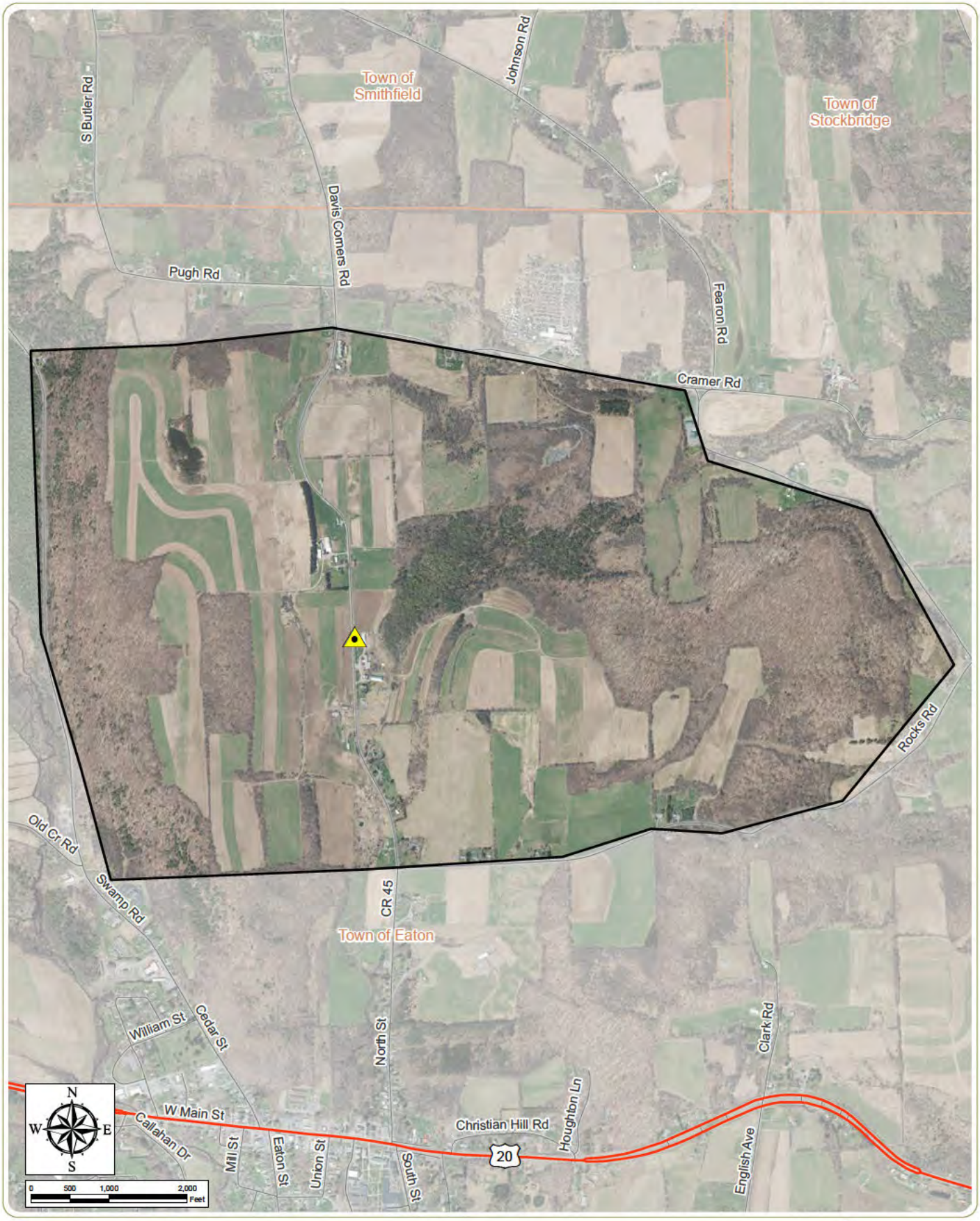

Blue Hill Wind Project

Town of Eaton, Madison County, New York

Spring Raptor Migration Survey Work Plan

Figure 3: Survey Location

Notes: 1. Basemap: NYSDOP "2017" orthoimagery map service. **2.** This map was generated in ArcMap on February 18, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Survey Location
- Facility Area
- Town Boundary

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Appendix A

NYSDEC Survey Guidelines

NEW YORK STATE OF OPPORTUNITY. | Department of Environmental Conservation

GUIDELINES FOR CONDUCTING BIRD AND BAT STUDIES AT COMMERCIAL WIND ENERGY PROJECTS

June 2016

Prepared by New York State Department of Environmental Conservation
Division of Fish and Wildlife

www.dec.ny.gov

Contents

Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects

To help meet our increasing demand for electricity, the 2015 New York State Energy Plan places a priority on increased energy diversity and the use of renewable energy sources, with a goal of 50% of the state's energy generation coming from carbon-free renewable sources by 2030. While wind energy has significant emissions benefits when compared to energy produced from fossil fuel, the New York State Department of Environmental Conservation (DEC or Department) must also consider the potential negative environmental impacts of wind energy production when evaluating proposed projects. Currently, the nature and severity of both site-specific and cumulative impacts that commercial wind energy projects may have on birds and bats and their habitats in New York State is DEC's most pressing issue related to wind energy development. The Department's concern for and jurisdiction over these natural resources derives from the Environmental Conservation Law (ECL) which articulates the policies of the DEC (Article 1), the powers and duties of the Commissioner (Article 3), and the requirements for the protection of fish and wildlife and their habitats (Article 11).

This document sets forth DEC's guidance for commercial wind energy developers on how to characterize bird and bat resources at on-shore wind energy sites, estimate and document impacts resulting from the construction and operation of wind energy projects, and reduce mortality levels through turbine siting and operational modifications. These guidelines provide a general framework for the developer to propose site-specific studies needed to evaluate the potential and/or actual effects of a given wind energy project, and outline consistent and predictable methodologies, based on the latest scientific knowledge, to assist developers in the planning, development, and monitoring process. It should be recognized that the effort required to fully understand the movement of and impact to birds and bats at any given locale would be monumental and would take many years. Therefore, the studies described here are considered the minimum effort necessary to characterize bird and bat activity at a specific project location within a reasonable time frame relative to construction.

This guidance provides two tracks for pre-construction and post-construction studies: "standard" and "expanded." It is anticipated that all sites will warrant at least the standard studies. However, where site-specific conditions or other information suggest the potential for substantial adverse impacts to birds and/or bats, or their habitats, expanded studies and/or additional years of study designed to further evaluate the specific concerns may be necessary.

Along with providing essential data for evaluation of project operation, the protocols set forth herein are intended to allow for comparability of data collection among sites and between years such that the information from each site may contribute to a statewide understanding of the ecological effects of wind energy generation. A list

of web sites, published papers, and other references and information sources is included at the end of the document.

1. Purpose and Definitions

The purpose of this document is to set forth the protocols for conducting bird and bat studies at wind energy projects to provide information necessary for DEC to:

a. assess and understand the ongoing or expected environmental impact of a specific wind energy project; and

b. make a recommendation to the State Environmental Quality Review Act (SEQRA) lead agency or the Public Service Law Article 10 (PSL Article 10) New York State Board on Electric Generation Siting and the Environment (Siting Board), as appropriate, regarding the construction and operation of the project in order to avoid or minimize adverse environmental impact.

c. determine the possible need for an incidental take permit for impacts to state listed species during construction and/or operation of the project, per 6 NYCRR Part 182.

These guidelines are not intended to cover survey recommendations for, or the evaluation of, potential impacts to species other than birds and bats. Developers should coordinate with DEC to determine if other wildlife resources may warrant investigation during the development, construction, and operation of a proposed project.

The following terms are used as defined here:

Adverse impact means 1) mortality of birds or bats due to collision or other possible effects such as barotrauma (sudden, potentially fatal, pressure changes that may rupture or otherwise injure ears, lungs, or other internal organs) caused by a wind turbine; 2) displacement of birds or bats from their habitat due to the presence and/or operation of a wind energy project; 3) a detectable reduction in bird or bat use of the site due to construction or operation of the project; or 4) repeated or continuous disruption of the natural feeding, roosting, breeding, wintering, or migratory behaviors of birds or bats as a result of the construction or operation of the project.

Bird and bat resources includes all species of native and protected birds (Class *Aves*) and bats (Order *Chiroptera*) that use or may use the site, as well as the habitats that support them.

Site, project site, or *project area* means not only the real property boundaries or outline of proposed turbine locations and other project-related infrastructure on the ground, but includes the air space over and surrounding the entire project.

Study area or *surrounding area* is defined as all land and air space within the project area and at least five miles outside of the edge of the project area. The study area may be extended out to fifteen miles, depending on the conditions and landscape of the project area, the proximity of the project to resources of concern and other proposed and existing wind energy projects, and which species are known or suspected to be present within or near the site.

Project components includes all proposed or existing turbines, overhead and underground collection lines and transmission lines, new or expanded public and private roads, substations and transfer areas, meteorological (met) towers, permanent and temporary staging, storage and laydown areas, operation and maintenance buildings, and any other building or infrastructure related to the construction and operation of the project.

As part of its environmental review, DEC must consider information pertaining to the presence and activity of birds and bats at the site and in the study area. One of the most effective means of reducing direct and indirect impacts to birds and bats is to site turbines in a location that will avoid disturbance to migrating, breeding, wintering, roosting, and feeding birds and bats. In addition to direct and indirect mortality caused by turbines, other negative effects from factors such as habitat loss or fragmentation, introduction or spread of invasive species, avoidance of otherwise potentially suitable habitat, increased human activity and development, and increased predator and parasite presence can result from the construction and operation of a wind energy project and should also be considered.

As wind energy development continues to expand throughout New York, more information is needed about the temporal and spatial use of habitats and the species composition of birds and bats using those habitats in order to relate wind energy production to its potential impacts. The studies described in these guidelines are based on DEC's current knowledge of the best procedures for conducting thorough and scientifically meaningful pre- and post-construction studies. As studies are conducted at more projects throughout the state, these guidelines may be fine-tuned to incorporate the most efficient, effective and accurate methodologies to fill data needs. When planning a project, developers should contact DEC as early as possible for the most current recommendations, which may differ from this document. Figure 1 (page 33) illustrates the steps described below for conducting pre- and post-construction studies.

2. Site and Project Description

A characterization of bird and bat resources includes documenting pertinent existing information, and collecting and analyzing additional field data on bird and bat use of the site and surrounding area. Several years of studies have been conducted to date gathering site-specific data on where, when, and how birds and bats use various habitats within the state. These guidelines are intended to provide a template for gathering further information and to aid DEC in assessing impacts and making recommendations to the lead agency, or Article 10 Siting Board, as necessary.

a. *Compile existing information on bird and bat resources*

Prior to expending significant effort in planning a wind energy project, the developer should compile existing information on bird and bat resources at the site and in the surrounding area, including available relevant information from other existing or proposed wind energy projects. The following sources should be consulted:

i. The DEC Central Office Division of Environmental Permits (DEP) and Division of Fish, Wildlife and Marine Resources (DFWMR) should be the initial point of contact for information regarding the environmental review and assessment process for wind energy development;
ii. The New York Natural Heritage Program (NYNHP) should be contacted for information on known state and federally listed endangered, threatened, and special concern species and sensitive ecological communities that may be located in or near the proposed project site and surrounding area;
iii. Screen the project and surrounding area using New York's Environmental Resource Mapper, Nature Explorer, and Biodiversity and Wind Siting Mapping Tool
iv. Biologists in the DEC Regional office(s), as applicable to the project location, should be contacted for available information on specific resources within the site and in the surrounding area;
v. To the extent required by the US Fish and Wildlife Service (USFWS), information collected through the use of DEC's guidelines should be provided to the USFWS. The USFWS Ecological Services New York Field Office should also be contacted for information on federally listed species that may be present within or near a proposed project area;
vi. Local ornithologists, Audubon Societies, birding clubs, hawk watches, and nature centers can provide specific information about bird and bat resources, as well as further information on data from the New York Breeding Bird Survey (BBS), Breeding Bird Atlas (BBA), eBird, and Christmas Bird Count (CBC);
vii. Biologists in the Bureau of Wildlife's Wildlife Diversity Unit can provide site specific information regarding the proximity of bat hibernacula and summer roosting areas, as well as information on technical research being conducted within New York; and
viii. Bat Conservation International (BCI) can provide general information about bats and bat biology.

b. *Identify landscape features and resources of potential concern*

The relative proximity of certain landscape features and/or ecological resources to a site can increase the likelihood that substantial adverse impacts to bird and bat resources will result from a proposed wind energy project. The developer should identify any of the following features or resources within the proposed project site or surrounding area:

i. Habitat of a listed bird or bat species per 6 NYCRR Part 182 (e.g., species of special concern, threatened or endangered). The project sponsor should be aware that if a threatened or endangered species, or habitat known to support those species, is present within or adjacent to the site and/or likely to be impacted by a project, the permit requirements of ECL Article 11-0535 may be applicable. Incidental take of a listed species is prohibited without a permit;

ii. Proximity of the project (approximately 5 miles) to the Atlantic coastline, the shoreline of one of the Great Lakes, Lake Champlain, Oneida Lake, the Finger Lakes, or the corridor of large rivers (e.g. the Delaware, Hudson, St. Lawrence, Niagara);

iii. The presence of, or proximity to, areas that concentrate raptors, waterfowl, or other specifically identified species of concern for the site (approximately 2 miles); or a major bat hibernaculum (approximately 40 miles); and

iv. The presence of any specifically identified habitat or landscape feature that may function to funnel or concentrate birds or bats during migration or for feeding, breeding, wintering, or roosting activities, such as National Wildlife Refuges (NWR), Wildlife Management Areas (WMA), grassland focus areas (Morgan and Burger, 2008), core forest blocks (contiguous areas 150 acres or larger), high elevation mountaintops, prominent ridgelines, or other significant habitat areas.

c. *Provide project information to DEC*

Once existing information is compiled, the developer should meet with DEC to discuss an overview of the proposal, the bird and bat resources of potential concern, and the application of these guidelines to the environmental assessment of the project. DEC understands that some of the information requested below in part 2(c) i-xiii may be considered proprietary, or is likely to evolve as project planning progresses, and may need to be submitted as confidential information/business trade secrets, not subject to public disclosure under the Freedom of Information Law (FOIL) pursuant to Public Officer's Law § 87. To aid in project planning, the project sponsor should prepare a complete description of the project site and surrounding area prior to meeting with DEC, including:

i. Description of the geographical, topographical and other physical features of the site and within 15 miles of the site, even if the proposed project is further than 5 miles from a shoreline, 2 miles from a wildlife concentration area, or 40 miles from a bat hibernaculum;

ii. Identification of federal, state, or locally-regulated wetlands, streams, waterbodies, drainage patterns, and publicly-owned forests, parks, and wildlife or forest management areas;

iii. Location of contiguous or core forest areas, expanses of grassland, large waterbodies, and wetland habitat located within the proposed project township(s) and surrounding study area;
iv. Location of all meteorological (met) towers, a summary of local weather patterns (e.g., annual precipitation, prevailing winds, etc.), and a summary of the wind resource at the site and in the study area; and
v. Maps with vegetation types, soils/bedrock, elevation, land use, and other information relevant to siting the project.

Prior to developing the pre-construction study work plan, additional information regarding the proposed project should be provided including:

vi. Maps of the proposed preliminary turbine layout;
vii. Description of turbine type, size and rotor swept area; and
viii. Figures or maps showing existing and proposed roads, electric line routes, substation location(s), and other project components as defined in Section 1.

Data regarding proposed site development should be provided in the form of shapefiles, for use in Geographical Information Systems (GIS) software via ESRI's ArcGIS suite of software (e.g. ArcMap) including:

ix. Polygon shapefile(s) showing the total project area;
x. Line shapefile(s) for the transmission and interconnect lines, as well as all proposed temporary and permanent access and maintenance roads;
xi. Polygon shapefile(s) of any proposed concrete and building structures, storage and lay down areas;
xii. Point shapefile(s) for all turbine and met tower locations, and any other structures that would be best represented as a point; and
xiii. Polygon shapefile(s) showing all areas proposed to be cleared around turbines, access roads, electric lines, and all other project components.

d. *Select and implement a standard or expanded pre-construction study protocol*

Sites that contain, are within, or are in close proximity to the features or resources of concern listed in 2(b) above have the potential to cause substantial adverse impacts to bird and bat resources. Therefore, for such sites, project sponsors should anticipate conducting expanded pre- and post-construction studies to identify and quantify potential or actual impacts associated with the specific features or resources of concern. In particular, a proposal to site a wind energy project in proximity to a bat hibernaculum (40 miles), wildlife concentration area (2 miles), along a coastline (5 miles), on a prominent ridgeline, or near a known location of a state or federally listed threatened or endangered species will likely justify a need for expanded pre-construction studies. In preparation for conducting either standard or expanded studies:

i. Contact the DEC Bureau of Fish and Wildlife Services' Special Licenses Unit regarding any necessary licenses or permits for collection and possession of birds and bats, or special licenses to handle threatened and endangered species that may be needed;
ii. Contact the USFWS regarding species covered by the Migratory Bird Treaty Act (MBTA), and Endangered Species Act (ESA) permits; and
iii. Engage an individual or firm knowledgeable about New York state fauna, natural history, and sensitive species habitat requirements, with experience in wildlife biology, ecology, and habitat assessment methodologies, and who possesses the ability and means to conduct appropriate studies.

3. Study Objectives and Rationale

The overall goal of the studies described in this document is to determine the potential for a specific wind energy project to have an adverse impact on bird and bat resources by characterizing the use of the site and surrounding area by birds and bats under a variety of environmental conditions throughout the year, and by estimating the mortality rate of birds and bats due to collisions and other effects associated with the project. The effects of construction and operation on habitat, and changes in wildlife use of the site will also be studied to determine any displacement or loss of species related to project construction or operation. Data collected prior to construction can be compared to information collected in a similar manner after construction to determine what impact, if any, the project has on migrating and resident breeding and wintering birds and bats. With regard to migratory bats, the data collected as outlined in this document may assist DEC in quantifying the impact of wind power development on bat populations. DEC may also advise that separate studies be conducted to evaluate the presence of, and potential impacts to, species not covered by this document, including mammals other than bats, reptiles, turtles, amphibians, invertebrates, or aquatic organisms. Ultimately, information gained from pre- and post-construction studies will be used to identify appropriate locations to site a project, and measures that may be used to minimize direct and indirect impacts from project construction and operation. See Appendix A (page 34) for more information on potential methods to reduce bat mortality from turbines, and on-going efforts researching bat population size, distribution, and movement patterns across the landscape.

a. *Pre-construction studies*

The objectives of the pre-construction studies are to determine:

i. To what extent the area of the proposed project is used by migrating, breeding, and wintering birds and bats and how the physical and biological features of the proposed site and surrounding area may influence such use;
ii. The expected and potential direct impact to birds and bats as a result of using the site during operation of the project;

iii. The expected and potential indirect impact to birds, bats, and their habitats as a result of construction and operation of the project;
iv. The best possible siting of turbines and other project components with the least likelihood of adversely impacting birds and bats; and
v. Areas to avoid siting any project components or facilities.

b. *Post-construction studies*

The objectives of the post-construction studies are:

i. To estimate direct impacts of the operating project in terms of the species composition, seasonal timing, and mortality rates of birds and bats caused by collisions or other effects of the turbines;
ii. To document any indirect impacts of construction and operation of the project in the form of habitat fragmentation and habituation/avoidance behavior of birds and bats in the area;
iii. To determine how daily weather events and/or conditions may correlate with the number and species composition of dead or injured animals found beneath daily-searched turbines; and
iv. To determine what types of operational regimes or technological designs would result in the lowest bird and bat mortality levels.

c. *Bird Studies*

Migrating birds, particularly neo-tropical migrants, are sensitive to changes occurring across the landscape that alter the amount and quality of habitat available to them during migration. Many aspects of the biology, population structure, and ecology of these birds are poorly understood. In a general sense, the following is known:

i. Most songbirds, and many shorebirds and waterfowl migrate at night, while raptors, swallows, corvids, and some shorebirds and waterfowl move during the day;
ii. The exact spatial and temporal distribution of this migration is affected by weather patterns, food availability, and geographic features;
iii. Concentrations of species and individual birds vary with the habitat, season, and year;
iv. Birds are much more physiologically vulnerable during migration than at other times of the year; and
v. The effects of human-caused habitat and landscape alterations are persistent over time.

Types of bird surveys include habitat surveys for sensitive and listed species, breeding bird surveys, nest searches and monitoring, migration surveys, eagle use surveys, wintering raptor surveys, waterfowl surveys, and marine radar surveys. The radar surveys provide information on target passage rate, flight altitude, and flight direction. Acoustic monitoring of migratory birds can also be used to identify some species that vocalize in flight, and may provide a rough estimate of flight height for these species. DEC will recommend one or more of these methods based on the

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depending on the species (Rich et al, 1994; Robinson and Wilcove, 1994). As these studies did not include the presence of a turbine, indirect impacts may extend further into the forest than reported. Therefore, *minimally*, all forested habitat within 300 feet from the edge of a cleared area is considered to suffer indirect impacts, as pertaining to interior forest breeding birds. Larger distances may be needed for some projects, depending on the species present, forest quality, and surrounding habitat.

Indirect impacts in forests and grasslands are likely species-specific and habitat dependent, and include: avoidance of novel tall structures (Shaffer and Buhl, 2015; Stevens et al, 2013; Leddy et al, 1999); increased presence of predators (Keyser et al, 1998), and nest parasites such as brown-headed cowbirds (Howell et al, 2007); the introduction or spread of invasive species; and human disturbance. These, as well as changes in temperature, light penetration, humidity, soil moisture, plant composition, noise levels, prey availability, and other factors may cause birds to avoid forest edges and grasslands during nesting, feeding, and migration periods. This can then lead to increased intra-and inter-species competition for preferred undisturbed habitat, changes in food availability, decreased fledging rates, and increased energy expenditure during foraging and territory defense in sub-par habitat (Wilcove et al, 1986). Every project that impacts interior forest habitat and core grassland areas across the landscape puts cumulative stress on bird and bat populations in New York and across the northeast, which may cause a gradual decline in the overall number and diversity of interior forest- and grassland-dependent species.

c. *Raptor migration surveys*

Raptor migration surveys should be conducted from one or more prominent locations with a clear view of the entire project area during spring and fall migration periods (March 1 to May 31; August 15 to December 15). The size, location, and topography of the proposed project will influence the total number of, and distance between, survey points that DEC recommends. Observations should take place starting at 8:00 a.m. and last until two hours prior to sunset, or later if birds are continuing to move through the area. Surveys should be done at least once every seven days during each season, on days without heavy rain, snow, fog or excessive cloud cover that would limit visibility. Information on the species, number of individuals, sex and age class (if possible), behavior, flight height and direction, time of sighting, and location of each bird relative to the project area should be recorded. Project developers should coordinate with the USFWS for the latest recommendations on conducting eagle use surveys in the project site and surrounding area.

Concurrent with the information described above, observations of the movements of any other large flocks or individual birds (waterfowl, waders, corvids, icterids, swallows, etc.) should be recorded in a similar manner. However, preference should be given to observing and recording data on raptors. The presence and movement of groups or large numbers of individuals of non-raptor species could indicate the area is an important staging, feeding or migratory area.

d. *Breeding and migrating bird surveys*

Breeding bird surveys should be conducted a minimum of once per week from approximately May 15 until June 30 or July 20, depending on the habitat and expected

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migration, and fall swarming times may also be recommended. Analysis of the data and call identification by software and experienced personnel should focus on determining the presence and species of any Myotis bats detected. At least two different software packages should be utilized to filter recorded calls, with a person(s) experienced in distinguishing and identifying bat calls conducting a visual inspection of all Myotis or other suspect calls flagged by software.

5. **Expanded Pre-construction Studies**

If a developer proposes to construct a wind energy project in or near one of the features or resources of concern identified in Section 2(b), then at least two years of pre-construction study may be needed, incorporating one or more expanded pre-construction studies to provide in-depth information on the bird and bat resources of the site. Similarly, if post-construction study results from a wind energy project in a locale with similar physiographic or ecological features to the proposed project have shown that pre-construction predictions under-estimated the actual post-construction impacts, expanded pre-construction studies may be warranted. Following are examples of the type of expanded studies that DEC may recommend based on site-specific conditions.

a. *Radar studies*

Radar studies include the use of remote sensing marine radar to determine the use of the project and surrounding area by nocturnally migrating birds and bats. The radar should sample concurrently in both horizontal and vertical modes to collect information on target passage rate, flight height, direction, and speed. Radar units should be operated from at least one hour prior to sunset to one hour after sunrise, minimally during the migration periods of March 1 to May 31 and August 1 to October 31. Different date ranges and/or daily sampling times may be recommended, depending on the goal of the study and resources of concern at a particular site. Data should be recorded in digital format, and include weather information, airspace not sampled due to ground clutter or other interference, and all information on targets corrected for the volume of airspace actually sampled and the density of targets detected at various altitudes. Nocturnal visual observations may be undertaken for a minimum of ten minutes each hour during radar operation to estimate the proportion of birds and bats using the airspace immediately over or adjacent to the radar unit. Moon watching, spotlighting, and/or thermal imaging are the most commonly used methods. Project sponsors should consult with DEC biologists to determine an appropriate location, duration, intensity, and time frame for these surveys, as well as the latest data analysis and reporting methods.

An analysis of archived and current Next-Generation Radar (NEXRAD) data from one of the six radar stations that cover land in New York may provide information on mass movements of migrants relative to major nightly weather patterns. Due to limitations in NEXRAD coverage, only projects near the cities of Buffalo (BUF), Binghamton (BGM), Montague (TYX), Burlington, Vermont (CXX), Albany (ENX), or New York City (OKX) are able to utilize this type of information. As NEXRAD largely samples a portion of the airspace far above the highest turbine height, this method does

not generally provide any kind of estimate for number of targets within the rotor swept zone or a likelihood of collision.

b. *Raptor migration surveys*

Expanded raptor migration surveys may be justified for projects proposed to be sited on a ridgeline, in a known or suspected raptor migration route (e.g. close to the shores of Lakes Erie and Ontario), or near an established spring or fall hawk watch. In addition, if observations during a standard study detected migrating raptor species listed by the state or federal government as threatened or endangered, expanded raptor surveys may be recommended. Even in areas known to concentrate raptors during migration, site-specific information on species' flight height, direction, and timing of movement is important in understanding and evaluating the potential risk to birds at a proposed wind project. Surveys should be conducted from one or more prominent locations within the project area during spring and fall migration periods (March 1 to May 31; August 15 to December 31). If standard surveys have already been conducted, expanded surveys should be done from the same observation point(s). Every favorable weather day should be surveyed during the migration periods. All other data and information collected should be the same as for standard raptor migration surveys. Project sponsors should consult with DEC biologists to determine an appropriate survey time frame and frequency for specific target species, which may differ from the above dates.

c. *Waterfowl surveys*

Waterfowl surveys may be recommended if the project is in close proximity to a recognized major waterfowl concentration area, National Wildlife Refuge, or State Wildlife Management Area used for feeding, roosting, wintering, breeding, or migration staging. Surveys should include both driving and static observations in a variety of seasons and weather conditions. Driving surveys consist of slowly driving roads throughout the project site and surrounding area at various times during the day to observe and record the species, numbers, and behavior of birds in wetlands, rivers, fields and other habitats. For static surveys, an observer is stationed for a designated period of time at a given location and recording the same observations as driving surveys. Project sponsors should consult with DEC biologists to determine appropriate location(s), duration, intensity, and time frame for these surveys.

d. *Breeding bird surveys*

Targeted breeding bird surveys for state or federally listed threatened or endangered species, species of concern, or SGCN may be recommended if the project is in close proximity to a wetland, grassland, forest or other habitat area that may harbor marsh birds, nightjars, forest raptors, owls, or other birds that would not easily be detected during a morning survey, either because they are not active during the morning, or are not typically vocal. These surveys may incorporate playback of species-specific songs and calls and/or mobbing calls, and take place in the very early morning and/or in the evening hours until after sunset, depending on the target species. A number of points should be designated in appropriate habitat, where an observer should listen for calling birds before broadcasting a recording and listening again for a

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projects that have applied for an Incidental Take Permit (ITP) for state or federally listed threatened or endangered species may differ from those described here, per conditions of the permit and agency requirements. All collection and possession permits must be obtained at the state and federal level prior to the commencement of searches. Should a state or federally listed species be found dead or injured anywhere in the project area by any person, either during a regular survey period or incidentally at any time during the life of the project, DEC and USFWS, respectively, are to be notified as soon as possible but no later than 24 hours after the discovery, for direction on how to proceed with handling the animal.

i. Turbine searches – A standardized turbine-search regime should be designed such that one third of the total number of turbines in the project are searched daily, and one third of the total number of turbines in the project are searched weekly, from April 15 to November 15 during the first year of study. At any project with 10 or fewer total turbines, all turbines must be searched daily. At any project with between 11 and 29 turbines, at least 10 turbines must be searched daily, and one third of the remaining number searched weekly. Whether the second and third year of study are done in sequence or postponed to later years (e.g., the fifth or sixth year of operation) will be determined following analysis of data from the first year. Should the project expand to include more turbines, the number and location of turbines in the search pattern will be altered accordingly.

ii. Area to be searched – The area to be searched beneath each turbine should be no less than 1.5 times the rotor diameter. Although plot size will be dependent on specific turbine height and rotor diameter, 120 meters by 120 meters should be adequate for most modern turbines currently being used in New York. Transects should be five (5) meters apart, allowing for a visual search area of approximately 2.5 meters on either side of the centerline. These distances may vary slightly from one site to another, due to varying ground conditions. Full plots are necessary for at least the first study year to produce the most accurate mortality estimate possible. After the first year of study, DEC may discuss with the developer the possibility of a portion of the study turbines being searched only on the cleared gravel road and pad area. If so, the number of carcasses found on the road and pad may be used to estimate fatality rates when compared with full plot searched turbines during the same year.

iii. Ground cover – The type and amount of ground cover under each turbine should be recorded every day that searches occur. Vegetation growth, crop harvesting and other changes in the substrate could greatly alter the efficiency of carcass recovery.

Mowing and/or brush-hogging some or all of the search plots, each in their entirety, is recommended to increase searcher efficiency and provide a relatively consistent ground cover throughout the study area and between projects. Mowing should take place as often as necessary to maintain vegetation height suitable for seeing small, dark, potentially wet or decomposing carcasses at a distance of 2.5 meters. Early notification to and coordination with landowners holding study turbines is essential to ensure an agreement can be made that will be satisfactory to all parties.

iv. Search conditions – Searches should begin as close to sunrise as possible. Overnight weather conditions greatly affect the number of animals that will fly and how they are distributed in the airspace, and thus their exposure to turbine blades. The standard weather data collection noted in Section 4(a) need only be collected on a daily basis for ground searches.

v. Photographs – Digital photographs should be taken of each carcass found. At least one picture of each carcass should include a ruler or other standard item used for scale. These photos, along with all field data information described in 6(a)i-vi, should be sent with the final report to DEC. The file name or folder for each photo or set of photos should be clearly marked with the date and turbine number. At a minimum, documentation for each carcass should include photos showing:
   (1) the position in which it was found;
   (2) the dorsal and ventral sides;
   (3) photos that indicate the gender and reproductive condition of bats (if possible); and
   (4) any identifying characteristics such as bill, foot, wing or tail shape, and plumage coloration for birds.

vi. Data collection – The following data should be recorded for each carcass found during standard searches or incidentally:
   (1) date, time, project name, and turbine number;
   (2) location on plot marked with GPS coordinates;
   (3) distance and cardinal direction from turbine;
   (4) distance and bearing from transect from which it was first spotted;
   (5) condition of carcass (whole or partial, extent of injury and some measure of decomposition and/or scavenging to estimate time of death);
   (6) position of carcass (face-up/down, sprawled, balled up, etc.);
   (7) species, age and sex, if determinable:
   (8) substrate conditions when found (gravel, short/long grass, crops, brush, etc.);

(9) identification of searcher/collector; and
(10) for all carcasses found incidentally (associated with a turbine outside of the study area, under a study turbine during non-survey times, or by someone other than a trained searcher), as much information as possible from 1-9 above should be recorded, and the carcasses labeled and stored in the same manner as a study carcass, with a marker identifying is it as an incidental find.

b. *Searcher efficiency and carcass removal trials*

To accurately estimate mortality rates, searcher efficiency tests, and scavenger removal tests should be conducted throughout the study period for each year of post-construction monitoring, using carcasses of various sizes and species that breed and migrate through the project area. Factors such as ground topography, vegetation cover, current weather conditions, searcher experience and fatigue level, and scavenging rates all affect the overall efficiency of carcass detection for a given project area. Searcher efficiency trials should be conducted to estimate search accuracy, and should take place unbeknownst to the searcher(s). Recovery rates should be calculated separately for bats and small, medium, large and all birds combined. Methodologies for this type of study may evolve as new information is gathered. The following is a standard process for conducting the trials:

i. Carcass placement – A person not performing searches that day should place bird and bat carcasses throughout the search areas under various turbines representing different types of ground cover early in the morning that a trial is to occur. This person should record the location of each carcass within the study area, and any not found by the searchers should be removed at the completion of the day's trial. Carcasses should be discreetly marked with a non-reflective material to identify them as test animals. If enough bat carcasses are not readily available, fresh brown mice may be used as a surrogate for searcher efficiency trials.

ii. Carcass recovery – Information collected on trial carcasses should be identical to all non-test carcasses as outlined in section 6(a)(vi). The number of test carcasses recovered and the accuracy of data recorded will be determined for each searcher, and an efficiency rate calculated for each trial conducted throughout the course of the study.

iii. Carcass removal trials – Most mammalian and avian scavengers quickly recognize easy food sources, can readily incorporate wind projects in their daily routes, and are often active at pre-dawn hours. Insect scavengers are active mostly in warmer months, and in some cases can drastically deteriorate a carcass in a matter hours. Carcass removal trials should continue throughout post-

construction monitoring, as scavenging rates change in response to a steady source of food.

iv. Number and condition of carcasses – Trial carcasses should be as fresh as possible, since long-frozen carcasses may be much more difficult to find and are possibly less attractive to scavengers. The number of carcasses used should not cause an excessive attraction to bring scavengers into the area. Carcasses should be placed in a variety of habitats and checked daily for the first week, and every two days thereafter until the carcass disappears (due to scavenging or decomposition). On each check, the location and condition of the carcass should be recorded to determine if any scavenging has occurred. Any tracks, scat, marks, or other signs that may indicate the type of scavenger should be noted. Scavenging rates for each season, animal taxa, and habitat type in the project area will be calculated.

d. *Bird habituation and avoidance studies*

The pre-construction breeding and migrating bird surveys described in sections 4(d) and 5(d) should be repeated during the first and second years of mortality monitoring. Additional years of study may be recommended for the third, fourth, or fifth year of project operation as determined through consultation with DEC. Post-construction survey transects, points, and methods should be as close as possible to those used during pre-construction surveys. At pre-construction sample locations that become actual turbine sites, surveys should, to the greatest extent possible, take place during a period when turbine noise does not interfere with the observer's ability to hear, see, and record birds. If expanded pre-construction breeding bird surveys were conducted, developers should consult with DEC to determine the scope, methods, and focus species post-construction breeding bird surveys will have. Any land use or habitat changes that may have occurred since pre-construction or the previous post-construction survey was conducted should be noted, as this could potentially alter the bird species composition, density, and distribution within the project area. Information from this post-construction survey is intended to be comparable to pre-construction surveys, and will examine whether the wind project is having any effect on bird use of the site during breeding and migration periods, and whether habituation or avoidance is occurring.

7. Expanded Post-construction Studies

For wind energy projects constructed in or near one of the features or resources of concern identified in section 2(b), and for projects that DEC determines may adversely affect a state or federally listed species, expanded post-construction monitoring studies may be needed to provide additional in-depth information to further understand the specific impacts to bird and bat resources of the site. Exact details of these components of post-construction monitoring will be determined on a site-specific basis through discussions between DEC and the project developer.

a. *Radar surveys*

If radar studies during pre-construction surveys showed high passage rates, low flight altitudes, or if other unanticipated conditions that may affect the results and conclusions of the study were observed, then a radar survey may be recommended during the first year of post-construction mortality surveys. The use of radar during subsequent years of post-construction surveys will be contingent on the results of the first year of post-construction study. For any project where post-construction monitoring reveals a higher than expected level of mortality based on pre-construction data and analysis, the use of radar may be recommended for the second year of post-construction study regardless of whether radar surveys were conducted during pre-construction studies. The timing and duration of post-construction radar studies should be determined in consultation with DEC staff.

b. *Raptor migration surveys*

Raptor migration surveys should be repeated during at least the first year of post-construction monitoring if: expanded raptor surveys were conducted during pre-construction surveys; the results of post-construction studies from other projects estimate impacts to raptors that are not consistent with pre-construction expectations; or as recommended by DEC. Raptor migration surveys should be done using the methods described under the expanded pre-construction survey section 5(b), or as recommended by DEC staff.

c. *Waterfowl surveys*

Waterfowl surveys should be repeated during at least the first year of post-construction monitoring if: they were conducted during pre-construction surveys; results of post-construction studies estimate impacts to waterfowl are not consistent with pre-construction expectations; or as recommended by DEC. Waterfowl surveys should be done using the methods described under the expanded pre-construction survey section 5(c), or as recommended by DEC staff.

d. *Wintering bird surveys*

Wintering bird surveys should be repeated during at least the first year of post-construction monitoring if: they were conducted during pre-construction surveys; the results of post-construction studies estimate impacts to wintering birds that are not consistent with pre-construction expectations; or as recommended by DEC. Wintering bird surveys should be done using the methods described under the expanded pre-construction survey section 5(e), or as recommended by DEC staff.

e. *Bat acoustic monitoring*

Bat acoustic monitoring may be recommended on a site-specific basis. If pre-existing data, information collected on site during pre-construction surveys, current conditions, or agency determination indicate a potential for undue impact to Myotis species, post-construction acoustic monitoring may be warranted. Consultation with DEC staff is recommended to determine the most appropriate methods for each site.

8. **Planning and Reporting**

a. *Work plans*

After discussions with DEC staff regarding the application of these guidelines to a particular site, the developer should submit a draft work plan incorporating the necessary elements for study at the site. The work plan should include the site description and maps of the most up to date project layout, as well as shapefiles indicating the locations of all project components, points, and transects used for bird and bat surveys. This information will assist DEC in reviewing the data and evaluating potential impacts to sensitive species and their habitats using GIS software. Pre-construction work plans and shapefiles should be submitted to DEC with enough lead time for all parties to discuss and agree upon the details of the plan before implementation of the proposed field work. A comprehensive post-construction study plan should be developed and submitted to DEC for review prior to completion of project construction, and all work should be conducted in consultation with DEC. Project sponsors should work closely with DEC to provide a work plan detailing the search regime, bias corrections, bat acoustic monitoring, bird displacement/habituation surveys, reporting techniques, and other aspects of a project's post-construction mortality study.

b. *Reports*

After completion of the agreed-upon studies, the developer should prepare a report presenting the results. A description of the proposed project should be provided including maps of the proposed or existing turbine layout and other project components, topography, state and federal wetlands, and any other relevant information and environmental features on or near the site. A composite map containing all project and study information (turbine locations, raptor observations points, breeding and migratory bird transects with observation points, radar unit location (if applicable), wintering bird and waterfowl survey points/routes, acoustic detector locations, and habitat types) should be provided. The preferred format for reporting is described below.

i. Habitat surveys: The habitat survey report should minimally include the following:
   (1) a description of the habitat types found on site, including the location and identity of any invasive species;
   (2) a description of what state and/or federally listed species are associated with each habitat type and may occur in the area;
   (3) a layout map of ground cover (grassland, forest interior/edge, old field, shrub/scrub, young forest, wetland, agricultural/grazing land, developed areas, etc.), and their respective proportions on the landscape within the project site and surrounding area;
   (4) one or more map, as needed, showing the locations of habitat suitable for any listed, special concern or SGCN species, as well as the locations of any actual observations made of listed or sensitive species; and

(5) a detailed discussion of the methods, results, and recommendations, including a description of the listed species presence/absence survey results.

ii. Breeding and migrating bird surveys: The breeding and migrating bird survey report should minimally include the following:

(1) the number, location and length of each turbine, electric line, and control transect;
(2) the overall survey period, and date, time, and duration of surveys conducted at each point;
(3) a description of the habitat surrounding each transect;
(4) the number of species observed overall;
(5) the total number of individuals of each species observed overall;
(6) the number of individuals of each species observed at each transect point;
(7) a summary of the number and behavior of birds seen (e.g. individual, moving in a small flock, feeding, resting, carrying nesting material, food, or fecal sac, etc.), and whether any active nests or recently fledged young were observed;
(8) which birds were identified visually or via vocalizations;
(9) the point(s) and transect(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
(10) the habitat type(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
(11) a description of the weather conditions during and immediately prior to survey days;
(12) a list of all species with the dates and points where they were observed;
(13) the number and identification of the observer(s) conducting each survey;
(14) a description of any disruptions and/or distractions that occurred during each sampling period that may have precluded an adequate survey;
(15) a detailed discussion of all methods, results, and recommendations;
(16) one or more table and graph, as needed, depicting the above information, as well as all species with the dates and points where they were observed, the location proposed or existing turbines and other project components;
(17) one or more map, as needed, which displays all observations of all individuals of state and federally listed species, species of concern, SGCN, and any other species targeted at the site. Detailed information on the location, method of detection, behavior, flight paths, and all other

relevant data should be clearly shown on the map, or otherwise made available in the report; and

(18) shapefiles depicting the date, location and behavior of each individual of all state and federally listed species observed on site, and shapefiles of all transects and point locations.

iii. Raptor migration surveys: The raptor migration report should minimally include the following:

(1) the number and location of observation point(s);
(2) the overall survey period, and date, time, and duration of surveys conducted at each point;
(3) a general description of the viewshed from each point, including any area with limited or no visibility of the horizon and sky;
(4) the number of species observed overall;
(5) the total number of individuals of each species observed overall;
(6) the number of individuals of each species observed on each survey;
(7) the flight height and direction of each raptor and vulture, including any changes observed;
(8) the average and median flight height and direction of each raptor and vulture species, and any notable behavior observed;
(9) a description of the weather conditions during each hour of and immediately prior to survey days;
(10) the number and identification of the observer(s) conducting each survey;
(11) a description of any disruptions and/or distractions that occurred during each hour that may have precluded an adequate survey;
(12) a detailed discussion of all methods, results, and recommendations;
(13) one or more table or graph, as needed, depicting the above information;
(14) one or more map, as needed, depicting survey location(s), viewshed(s), the overall mean raptor and vulture flight paths, and locations of any listed species observations; and
(15) shapefiles depicting the date, location and behavior of each individual of all state and federally listed species observed on site, and shapefiles of all observation point locations.

iv. Radar studies: The radar report should minimally include the following:

(1) the radar unit location, elevation, and characteristics of the surrounding vegetation and topography;

(2) the total number of days surveyed overall, and in each season;
(3) the date, time, and number of hours per night and day that surveys took place each season;
(4) the mean, median, minimum and maximum values recorded each hour and overall each season for: target flight height, direction, passage rate in targets/km/hour, and percentage of targets detected below the maximum height of the proposed turbines, all corrected for the volume of airspace actually sampled and density of targets within that space;
(5) the elevation and total height of the proposed turbines;
(6) a detailed discussion of all methods, results, and recommendations;
(7) a discussion and evaluation of results describing the type of equipment used, including capabilities, limitations, and settings used for all equipment, as well as the amount of down time, failures, or suspected malfunctions that may have occurred during the survey periods. All equipment performance data should be reported to better assess the efficiency and accuracy of the units being used at each location;
(8) one or more picture from both the horizontal and vertical screen views indicating the location and amount of ground clutter surrounding the radar unit; and
(9) one or more table or graph, as needed, depicting the above information, as well as times and number of hours actually sampled each night and day in both horizontal and vertical modes, and hourly weather information (particularly wind speed and direction, percent cloud cover, ceiling height, and the presence of fog and/or precipitation).

v. Wintering bird surveys: The wintering bird survey report should minimally include the following:
(1) the number, location and length of all observation points and routes surveyed;
(2) the overall survey period, and date, time, and duration of surveys conducted at each point and driving route;
(3) a general description of the viewshed from each observation point, including areas with limited or no visibility of the targeted habitat;
(4) the number of species observed overall;
(5) the total number of individuals of each species observed overall;
(6) the number of individuals of each species observed on each survey, and at each point;

(7) a description of the behavior (feeding, perching, soaring, flocking, etc.) of the birds observed and the habitat they occupied;
(8) which birds were identified visually or via vocalizations;
(9) the point(s)/route(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
(10) a description of the weather conditions during an immediately prior to survey days;
(11) any disruptions and/or distractions that occurred during each survey that may have precluded an adequate collection of data;
(12) the number and identification of the observer(s) conducting each survey;
(13) a detailed discussion of all methods, results, and recommendations;
(14) one or more table or graph, as needed, depicting the above information, as well as all species and individuals with the dates and points where they were observed;
(15) one or more map, as needed, showing the locations of the sightings relative to proposed or existing turbine locations and from the survey point/driving route;
(16) any other information as requested by NYSDEC 2014(b); and
(17) shapefiles depicting all survey locations, the viewshed from each, and the date, location, flight direction, and behavior of each individual of all state and federally listed species observed.

vi. Waterfowl surveys: The waterfowl survey report should minimally include the following:
(1) the number, location and length of all observation points and routes surveyed;
(2) the overall survey period, and date, time, and duration of surveys conducted at each point and driving route;
(3) a description of the habitat surrounding each observation point and along routes surveyed;
(4) the number of species observed overall;
(5) the number of individuals of each species observed overall;
(6) the number of individuals of each species observed on each survey and at each point;
(7) a description of the behavior (feeding, resting, flying, flocking, etc.) of birds observed, the habitat they occupied, and any movements of birds within or across the project area;
(8) detailed descriptions of the location and behavior of all state or federally listed species observed;

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viii. Mortality studies: An interim progress report should be submitted to DEC no later than mid-July summarizing the post-construction survey results from spring of that year. The interim report is not intended to be an exhaustive analysis of methods, results and estimates. At a minimum, this report should include:

(1) the number and species of all dead or injured birds and bats found to date during standardized searches and incidentally, including any state or federally listed species found anywhere on site;
(2) the turbine number at which each animal was found;
(3) the date each animal was found;
(4) an overview of the searcher efficiency and carcass removal trials conducted to date;
(5) one or more map, as needed, identifying each turbine number and location; and
(6) any other notable bird or bat observations made on site.

A draft final report, to be submitted by January 31 following the end of the fall study period, should minimally include the following:

(7) the results of the daily and weekly ground searches;
(8) a description of the habitat type and ground cover height surrounding each turbine, including details of any vegetation management that was done at each turbine;
(9) the cardinal direction and distance from the turbine, in 10 meter increments, each carcass was found during standardized searches and incidentally;
(10) the size class of each carcass (small or large bat, small, medium or large bird);
(11) the condition of each carcass found;
(12) the date each carcass was found;
(13) photographs of all carcasses found;
(14) the age and sex of each carcass, if determinable;
(15) the total area beneath each turbine actually searched;
(16) a description of daily weather conditions prior to and during each search;
(17) the number and identification of people conducting each survey;
(18) the results of the searcher efficiency tests and scavenger removal study. The estimated searcher efficiency should be reported by carcass size, ground cover type, and season for each searcher. Estimated scavenging rate should be reported for each carcass size, habitat type, and season. This should include the types of scavengers present on site (avian, mammalian, insect) and the frequency at which each occurs;
(19) a discussion of all methods, results, and recommendations;

(20) one or more table or graph, as needed, depicting all the above information, as well as showing the number and identification of birds and bats found, and at which turbine, during standardized searches and incidentally; and
(21) one or more map, as needed, identifying each turbine number and location, and the area searched beneath each turbine.

If operational curtailment of all or a portion of the turbines occurred at any time during the survey period, the final report should include detailed information on the following:
(22) which turbines were feathered;
(23) the wind speed at which curtailment took place, and whether that varied between turbines;
(24) the dates and times of curtailment events, as well as total time of curtailment;
(25) a detailed discussion on how the curtailment effort impacted the estimated bird and bat mortality rates; and
(26) any other information relevant to changes in operational cut-in speeds.

All statistical methodologies should be fully explained and justified, and the most appropriate and accurate model used for estimating mortality rates. Project developers should consult with DEC and USFWS to determine the statistical model(s) to be used. Mortality rates should be calculated using at least a 95% confidence interval. Estimates should be made of overall mortality during the study period on a per turbine, per megawatt rated, per megawatt produced, and per rotor swept area for bats and birds (including small, medium and large birds, and all birds together). A separate estimate of bat mortality during the late summer/fall period (approximately mid-July through September) should also be provided, to allow for comparison of results with studies that only evaluated this time frame. All of these estimates should take into account:
(27) searcher efficiency rate;
(28) scavenger removal rate;
(29) the overall search plot size under each turbine;
(30) the amount of area actually searched under each turbine and throughout the project;
(31) the frequency of searches;
(32) operational curtailment, if any;
(33) the number of birds and bats estimated to have fallen outside of the search plot; and
(34) a discussion of any other factor that may have influenced the search regime and results.

ix. Other post-construction surveys: Either inclusive with the mortality report, or as a separate document, information on the post-construction bat surveys, bird habituation/avoidance studies, bird and raptor migration surveys, and/or radar surveys should be reported as described above in 8(b) i-vii, with the following additions: specific avoidance behavior of flying birds and/or bats observed in the project area; and any other information relevant to how birds and bats are using or avoiding the operating project area, especially with respect to the level of habitat restoration that has occurred at the time.

9. References and Sources of Information

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New York Natural Heritage Program
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NYSDEC Division of Environmental Permits
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NYSDEC Operating and Proposed Wind Energy Projects in New York State
http://www.dec.ny.gov/energy/48089.html

NYSDEC Regional Office Information
http://www.dec.ny.gov/about/255.html

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http://www.dec.ny.gov/animals/9406.html

NYSDEC State Listed Species Information
http://www.dec.ny.gov/animals/7494.html

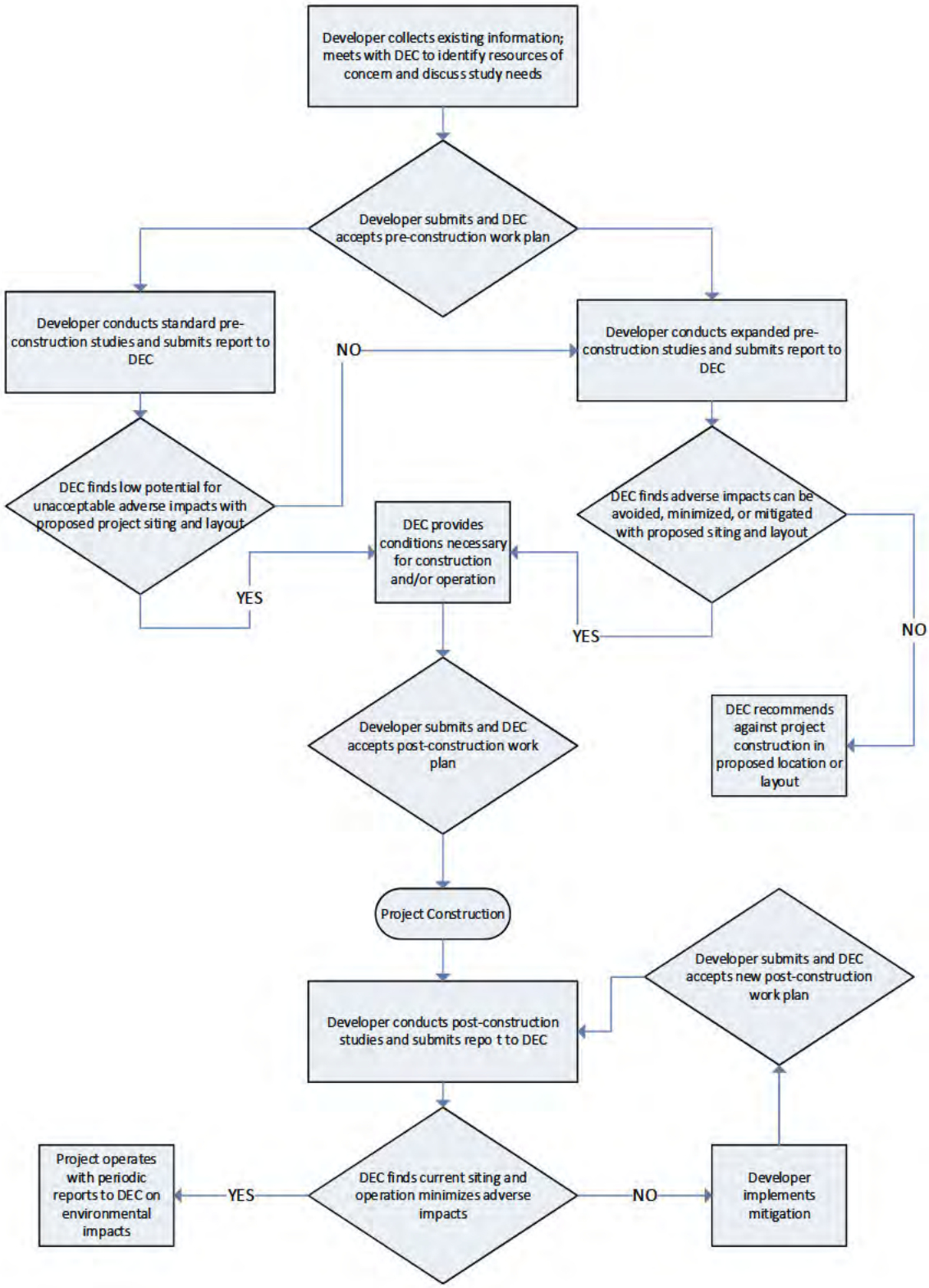
NYSDEC Wind Energy Information
http://www.dec.ny.gov/energy/40966.html

New York Environmental Resource Mapper
http://www.dec.ny.gov/animals/38801.html

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Figure 1. General Process for Conducting Bird and Bat Studies at Wind Energy Projects in New York



This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Appendix B

Results of Agency Consultation and Database Review

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: November 30, 2020
Consultation Code: 05E1NY00-2021-SLI-0597
Event Code: 05E1NY00-2021-E-01802
Project Name: Smokey Ave Wind (Eaton)_2

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

[redacted]

[redacted]Additionally, wind energy projects should follow the Services wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2021-SLI-0597

Event Code: 05E1NY00-2021-E-01802

Project Name: Smokey Ave Wind (Eaton)_2

Project Type: POWER GENERATION

Project Description: The Study Area is located in the Town of Morrisville, Madison County, New York. The Study Area is approximately 2.33 square miles and will consist of 6 turbines. The attached image represents the Study Area with a 5-mile buffer.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.91734629508301N75.63545711262867W

Counties: Madison, NY | Oneida, NY

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Snails

NAME	STATUS
[redacted]	[redacted]

No critical habitat has been designated for this species.

[redacted]

Ferns and Allies

NAME	STATUS
[redacted]	[redacted]

No critical habitat has been designated for this species.

[redacted]

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Environmental Resource Mapper

The coordinates of the point you clicked on are:

UTM 18	**Easting:**	447758.6680132128	**Northing:**	4751941.379921579
Longitude/Latitude	**Longitude:**	-75.64008602111682	**Latitude:**	42.91831268429283

The approximate address of the point you clicked on is:
13408, Morrisville, New York

County: Madison
Town: Eaton
USGS Quad: MORRISVILLE

DEC Region

Region 7:
(Central New York) Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga and Tompkins counties. For more information visit http://www.dec.ny.gov/about/615.html.

National Wetands Inventory

Attribute: undefined
Type: undefined
Acres: undefined

For more information about the National Wetands Inventory wetlands visit http://www.fws.gov/wetlands/

If your project or acon is within or near an ar ea with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the acon ma y be harmful to the species or its habitat.

If your project or acon is within or near an ar ea with rare plants and/or significant natural communies, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (ie. a wetland) and thus be subject to permit jurisdicon.

Please refer to the "Need a Permit?" tab for permit informaon or other authoriz aons r egarding these natural resources.

Disclaimer: If you are considering a project or acon in, or near , a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreaonal Riv ers, are currently not included on the maps.

Appendix C

Sample Data Sheet

Spring Raptor Migration Survey Data Sheet

Observer Initials:	Project:	Town(s)/County:	Survey Date:
Overall Start Time:	Overall End Time:	Survey Duration (hh:mm):	Weather Conditions (Previous Day):

Hourly Weather Conditions

Time	8-9 a.m.	9-10 a.m.	10-11 a.m.	11-12 p.m.	12-1 p.m.	1-2 p.m.	2-3 p.m.	3-4 p.m.	4-5 p.m.	5-6 p.m.	6-7 p.m.
Temperature Range (°F)											
Cloud Cover (%)											
Prevailing Wind Direction											
Wind Speed Range (mph)											
Precipitation[1]											
Visibility[2]											

[1]If none, leave blank. Otherwise, provide using the following codes: D = drizzle; R = rain; SL = sleet; H = hail; SN = snow; O = other (write in).
[2]Report in miles, estimated based on visible landmarks at known distances from the survey location (or nearest weather station).

Raptor, Large Flock, and Special Status Species Observations

Time Period[1]	Species[2]	Number	Sex/Age (If Known)[3]	Behavior(s)[4]	Average Flight Height (feet)	Initial Distance (feet)	Closest Distance (feet)	Average Flight Direction	Notes

Time Period[1]	Species[2]	Number	Sex/Age (If Known)[3]	Behavior(s)[4]	Average Flight Height (feet)	Initial Distance (feet)	Closest Distance (feet)	Average Flight Direction	Notes

Additional Notes and Detailed Behavioral Information for Special Status Species

APPENDIX B

Results of Agency Database Review and Consultation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To:
Consultation Code: 05E1NY00-2021-SLI-1759
Event Code: 05E1NY00-2021-E-05603
Project Name: Blue Hill Wind

March 04, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

[redacted] Additionally, wind energy projects should follow the Services wind

energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2021-SLI-1759
Event Code: 05E1NY00-2021-E-05603
Project Name: Blue Hill Wind
Project Type: POWER GENERATION
Project Description: Proposed wind project consisting of up to 6 turbines
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.9173469,-75.63606566833082,14z

Counties: Madison County, New York

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

March 17, 2021

Benjamin Roosa
Environmental Design & Research
41 State Street, Suite 806
Albany, NY 12207

Re: Proposed Wind Project in Town of Eaton
County: Madison Town/City: Eaton

Dear Benjamin Roosa:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities at the project site or in its immediate vicinity.

Enclosed is a report of rare birds documented within 10 miles of the project site, and rare bats documented within 40 miles of the project site, for use in assessing potential impacts of bird and bat collisions. For information on NYSDEC's environmental review of proposed wind energy projects, and and for the document entitled Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects, follow this link:

https://www.dec.ny.gov/regulations/28693.html

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the Permits staff at the NYSDEC Region 7 Office dep.r7@dec.ny.gov, 315-426-7438.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

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New York Natural Heritage Program

Report on Rare Birds and Rare Bats in the General Vicinity of Wind Power Projects

The following rare bats and birds have been documented in the general vicinity of the proposed wind power project.

The impacts of wind turbines on animals include both impacts due to disturbance at the site of the turbines, and impacts due to flying birds and bats colliding with turbine blades. Therefore, when screening proposed wind energy projects for potential impacts on rare species, in addition to reporting rare plants and animals documented at the project site itself, NY Natural Heritage reports species of rare birds documented within 10 miles of the project site, and rare bats documented within 40 miles of the project site. These distances were determined in consultation with the NYSDEC Division of Fish, Wildlife and Marine Resources.

For information on NYSDEC's environmental review of proposed wind energy projects, and for the document entitled Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects, follow this link: https://www.dec.ny.gov/regulations/28693.html

Bats within 40 miles

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS**
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

Our database does not currently contain any records of rare birds within 10 miles of the project site.

* Conservation status in NYS as ranked by NY Natural Heritage Program on a 1 to 5 scale:
  S1 = Critically imperiled
  S2 = Imperiled
  S3 = Rare or uncommon
  S4 = Abundant and apparently secure
  S5 = Demonstrably abundant and secure

B after one of the above ranks indicates the status rank is for breeding populations only.
N after one of the above ranks indicates the status rank is for nonbreeding wintering populations only.

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

NEW YORK STATE OF OPPORTUNITY. Office of Renewable Energy Siting

ANDREW M. CUOMO
GOVERNOR

HOUTAN MOAVENI
ACTING EXECUTIVE DIRECTOR

review of the above referenced draft winter raptor and breeding bird survey reports and associated shapefiles, in compliance with 19 NYCRR §§ 900-1.3(g)(6) and (7).

Recommended Habitat Assessments and/or Field Surveys

Field surveys for grassland birds are recommended in the appropriate seasonal windows within one year. A full season of winter raptor surveys and breeding bird surveys are recommended following DEC protocols. Habitat assessments for breeding grassland birds should also include a description of the current landcover, and the crop history for the previous five growing seasons for all fields greater than 25 acres in size where project infrastructure may be constructed.

If LRI concurs with these recommendations and agrees to conduct the habitat assessments and field surveys described above, please develop appropriate pre-construction study work plans and submit for review by the Office and NYSDEC prior to the commencement of field work, in compliance with §900-1.3(g)(4). If the Applicant opts not to conduct the recommended surveys and believes that suitable habitat for a given species is not present at the site, please provide a detailed description of the methodology used to determine that no suitable habitat exists in compliance with §900-1.3(g)(3).

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

APPENDIX C

Spring Raptor Migration Survey Observations

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

APPENDIX D

Survey Data Sheets

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	134360
Survey Date	03/04/2021
User	Max Baber
Observer Initials:	MDB
Habitat Photos (4):	None
Start Time:	08:00 AM
End Time:	03:54 PM
Survey Duration (hr:min):	7:54

Hourly Data

Hourly Observation (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am
- [ ] 11:00 am to 12:00 pm
- [ ] 12:00 pm to 1:00 pm
- [ ] 1:00 pm to 2:00 pm
- [ ] 2:00 pm to 3:00 pm
- [ ] 3:00 pm to 4:00 pm
- [ ] 4:00 pm to 5:00 pm
- [ ] 5:00 pm to 6:00 pm
- [ ] 6:00 pm to 7:00 pm

Temperature (F): 22

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Mostly Cloudy = 50-90%
- [ ] Partly Cloudy = 25-50%
- [X] Overcast = 90-100%

Wind Direction(s):

- [ ] E
- [ ] N
- [ ] NE

	[X] NW [ ] S [ ] SE [ ] SW [ ] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [X] SN = Snow
"Other" Precipitation Notes	Wind speed 12
Visibility (miles):	5

Hourly Observation (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S

	☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☒ SN = Snow
"Other" Precipitation Notes	Wind speed 12
Visibility (miles):	6

Hourly Observation (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW

	☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☒ SN = Snow
"Other" Precipitation Notes	Wind speed 15
Visibility (miles):	6

Hourly Observation (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	24
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☒ SN = Snow
"Other" Precipitation Notes	Wind speed 14
Visibility (miles):	7

Hourly Observation (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Wind speed 14
Visibility (miles):	9

Hourly Observation (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet

	[X] SN = Snow
"Other" Precipitation Notes	Wind speed 17
Visibility (miles):	9

Hourly Observation (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [ ] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	Wind speed 16

Visibility (miles):	10

Hourly Observation (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	Wind speed 14
Visibility (miles):	10
Incidental Species (Common Names):	EUST, AMCR, WITU, CANG, AMGO, ROPI, BCCH, MALL

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	135404
Survey Date	03/09/2021
User	Samantha Parker
Observer Initials:	SPF

Site Photos (4):

Start Time:	08:00 AM
End Time:	04:02 AM
Survey Duration (hr:min):	8:02

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	35
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	wind speed 4
Visibility (miles):	8

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	37
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [ ] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	wind speed 11
Visibility (miles):	8

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am

	[X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	37
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	wind speed 9
Visibility (miles):	8

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	37
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	wind speed 9
Visibility (miles):	8

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm

	☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	38
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	wind speed 9
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	39
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	wind speed 9
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm

	☐ 6:00 pm to 7:00 pm
Temperature (F):	40
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	wind speed 8
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	42

Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	wind speed 10
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	42
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25%

	[X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [ ] W
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	wind speed 10
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 10

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [X] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	43
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50%

	☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☐ W
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	wind speed 8
Visibility (miles):	9
Incidental Species (Common Names):	AMCR, WITU, EUST, MALL, CANG
Notes:	

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	138766
Survey Date	03/19/2021
User	Samantha Parker
Observer Initials:	SPF

Site Photos (4):

Start Time:	08:00 AM
End Time:	05:14 PM
Survey Duration (hr:min):	9:14

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	18
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am

	☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	21
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	15
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	23
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	14
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	24
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	14
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	27
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	13
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	29
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	12
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	31
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	12
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	[ ] 3:00 pm to 4:00 pm [X] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	32
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	11
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm

	[ ] 4:00 pm to 5:00 pm [X] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	32
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	9
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	EUST, AMCR, AMGO, ROPI, WITU
Notes:	active agricultural activities, military helicopters flying over

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	138767
Survey Date	03/26/2021
User	Samantha Parker
Observer Initials:	SPF

Site Photos (4):

Start Time:	08:00 AM
End Time:	05:25 AM
Survey Duration (hr:min):	9:25

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	59
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	11
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	7

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	17
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am

	☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	62
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	18
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	66
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [X] SW [ ] W
Wind Speed (mph):	17
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	66
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [X] SW [ ] W
Wind Speed (mph):	21
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	63
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [X] SW [ ] W
Wind Speed (mph):	19
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [X] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	7

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	20
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	21
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [X] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	22
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	58
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	24
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	8
Incidental Species (Common Names):	EUST, AMRO, AMCR, CANG, WODU, ROPI
Notes:	

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21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	146791
Survey Date	03/31/2021
User	Samantha Parker
Observer Initials:	SPF

Site Photos (4):






Start Time:	08:00 AM
End Time:	05:28 AM
Survey Duration (hr:min):	9:28

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	50
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	13
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	52
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	14
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am

	[ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	53
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	53
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	14
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	14
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	12
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [X] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	7

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [X] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	11
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [X] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [X] SW [ ] W
Wind Speed (mph):	10
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	[ ] 3:00 pm to 4:00 pm [X] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	53
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [X] SW [ ] W
Wind Speed (mph):	10
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	9

Hourly Conditions (At start of each hour block) 10

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	52
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☒ SW ☐ W
Wind Speed (mph):	10
Precipitation Code(s):	☒ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☒ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	9
Incidental Species (Common Names):	EUST, BLJA, AMCR, RWBL, BCCH, SOSP, EUST, CANG, NOCA, ROPI
Notes:	

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	146789
Survey Date	04/08/2021
User	Samantha Parker
Observer Initials:	SPF
Site Photos (4):	None
Start Time:	08:00 AM
End Time:	05:37 PM
Survey Duration (hr:min):	9:37

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour

- [X] 8:00 am to 9:00 am
- [ ] 9:00 am to 10:00 am
- [ ] 10:00 am to 11:00 am
- [ ] 11:00 am to 12:00 pm
- [ ] 12:00 pm to 1:00 pm
- [ ] 1:00 pm to 2:00 pm
- [ ] 2:00 pm to 3:00 pm
- [ ] 3:00 pm to 4:00 pm
- [ ] 4:00 pm to 5:00 pm
- [ ] 5:00 pm to 6:00 pm
- [ ] 6:00 pm to 7:00 pm

Temperature (F): 46

Cloud Cover (%):

- [X] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Mostly Cloudy = 50-90%
- [ ] Partly Cloudy = 25-50%
- [ ] Overcast = 90-100%

Wind Direction(s):

- [ ] E
- [ ] N
- [ ] NE

	☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	56
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW

	[ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	9
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	59
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S

	[X] SE [ ] SW [ ] W
Wind Speed (mph):	10
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	63
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [X] SE

	☐ SW ☐ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☒ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	71
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☒ SE ☐ SW

	☐ W
Wind Speed (mph):	8
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☒ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	74
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W

Wind Speed (mph):	12
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☒ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	75
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	13

Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	76
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	13
Precipitation Code(s):	☐ D = Drizzle

	☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	77
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	14
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail

	☐ O = other (write in)
	☐ R = Rain
	☐ SL = Sleet
	☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am
	☐ 9:00 am to 10:00 am
	☐ 10:00 am to 11:00 am
	☐ 11:00 am to 12:00 pm
	☐ 12:00 pm to 1:00 pm
	☐ 1:00 pm to 2:00 pm
	☐ 2:00 pm to 3:00 pm
	☐ 3:00 pm to 4:00 pm
	☐ 4:00 pm to 5:00 pm
	☒ 5:00 pm to 6:00 pm
	☐ 6:00 pm to 7:00 pm
Temperature (F):	78
Cloud Cover (%):	☒ Clear = 0-10%
	☐ Mostly Clear = 10-25%
	☐ Mostly Cloudy = 50-90%
	☐ Partly Cloudy = 25-50%
	☐ Overcast = 90-100%
Wind Direction(s):	☐ E
	☐ N
	☐ NE
	☐ NW
	☐ S
	☒ SE
	☐ SW
	☐ W
Wind Speed (mph):	16
Precipitation Code(s):	☐ D = Drizzle
	☐ H = Hail
	☐ O = other (write in)

	☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	EUST, AMCR, SOSP, RWBL
Notes:	

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	146792
Survey Date	04/13/2021
User	Samantha Parker
Observer Initials:	SPF
Site Photos (4):	

Start Time:	08:00 AM
End Time:	05:43 PM
Survey Duration (hr:min):	9:43

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	39
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [X] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [X] SW [ ] W
Wind Speed (mph):	3
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	6

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	43
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	3
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	6

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am

	[ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	48
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	3
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	53
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	5
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	4
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	56
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [X] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	3
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	58
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [X] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	2
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [X] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	4
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	[ ] 3:00 pm to 4:00 pm [X] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	59
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	4
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	AMCR, AMRO, AMGO, EUST, RWBL, SOSP, BLJA, ROPI
Notes:	active agricultural activity

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	144520
Survey Date	04/22/2021
User	Nick Pusateri
Observer Initials:	NP
Site Photos (4):	

Start Time:	08:00 AM
End Time:	05:53 PM
Survey Duration (hr:min):	09:53

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	29
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [X] SN = Snow
"Other" Precipitation Notes	light flurries limiting visibility
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	30
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	15
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☒ SN = Snow
"Other" Precipitation Notes	light flurries
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am

	[ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	32
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [X] SN = Snow
"Other" Precipitation Notes	heavier flurries
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	33
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [X] SN = Snow
"Other" Precipitation Notes	light flurries
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	35
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	21
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [X] SN = Snow
"Other" Precipitation Notes	light flurries and high winds
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	36
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	22
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None, snow stopped around 12:20pm and sun is poking through the clouds a little but still very overcast
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	37
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	21
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [X] SN = Snow
"Other" Precipitation Notes	very light snow started again at the top of the hour
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☒ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	37
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	21
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [X] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	38
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	21
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

This appendix has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

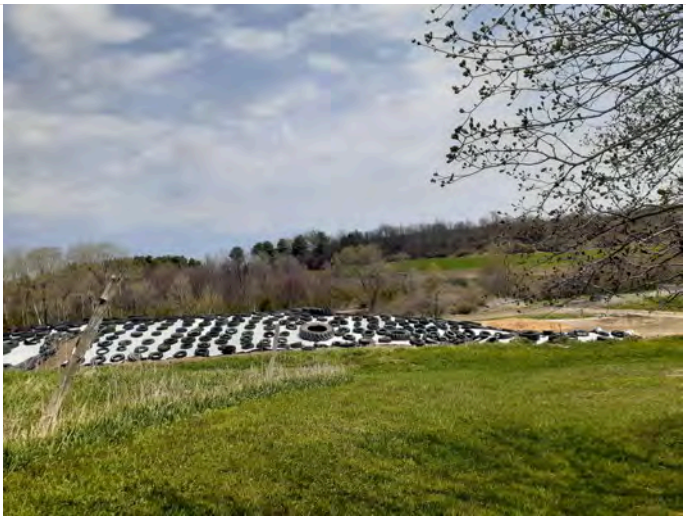
hour but shifted back to overcast with very light snow starting again from about 1:50-2:30pm. The whole day was quite windy causing any raptors to remain relatively low.

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	145599
Survey Date	04/27/2021
User	Nick Pusateri
Observer Initials:	NP
Site Photos (4):	



Start Time:	08:00 AM
End Time:	05:59 PM
Survey Duration (hr:min):	09:59

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	39
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [X] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	4
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	44
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am

	☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	48
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am

	☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	48
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	5
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	58
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [X] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	63
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [X] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [X] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	2
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	67
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [X] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	[ ] 3:00 pm to 4:00 pm [X] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	68
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [X] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [X] N [X] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	67
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☒ N ☒ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	None
Visibility (miles):	10
Incidental Species (Common Names):	SOSP, CANG, RWBL, AMRO, BCCH, AMCR, DEJU, EUST, ROPI, COGR, NOCA, BHCO, AMGO, WITU, TRES, CORA, NOFL
Notes:	It was a slow cool morning with a very light breeze but some TUVU began moving in the 10:00AM hour with a good push of high BWHA and RTHA coming in the early afternoon through the 01:00pm hour as it warmed up significantly. Skies went from completely overcast at the start of the survey to being mostly clear by 02:00pm. The flight slowed significantly when the wind slowed and then shifted to the E around

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	147680
Survey Date	05/04/2021
User	Nick Pusateri
Observer Initials:	NP
Site Photos (4):	

Start Time:	08:00 AM
End Time:	06:06 PM
Survey Duration (hr:min):	10:06

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	2
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [X] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	Very foggy
Visibility (miles):	.5

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	54
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	3
Precipitation Code(s):	☒ D = Drizzle ☐ H = Hail ☒ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	dense fog still present
Visibility (miles):	.75

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am

	[ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	59
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	6
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [X] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	dense fog still present
Visibility (miles):	.75

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am

	☐ 10:00 am to 11:00 am ☒ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	56
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☒ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	4
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	light fog but most has lifted
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 5

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	62
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	5
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	64
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	5
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	65
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	5
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	66
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [X] SE [ ] SW [ ] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	67
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW ☐ S ☒ SE ☐ SW ☐ W
Wind Speed (mph):	6
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm

	[ ] 4:00 pm to 5:00 pm [X] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	68
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[X] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	7
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5

Hourly Conditions (At start of each hour block) 11

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm

	☐ 5:00 pm to 6:00 pm ☒ 6:00 pm to 7:00 pm
Temperature (F):	67
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☒ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☐ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	5
Incidental Species (Common Names):	EUST, RWBL, AMRO, NOCA, SOSP, SAVS, COGR, BCCH, ROPI, AMCR, KILL, MALL, BHCO, AMGO, YEWA, CORA, GRCA, WITU, CANG, HOSP, MODO,
Notes:	At 08:00AM it was drizzling lightly with dense fog that limited visibily to about .5 miles. Light wind SE for most of the day. The fog had mostly lifted by 11:00AM improving visibility significantly. It remained overcast until it became partly cloudy at about 04:30 PM.

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	149728
Survey Date	05/11/2021
User	Nick Pusateri
Observer Initials:	NP
Site Photos (4):	

Start Time:	08:00 AM
End Time:	06:14 PM
Survey Duration (hr:min):	10:14

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	42
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	9
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	☐ 8:00 am to 9:00 am ☒ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	46
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	12
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	☐ 8:00 am to 9:00 am

	[ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	46
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	49
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	15
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	50
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	15
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [X] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	slight drizzle starting at almost exactly 12:00 PM. at about 12:30 PM it began sleeting/snowing limiting visibility.
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	50
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	16
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [X] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	on and off mix of drizzle and sleet
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	52
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	21
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [X] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	continue mix of rain and sleet
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	52
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	22
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [X] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☒ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	52
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	22
Precipitation Code(s):	☒ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [X] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	49
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	18
Precipitation Code(s):	[X] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 11

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☒ 6:00 pm to 7:00 pm
Temperature (F):	48
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	17
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	RWBL, EUST, SOSP, SAVS, ROPI, YEWA, AMGO, AMRO, AMCR, HOSP, COGR, KILL, CANG, CORA, MALL, MODO, BARS, BHCO, BCCH, NOCA
Notes:	It started as a chilly, windy, and clear morning. The skies turned to almost completely overcast by 12:00 PM with a strong wind building to about 15-25mph NW. There was a drizzle and sleet mix on and off 12:00-5:00PM with most of this period having no precipitation. Periods of precipitation at the survey site lasted only a few minutes at the most with about 15 minutes

between bouts. It appeared to be raining more frequently in the areas surrounding the survey site. That and the strong winds likely contributed to the relatively low raptor count and inconsistent flight.

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	151214
Survey Date	05/18/2021
User	Nick Pusateri
Observer Initials:	NP
Site Photos (4):	

Start Time:	08:00 AM
End Time:	06:22 PM
Survey Duration (hr:min):	10:22

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	49
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	50
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	7
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am

	[ ] 9:00 am to 10:00 am [X] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	58
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	7
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	68
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	7
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	72
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	72
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	7
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	72
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	8
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	72
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	9
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [X] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	[ ] 3:00 pm to 4:00 pm [X] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	73
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	9
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm

	[ ] 4:00 pm to 5:00 pm [X] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	73
Cloud Cover (%):	[X] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [ ] W
Wind Speed (mph):	6
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 11

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm

	☐ 5:00 pm to 6:00 pm ☒ 6:00 pm to 7:00 pm
Temperature (F):	72
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	9
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	SOSP, EUST, RWBL, COGR, ROPI, EAPH, YRWA, YEWA, BHCO, NOCA, AMCR, AMRO, BCCH, HOSP, SAVS, KILL, GRCA, AMGO, RBWO, BLJA, CORA, NOFL, BARS, CANG
Notes:	It was a sunny and warm day that got up to about 75F. There was a moderate NW breeze for most of the day. There was also a thin layer of haze that seemed to hang around for the first few hours as well. Other than that there were very few clouds.

EDR

21027 Blue Hill Wind Checklist

Spring Raptor Migration Survey 2

Project	21027 Blue Hill Wind
ID	155181
Survey Date	05/27/2021
User	Nick Pusateri
Observer Initials:	NP
Site Photos (4):	

Start Time:	08:00 AM
End Time:	06:31 PM
Survey Duration (hr:min):	10:31

Hourly Data

Hourly Conditions (At start of each hour block) 1

Survey Hour	[X] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	58
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	8
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [X] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 2

Survey Hour	[ ] 8:00 am to 9:00 am [X] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	58
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	8
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 3

Survey Hour	[ ] 8:00 am to 9:00 am

	☐ 9:00 am to 10:00 am ☒ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm ☐ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☐ Partly Cloudy = 25-50% ☒ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☐ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 4

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am

	[ ] 10:00 am to 11:00 am [X] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	10
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 5

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am

	[ ] 11:00 am to 12:00 pm [X] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	59
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	12
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 6

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm

	[ ] 12:00 pm to 1:00 pm [X] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [ ] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	13
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 7

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm

	[ ] 1:00 pm to 2:00 pm [X] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [X] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	13
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 8

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm

	[ ] 2:00 pm to 3:00 pm [X] 3:00 pm to 4:00 pm [ ] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	13
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 9

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm

	[ ] 3:00 pm to 4:00 pm [X] 4:00 pm to 5:00 pm [ ] 5:00 pm to 6:00 pm [ ] 6:00 pm to 7:00 pm
Temperature (F):	64
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Mostly Cloudy = 50-90% [ ] Partly Cloudy = 25-50% [ ] Overcast = 90-100%
Wind Direction(s):	[ ] E [ ] N [ ] NE [X] NW [ ] S [ ] SE [ ] SW [X] W
Wind Speed (mph):	10
Precipitation Code(s):	[ ] D = Drizzle [ ] H = Hail [ ] O = other (write in) [ ] R = Rain [ ] SL = Sleet [ ] SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 10

Survey Hour	[ ] 8:00 am to 9:00 am [ ] 9:00 am to 10:00 am [ ] 10:00 am to 11:00 am [ ] 11:00 am to 12:00 pm [ ] 12:00 pm to 1:00 pm [ ] 1:00 pm to 2:00 pm [ ] 2:00 pm to 3:00 pm [ ] 3:00 pm to 4:00 pm

	☐ 4:00 pm to 5:00 pm ☒ 5:00 pm to 6:00 pm ☐ 6:00 pm to 7:00 pm
Temperature (F):	61
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	12
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10

Hourly Conditions (At start of each hour block) 11

Survey Hour	☐ 8:00 am to 9:00 am ☐ 9:00 am to 10:00 am ☐ 10:00 am to 11:00 am ☐ 11:00 am to 12:00 pm ☐ 12:00 pm to 1:00 pm ☐ 1:00 pm to 2:00 pm ☐ 2:00 pm to 3:00 pm ☐ 3:00 pm to 4:00 pm ☐ 4:00 pm to 5:00 pm

	☐ 5:00 pm to 6:00 pm ☒ 6:00 pm to 7:00 pm
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Mostly Cloudy = 50-90% ☒ Partly Cloudy = 25-50% ☐ Overcast = 90-100%
Wind Direction(s):	☐ E ☐ N ☐ NE ☒ NW ☐ S ☐ SE ☐ SW ☒ W
Wind Speed (mph):	10
Precipitation Code(s):	☐ D = Drizzle ☐ H = Hail ☐ O = other (write in) ☐ R = Rain ☐ SL = Sleet ☐ SN = Snow
"Other" Precipitation Notes	
Visibility (miles):	10
Incidental Species (Common Names):	AMCR, SAVS, SOSP, CANG, EUST, AMRO, ROPI, RWBL, COGR, NOCA, KILL, BCCH, COYE, MODO, YRWA, EAPH, CORA, BARS, AMGO, BLJA, MALL, BHCO, NOFL
Notes:	It was a cooler day than it has been with temperatures only reaching the low 60s F. Overcast with moderate to strong wing for the whole day mostly from the west.

Fall Raptor Migration Survey Report

Blue Hill Wind Project

Town of Eaton, Madison County, New York

Prepared for:

Liberty Renewables Inc.
90 State Street, Suite 700
Albany, NY 12207
https://liberty-renewables.com/bluehillwind/

Prepared by:

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January 2022

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ACRONYMS AND ABBREVIATIONS

EDR	Environmental Design & Research, D.P.C.
NYNHP	New York Natural Heritage Program
NYSDEC	New York State Department of Environmental Conservation
ORES	Office of Renewable Energy Siting
SCC	species of special concern
SGCN	species of greatest conservation need

1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Liberty Renewables Inc. (the Applicant), Environmental Design & Research, D.P.C. (EDR) has prepared this Fall Raptor Migration Survey Report for the Blue Hill Wind Project, a proposed wind energy generation facility and associated infrastructure (the Facility) located in Madison County, New York. This report will be incorporated into an Application for a siting permit that is being prepared in accordance with New York's Accelerated Renewable Energy Growth and Community Benefit Act, Executive Law §94-c (Section 94-c) regulations.[1] The information included in this report is intended to inform the Applicant in the development of the Facility and assist the New York State Office of Renewable Energy Siting (ORES) and the New York State Department of Environmental Conservation (NYSDEC) in their review of the Facility's potential impacts on state-listed endangered and threatened bird species in accordance with the requirements of the Section 94-c and 6 NYCRR Part 182 (Part 182) regulations.

The purpose of the fall raptor migration surveys was to identify and document raptors that move through the vicinity including and surrounding the Facility Area during the fall migration season (defined by the NYSDEC as August 15 to December 15). All raptors (including eagles, falcons, harriers, hawks, ospreys, owls, and vultures) were targeted for the study, along with large flocks of non-raptor birds (e.g., waterfowl, corvids, icterids) and any special status species (i.e., endangered or threatened species, species of special concern [SSC], and species of greatest conservation need [SGCN] [NYSDEC, 2015a; NYSDEC, 2015b]). The fall raptor surveys were conducted by qualified biologists following the methodology established in the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects* (NYSDEC Survey Protocol). The scope of these surveys was defined in a Fall Raptor Migration Survey Work Plan that was submitted for ORES staff review in August 2021 (see **Appendix A**).

1.2 Facility Location and Description

The Applicant is proposing to construct a wind-powered electric generating facility of up to 27 megawatts and associated infrastructure within the Town of Eaton in Madison County, New York. The regional Facility location and the Facility Area are depicted on **Figures 1** and **2**, respectively. The Facility Area totals approximately 1,500 acres and is composed primarily of open agricultural fields, along with deciduous, evergreen, and mixed forestland, woody wetlands, and disturbed/developed areas (e.g., roadways, residences, commercial buildings). Within the Facility Area, a more limited subset of land will be selected for siting, design, construction, and operation of the Facility. Much of the Facility will be constructed in areas where disturbance has already occurred (e.g., agricultural fields that are used for crop cultivation) in order to minimize the need for vegetation removal within forestland and wetland areas.

[1] Chapter XVIII, Title 19 of the New York Codes, Rules and Regulations (NYCRR) Part 900. Available at: https://ores.ny.gov/regulations

2.0 BACKGROUND INFORMATION

2.1 Agency Database Review and Consultation

The Applicant has engaged in consultation with federal and state agencies regarding the potential presence of threatened and endangered species within the Facility Area. This has included database review via the U.S. Fish and Wildlife Service online Information for Planning and Consultation system, as well as correspondence with the New York Natural Heritage Program (NYNHP), NYSDEC, and ORES. A letter received from the U.S. Fish and Wildlife Service on March 4, 2021, indicated that no federally threatened, endangered, or candidate species are known to occur in the Facility Area (**Appendix B**). Correspondence with the NYNHP began with the submittal of a formal request for information regarding state and federally listed endangered and threatened species within the Facility Area on February 1, 2021. A response letter received from the NYNHP on March 17, 2021, stated that the NYNHP database does not currently contain any records of rare birds within 10 miles of the Facility Area (**Appendix B**). **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** In June 2021, ORES provided a Pre-application Wildlife Site Characterization Consultation letter which included initial findings of occupied habitat. ORES indicated that the Facility is not sited within areas of mapped occupied habitat for any state-listed species but recommended that the Applicant conduct breeding bird surveys and winter raptor surveys (**Appendix B**).

EDR also engaged in additional agency consultations and conducted reviews of other open-access databases (e.g., eBird, Christmas Bird Count) as part of preparing a Wildlife Site Characterization Report for the Facility. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION**

3.0 FALL RAPTOR MIGRATION SURVEYS

As noted in Section 2.1, fall raptor migration surveys for the Facility were conducted based on NYSDEC Survey Protocol. The surveys were intended to document the species, number, and flight height/direction of migrating raptors in order to allow for potential impact evaluation and inform the Facility development and permitting process.

3.1 Survey Period and Frequency

The survey period corresponded with the typical migratory period for most New York avian species that may pass by or transect the Facility Area during the fall migration season. As noted in Section 1.1, NYSDEC defines the fall migration season as beginning on August 15 and continuing through December 15. Therefore, surveys were conducted from August 17 to December 14, 2021, for a total of 18 surveys (representing more than 146 survey-hours).

Surveys were conducted once per week, starting at 0800 and lasting until at least 2 hours prior to sunset, which ranged from approximately 1800 to approximately 1430 as the season progressed. To the greatest extent practicable, surveys were not conducted on days when weather conditions would limit visibility (e.g., heavy rain, fog, snow or excessive cloud cover). Weather forecasts were reviewed regularly to select the most appropriate survey days.

3.2 Survey Location

The primary method for surveying migrating raptors consisted of daytime surveys conducted from one survey location. Spring raptor migration surveys were previously completed for the Facility in 2021. As part of designing that study, EDR conducted a desktop review of the Facility Area using a Geographic Information System (GIS) to evaluate topography, vegetative communities, land cover, and access constraints. The results of this analysis were used to identify the best single survey location for the spring raptor migration surveys. Current National Agriculture Imagery Program and New York Statewide Digital Orthoimagery Program aerial imagery were reviewed as part of this effort, along with topographic contours generated from New York State GIS Program Office lidar data. This survey location was also field-verified during the spring surveys. In order to provide more open views to the north, this survey location was moved approximately 1,200 feet to the north for the fall raptor migration surveys (see **Figure 3**). The survey location was positioned at the edge of an open agricultural field east of Davis Corners Road (County Highway 45) in the central portion of the Facility Area. This location provided open views of the sky and the Facility Area in multiple directions.

3.3 Survey Methodology

The primary method for surveying migrating raptors consisted of a daytime survey conducted from a single survey location. As described in Section 3.2, EDR conducted a GIS analysis to select a survey location with optimal, representative views of the vicinity including and surrounding the Facility Area. The suitability of

the survey location was also field-verified and micro-sited during the first field survey. The survey location was established at the edge of an open agricultural field east of Davis Corners Road (County Highway 45) in the central portion of the Facility Area (see **Figure 3**). This location afforded open views of the sky and the Facility Area in multiple directions.

During surveys, biologists stood and/or sat at the stationary survey location and conducted systematic visual scans of the sky in all directions in order to detect raptors and other birds passing through the area and/or utilizing habitat within the Facility Area. Binoculars of 8x or 10x magnification were used as the primary visual aid for avian identification and counts. Biologists recorded detailed information for all raptors observed, as well as large flocks of non-raptor birds (i.e., more than 50 individuals). In addition, any special status (i.e., endangered, threatened, SSC, SGCN) species observations were documented, regardless of number.

Survey data were recorded in a standardized and organized fashion using data sheets and a mobile GIS application that allowed for digitization of flight path lines and perch locations. Data recorded for each fall raptor migration survey included the following:

- Observer initials
- Date
- Start and end time
- Hourly weather conditions (temperature, cloud cover, prevailing wind direction, wind speed, precipitation type [if any], and visibility)
- The number of individuals and identification of each species observed
- The start and end time of each observation
- Sex and age of individuals (when possible)
- Minimum and maximum flight height
- Average flight height and direction
- Behavior(s) (e.g., flying, perched, foraging)
- Descriptions and additional notes.

Non-raptor bird species flocks composed of more than 50 individuals and all non-raptor special status species were also noted and mapped in a similar manner to raptor observations. All other non-raptor bird species that did not meet those criteria were noted as incidental species simply for their presence (the number of individuals was not recorded). Locations of all raptor species were indicated on an aerial-based map of the survey area. All observations of special status species (including detailed behavioral descriptions) were recorded.

3.3.1 Data Analysis

Several metrics were calculated for each raptor species observed during the fall migration surveys. First, the total number of observations was identified for each species including observations of raptors in flight or perched at any distance relative to the survey location. Observations were considered equivalent to

individuals for the purpose of the analysis, as it is not always possible to discern among individuals of the same species during surveys (i.e., the same individuals may or may not be present at the same locations from week to week). Frequency was then calculated for each species by dividing the number of survey days during which observations were recorded by the total number of survey days. Mean and median flight heights for each species were calculated using the average flight height for each individual of that species recorded in the field. The percentage of individuals in flight was calculated based on the total number of individuals perched and the total number of individuals in flight observed for each species. The dominant flight direction was determined by reviewing flight paths and recorded flight pattern data; in some cases, there was no obvious dominant flight direction. Temporal use was tabulated for raptor types based on the time of observation for every individual.

3.4 Survey Results

A total of 18 surveys were conducted between August 17 and December 14, 2021, resulting in more than 146 observer-hours (8,806 observer-minutes). A summary of completed survey information is provided in **Table 1**. Overall, a total of 211 raptors were recorded throughout the season. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** Turkey vultures and broad-winged hawks were the most observed species, with the former noted most frequently. A summary of raptor observations is provided in **Table 2**, and raptor observations are presented in **Figure 4**. All raptor observations are listed in **Appendix C** and survey data sheets are provided in **Appendix D**.

The observed flight path for raptor species averaged in a south-dominant direction. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** The overall average flight height for all observations was 85 feet. All raptors observed were seen in flight. A summary of raptor flight metrics is provided in **Table 3**.

Table 1. Summary of Completed Surveys

Survey Date	Start Time (24-hour)	End Time (24-hour)	Survey Duration[1]	Temp. Range (°F)	Cloud Cover Range (%)	Wind Direction(s)	Wind Speed Range (mph)	Precip.[2]	Visibility Range (mi)	Number of Raptor Species Observed	Number of Raptor Individuals Observed
08/17/2021	0800	1802	10:02	66-77	90-100	E, SE, SSE, ESE,	3-8	R, D	4-10	1	8
08/24/2021	0800	1751	9:51	68-81	10-90	W, WNW	6-9		10	3	51
08/31/2021	0800	1739	9:39	59-75	25-90	W, WSW, WNW	3-9		10	4	17
09/07/2021	0800	1727	9:27	55-74	10-90	WSW, SW, SSW	4-7		10	2	15
09/14/2021	0800	1715	9:15	56-80	10-90	SE, ESE, SSE, SSW	4-9		10	3	39
09/20/2021	0800	1704	9:04	49-78	0-25	SSE, SE	5-8		10	2	10
09/28/2021	0800	1650	8:50	52-65	25-100	NW	5-9	D, F	1-10	5	21
10/05/2021	0800	1637	8:37	57-64	90-100	E, ESE, SE, ENE	4-7	D, F	1	0	0
10/12/2021	0800	1625	8:25	59-73	0-25	SSE, ESE, SE	7-8		10	3	12
10/19/2021	0800	1614	8:14	44-61	10-90	W, NW, WNW	8-15		10	5	16
10/25/2021	0800	1605	8:05	46-66	50-100	SE, SSE	8-10	D	10	2	4
11/02/2021	0800	1554	7:54	36-48	50-100	SW, WNW, W	4-10	R, D	10	2	7
11/09/2021	0800	1445	6:45	44-58	50-100	W, WNW	5-6		10	2	5
11/17/2021	0800	1438	6:38	34-48	50-90	SSE, SE	6-14		10	2	4
11/23/2021	0800	1433	6:43	30-32	50-100	NW	10-14	SN	10	0	0

Survey Date	Start Time (24-hour)	End Time (24-hour)	Survey Duration[1]	Temp. Range (°F)	Cloud Cover Range (%)	Wind Direction(s)	Wind Speed Range (mph)	Precip.[2]	Visibility Range (mi)	Number of Raptor Species Observed	Number of Raptor Individuals Observed
11/30/2021	0800	1430	6:30	32-35	90-100	SE, SSE, S	4-5	D, M	10	1	2
12/08/2021	0800	1428	6:28	29-34	90-100	NE, NNE, SSE, S	5-7	S	1-10	0	0
12/14/2021	0800	1429	6:29	38-41	0-25	NW, NNW	6-7		10	0	0

[1]Time spent at survey location (hh:mm).

[2]D = drizzle; R = rain; SL = sleet; H = hail; SN = snow; F = fog; M = mist.

BEGIN CONFIDENTIAL INFORMATION<

Table 2. Summary of Raptors Observed

Raptor Group/Species	Scientific Name	Number of Survey Days Observed	Frequency[1]	Number of Individuals
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Buteos				
Broad-winged Hawk	*Buteo platypterus*	1	0.06	23
Red-tailed Hawk	*Buteo jamaicensis*	7	0.39	12
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Falcons				
American Kestrel	*Falco sparverius*	2	0.11	2
Merlin	*Falco columbarius*	1	0.06	1
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Vultures				
Turkey Vulture	*Cathartes aura*	13	0.72	157

[1]Represents the number of survey days the species was observed divided by the total number of survey days (18).

Table 3. Summary of Raptor Flight Metrics

Raptor Group/Species	Total Number of Individuals[1]	Mean Flight Height (feet)	Median Flight Height (feet)	Percentage of Individuals in Flight	Dominant Flight Direction
[redacted]					
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Buteos					
Broad-winged Hawk	23	94	75	100	South
Red-tailed Hawk	12	53	50	100	Variable
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]					
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Falcons					
American Kestrel	2	25	25	100	South
Merlin	1	150	150	100	South
[redacted]					
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Vultures					
Turkey Vulture	157	88	75	100	South
Total	**211**	**85**	**75**	**100**	

[1]Number of individuals observed over the course of the season. Observations were considered equivalent to individuals for the purpose of this table, though the same individuals may or may not have been observed multiple times.

>END CONFIDENTIAL INFORMATION

The period (24-hour) with the most raptor observations was 1300 to 1400, with 47 individuals. The second most productive period was 1100 to 1200, with 38 individuals. These 2 hours accounted for approximately 40% of all observations. A summary of raptor temporal use is provided in **Table 4**.

BEGIN CONFIDENTIAL INFORMATION<

Table 4. Summary of Raptor Temporal Use

Species	Time Period (24-hour)									
	0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800
American Kestrel	0	0	0	0	1	0	1	0	0	0
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Broad-winged Hawk	0	0	0	0	0	23	0	0	0	0
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Merlin	0	0	0	1	0	0	0	0	0	0
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Red-tailed Hawk	1	1	0	5	3	2	1	0	0	0
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Turkey Vulture	1	13	22	27	22	22	20	17	29	0
Total	**3**	**16**	**25**	**38**	**28**	**47**	**23**	**20**	**29**	**0**

>END CONFIDENTIAL INFORMATION

3.4.1 Special-Status Species, Large Flocks, and Incidental Species

A total of four state-listed raptor species were observed throughout the survey period. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** A summary of state-listed threatened raptor observations is provided in **Table 5**. One large flock of 69 Canada geese was observed during a survey on August 28, 2021.

Table 5. State-Listed Threatened Raptor Observations

BEGIN CONFIDENTIAL INFORMATION<

Species Common Name	Species Scientific Name	Conservation Status in New York	Date	Time (24-hour)	Number of Individuals	Avg Flight Height (feet)	Description
[redacted]							
[redacted]							
[redacted]							
[redacted]							
[redacted]							

Species Common Name	Species Scientific Name	Conservation Status in New York	Date	Time (24-hour)	Number of Individuals	Avg Flight Height (feet)	Description
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Species Common Name	Species Scientific Name	Conservation Status in New York	Date	Time (24-hour)	Number of Individuals	Avg Flight Height (feet)	Description
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

>END CONFIDENTIAL INFORMATION

Non-raptor bird species that did not meet the criteria of large flocks or individuals of special status species were noted as incidental species simply for their presence (the number of individuals was not recorded). Incidental avian species observed during each survey were noted on the survey data sheets (see **Appendix D).**

4.0 CONCLUSIONS

Fall raptor migration surveys were conducted at a single survey location within the Facility Area between August 17 and December 14, 2021, totaling more than 146 observer-hours over the course of 18 survey days. Surveys were conducted from 0800 until 2 hours before sunset. Overall, a total of 211 raptors of ten species were observed. **BEGIN CONFIDENTIAL INFORMATION** <[redacted]

[redacted]>**END CONFIDENTIAL INFORMATION** However, as recommended by ORES and NYSDEC, winter raptor surveys are being conducted during the 2021–2022 season to evaluate the potential presence of occupied wintering habitat.

5.0 REFERENCES

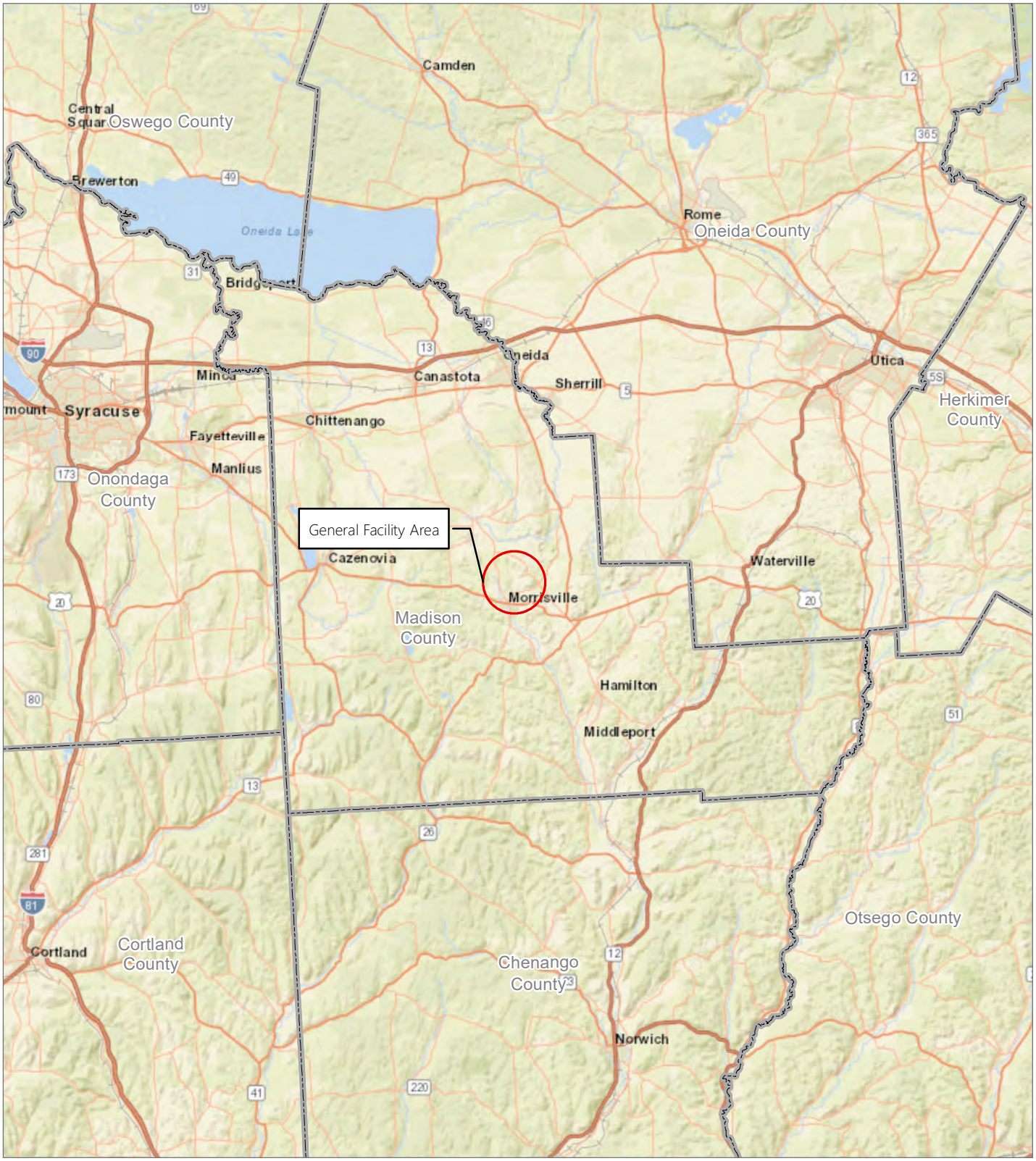
Bird Studies Canada. 2017. *Wind energy bird and bat monitoring database, summary of the findings from post construction monitoring reports*. Canadian Wind Energy Association, Environment Canada, Ontario Ministry of Natural Resources. 2017 (July).

New York State Department of Environmental Conservation (NYSDEC). 2015a. *List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State*. Available at: http://www.dec.ny.gov/animals/7494.html (Accessed March 2021).

New York State Department of Environmental Conservation (NYSDEC). 2015b. *New York State Species of Greatest Conservation Need*. Available at: https://www.dec.ny.gov/docs/wildlife_pdf/sgnc2015list.pdf (Accessed January 2022).

FIGURES

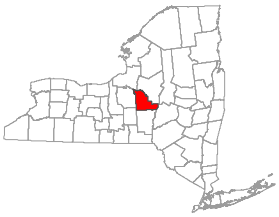
Figure 1: Regional Facility Location



Blue Hill Wind Project

Town of Eaton, Madison County, New York

Fall Raptor Migration Survey Report



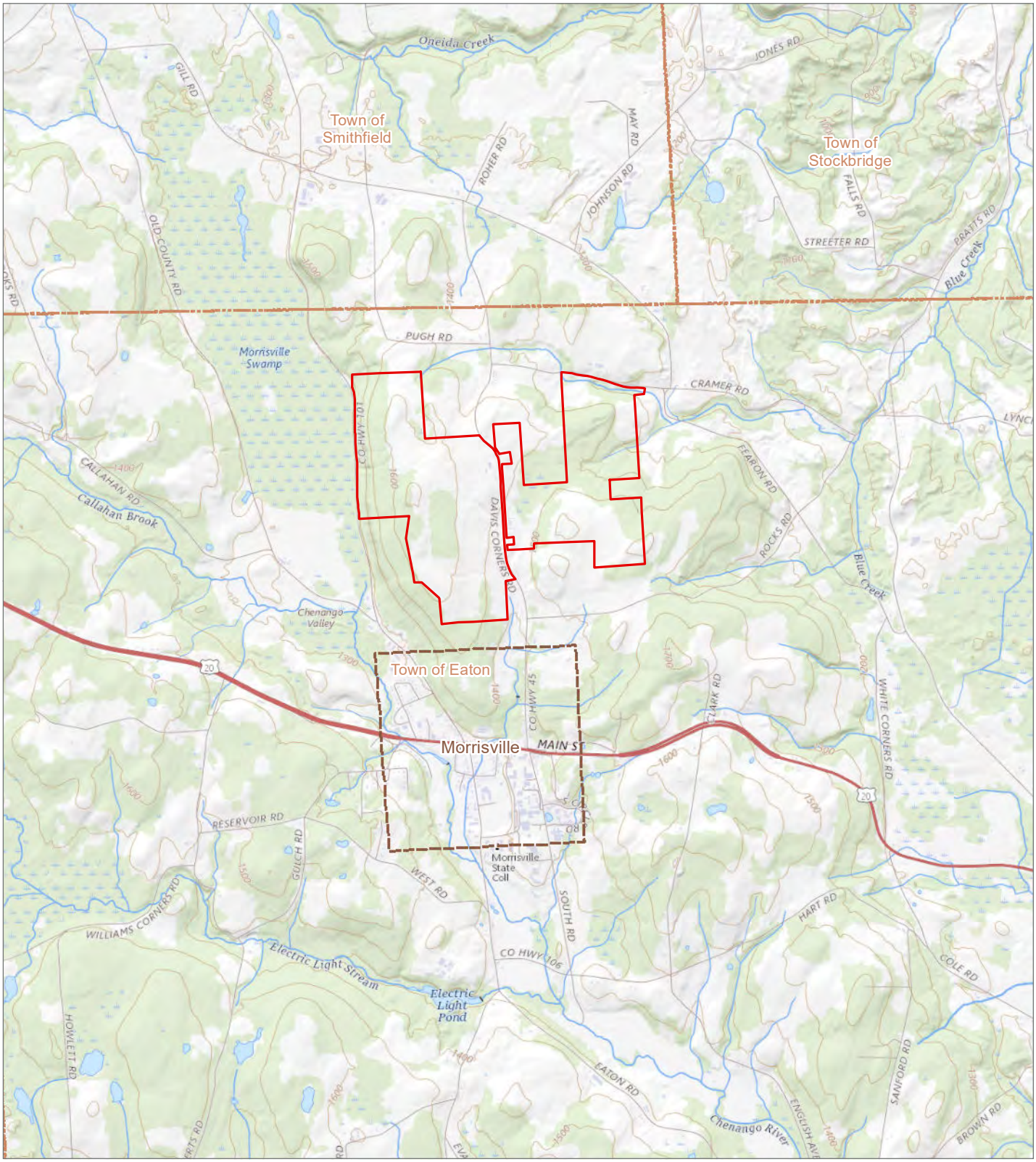
0 2.5 5 10

Miles

Prepared January 19, 2022

Basemap: Esri ArcGIS Online "World Street Map" map service

Figure 2. Facility Area



Blue Hill Wind Project

Town of Eaton, Madison County, New York

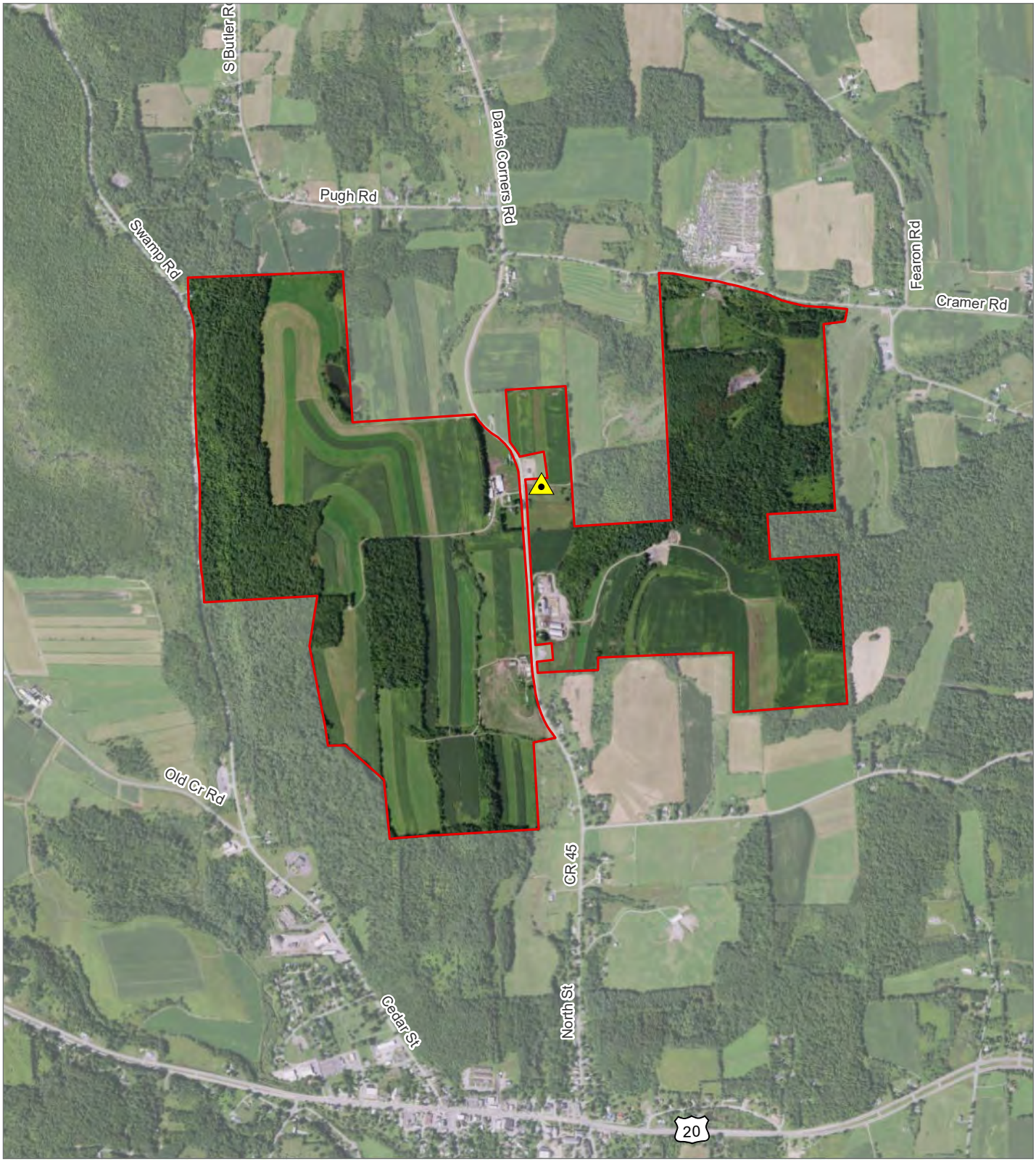
Fall Raptor Migration Survey Report

Facility Area

0 1,000 2,000 4,000
Feet

Prepared January 19, 2022
Basemap: Esri ArcGIS Online "USGS Topo" map service.

Figure 3. Survey Location



Blue Hill Wind Project

Town of Eaton, Madison County, New York

Fall Raptor Migration Survey Report

Survey Location

Facility Area

0 500 1,000 2,000

Feet

Prepared January 19, 2022

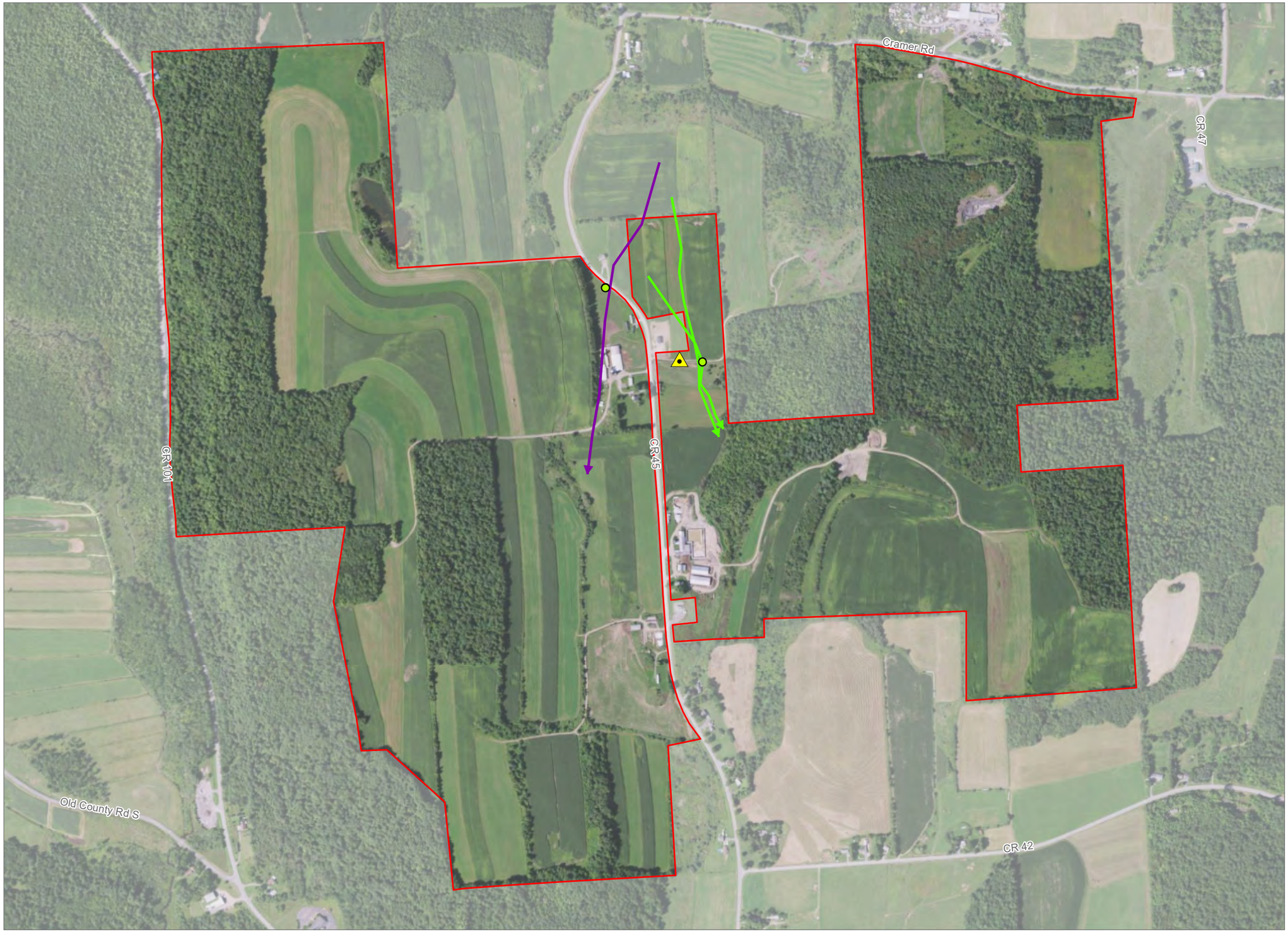
Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service.

This figure has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

This figure has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

This figure has been redacted from this publicly available document because it contains protected/confidential information regarding species listed as endangered, threatened, or special concern in New York.

Figure 4. Raptor Observations - Falcons



Blue Hill Wind Project

Town of Eaton
Madison County, New York

Fall Raptor Migration Survey Report

- Survey Location
- American Kestrel Perch Location
- American Kestrel Flight Path
- Merlin Flight Path
- Facility Area

0 500 1,000
Feet

Prepared January 19, 2022
Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service.

EDR

Figure 4. Raptor Observations - Vultures

Blue Hill Wind Project

Town of Eaton
Madison County, New York

Fall Raptor Migration Survey Report

Survey Location
Turkey Vulture Flight Path
Facility Area

0 500 1,000
Feet

Prepared January 19, 2022
Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service.

EDR

APPENDIX A

Fall Raptor Migration Survey Work Plan

Fall Raptor Migration Survey Work Plan

Blue Hill Wind Project

Town of Eaton, Madison County, New York

Prepared for:

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August 2021

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Liberty Renewables Inc. (the Applicant), Environmental Design & Research, D.P.C. (EDR) has prepared this Fall Raptor Migration Survey Work Plan for the Blue Hill Wind Project, a proposed wind energy generation facility and associated infrastructure (the Facility) located in Madison County, New York. This work plan will be incorporated into an Application for a siting permit that is being prepared in accordance with New York's Accelerated Renewable Energy Growth and Community Benefit Act, Executive Law §94-c (Section 94-c) regulations.[1] The information included in this report is intended to inform the Applicant in the development of the Facility and assist the New York State Office of Renewable Energy Siting (ORES) and the New York State Department of Environmental Conservation (NYSDEC) in their review of the Facility's potential impacts on state-listed endangered and threatened bird species in accordance with the requirements of the Section 94-c and 6 NYCRR Part 182 (Part 182) regulations.

The purpose of the fall raptor migration surveys is to identify and document raptors (including eagles, falcons, harriers, hawks, ospreys, owls, and vultures) that move through the area including and surrounding the Facility Area during the fall migration season (defined by the NYSDEC as August 15 to December 15). All raptors will be targeted for the study, along with large flocks of non-raptor birds (e.g., waterfowl, corvids, icterids) and any special status species (i.e., endangered or threatened species, species of special concern, and species of greatest conservation need [NYSDEC, 2015a; NYSDEC, 2015b]). The fall raptor surveys will be conducted by qualified biologists following the methodology established in the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects* (NYSDEC Survey Protocol).

1.2 Facility Location and Description

The Applicant is proposing to construct an up to 27-megawatt (MW) wind-powered electric generating facility and associated infrastructure within the Town of Eaton in Madison County, New York. The regional Facility location and the Facility Area are depicted on Figures 1 and 2, respectively. The Facility Area totals approximately 1,500 acres and is composed primarily of open agricultural fields, along with deciduous, evergreen, and mixed forestland, woody wetlands, and disturbed/developed areas (e.g., roadways, residences, commercial buildings). Within the Facility Area, a much more limited subset of land will be selected for the siting, design, construction, and operation of the Facility. Much of the Facility will be constructed in areas where disturbance has already occurred (e.g., agricultural fields that are used for crop cultivation) in order to minimize the need for vegetation removal within forested and wetland areas.

[1] Chapter XVIII, Title 19 of the New York Codes, Rules and Regulations (NYCRR) Part 900. Available at: https://ores.ny.gov/regulations

2.0 BACKGROUND INFORMATION

2.1 Agency Database Review and Consultation

The Applicant has engaged in consultation with federal and state agencies regarding the potential presence of threatened and endangered species within the Facility Area. This has included database review via the U.S. Fish and Wildlife Service (USFWS) online Information for Planning and Consultation (IPaC) system, as well as correspondence with the New York Natural Heritage Program (NYNHP), NYSDEC, and ORES. A letter received from the USFWS on March 4, 2021, indicated that no federally threatened, endangered, or candidate species are known to occur in the Facility Area (Appendix A). Correspondence with the NYNHP began with the submittal of a formal request for information regarding state and federally-listed endangered and threatened species within the Facility Area on February 1, 2021. A response letter received from the NYNHP on March 17, 2021 stated that the NYNHP database does not currently contain any records of rare birds within 10 miles of the Facility Area (Appendix A). **BEGIN CONFIDENTIAL INFORMATION**<[redacted]>**END CONFIDENTIAL INFORMATION** In June 2021, ORES provided a Pre-application Wildlife Site Characterization Consultation letter, which included initial findings of occupied habitat. ORES indicated that the Facility is not sited within areas of mapped occupied habitat for any state-listed species, but recommended that the Applicant conduct breeding bird surveys and winter raptor surveys (Appendix A).

EDR also engaged in additional agency consultations and conducted reviews of other open-access databases (e.g., eBird, Christmas Bird Count) as part of preparing a Wildlife Site Characterization Report for the Facility. **BEGIN CONFIDENTIAL INFORMATION**<[redacted]>**END CONFIDENTIAL INFORMATION**

3.0 FALL RAPTOR MIGRATION SURVEYS

3.1 Survey Period and Frequency

The survey period will correspond with the typical fall migratory period for the majority of New York avian species that may pass by or through the Facility Area during the fall migration season. As noted above, the NYSDEC defines the fall migration season as beginning on August 15 and continuing through December 15. Therefore, surveys will be conducted within this time period. Surveys will be performed once per week between 8:00 a.m. and until at least two hours prior to sunset, which will range from approximately 6:00 p.m. to approximately 2:30 p.m. as the season progresses. To the greatest extent practicable, surveys will not be conducted on days when weather conditions would limit visibility (e.g., heavy rain, fog, snow or

excessive cloud cover). Weather forecasts will be reviewed regularly in order to select the most appropriate survey days.

3.2 Survey Location

The primary method for surveying migrating raptors will consist of daytime surveys conducted from one survey location. Spring raptor migration surveys were previously completed for the Facility in 2021. As part of designing that study, EDR conducted a desktop review of the Facility Area using a Geographic Information System (GIS) to evaluate topography, vegetative communities, land cover, and access constraints. The results of this analysis were used to identify the best single survey location for the spring raptor migration surveys. Current National Agriculture Imagery Program (NAIP) and New York Statewide Digital Orthoimagery Program (NYSDOP) aerial imagery were reviewed as part of this effort, along with topographic contours generated from New York State GIS Program Office (NYSGPO) lidar data. This survey location was also field-verified during the spring surveys. In order to provide more open views to the north, this survey location will be moved approximately 1,200 feet to the north for the fall raptor migration surveys (see Figure 3). The proposed survey location is positioned at the edge of an open agricultural field east of Davis Corners Road (County Highway 45) in the central portion of the Facility Area. This location will provide open views of the sky and the Facility Area in multiple directions.

3.3 Surveyor Qualifications

Fall raptor migration surveys will be conducted by experienced, trained biologists to ensure accurate species identification and compliance with this work plan. EDR biologists Max Baber, Nicholas Pusateri, Tiffany Clay, and Samouel Beguin will conduct and/or provide support and technical direction for the survey effort and ensure that quality assurance and quality control procedures are followed.

Mr. Baber is an Environmental Analyst with more than eight years of experience in wildlife biology, wildlife management, and scientific research. He received a Bachelor of Science degree in wildlife biology from The Evergreen State College. Mr. Baber's experience includes threatened and endangered wildlife species surveys, habitat assessments, scientific study design, scientific writing, and statistical analysis. Mr. Baber's professional focus is on avian research and advocacy. He has designed, overseen, and conducted avian surveys implementing a broad range of research methods including nest searching and monitoring, territory mapping, mist netting and banding, point count surveys, radio telemetry and tracking, migratory bird counts, and bioacoustic recording and monitoring. Mr. Baber has also taught these methods to technicians, interns, volunteers and students. At EDR, Mr. Baber has conducted breeding bird surveys, fall raptor migration surveys, and wintering raptor surveys, and supports the design and implementation of avian surveys for renewable energy projects.

Mr. Pusateri is a Field Ecologist with more than five years of experience in wildlife biology, conservation ecology, and scientific research. He received a Bachelor of Science degree in Environmental Science and Biology with a concentration in Terrestrial Ecology from The College at Brockport State University of New York (SUNY Brockport). Mr. Pusateri's experience includes avian field surveys, avian banding, and scientific writing. Prior to joining EDR, Mr. Pusateri spent two field seasons as an avian migration counter at Hawk

Ridge Bird Observatory in Duluth, Minnesota and another field season as a Field Ecologist with Bird Conservancy of the Rockies in Colorado, Wyoming, and Idaho. Mr. Pusateri has also spent multiple seasons interning and volunteering with Braddock Bay Raptor Research in New York, aiding in migration and owl surveys. At EDR, Mr. Pusateri has conducted breeding bird surveys and raptor migration surveys, and supports the design and implementation of avian surveys for renewable energy projects.

Ms. Clay is an Environmental Analyst with more than six years of experience in the natural resources field. She received a Bachelor of Science in Environmental Science and Biology from The College at Brockport State University of New York (SUNY Brockport) and a master's degree in Environmental Science and Ecology from SUNY Brockport. Prior to joining EDR, Ms. Clay spent two field seasons as a crew leader conducting avian community surveys (acoustic and visual) for the Great Lakes Coastal Wetland Monitoring Project. As a long-term volunteer, Ms. Clay has also conducted point count surveys for breeding birds at Montezuma National Wildlife Refuge. Ms. Clay is a member of The Rochester Birding Association and is an avid bird watcher in her free time. At EDR, Ms. Clay has been involved in designing, conducting, and managing avian surveys and habitat assessments for numerous utility- and community-scale renewable energy projects.

Mr. Beguin is a Senior Environmental Analyst with more than seven years of experience in environmental consulting, wildlife biology, and scientific research. He received a Master of Science degree in Environmental and Forest Biology from the State University of New York College of Environmental Science and Forestry and a Bachelor of Arts degree in Biology and Environmental Studies from Middlebury College. Mr. Beguin's experience includes threatened and endangered wildlife species surveys, habitat assessments, environmental permitting, mitigation planning, agency consultation, GIS mapping and data analysis, and bioacoustic monitoring of avian communities. At EDR, Mr. Beguin has been involved in designing, conducting, and managing avian surveys and habitat assessments for numerous utility- and community-scale renewable energy projects.

3.4 Survey Methodology

During surveys, biologists will stand and/or sit at the stationary survey location and conduct systematic visual scans of the sky in all directions in order to detect raptors and other birds passing through the area and/or utilizing habitat within the Facility Area. Binoculars of 8x or 10x magnification will be used as the primary visual aid for avian identification and counts. Biologists will record detailed information for all raptors observed, as well as large flocks of non-raptor birds (i.e., more than 50 individuals). In addition, any observations of special status species (i.e., endangered, threatened, special concern, species of greatest conservation need) will be documented, regardless of number.

Survey data will be recorded in a standardized and organized fashion using data sheets and a mobile GIS application that will allow for digitization of flight path lines and perch locations. Data recorded for each fall raptor migration survey will include:

- Observer initials;

- Date;
- Start and end time;
- Hourly weather conditions (temperature, cloud cover, prevailing wind direction, wind speed, precipitation type [if any], and visibility);
- The number of individuals and identification of each species observed;
- The start and end time of each observation;
- Sex and age of individuals (when possible);
- Minimum and maximum flight height;
- Average flight height and direction;
- Behavior(s) (e.g., flying, perched, foraging); and
- Descriptions and additional notes.

Non-raptor bird species flocks composed of more than 50 individuals and all non-raptor special status species will also be noted and mapped in a similar manner to raptor observations. All other non-raptor bird species that do not meet those criteria will be noted as incidental species simply for their presence (the number of individuals will not be recorded). Locations of all raptor species will be indicated on an aerial-based map of the survey area. All observations of special status species (including detailed behavioral descriptions) will be recorded.

3.4.1 Data Analysis

Several metrics will be calculated for each raptor species observed during surveys. First, the total number of observations will be identified for each species including observations of raptors in flight or perched at any distance relative to the survey location. Observations will be considered equivalent to individuals for the purpose of the analysis, as it is not always possible to discern among individuals of the same species during surveys (i.e., the same individuals may or may not be present at the same locations from week to week). Frequency will then be calculated for each species by dividing the number of survey days during which observations are recorded by the total number of survey days. Mean and median flight heights for each species will be calculated using the average flight height for each individual of that species recorded in the field. Percent of individuals in flight will be calculated based on the total number of individuals perched and the total number of individuals in flight observed for each species. The dominant flight direction will be determined by reviewing flight paths and recorded flight pattern data; in some cases, there may be no obvious dominant flight direction. Temporal use will also be tabulated for each species based on the time of observation for every individual.

3.5 Reporting

A final report will be prepared and submitted to ORES and the NYSDEC on behalf of the Applicant after the surveys have been completed. The report will summarize all observations of migratory raptors, and all special status species observed during the surveys. Summary information will include:

- The date, start time, end time, duration, weather conditions, and number of raptor species and individuals observed for each survey;

- The total number of raptor species observed during the survey period;
- The total number of individuals and frequency for each species observed;
- An indication of the dates, times, and locations for each raptor observation;
- The observed mean flight height, median flight height, percent of individuals in flight, and dominant flight direction for each raptor species;
- An indication of the time periods during which each species was observed;
- Detailed information and descriptions for each state-listed raptor observation; and
- A list of incidental avian species observed during surveys.

The report will include supporting tables, figures, and appendices. In addition, GIS shapefiles will be provided to ORES and the NYSDEC for the survey location, the Facility Area boundary, flight path lines, and perch point locations. For any observations of state-listed threatened and endangered species, the report will provide the date, time observed, number of individuals, behavior(s), flight height, flight direction, and other relevant information, as applicable. Locations and GIS shapefiles will be provided for all threatened and endangered species observations (including points for any perching/roosting locations, flight path lines, and/or polygons for on-site use areas).

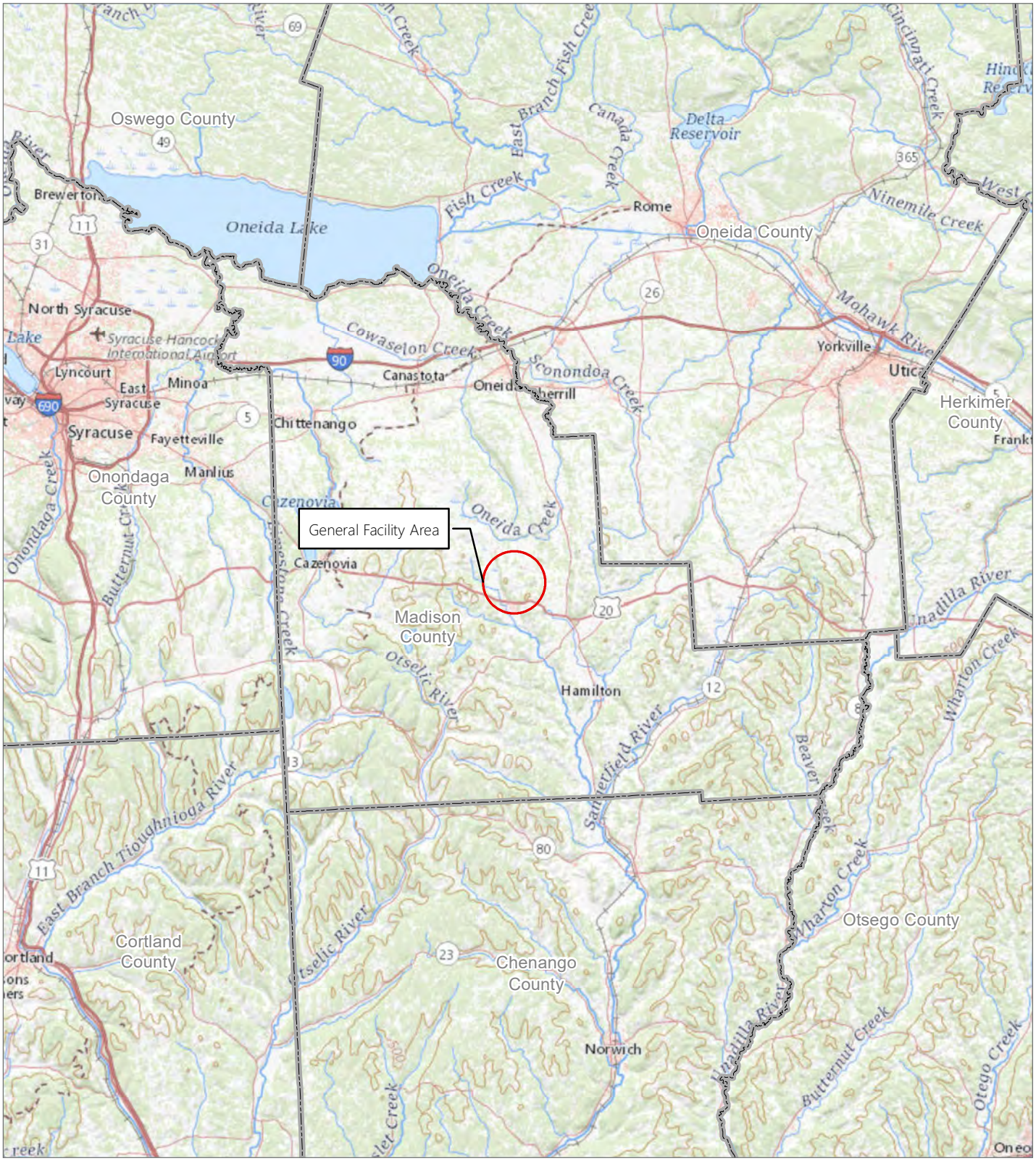
3.6 REFERENCES

New York State Department of Environmental Conservation (NYSDEC). 2015a. *List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State*. Available at: http://www.dec.ny.gov/animals/7494.html (Accessed March 2021).

NYSDEC. 2015b. *Species of Greatest Conservation Need (SGCN)*. Available at: https://www.dec.ny.gov/animals/9406.html (Accessed March 2021).

FIGURES

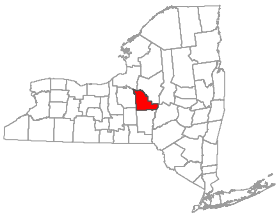
Figure 1: Regional Facility Location



Blue Hill Wind Project

Town of Eaton, Madison County, New York

Fall Raptor Migration Survey Work Plan



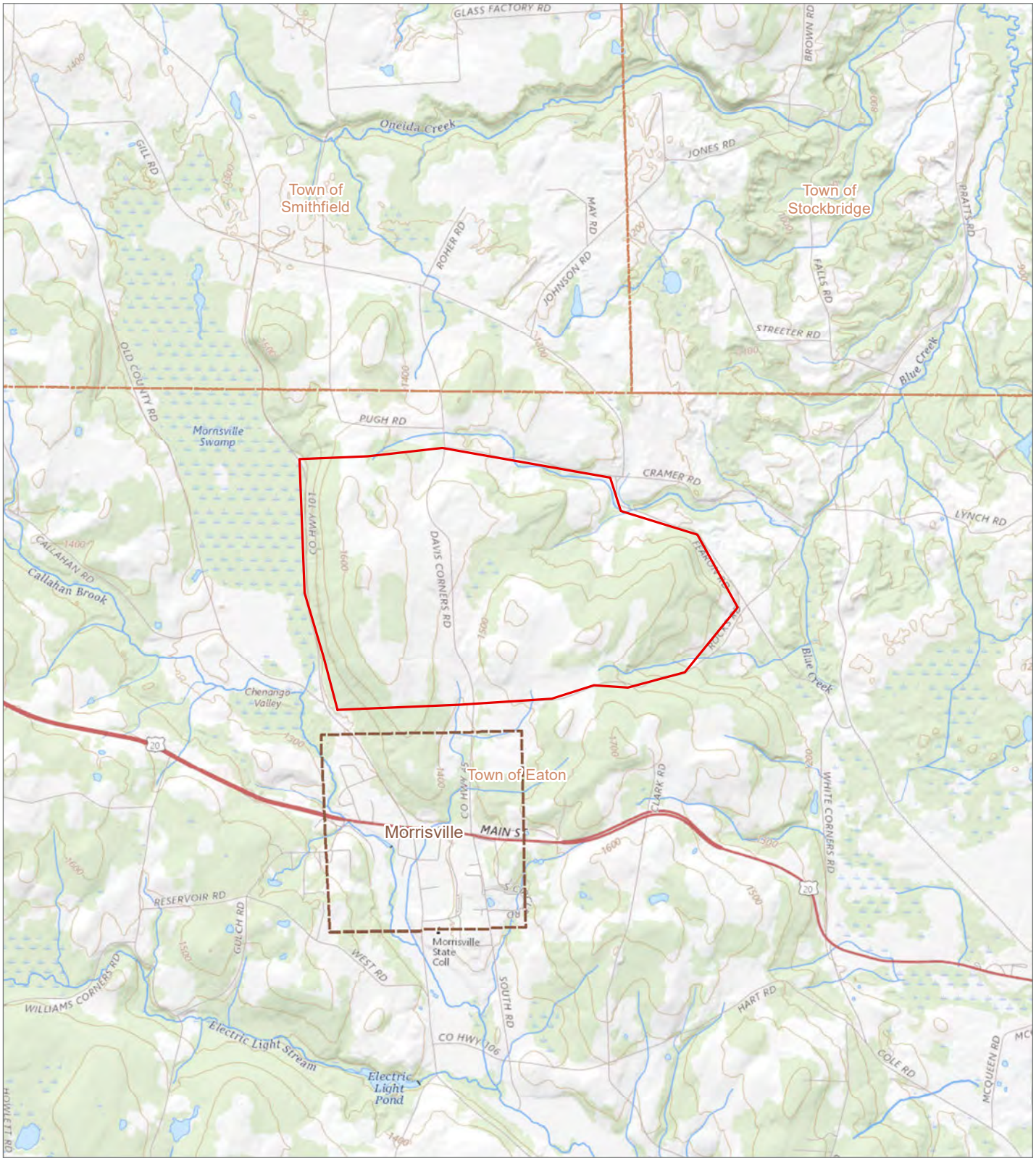
0 2.5 5 10

Miles

Prepared August 11, 2021

Basemap: Esri ArcGIS Online "USGS Topo" map service.

Figure 2. Facility Area



Blue Hill Wind Project

Town of Eaton, Madison County, New York

Fall Raptor Migration Survey Work Plan

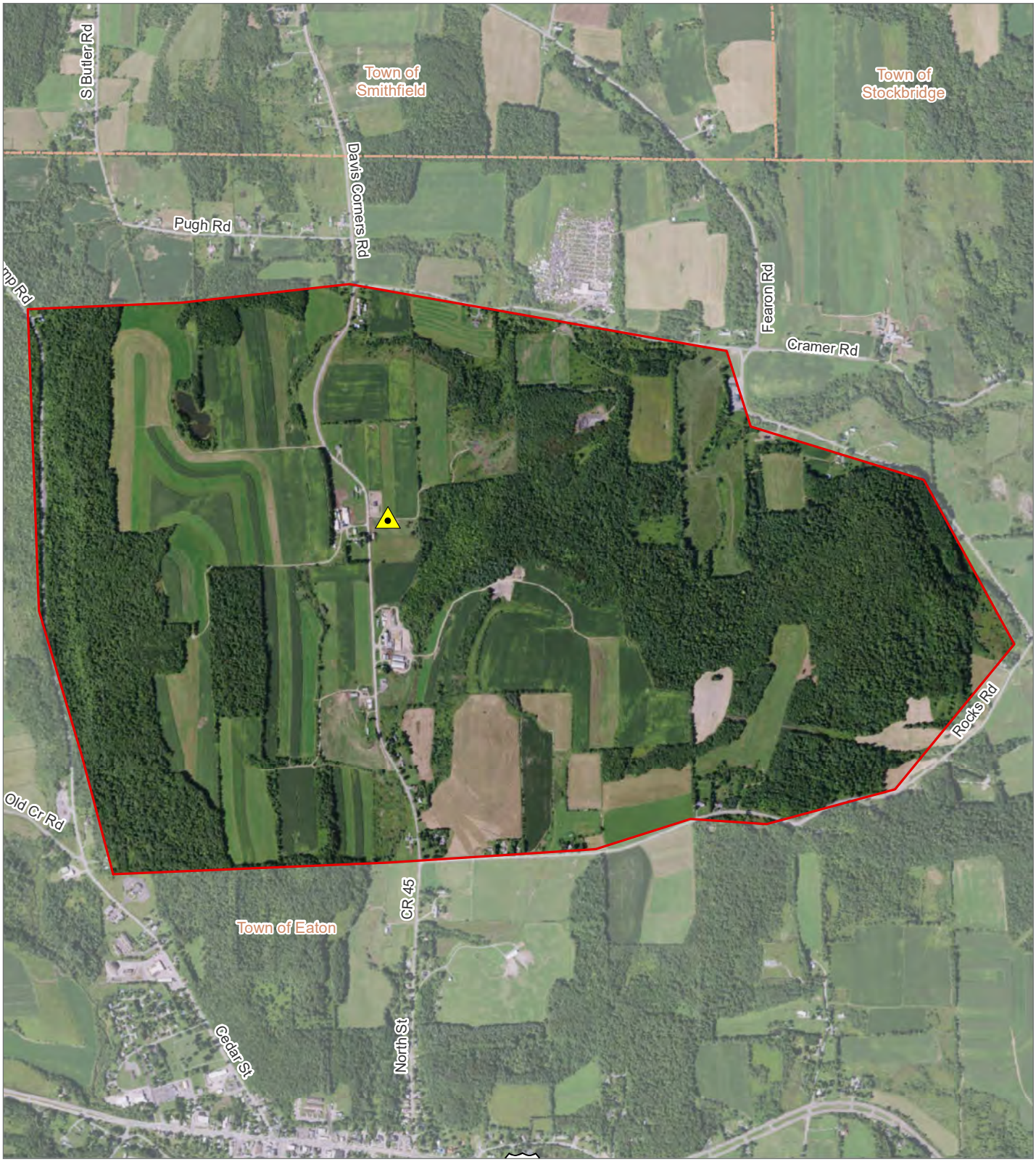
Facility Area

0 1,000 2,000 4,000
Feet

Prepared August 11, 2021
Basemap: Esri ArcGIS Online "USGS Topo" map service.

EDR

Figure 3. Survey Location



Blue Hill Wind Project

Town of Eaton, Madison County, New York

Fall Raptor Migration Survey Work Plan

Survey Location

Facility Area

0 500 1,000 2,000

Feet

Prepared August 11, 2021

Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service.

APPENDIX A

Results of Agency Database Review and Consultation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: March 04, 2021
Consultation Code: 05E1NY00-2021-SLI-1759
Event Code: 05E1NY00-2021-E-05603
Project Name: Blue Hill Wind

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

[redacted] Additionally, wind energy projects should follow the Services wind

energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2021-SLI-1759
Event Code: 05E1NY00-2021-E-05603
Project Name: Blue Hill Wind
Project Type: POWER GENERATION
Project Description: Proposed wind project consisting of up to 6 turbines
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.9173469,-75.63606566833082,14z

Counties: Madison County, New York

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

March 17, 2021

Benjamin Roosa
Environmental Design & Research
41 State Street, Suite 806
Albany, NY 12207

Re: Proposed Wind Project in Town of Eaton
County: Madison Town/City: Eaton

Dear Benjamin Roosa:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities at the project site or in its immediate vicinity.

Enclosed is a report of rare birds documented within 10 miles of the project site, and rare bats documented within 40 miles of the project site, for use in assessing potential impacts of bird and bat collisions. For information on NYSDEC's environmental review of proposed wind energy projects, and and for the document entitled Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects, follow this link:

https://www.dec.ny.gov/regulations/28693.html

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the Permits staff at the NYSDEC Region 7 Office dep.r7@dec.ny.gov, 315-426-7438.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

226

New York Natural Heritage Program

Report on Rare Birds and Rare Bats in the General Vicinity of Wind Power Projects

The following rare bats and birds have been documented in the general vicinity of the proposed wind power project.

The impacts of wind turbines on animals include both impacts due to disturbance at the site of the turbines, and impacts due to flying birds and bats colliding with turbine blades. Therefore, when screening proposed wind energy projects for potential impacts on rare species, in addition to reporting rare plants and animals documented at the project site itself, NY Natural Heritage reports species of rare birds documented within 10 miles of the project site, and rare bats documented within 40 miles of the project site. These distances were determined in consultation with the NYSDEC Division of Fish, Wildlife and Marine Resources.

For information on NYSDEC's environmental review of proposed wind energy projects, and for the document entitled Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects, follow this link: https://www.dec.ny.gov/regulations/28693.html

Bats within 40 miles

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS**
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

Our database does not currently contain any records of rare birds within 10 miles of the project site.

* Conservation status in NYS as ranked by NY Natural Heritage Program on a 1 to 5 scale:
  S1 = Critically imperiled
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review of the above referenced draft winter raptor and breeding bird survey reports and associated shapefiles, in compliance with 19 NYCRR §§ 900-1.3(g)(6) and (7).

Recommended Habitat Assessments and/or Field Surveys

Field surveys for grassland birds are recommended in the appropriate seasonal windows within one year. A full season of winter raptor surveys and breeding bird surveys are recommended following DEC protocols. Habitat assessments for breeding grassland birds should also include a description of the current landcover, and the crop history for the previous five growing seasons for all fields greater than 25 acres in size where project infrastructure may be constructed.

If LRI concurs with these recommendations and agrees to conduct the habitat assessments and field surveys described above, please develop appropriate pre-construction study work plans and submit for review by the Office and NYSDEC prior to the commencement of field work, in compliance with §900-1.3(g)(4). If the Applicant opts not to conduct the recommended surveys and believes that suitable habitat for a given species is not present at the site, please provide a detailed description of the methodology used to determine that no suitable habitat exists in compliance with §900-1.3(g)(3).

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APPENDIX B

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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New York Natural Heritage Program

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New York Natural Heritage Program

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[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

Our database does not currently contain any records of rare birds within 10 miles of the project site.

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New York Natural Heritage Program

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If LRI concurs with these recommendations and agrees to conduct the habitat assessments and field surveys described above, please develop appropriate pre-construction study work plans and submit for review by the Office and NYSDEC prior to the commencement of field work, in compliance with §900-1.3(g)(4). If the Applicant opts not to conduct the recommended surveys and believes that suitable habitat for a given species is not present at the site, please provide a detailed description of the methodology used to determine that no suitable habitat exists in compliance with §900-1.3(g)(3).

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APPENDIX C

Fall Raptor Migration Survey Observations

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Appendix C - Fall Raptor Migration Survey Observations

Date	Time First Observed	Time Last Observed	Species [1]	Total Number	Number of Males	Number of Females	Number of Adults	Number of Juveniles	Number of Unknown	Behavior(s) [2]	Average Direction	Average Flight Height	Minimum Flight Height	Maximum Flight Height	Notes
11/30/2021	1128	1129	RTHA	1	0	0	1	0	0	FO	East	50	50	50	1 RTHA flew over the N field from the W treeline to the E
11/30/2021	1415	1416	RTHA	1	0	0	1	0	0	FO	North West	30	30	30	1 RTHA flew NW from the SE treeline over the NW treeline

[1]Species codes are based on standardized four-letter AOU alpha codes defined by the Institute for Bird Populations (https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf).

[2]Behavior codes reflect behaviors documented for each observation: FO = fly-over; V = Visual Observation; P = perched; H = hunting (foraging); CF = Carrying Food or Fecal Sac

Appendix C - Fall Raptor Migration Survey Observations

Date	Time First Observed	Time Last Observed	Species [1]	Total Number	Number of Males	Number of Females	Number of Adults	Number of Juveniles	Number of Unknown Age	Number of Unknown Sex	Approx. Perch Height (Feet)	Perch Type	Notes
8/17/2021	1408	1605	AMKE	1	1	0	0	0	0	0	18	Utility Pole	1 AMKE seen perched on the utility pole in about this location. Dropped into the surrounding field once or twice and came back up to the same perch over the course of the observation period. Left perch by 1605 (did not see leave).
9/20/2021	1422	1430	AMKE	1	1	0	1	0	0	0	4	Fence Post	1 AMKE perched here for several minutes and followed the flight path shown going N to S

[1]Species codes are based on standardized four-letter AOU alpha codes defined by the Institute for Bird Populations (https://www.birdpop.org/docs/misc/Alpha_codes_eng.pdf).

APPENDIX D

Survey Data Sheets

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	175300
Survey Date	08/17/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

Photo to East:

Photo to South:

Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1802
Survey Duration (hr:min):	10:02

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 66

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	E
Wind Speed (mph):	5
Precipitation:	☐ Drizzle ☐ Hail ☒ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	4
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	67
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	3

Precipitation:	[ ] Drizzle [ ] Hail [X] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	4
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [X] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	69
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	E
Wind Speed (mph):	7
Precipitation:	[ ] Drizzle [ ] Hail [X] Rain [ ] Sleet [ ] Snow

	☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	4
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	70
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☒ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	4

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [X] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 72

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%
- [X] Overcast = 90-100%

Wind Direction(s): SSE

Wind Speed (mph): 4

Precipitation:

- [X] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 4

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	74
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	ESE
Wind Speed (mph):	7
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	5
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	74
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	77

Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☒ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	76
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%

Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 10

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☒ 1700-1800 ☐ 1800-1900
Temperature (F):	76
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain

	☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 11

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☒ 1800-1900
Temperature (F):	76
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)

Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMGO, AMRO, MODO, ROPI, EUST, RWBL, HOSP, BCCH, SOSP, AMCR, BARS, KILL
General Survey Notes:	Continuous rain from 0800-1330 with only brief periods of drizzle or light rain. The sky was almost completely overcast the entire day.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	176545
Survey Date	08/24/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

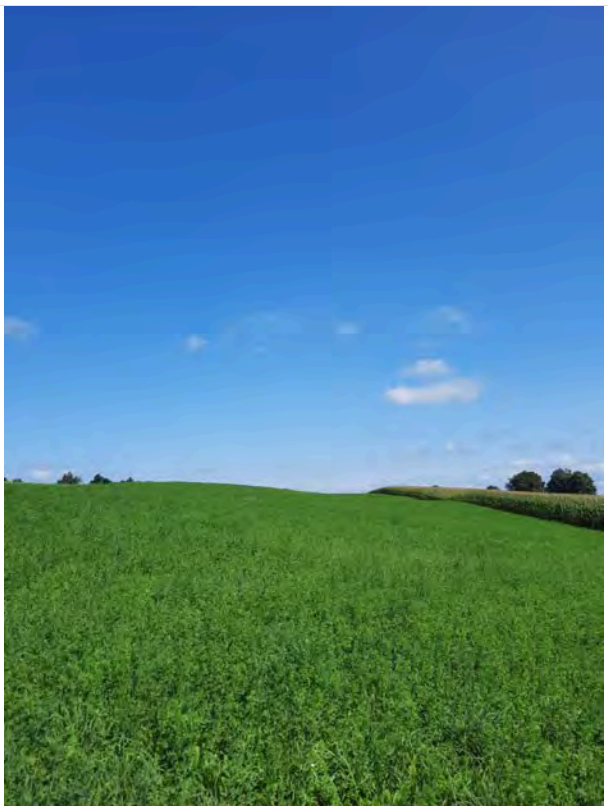


Photo to East:

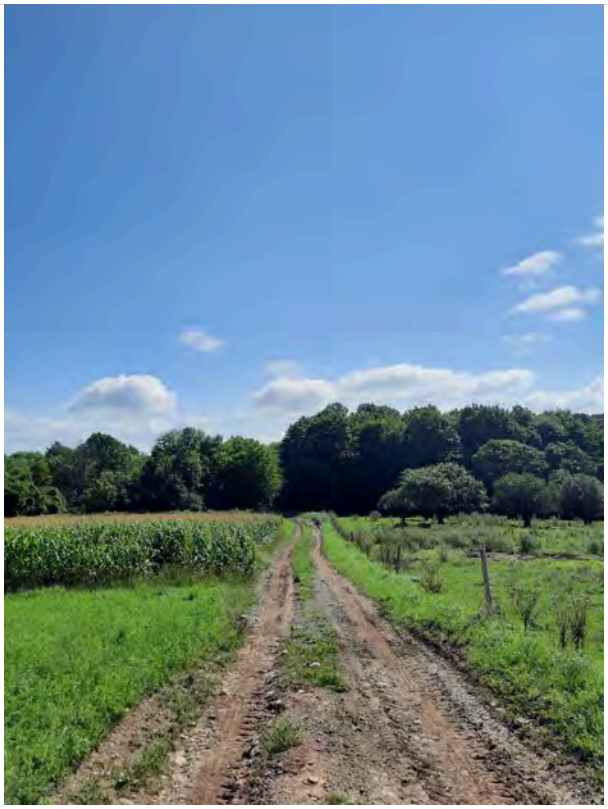


Photo to South:

Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1751
Survey Duration (hr:min):	09:51

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 68

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	70
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	7

Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	73
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow

	☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [X] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 77

Cloud Cover (%):

- [ ] Clear = 0-10%
- [X] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%
- [ ] Overcast = 90-100%

Wind Direction(s): WNW

Wind Speed (mph): 6

Precipitation:

- [ ] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	79
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	80
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	80

Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	8
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [X] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	80
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%

Wind Direction(s):	WNW
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 10

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☒ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	81
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WNW
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain

	☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 11

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☒ 1700-1800 ☐ 1800-1900
Temperature (F):	81
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WNW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)

Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	ROPI, EUST, AMGO, AMCR, SOSP, MODO, CORA, BARS, AMRO, HOSP, NOFL
General Survey Notes:	The day started out overcast with temperatures just below 70F. The skies cleared for a sunny warm day with a high of 81F and a W breeze of 5-10mph.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	177844
Survey Date	08/31/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

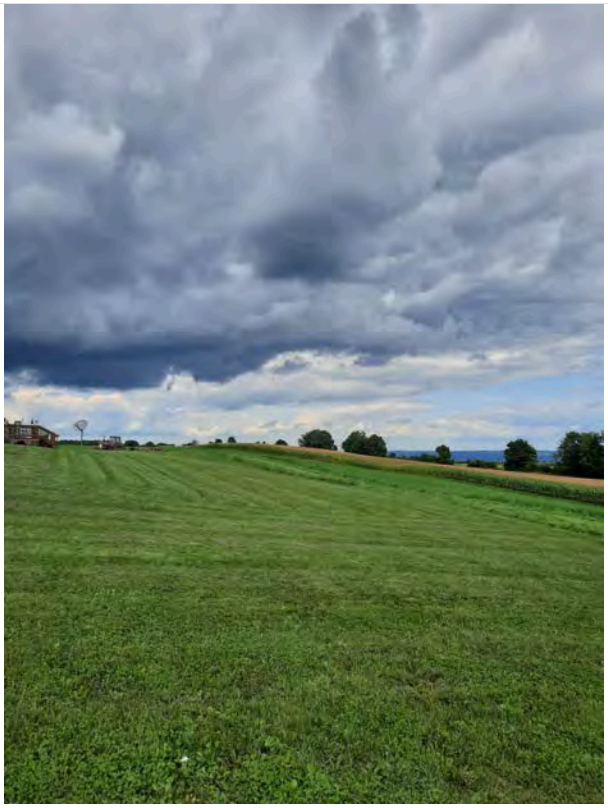
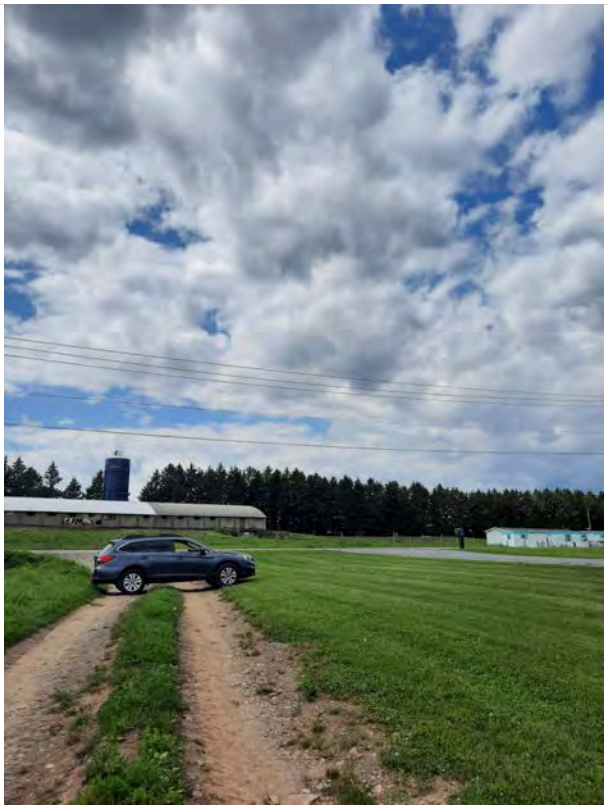


Photo to East:

Photo to South:

Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1739
Survey Duration (hr:min):	09:39

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 59

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [X] Partly Cloudy = 25-50%

	☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	3
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	5
Precipitation:	☐ Drizzle

	☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog

	☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	67
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WSW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☒ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 6

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100

	☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600

	☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10%

	☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☒ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WNW

Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 10

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☒ 1700-1800 ☐ 1800-1900
Temperature (F):	74
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WNW
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet

	☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	MODO, AMGO, ROPI, AMCR, AMRO, EUST, HOSP, KILL, SOSP, BARS
General Survey Notes:	It was a cooler overcast day with a 75F high and moderate W winds. No real flight developed and it was slow overall.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	179040
Survey Date	09/07/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

Photo to East:

Photo to South:

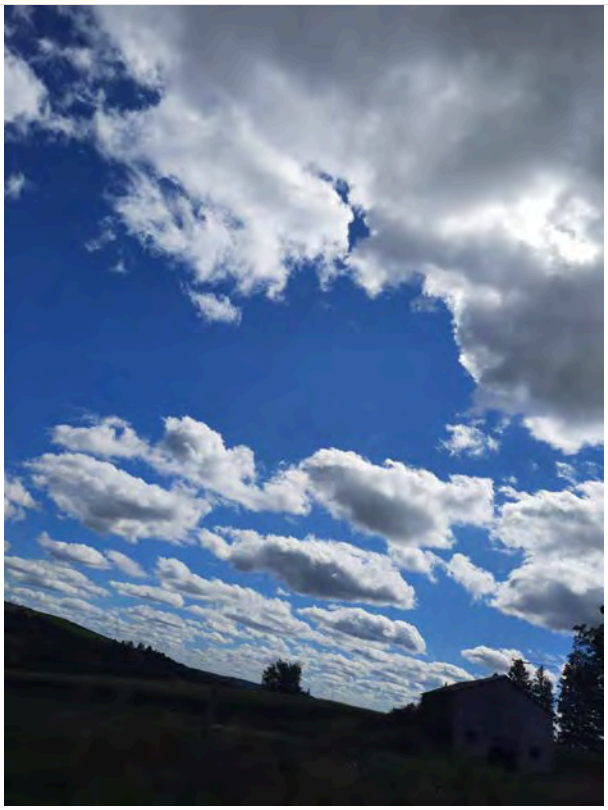
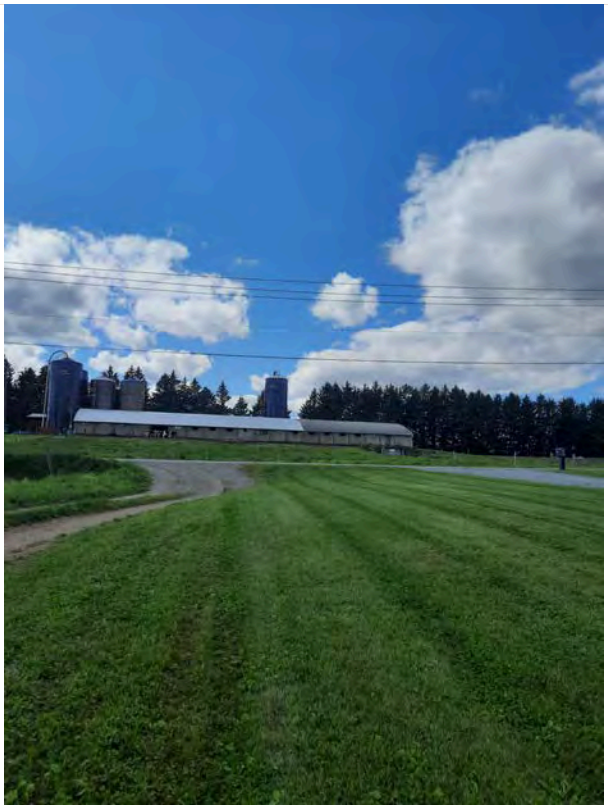


Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1727
Survey Duration (hr:min):	09:27

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 55

Cloud Cover (%):

- [ ] Clear = 0-10%
- [X] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%

	☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WSW
Wind Speed (mph):	4
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WSW
Wind Speed (mph):	4
Precipitation:	☐ Drizzle

	☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	64
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WSW
Wind Speed (mph):	5
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog

	☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	68
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WSW
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [X] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	70
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	WSW
Wind Speed (mph):	7
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 6

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100

	☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	71
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WSW
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600

	☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	72
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WSW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	73
Cloud Cover (%):	☐ Clear = 0-10%

	☐ Mostly Clear = 10-25% ☒ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SW
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☒ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	74
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SW

Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 10

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☒ 1700-1800 ☐ 1800-1900
Temperature (F):	73
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet

	☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	MODO, AMCR, AMGO, EUST, ROPI, AMRO, GRCA, BLJA, CORA
General Survey Notes:	It was a partly-mostly cloudy day with temperatures reaching 74F. The wind was out of the WSW and SW at about 4-7mph for most of the day.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	180191
Survey Date	09/14/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

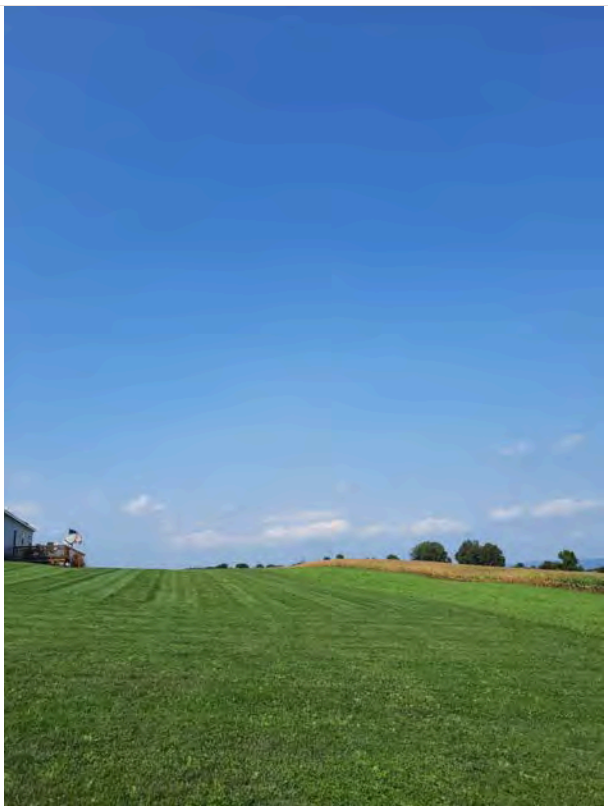


Photo to East:

Photo to South:

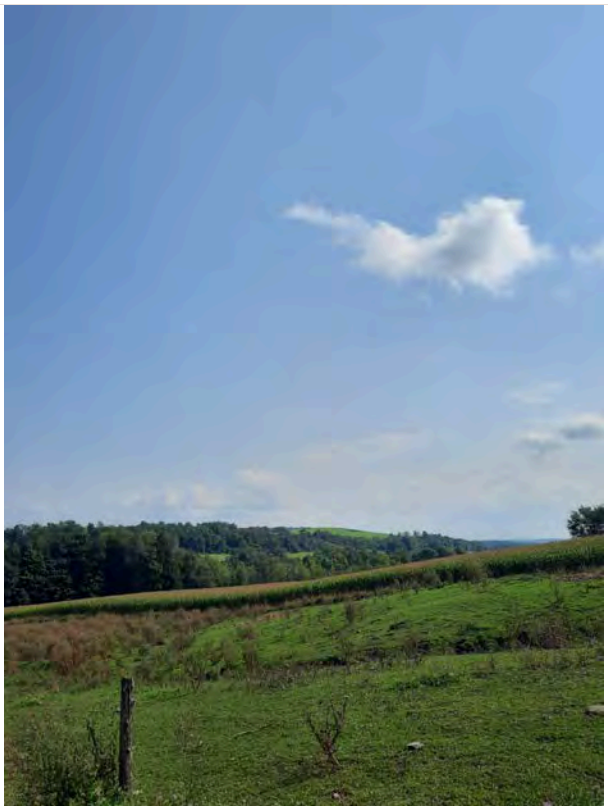
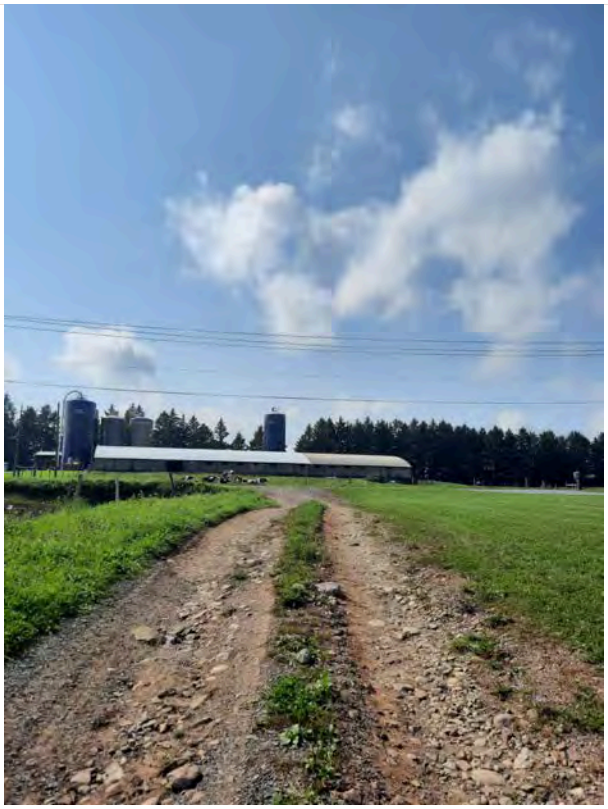


Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1715
Survey Duration (hr:min):	09:15

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 56

Cloud Cover (%):

- [ ] Clear = 0-10%
- [X] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%

	☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	4
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	61
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	ESE
Wind Speed (mph):	5
Precipitation:	☐ Drizzle

	☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	65
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	ESE
Wind Speed (mph):	5
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog

	☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	69
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [X] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	72
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	ESE
Wind Speed (mph):	7
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 6

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100

	☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600

	☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	77
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	79
Cloud Cover (%):	☐ Clear = 0-10%

	☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☒ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	80
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	S

Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 10

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☒ 1700-1800 ☐ 1800-1900
Temperature (F):	79
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSW
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet

	☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, MODO, EUST, AMGO, AMRO, BLJA, DOWO, SOSP, GRCA, ROPI
General Survey Notes:	It was a mostly clear morning with skies shifting the mostly cloudy and then back to mostly clear. There was a SE breeze most of the day at 6-9mph. Temperatures reached 80F. Today was the first sighting of BWHA for the season at this site with a good push of over 20 during the 1300 hour.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	181293
Survey Date	09/20/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

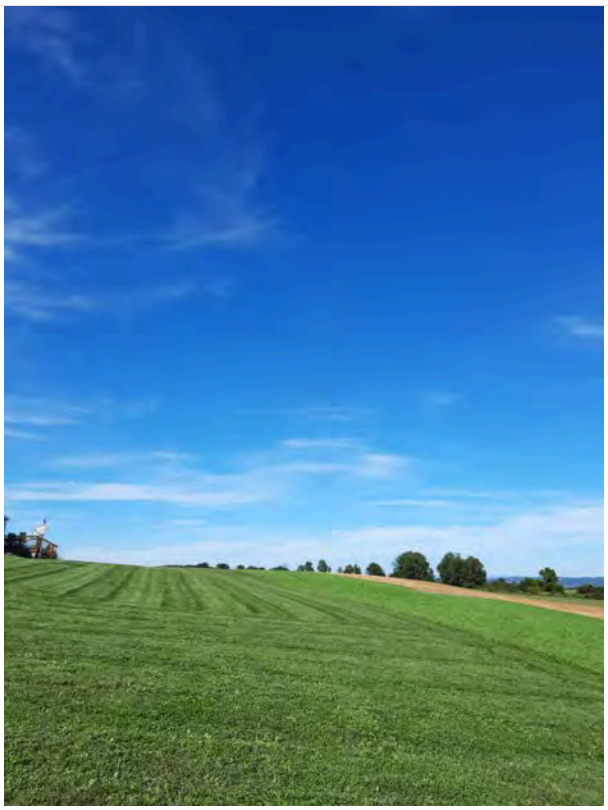


Photo to East:

Photo to South:

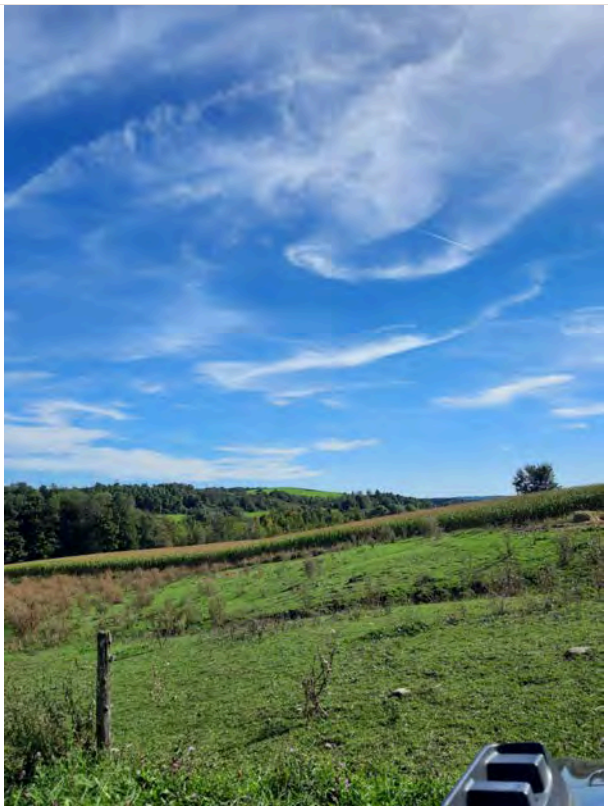


Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1704
Survey Duration (hr:min):	09:04

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 49

Cloud Cover (%):

- [ ] Clear = 0-10%
- [X] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%

	☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☒ Other (write in notes)
Other Precipitation/ Precipitation Notes:	light fog in some of the valleys
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	54
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	5
Precipitation:	☐ Drizzle

	☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	61
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog

	☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	66
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☒ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	69
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 6

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100

	☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	71
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600

	☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	76
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	75
Cloud Cover (%):	☐ Clear = 0-10%

	[X] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	8
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [X] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	78
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	SE

Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 10

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☒ 1700-1800 ☐ 1800-1900
Temperature (F):	76
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet

	☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, BLJA, MODO, EUST, ROPI, AMGO, CORA, KILL, AMRO
General Survey Notes:	It was a cooler morning with mostly clear skies and temperatures reaching about 78F. SE winds at 7-9mph persisted through out the day. This was likely a factor for the lower number of sightings compared to last week.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	183156
Survey Date	09/28/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

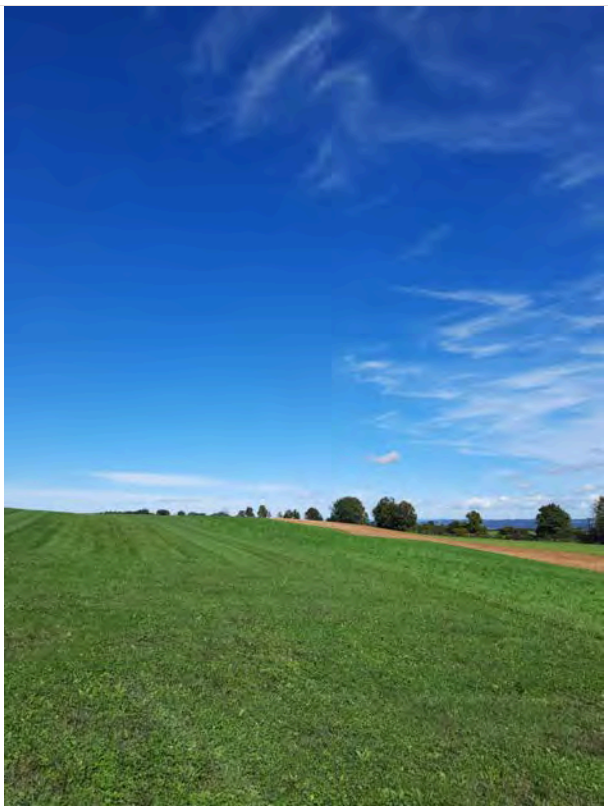


Photo to East:

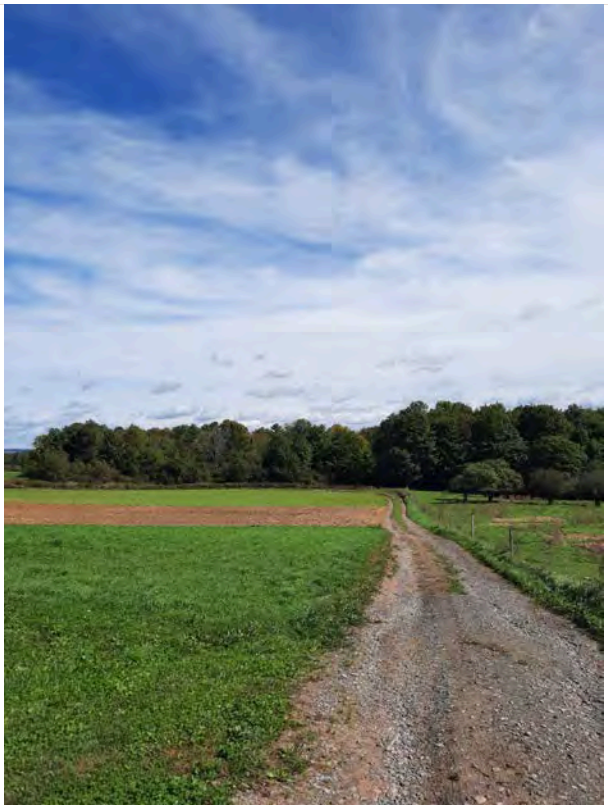


Photo to South:

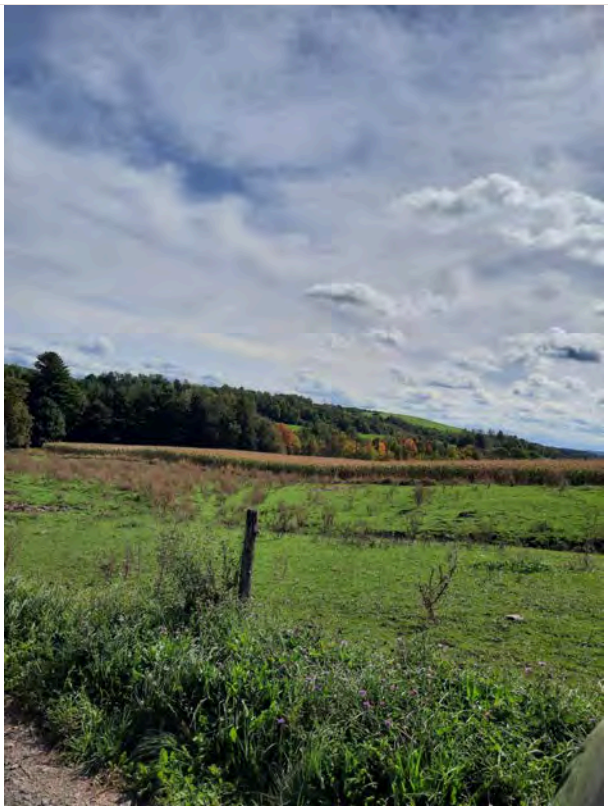


Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1650
Survey Duration (hr:min):	0850

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 52

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%

	[ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	5
Precipitation:	[X] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [X] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	Thick fog heavily limiting visibility. Very light drizzle.
Visibility (miles):	.25
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	[ ] 0800-0900 [X] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	56
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	7

Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☒ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	Thick fog heavily limiting visibility
Visibility (miles):	.25
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow

	[X] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	Thick fog heavily limiting visibility until 1050.
Visibility (miles):	.25
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [X] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	62
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	8
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [X] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [X] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 63

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [X] Mostly Cloudy = 50-90%
- [ ] Overcast = 90-100%

Wind Direction(s): NW

Wind Speed (mph): 8

Precipitation:

- [ ] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	64
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	65
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	65

Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	9
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [X] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	63
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%

Wind Direction(s):	NW
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, EUST, ROPI, CANG, MODO, BLJA, AMGO, CORA, AMRO
General Survey Notes:	Thick fog heavily limited visibility to .25-.5 miles in the morning and didn't clear until 1050. It was cool in the morning with the temperature at 52F and reaching a high of about 64. Winds were moderately strong and out if the NW for most of the day.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	186154
Survey Date	10/05/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

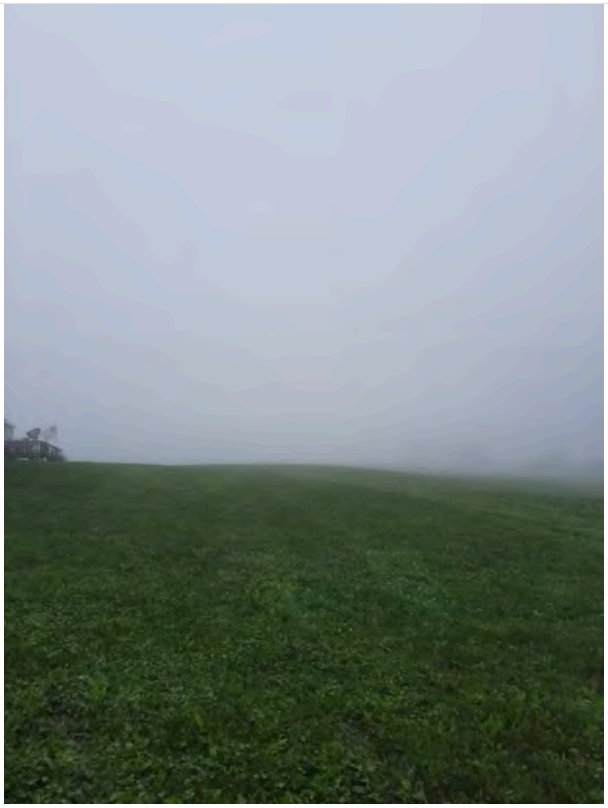
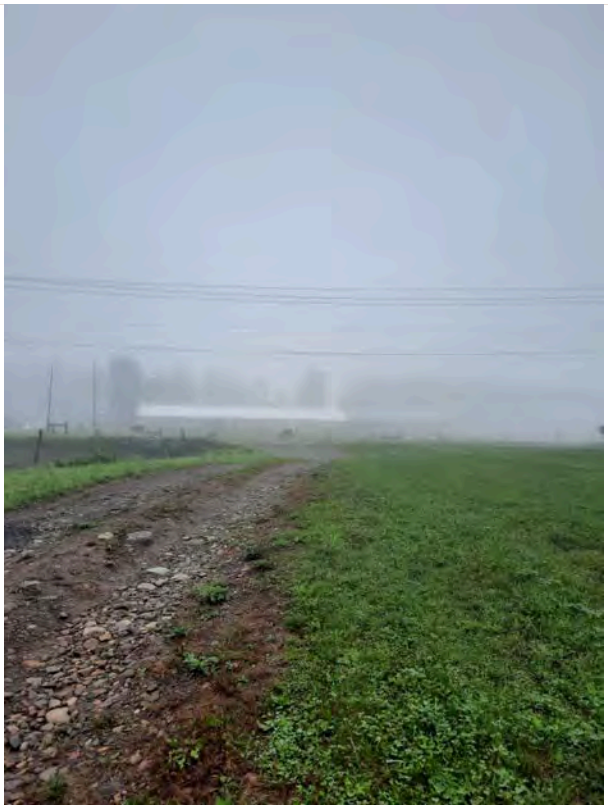


Photo to East:

Photo to South:

Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1637
Survey Duration (hr:min):	0837

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 57

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	E
Wind Speed (mph):	7
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☒ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	misting and heavy fog limiting visibility
Visibility (miles):	1
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	58
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	E
Wind Speed (mph):	4

Precipitation:	[X] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [X] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	1
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [X] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	58
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	ESE
Wind Speed (mph):	5
Precipitation:	[X] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow

	[X] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	.5
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [X] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	60
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	5
Precipitation:	[X] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [X] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	.5

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [X] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 62

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%
- [X] Overcast = 90-100%

Wind Direction(s): SE

Wind Speed (mph): 5

Precipitation:

- [X] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [X] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): .5

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	ESE
Wind Speed (mph):	4
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☒ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	.5
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	ENE
Wind Speed (mph):	4
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☒ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	.5
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	64

Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	ENE
Wind Speed (mph):	4
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☒ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	.5
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☒ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%

Wind Direction(s):	ENE
Wind Speed (mph):	5
Precipitation:	[X] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [X] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	.5
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, EUST, MODO, ROPI, AMRO, SOSP, CANG
General Survey Notes:	At 0800 when the survey started, it was very foggy with a light mist of rain. I assumed it would lift in an hour or so but the fog and drizzle persisted throughout the whole survey limiting visibility to less than a mile for most of the day. Temperatures reached 64F with winds varying all day between SE to NE.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	186401
Survey Date	10/12/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

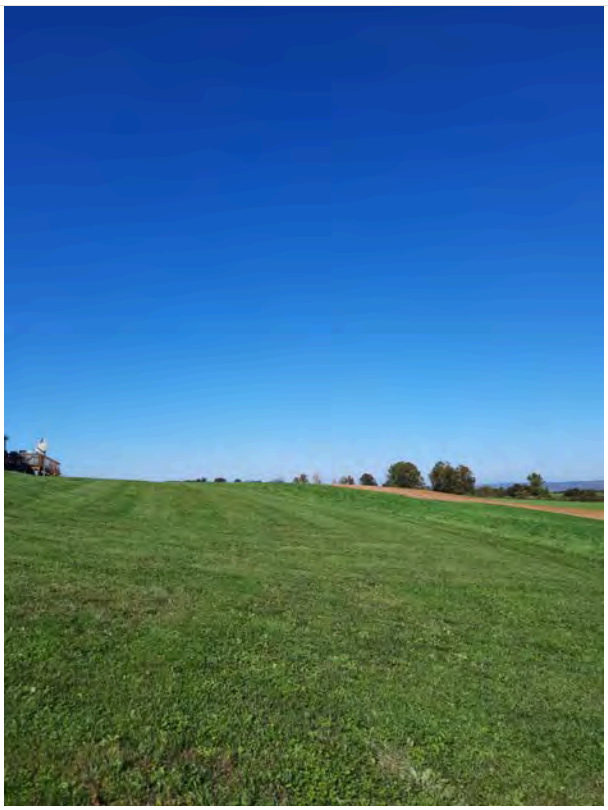


Photo to East:

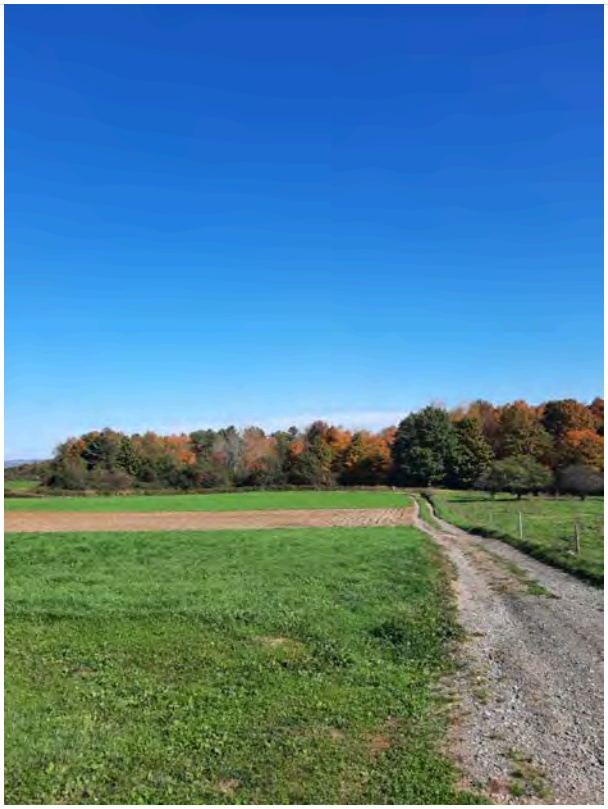


Photo to South:

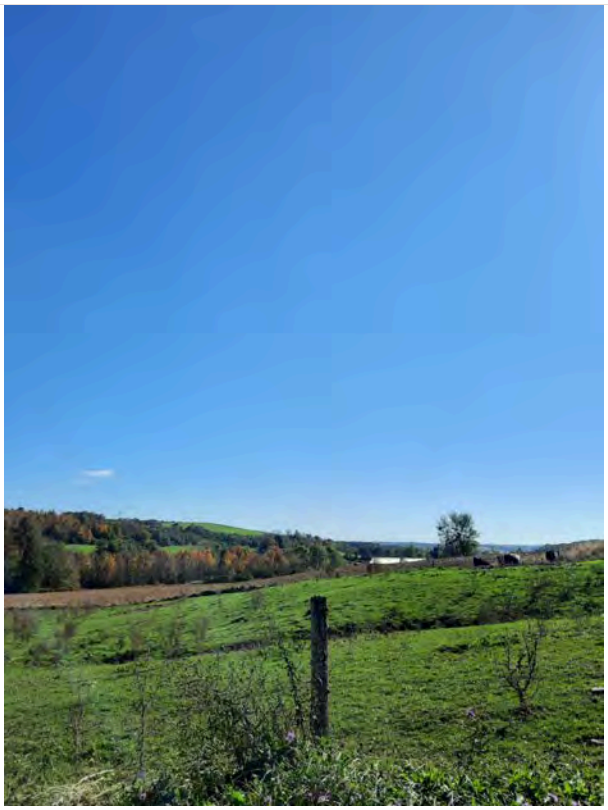


Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1625
Survey Duration (hr:min):	0825

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 59

Cloud Cover (%):

- [ ] Clear = 0-10%
- [X] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%

	☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	61
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	7
Precipitation:	☐ Drizzle

	☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	64
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	ESE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog

	☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	66
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [X] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	69
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	8
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 6

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100

	☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	71
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600

	☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	72
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	73
Cloud Cover (%):	☐ Clear = 0-10%

	[X] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [X] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	73
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	SSE

Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, SOSP, ROPI, CANG, BLJA, EUST, MODO, AMGO
General Survey Notes:	It was a warm day with temperatures reaching the mid 70sF and clear to mostly clear skies. Wind was from the SE at 7-8mph for the duration of the survey.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	188968
Survey Date	10/19/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

Photo to East:

Photo to South:

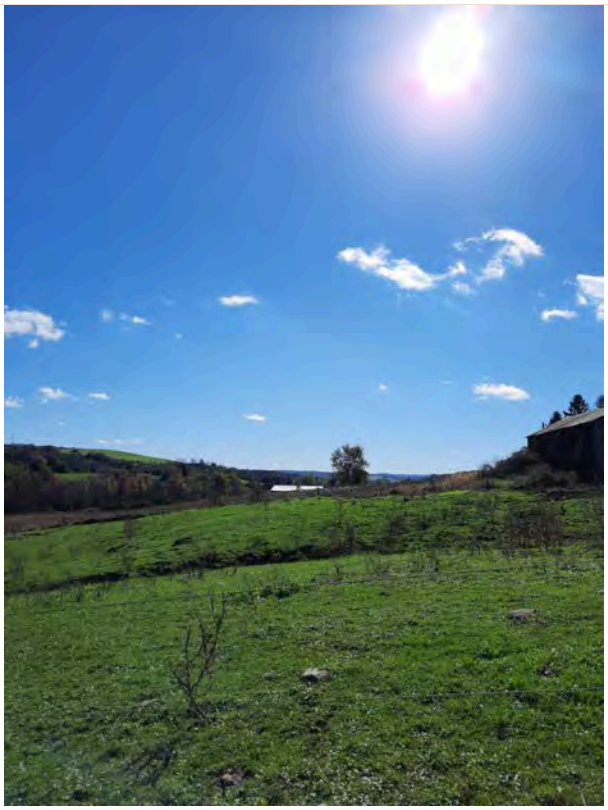


Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1614
Survey Duration (hr:min):	0814

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F):	44

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	14
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	48
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	14

Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	51
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	11
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow

	☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	54
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NNW
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [x] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 57

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [x] Mostly Cloudy = 50-90%
- [ ] Overcast = 90-100%

Wind Direction(s): NW

Wind Speed (mph): 10

Precipitation:

- [ ] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	59
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WNW
Wind Speed (mph):	10
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	60
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☒ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WNW
Wind Speed (mph):	14
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	61

Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	15
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [X] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	61
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [X] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%

Wind Direction(s):	W
Wind Speed (mph):	15
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	ROPI, AMCR, EUST, MODO, AMRO, CORA, BHCO, BLJA, CANG
General Survey Notes:	It was a cool fall day with temperatures starting in the mid 40sF and rising to 61F. Winds were strong out of the W and NW at 8-15mph all day with mostly cloudy skies turning into partly cloudy later in the survey. The wind was noticeably effecting the raptors as they were seen fighting the wind a lot throughout the day. There were relatively consistent sightings before about 1300 but later in the day the flight slowed significantly.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	190180
Survey Date	10/25/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

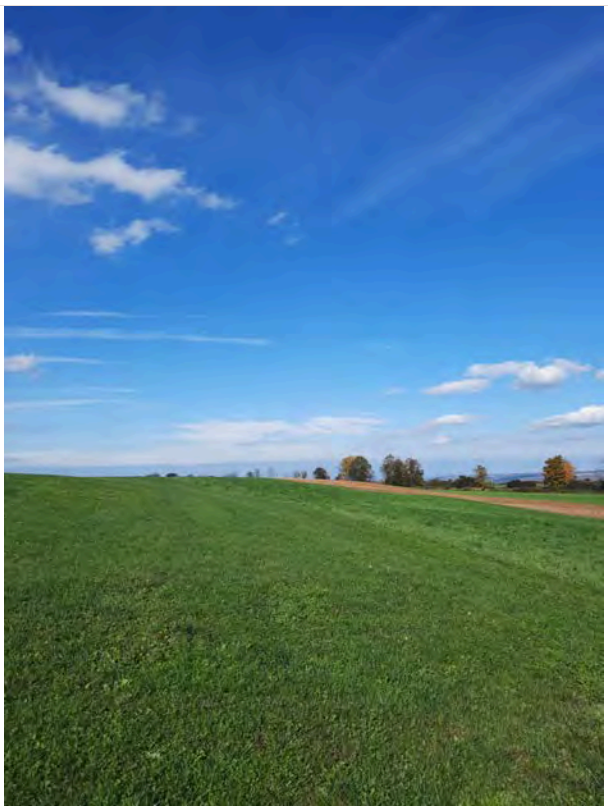


Photo to East:

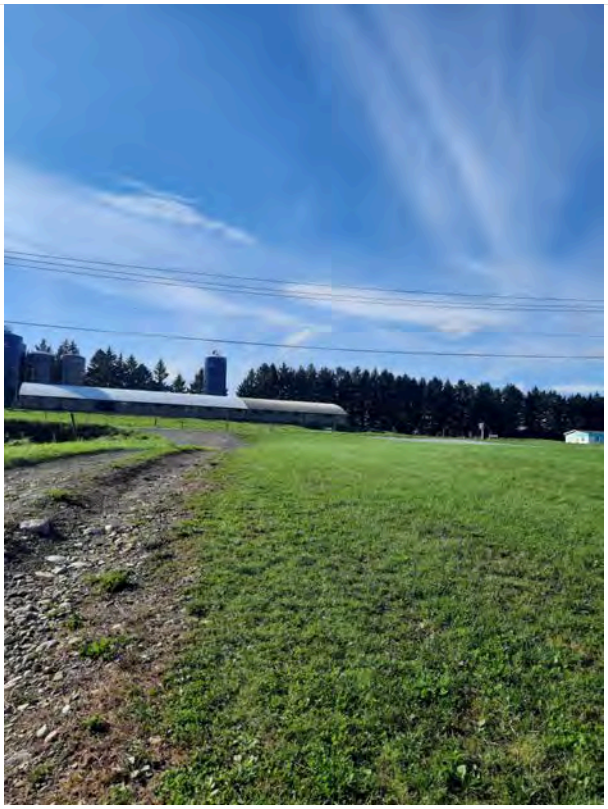


Photo to South:

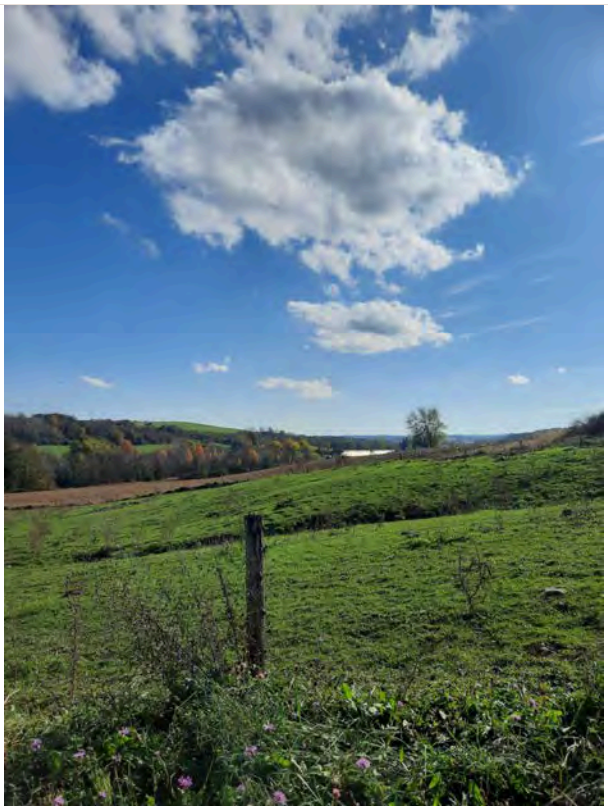
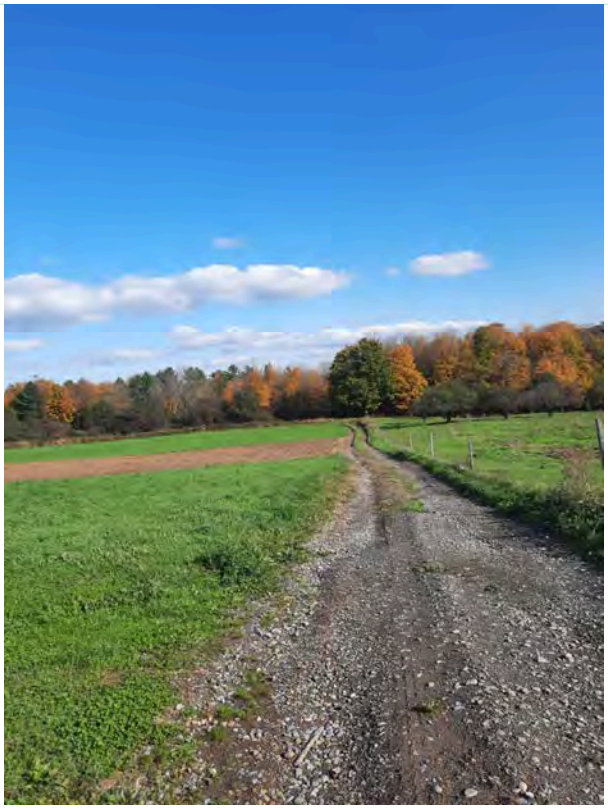


Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1605
Survey Duration (hr:min):	0805

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F):	46

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	50
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	10

Precipitation:	[X] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [X] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	54
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	10
Precipitation:	[X] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow

	☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	57
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	10
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [X] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 61

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [X] Mostly Cloudy = 50-90%
- [ ] Overcast = 90-100%

Wind Direction(s): SSE

Wind Speed (mph): 10

Precipitation:

- [ ] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	63
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	65
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	66

Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	9
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 9

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☒ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	66
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%

Wind Direction(s):	SE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, MODO, EUST, BHCO, AMGO, CANG, AMRO, CORA, ROPI, BLJA
General Survey Notes:	It was a cool overcast morning with drizzling rain leading into a mostly cloudy afternoon with temperatures reaching 66F. Winds were out of the SSE and SE at 8-10mph for the duration of the survey.

EDR

21027 Blue Hill Wind Checklist

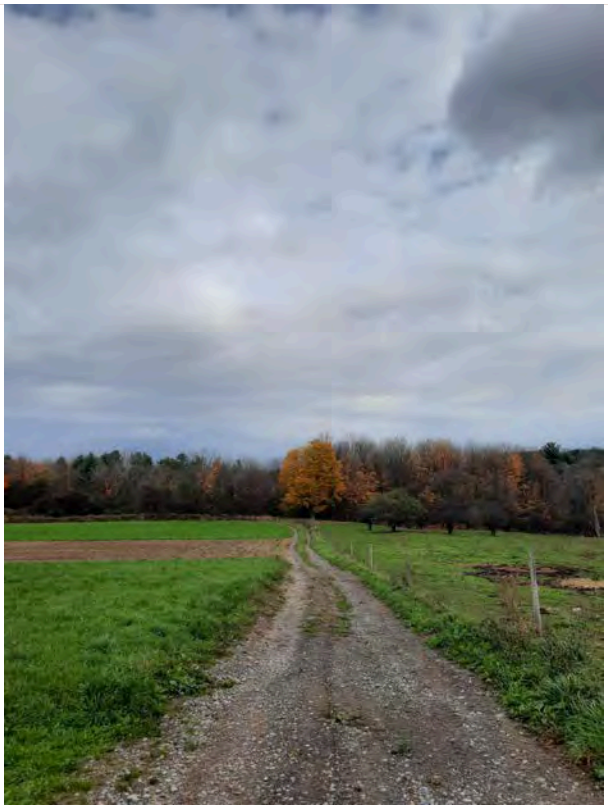
Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	190860
Survey Date	11/02/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

Photo to East:

Photo to South:

Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1554
Survey Duration (hr:min):	7:54

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F):	36
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SW
Wind Speed (mph):	4
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	39
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SW
Wind Speed (mph):	6

Precipitation:	[X] Drizzle [ ] Hail [X] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [X] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	41
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	WNW
Wind Speed (mph):	7
Precipitation:	[X] Drizzle [ ] Hail [X] Rain [ ] Sleet [ ] Snow

	☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	44
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	8
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [X] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 47

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%
- [X] Overcast = 90-100%

Wind Direction(s): W

Wind Speed (mph): 9

Precipitation:

- [ ] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	48
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	10
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☒ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	48
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	10
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 8

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☒ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	47

Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	10
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, MODO, EUST, BHCO, ROPI, CANG, CORA, AMRO, BLJA,
General Survey Notes:	It was a cooler day with temperatures reaching the mid 40sF. Winds were strong at about 10mph out of the W with periods of drizzle and rain coming throughout the day. It was sleeting for about 30mins during the 1300 hour.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	193132
Survey Date	11/09/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP

Photo to North:

Photo to East:

Photo to South:

Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1445
Survey Duration (hr:min):	0645

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700

	☐ 1700-1800 ☐ 1800-1900
Temperature (F):	44
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	5
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	46
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	5
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	49
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	5

Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	51
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	W
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow

	☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☒ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	54
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	WNW
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [x] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 56

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%
- [x] Overcast = 90-100%

Wind Direction(s): WNW

Wind Speed (mph): 6

Precipitation:

- [ ] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 7

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	58
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	WNW
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, MODO, EUST, BHCO, ROPI, CANG, BLJA, AMGO, CORA
General Survey Notes:	It was a warmer day with temperatures approaching 60F. Skies were mostly cloudy or overcast with winds primarily from the W at 5-6mph.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	194508
Survey Date	11/17/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

Photo to East:

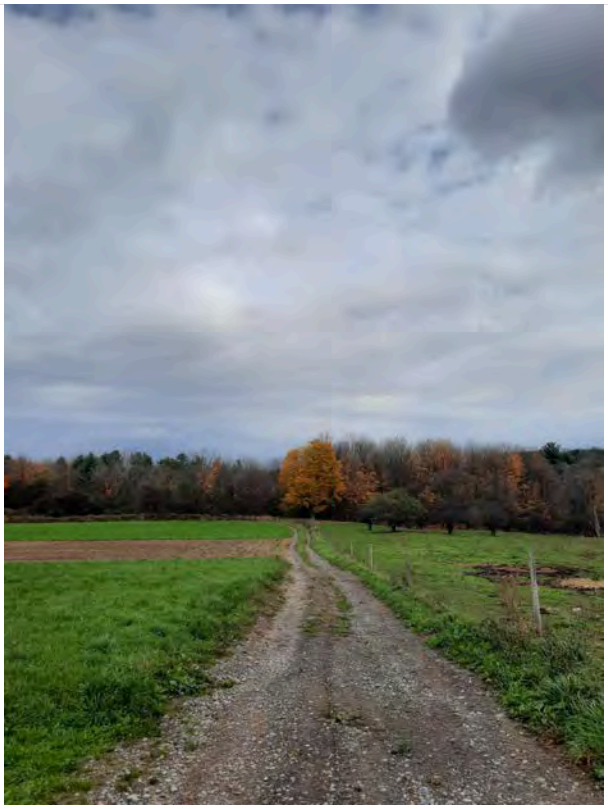


Photo to South:

Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1438
Survey Duration (hr:min):	0638

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 34

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [X] Mostly Cloudy = 50-90%
- [ ] Overcast = 90-100%

Wind Direction(s): SSE

Wind Speed (mph): 6

Precipitation:

- [ ] Drizzle

	☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	35
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog

	☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	38
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	8
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [X] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	42
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [X] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	12
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100

	☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	45
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	12
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 6

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600

	☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	48
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	14
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	BLJA, AMCR, EUST, ROPI, CANG, BCCH, AMGO,
General Survey Notes:	It was an mostly cloudy and windy day with SE wind at 8-14mph. It was warmer with temperatures reaching 48F.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	195351
Survey Date	11/23/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

Photo to East:

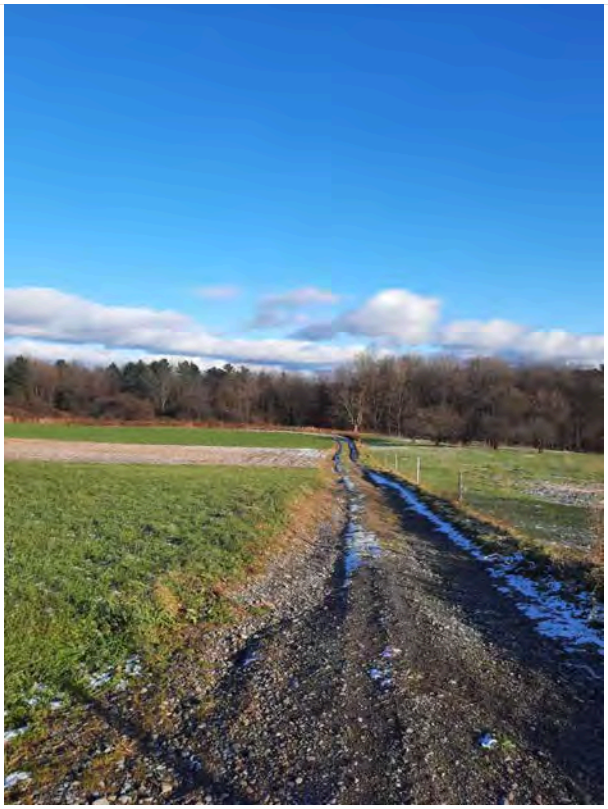


Photo to South:

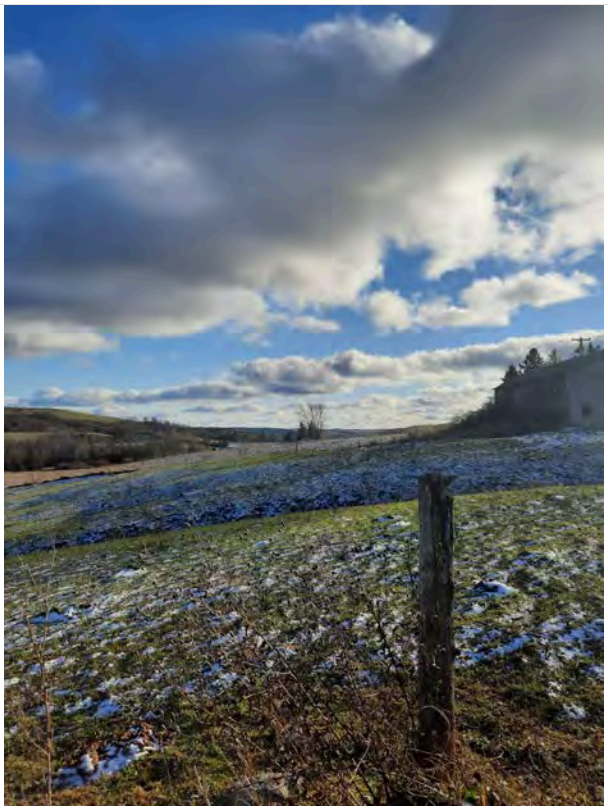
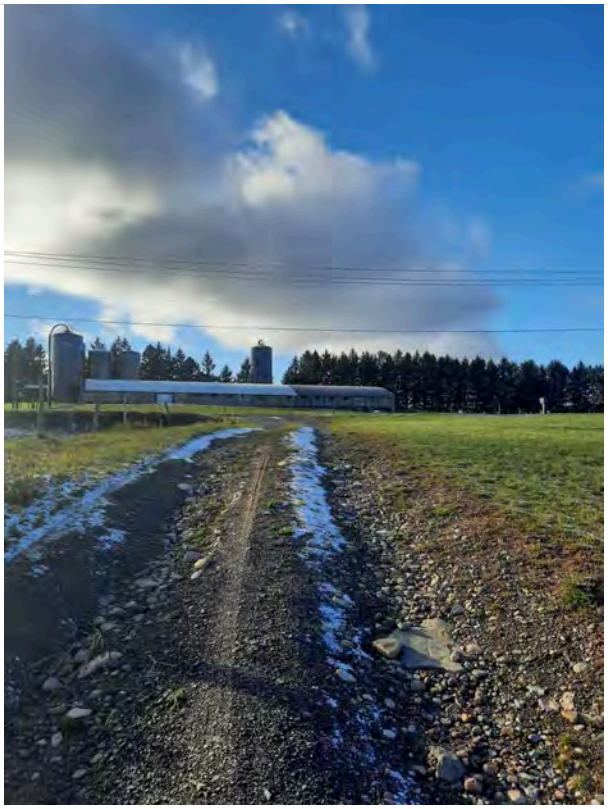


Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1433
Survey Duration (hr:min):	0633

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 30

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	10
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	31
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	12

Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [X] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [X] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	31
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	12
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [X] Snow

	☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	32
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	13
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☒ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [X] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 32

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%
- [X] Overcast = 90-100%

Wind Direction(s): NW

Wind Speed (mph): 14

Precipitation:

- [ ] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [ ] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	32
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	14
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	31
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☒ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	13
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, EUST, MODO, ROPI, CANG, BLJA, BCCH,
General Survey Notes:	It was a colder survey with temperatures staying at about 30-32F. Wind was out if the NE at 10-14mph with some light snow on and off in the first couple hours.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	196104
Survey Date	11/30/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

Photo to East:

Photo to South:

Photo to West:

Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1430
Survey Duration (hr:min):	0630

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 32

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%

	☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	4
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	32
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SE
Wind Speed (mph):	4

Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	33
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	5
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow

	☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☒ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	34
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	5
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 5

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [X] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 35

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%
- [X] Overcast = 90-100%

Wind Direction(s): SSE

Wind Speed (mph): 5

Precipitation:

- [X] Drizzle
- [ ] Hail
- [ ] Rain
- [ ] Sleet
- [ ] Snow
- [ ] Thick Fog
- [X] Mist
- [ ] Other (write in notes)

Other Precipitation/ Precipitation Notes:

Visibility (miles): 10

Misc. Hourly Notes:

Hourly Conditions (at start of each hour block) 6

Survey Hour:

- [ ] 0800-0900
- [ ] 0900-1000

	☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	34
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	S
Wind Speed (mph):	5
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☒ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500

	☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	35
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	S
Wind Speed (mph):	5
Precipitation:	☒ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☒ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	CANG, CORA, BCCH, BLJA, MODO, ROPI, EUST
General Survey Notes:	It was a cool day with temperatures at about 34F and mild winds put of the SW. There was about 4 inches of snow on the ground with a very light mist and snow falling for thr last couple hours of the survey.

Blue Hill Wind Fall Raptor Migration Survey 1

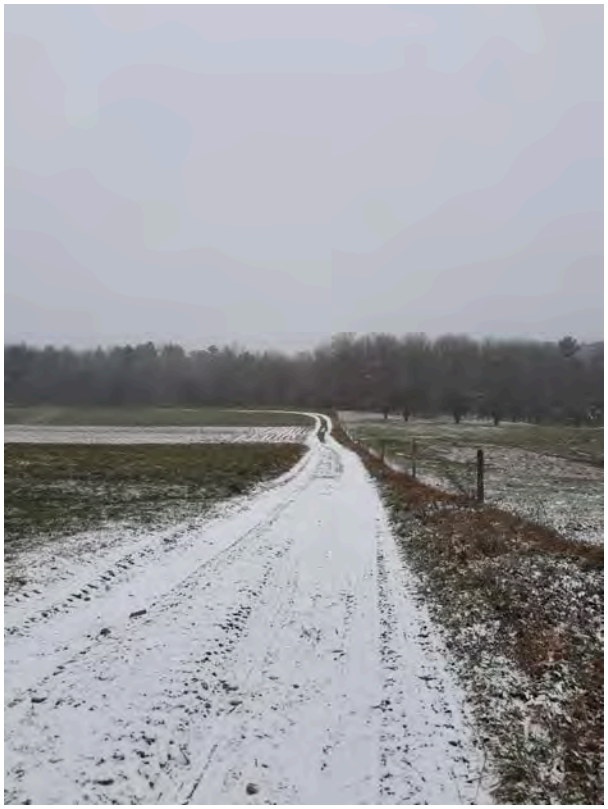
Project	21027 Blue Hill Wind
ID	198190
Survey Date	12/08/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

Photo to East:

Photo to South:

EDR

Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1428
Survey Duration (hr:min):	0628

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 29

Cloud Cover (%):

- [ ] Clear = 0-10%
- [ ] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%

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	[X] Overcast = 90-100%
Wind Direction(s):	NNE
Wind Speed (mph):	5
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	[ ] 0800-0900 [X] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	29
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	NE
Wind Speed (mph):	6
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet

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	☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	30
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	NE
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [X] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	31
Cloud Cover (%):	[ ] Clear = 0-10% [ ] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [X] Overcast = 90-100%
Wind Direction(s):	SSE
Wind Speed (mph):	6
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [X] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	light flurries
Visibility (miles):	5
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [X] 1200-1300 [ ] 1300-1400

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	☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	32
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	S
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☒ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	light flurries
Visibility (miles):	5
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 6

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	33
Cloud Cover (%):	☐ Clear = 0-10%

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	☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	S
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☒ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	flurries
Visibility (miles):	2
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	34
Cloud Cover (%):	☐ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☒ Overcast = 90-100%
Wind Direction(s):	S
Wind Speed (mph):	7
Precipitation:	☐ Drizzle

	☐ Hail ☐ Rain ☐ Sleet ☒ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	flurries
Visibility (miles):	1
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, CORA, ROPI, EUST, CANG
General Survey Notes:	It was a cool and overcast day with moderate winds 5-7mph shifting from NE to S as the day went on. Light snow flurries led to a bit heavier snow by the end of the survey, limiting visibility to about a mile or less. No raptors were spotted.

EDR

21027 Blue Hill Wind Checklist

Blue Hill Wind Fall Raptor Migration Survey 1

Project	21027 Blue Hill Wind
ID	198330
Survey Date	12/14/2021
User	Nick Pusateri
Project:	21027 Blue Hill Wind
Observer Initials:	NP
Photo to North:	

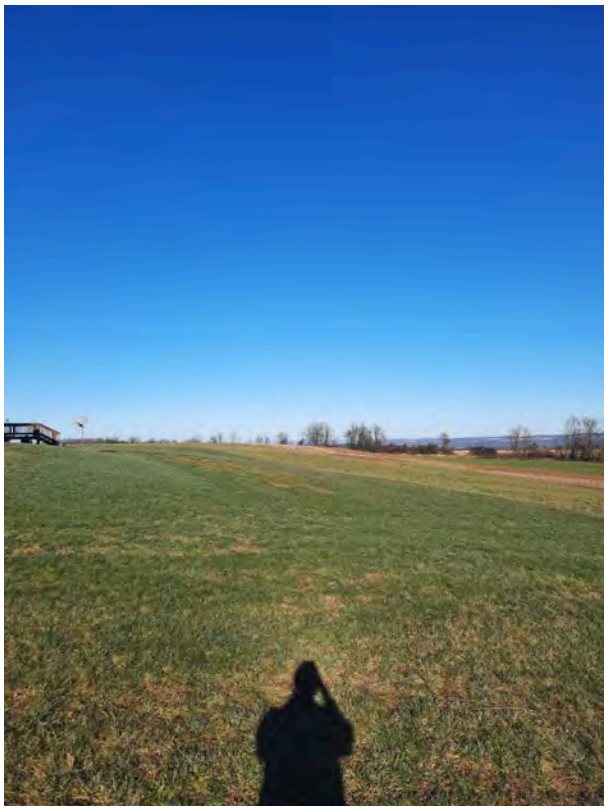


Photo to East:

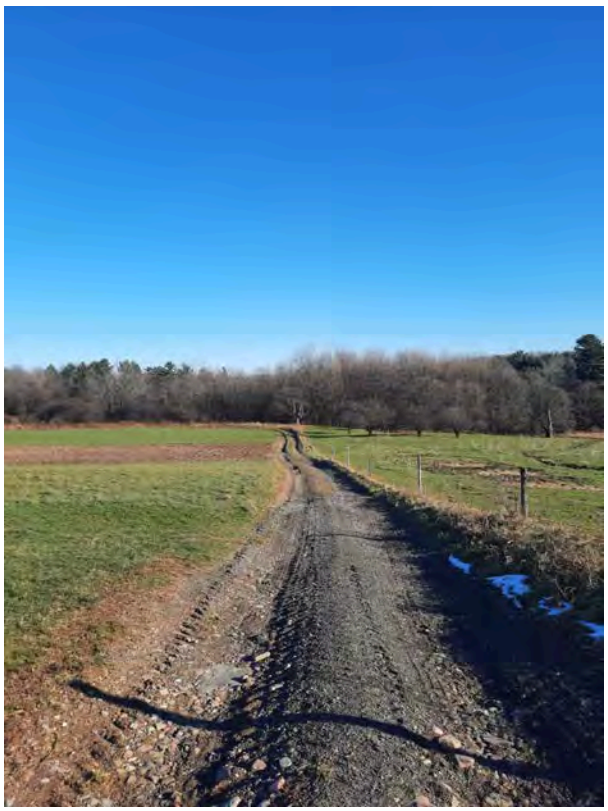
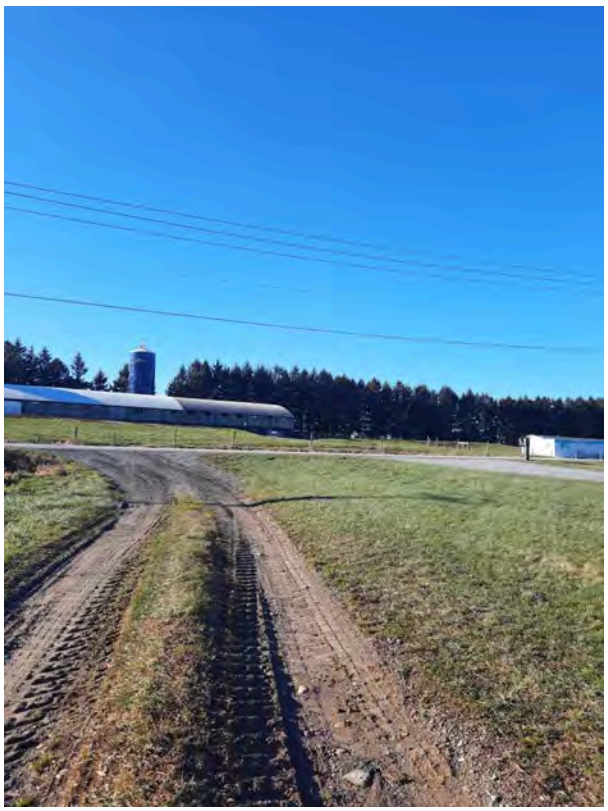


Photo to South:

Photo to West:



Start Time (24 hour clock, ex: 1422):	0800
End Time (24 hour clock, ex: 1422):	1429
Survey Duration (hr:min):	6:29

Hourly Conditions (at start of each hour block) 1

Survey Hour:

- [X] 0800-0900
- [ ] 0900-1000
- [ ] 1000-1100
- [ ] 1100-1200
- [ ] 1200-1300
- [ ] 1300-1400
- [ ] 1400-1500
- [ ] 1500-1600
- [ ] 1600-1700
- [ ] 1700-1800
- [ ] 1800-1900

Temperature (F): 38

Cloud Cover (%):

- [ ] Clear = 0-10%
- [X] Mostly Clear = 10-25%
- [ ] Partly Cloudy = 25-50%
- [ ] Mostly Cloudy = 50-90%

EDR

	☐ Overcast = 90-100%
Wind Direction(s):	NW
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 2

Survey Hour:	☐ 0800-0900 ☒ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	39
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NNW
Wind Speed (mph):	6
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet

	☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 3

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☒ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	40
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NNW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 4

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [X] 1100-1200 [ ] 1200-1300 [ ] 1300-1400 [ ] 1400-1500 [ ] 1500-1600 [ ] 1600-1700 [ ] 1700-1800 [ ] 1800-1900
Temperature (F):	41
Cloud Cover (%):	[ ] Clear = 0-10% [X] Mostly Clear = 10-25% [ ] Partly Cloudy = 25-50% [ ] Mostly Cloudy = 50-90% [ ] Overcast = 90-100%
Wind Direction(s):	NNW
Wind Speed (mph):	6
Precipitation:	[ ] Drizzle [ ] Hail [ ] Rain [ ] Sleet [ ] Snow [ ] Thick Fog [ ] Mist [ ] Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 5

Survey Hour:	[ ] 0800-0900 [ ] 0900-1000 [ ] 1000-1100 [ ] 1100-1200 [X] 1200-1300 [ ] 1300-1400

EDR

	☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	41
Cloud Cover (%):	☐ Clear = 0-10% ☒ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NNW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 6

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☒ 1300-1400 ☐ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	41
Cloud Cover (%):	☒ Clear = 0-10%

EDR

	☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NNW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle ☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	

Hourly Conditions (at start of each hour block) 7

Survey Hour:	☐ 0800-0900 ☐ 0900-1000 ☐ 1000-1100 ☐ 1100-1200 ☐ 1200-1300 ☐ 1300-1400 ☒ 1400-1500 ☐ 1500-1600 ☐ 1600-1700 ☐ 1700-1800 ☐ 1800-1900
Temperature (F):	40
Cloud Cover (%):	☒ Clear = 0-10% ☐ Mostly Clear = 10-25% ☐ Partly Cloudy = 25-50% ☐ Mostly Cloudy = 50-90% ☐ Overcast = 90-100%
Wind Direction(s):	NNW
Wind Speed (mph):	7
Precipitation:	☐ Drizzle

EDR

	☐ Hail ☐ Rain ☐ Sleet ☐ Snow ☐ Thick Fog ☐ Mist ☐ Other (write in notes)
Other Precipitation/ Precipitation Notes:	
Visibility (miles):	10
Misc. Hourly Notes:	
Incidental Species (Alpha Codes):	AMCR, MODO, ROPI, CANG, BLJA, BCCH, CORA, EUST
General Survey Notes:	It was a mild day with temperatures steadily around 40F and relatively clear skies. Wind was out of the NNW at around 6mph for the whole survey.

EDR

Fall Raptor Migration Survey Report

Hoffman Falls Wind Project

Towns of Fenner, Nelson, Eaton, and Smithfield

Madison County, New York

Prepared for:

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90 State Street, Suite 700
Albany, NY 12207
https://liberty-renewables.com/hoffmanfallswind/

Prepared by:

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February 2023

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ACRONYMS AND ABBREVIATIONS

EDR	Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.
GIS	geographic information system
IPaC	Information for Planning and Consultation
MW	megawatt
NAIP	National Agriculture Imagery Program
NYNHP	New York Natural Heritage Program
NYSDEC	New York State Department of Environmental Conservation
NYSDOP	New York State Digital Orthoimagery Program
ORES	New York State Office of Renewable Energy Siting
POI	point of interconnection
SGCN	species of greatest conservation need
SSC	species of special concern
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Liberty Renewables Inc. (the Applicant), Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) has prepared this Fall Raptor Migration Survey Report for the Hoffman Falls Wind Project, a proposed wind energy generation facility and associated infrastructure (herein, the Facility) located in Madison County, New York. This report supports an Application for a siting permit that is being prepared in accordance with New York's Accelerated Renewable Energy Growth and Community Benefit Act, Executive Law §94-c (Section 94-c) regulations.[1] The information included in this report is intended to inform the Applicant in the development of the Facility and assist the New York State Office of Renewable Energy Siting (ORES) and the New York State Department of Environmental Conservation (NYSDEC) in their review of the Facility's potential impacts on state-listed threatened and endangered (T&E) bird species in accordance with the requirements of the Section 94-c and 6 NYCRR Part 182 (Part 182) regulations.

The purpose of the fall raptor migration surveys was to identify and document raptors (including eagles, falcons, harriers, hawks, ospreys, owls, and vultures) that move through the area including and surrounding the proposed Facility during the fall migration season (defined by the NYSDEC as August 15 to December 15). All raptor species were targeted for the study, along with large flocks of non-raptor birds (e.g., waterfowl, corvids, icterids) and any special status species (i.e., T&E species, species of special concern [SSC], and species of greatest conservation need [SGCN] [NYSDEC, 2015a; NYSDEC, 2015b]). The fall raptor surveys were conducted by qualified biologists following the methodology established in the 2016 NYSDEC *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects* (NYSDEC Survey Protocol; NYSDEC, 2016). The scope of these surveys was defined in a Fall Raptor Migration Survey Work Plan that was submitted for ORES staff review on October 4, 2022 (EDR, 2022).

1.2 Facility Location and Description

The Applicant is proposing to construct a wind energy generation facility of up to 100 megawatts (MW) within the Towns of Fenner, Nelson, Eaton, and Smithfield in Madison County, New York (see **Figure 1**). The proposed Facility will consist of wind turbines, a point of interconnection (POI) substation, temporary construction laydown areas, access roads, and electrical collection lines. The Facility will be constructed within an approximately 7,000-acre area (the Facility Area; see **Figure 2**). Within this area, a more limited subset of land will be selected for the siting, design, construction, and operation of the Facility. Some Facility components will be constructed in areas where disturbance has already occurred (e.g., agricultural fields that are used for hay and/or row crop production) in order to minimize the need for vegetation removal within natural communities.

[1] Chapter XVIII, Title 19 of the New York Codes, Rules and Regulations (NYCRR) Part 900. Available at: https://ores.ny.gov/regulations

2.0 BACKGROUND INFORMATION

2.1 Existing Conditions

The Applicant has gathered a substantial amount of information on the existing ecological conditions within the Facility Area. These investigations have included developing a preliminary Wildlife Site Characterization[2] for the Facility, plus additional desktop analyses and on-site field assessments (e.g., spring raptor migration surveys, breeding bird surveys, winter raptor surveys). Based on these assessments, the Facility Area is primarily composed of agricultural fields, along with mixed forests, evergreen forests, woody wetlands, early successional communities, and developed land (primarily rural single-family houses, farms, and associated yards).

2.2 Agency Database Review and Consultation

As part of the preliminary Wildlife Site Characterization, EDR consulted with federal and state agencies regarding the potential presence of T&E species near the Facility. This included database review via the U.S. Fish and Wildlife Service (USFWS) online Information for Planning and Consultation (IPaC) system, as well as correspondence with the New York Natural Heritage Program (NYNHP), NYSDEC, and ORES. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** Correspondence with the NYNHP began with the submittal of a formal request for information regarding state and federally listed endangered and threatened species within the Facility Area on April 1, 2021. A response letter received from the NYNHP on May 14, 2021, listed several state-listed T&E bird species that have been documented within 10 miles of the Facility Area (EDR, 2022). **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION**

In a pre-application consultation letter provided in June 2021, ORES indicated that the Facility is not sited within areas of mapped occupied habitat for any state-listed species but recommended that the Applicant conduct breeding bird surveys and winter raptor surveys (EDR, 2022). Although ORES did not recommend conducting raptor migration surveys for the Facility, the Applicant elected to conduct these surveys to gather more information on state-listed bird species and provide additional data for Exhibits 11 and 12 of the Section 94-c Application that will be prepared for the Facility. The Applicant will continue to consult with the appropriate agencies to ensure that the most current state-listed species information is being considered throughout the Facility design and development process.

[2] A revised Wildlife Site Characterization was prepared to account for the current Facility Area, and was submitted to ORES and NYSDEC staff on February 16, 2023.

3.0 FALL RAPTOR MIGRATION SURVEYS

As noted in Section 1.1, fall raptor migration surveys for the Facility were conducted based on the NYSDEC Survey Protocol. The surveys were intended to document the species, number, and flight height/direction of migrating raptors in order to allow for potential impact evaluation and to inform the Facility development and permitting process.

3.1 Survey Schedule

The survey period corresponded with the typical fall migratory period for the majority of New York avian species that may pass by or through the Facility Area during the fall migration season. As noted above, the NYSDEC Survey Protocol defines the fall migration season as beginning on August 15 and continuing through December 15. Therefore, surveys were conducted from August 16 to December 14, 2022, for a total of 36 surveys (representing more than 297 survey-hours).

Surveys were conducted at each survey location once per week, starting at 0800[3] and lasting until at least 2 hours prior to sunset, which ranged from approximately 1800 to approximately 1430 as the season progressed. To the greatest extent practicable, surveys were not conducted on days when weather conditions would limit visibility (e.g., heavy rain, fog, snow, or excessive cloud cover). Weather forecasts were reviewed regularly in order to select the most appropriate survey days.

3.2 Survey Locations

The primary method for surveying migrating raptors consisted of daytime surveys conducted from two survey locations. Spring raptor migration surveys were previously completed for the Facility in 2021. As part of designing that study, EDR conducted desktop reviews of the Facility Area using a Geographic Information System (GIS) to evaluate topography, vegetative communities, land cover, and access constraints. The results of this analysis were used to identify suitable survey locations for spring raptor migration surveys (EDR, 2021a; EDR, 2021b). Current National Agriculture Imagery Program (NAIP) and New York Statewide Digital Orthoimagery Program (NYSDOP) aerial imagery were reviewed as part of that effort, along with topographic contours generated from New York State GIS Program Office lidar data.

Based on a similar analysis conducted for the current Facility Area, two survey locations were selected for the 2022 fall raptor migration surveys (see **Figure 3**). The first location (Station 1) was positioned approximately 750 meters south of Cody Road and approximately 400 meters east of Wyss Road in the northern portion of the Facility Area. The second location (Station 2) was positioned approximately 250 meters east of Brooks Road in the central/eastern portion of the Facility Area. The suitability of both locations was field verified by EDR biologists in July 2022. Both survey locations provided open views of the sky and the Facility Area in multiple directions, with emphasis on northern views to improve detection of southbound raptors. Representative views for both survey locations (under leaf-on and leaf-off conditions) are provided in **Appendix A**.

[3] Note that 24-hour time format is used here and throughout this report.

3.3 Survey Methodology

During surveys, biologists stood and/or sat at the stationary survey locations and conducted systematic visual scans of the sky in all directions, in order to detect raptors and other birds passing through the area and/or utilizing habitat within the Facility Area. Binoculars of 8x or 10x magnification were used as the primary visual aid for avian identification and counts, and a 20x-60x spotting scope was used as a secondary visual aid. Biologists recorded detailed information for all state-listed raptors observed, as well as large flocks of non-raptor birds (i.e., more than 50 individuals). In addition, any observations of special status species (i.e., endangered, threatened, SSC, SGCN) were documented, regardless of number.

Survey data were recorded in a standardized and organized fashion using data sheets and a mobile GIS application that allowed for digitization of flight path lines and perch locations. Data recorded for each fall raptor migration survey included:

- Observer initials.
- Date.
- Survey start time.
- Survey end time.
- Survey duration.
- Survey location identification number.
- Hourly weather conditions (temperature, cloud cover, prevailing wind direction, wind speed, precipitation type [if any], and visibility).
- Overall dominant flight direction.
- The number of individuals and identification of each species observed.
- The start and end time (or time period) for each observation.
- Sex and age of individuals (when applicable).
- Minimum and maximum flight height.
- Average flight height and direction.
- Point feature type (if applicable).
- Perch height and substrate type (if applicable).
- Behavior(s) (e.g., soaring, perching, foraging).
- Apparent migratory status (i.e., suspected migrant or suspected local/resident).
- Descriptions and additional notes.

Non-raptor bird species flocks composed of more than 50 individuals and all non-raptor special status species were noted and mapped in a similar manner to state-listed raptor observations. All other non-raptor bird species that did not meet those criteria were noted as incidental species simply for their presence (the number of individuals was not recorded). Locations of all state-listed endangered, threatened, and special concern raptor species were indicated on an aerial-based map of the survey area. All observations of non-raptor special status species (including more detailed flight/perch information and behavioral descriptions) were also recorded on this map.

3.3.1 Data Analysis

Several metrics were calculated for each raptor species observed during surveys. First, the total number of observations was determined for each species. Observations were considered equivalent to individuals for the purpose of the analysis, as it is not always possible to discern among individuals of the same species during surveys. Frequency was then calculated for each raptor species by dividing the number of survey days during which observations are recorded by the total number of survey days. Mean and median flight heights for each special status raptor species were also calculated using the average flight height for each individual of that species recorded in the field. The percentage of special status raptor species in flight was calculated based on the total number of individuals that were only seen perching and the total number of individuals that were seen in flight. The dominant flight direction was determined by reviewing flight paths and recorded flight pattern data; in some cases, there was no obvious dominant flight direction. Temporal use was also tabulated for each raptor species based on the time period of observation for every individual.

For state-listed T&E species that were documented, EDR reviewed behavioral descriptions, flight heights/patterns, and temporal data to identify the subset of observations of these species that appeared to include one or more essential behaviors.[4]

3.4 Survey Results

A total of 36 surveys were conducted between August 16 and December 14, 2022, resulting in more than 297 observer-hours (17,851 observer-minutes). A summary of the completed survey information is provided below in **Tables 1** and **2**. Overall, a total of 2,223 migrating raptors and 394 local raptors were recorded throughout the season (2,617 total individuals). **BEGIN CONFIDENTIAL INFORMATION**<[redacted]>**END BEGIN CONFIDENTIAL INFORMATION** A summary of raptor observations is provided below in **Table 3**, and state-listed raptor observations are presented in **Figure 4**. State-listed migrant and local raptor observations are listed in **Appendices B** and **C**, respectively, and survey data sheets are provided in **Appendix D**.

[4] 6 NYCRR Part 182.2(f) defines essential behavior as any of the behaviors exhibited by a species listed as endangered or threatened (in New York State) that are a part of its normal or traditional life cycle and that are essential to its survival and perpetuation. Essential behavior includes behaviors associated with breeding, hibernation, reproduction, feeding, sheltering, migration and overwintering.

BEGIN CONFIDENTIAL INFORMATION<[redacted]>**END CONFIDENTIAL INFORMATION** The overall average flight height for all observations of state-listed suspected migrant raptors was approximately 405 feet. Nearly all raptors observed were seen in flight. A summary of state-listed raptor flight metrics for suspected migrants is provided below in **Table 4.**

Table 1. Summary of Completed Surveys (Station 1)

Survey Date	Start Time (24-hour)	End Time (24-hour)	Survey Duration (hh:mm)	Temp. Range (°F)	Cloud Cover Range (%)	Prevailing Wind Direction(s)	Wind Speed Range (mph)	Precipitation	Visibility Range (mi)	Number of Migrating Raptor Species Observed	Number of Migrating Raptor Individuals Observed
8/16/2022	0755	1808	10:13	66-80	40-70	N, NE, ENE, S, SW	1-10	None	10+	8	104
8/24/2022	0756	1756	10:00	65-78	30-70	W, NW, WNW	1-13+	None	5-10+	7	94
9/1/2022	0800	1740	9:40	58-65	10-70	W, NW	4-12	None	10+	8	134
9/9/2022	0755	1729	9:34	59-78	10-70	N, NE, ENE, SW, WSW, W	0-3	None	5-10+	7	187
9/14/2022	0800	1715	9:15	55-71	30-100	WNW	4-13+	None	10+	7	86
9/23/2022	0800	1659	8:59	41-52	80-100	NW, WNW	4-12	None	5-10	6	22
9/28/2022	0818	1700	8:42	50-54	90-100	W, WNW, NW, NNW	4-12	Fog, Drizzle, and Rain	1-10	3	18
10/6/2022	0800	1640	8:40	45-71	20-90	WSW, W, WNW	0-7	None	5-10+	6	80
10/12/2022	0800	1630	8:30	50-67	30-100	S, SSW, SW	0-12	None	5-10+	5	90
10/20/2022	0800	1615	8:15	37-46	90-100	S, SSW, SW	8-12	None	10+	4	45
10/25/2022	0800	1615	8:15	57-73	20-100	WNW, NW	1-13+	Drizzle	10+	3	47
11/4/2022	0800	1600	8:00	42-71	0-50	SSE, S	4-12	None	10+	5	47

Survey Date	Start Time (24-hour)	End Time (24-hour)	Survey Duration (hh:mm)	Temp. Range (°F)	Cloud Cover Range (%)	Prevailing Wind Direction(s)	Wind Speed Range (mph)	Precipitation	Visibility Range (mi)	Number of Migrating Raptor Species Observed	Number of Migrating Raptor Individuals Observed
11/9/2022	0800	1500	7:00	29-56	0-10	S, SSE	1-12	None	10+	5	12
11/15/2022	0800	1445	6:45	31-34	90-100	ENE, ESE	1-7	None	10+	3	7
11/22/2022	0800	1500	7:00	34-41	60-90	SW, WSW	4-12	None	10+	2	3
12/1/2022	0800	1430	6:30	28-32	80-100	W, WNW	13+	Snow	2-10+	2	2
12/9/2022	0800	1445	6:45	28-31	70-90	NNW, NW	1-7	None	10+	2	6
12/13/2022	0800	1430	6:30	7-28	0-10	NNW, NW	4-7	None	10+	1	1

Table 2. Summary of Completed Surveys (Station 2)

Survey Date	Start Time (24-hour)	End Time (24-hour)	Survey Duration (hh:mm)	Temp. Range (°F)	Cloud Cover Range (%)	Prevailing Wind Direction(s)	Wind Speed Range (mph)	Precipitation	Visibility Range (mi)	Number of Migrating Raptor Species Observed	Number of Migrating Raptor Individuals Observed
8/19/2022	0753	1803	10:10	61-82	20-70	N, NNW, NW, SSE, WSW, W, WNW	0-10	None	10+	8	142
8/25/2022	0755	1755	10:00	63-79	20-60	N, SSW, SW, WSW, NW, NNW	1-7	None	10+	9	102
8/31/2022	0755	1745	9:50	62-74	10-80	SW, W	8-13+	None	10+	7	112
9/8/2022	0800	1730	9:30	62-77	20-100	N, NNW	0-12	Drizzle	10+	11	149
9/15/2022	0800	1715	9:15	47-63	0-10	N, NNW	4-12	None	10+	6	89
9/20/2022	0800	1715	9:15	61-66	90-100	WNW, NW	4-12	Drizzle and Rain	1-10+	4	68
9/29/2022	0800	1700	9:00	45-55	10-90	N, WNW, NW, NNW	1-12	None	5-10+	7	186
10/4/2022	0800	1645	8:45	45-55	90-100	N	0-7	Drizzle	10+	5	148
10/14/2022	0800	1629	8:29	40-61	0-30	SSW, SW, WSW	0-12	None	10+	5	125
10/19/2022	0800	1615	8:15	28-42	70-100	S, SSW, SW	1-13+	None	10+	3	45
10/27/2022	0800	1610	8:10	41-45	20-100	WNW, NW	1-13+	Drizzle	10+	4	29

Survey Date	Start Time (24-hour)	End Time (24-hour)	Survey Duration (hh:mm)	Temp. Range (°F)	Cloud Cover Range (%)	Prevailing Wind Direction(s)	Wind Speed Range (mph)	Precipitation	Visibility Range (mi)	Number of Migrating Raptor Species Observed	Number of Migrating Raptor Individuals Observed
11/3/2022	0800	1600	8:00	43-68	0-10	SSE, S, SSE, WSW	1-13+	None	5-10+	3	16
11/10/2022	0800	1500	7:00	40-64	0-30	SSE, S	4-12	None	10+	4	12
11/18/2022	0800	1500	7:00	27-32	80-100	SSW, SW, WSW	8-13+	None	10+	3	6
11/22/2022	0800	1434	6:34	33-44	10-100	WNW, SW, WSW	1-7	None	10+	3	7
11/29/2022	0800	1444	6:45	31-37	90-100	SSE, S, SSE, SW	1-7	None	5-10+	1	1
12/8/2022	0800	1430	6:30	36-38	90-100	NNW, NW	1-7	Rain, Drizzle, and Snow	0-10+	0	0
12/14/2022	0800	1430	6:30	14-23	10-30	N, NNW	4-12	None	10+	1	1

Table 3. Summary of Raptors Observed

BEGIN CONFIDENTIAL INFORMATION<

Common Name	Scientific Name	Conservation Status[1]	Number of Survey Days Observed[2]	Frequency[3]	Number of Individuals[4]
[redacted]	[redacted]	Endangered	4	0.11	4
[redacted]	[redacted]	Threatened	32	0.89	182
[redacted]	[redacted]	Threatened	19	0.53	27
[redacted]	[redacted]	Special Concern	15	0.42	46
[redacted]	[redacted]	Special Concern	11	0.31	14
[redacted]	[redacted]	Special Concern	9	0.25	11
[redacted]	[redacted]	Special Concern	3	0.08	3
American Kestrel	*Falco sparverius*	Greatest Conservation Need	13	0.36	74
Broad-winged Hawk	*Buteo platypterus*	None	10	0.28	58
Merlin	*Falco columbarius*	None	3	0.08	3
Red-tailed Hawk	*Buteo jamaicensis*	None	31	0.86	384
Rough-legged Hawk	*Buteo lagopus*	None	2	0.06	2
Turkey Vulture	*Cathartes aura*	None	25	0.69	1,808
[redacted][5]	[redacted]	Special Concern	1	0.03	1

[1]Highest conservation status based on the List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State (NYSDEC, 2015a) and the List of the Species of Greatest Conservation Need (NYSDEC, 2015b).
[2]The total number of days the species was observed during the survey period.
[3]Represents the number of survey days the species was observed divided by the total number of survey days (36).
[4]The number of individuals includes suspected migrants and suspected non-migrants.
[5][redacted]

Table 4. Summary of State-Listed Suspected Migrant Raptor Flight Metrics

Species	Total Number of Individuals[1]	Mean Flight Height (feet)	Median Flight Height (feet)	Percent of Individuals in Flight	Dominant Flight Direction
[redacted]	4	488	500	100	S/SW
[redacted]	167	458	450	99	S
[redacted]	20	298	225	95	S
[redacted]	44	362	320	100	S
[redacted]	12	208	175	100	S
[redacted]	10	424	388	100	S
[redacted]	3	208	200	100	SW
[redacted][2]	1	N/A	N/A	N/A	N/A

[1]The number of individuals observed over the course of the season. Observations were considered equivalent to individuals for the purpose of this table, although the same individuals may or may not have been observed multiple times.
[2] [redacted]

>END CONFIDENTIAL INFORMATION

The time period with the most raptor observations was 1100–1200, with 397 individuals. The second most productive period was 1000–1100, with 371 individuals. These two time periods (1000–1100 and1100-1200) accounted for approximately 34% of all observations of suspected migrant raptors. A summary of raptor temporal use is provided in **Table 5**.

Table 5. Summary of Suspected Migrant Raptor Temporal Use

BEGIN CONFIDENTIAL INFORMATION<

Species	Time Period (24-hour)										
	0800 -0900	0900 -1000	1000- 1100	1100- 1200	1200- 1300	1300- 1400	1400- 1500	1500- 1600	1600- 1700	1700- 1800	1800- 1900
[redacted]	0	0	0	2	1	1	0	0	0	0	0
[redacted]	1	4	27	41	36	42	9	6	1	0	0
[redacted]	1	0	6	2	3	1	2	3	2	0	0
[redacted]	2	2	5	4	6	8	6	7	2	2	0
[redacted]	1	0	1	3	1	2	3	0	0	1	0
[redacted]	1	0	0	0	2	4	0	2	0	1	0
[redacted]	0	0	1	0	1	1	0	0	0	0	0
American Kestrel	1	6	9	6	6	5	8	7	8	0	0
Broad-winged Hawk	1	7	3	30	1	5	6	1	4	0	0
Merlin	0	0	0	0	0	0	2	0	1	0	0
Red-tailed Hawk	2	9	46	56	47	50	64	47	22	8	0
Rough-legged Hawk	0	0	0	0	1	0	0	0	0	0	0
Turkey Vulture	21	92	273	253	225	222	159	117	92	39	0
[redacted][1]	0	0	0	0	0	1	0	0	1	0	0
Total	**31**	**120**	**371**	**397**	**330**	**342**	**259**	**190**	**132**	**51**	**0**

Note: Temporal use values represent the total number of birds observed during each time period.
[1] [redacted]

>END CONFIDENTIAL INFORMATION

3.4.1 Special-Status Species, Large Flocks, and Incidental Species

BEGIN CONFIDENTIAL INFORMATION [redacted] **END CONFIDENTIAL INFORMATION** A summary of state-listed species observations is provided in **Table 6**, and state-listed raptor observations are presented in **Figure 4**. Observations of state-listed non-raptor species are presented in **Figure 5**.

Although most state-listed raptors were observed migrating through the area, some species exhibited behaviors indicative of potential breeding or wintering. **BEGIN CONFIDENTIAL INFORMATION** [redacted] **END CONFIDENTIAL INFORMATION**

Table 6. State-Listed T&E Species Observations

BEGIN CONFIDENTIAL INFORMATION<

Common Name	Scientific Name	Conservation Status[1]	Sex/Age	Date(s)	Observed Behavior(s)	Number of Suspected Migrants	Number of Suspected Non-migrants
[redacted]	[redacted]	Endangered	Unknown; Juvenile and Subadult	September 8 to December 14, 2022	Soaring; Flapping; Gliding	4	0
		Threatened	Unknown; Adult, Juvenile, Subadult, and Unknown	August 16 to December 14, 2022	Soaring; Gliding; Flapping; Interacting; Leaving Suspected Roost; Foraging; Courtship	167	15
		Threatened	Male, Female, and Unknown; Juvenile, Adult, and Unknown	August 16 to November 22, 2022	Flapping; Foraging; Gliding; Interacting; Soaring; Perching	20	7
		Special Concern	Unknown; Adult, Juvenile, and Unknown	August 16 to December 9, 2022	Soaring; Flapping; Gliding; Foraging; Interacting	44	2

Common Name	Scientific Name	Conservation Status[1]	Sex/Age	Date(s)	Observed Behavior(s)	Number of Suspected Migrants	Number of Suspected Non-migrants
[redacted]		Special Concern	Unknown; Adult and Unknown	August 16 to November 10, 2022	Soaring; Gliding; Flapping; Foraging; Interacting	12	2
		Special Concern	Unknown; Unknown	August 16 to October 14, 2022	Soaring; Flapping; Gliding	10	1
		Special Concern	Unknown; Adult and Juvenile	September 1 to November 29, 2022	Flapping; Soaring; Gliding	3	0
		Special Concern	Unknown; Unknown	November 3 to November 22, 2022	Vocalizing; Foraging; Flapping	0	69

[1] Highest conservation status based on the List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State (NYSDEC, 2015a).

>END CONFIDENTIAL INFORMATION

Many Canada goose (*Branta canadensis*) flocks were observed during surveys, with flocks ranging from 65 to 540 individuals. Several flocks of blackbirds that included common grackles (*Quiscalus quiscula*) and red-winged blackbirds (*Agelaius phoeniceus*) were also documented during surveys, as well as flocks of American crows (*Corvus brachyrhynchos*). Other large passerine flocks observed consisted of European starlings (*Sturnus vulgaris;* 90-210 individuals) and cedar waxwings (*Bombycilla cedrorum;* flock of 80 individuals). Two non-raptor SGCN, the bobolink (*Dolichonyx oryzivorus*) and the eastern meadowlark (*Sturnella magna*), were recorded incidentally during the survey period. One arctic-breeding songbird species, snow bunting (*Eremophila alpestris*), was observed toward the end of the survey period. Other incidental avian species observed during each survey were noted on the survey data sheets (see **Appendix D**) and are summarized in **Appendix E**.

4.0 CONCLUSIONS

Fall raptor migration surveys were conducted at two survey locations within the Facility Area between August 16 and December 14, 2022, totaling more than 297 survey-hours over the course of 36 survey days. Surveys were conducted from 0800 until 2 hours before sunset. Overall, a total of 2,223 migrating raptors of 13 species were observed. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION** The remaining raptor species observed included merlin, broad-winged hawk, red-tailed hawk, rough-legged hawk, and turkey vulture. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL INFORMATION**

State-listed raptor species were observed multiple times within the Facility Area from mid-August through mid-December. The regular presence of state-listed raptor species during the fall migration season suggests that Facility construction and operation could present some risk to these species. **BEGIN CONFIDENTIAL INFORMATION<** [redacted] **>END CONFIDENTIAL**

INFORMATION The Applicant will continue to engage in consultations with ORES and NYSDEC regarding the results of this and other avian field surveys conducted for the Facility in order to make conclusions about potential impacts to occupied habitat and the need for a net conservation benefit plan.

5.0 REFERENCES

Environmental Design & Research, D.P.C. (EDR). 2021a. *Spring Raptor Migration Survey Report*. *Hoffman Falls Wind Project*. Prepared for Liberty Renewables Inc. by Environmental Design & Research, D.P.C., Syracuse, NY. July 2021.

EDR. 2021b. *Spring Raptor Migration Survey Report*. *Blue Hill Wind Project*. Prepared for Liberty Renewables Inc. by Environmental Design & Research, D.P.C., Syracuse, NY. July 2021.

EDR. 2022. *Fall Raptor Migration Survey Work Plan*. *Hoffman Falls Wind Project*. Prepared for Liberty Renewables Inc. by Environmental Design & Research, D.P.C., Syracuse, NY. August 2022.

New York State Department of Environmental Conservation (NYSDEC). 2015a. *List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State*. Available at: http://www.dec.ny.gov/animals/7494.html (Accessed February 2023).

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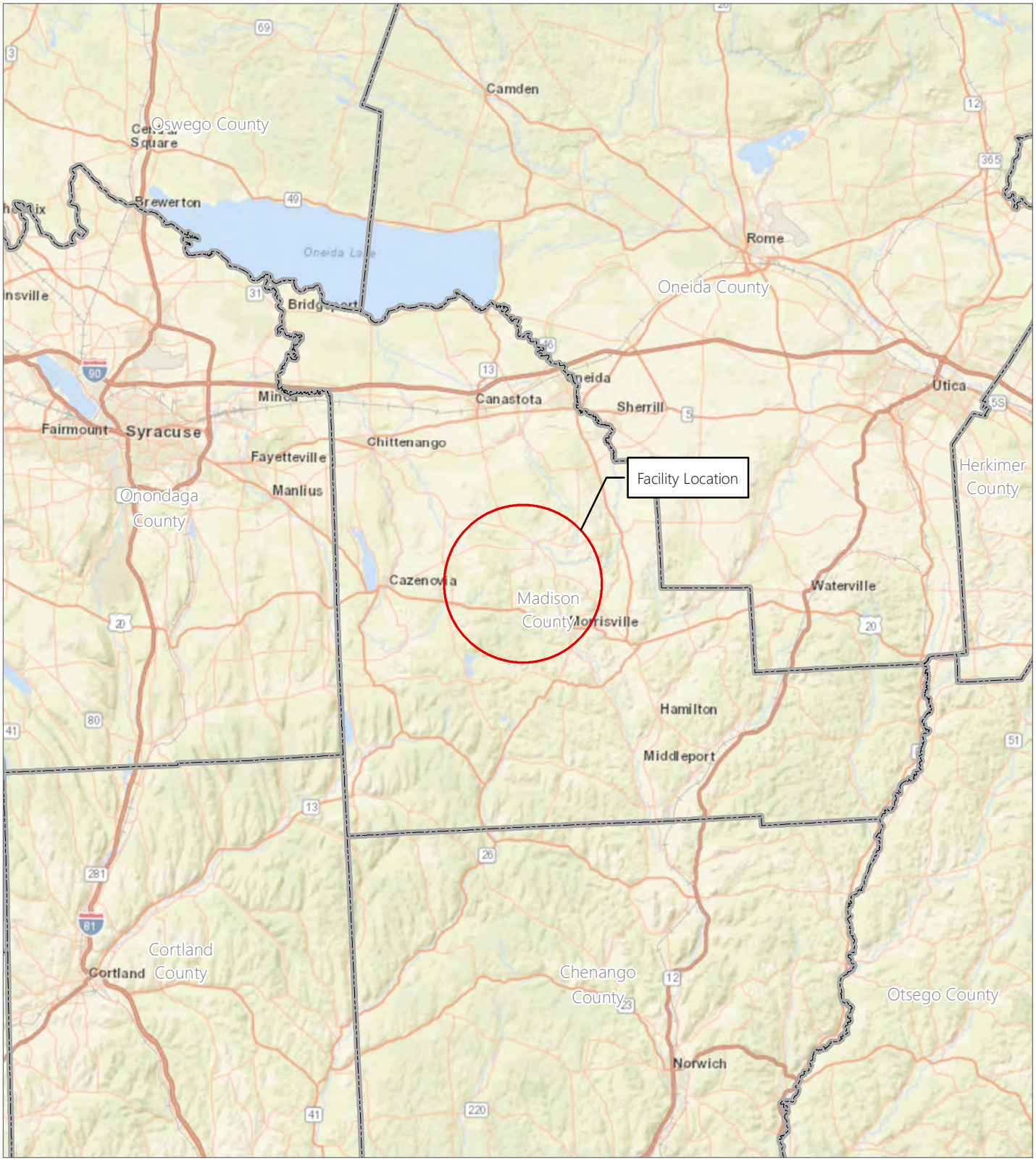
NYSDEC. 2016. *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects*. Available at: https://www.dec.ny.gov/docs/wildlife_pdf/windguide.pdf (Accessed February 2023).

FIGURES

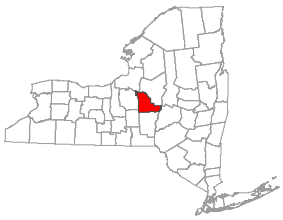
Figure 1. Regional Facility Location



Hoffman Falls Wind Project

Towns of Fenner, Nelson, Eaton, and Smithfield,
Madison County, New York

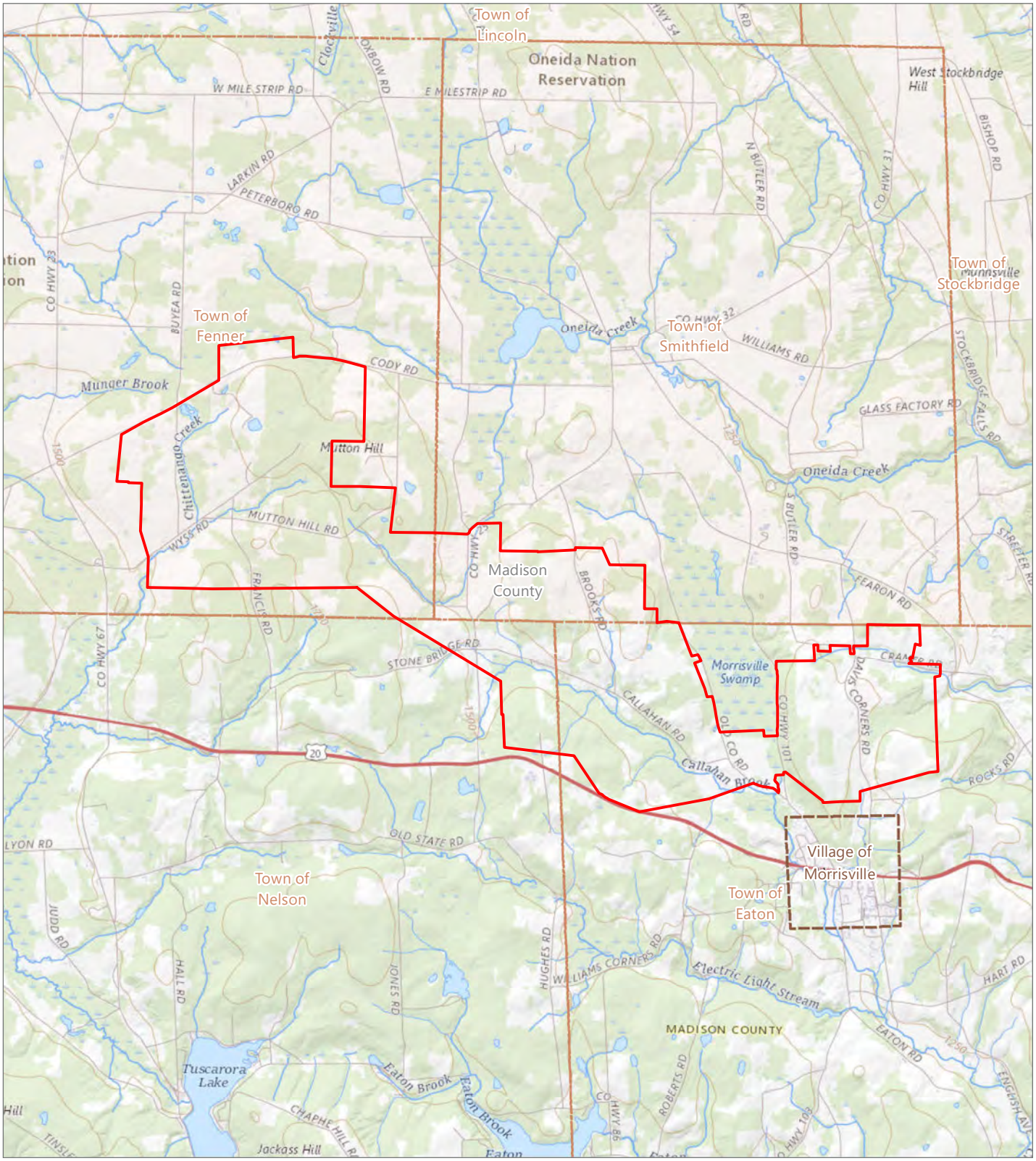
Fall Raptor Migration Survey Report



0 2.5 5 10
Miles

Prepared December 22, 2022
Basemap: Esri "USGS Topo" map service

Figure 2. Facility Area



Hoffman Falls Wind Project

Towns of Fenner, Nelson, Eaton, and Smithfield,
Madison County, New York

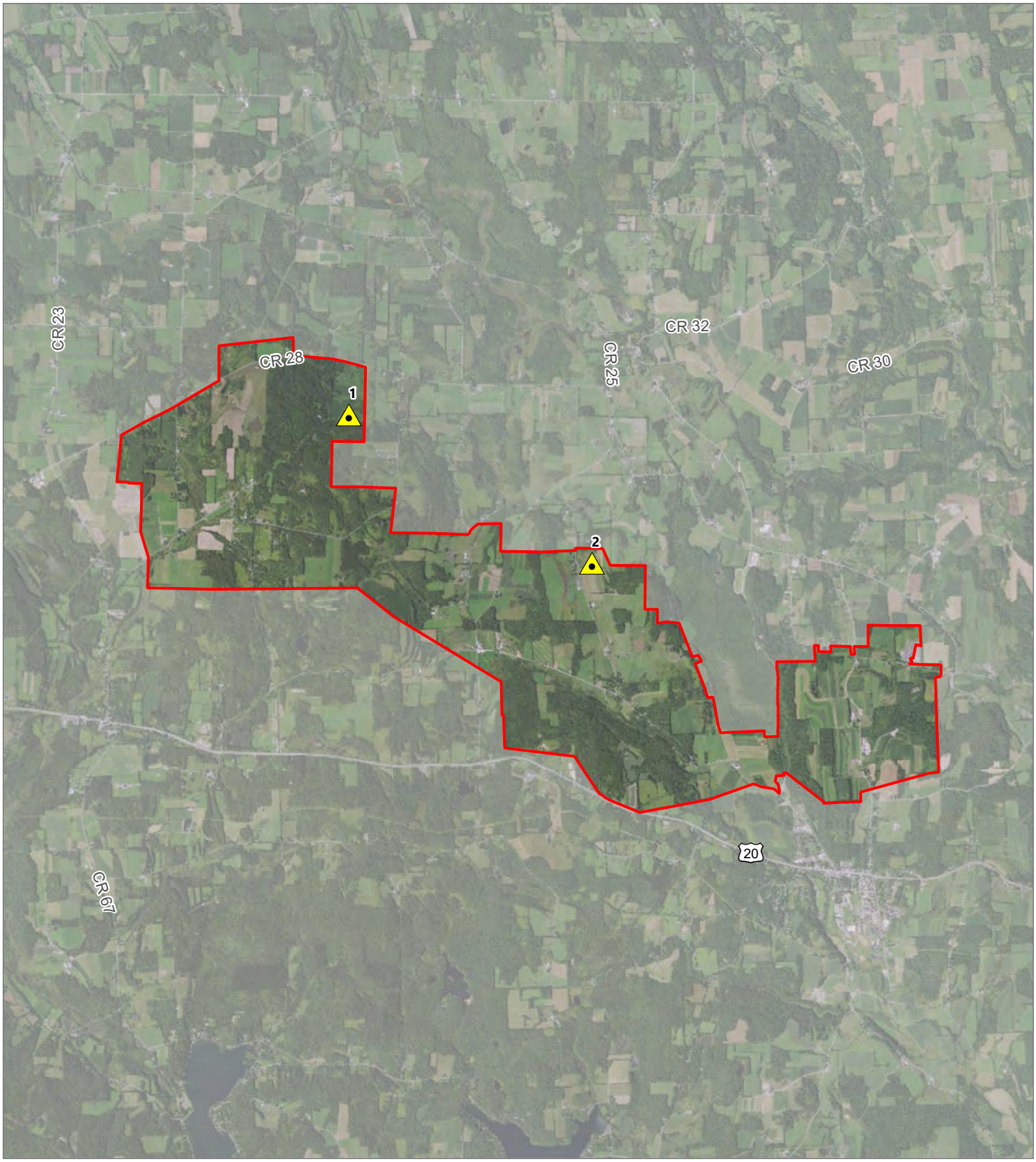
Fall Raptor Migration Survey Report

Facility Area

0 0.5 1 2
Miles

Prepared January 27, 2023
Basemap: Esri "USGS Topo" map service

Figure 3. Survey Locations



Hoffman Falls Wind Project

Towns of Fenner, Nelson, Eaton, and Smithfield,
Madison County, New York

Fall Raptor Migration Survey Report

Survey Location

Facility Area

0 0.5 1 2

Miles

Prepared January 17, 2023
Basemap: NYSDOP "2019" orthoimagery map service

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