Wildlife Site Characterization Report

South Ripley Solar

Town of Ripley

Chautauqua County, New York

Prepared for:

ConnectGen LLC
1001 McKinney, Suite 700
Houston, Texas 77002

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

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1.0 INTRODUCTION

ConnectGen LLC (the Applicant) is proposing to construct the South Ripley Solar Energy Generating Facility and associated necessary infrastructure (the Facility) on approximately 4,523 acres (the Facility Area) in the Town of Ripley in Chautauqua County, New York (Figure 1). The Facility Area is roughly bound by the Town of Mina town line to the south, the Pennsylvania state line to the west, the border of the Town of Westfield to the east, and Irish Road to the north (Figure 2). The Facility will consist of arrays of photovoltaic (PV) panels and associated support structures, along with access roads, collection lines, battery storage, a collection substation, and a point of interconnect substation.

With a proposed nameplate capacity of 177 MW, the Facility is considered a major renewable energy facility as defined by Section 66(p) of the New York State Public Service Law, added by Chapter 106 of the Laws of 2019. Chapter XVIII, Title 19 of NYCRR Part 900 establishes procedural and substantive requirements for permit applications for major renewable energy facilities under Section 94-c of the New York State Executive Law. Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) was retained by the Applicant to prepare a Wildlife Site Characterization Report as requested in a November 23, 2020 letter from the Office of Renewable Energy Siting (Office), and as required by the draft 94-c regulations. Specifically, § 900-1.3(g)(1) of the draft regulations state, "*At the earliest point possible in the applicant's preliminary project planning, the applicant shall conduct a wildlife site characterization summarizing existing public information on bird, bat, and other species…*" However, it should be noted that prior to the release of the draft 94-c regulations the Applicant conducted extensive consultation with federal and New York State agencies with respect to wildlife species in the vicinity of the Facility Area, specifically focusing on the potential presence of threatened and endangered species. During the course of consultation, it was determined that Facility-specific avian surveys to determine the potential presence of rare grassland species should be conducted, which resulted in an on-site Winter Raptor Survey in the winter of 2019/2020 and an on-site Breeding Bird Survey in the spring of 2020. A summary of the Applicant's consultation to-date and the associated on-site surveys is provided below in Section 1.1.

The purpose of this Wildlife Site Characterization Report is to comply with § 900-1.3(g)(1) of the draft 94-c regulations by summarizing existing public information on bird, bat, and other wildlife species, and to provide additional analysis with respect to New York State (NYS) listed threatened, endangered, or special concern species that could potentially occur in the vicinity of the Facility. In addition, this report will discuss the results of site-specific wildlife consultation and avian surveys conducted by EDR in 2019 and 2020.

2.0 PUBLICLY AVAILABLE DATA SOURCES

Requirements pursuant to § 900-1.3(g)(1)
At the earliest point possible in the applicant's preliminary project planning, the applicant shall conduct a wildlife site characterization summarizing existing public information on bird, bat, and other species, including, but not limited to, New York's Environmental Assessment Form (EAF) Mapper, New York Natural Heritage Program (NYNHP), USFWS iPaC and ECOs databases, New York's Environmental Resource Mapper, Nature Explorer, and Biodiversity and Wind Siting Mapping Tool, eBird, Audubon Christmas Bird Counts, United States Geological Survey (USGS) breeding bird surveys, the current New York Breeding Bird Atlas III program, New York State Ornithological Association, local birding organizations, Bat Conservation International's database on bat species ranges, New York State Department of Environmental Conservation (NYSDEC) bat information.

2.1 NEW YORK'S EAF MAPPER

The EAF Mapper is a tool developed by the New York State Department of Conservation (NYSDEC) that takes a user-defined project site and searches Geographic Information System (GIS) data sets (NYSDEC, 2020b) of various environmental resources or sensitivities.

The EAF Mapper tool was queried for the proposed Facility Area (i.e., the land area bounded by the Mina town line to the south, the Pennsylvania state line to the west, the border of the Town of Westfield to the east, and Irish Road to the north). The response to EAF question E.2.n indicates that there are two significant natural communities within the Facility Area, Confined River (approximately 77 acres) and Hemlock-Northern Hardwood Forest (approximately 1,430 acres). The response to EAF question E.2.o indicates that there is one endangered or threatened species potentially present within the Facility Area; the New York State threatened bald eagle (*Haliaeetus leucocephalus*). The response to EAF question E.2.p indicates that there are no rare plants or animals present within the Facility Area.

2.2 NEW YORK'S ENVIRONMENTAL RESOURCE MAPPER

The Environmental Resource Mapper is an interactive mapping application developed by the NYSDEC that can be used to identify New York State's natural resources and environmental features that are state or federally protected, or of conservation concern. The maps display the general areas where rare animals, rare plants and significant natural communities have been documented by the New York Natural Heritage Program (NYNHP). The Environmental Resource Mapper also displays locations of New York State regulated freshwater wetlands and of protected streams, rivers, and lakes. These maps are provided as a source of information for landowners, land managers, citizens, local officials, and project sponsors engaged in land use decision making, conservation planning, or environmental assessment of proposed projects or actions (NYSDEC, 2020a).

The Environmental Resource Mapper does not support user-defined search areas or shapefiles. To evaluate the Facility Area, the Town of Ripley was queried and the portion of the town map within the Facility Area was examined. An unidentified significant natural community is identified as occurring throughout the central and eastern portions of the Facility Area. Additionally, a rare plant or animal is indicated directly to the north and east of the Facility Area. The only mapped features illustrated within the Facility Area boundary are streams and New York State regulated

freshwater wetlands (NYSDEC, 2020a). Additional discussion of mapped wetlands and streams is included in Section 4.5.1 of this report.

2.3 NEW YORK NATURAL HERITAGE PROGRAM

The NYNHP maintains data on state-listed rare, threatened, and endangered plant and animal species, as well as significant ecological communities. Based on the results of the Environmental Resource Mapper review, an initial site-specific request for documented occurrences in the vicinity of the Facility Area was submitted to NYNHP on August 21, 2019, and a response received on September 15, 2019. This response indicated two high quality occurrences of significant natural communities (Confined River and Hemlock-Northern Hardwood Forest), within the Facility Area, as well as a state-listed endangered plant (tall ironweed [*Vernonia gigantea*]), occurring within 0.35 mile of the Facility Area.

On November 6, 2019, the NYSDEC Central Office provided additional NYNHP occurrence data for the Facility Area and its vicinity in accordance with a previously executed non-disclosure agreement (NDA). In this response, NYSDEC stated that "[t]here are no records of State-listed threatened or endangered grassland bird species within the project area, however some suitable habitat exists on site that may support wintering or breeding grassland birds."

As the project continued to develop, a second request for information was sent to the NYNHP on April 28, 2020, and a subsequent response was received on May 21, 2020 (Appendix B). The second NYNHP response letter indicated that breeding bald eagles (state-listed threatened) have been documented within 0.75 mile of the Facility Area, as well as the previously identified significant natural communities and state-listed endangered plant.

2.4 USFWS IPaC and ECOS DATABASES

The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaA) database is a project planning tool that streamlines the environmental review process. Users define a proposed project area and provide basic information about the project. IPaC then generates an official species list containing information to assist in evaluating the potential impacts of the project. The official species list is a formal letter from the local USFWS office that includes a list of threatened and endangered species and critical habitat that should be considered under Section 7 of the Endangered Species Act, as well as other pertinent information from the local field office.

A shapefile of the Facility Area was uploaded to IPaC on November 17, 2020 (Appendix B). The official species list generated by IPaC identified one federally-listed threatened mammal, the northern long-eared bat (*Myotis septentrionalis*), as potentially occurring within the Facility Area. However, no critical habitat for northern long-eared bat has been identified within the Facility Area. According to the IPaC, no federally-listed avian species are expected to occur within the Facility Area.

2.5 NEW YORK'S NATURE EXPLORER

New York Nature Explorer is an online tool developed by the NYSDEC to help inform land use decisions, natural resource management, biodiversity conservation, and environmental assessment. Users can define a specific search area (or query by county, town, or watershed) and obtain a list of the rare and listed animals, plants, and significant natural communities that have been found there, as documented in databases maintained by NYSDEC. However, because not all species are included in the list (i.e., location information for some sensitive species is excluded due to vulnerability to collection), the results of a New York Nature Explorer query should be considered only an initial indication of the potential presence of rare and/or listed animals and plants in the vicinity of the search area (NYSDEC, 2020d). Direct correspondence with the NYNHP, described above in Section 2.3, affords access to site-specific data for all rare and listed species, including those sensitive species not reported in New York Nature Explorer results.

The New York Nature Explorer tool was queried using an approximate Facility Area boundary. Results indicated no records of rare species or significant natural communities occurring within the Facility Area.

2.6 NEW YORK'S BIODIVERSITY AND WIND SITING MAPPING TOOL

The Biodiversity and Wind Siting Online Mapping Tool is intended to help New York meet its renewable energy goals while avoiding and minimizing impacts on sensitive biodiversity resources. This tool, developed by scientists from The Nature Conservancy, The New York Natural Heritage Program, and The Cornell Laboratory of Ornithology in collaboration with the New York State Energy Research and Development Authority (NYSERDA), can help decision-makers balance environmental concerns with siting wind power. The proposed Facility is a solar energy project, and as such, does not pose the same collision risks to migratory birds and bats that wind energy facilities can. Since early November 2020 attempts have been made to use this tool; however, it has not been functioning, which remains the case as of January 26, 2021.

2.7 CORNELL LABORATORY OF ORNITHOLOGY's eBird

The eBird database, managed by the Cornell Lab of Ornithology, is an on-line database of bird observations collected by citizen scientists around the world and vetted by regional experts (eBird, 2020a). Data are used to document bird distribution, abundance, habitat use, and trends within a simple, scientific framework to help inform bird research worldwide. The main limitation of eBird data is the concentration of data is often limited to publicly accessible lands such as state and national parks, national forest lands, and known birding hotspots. Hotspots are public birding locations created and regularly frequented by eBird users that allow multiple birders to enter data into the same shared location. However, data are also available in the form of personal observations with approximate locations.

In order to narrow the search focus to within the vicinity of the Facility Area, only eBird hotspots were queried. According to eBird, the nearest hotspot is the Sheldon Trail (Town of Chautauqua, approximately 3.5 miles east of the Facility Area). At this location, three state-listed threatened birds, (pied-billed grebe [*Podilymbus podiceps*], bald eagle, and northern harrier [*Circus cyaneus*]) and two state-listed species of special concern (osprey [*Pandion haliaetus*] and Cooper's hawk [*Accipiter cooperii*]) have been observed within the last five years. Common species observed include Canada goose (*Branta canadensis*), American crow (*Corvus brachyrhynchos*), black-capped chickadee (*Poecile atricapillus*), and northern cardinal (*Cardinalis cardinalis*). The next closest eBird hotspot is the Chautauqua Gorge State Forest (approximately 4 miles to the northeast of the Facility Area). No state-listed species have been documented at this hotspot. Common species observed include red-bellied woodpecker (*Melanerpes carolinus*), common grackle (*Quiscalus quiscula*), yellow warbler (*Setophaga petechia*), and song sparrow (*Melospiza melodia*). The Wildlife Species List provided in Appendix C identifies all bird species observed within the Sheldon Trail and Chautauqua Gorge State Forest eBird hotspots.

2.8 AUDUBON CHRISTMAS BIRD COUNT

The Christmas Bird Count (CBC), which was created by the National Audubon Society in 1900, is the longest-running citizen science project in the country (National Audubon Society, 2020c). The primary objective of the CBC is to monitor the status and distribution of wintering bird populations across the Western Hemisphere. Counts take place on a single day within a 15-mile (24 kilometer) diameter count circle, and all bird species and individuals observed are recorded by volunteers.

The Facility Area is not located within any CBC circles; however, the outer limits of two CBC circles are located within 10 miles of the Facility Area. The edge of the Jamestown CBC circle occurs approximately 8 miles to the east, and the edge of the Dunkirk/Fredonia CBC circle occurs approximately 9 miles northeast. Over the last five years (2015-2019), a total of 109 unique species were observed within the Jamestown CBC circle. The most commonly observed species include, Canada goose, mallard (*Anas platyrhynchos*), ring-billed gull (*Larus delawarensis*), and black-capped chickadee. One state-listed endangered species (short-eared owl [*Asio flammeus*]), two state-listed threatened species (northern harrier and bald eagle), and four species of special concern (sharp-shinned hawk [*Accipter striatus*], Cooper's hawk, red-shouldered hawk [*Buteo lineatus*], and horned lark [*Eremophila alpestris*]) were observed within the Jamestown CBC circle within the last five years. Over the last five years (2015-2019), a total of 92 unique species were observed within the Dunkirk/Fredonia CBC circle. Common species observed include mute swan (*Cygnus olor*), wild turkey (*Meleagris gallopavo*), mourning dove, and blue jay. One state-listed endangered species (short-eared owl), two state-listed threatened species (northern harrier and bald eagle), and one species of special concern (Cooper's hawk) were observed within the Dunkirk/Fredonia CBC circle within the last five years. The Wildlife Species List provided in Appendix C identifies all bird species observed within the Jamestown and Dunkirk/Fredonia count circles from 2015-2019.

2.9 USGS BREEDING BIRD SURVEY

The United States Geological Survey (USGS) Breeding Bird Survey (BBS), overseen by the Patuxent Wildlife Research Center, is a long-term, large-scale, international avian monitoring program that tracks the status and trends of North American bird populations. Each survey route is 24.5 miles long, with 3-minute point counts completed at 0.5-mile intervals. During the point counts, every bird seen or heard within a 0.25-mile radius is recorded. No BBS routes are located within or adjacent to the Facility Area.

The closest BBS survey route is Cherry Hill (062), located approximately 16 miles southeast of the Facility. Over the last five years (2015-2019), a total of 74 unique species were observed along this route. State-listed species observations along this route include one observation of a bald eagle (threatened), and one observation of a Cooper's hawk (special concern). Common species observed include killdeer (*Charadrius vociferus*), eastern phoebe (*Sayornis phoebe*), tree swallow (*Tachycineta bicolor*), and tufted titmouse (*Baeolophus bicolor*). No other state-listed threatened, endangered, or special concern species were identified along the Cherry Hill route in the last five years (Pardieck et al., 2020). The Wildlife Species List provided in Appendix C identifies all bird species observed along the Cherry Hill (062) BBS survey route during the 2015-2019 surveys.

2.10 NEW YORK BREEDING BIRD ATLAS

The New York Breeding Bird Atlas (BBA) is a statewide inventory of all birds breeding in the state. The first Atlas inventory was conducted from 1980-1985, the second from 2000-2005, and NYSDEC is currently working with agency and conservation partners to conduct the third atlas inventory between 2020 and 2024 (BBA III). Field work is conducted by dividing the state into blocks of approximately 9 square miles, within which volunteers record all the bird species observed during the breeding season and document evidence of breeding activity (NYSDEC, 2020e). A key change for the BBA III compared to the previous atlases is the use of eBird for data collection. eBird offers real-time data entry and outputs, so partial data results will be available throughout the entire survey period. These preliminary results were reviewed for the atlas blocks that encompass the Facility Area. No bird observations have yet been reported for either the Ripley SW or Ripley SE survey blocks (eBird, 2020b).

Since data are not yet available from the BBA III, data from the second BBA was reviewed for the Facility Area (NYSDEC, 2007a). The Facility Area overlaps four BBA blocks; 1067B, 1068C, 1068D, and 1168C. Common species observed within these blocks include Canada goose, wild turkey, red-tailed hawk (*Buteo jamaicensis*), American robin, and American goldfinch (*Spinus tristis*). State-listed species observed during the second BBA within these blocks include three state-listed species of special concern (sharp-shinned hawk, red-shouldered hawk, and Cooper's hawk). The Wildlife Species List provided in Appendix C identifies all bird species observed within survey blocks 1067B, 1068C, 1068D, and 1168C during the second BBA.

2.11 HAWK MIGRATION ASSOCIATION OF NORTH AMERICA'S RAPTOR MIGRATION DATABASE

The Hawk Migration Association of America (HMANA) is a nonprofit organization that collects hawk migration data from almost 200 affiliated raptor monitoring sites throughout the United States, Canada, and Mexico. A portion of the Ripley Hawk Watch is located within and adjacent to the Facility Area (see Figure 4). The Ripley Hawk Watch is a major spring concentration area for hawks migrating along the south shore of Lake Erie. It has also reported the highest number of sandhill cranes (*Grus canadensis*) on any migration flyway in the northeast. Recent studies indicate that this site is also an important migration corridor for nocturnal passerines (Audubon, 2020). The HMANA website contains complete data from the 2019 spring migration season and partial data from the 2020 spring migration season; due to the Covid pandemic, data was only collected during March 2020.

Review of 2019 data for the Ripley Hawk watch indicates that a total of 11 species were observed throughout the spring hawk watch season. The most abundant species included turkey vulture, broad-winged hawk (*Buteo platypterus*) and red-tailed hawk. State-listed species observed in 2019 include the state-listed endangered golden eagle (*Aquila chryseatos*), the threatened northern harrier and bald eagle, and the species of special concern osprey, sharp-shinned hawk, Cooper's hawk, and red-shouldered hawk. A total of 14 species were observed in 2020, black vulture (*Coragyps atratus*), turkey vulture, osprey (species of special concern), bald eagle (threatened), northern harrier (threatened), sharp-shinned hawk (species of special concern), Cooper's hawk (species of special concern), northern goshawk (species of special concern; *Accipter gentilis*), red-shouldered hawk (species of special concern), broad-winged hawk, red-tailed hawk, rough-legged hawk (*Buteo lagopus*), American kestrel (*Falco sparverius*), merlin (*Falco columbarius*), and peregrine falcon (endangered; *Falco peregrinus*). The Wildlife Species List provided in Appendix C identifies all bird species observed at the Ripley Hawk Watch in March 2020.

2.12 NEW YORK STATE ORNITHOLOGICAL ASSOCIATION

The New York State Ornithological Association (NYSOA) is a conservation organization focused on documenting the ornithology of New York State, fostering interest in and appreciation of birds, and protecting birds and their habitats. Members of NYSOA participate in citizen science efforts, contributing data to eBird, CBC, BBS, and BBA (described above in Sections 2.6, 2.7, 2,8, and 2,9, respectively). In addition, the New York State Avian Records Committee (NYSARC; a committee of the NYSOA) is responsible for maintaining the official list of species of birds that are known to occur (or have occurred) in New York State and adjacent waters. As part of this effort, NYSARC reviews all data pertaining to records of scarce or rare birds reported in the state (NYSOA, 2020a).

The NYSOA website includes a complete, downloadable list of all reports of rare birds submitted to and reviewed by NYSARC since its inception, including species, date, county, status, and publication date. All Chautauqua County records in this list, last updated in August 2020, were reviewed. Two observations of vagrant species were documented in the last five years, including the neotropic cormorant (*Phalacrocorax brasilianus*) and Inca dove (*Columbina inca*).

No birds that are state-listed as threatened, endangered, or species of special concern have been reported from Chautauqua County within the last five years (NYSOA, 2020b).

2.13 LOCAL BIRDING ORGANIZATIONS

The only local birding organization that could be identified was the Chautauqua Bird, Tree and Garden Club, based in Chautauqua, New York. The Chautauqua Bird, Tree & Garden Club hosts a variety of activities for birders in Chautauqua County, including bird walk and talks and purple martin chats, as well as providing various guides to aid in recreational birding and birding photography. However, no database of observed birds is publicly available on this organization's website.

2.14 BAT CONSERVATION INTERNATIONAL'S DATABASE ON BAT SPECIES RANGES AND NYSDEC BAT INFORMATION

According to the Bat Conservation International database and the NYSDEC, nine species of bat have the ranges that extend into New York State (Bat Conservation International, 2020; NYSDEC 2020a). However, only seven of these species have ranges that overlap the Facility Area. These include big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), little brown bat (*Myotis lucifugus*), northern long-eared bat, eastern pipistrelle (*Perimyotis subflauvus*), and silver-haired bat (*Lasionycteris noctivagans*). The northern long-eared bat is both state and federally-listed as threatened. However, as noted previously, the NYNHP response letter of May 21, 2020 citing information on rare, threatened, and/or endangered species did not identify any state-listed bat species as occurring within the Facility Area (see Section 2.3 above). The Wildlife Species List provided in Appendix C includes all bat species identified by Bat Conservation International or the NYSDEC as potentially being present within the Facility Area.

2.15 AMERICAN SOCIETY OF MAMMALOGISTS

There is little publicly-available information regarding the occurrence of mammalian species within the Facility Area. Therefore, the potential occurrence of mammals was documented through consultation with the Region 9 office of the NYSDEC, review of the statewide mammal lists maintained by The American Society of Mammalogists (ASM, 2020), and observations made incidentally during on-site field surveys. Common species that have the potential to occur within the Facility Area include white-tailed deer (*Odocoileus virginianus*), red fox (*Vulpes vulpes*), gray squirrel (*Sciurus carolinensis*), black bear (*Ursus americanus*), and beaver (*Castor canadensis*). Additionally, six species of bat have the potential to occur within the Facility Area, including the state-listed threatened northern long-eared bat (see section 2.14). No other state-listed mammal species are expected to occur within the Facility Area. See also the Wildlife Species List provided in Appendix C.

2.16 HERP ATLAS PROJECT

The New York State Amphibians & Reptile Atlas Project (Herp Atlas) was a survey conducted over a 10-year period (1990-1999) that was designed to document the geographic distribution of New York State's herpetofauna (NYSDEC, 2007b). The USGS 7.5-minute topographic quadrangle is the unit of measurement for data collection for the Herp Atlas.

A total of 12 amphibian species and six reptile species were identified within the South Ripley and North East quadrangles (NYSDEC, 2007). These records consist of common and widespread species including spring peeper (*Pseudacris crucifer*), common garter snake (*Thamnophis sirtalis*), American toad (*Bufo americanus*), northern redback salamander (*Plethodon cinereus*), and northern dusky salamander (*Desmognathus ochrophaeus*). No state-listed threatened or endangered or species of special concern herpetofauna have been documented within the vicinity of the Facility Area. The Wildlife Species List provided in Appendix C identifies all reptile and amphibian species observed within the South Ripley and North East quads during the original Herp Atlas Project.

3.0 ADDITIONAL INFORMATION: SITE SPECIFIC WILDLIFE CONSULTATION AND SURVEYS

Consultation with federal and state agencies regarding the potential presence of threatened and endangered species within the Facility Area began in the summer of 2019. This initiated with a review of 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). Further consultation took place in the fall of 2019 with New York State Department of Environmental Conservation (NYSDEC) Central Office staff and NYSDEC Region 9 staff to obtain occurrence records for any additional state-listed species that may have been documented by the NYSDEC or the NYNHP in the vicinity of the Facility Area.

A Winter Raptor Survey Workplan was prepared and provided to NYSDEC personnel for review and comment in November 2019, the associated on-site surveys were conducted from November 2019 through March 2020, and a virtual meeting was held with NYSDEC personnel in April 2020 to discuss various topics, which included a detailed review of the results of the winter raptor survey. A complete Winter Raptor Survey Report (and associated shapefiles) was provided to NYSDEC on May 22, 2020.

A Breeding Bird Survey Workplan was prepared and provided to NYSDEC personnel for review and comment in May 2020, the associated on-site surveys were conducted from May through July 2020, and a complete Breeding Bird Survey Report (and associated shapefiles) was provided to NYSDEC in September 2020. A detailed summary of avian-specific consultation was provided to the Office of Renewable Energy Siting (Office) in October 2020 and is also included as Appendix A to this Wildlife Site Characterization report. The Winter Raptor Survey Report and the Breeding Bird Survey Report were also provided to the Office in October 2020.

3.1 2019-2020 WINTER RAPTOR SURVEY

Winter raptor surveys were conducted by EDR during the 2019-2020 winter season to identify and document raptor species that utilize grassland habitat within the Facility Area during the winter season. Though neither the NYSDEC nor the NYNHP have identified known occurrences of short-eared owl (state-listed endangered; *Asio flammeus*) or northern harrier (state-listed threatened) within the Facility Area, the NYSDEC and EDR have both identified the potential for suitable habitat to exist on-site. Additionally, publicly available data sources identified northern harrier within 5 miles of the Facility Area (eBird, 2020a; HMANA, 2020; National Audubon Society, 2020c). Therefore, the winter raptor study specifically targeted these two grassland raptor species.

The winter raptors surveys were conducted by qualified biologists following recommendations provided by NYSDEC staff and the methodology established in the 2015 NYSDEC *Survey Protocol for State-listed Wintering Grassland Raptor Species* (NYSDEC, 2015b). In total, 56 evening stationary surveys were conducted at six survey locations, and daytime driving surveys along six routes were completed on five different days from December 2019 to April 2020, totaling 75 five-minute point count surveys. The total effort for the winter raptor study included more than 5,600 survey minutes (more than 93 survey hours).

Throughout the winter season, a total of 62 raptors were observed, including 12 state-listed raptors (five bald eagles and seven northern harriers). The remaining raptors included red-tailed hawk, turkey vulture, American kestrel, sharp-shinned hawk (state-listed special concern) and one unknown raptor species. The Wildlife Species List provided in Appendix C identifies all avian species observed during the 2019-2020 winter raptor surveys conducted by EDR.

3.2 2020 BREEDING BIRD SURVEY

The primary purpose of the breeding bird surveys conducted by EDR in 2020 was to identify and document avian species that utilize the Facility Area during the breeding season. The breeding bird surveys were conducted by qualified biologists following recommendations provided by NYSDEC staff and the methodology established in the 2015 NYSDEC *Survey Protocol for State-listed Breeding Grassland Bird Species* (NYSDEC, 2015a). A total of 36 point count locations designated along 14 transects were surveyed. Survey locations were selected to provide representative coverage of a variety of ecological community and habitat types found within the Facility Area, including field cropland used for hay and wheat production, pastureland, active and fallow row cropland, successional old fields, successional shrubland, and forestland. Surveys were conducted once per week between June 4 and July 31, 2020. In total, surveys were completed on 12 different days, representing 235 breeding bird point count surveys and more than 78 survey-hours (4,680 survey-minutes).

A total of 2,530 individual birds of 81 species were recorded within 100 m of point count locations. The most abundant species observed included red-winged blackbird, bobolink (*Dolichonyx oryzivorus*), and song sparrow. No state-listed

threatened or endangered species were observed during the on-site breeding bird surveys. However, two state-listed species of special concern were observed during the course of these surveys; Cooper's hawk and grasshopper sparrow (*Ammodramus savannarum*). The Wildlife Species List provided in Appendix C identifies all avian species observed during the 2020 breeding bird surveys conducted by EDR.

4.0 THREATENED OR ENDANGERED SPECIES OR SPECIES OF SPECIAL CONCERN

Requirements pursuant to § 900-1.3(g)(1)

With respect to NYS threatened or endangered species or species of special concern, the wildlife site characterization shall include:

- *(i) Species documented at the proposed facility, access roads, interconnections, connecting lines, from available data sources. A subset of NYS threatened or endangered species identified within the last five (5) years shall be provided.*
- *(ii) For each listed animal species documented from available data sources, provide an evaluation of current habitat suitability for those species at the project site.*
- *(iii) Landscape features and resources of potential concern within five (5) miles of the facility that may function to funnel or concentrate birds and bats, with a focus on NYS threatened or endangered species, during migration or for feeding, breeding, wintering, or roosting activities, such as national wildlife refuges, wildlife management areas, grassland focus areas, core forest blocks (contiguous areas one hundred fifty (150) acres or larger), Audubon Important Bird Areas, high elevation mountaintops, prominent ridgelines, forested riparian areas, known hibernacula, records of caves and mines, or other significant habitat areas.*
- *(iv) Geographical, topographical, and other physical features within five (5) miles of the facility, interconnections, connecting lines, and access roads.*
- *(v) National Wetlands Inventory (NWI) and NYSDEC mapped wetlands, streams, waterbodies, state forests, parks, land use, and other available information relevant to siting the facility.*
- *(vi) A review of National Audubon Society climate change modeling for listed bird species documented in the wildlife site characterization, and review of other climate change models relevant to listed bird species and other wildlife species documented at the facility site, as available.*

4.1 SPECIES DOCUMENTED AT THE PROPOSED FACILITY

A full list of wildlife species documented within the vicinity of the Facility Area is included as Appendix C.

A subset of the full list, comprising those species that are state-listed and have been identified within the vicinity of the Facility Area in the last five years, is presented below in Table 1. Data from observations made more than five years ago are not included here (e.g., BBA data from 2000-2005 has been excluded from Table 1).

Table 1. State-listed Species Observed Within the Last Five Years within the vicinity of the Facility Area

Species	NYS Status	USFWS Status	SGCN Status[1]	Source[2]
Short-eared Owl (*Asio flammeus*)	Endangered	N/A	SGCN-HP	CBC
Golden Eagle (*Aquila chrysaetos*)	Endangered	N/A	SGCN	HMANA
Peregrine Falcon (*Falco peregrinus*)	Endangered	N/A	SGCN	HMANA
Bald Eagle (*Haliaeetus leucocephalus*)	Threatened	N/A	SGCN	EDR, BBS, CBC, eBird, NYNHP, HMANA
Northern Harrier (*Circus cyaneus*)	Threatened	N/A	SGCN	EDR, CBC, eBird, HMANA
Pied-billed Grebe (*Podilymbus podiceps*)	Threatened	N/A	SGCN	eBird
Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened	Threatened	SGCN-HP	USFWS, ASM
Osprey (*Pandion haliaetus*)	Species of Special Concern	N/A	N/A	eBird
Cooper's Hawk (*Accipiter cooperii*)	Species of Special Concern	N/A	N/A	EDR, BBS, BBA, CBC, eBird, HMANA
Sharp-shinned Hawk (*Accipiter striatus*)	Species of Special Concern	N/A	N/A	EDR, BBA, CBC, HMANA
Red-shouldered Hawk (*Buteo lineatus*)	Species of Special Concern	N/A	SGCN	BBA, CBC, HMANA
Northern Goshawk (*Accipiter gentilis*)	Species of Special Concern	N/A	SGCN	HMANA
Grasshopper Sparrow (*Ammodramus savannarum*)	Species of Special Concern	N/A	SGCN-HP	EDR

[1] SGCN Status refers to status under the Comprehensive State Wildlife Strategy. SGCN = Species of Greatest Conservation Need, SGCN-HP = High Priority Species of Greatest Conservation Need.

[2] Source: EDR = observed by EDR biologists, NYNHP = New York Natural Heritage Program site-specific request for data, USFWS = US Fish & Wildlife Service IPaC resource list for federally-listed species, eBird = the Sheldon Trail and Chautauqua Gorge State Forest hotspots, BBA = NYS Breeding Bird Atlas, BBS = USGS Breeding Bird Survey, CBC = Jamestown and Dunkirk-Fredonia CBC circles, HMANA = Ripley Hawk Watch 2020 observations, ASM = American Society of Mammologists statewide list of mammals

4.2 EVALUATION OF HABITAT SUITABILITY FOR LISTED SPECIES AT THE FACILITY AREA

This section contains an evaluation of current habitat suitability within the Facility Area for each state-listed or species of special concern wildlife species documented within the vicinity of the Facility Area within the last five years.

4.2.1 Short-Eared Owl and Northern Harrier

Short-eared owls are found in New York State throughout the year, although their breeding range is primarily limited to the St. Lawrence and Lake Champlain valleys, the Great Lakes plains, and marshes along the southern shore of Long Island. During the winter season, short-eared owls prefer to forage in large, open grasslands, including hayfields, fallow farmland, and pastures dominated by grasses and forbs with a mean vegetation height in the range of 10-16 inches, including dead remnant herbaceous vegetation. For roosting (which typically occurs on or close to the ground), short-eared owls prefer fields dominated by grasses and forbs with a mean vegetation height of 20-23 inches, including dead and remnant herbaceous vegetation.

Northern harriers use a wide range of habitats including open grasslands, prairies, shrubland, and both saltwater and freshwater marshes. Both wet and dry habitats are suitable where there is good ground cover. Nests are built of grasses and sticks on the ground in grassland or marshes within areas of tall, dense cover. In New York State, northern harriers are confirmed breeders in the western Great Lakes plains, open habitats of the Adirondacks, the western Finger Lakes, Long Island, and within the Hudson, St. Lawrence, and Lake Champlain valleys. Their winter range is similar to their breeding range but varies depending on prey abundance and snow cover. Winter foraging and roosting habitat for this species include some types of agricultural land, emergent wetland, successional old field, and successional shrubland.

For both short-eared owls and northern harriers, large grass/forb dominated fields with a mean vegetation height range of 10-24 inches are considered optimal. In addition to vegetation characteristics, the NYSDEC uses a 25-acre threshold as a means of determining whether a field is of adequate size to be considered suitable habitat for short-eared owls, northern harriers, and other grassland birds, as most grassland species require large expanses of open habitat, free of large trees hedgerows, and human disturbance (i.e., development, tall structures, busy roads, etc.) (Denoncour and Mazzocchi, 2019).

Based on consultation with the NYSDEC, and EDR's review of land cover and ecological communities, it was determined that portions of the Facility Area could represent suitable wintering habitat for short-eared owl and northern harrier. To determine if these state-listed species occur within the Facility Area, EDR conducted a winter raptor survey during the 2019-2020 season (see Section 3.1 above). Over the course of the winter raptor survey season, a total of 62 raptors were observed, including seven northern harriers. Observed behaviors of northern harriers included flying through the site (five of the seven observations) and flying/foraging in open fields (two of the seven observations). No roosting behavior was observed for northern harrier and these observations did not occur regularly in any one area, suggesting a lack of consistent or repeated use of specific portions of the Facility Area. No short-eared owls were observed during any of the surveys. Based on the results of this survey, and lack of previous documentation, EDR

concluded that the Facility Area does not contain any occupied habitat for wintering short-eared owls or northern harriers.

4.2.2 Golden Eagle

The golden eagle is a Holarctic species that breeds in mountainous areas throughout North America, Europe, Asia, and Africa from 20-70 degrees north latitude. This large raptor utilizes open habitat in wild, remote areas where small game is abundant, and cliffs are available for nesting. In North America, golden eagles are currently mostly a western species, with a discontinuous breeding population of about 100 pairs in northern Quebec. Formerly, a small disjunct breeding population occupied the northern Appalachians (Adirondacks, Maine, New Hampshire). However, the last eaglet successfully fledged from this small breeding population in the central Adirondacks in 1972, and golden eagles are considered extirpated from New York's breeding bird fauna (NYNHP, 2020b). Although golden eagle sightings are reported every year in New York, most are during migration and no active nests are currently known (NYSDEC, 2020c). Between 50-150 migrants pass through New York State each year on their way to wintering grounds in the mid-Atlantic and central and southern Appalachians. One area in Dutchess County has been consistently occupied by 1-4 wintering eagles since the early 1970s, and another spot in Orange County has been consistently occupied by 1-2 wintering birds since 2008. According to the NYNHP (2020b), "Any current management in New York State is relevant primarily to the wintering site in Dutchess County."

The observations of golden eagles in the vicinity of the Facility Area include a Ripley Hawk Watch observation of a single golden eagle, observed in Spring 2019 (HMANA, 2020). This observation is consistent with a migratory individual. There is no suitable breeding habitat or documented wintering habitat for golden eagles within the Facility Area.

4.2.3 Peregrine Falcon

The peregrine falcon is a nearly cosmopolitan bird that breeds on every continent except Antarctica. They often nest on ledges or holes on the faces of rocky cliffs, and in more urban areas, on manmade structures such as bridges and tall buildings. Wintering birds frequent buildings, towers, and steeples in urban areas, and open areas with plentiful prey in more natural settings. In New York State, the current breeding range includes the Adirondacks, on bridges and cliffs in the Hudson Valley, and on buildings and bridges in the New York City area, as well as scattered urban sites such as Rochester, Buffalo, Binghamton, and Albany (NYNHP, 2020c). The peregrine falcon has one of the longest migrations of any North American bird (Cornell Lab of Ornithology, 2020).

The observations of peregrine falcons within the vicinity of the Facility Area include five observations at the Ripley Hawk Watch in Spring 2020. These observations likely represent migrating birds. There is no suitable breeding habitat for peregrine falcons within the Facility Area.

4.2.4 Bald Eagle

Bald eagles breed from Alaska throughout Canada and in scattered areas throughout the northern contiguous United States. In New York, bald eagles breed throughout the state, usually in areas with large bodies of water that support high populations of fish and waterfowl, their primary food source. Large, heavy nests are built in tall pine, spruce, fir, cottonwood, oak, poplar, or beech trees (NYNHP, 2020d). Bald eagles can be residents or long-distance migrants, depending on age, breeding location, and food availability. Northern adults begin fall migration when lakes and rivers freeze, usually migrating coastward or south to other open waters. They return to breeding grounds when weather and food permit, usually January–March (Cornell Lab of Ornithology, 2020). In New York, wintering bald eagles seek out areas where water remains open throughout the winter season. Wintering sites within the state are concentrated in four main areas: the Upper Delaware River, the Saint Lawrence River, the Lower Hudson River, and the Sacandaga River (NYNHP, 2020d).

In data provided in accordance with the November 2019 NDA, the NYSDEC has identified five known bald eagle nests within 5 miles of the Facility Area, though none have been documented within the bounds of the Facility Area. Due to the lack of large bodies of open water within the Facility Area, suitable breeding or wintering habitat for bald eagle does not appear to be present (see Section 4.5.2 for a discussion of land cover within the Facility Area). This is further supported by the limited observations of this species and its behavior during pre-construction avian surveys. Though five bald eagles were observed flying over the site during the 2019-2020 winter raptor surveys, no foraging or roosting behavior was observed. In addition no bald eagles were observed during the preconstruction breeding bird survey.

4.2.5 Pied-Billed Grebe

Pied-billed grebes are widespread and fairly common in most of the United States and southern Canada (Cornell Lab of Ornithology, 2020). However, in New York State, pied-billed grebes are considered rare to uncommon, with local breeding populations clustered around large wetland complexes. Pied-billed grebes utilize marsh habitats, shallow lakes, and slow-moving streams, preferring habitats with a 50/50 combination of emergent vegetation and open water (NYNHP, 2020e). Nests are placed within tall vegetation with ideal water depths ranging from 25 to 50 cm, often setting up breeding territories in wetlands impounded by beavers or humans as opposed to those of glacial origin. Mid-sized wetlands (1.5 – 17.0 acres) are preferred over very large or very small wetlands. As opportunistic feeders, pied-billed grebes prefer crayfish and small fish, but feed on a wide variety of prey items depending on what is available (Cornell Lab of Ornithology, 2020).

The only observation of pied-billed grebe in the vicinity of the Facility Area was an observation made via eBird at the Sheldon Trail hotspot approximately 3.5 miles east of the Facility Area. This rail-to-trail passes through woodlands and through wetlands which offer habitat suitable for beavers and migrating waterfowl. While marsh habitat does occur

within the Facility Area, emergent vegetation is typically denser than preferred pied-billed grebe habitat. The largest open water wetland (beaver pond) located within the Facility Area does not have a preferred vegetation structure (i.e., low levels of emergent vegetation). See Section 4.5.2 for a discussion of land cover within the Facility Area.

4.2.6 Osprey

Osprey breed in New York along coastal and inland shorelines, with the largest populations on Long Island, Lake Champlain, the St. Lawrence River, Oneida Lake, and the Finger Lakes (NYSDEC, 2014c). Osprey utilize shallow bodies of water with ample fish supply, including rivers, lakes, reservoirs, swamps, and marshes. Nesting habitat must include accessible fish within a maximum of 12 miles from the nest. Nests are typically elevated to remain free from predatory mammals (Cornell Lab of Ornithology, 2020).

The only observation of osprey within 5 miles of the Facility Area was an observation made via eBird at the Sheldon Trail hotspot approximately 3.5 miles east of the Facility Area, which passes through wetlands suitable for beavers and migrating waterfowl. Limited habitat for osprey is present within the Facility Area in the form of bodies of water with ample fish supplies. However, there are bodies of water that provide suitable osprey habitat within 12 miles of the Facility Area. See Section 4.5.2 for a discussion of land cover within the Facility Area.

4.2.7 Cooper's Hawk, Sharp-Shinned Hawk, And Red-Shouldered Hawk

Cooper's hawks, sharp-shinned hawks, and red-shouldered hawks are woodland birds that prefer forests with high foliage height diversity, though they can also be found in suburban habitats (Cornell Lab of Ornithology, 2020). Cooper's hawks are year-round residents across much of the United States, including New York State, although birds at the northern edge of the range (i.e., in southern Canada and the northern U.S.) are described as short to medium-distance migrants (Cornell Lab of Ornithology, 2020). Cooper's hawk is a woodland raptor that specializes in avian prey. It uses deciduous, mixed, and coniferous woodlands for nesting and feeding, as well as urban and suburban areas (NYSDEC, 2014a).

Sharp-shinned hawk is a widespread breeder in all of New York except the coastal lowlands. It is a common migrant and a rare but increasing winter resident. The sharp-shinned hawk occurs from sea level to nearly alpine habitats, breeding in mixed, deciduous, and coniferous forests. Nests are most frequently placed in wooded areas where the canopy is dense and trees are small in diameter and closely spaced (NYSDEC, 2014e).

Red-shouldered hawks occur primarily in the eastern half of the United States, with New York being the northern extent of their range (NYSDEC, 2014d; Cornell Lab of Ornithology, 2020). In New York, red-shouldered hawks are found in bottomland hardwood forests, riparian habitats, and flooded swamps as well as in upland forests (NYSDEC, 2014d). They typically nest in broad-leaved trees just below the forest canopy near ponds, streams, or swamps where prey is

abundant (Cornell Lab of Ornithology, 2020). Red-shouldered hawks' diet consists primarily of amphibians, small mammals, lizards, and snakes.

Potential habitat for each of these woodland raptors does occur within the Facility Area (see Section 4.5.2 for a discussion of land cover within the Facility Area), and sharp-shinned hawks were observed on-site by EDR during the 2019-2020 winter raptor surveys. Additionally, observations of these species have been made within the region during the BBS, BBA, and CBC surveys, at eBird hotspots, and at the Ripley Hawk Watch.

4.2.8 Northern Goshawk

Northern goshawks historically nested primarily in Canada, though their range has expanded southwards into the northeastern United States due to forest regeneration (NYSDEC, 2014b). Northern goshawks nest in mature and old-growth northern hardwood forests with a fairly closed canopy, typically building nests near breaks in the canopy (e.g., trail edges). Foraging occurs primarily along riparian corridors within the forest (Cornell Lab of Ornithology, 2020).

Potential northern goshawk habitat does occur within the Facility Area in the form of mixed-hardwood forests with riparian corridors, chiefly surrounding Twentymile Creek (see Section 4.5.2 for a discussion of land cover within the Facility Area). However, the only northern goshawks observed in the vicinity of the Facility Area were one observation of a migrating individual at the Ripley Hawk Watch in May 2019, and two migrating individuals in March 2020 (HMANA, 2020). No northern goshawks were observed during the 2019-2020 winter and spring field surveys performed by EDR.

4.2.9 Grasshopper Sparrow

Grasshopper sparrows occur in grasslands, prairies, hayfields, and open pastures with little to no shrub cover and often with some bare ground, typically far from cultivated fields, fence lines, and woods (Cornell Lab of Ornithology, 2020; NYNHP, 2020a). Throughout New York, grasshopper sparrows are found in open, grassy areas at low elevations, with the highest concentrations being found in the northeastern Great Lakes Plain (Jefferson County). Nests are located on the ground, typically at the base of a clump of grass within a more extensive patch of taller grasses (Cornell Lab of Ornithology, 2020). Grasshopper sparrows are insectivores which prey primarily on grasshoppers, beetles, caterpillars, and other insects and spiders.

Grasshopper sparrows were observed singing within two different hayfields in the Facility Area during the spring 2020 breeding bird surveys. These hayfields were hayed in late June/early July providing shorter vegetation providing more optimal habitat for grasshopper sparrows. Hayfields are abundant throughout the Facility Area, totaling approximately 883 acres (Figure 6). Depending on the timing of haying these fields, potential habitat for grasshopper sparrows is abundant throughout the Facility Area. See Section 4.5.2 for a discussion of land cover within the Facility Area.

4.2.10 Northern Long Eared Bat

Northern long-eared bat are typically associated with mature interior forest, avoiding woodlands with significant edge habitat. However, the NYSDEC has determined that northern long-eared bat utilize a wide variety of forest types throughout New York State. Although they hibernate in caves and mines during the winter, during the active season (April – October) northern long-eared bat roost in dead or live trees under loose bark, and in cavities or crevices.

The USFWS IPaC system identified northern long-eared bat as potentially occurring within the Facility Area, though no critical habitat for this species has been identified within the Facility Area (see Section 2.4 above). The nearest known bat hibernaculum is located approximately 82 miles northeast of the Facility Area and no caves or mines were observed in the vicinity of the Facility Area during any of the pre-construction surveys. However, habitat for northern long-eared bat is present within the Facility Area in the form of potential roost trees, that could be used during the spring migration, summer maternity, and fall migration periods (see Section 4.5.2 for a discussion of land cover within the Facility Area). Although NYNHP data provided by NYSDEC in accordance with the November 2019 NDA documented two northern long-eared bat occurrences approximately 5 miles from the Facility Area, no occupied habitat has been documented within the Facility Area itself.

4.3 LANDSCAPE FEATURES AND RESOURCES OF POTENTIAL CONCERN WITH FIVE MILES

There are no national wildlife refuges, wildlife management areas, grassland focus areas, high elevation mountain tops, caves or mines, or known hibernacula within 5 miles of the Facility Area. Specific landscape features and resources of potential concern within 5 miles of the Facility Area that may function to funnel or concentrate birds and bats are discussed in greater detail below.

4.3.1 Core Forest Blocks

New York's forests provide important breeding, migratory stop-over, and wintering habitat for more than a hundred species of birds. One of their most important ecological functions is to provide breeding habitat for bird species which are experiencing population declines due to factors such as habitat fragmentation and the loss of quality habitat (Treyger, 2019). Research has demonstrated that larger forest tracks typically support more species than smaller forest stands. The amount of forest cover, size of individual forest patches, forest type, and linkages to other patches in a landscape determine their ability to support wildlife species which depend on them, including area-sensitive and edge-intolerant species. This is particularly true for mammals and forest interior birds that require extensive forests (Environment Canada, 2004). Ongoing development is resulting in the fragmentation of privately held forest habitats that connect publicly managed open space. If these trends continue, New York's future forest ecosystems will have a higher proportion of isolated forest patches that will be less connected across the landscape. Large blocks of core forest

also play an important role by providing 'source' populations of plants and animals that can repopulate nearby smaller patches of habitat after disturbance events (NYSDEC, 2011).

EDR conducted a desktop analysis to identify core forest blocks (i.e., contiguous areas 150 acres or larger) in the vicinity of the proposed Facility. According to the 2016 National Land Cover Data (NLCD), there are 56 core forest blocks at least partially within 5 miles of the Facility Area (see Figure 3). These forest blocks range in size from 150 acres to 5,526 acres and collectively total 43,389.23 acres, or approximately 57.16% of the total land area within 5 miles of the Facility Area boundaries. This analysis included all areas classified as one of the four forest types (i.e., deciduous forest, mixed forest, evergreen forest, and woody wetlands). Within the Facility Area, seven core forest blocks total 2,473.00 acres, or approximately 54.82% of the Facility Area. As shown in Table 2, these four cover types together comprise 2,299.98 acres, or 50.85% of the Facility Area.

4.3.2 Forested Riparian Areas

A riparian area is the area of land located immediately adjacent to streams and rivers. Riparian areas differ from uplands because of high levels of soil moisture, frequent flooding, and the resulting unique assemblage of plants and animals. Riparian areas in the eastern United States are among the most productive biological systems in the world and provide critical habitat for many types of wildlife, including both common and rare species. Wildlife may be permanent residents of a riparian area or occasional visitors that use the area for food, water, or temporary shelter. The importance of a particular riparian area will depend on the surrounding land uses and the vegetation present. For example, in areas of intensive agriculture, forested riparian areas can provide important "islands" or refugia of natural habitat where species that depend on forests for their survival can live and reproduce (Klapproth & Johnson, 2009).

In New York State, mapped NYSDEC streams can be used as a preliminary screening tool to help identify forested riparian areas. This is because trout require cool clean water to survive, and in New York, such conditions often require the presence of adjacent forest cover. The presence of trout is, and has been for many years, used as a measure of water and habitat quality by NYSDEC when making decisions regarding permitted land or water use (NYSDEC, 2020f), and can be an indication of the likely presence of forested riparian habitat. A number of mapped streams occur within 5 miles of the Facility Area, including several NYSDEC-protected streams designated as (T) or (TS), indicating that they support trout or trout spawning, respectively (see Figure 5). These include Twentymile Creek, French Creek, the West Branch of French Creek, Wing Creek, and Chautauqua Creek. A review of aerial imagery confirms that these streams, along with others in the area, appear to have riparian corridors that are forested, at least in part, which may help support in-stream habitat conditions for trout and other wildlife.

4.3.3 Prominent Ridgelines

Ridgelines play an important role in the landscape, creating physical barriers that often define avian migration corridors. These ridgelines can deflect air currents and create thermal updrafts which are used by migrating birds to ease migration effort. The Portage Escarpment, known locally as Beach Ridge, is a steep escarpment running parallel to the shore of Lake Erie, that defines Lake Erie's prehistoric shore (NRCS, 1994). This prominent ridgeline runs from the State of Ohio, through Pennsylvania, and into New York, forming a clear dividing line between the Allegheny Plateau and the Great Lakes Basin (Roger Tory Peterson Institute of Natural History, 2020). The escarpment is dissected by several streams with deep gorges that have been cut through glacial deposits and bedrock since the glaciers receded from the region. Additionally, the proximity of the Portage Escarpment to Lake Erie narrows and concentrates the avian migration pathway into an area roughly defined by the boundaries of the Ripley Hawk Watch (approximately 2 miles north of the Facility Area) of which the southern boundary overlaps the northern portion of the Facility Area. See section 4.4 below for further discussion.

4.3.4 Audubon Important Bird Areas

Audubon Important Bird Areas (IBAs) are part of an international effort in 130 countries which began in 1996. To become an IBA, an area must meet one of the following three criteria: 1) be a place where birds congregate in large numbers at one time, 2) be a place that provides habitat for species that are at-risk, or 3) be a place that supports groups of birds representing certain habitats such as forests, wetlands, grasslands, and shrublands (National Audubon Society, 2020a). Within New York State, there are more than 130 IBAs that have been recognized as significant places for birds.

The Ripley Hawk Watch is an Audubon IBA that overlaps the northern portion of the Facility Area (Figure 4). The Ripley Hawk Watch occurs along the Portage Escarpment, south of the Lake Erie shoreline. This IBA is a major spring hawk concentration area and has reported the highest number of Sandhill Cranes on any migration flyway in the northeast. It also represents an important migration corridor for nocturnal passerines. See Section 2.11 and 4.3.3 above and Section 4.4 below for further discussion.

4.4 GEOGRAPHICAL, TOPOGRAPHICAL, OR OTHER PHYSICAL FEATURES WITHIN FIVE MILES

The Facility Area is located within the Atlantic Flyway, a major north-south route for migratory birds in North America which encompasses much of the eastern United States. On a smaller scale, birds and bats often follow migration corridors that follow major physiographic features such as mountain ranges, major rivers, and coast lines. Within New York, Lake Erie and Lake Ontario can act as barriers to migrating birds and bats because they require substantial energy to cross. This results in a concentration of migratory birds along the southern and eastern shores of these lakes during the spring (northern) migration season (USFWS and USGS, 2012). As mentioned previously, the proximity of the Portage Escarpment to Lake Erie narrows and concentrates the avian migration pathway into an area roughly

defined by the boundaries of the Ripley Hawk Watch, which overlaps the northern portion of the Facility Area (Figure 4; HMANA, 2015).

4.5 LAND USE AND MAPPED WETLANDS, STREAMS, STATE FORESTS, AND PARKS

4.5.1 Mapped Wetlands and Streams

The Facility Area is located partially within the Chautauqua-Conneaut Hydrologic Unit (04120101) and French Hydrologic Unit (05010004). The Chautauqua-Conneaut Unit covers the northern portion of the Facility Area and the French Unit covers the southern portion. The majority of the northern portion of the Facility Area drains into Twentymile Creek, which flows north to Lake Erie. The southern portion of the Facility Area drains south into the West Branch of French Creek, which flows southwest into Pennsylvania (NRCS, 1994). Total annual precipitation (from 2000 to 2020) averages 33.91 inches at the nearby Dunkirk-Chautauqua County Airport (NOAA, 2020).

National Wetlands Inventory (NWI) mapping indicates the presence of 68 wetland communities within the Facility Area, totaling 194.29 acres (Figure 5). Forested and scrub-shrub wetlands are the dominant community types mapped on site, totaling approximately 157.51 acres. Other NWI-mapped communities within the Facility Area include riverine wetland communities (24.67 acres), open water ponds (9.34 acres), and emergent wetlands (2.77 acres).

New York State Freshwater Wetlands maps indicate that portions of two wetlands regulated under Article 24 of the Environmental Conservation Law occur within the Facility Area (Figure 5). Wetland SR-6 has a total size of 229 acres, with 19.75 acres occurring within the Facility Area, while SR-8 totals 9,009 acres, with 89.97 acres falling within the Facility Area.

To identify streams occurring within and adjacent to the Facility Area, EDR utilized data from the New York State (NYS) GIS Clearing House (NYSITS, 2020) and NYSDEC Environmental Resource Mapper, an interactive mapping application that identifies New York's natural resources and environmental features that are state or federally protected, or of conservation concern (NYSDEC, 2020a). Based on available NYSDEC stream classification mapping, the Facility Area includes numerous mapped streams, including those with classifications of A-S, C, and C(T). State protected streams (Class C[T] or better) within the Facility Area include Twentymile Creek, unnamed tributaries to Twentymile Creek, and the West Branch of French Creek (Figure 5).

An on-site wetland and stream delineation was conducted between June and September 2020 on parcels within the Facility Area that are proposed to host Project components. The wetland and stream delineation report is currently under development and will be provided to the agencies upon completion.

According to Federal Emergency Management Agency map services, there is no data on the presence of floodplains in this area.

4.5.2 Land Use

The Facility Area is primarily composed of deciduous forestland and agricultural land that is actively managed to produce field crops (primarily wheat) and pasture/hay. In addition, the area includes row cropland, fallow agricultural fields, successional shrubland, forested wetlands, emergent wetlands, scrub-shrub wetlands, and disturbed/developed land (primarily roads, rural homes, and farms).

According to United States Geologic Survey (USGS) National Land Cover Database (NLCD), deciduous forest represents approximately 41% of the Facility Area, while cultivated crops represent approximately 29%. Another approximately 12% of the Facility Area is represented by pasture/hay. The remaining 18% lands in the Facility Area are classified as woody wetlands, evergreen forest, shrub/scrub, developed, grassland/herbaceous, emergent herbaceous wetlands, and open water. Table 2 summarizes the NLCD land cover types found within the Facility Area.

Table 2. Land Cover Classes Found within the Facility Area

Land Cover Class	Acres	Percent Cover (%)
Deciduous Forest	1857.51	41.07
Cultivated Crops	1314.92	29.07
Pasture/Hay	531.21	11.74
Woody Wetlands	207.36	4.58
Evergreen Forest	162.68	3.60
Shrub/Scrub	149.54	3.31
Developed, Open Space	106.68	2.36
Grassland/Herbaceous	92.88	2.05
Mixed Forest	72.43	1.60
Emergent Herbaceous Wetlands	15.68	0.35
Developed, Low Intensity	5.23	0.12
Open Water	4.91	0.11
Developed, Medium Intensity	1.89	0.04
Developed, High Intensity	0.22	0.00
Total	4523.14	100

Source: NLCD 2016

Land cover within the Facility Area was also classified into ecological community types based on those described in *Ecological Communities of New York State* (Edinger et al., 2014). EDR identified and mapped each plant community using a combination of desktop review of aerial imagery, publicly available datasets for land cover and soil, and data collected during on-site biological field surveys conducted between 2019 and 2020 (e.g., wetland delineations, winter raptor surveys, and breeding bird surveys). Table 3 below provides the total acreage for each ecological community within the Facility Area and a map of identified ecological cover types within the Facility Area is provided in Figure 6.

Table 3. Ecological Communities within the Facility Area

Ecological Community	Acres	Percent Cover (%)
Forestland	2442.03	54.28
Field Cropland (Hay)	882.57	19.62
Pastureland	341.58	7.59
Successional Shrubland	237.57	5.28
Successional Old Field	224.59	4.99
Developed/Disturbed	159.54	3.55
Field Cropland (Wheat)	58.07	1.29
Row Cropland (Active)	52.69	1.17
Shallow Emergent Marsh	42.55	0.95
Open Water	33.19	0.74
Row Cropland (Fallow)	24.77	0.55
Total	4523.14	100

The most abundant ecological community within the Facility Area is forestland (54.28%) followed by hayfields (19.62%). Other agricultural lands, including pastureland, wheatfields, and active row crops comprise 10.05% of the Facility Area. Successional old field, potentially suitable habitat for state-listed grassland bird species, comprises 4.99% of the Facility Area. The remaining 11.07% of the Facility Area is comprised of successional shrubland, developed/disturbed, shallow emergent marsh, open water, and fallow cropland.

4.5.3 State Forests and Parks

There are no state parks or state forests within the Facility Area. The closest state park is Long Point State Park on Lake Chautauqua, located approximately 12 miles east of the Facility Area. The closest state forests are the Chautauqua Gorge State Forest and Mount Pleasant State Forest, located approximately 3.6 and 4.5 miles east of the Facility Area, respectively (Figure 4). There are no other state parks or state forests within 5 miles of the Facility Area.

4.6 CLIMATE CHANGE MODELING FOR LISTED SPECIES

Climate change is accelerating many threats that challenge rare species and the natural ecosystems they depend on. Consequently, successful conservation strategies will require an understanding of climate change and the ability to predict how it will affect both species and habitats. Birds have been the basis of many studies of the ecological effects of climate change, and have also been the subject of a wide variety of correlative models to predict potential future distributions. Birds are responding to recent climate change in a variety of ways including shifting their geographic ranges. There is evidence that northern-temperate birds have shifted their breeding and non-breeding ranges to higher

latitudes (La Sorte and Jetz, 2010). For example, using CBC data, the National Audubon Society has demonstrated a northward shift in 208 North American bird species centers of abundance over the last 40 years (Niven et al., 2014). These data show that wetland birds, forest birds, shrub birds, and generalists are generally moving north in the winter, while grassland bird species are not.

4.6.1 National Audubon Society Climate Change Modeling

The National Audubon Society has compiled an online database entitled *Survival by Degrees: 389 Species on the Brink* where they analyzed 140 million observations of the current ranges of 604 North American Bird Species and used the latest climate models to predict how each species range will shift as a result of climate change. The National Audubon Society climate change modeling platform was reviewed for Chautauqua County in December 2020, giving particular attention to listed bird species documented within 5 miles of the Facility Area (National Audubon Society, 2020b). This platform provides information for high vulnerability, moderate vulnerability, low vulnerability, and stable bird species in both summer and winter scenarios. Additionally, different warming scenarios can be considered. For the purpose of this analysis, a warming scenario of +3.0 °C was assumed as the worst-case scenario.

Based on the National Audubon Society model, it is predicted that during the summer months several state-listed species ranges will move farther north into Canada, with much of their New York State range being lost. Northern goshawk is considered a high vulnerability species, and under the scenario described above it is projected that northern goshawks will lose up to 60% of their range. Sharp-shinned hawks are considered moderately vulnerable, and are predicted to lose up to 55% of their current range, including their entire range in New York. Bald eagle is considered a low vulnerability species, and is projected to lose up to 15% of its current range. Pied-billed grebe, osprey, Cooper's hawk, red-shouldered hawk, and peregrine falcon species are considered stable. It is projected that they will maintain over 83% of their current summer range.

During the winter months Cooper's hawk and northern goshawk species are considered low vulnerability species. The Cooper's hawk is projected to lose up to 33% of its winter range. Their new range under the +3.0° C climate change scenario will shift to southern Canada and mountainous regions of Northeastern United States. The northern goshawk is projected to lose up to 33% of its range. Their new range under the +3.0° C climate scenario will shift to northern Canada. During the winter months pied-billed grebe, northern harrier, short-eared owl, sharp-shinned hawk, bald eagle, and peregrine falcon are considered stable. It is projected that they will maintain over 77% of their winter ranges.

4.6.2 Additional Climate Change Models

The NYNHP, in partnership with the Nature Conservancy and the NYSDEC, conducted a vulnerability assessment for 119 of New York's Species of Greatest Conservation Need (SGCN) (Schlesinger et al., 2011). They selected species spanning taxonomic groups that might be susceptible to climate change, would be good indicators of vulnerability of

species in similar habitats, and had sufficient data to allow conducting the assessment. None of the state-listed species that have the potential to occur within 5 miles of the Facility Area were selected as candidates for the NYNHP vulnerability assessment. However, grasshopper sparrow was a species suggested for future assessment.

5.0 CONCLUSIONS

In accordance with the requirements of the Section 94-c permitting process, publicly available data sources were queried to determine wildlife species that have the potential to be present within the Facility Area. This review suggests that the Facility Area is likely to include a wildlife community dominated by relatively common species typically found in agricultural and forest habitats. The results of the database queries are summarized in a Wildlife Species List (Appendix C). Of these species, particular concern was given to state-listed species and the potential habitat available for these species within the Facility Area. Eleven state-listed species have been documented within the vicinity of the Facility Area in the last five years including, short-eared owl, northern harrier, bald eagle, pied-billed grebe, osprey, Cooper's hawk, sharp-shinned hawk, red-shouldered hawk, northern goshawk, grasshopper sparrow, and northern long-eared bat. An evaluation of habitat suitability for these state-listed species resulted in the determination that potential habitat may exist within the Facility Area for short-eared owl, northern harrier, Cooper's Hawk, sharp-shinned hawk, red-tailed hawk, grasshopper sparrow, and northern long-eared bat.

EDR also conducted winter raptor surveys during the 2019-2020 season specifically targeting two state-listed grassland raptor species: short-eared owl (state-listed endangered) and northern harrier (state-listed threatened). Additionally, EDR conducted breeding bird surveys during the 2020 season, in which no state-listed threatened or endangered species were observed. Based on the results of these surveys, and lack of previous documentation, EDR concluded that the Facility Area does not include any occupied winter habitat for these (or any other) state-listed threatened or endangered avian species. Additionally, the November 23, 2020 letter from the Office provided initial findings of occupied habitat, which included a preliminary finding that the project will not result in the potential take of any threatened or endangered grassland bird species. This letter also included preliminary findings that the project shall adhere to the applicable Uniform Standards and Conditions to avoid and minimize impacts to NLEB and bald eagle.

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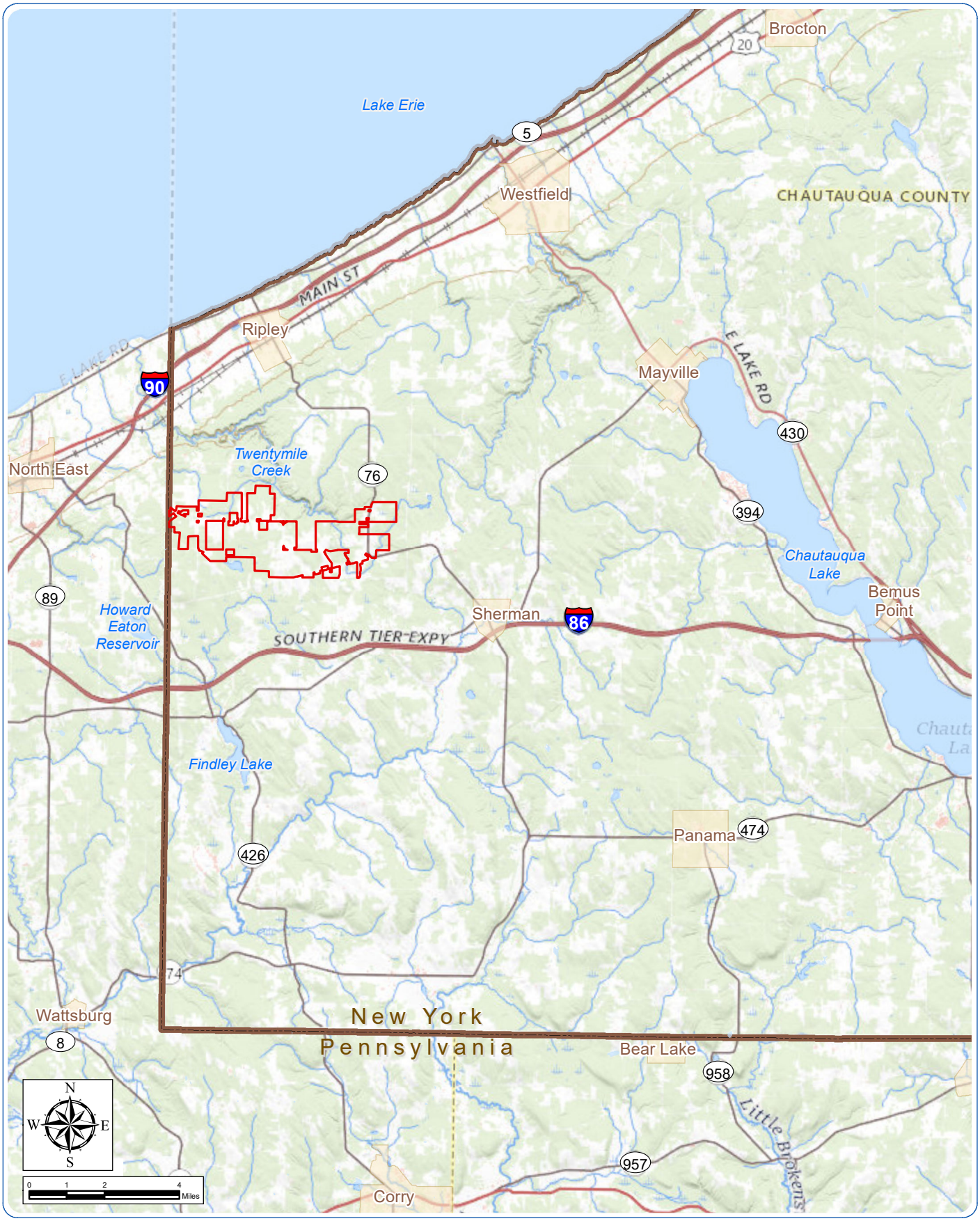
FIGURES



South Ripley Solar Project

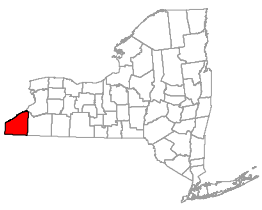
Town of Ripley, Chautauqua County, New York

Wildlife Site Characterization

Figure 1: Regional Facility Location

Facility Area

State Boundary



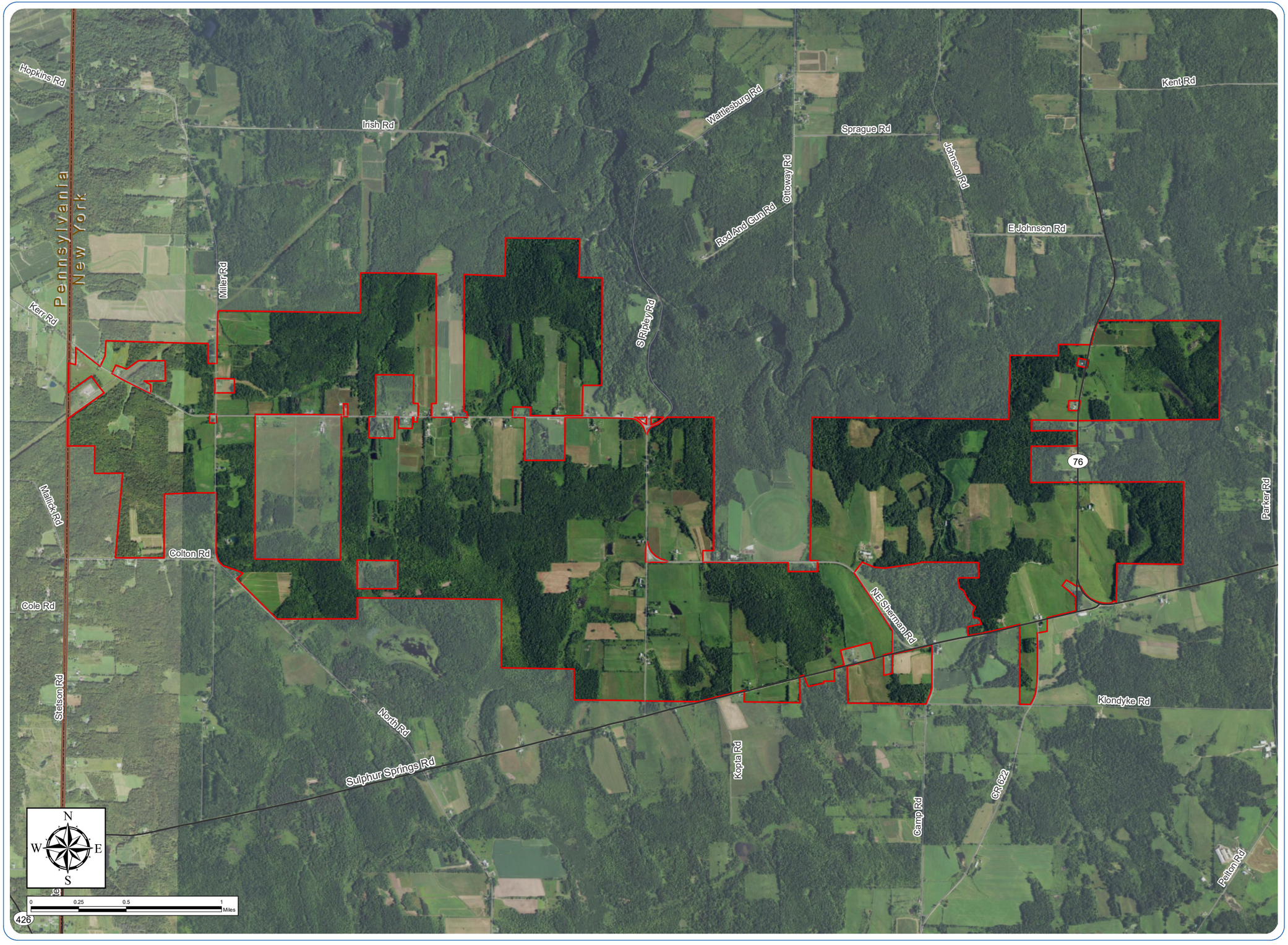
Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. **2.** This map was generated in ArcMap on January 19, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Wildlife Site Characterization

Figure 2: Facility Area



Facility Area

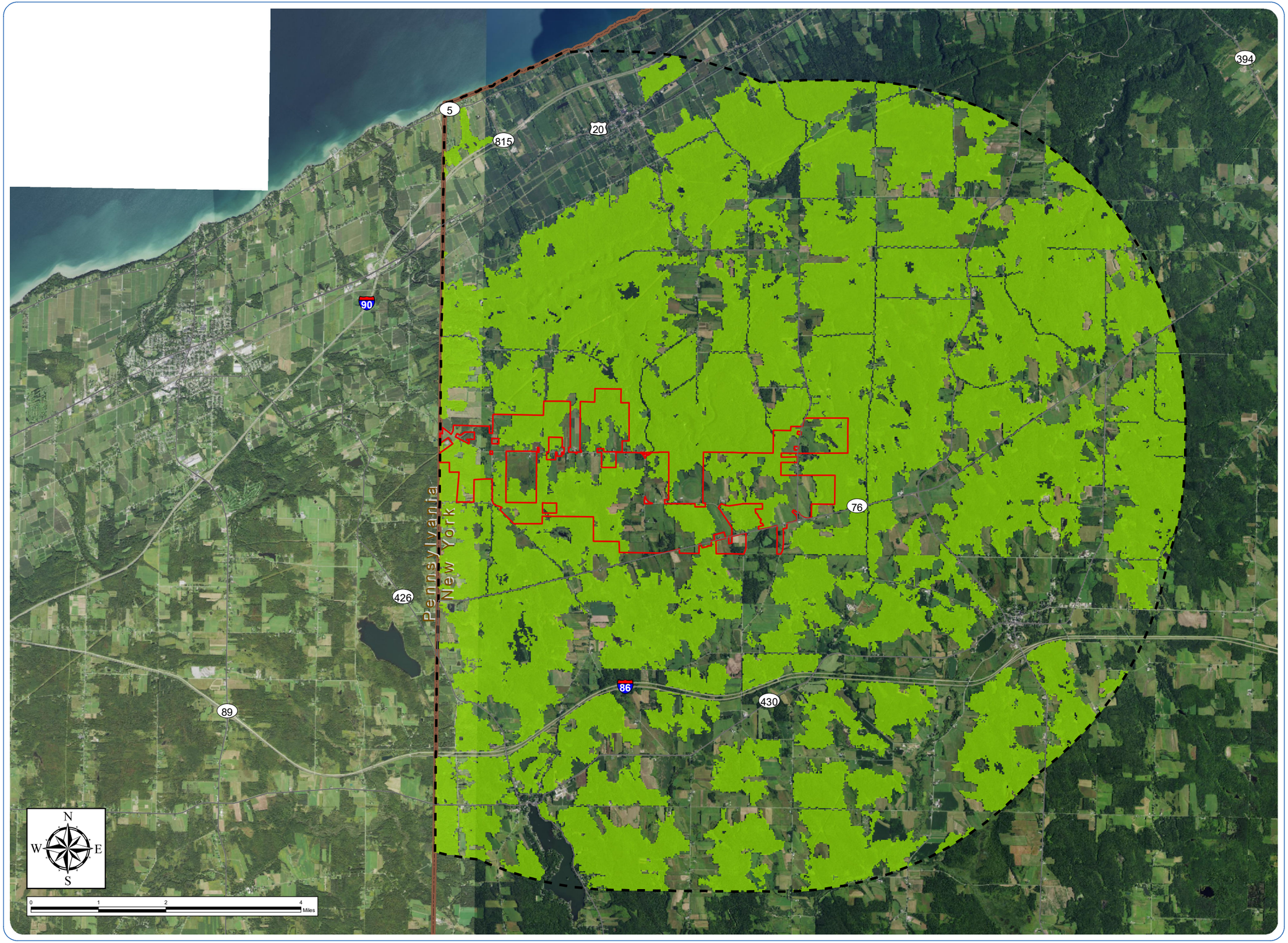
Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. **2.** This map was generated in ArcMap on February 2, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Wildlife Site Characterization

Figure 3: Core Forest Blocks



NLCD Large Forest Blocks
Facility Area
5-mile Study Area
State Boundary

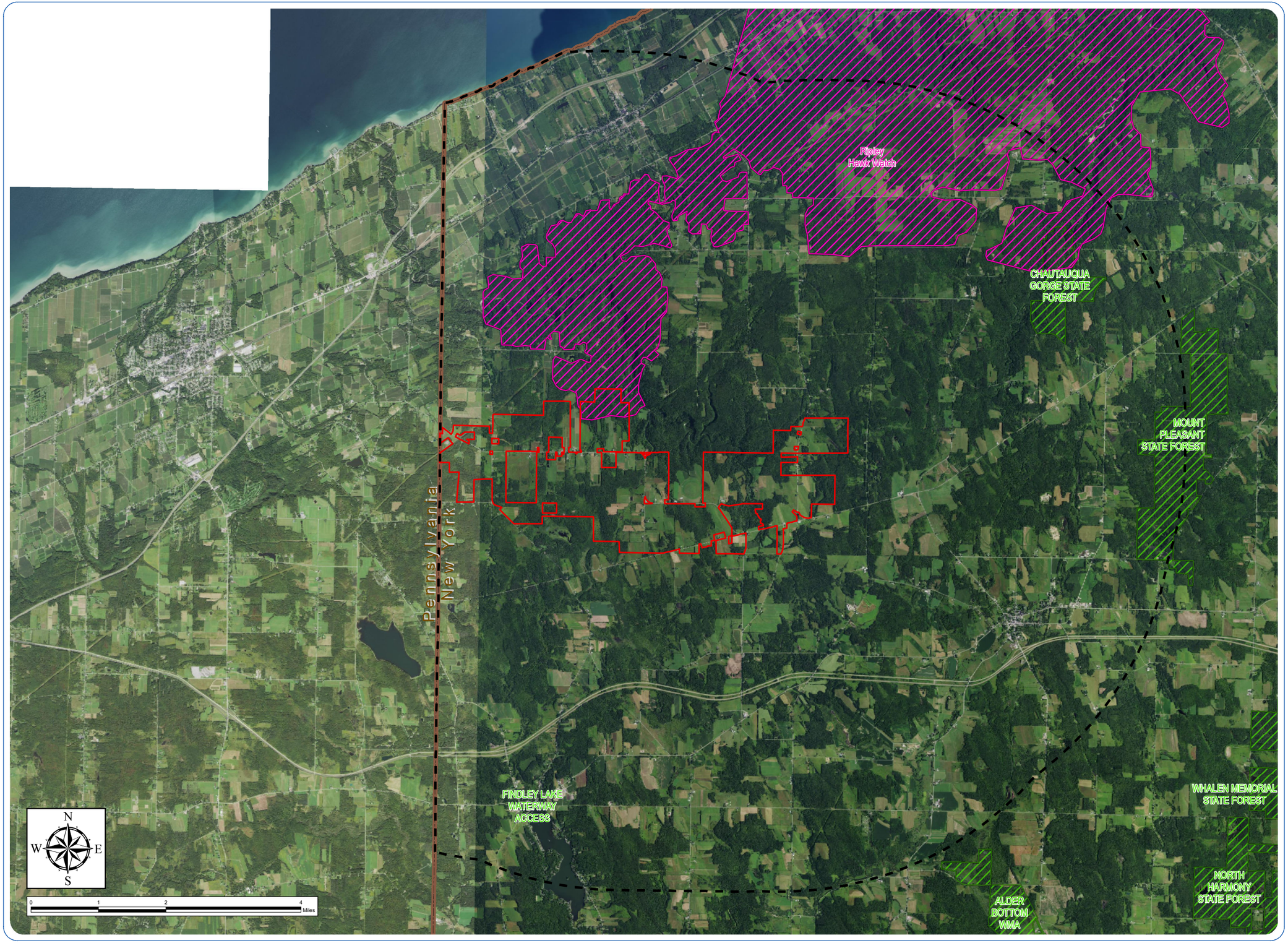
Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service.. **2.** This map was generated in ArcMap on January 19, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Wildlife Site Characterization

Figure 4: Sensitive Environmental Areas



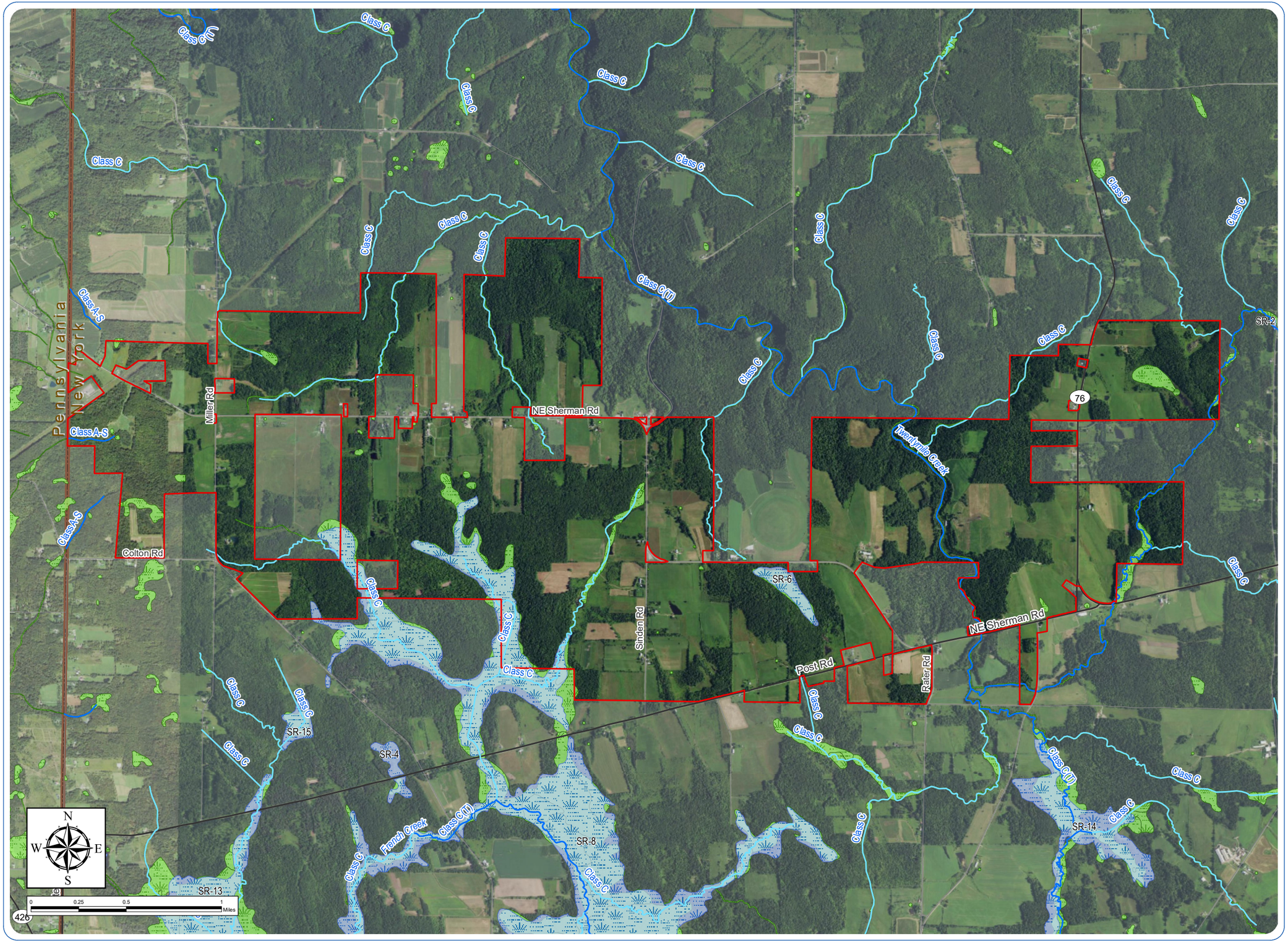
Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. **2.** This map was generated in ArcMap on January 19, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Wildlife Site Characterization

Figure 5: Mapped Wetlands and Streams



- Class A, B, C(TS), or C(T) Stream
- Class C or D Stream
- NYSDEC Mapped Wetland
- NWI Wetland
- Facility Area
- State Boundary

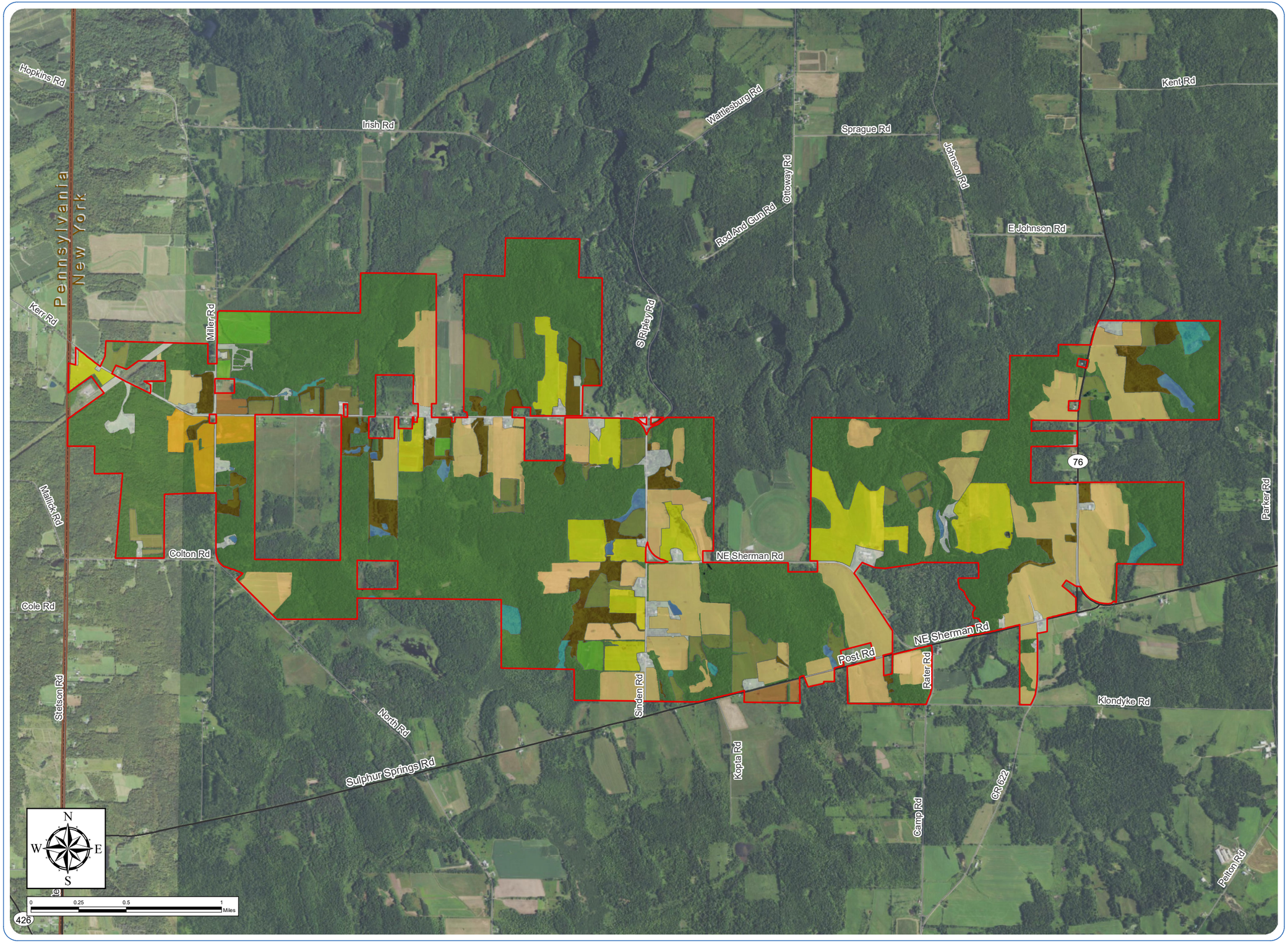
Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service.. **2.** This map was generated in ArcMap on January 19, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Wildlife Site Characterization

Figure 6: Ecological Communities



- Field Cropland (Hay)
- Field Cropland (Wheat)
- Row Cropland (Active)
- Row Cropland (Fallow)
- Pastureland
- Successional Old Field
- Successional Shrubland
- Forestland
- Open Water
- Shallow Emergent Marsh
- Developed/Disturbed
- Facility Area
- State Boundary

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. **2.** This map was generated in ArcMap on February 2, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

Appendix A

Summary of Avian Consultations

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000, Syracuse, New York 13202
P. 315.471.0688 • F. 315.471.1061 • www.edrdpc.com

memorandum

To:	Houtan Moaveni (ORES)	**EDR Project No:**	19020
From:	Ben Brazell, Bill Whipps		
Date:	October 2, 2020		
Reference:	South Ripley Solar: Summary of Avian Consultations		

Comments:

As discussed during our October 1, 2020 conference call, please find below a summary of avian-specific agency consultations that have occurred to date for the South Ripley Solar Project.

Threatened and Endangered Species Database Review and Consultation

Consultation with federal and state agencies regarding the potential presence of threatened and endangered avian species within the Facility Area began in the summer of 2019. This initiated with database review of 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). According to the IPaC system, no federally-listed avian species occur within the Facility Area. 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 August 21, 2019. A response letter received from the NYNHP on September 15, 2019 did not reveal known occurrences of state-listed bird species within the Facility Area.

Following receipt of the NYNHP response letter, EDR initiated further consultation with NYSDEC Central Office staff and NYSDEC Region 9 staff to obtain occurrence records for any additional state-listed species that may have been documented by the NYSDEC or the NYNHP in the vicinity of the Facility Area. Specifically, ConnectGen and EDR spoke with NYSDEC Central Office staff on September 18, 2019 regarding the NYNHP response letter and the potential for additional state-listed species data. On November 6, 2019, the NYSDEC Central Office provided additional occurrence data for the Facility Area and its vicinity in accordance with a previously executed non-disclosure agreement (NDA). In this response, NYSDEC stated that "[t]here are no records of State-listed threatened or endangered grassland bird species within the project area, however some suitable habitat exists on site that may support wintering or breeding grassland birds."

In addition, EDR corresponded with NYSDEC Region 9 staff in mid-October 2019 regarding additional state-listed species data that may not currently be integrated with the NYNHP database. On October 21, 2019, NYSDEC Region 9 staff provided a response indicating that NYSDEC Region 9 was not aware of any additional records. Finally, a conference call was held with NYSDEC staff on April 3, 2020 during which the NYSDEC recommended submitting another request to the NYNHP for any updated state-listed species data. A second request was submitted to the NYNHP on April 28, 2020, and the response letter received on May 21, 2020 indicated that bald eagle has been documented within 0.75 mile of the Facility Area.

Winter Raptor Survey Workplan

The Winter Raptor Survey Workplan was provided to NYSDEC personnel for review and comment on November 26, 2019. Subsequent correspondence is summarized as follows:

- December 5, 2019: EDR emailed NYSDEC personnel in an effort to obtain comments or questions on the workplan, and to also indicate that surveys were underway.
- December 12, 2019: EDR emailed NYSDEC personnel in an effort to obtain comments or questions on the workplan.
- January 2, 2020: NYSDEC personnel provided email comments on the workplan.
- January 8, 2020: EDR provides response to NYSDEC comments.
- January 29, 2020: EDR provides NYSDEC personnel shapefiles and map associated with updated winter raptor survey locations.

Winter Raptor Survey Results

ConnectGen and EDR held a conference call with NYSDEC personnel on April 3, 2020 to discuss various topics, which included a detailed review of the results of the winter raptor survey. A complete Winter Raptor Survey Report (and associated shapefiles) was provided to NYSDEC on May 22, 2020. Subsequent correspondence is summarized as follows:

- August 26, 2020: EDR emailed NYSDEC personnel in an effort to obtain comments or questions on the Winter Raptor Survey Report.
- August 28, 2020: NYSDEC Central Office personnel replied and indicated they will be coordinating with Region 9 personnel on September 11, 2020.
- September 11, 2020: EDR emailed NYSDEC personnel regarding comments or questions on the Winter Raptor Survey Report.
- September 14, 2020: NYSDEC personnel indicated they have no questions on the Winter Raptor Survey Report. However, this reply also indicated their understanding that COVID-19 prevented additional surveys in April, which would normally be warranted based on observations of northern harrier during the last 2 weeks of March.
- September 14, 2020: EDR replied to NYSDEC, clarifying our understanding that additional surveys in April were not necessary irrespective of COVID-19.

Breeding Bird Survey Workplan

The Breeding Bird Survey Workplan was provided to NYSDEC personnel for review and comment on May 8, 2020. Subsequent correspondence is summarized as follows:

- May 28, 2020: EDR emailed NYSDEC personnel regarding comments or questions on the workplan, and to provide updates to the proposed survey transects.
- June 1, 2020: NYSDEC personnel provided comments on the workplan.
- June 4, 2020: EDR provided responses to NYSDEC comments on the workplan.
- July 9, 2020: EDR emailed NYSDEC personnel to obtain any further comments on the workplan.
- August 28, 2020: NYSDEC personnel indicated there were no further comments on the workplan.

Breeding Bird Survey Report

A complete Breeding Bird Survey Report (and associated shapefiles) was provided to NYSDEC on September 11, 2020. NYSDEC personnel confirmed receipt of the report on September 14, 2020. To date, no further correspondence has occurred.

Copies To: John Kuba, Isaac Phillips (ConnectGen)
Project File

Appendix B

Agency Correspondence

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 21, 2020

William Whipps
EDR
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

Re: South Ripley Solar Project (EDR Project No. 19020)
County: Chautauqua Town/City: Ripley

Dear Mr. Whipps:

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 site.

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.

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 NYS DEC Region 9 Office, Division of Environmental Permits, at dep.r9@dec.ny.gov.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

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The following state-listed animal has been documented in the vicinity of the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 9 Office at dep.r9@dec.ny.gov, (716) 851-7165.

The following species has been documented within 0.75 mile of the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Birds				
Bald Eagle *Breeding*	*Haliaeetus leucocephalus*	Threatened		12663

This report only includes records from the NY Natural Heritage database.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

The following rare plants and significant natural communities have been documented at or in the vicinity of the project site.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is either an example of a community type that is rare in the state, or a high-quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Wetland/Aquatic Communities			
Confined River			High Quality Occurrence of Uncommon Community Type

Documented within the project boundary. Twentymile Creek. This is a moderately large occurrence in very good condition and with very good species diversity. The stream is in a moderate-sized landscape of working forests. 10196

Upland/Terrestrial Communities

Hemlock-Northern Hardwood Forest — High Quality Occurrence

Documented within the project boundary. This is a moderate-sized occurrence in a mature state with small patches of putative old growth and excellent plant species diversity. The community is in an excellent moderate-sized and intact forested landscape. 6512

The following plant is listed as Endangered and so is a vulnerable natural resource of conservation concern.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Vascular Plants			
Tall Ironweed	*Vernonia gigantea*	Endangered	Critically Imperiled in NYS

Documented within 0.4 mile south of the project site. Pelton Road wetlands. 1991-08-05: Moist pastureland and successional old field. The area was probably a rich hemlock-hardwood forest before human and beaver activities. 1882

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. 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.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

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 17, 2020
Consultation Code: 05E1NY00-2021-SLI-0478
Event Code: 05E1NY00-2021-E-01454
Project Name: South Ripley Solar

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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/

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-0478

Event Code: 05E1NY00-2021-E-01454

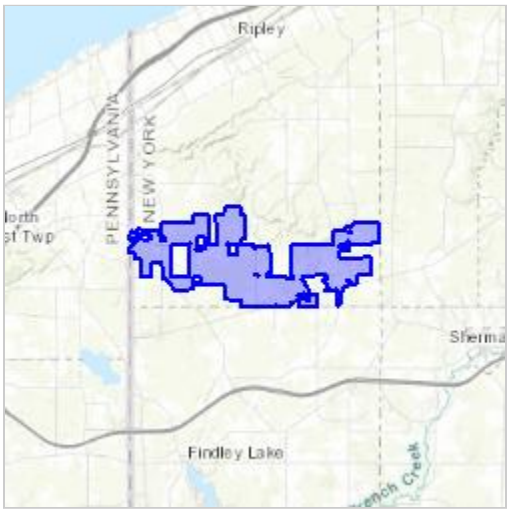
Project Name: South Ripley Solar

Project Type: POWER GENERATION

Project Description: An up to 177 MW solar energy generating facility in the Town of South Ripley, Chautauqua County, New York.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.190996927097544N79.7148548142037W



Counties: Chautauqua, NY

Endangered Species Act Species

There is a total of 1 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.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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

Appendix C

Wildlife Species List

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
Bird Species			
	Ducks, Geese, and Waterfowl	*Anatidae*	
1,2,3,5	wood duck	*Aix sponsa*	
4,5	northern pintail	*Anas acuta*	SGCN
4,5	green-winged teal	*Anas crecca*	
1,2,3,4,5	mallard	*Anas platyrhynchos*	
3,4	American black duck	*Anas rubripes*	SGCN-HP
	greater white-fronted goose	*Anser albifrons*	
4	snow goose	*Anser caerulescens*	
4	lesser scaup	*Aythya affinis*	SGCN
4	redhead	*Aythya americana*	
4,5	ring-necked duck	*Aythya collaris*	
4	greater scaup	*Aythya marila*	SGCN
4	canvasback	*Aythya valisineria*	
	brant	*Branta bernicla*	
1,2,3,4,5	Canada goose	*Branta canadensis*	
4,5	bufflehead	*Bucephala albeola*	
4	common goldeneye	*Bucephala clangula*	SGCN
4	long-tailed duck	*Clangula hyemalis*	SGCN
	trumpeter swan	*Cygnus buccinator*	
4	tundra swan	*Cygnus columbianus*	
4	mute swan	*Cygnus olor*	
	harlequin duck	*Histrionicus histrionicus*	SGCN
4,5	hooded merganser	*Lophodytes cucullatus*	
4,5	American wigeon	*Mareca americana*	
	Eurasia wigeon	*Mareca penelope*	
4	gadwall	*Mareca strepera*	
	black scoter	*Melanitta americana*	
	white-winged scoter	*Melanitta deglandi*	SGCN
	surf scoter	*Melanitta perspicillata*	SGCN
2,4,5	common merganser	*Mergus merganser*	
4	red-breasted merganser	*Mergus serrator*	
4	ruddy duck	*Oxyura jamaicensis*	SGCN
	common eider	*Somateria mollissima*	SGCN
4,5	northern shoveler	*Spatula clypeata*	
5	blue-winged teal	*Spatula discors*	SGCN

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	New World Quail	*Odontophoridae*	
	northern bobwhite	*Colinus virginiana*	SGCN-HP
	Pheasants, Grouse, and Allies	*Phasianidae*	
3,4,5	ruffed grouse	*Bonasa umbellus*	SGCN
1,2,3,4,5	wild turkey	*Meleagris gallopavo*	
3	ring-necked pheasant	*Phasianus colchicus*	
	Loons	*Gaviidae*	
4	common loon	*Gavia immer*	SGCN
	Grebes	*Podicipedidae*	
4,5	horned grebe	*Podiceps auritus*	SGCN
	red-necked grebe	*Podilceps grisegena*	
4,5	pied-billed grebe	*Podilymbus podiceps*	ST, SGCN
	Pigeons, Doves	*Columbidae*	
1,2,3,4,5	rock pigeon	*Columba livia*	
1,2,3,4,5	mourning dove	*Zenaida macroura*	
	Cuckoos	*Cuculidae*	
1,5	yellow-billed cuckoo	*Coccyzus americanus*	
1,2,5	black-billed cuckoo	*Coccyzus erythropthalmus*	SGCN
	Nightjars and Allies	*Caprimulgidae*	
	whip-poor-will	*Caprimulgus vociferus*	SSC, SGCN-HP
	common nighthawk	*Chordeiles minor*	SSC, SGCN-HP
	Swifts	*Apodidae*	
3,5	chimney swift	*Chaetura pelagica*	
	Hummingbirds	*Trochilidae*	
3,5	ruby-throated hummingbird	*Archilochus colubris*	
	Rails, Gallinules, and Coots	*Rallidae*	
4	American coot	*Fulica americana*	
	common gallinule	*Gallinula galeata*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
5	sora rail	*Porzana carolina*	
1,5	Virginia rail	*Rallus limicola*	
	Cranes	*Gruidae*	
4	Sandhill Crane	*Grus canadensis*	
	Plovers	*Charadriidae*	
5	semipalmated plover	*Charadrius semipalmatus*	
1,2,3,4,5	killdeer	*Charadrius vociferus*	
	Sandpipers	*Scolopacidae*	
3,5	spotted sandpiper	*Actitus macularius*	
	ruddy turnstone	*Arenaria interpres*	SGCN
	upland sandpiper	*Bartramia longicauda*	ST, SGCN-HP
	sanderling	*Calidris alba*	
5	dunlin	*Calidris alpina*	
	red knot	*Calidris canutus*	ST, SGCN-HP
5	white-rumped sandpiper	*Calidris fuscicollis*	
5	pectoral sandpiper	*Calidris melanotos*	
5	least sandpiper	*Calidris minutilla*	
5	semipalmated sandpiper	*Calidris pusilla*	
3,4,5	Wilson's snipe	*Gallinago delicata*	
5	short-billed dowitcher	*Limnodromus griseus*	
1,3,5	American woodcock	*Scolopax minor*	SGCN
5	lesser yellowlegs	*Tringa flavipes*	
5	greater yellowlegs	*Tringa melanoleuca*	SGCN
5	solitary sandpiper	*Tringa solitaria*	
	Gulls, Terns	*Laridae*	
4	Bonaparte's gull	*Chroicocephalus philadelphia*	SGCN
4	herring gull	*Larus argentatus*	
1,2,4,5	ring-billed gull	*Larus delawarensis*	
4	lesser black-backed gull	*Larus fuscus*	
	Iceland gull	*Larus glaucoides*	
	glaucous gull	*Larus hyperboreus*	
4	great black-backed gull	*Larus marinus*	
	laughing gull	*Leucophaeus atricilla*	SGCN

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	black-legged kittiwake	*Rissa tridactyla*	
	roseate tern	*Sterna dougallii*	SE, SGCN-HP
	common tern	*Sterna hirundo*	ST, SGCN

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Loons	*Gaviidae*	
	common loon	*Gavia immer*	SSC, SGCN
	red-throated loon	*Gavia stellata*	
	Comorants	*Phalacrocoracidae*	
4	double crested cormorant	*Phalacrocorax auritus*	
	great cormorant	*Phalacrocorax carbo*	
	Herons, Bitterns	*Ardeidae*	
4,5	great egret	*Ardea alba*	SGCN
1,3,4,5	great blue heron	*Ardea herodias*	
	American bittern	*Botaurus lentiginosus*	SSC, SGCN
3,5	green heron	*Butorides virescens*	
	snowy egret	*Egretta thula*	SGCN
	least bitten	*Ixobrychus exilis*	ST, SGCN
5	black-crowned night heron	*Nycticorax nycticorax*	SGCN
	American Vultures	*Cathartidae*	
1,2,3,5,11	turkey vulture	*Cathartes aura*	
11	black vulture	*Coragyps atratus*	
	Osprey	*Pandionidae*	
5	osprey	*Pandion haliaetus*	SSC
	Hawks	*Accipitridae*	
11	golden eagle	*Aquila chrysaetos*	SE, SGCN
1,2,3,4,5,11	Cooper's hawk	*Accipiter cooperii*	SSC
11	northern goshawk	*Accipiter gentilis*	SSC, SGCN
1,3,4,11	sharp-shinned hawk	*Accipiter striatus*	SSC
1,3,4,5,11	red-tailed hawk	*Buteo jamaicensis*	
4,11	rough-legged hawk	*Buteo lagopus*	
3,4,11	red-shouldered hawk	*Buteo lineatus*	SSC, SGCN
3,5,11	broad-winged hawk	*Buteo platypterus*	
1,4,5,11	northern harrier	*Circus cyaneus*	ST, SGCN
1,2,4,5,6,11	bald eagle	*Haliaeetus leucocephalus*	ST, SGCN
	Barn-owls	*Tytonidae*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	barn owl	*Tyto alba*	SGCN-HP
	Owls	*Strigidae*	
	northern saw-whet owl	*Aegolius acadicus*	
4	short-eared owl	*Asio flammeus*	SE, SGCN-HP
4	long-eared owl	*Asio otus*	SGCN
4	snowy owl	*Bubo scandiacus*	
3,4	great horned owl	*Bubo virginianus*	
3,4	eastern screech owl	*Megascops asio*	
5	barred owl	*Strix varia*	
	Kingfishers	*Alcedinidae*	
1,3,4,5	belted kingfisher	*Ceryle alcyon*	
	Woodpeckers	*Picidae*	
1,2,3,4,5	northern flicker	*Colaptes auratus*	
1,2,3,4,5	pileated woodpecker	*Dryocopus pileatus*	
1,2,3,4,5	downy woodpecker	*Dryobates pubescens*	
1,2,3,4,5	hairy woodpecker	*Dryobates villosus*	
1,2,4,5	red-bellied woodpecker	*Melanerpes carolinus*	
3	red-headed woodpecker	*Melanerpes erythrocephalus*	SSC, SGCN-HP
	black-backed woodpecker	*Picoides arcticus*	
2,3,4,5	yellow-bellied sapsucker	*Sphyrapicus varius*	
	Falcons	*Falconidae*	
1,4,11	merlin	*Falco columbarius*	
4,11	peregrine falcon	*Falco peregrinus*	SGCN
1,2,3,4,5,11	American kestrel	*Falco sparverius*	SGCN
	Tyrant Flycatchers	*Tyrannidae*	
	olive-sided flycatcher	*Contopus cooperi*	SGCN-HP
1,2,3,5	eastern wood-pewee	*Contopus virens*	
1,2,3,5	alder flycatcher	*Empidonax alnorum*	
5	yellow-bellied flycatcher	*Empidonax flaventris*	
2,3,5	least flycatcher	*Empidonax minimus*	
1,2,3,5	willow flycatcher	*Epidonax traillii*	
1,3,5	Acadian flycatcher	*Epidonax viresceus*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
1,2,3,5	great crested flycatcher	*Myiarchus crinitus*	
1,2,3,4,5	eastern phoebe	*Sayornis phoebe*	
1,2,3,5	eastern kingbird	*Tyrannus tyrannus*	
	Vireos	*Vireonidae*	
5	yellow-throated vireo	*Vireo flavifrons*	
1,2,3,5	warbling vireo	*Vireo gilvus*	
	white-eyed vireo	*Vireo griseus*	
1,2,3,5	red-eyed vireo	*Vireo olivaceus*	
	Philadephia vireo	*Vireo philadelphicus*	
1,2,3,5	blue-headed vireo	*Vireo solitarius*	
	Shrikes	*Laniidae*	
1,4	northern shrike	*Lanius borealis*	
	Jays, Crows	*Corvidae*	
1,2,3,4,5	American crow	*Corvus brachyrhynchos*	
1,4,5	common raven	*Corvus corax*	
	fish crow	*Corvus ossifragus*	
1,2,3,4,5	blue jay	*Cyanocitta cristata*	
	Titmice	*Paridae*	
1,2,4,5	tufted titmouse	*Baeolophus bicolor*	
1,2,3,4,5	black-capped chickadee	*Poecile atricapillus*	
	Larks	*Alaudidae*	
4	horned lark	*Eromophila alpestris*	SSC, SGCN-HP

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Swallows	*Hirundinidae*	
1,2,3,5	barn swallow	*Hirundo rustica*	
3,5	cliff swallow	*Petrochelidon pyrrhonota*	
3,5	purple martin	*Progue subis*	
2,3,5	bank swallow	*Riparia riparia*	
3,5	northern rough-winged swallow	*Stelgidopteryx serripennis*	
1,2,3,5	tree swallow	*Tachycineta bicolor*	
	Kinglets	*Regulidae*	
5	ruby-crowned kinglet	*Regulus calendula*	
4,5	golden-crowned kinglet	*Regulus satrapa*	
	Nuthatches	*Sittidae*	
4,5	red-breasted nuthatch	*Sitta canadensis*	
1,2,3,4,5	white-breasted nuthatch	*Sitta carolinensis*	
	Treecreepers	*Certhiidae*	
1,3,4,5	brown creeper	*Certhia americana*	
	Gnatcatchers	*Polioptilidae*	
	blue-gray gnatcatcher	*Polioptila caerulea*	
	Wrens	*Troglodytidae*	
5	marsh wren	*Cistothorus palustris*	
	sedge wren	*Cistothorus platensis*	ST, SGCN-HP
3,4	Carolina wren	*Thryothorus ludovicianus*	
1,2,3,5	house wren	*Troglodytes aedon*	
1,3,4	winter wren	*Troglodytes hiemalis*	
	Starlings	*Sturnidae*	
1,2,3,4,5	European starling	*Sturnus vulgaris*	
	Wagtails and Pipits	*Motacillidae*	
4,5	American pipit	*Anthus rubescens*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Mimic Thrushes	*Mimidae*	
1,2,3,5	gray catbird	*Dumetella carolinensis*	
3,4	northern mockingbird	*Mimus polyglottos*	
1,2,3,5	brown thrasher	*Toxostoma rufum*	SGCN-HP
	Thrushes and Allies	*Turdidae*	
1,2,3,5	veery	*Catharus fuscescens*	
1,3,5	hermit thrush	*Catharus guttatus*	
	gray-cheecked thrush	*Catharus minimus*	
1,5	Swainson's thrush	*Catharus ustulatus*	
1,2,3,5	wood thrush	*Hylocichla mustelina*	SGCN
1,2,3,4,5	eastern bluebird	*Sialia sialis*	
1,2,3,4,5	American robin	*Turdus migratorius*	
	Waxwings	*Bombycillidae*	
1,2,3,4,5	cedar waxwing	*Bombycilla cedrorum*	
	Old World Sparrows	*Passeridae*	
1,2,3,4,5	house sparrow	*Passer domesticus*	
	Finches and Allies	*Fringillidae*	
	common redpoll	*Acanthis flammea*	
4	evening grosbeak	*Coccothraustes vespertinus*	
2,3,4,5	house finch	*Haemorhous mexicanus*	
2,3,4,5	purple finch	*Haemorhous purpureus*	
	red crossbill	*Loxia curvirostra*	
	white-winged crossbill	*Loxia leucoptera*	
4	pine siskin	*Spinus pinus*	
1,3,4,5	American goldfinch	*Spinus tristis*	
	Longspurs	*Calcariidae*	
4	Lapland longspur	*Calcarius lapponicus*	
4	snow bunting	*Plectrophenax nivalis*	
	New World Sparrows	*Passerellidae*	
	seaside sparrow	*Ammospiza maritima*	SSC, SGCN-HP
1	grasshopper sparrow	*Ammodramus savannarum*	SSC, SGCN-HP

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Henslow's sparrow	*Centronyx henslowii*	ST, SGCN-HP
1,2,3,4,5	dark-eyed junco	*Junco hyemalis*	
1,2,3,4,5	swamp sparrow	*Melospiza georgiana*	
	Lincoln's sparrow	*Melospiza lincolnii*	
1,2,3,4,5	song sparrow	*Melospiza melodia*	
1,2,3,4,5	savannah sparrow	*Passerculus sandwichensis*	
4	fox sparrow	*Passerella iliaca*	
1,2,3,4,5	eastern towhee	*Pipilo erythrophthalmus*	
	vesper sparrow	*Pooecetes gramineus*	SSC, SGCN-HP
1,2,3,4,5	chipping sparrow	*Spizella passerina*	
1,2,3,4,5	field sparrow	*Spizella pusilla*	
1,4,5	American tree sparrow	*Spizelloides arborea*	
3,4,5	white-throated sparrow	*Zonotrichia albicollis*	
4,5	white-crowned sparrow	*Zonotrichia leucophrys*	
	Blackbirds	*Icteridae*	
1,2,3,4,5	red-winged blackbird	*Agelaius phoeniceus*	
1,2,3,5	bobolink	*Dolichonyx oryzivorus*	SSC, SGCN-HP
4,5	rusty blackbird	*Euphagus carolinus*	SGCN-HP
1,2,3,5	Baltimore oriole	*Icterus galbula*	
3,5	orchard oriole	*Icterus spurius*	
1,2,3,4,5	brown-headed cowbird	*Molothrus ater*	
	boat-tailed grackle	*Quiscalus major*	
1,2,3,4,5	common grackle	*Quiscalus quiscula*	
1,2,3,4,5	eastern meadowlark	*Sturnella magna*	SGCN-HP
	New World Warblers	*Parulidae*	
3,5	Canada warbler	*Cardellina canadensis*	SGCN-HP
5	Wilson's warbler	*Cardellina pusilla*	
	Kentucky warbler	*Geothlypis formosa*	SGCN-HP
3,5	mourning warbler	*Geothlypis philadelphia*	
1,2,3,5	common yellowthroat	*Geothlypis trichas*	
	worm-eating warbler	*Helmitheros vermivorum*	SGCN
	yellow-breasted chat	*Icteria virens*	SSC, SGCN-HP
5	orange-crowned warbler	*Leiothlypis celata*	
5	Tennessee warbler	*Leiothlypis peregrina*	
5	Nashville warbler	*Leiothlypis ruficapilla*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	black-and-white warbler	*Mniotilta varia*	
	Connecticut warbler	*Oporornis agilis*	
3,5	Louisiana waterthrush	*Parkesia motacilla*	SGCN
5	northern waterthrush	*Parkesia noveboracensis*	
1,2,3,5	ovenbird	*Seiurus aurocapillus*	
5	northern parula	*Setophaga americana*	
	black-throated blue warbler	*Setophaga caerulescens*	SGCN
	bay-breasted warbler	*Setophaga castanea*	SGCN-HP
	cerulean warbler	*Setophaga cerulea*	SSC, SGCN
1,3,5	hooded warbler	*Setophaga citrina*	
1,3,4,5	yellow-rumped warbler	*Setophaga coronata*	
	prairie warbler	*Setophaga discolor*	SGCN
	yellow-throated warbler	*Setophaga dominica*	
3,5	Blackburnian warbler	*Setophaga fusca*	
3,5	magnolia warbler	*Setophaga magnolia*	
5	palm warbler	*Setophaga palmarum*	
1,2,3,5	chestnut-sided warbler	*Setophaga pensylvanica*	
1,2,3,5	yellow warbler	*Setophaga petechia*	
1,5	pine warbler	*Setaphaga pinus*	
1,2,3,5	American redstart	*Setophaga ruticilla*	
5	blackpoll warbler	*Setophaga striata*	
	Cape May warbler	*Setophaga tigrina*	SGCN-HP
1,3,5	black-throated green warbler	*Setophaga virens*	
	golden-winged warbler	*Vermivora chrysoptera*	SSC, SGCN-HP
1,2,3,5	blue-winged warbler	*Vermivora cyanoptera*	SGCN

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Cardinals and Allies	*Cardinalidae*	
1,2,3,4,5	northern cardinal	*Cardinalis cardinalis*	
	blue grosbeak	*Passerina caerulea*	
1,2,3,5	indigo bunting	*Passerina cyanea*	
1,2,3,4,5	rose-breasted grosbeak	*Pheucticus ludovicianus*	
1,2,3,5	scarlet tanager	*Piranga olivacea*	SGCN
	dickcissel	*Spiza americana*	
Mammal Species			
	Opossums	*Didelphiidae*	
8	opossum	*Didelphis virginiana*	
	Shrews	*Soricidae*	
8	shorttail shrew	*Blarina brevicauda*	
8	least shrew	*Cryptotis parva*	
8	masked shrew	*Sorex cinereus*	
	smoky shrew	*Sorex fumeus*	
	Moles	*Talpidae*	
8	starnose mole	*Condylura cristata*	
8	hairytail mole	*Parascalops breweri*	
	eastern mole	*Scalopus aquaticus*	
	Plainnose Bats	*Vespertilionidae*	
8	big brown bat	*Eptesicus fuscus*	
8	silver-haired bat	*Lasionycteris noctivagans*	SGCN
8	red bat	*Lasiurus borealis*	SGCN
8	hoary bat	*Lasiurus cinereus*	SGCN
	small-footed bat	*Myotis leibii*	
8	little brown myotis	*Myotis lucifugus*	SGCN-HP
7,8	northern long-eared bat	*Myotis septentrionalis*	FT, ST, SGCN-HP
	Indiana bat	*Myotis sodalis*	FE, SE, SGCN-HP
8	eastern pipistrelle	*Perimyotis subflavus*	SGCN-HP

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Racoons	*Procyonidae*	
8	raccoon	*Procyon lotor*	
	Porcupines	*Erethizontidae*	
8	porcupine	*Erethizon dorsatum*	
	Weasels	*Mustelidae*	
8	striped skunk	*Mephitis mephitis*	
8	shorttail weasel	*Mustela erminea*	
8	longtail weasel	*Mustela frenata*	
8	mink	*Mustela vison*	
	Dogs, Wolves, Foxes	*Canidae*	
8	coyote	*Canis latrans*	
8	gray fox	*Urocyon cinereoargenteus*	
1,8	red fox	*Vulpes vulpes*	
	Cats	*Felidae*	
8	bobcat	*Felis rufus*	
	Squirrels	*Sciuridae*	
8	southern flying squirrel	*Glaucomys volans*	
8	woodchuck	*Marmota monax*	
8	eastern gray squirrel	*Sciurus carolinensis*	
8	eastern fox squirrel	*Sciurus niger*	
8	eastern chipmunk	*Tamias striatus*	
1,8	red squirrel	*Tamiasciurus hudsonicus*	
	Beaver	*Castoridae*	
8	beaver	*Castor canadensis*	
	Mice, Rats, Lemmings, Volves	*Cricetidae*	
8	meadow vole	*Microtus pennsylvanicus*	
8	muskrat	*Ondatra zibethicus*	
8	white-footed mouse	*Peromyscus leucopus*	
8	deer mouse	*Peromyscus maniculatus*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Old World Rats & Mice	*Muridae*	
8	house mouse	*Mus musculus*	
8	Norway rat	*Rattus norvegicus*	
	Jumping Mice	*Zapeoidae*	
8	woodland jumping mouse	*Napaeozapus insignis*	
8	meadow jumping mouse	*Zapus hudsonicus*	
	Hares, Rabbits	*Leporidae*	
8	eastern cottontail	*Sylvilagus floridanus*	
	Deer	*Cervidae*	
1,8	whitetail deer	*Odocoileus virginianus*	
	Bears	*Ursidae*	
8	black bear	*Ursus americanus*	
Amphibian Species			
	Giant Salamanders	*Cryptobranchidae*	
	hellbender	*Cryptobranchus alleganiensis*	SSC, SGCN-HP
	Mole Salamanders	*Ambystomatidae*	
	Jefferson salamander	*Ambystoma jeffersonianum*	SSC
	blue-spotted salamander	*Ambystoma laterale*	SSC, SGCN-HP
	spotted salamander	*Ambystoma maculatum*	
	marbled salamander	*Ambystoma opacum*	SSC, SGCN
	tiger salamander	*Ambystoma tigrinum*	SE, SGCN-HP
	Newts	*Salamandridae*	
9	red-spotted newt	*Notophthalmus viridescens*	
	Aquatic Salamanders	*Proteidae*	
	mudpuppy	*Necturus maculosus*	SGCN

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Lungless Salamanders	*Plethodontidae*	
9	northern dusky salamander	*Desmognathus fuscus*	
9	Allegheny mountain dusky salamander	*Desmognathus ochrophaeus*	
9	northern two-lined salamander	*Eurycea bislineata*	
	long-tailed salamander	*Eurycea longicauda*	SSC, SGCN-HP
	spring salamander	*Gyrinophilus porphyriticus*	
	four-toed salamander	*Hemidactylium scutatum*	SGCN-HP
9	eastern red-backed salamander	*Plethodon cinereus*	
9	slimy salamander	*Plethodon glutinosus*	
	Wehrle's salamander	*Plethodon wehrlei*	
	northern red salamander	*Pseudotriton ruber*	
	Spadefoot Toads	*Scaphiopodidae*	
	American spadefoot toad	*Scaphiopus holbrookii*	SSC, SGCN
	Tree Frogs	*Hylidae*	
	eastern cricket frog	*Acris crepitans*	SE, SGCN-HP
	gray treefrog	*Hyla versicolor*	
1,9	spring peeper	*Pseudacris crucifer*	
	boreal cricket frog	*Pseudacris maculata*	
	western chorus frog	*Pseudacris triseriata*	SGCN
	Toads	*Bufonidae*	
9	American toad	*Anaxyrus americanus*	
	Fowler's toad	*Anaxyrus fowleri*	SGCN
	True Frogs	*Ranidae*	
9	bull frog	*Lithobates catesbeianus*	
9	green frog	*Lithobates clamitans*	
	Atlantic Coast leopard frog	*Lithobates kauffeldi*	SSC, SGCN-HP
9	pickerel frog	*Lithobates palustris*	
	northern leopard frog	*Lithobates pipiens*	
	mink frog	*Lithobates septentrionalis*	
	southern leopard frog	*Lithobates sphenocephala*	SSC
9	wood frog	*Lithobates sylvaticus*	

Reptile Species

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Softshell Turtles	*Trionychidae*	
	spiny softshell	*Apalone spinifera*	SSC, SGCN-HP
	Snapping Turtles	*Chelydridae*	
9	common snapping turtle	*Chelydra serpentina*	SGCN
	Mud and Musk Turtles	*Kinosternidae*	
	mud turtle	*Kinosternon subrubrum*	SE, SGCN-HP
	musk turtle	*Sternotherus odoratus*	SGCN-HP
	Box and Water Turtles	*Emydidae*	
9	painted turtle	*Chrysemys picta*	
	spotted turtle	*Clemmys guttata*	SSC, SGCN-HP
	Blanding's turtle	*Emydoidea blandingii*	ST, SGCN-HP
	wood turtle	*Glyptemys insculpta*	SSC, SGCN-HP
	bog turtle	*Glyptemys muhlenbergii*	FT, SE, SGCN-HP
	northern map turtle	*Graptemys geographica*	SGCN
	northern diamond-backed terrapin	*Malaclemys terrapin*	SGCN
	eastern box turtle	*Terrapene carolina*	SSC, SGCN-HP
	slider turtle	*Trachemys scripta*	
	Skinks	*Scincidae*	
	northern coal skink	*Plestiodon anthracinus*	SGCN
	common five-lined skink	*Plestiodon fasciatus*	
	Wall Lizards	*Lacertidae*	
	Italian wall lizard	*Podarcis sicula*	
	Spiny Lizards	*Phrynosomatidae*	
	eastern fence lizard	*Sceloporus undulatus*	ST, SGCN

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Colubrids	*Colubridae*	
	eastern wormsnake	*Carphophis amoenus*	SSC, SCGN
	northern black racer	*Coluber constrictor*	SGCN
9	ring necked snake	*Diadophis punctatus*	
	black rat snake	*Elaphe obsoleta*	
	eastern hog-nosed snake	*Heterodon platirhinos*	SSC, SCGN-HP
	eastern milk snake	*Lampropeltis triangulum*	
9	northern water snake	*Nerodia sipedon*	
9	smooth green snake	*Opheodrys vernalis*	SGCN
	eastern ratsnake	*Pantherophis alleghaniensis*	SGCN
	queensnake	*Regina septemvittata*	SE, SGCN-HP
	brown snake	*Storeria dekayi*	
	red-bellied snake	*Storeria occipitomaculata*	
	shorthead garter snake	*Thamnophis brachystoma*	SGCN
	eastern ribbon snake	*Thamnophis sauritus*	SGCN
9	common garter snake	*Thamnophis sirtalis*	
	Vipers	*Viperidae*	
	northern copperhead	*Agkistrodon contortrix*	SGCN
	eastern massasauga	*Sistrurus catenatus*	FT, SE, SGCN-HP
	timber rattlesnake	*Crotalus horridus*	ST, SGCN-HP
Fish Species			
	Lampreys	*Petromyzontidae*	
	Ohio lamprey	*Ichthyomyzon bdellium*	SGCN
10	northern brook lamprey	*Ichthyomyzon fossor*	
	mountain brook lamprey	*Ichthyomyzon greeleyi*	SGCN
10	silver lamprey	*Ichthyomyzon unicuspis*	
10	American brook lamprey	*Lethenteron appendix*	
10	sea lamprey	*Petromyzon marinus*	
	Sturgeons	*Acipenseridae*	
	shortnose sturgeon	*Acipenser brevirostrum*	FE, SE, SGCN
10	lake sturgeon	*Acipenser fulvescens*	ST, SGCN
	Atlantic sturgeon	*Acipenser oxyrinchus*	SGCN-HP
	Paddlefishes	*Polyodontidae*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	paddlefish	*Polyodon spathula*	SGCN-HP
	Gars	*Lepisosteidae*	
10	longnose gar	*Lepisosteus osseus*	
	Bowfin	*Amiidae*	
10	bowfin	*Amia calva*	
	Mooneyes	*Hiodontidae*	
10	mooneye	*Hiodon tergisus*	ST, SGCN-HP
	Freshwater Eels	*Anguillidae*	
10	American eel	*Anguilla rostrata*	SGCN-HP
	Anchovies	*Engraulidae*	
	bay anchovy	*Anchoa mitchilli*	SGCN
	Herrings	*Clupeidae*	
	blueback herring	*Alosa aestivalis*	SGCN
	hickory shad	*Alosa mediocris*	
10	alewife	*Alosa pseudoharengus*	SGCN
	American shad	*Alosa sapidissima*	SGCN-HP
10	gizzard shad	*Dorosoma cepedianum*	
	Carps and Minnows	*Cyprinidae*	
10	central stone roller	*Campstoma anomalum*	
10	goldfish	*Carassius auratus*	
10	northern redbelly dace	*Chrosomus eos*	
	finescale dace	*Chrosomus neogaeus*	
10	redside dace	*Clinostomus elongatus*	
	lake chub	*Couesius plumbeus*	SGCN
10	grass carp	*Ctenopharyngodon idella*	
	satinfin shiner	*Cyprinella analostana*	
10	spotfin shiner	*Cyprinella spiloptera*	
10	common carp	*Cyprinus carpio*	
	streamline chub	*Erimystax dissimilis*	
	gravel chub	*Erimystax x-punctatus*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	tonguetied minnow	*Exoglossum laurae*	SGCN
	cutlip minnow	*Exoglossum maxillingua*	
10	brassy minnow	*Hybognathus hankinsoni*	
	eastern silvery minnow	*Hybognathus regius*	
10	bigeye chub	*Hybopsis amblops*	SGCN-HP
10	striped shiner	*Luxilus chrysocephalus*	
10	common shiner	*Luxilus cornutus*	
10	redfin shiner	*Lythrurus umbratilis*	SSC, SGCN
10	silver chub	*Macrhybopsis storeriana*	SE
10	Allegheny pearl dace	*Margariscus margarita*	
	northern pearl dace	*Margariscus nachtriebi*	
10	hornyhead chub	*Nocomis biguttatus*	
10	river chub	*Nocomis micropogon*	
10	golden shiner	*Notemigonus crysoleucas*	
	comely shiner	*Notropis amoenus*	SGCN-HP
	pugnose shiner	*Notropis anogenus*	SE, SGCN
10	emerald shiner	*Notropis atherinoides*	
10	bridle shiner	*Notropis bifrenatus*	SGCN
	silverjaw minnow	*Notropis buccatus*	
	ironcolor shiner	*Notropis chalybaeus*	SSC, SGCN
10	bigmouth shiner	*Notropis dorsalis*	SGCN
10	blackchin shiner	*Notropis heterodon*	SGCN
10	blacknose shiner	*Notropis heterolepis*	SGCN
10	spottail shiner	*Notropis hudsonicus*	
	silver shiner	*Notropis photogenis*	
	swallowtail shiner	*Notropis procne*	SGCN-HP
10	rosyface shiner	*Notropis rubellus*	
10	sand shiner	*Notropis stramineus*	
10	mimic shiner	*Notropis volucellus*	
10	bluntnose minnow	*Pimephales notatus*	
10	fathead minnow	*Pimephales promelas*	
	eastern blacknose dace	*Rhinicthys atratulus*	
10	longnose dace	*Rhinicthys cataractae*	
10	western blacknose dace	*Rhinichthys obtusus*	
	bitterling	*Rhodeus sericeus*	
10	common rudd	*Scardinius erythrophthalmus*	
10	creek chub	*Semotilus atromaculatus*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
10	fall fish	*Semotilus corporalis*	
	tench	*Tinca tinca*	
	Suckers	*Catostomidae*	
10	quillback	*Carpioides cyprinus*	
	longnose sucker	*Catostomus catostomus*	SGCN
10	white sucker	*Catostomus commersonii*	
	summer sucker	*Catostomus utawana*	SGCN-HP
10	creek chubsucker	*Erimyzon oblongus*	
10	lake chubsucker	*Erimtzon sucetta*	ST
10	northern hogsucker	*Hypentellum nigricans*	
10	smallmouth buffalo	*Ictiobus bubalus*	
10	bigmouth buffalo	*Ictiobus cyprinellus*	
10	spotted sucker	*Minytrema melanops*	
10	silver redhorse	*Moxostoma anisurum*	
	smallmouth redhorse	*Moxostoma breviceps*	
	river redhorse	*Moxostoma carinatum*	SGCN-HP
10	black redhorse	*Moxostoma duquesnei*	SSC, SGCN
10	golden redhorse	*Moxostoma erythrurum*	
10	shorthead redhorse	*Moxostoma macrolepidotum*	
10	greater redhorse	*Moxostoma valenciennesi*	
	Loaches	*Cobitidae*	
	Oriental weatherfish	*Misgurnus anguillicaudatus*	
	Bullhead/Catfishes	*Ictaluridae*	
	white catfish	*Ameirurus catus*	
10	black bullhead	*Ameiurus melas*	SGCN
10	yellow bullhead	*Ameiurus natalis*	
10	brown bullhead	*Ameiurus nebulosus*	
10	channel catfish	*Ictalurus punctatus*	
10	stonecat	*Norturus flavus*	
10	tadpole madtom	*Norurus gyrinus*	
	margined madtom	*Noturus insignis*	
10	brindled madtom	*Noturus miurus*	
	Smelts	*Osmeridae*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	rainbow smelt	*Osmerus mordax*	
	Trout	*Salmonidae*	
10	cisco	*Coregonus artedi*	SGCN
10	lake whitefish	*Coregonus clupeformis*	
	bloater	*Coregonus hoyi*	SGCN-HP
	kiyi	*Coregonus kiyi*	
	shortnose cisco	*Coregonus reighardi*	
10	pink salmon	*Onchorhynchus gorbuscha*	
10	coho salmon	*Onchorhynchus kisutch*	
10	rainbow trout	*Oncorhynchus mykiss*	
	sockeye salmon	*Oncorhynchus nerka*	
10	chinook salmon	*Oncorhynchus tshawytscha*	
	round whitefish	*Prosopium cylindraceum*	SGCN
	Atlantic salmon	*Salmo salar*	SGCN
10	brown trout	*Salmo trutta*	
10	brook trout	*Salvelinus fontinalis*	SGCN
	splake	*S. fontinalis* x *S. namaycush*	
10	lake trout	*Salvelinus namaycush*	SGCN
	Pikes	*Esocidae*	
10	grass pickerel	*Esox americanus*	
10	northern pike	*Esox lucius*	
10	tiger muskellunge	*E. lucius x E. masquinongy*	
10	muskellunge	*Esox masquinongy*	SGCN
10	chain pickerel	*Esox niger*	
10	central mudminnow	*Umbra limi*	
	eastern mudminnow	*Umbra pygmaea*	
	Trout-perches	Percopsidae	
10	trout perch	*Percopsis omiscomaycus*	
	Pirate Perch	Aphredoderidae	
10	pirate perch	*Aphredoderus sayanus*	SGCN

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Cods	*Lotidae*	
10	burbot	*Lota lota*	
	Atlantic tomcod	*Microgadus tomcod*	SGCN-HP
	New World Silversides	*Atherinopsidae*	
10	brook silversides	*Labidesthes sicculus*	
	Topminnows	*Fundulidae*	
10	banded killifish	*Fundulus diphanus*	
	mummichog	*Fundulus heteroclitus*	SGCN
	Livebearers	*Poeciliidae*	
	western mosquitofish	*Gambusia affinis*	
	Sticklebacks	*Gasterosteidae*	
	fourspine stickleback	*Apeltes quadracus*	SGCN-HP
10	brook stickleback	*Culaea inconstans*	
	threespine stickleback	*Gasterosteus aculeatus*	SGCN-HP
	ninepine stickleback	*Pungitius pungitius*	SGCN
	Sculpins	*Cottidae*	
10	mottled sculpin	*Cottus bairdii*	
10	slimy sculpin	*Cottus cognatus*	
10	spoonhead sculpin	*Cottus ricei*	SE
10	deepwater sculpin	*Myoxocephalus thompsonii*	SE, SGCN
	Temperate Bass	*Moronidae*	
10	white perch	*Morone americana*	
10	white bass	*Morone chrysops*	
	striped bass	*Morone saxatilis*	
	Sunfishes	*Centrarchidae*	
	mud sunfish	*Acantharchus pomotis*	ST
10	rock bass	*Ambloplites rupestris*	
	bluespotted sunfish	*Enneacanthus gloriosus*	
	banded sunfish	*Enneacanthus obesus*	ST, SGCN
	redbreast sunfish	*Lepomis auritus*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
10	green sunfish	*Lepomis cyanellus*	
10	pumpkinseed	*Lepomis gibbosus*	
	warmouth	*Lepomis gulosus*	
10	bluegill	*Lepomis macrochirus*	
10	northern sunfish	*Lepomis peltastes*	ST, SGCN-HP
10	smallmouth bass	*Micropterus dolomieui*	
10	largemouth bass	*Micropterus salmoides*	
10	white crappie	*Pomoxis annularis*	
10	black crappie	*Poxomis nigromaculatus*	
	Perches	*Percidae*	
10	eastern sand darter	*Ammocrypta pellucida*	ST, SGCN
10	greenside darter	*Etheostoma blennioides*	
10	rainbow darter	*Etheostoma caeruleum*	
	bluebreast darter	*Etheostoma camurum*	SGCN-HP
10	Iowa darter	*Etheostoma exile*	SGCN
10	fantail darter	*Etheostoma flabellare*	
	swamp darter	*Etheostoma fusiforme*	ST, SGCN
	spotted darter	*Etheostoma maculata*	ST, SGCN-HP
10	Johnny darter	*Etheostoma nigrum*	
	tessellated darter	*Etheostoma olmstedi*	
	variegate darter	*Etheostoma variatum*	
	banded darter	*Etheostoma zonale*	
10	yellow perch	*Perca flavescens*	
10	common logperch	*Percina caprodes*	
10	channel darter	*Percina copelandi*	
	gilt darter	*Percina evides*	SE, SGCN-HP
	longhead darter	*Percina macrocephala*	ST
10	blackside darter	*Percina maculata*	
	shield darter	*Percina peltata*	
10	sauger	*Sander canadensis*	SGCN-HP
10	blue pike	*Sander glaucus*	
10	walleye	*Sander vitreus*	
	Drums	*Sciaenidae*	
10	freshwater drum	*Aplodinotus grunniens*	

WILDLIFE SPECIES LIST

Based on existing data, on-site surveys, and/or the availability of suitable habitat, the following species could occur in the project area at some time during the year:

Occurrence Data[1]	Common Name	*Scientific Name*	Conservation Status[2]
	Gobies	*Gobiidae*	
10	round goby	*Neogobius melanostomus*	
	Snakeheads	*Channidae*	
	northern snakehead	*Channa argus*	

Species Occurrence Codes[1]

1. Species identified during on-site ecological surveys conducted by EDR within 2019-2020.
2. Species identified in the USGS Breeding Bird Survey (Cherry Hill Route).
3. Species identified in the NYS Breeding Bird Atlas (Survey Blocks 1068C, 1068D, 1168C, 1067B).
4. Species identified in the Audubon Christmas Bird Count (Jamestown and Dunkirk-Fredonia Counts).
5. Reported by eBird users in the vicinity of the Facility Area.
6. Identified by the NYNHP as occurring within 0.75 mile of the Facility Area in correspondence dated May 21, 2020.
7. Identified in the USFWS's IPaC Official Species List as potentially occurring at or near the Facility Area.
8. Likely to occur in the vicinity of the Facility Area based on information from NYSDEC, NatureServe Explorer, and the American Society of Mammalogists.
9. Species identified in the NYS Amphibian & Reptile Atlas Project (South Ripley and North East Quads).
10. Species identified by the Atlas of Inland Fishes of New York as occurring within the Erie-Niagara watershed (HUC-10 4120101).
11. Species identified at the Ripley Hawk Watch.

Conservation Status Codes[2]

FE	Federally Endangered Species
FT	Federally Threatened Species
SE	NYS Endangered Species
ST	NYS Threatened Species
SSC	NYS Species of Special Concern
SGCN	NYS Species of Greatest Conservation Need
SGCN-HP	NYS Species of Greatest Conservation Need – High Priority

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