

**TIM  
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November 22, 2021

Mayor Brian Pugh and the Board of Trustees  
Village of Croton-on-Hudson  
Stanley Kellerhouse Municipal Building  
One Van Wyck Street  
Croton-on-Hudson NY 10520

Re: Hudson National Golf Club/Matrix Development LLC Solar Project  
Prickly Pear Drive  
Village of Croton on Hudson  
Westchester County, NY

Dear Mr. Pugh and Members of the Board:

I have reviewed the comments from the Village's consultants and others re: the proposed solar farm project. Our responses below are outlined as in the Chazen comment letter, but generally address many of the ecology comments from other entities as well.

Comments on Habitat Assessment Report

1. Regarding the number of days spent on the "survey", it is first very important to point out that a detailed wildlife survey and vegetation inventory were not conducted for this site. Rather, as indicated later in the Introduction, the aim of the site visits was to "asses and perform an analysis of existing habitats and their potential to support target focal wildlife populations." Two site visits in October and November of 2020 were conducted toward this goal. During that time in the field, a list of observed vegetation species was completed and presented in the report. The report also includes a list of species that were observed or considered likely to utilize the habitat available based on our observations. Some of these observations were made during additional site walks on other parts of the club property that we have been working on as part of other club improvements.
2. Both the DEC and Fish and Wildlife Service (FWS) were notified in May of 2021 about the project. In their response, the DEC did not list Indiana or northern long-eared bats as species of concern for this project. There is no regulatory nexus for the FWS requiring additional review, but FWS acknowledged that the report completed by Environmental Solutions and Innovations was thorough and only identified one potential roosting tree. The FWS could not **require** a Time of Year Restriction (TOYR) for tree cutting but would recommend it. The applicant has agreed to that TOYR.
3. a. Regarding detailed breeding bird and other surveys, the limited scale of this project does not in our mind warrant such detailed and time sensitive field efforts. As depicted on

the aerial photos included with the report, there would be large areas of woodlands remaining on and near the site. Regarding the creation of new open meadow/edge habitat, this would not be significantly different than the condition already existing with the golf course and these same adjacent woodlands. We acknowledge that the surrounding areas consist of significant areas of woodlands, and this is a “forested site”. It is equally true that the adjacent golf course provides more than 200 acres of open field and meadow habitat which ultimately results in habitat for a mix of species that can utilize either or both habitats and the edges that are created between them. Therefore it can be concluded that the proposed clearing for the solar arrays does not result in a fragmentation of a continuous wooded habitat but rather a relatively small expansion of an existing condition. As noted in our report, approximately half of the area to be cleared has a relatively young tree population and sparse canopy, which would not be suitable for forest interior birds that are most sensitive to fragmentation effects.

b. The report includes a summary table of the vegetation species that were observed, and the general overview that while mast and nut trees are numerous, generally the overall habitat quality is limited due to the number of invasive species and heavy deer browsing. All of the oak trees, and some of the berry bearing shrubs, canes and vines provide food for resident wildlife. As noted, however, vegetative density is relatively low below the tree canopy, where barberry is the dominant shrub species if any shrubs are present. Barberry, shrub honeysuckles and other less common fruit bearing shrubs are present on site and offer food for birds.

Most of the 12.5 acre site will be undisturbed; the six acres between and immediately surrounding the panels will be maintained as an open meadow habitat with grasses and pollinator friendly wildflowers planted to enhance wildlife and pollinators. There is significant value to creating old field/meadow habitat in an area like Westchester where it is scarce. This area will obviously be different than the maintained turf of the golf course, although the islands of “rough” on the course do provide some of the same habitat type. This low maintenance/high diversity cover type will offer value to Monarch butterflies, bluebird, bobolink, kestrels, and other species that require open habitat.

4. a. The 177 trees less than 8” to be removed vary between 4” dbh and 7” dbh. It is noted that Indiana bats may utilize trees for roosting as small as 5” dbh. The attached Bat Habitat Assessment concluded that only one suitable roosting tree was identified and was outside of the proposed area of the solar arrays.

b. As pointed out, several herpetile species were identified in the text of the report but listed on Table 2. Red back salamander (*Plethodon cinereus*), slimy salamander (*Plethodon glutinosus*), garter snake (*Thamnophis sirtalis*) and brown snake (*Storeria dekayi*) may all utilize the rock walls and/or decaying trees for habitat.

A review of historic aerial photos and aging of the existing woodland show that the proposed site has been logged and cleared on multiple occasions in the past century; it is now second growth hardwoods typical of the region, with an incursion of invasive species. There are nearby wooded areas that deserve careful preservation (Brinton Brook and Graff Audubon preserves and the arboretum) but this is not one of them. Moreover the benefit to native pollinators and fauna from edge habitat is significant, and open field habitat is rare in the county.

5. Based on the final site plan, the limits of disturbance include 6.75 acres of clearing. The count of trees to be removed has been reduced to 548, with 352 trees that are greater than or equal to 8" dbh, 110 that are less than 8", and 86 trees that are of invasive species. The applicant proposes to plant up to 250 sugar maple, black cherry and red oak trees in areas where shading of the solar array won't be an issue short term.
6.
  - a. It is unclear where this comment comes from. Our report does not address or consider piping plover as a species of concern for this site. A Bat Habitat Assessment for the project was completed and is attached. It concludes that one potential roosting tree was observed (a dead northern red oak) and this tree is within the overall limits of disturbance but outside of the solar arrays. Foraging habitat for both Indiana bat and northern long-eared bat was ranked low due to the absence of nearby wetlands, presence of subcanopy clutter and a lack of defined edges.
  - b. Comment noted. There are hibernacula present in Orange County as well as Ulster County. The applicant is proposing to limit the tree cutting season to that recommended by the DEC and FWS in order to eliminate the potential to impact Indiana and northern long-eared bat.
7.
  - a. Following cutting of the trees, stumps will be either grubbed or removed only in those specific locations where the piers for the solar arrays will be installed. It will not be necessary to stump and grub the entire solar farm area. This will however require regular maintenance to control sprouting from the remaining stumps to maintain the old field herbaceous habitat. The project engineer has prepared an erosion and sedimentation control plan and sequencing plan that will capture and treat runoff during construction, immediately stabilize areas that are disturbed during tree clearing and grubbing, and result in the re-seeding of the entire area with pollinator wildflower and grass seed mix.

It is important to note that while the clearing of trees and installation of solar panel arrays will result in a different type of cover for the 7 acres of the site, it is not technically an impervious surface. The solar panels are suspended above the ground, and while stormwater runoff will become somewhat concentrated after hitting the panels, the ground surface will still be exposed and available for infiltration before any excess runoff is routed to the treatment practices. A dense herbaceous layer is expected to become established and will slow down and filter any future runoff. The value of converting some woodland into solar power generation should not be overlooked, as the benefit of carbon reduction and renewable energy should be considered a significant part of the mitigation of clearing these 6.7 acres of trees.

b. As noted above, the project site has been determined to be of low value for sensitive bat species. The offered mitigation of limiting tree cutting to times of the year when bats are not present is acceptable to the Fish and Wildlife Service. As also noted in the report, areas are available within relatively close proximity to the site that offer superior habitat potential for these bats (i.e., the Hudson River corridor, the power line ROW on the north end of the golf course, the New Croton Reservoir).

c. On a landscape scale, the clearing of the 7 acres of trees on this property results in an expansion of the open meadow and edge habitat currently provided by the golf course. It is clear from the aerial photos provided in the report that the proposed solar arrays will be contiguous to areas that are currently cleared. The northeastern array will lie within 100 feet of the parking area and clubhouse, both of which are directly connected to the course.

Croton Board of Trustees  
November 22, 2021

The southwest array will connect to this new area through the open canopy of the existing maintenance facility. The point that is being made is that these two areas are already in close proximity to open habitat, and are not centrally located within the dense canopy of a thousand acre forest. The existing stone walls on the project site are a clear indication that historically this portion of the property was cleared, likely as pasture, and does not represent dense, old growth forest that would be most suitable for forest interior birds or other species that require such habitat.

I hope this clarifies the issues related to habitat, ecology and potential wildlife impacts. We are available to answer any further questions on request.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Marino", with a stylized flourish at the end.

Steve Marino, PWS  
Principal/Senior Wetland Scientist  
Tim Miller Associates,, Inc.



# **BIODIVERSITY AND HABITAT ASSESSMENT**

**Proposed Solar Farm  
Prickly Pear Drive  
Village of Croton on Hudson  
Westchester County New York**

Prepared for:

**Matrix Development LLC**

Prepared By: Steve Marino, PWS  
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**December 1, 2020**

## ***Introduction***

Tim Miller Associates was retained to conduct an initial Phase I Biodiversity Assessment of the Hudson National Golf Club-owned parcel adjacent to Prickly Pear Road south of the existing Club parking lot and near the Club's maintenance and materials storage area. The purpose of this Phase I Biodiversity Assessment was to conduct an overall qualitative assessment and evaluation of the main habitat cover types present on the subject parcel, in order to determine habitat quality in relation to the ability of these habitats to support a diverse and healthy wildlife population. The survey was limited to two field days to assess and perform an analysis of existing habitats and their potential to support target focal wildlife populations.

A number of site walks were conducted during October and November of 2020 to evaluate site conditions and the existence of important or unique habitat. An analysis of the forested habitat was performed throughout the study area.

## ***Study Area***

The study area included the entire 13.5 acre parcel that is proposed for the solar farm and accessory structures. The parcel was field investigated to assess the existing biological conditions and evaluate ecological values. Please refer to the attached map (Figure 1) that outlines the parcel. Please note that this parcel was not identified as a parcel of conservation concern in the Croton to Highlands Biodiversity Plan prepared by the Metropolitan Conservation Alliance (MCA) in 2004.

## ***Survey Methods***

A qualitative analysis of the forested habitat was performed throughout the study area. Specific random search areas were used to determine representative plant community characteristics. All plants observed were recorded to species when conditions allowed. Changes in the soil conditions, topography, and vegetation disturbances were also recorded. Each habitat was evaluated according to the following community characteristics, including uniqueness and relative abundance, vegetative species diversity, plant type and food value, vertical and structural diversity, and plant utilization of existing vegetation.

Wildlife observations were recorded. Direct observations were noted, as well as observation of scat, tracks, song and calls, and other applicable sign. Random transects were followed through the site, with occasional stops for listening and observations, and random turning of stones and logs.

## ***Existing Conditions***

The study area was limited to the proposed 13.5 acre solar farm parcel. This area was field investigated to assess the existing biological condition and evaluate their respective ecological values.

The existing parcel is made up of second growth hardwood forest. As recently as the 1960's, portions of the site were cleared, likely for agricultural purposes. With the abandonment of the site, vegetation has regenerated and the site is now a uniform wooded parcel. A time series of aerial photos is provided with this report. No wetlands or watercourses were observed within or adjacent to the potential development area.

The project site is an undeveloped parcel with mature, mixed deciduous second-growth forest and a sparse understory. The terrain consists of sloping woody hillsides with occasional surface rock on shallow, well-drained soils. Upland areas were dominated by oaks (*Quercus spp.*), hickory (*Carya spp.*) and black birch (*Betula nigra*). Saplings included black birch, American beech, and sugar maple. It is noted that Japanese barberry (*Berberis thunbergii*) and Morrow honeysuckle (*Lonicera morrowii*), both non-native invasive species, were the dominant plants in the shrub layer. Heavy deer browsing has significantly reduced the number of native shrubs and saplings in the lower canopy. Due to the late season when this inventory was conducted it is likely that some herbaceous species were not observed, but no unique or unusual habitat was identified that might support rare plants.

A tree survey and plan has been completed and submitted to the village under separate cover. A total of 948 trees were tagged and identified within or close to the area of the proposed disturbance for the installation of the solar panel arrays. Of these 948 trees, 581 trees that are in relatively good health will be removed; 177 of these are small (less than 8" dbh). A relatively small percentage of the overall tree count are greater than or equal to 18" in diameter (173 out of 948, or 18 percent). This is indicative of the young age of the forest group. Only seven trees greater than or equal to 36 inches in diameter were identified. 113 trees were identified as non-native or invasive species (Norway maple, black locust and tree of heaven).

Table 1. Plant species observed

Garlic mustard ( <i>Alliaria petiolata</i> )	Japanese honeysuckle ( <i>Lonicera japonica</i> )
Blackberry ( <i>Rubus allegheniensis</i> )	Winged euonymus ( <i>Euonymus alatus</i> )
Black locust ( <i>Robinia pseudoacacia</i> )	Barberry ( <i>Berberis thunbergii</i> )
Red oak ( <i>Quercus rubra</i> )	Morrow honeysuckle ( <i>Lonicera morrowii</i> )
Poison ivy ( <i>Toxicodendron radicans</i> )	Choke cherry ( <i>Prunus virginiana</i> )
Climbing bittersweet ( <i>Celastrus orbiculatus</i> )	Black birch ( <i>Betula lenta</i> )
White oak ( <i>Quercus alba</i> )	Greenbriar ( <i>Smilax rotundifolia</i> )
Japanese stiltgrass ( <i>Microstegium vimineum</i> )	Virginia creeper ( <i>Parthenocissus quinquefolia</i> )
Pignut hickory ( <i>Carya ovata</i> )	Pennsylvania sedge ( <i>Carex pensylvanica</i> )
Dewberry ( <i>Rubus flagellaris</i> )	Chestnut oak ( <i>Quercus montana</i> )
Red maple ( <i>Acer rubrum</i> )	Black cherry ( <i>Prunus serotina</i> )
Tree of Heaven ( <i>Ailanthus altissima</i> )	Multifloral rose ( <i>Rosa multiflora</i> )
Hop hornbeam ( <i>Ostrya virginiana</i> )	Black oak ( <i>Quercus velutina</i> )
Wineberry ( <i>Rubus phoenicolasius</i> )	Deertongue ( <i>Dichantelium clandestinum</i> )
Onion grass ( <i>Allium canadense</i> )	Shagbark hickory ( <i>Carya ovata</i> )
Norway maple ( <i>Acer platanoides</i> )	Sassafras ( <i>Sassafras albidum</i> )
Flowering dogwood ( <i>Cornus florida</i> )	Wild raisin ( <i>Viburnum cassinoides</i> )
Grapes ( <i>Vitis spp.</i> )	Mugwort ( <i>Artemisia vulgaris</i> )
Christmas fern ( <i>Polystichum acrostichoides</i> )	Privet ( <i>Ligustrum vulgaris</i> )
Sugar maple ( <i>Acer saccharum</i> )	Tulip poplar ( <i>Liriodendron tulipifera</i> )
American beech ( <i>Fagus grandifolia</i> )	White pine ( <i>Pinus strobus</i> )
Eastern red cedar ( <i>Juniperus virginiana</i> )	White ash ( <i>Fraxinus americana</i> )
Hackberry ( <i>Celtis occidentalis</i> )	American elm ( <i>Ulmus americana</i> )
Hornbeam ( <i>Carpinus caroliniana</i> )	Prickly pear cactus ( <i>Opuntia humifusa</i> )

Table 2. Animal species observed or likely

White-tailed deer ( <i>Odocoileus virginiana</i> )	Opossum ( <i>Didelphis virginiana</i> )
Gray squirrel ( <i>Sciurus carolinensis</i> )	Wood thrush ( <i>Hylocichla mustelina</i> )
Coyote ( <i>Canis latrans</i> )	Cardinal ( <i>Cardinalis cardinalis</i> )
Hairy woodpecker ( <i>Picoides villosus</i> )	Mockingbird ( <i>Mimus polyglottos</i> )
Robin ( <i>Turdus migratorius</i> )	Tufted titmouse ( <i>Baeolophus bicolor</i> )
Eastern phoebe ( <i>Sayornis phoebe</i> )	Crow ( <i>Corvus brachyrhynchus</i> )
Blue jay ( <i>Cyanocitta cristata</i> )	Scarlet tanager ( <i>Piranga olivacea</i> )
Mourning dove ( <i>Zenaida macroura</i> )	Turkey vulture ( <i>Cathartes aura</i> )
Chipping sparrow ( <i>Spizella passerina</i> )	Chipmunk ( <i>Tamias striatus</i> )
Canada Goose ( <i>Branta canadensis</i> )	Black capped chickadee ( <i>Poecile atricapillus</i> )
Red-tailed Hawk ( <i>Buteo jamaicensis</i> )	Broad-winged Hawk ( <i>Buteo platypterus</i> )
Northern Flicker ( <i>Colaptes auratus</i> )	Downy Woodpecker ( <i>Picoides pubescens</i> )
Song Sparrow ( <i>Melospiza melodia</i> )	Ovenbird ( <i>Seiurus aurocapilla</i> )
	White-throated Sparrow ( <i>Zonotrichia albicollis</i> )

### **Ecological Assessment and Setting**

The site is the location of an undeveloped parcel that is currently vegetated (see attached photos). The vegetation in the upland areas is second growth forest. There is considerable evidence that the site was developed in the past; historic aerial photographs show the presence of roads and structures, and rock walls and debris are present throughout the site. A portion of the development site (for solar arrays #100 to #195), the “northeast” site, drains to the east toward Prickly Pear Road, while the southern arrays drain to the south, ultimately draining to the Hudson River. The presence of a significant number of individuals of non-native or invasive species is somewhat indicative of past site disturbance.

The site has moderate tree species diversity, with a moderate percentage of the trees in the 18-24” diameter range. Nut and mast producing trees are common, and standing dead trees with snags and cavities exist that may provide habitat for mammals and some of the larger bird species. The shrub layer was sparse, with the exception of those thorny nonnative species that often remain that are not palatable to deer.

The northeast solar array site is more open in the canopy and with fewer trees than the southern site. Sitting on a flat plateau between rock outcroppings, this site has more brambles and stiltgrass than the southern site, and fewer large trees. The southern array site is more typical of higher elevation, rocky woodlands in the Hudson Valley, dominated by red and chestnut oak over relatively shallow soils.. The trees are generally not large in diameter and close together, forming a dense canopy during the growing season. The shallow soils lead to shallow root systems, resulting in a number of windthrows that will occasionally open up the canopy. Any herbaceous vegetation that starts to grow in these open areas is quickly browsed by the deer population, although a few species (particularly the Pennsylvania sedge and garlic mustard) do not appear to be palatable to white tailed deer. Both areas are approximately 3-1/2 acres in size.

The existing stone walls and occasional cracks in the exposed bedrock may provide habitat for small mammals and reptiles. Occasional standing dead trees and fallen logs can provide cavities and habitat for a number of bird, small mammal and potentially some of the more terrestrial salamander species (redback salamander and slimy salamander). None were observed during site walks, likely due to the late season.

Perhaps the most interesting find during the site walks was a dense patch of prickly pear cactus (*Opuntia humifusa*) on a rocky outcrop just north of the existing maintenance shed. While not listed as a rare or threatened species, and considered to be secure throughout its habitat, this is still a relatively rare plant unusual as a cactus species that is tolerant of the cold winters in southeastern New York. This patch of plants is outside of the proposed limits of disturbance and will not be affected by the current proposal.

Based on the species observed, the quality of habitats, and the regional setting of the property in relation to adjacent large open space parcels, the property exhibits moderate ecological value (see Figure 2). The 13.5 acre parcel, of which 7.4 acres will be disturbed, represents a small portion of the overall forest and open space in this portion of the Hudson Valley. The areas are dominated by moderate to mature mixed deciduous forest with a sparse understory with occasional invasive, non-native plant species such as tree of heaven (*Ailanthus altissima*), Japanese barberry (*Berberis thunbergii*) and Japanese stiltgrass (*Microstegium vimineum*). In the northeast corner of the site, where there are fewer large trees and the canopy is therefore more open, a greater density of shrubs, brambles and mugwort (*Artemisia vulgaris*) in the understory was observed. The lack of native regeneration and establishment of non-native invasives are likely a result of heavy deer-browse and human alteration. Hollows and standing dead trees were occasionally observed, and could serve as habitat for cavity nesters or nocturnal animals.

The NRCS Westchester County Soil Survey shows the site as having Chatfield-Charlton and Charlton Chatfield soil complexes, which typically are upland soils with a stony substrate.

### **Threatened and Endangered Species**

A review of the New York State DEC Environmental Resource Mapper, which includes the database for the Natural Heritage Program, turned up two Hudson River fish species as being known in the area. Due to the distance to the river, lack of direct hydrologic connection and no significant alteration to water quality, this project will not affect Atlantic or short-nosed sturgeon in the Hudson.

A review of the US Fish and Wildlife Service data returned only the Indiana bat (*Myotis sodalis*), although the response indicated that no known critical habitat is available on or near the site. The Indiana bat has been the victim of white nose syndrome, which is related to infections in the bat's winter hibernaculum, locally in the caves of Ulster County. If warranted, an appropriate and common mitigation measure is the cutting of potential summer roosting trees in the winter so that no bats are accidentally injured during tree clearing. The applicant will pursue discussions with the FWS to determine if such a measure is necessary.

### **Current Proposal as Reviewed**

The owner of the property proposes to lease a portion of the property to Matrix Development LLC for the installation of a solar power generating facility. Approximately 400 trees that meet the Village permitting criteria will be removed for this project. Due to the nature of the project as a "solar farm", it is impossible to preserve additional trees within the area of the solar arrays. The site will only require relatively small amounts of earth movement as the solar arrays are flexible with regards to placement on piers. This will result in a change to the site from second growth forest to open meadow and maintained grassland over approximately seven acres of the parcel. Those wooded portions of the site will be lost as potential habitat for bird and mammal species

that are most dependent on closed canopy woodlands. The lack of available water in the immediate area does limit the potential as particularly good habitat for woodland species.

The proposed use (solar power generating facility) appears to be a low impact use with regards to human activity, unlike a residential subdivision or similar development, but will alter the site from wooded landscape to open grassland and solar panel array structures. Since no sensitive species were observed (and no specific habitat for such species identified) this would be consistent with the current condition on the much larger golf course parcel to the north, so is not expected to substantially alter the wildlife habitat availability for animals in the immediate vicinity. These animals are already adapted to an edge habitat of woodlands, as on the subject parcel and lands to the west, and the open space habitat of the golf course. The largest impact to wildlife is expected to occur during construction, when the site is cleared and the grounds regraded to reach the final landscape condition. Long term effects of solar arrays on local wildlife are still being determined as this is a new technology and detailed evaluations are ongoing.

Regarding interconnectedness to adjacent habitat areas, the site is adjacent to the open spaces of the Hudson National Golf Course to the north and east, and undeveloped woodlands to the west. These undeveloped lands are owned by the Village of Croton on Hudson and the Saw Mill River Audubon Society, and will not be developed in the future. Therefore the golf course and adjacent parcels represent a large contiguous tract of open space with a variety of habitat types and covers.

Developed communities exist to the south, west and east of the site and its immediate surroundings, including the Village of Croton and the lower density roads on southeastern Cortlandt.

DETAILED BAT HABITAT ASSESSMENTS FOR  
THE PRICKLY PEAR SOLAR PROJECT  
WESTCHESTER COUNTY, NEW YORK

31 March 2021

*Submitted to:*

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U.S. Fish and Wildlife Service  
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Cortland, NY 13045

Ms. Lisa Masi  
Wildlife Biologist  
NYSDEC Region 3 Headquarters  
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*Prepared for:*

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Appendices

Appendix A: Agency Correspondence

Appendix B: Representative Photographs

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## **1.0 Introduction**

Prickly Pear Solar, LLC. (Project proponent) proposes construction of the Prickly Pear Solar Project in the Village of Croton-on-Hudson in the Town of Cortlandt, Westchester County, New York (Project, Figure 1). The proposed Project involves constructing two discrete solar arrays and associated facilities within an approximately 13.3-acre (5.4-ha) Project area composed of forested habitat adjacent New York State Route 9A. Approximately 7.5 acres (3 ha) of tree clearing is necessary within the Project's Limits of Disturbance (LOD) to construct the solar infrastructure. To meet the scheduled Project completion date, clearing within the Project's solar array boundaries is required during summer 2021.

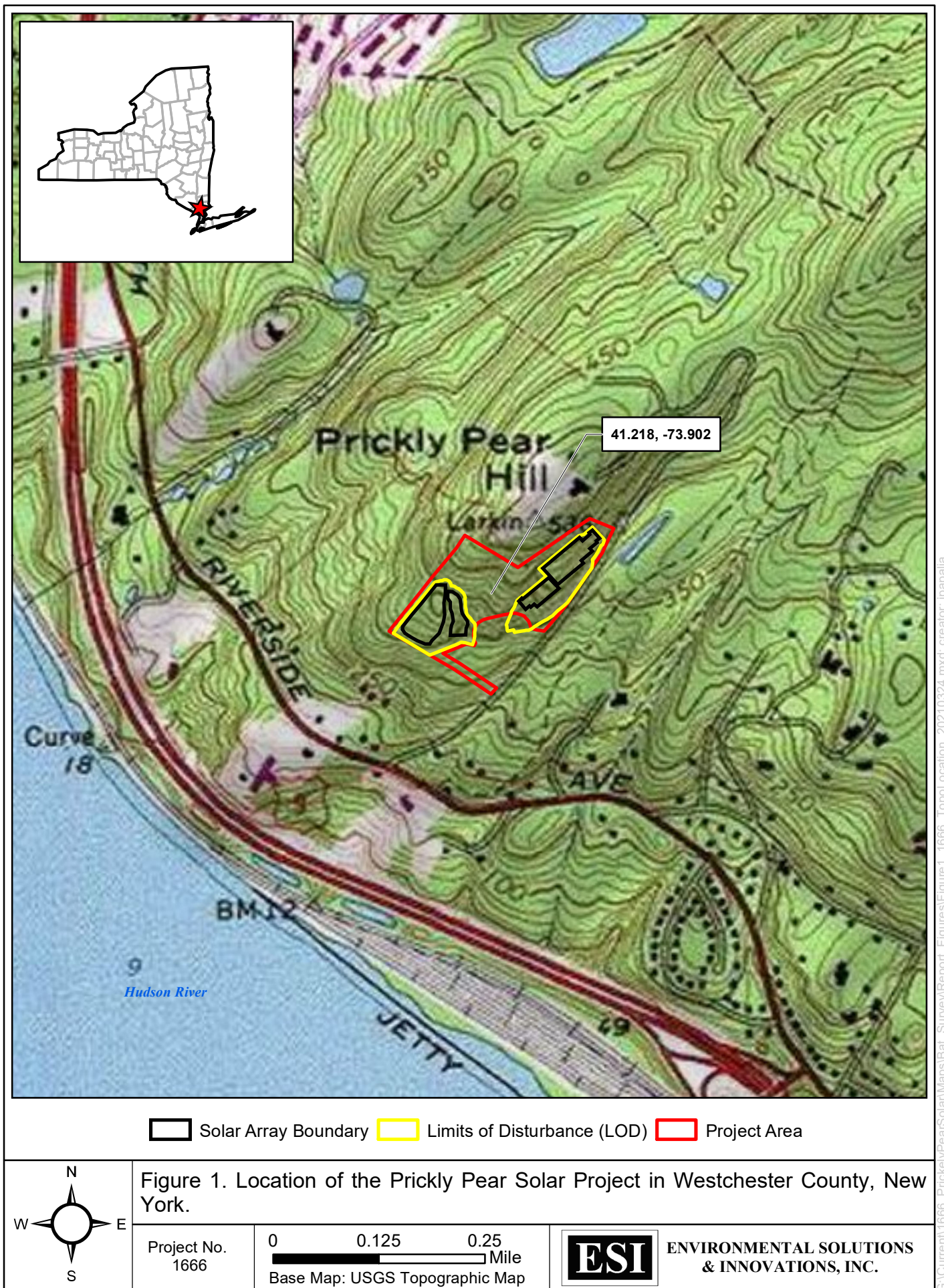
The Project proponent retained Environmental Solutions & Innovations, Inc. (ESI) to coordinate Endangered Species Act (ESA) compliance with the U.S. Fish and Wildlife Service (USFWS) and the New York State Department of Environmental Conservation (NYSDEC) for compliance as it relates to bats for this Project. The Project's operating schedule warranted a detailed habitat assessment to determine any impacts on potential habitat for listed bats. This report details methods and results of habitat assessments completed on 16 March 2021.

## **2.0 Regulatory Setting**

### **2.1 Endangered Species Act (ESA)**

The Federal ESA [16 U.S.C. 1531 et seq.] was codified into law in 1973. This law provides for the listing, conservation, and recovery of endangered and threatened species of plants and wildlife. Under the ESA, the USFWS is mandated to monitor and protect listed species.

Section 9 of the ESA prohibits the "take" of listed species unless otherwise specifically authorized by regulation. "Take" is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" [16 U.S.C. 1532(19)]. ESA further defines "harm" to include significant habitat modification or degradation [50 CFR §17.3]. Section 7(a)(2) of the ESA states that each federal agency shall insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in destruction or adverse modification of designated critical habitat. In 1982, amendments to the ESA, Congress established a provision in Section 10(a)(1)(B) that authorizes incidental take by nonfederal entities.



To obtain an Incidental Take Permit (ITP), an applicant must submit a conservation plan specifying impacts resulting in take and measures to minimize and mitigate impacts.

Regardless of whether incidental take may be covered under Section 7 or Section 10, it is the obligation of the Project proponent to avoid and minimize impacts on listed species. If, through this process, take is avoided, then an ITS or ITP is not required. The initial step in avoidance and minimization is to determine whether suitable habitat is present and whether listed species are present.

## **2.2 New York Species Law**

Per authority under 6 NYCRR Part 182, the NYSDEC regulates activities potentially resulting in direct harm to state-listed endangered or threatened species or adverse modification of species-occupied habitat. State-listed endangered species are defined as fish and wildlife species seriously threatened with extinction as designated by the NYSDEC, and threatened species consisting of those likely to become endangered within the foreseeable future throughout a significant portion of their ranges. New York regulations require authorization of an ITP from the NYSDEC when a proposed activity likely results in take of individuals incidental to, and not the intended purpose of, an otherwise lawful activity, or involves an adverse modification of occupied habitat. Occupied habitat is defined as the geographic area, determined by the NYSDEC, where a protected species exhibited one or more essential behaviors. *Adverse modification of habitat* is defined as any alteration of occupied habitat of any state-listed endangered or threatened species likely to negatively affect one or more essential behaviors of such species.

A USFWS Trust Resource List generated on 14 October 2020 through the online Information for Planning and Consultation tool indicates the Project is within the range of the federally and state-endangered Indiana bat (*Myotis sodalis*) (Appendix A). Indiana bats are “tree bats” in summer and “cave bats” in winter. A letter from NYSDEC New York Natural Heritage Program dated 15 December 2020 does not indicate any known records of the species near the Project (Appendix A).

## **3.0 Ecological Setting**

### **3.1 Indiana Bat Status**

The USFWS listed the Indiana bat as endangered on 11 March 1967. The most current range-wide estimate of the population is 537,297 individuals, which represents about



60 percent of the estimated population of 1960 (USFWS 2019). Long-term, detailed documentation of population changes is lacking across most of its range, with the exception of the state of Indiana (Brack et al. 1984, Johnson et al. 2002, Brack et al. 2003), although such information is now being acquired in most states. It is probable that habitat loss during summer (USFWS 2007) and winter disturbances during hibernation (Johnson et al. 1998) both contributed to the overall decline of the species that lead to listing. With the advent of White-nosed Syndrome (WNS), this species has undergone significant population declines.

Federal Register Documents  
[32 FR 4001](#); 11 March 1967: Final Listing, Endangered  
[40 FR 58308 58312](#); 16 December 1975: Proposed Critical Habitat, Critical habitat- mammals  
[41 FR 41914](#); 24 September 1976: Final Critical Habitat, Critical habitat-mammals

### 3.2 Regional Species Occurrence

No winter or summer records of Indiana bats are known from Westchester County (Figure 2). Only one adjacent county, Orange County, contains any records (maternity, non-reproductive) of Indiana bats.

## 4.0 Methods

### 4.1 Detailed Habitat Assessment

Detailed habitat assessments of available summer bat habitat facilitate Project design decisions and avoid and minimize impacts on potentially suitable roosting and foraging habitat for Indiana bats. Experienced state and federally permitted bat biologists walk the Project area and identify trees and “habitat patches” that are biologically similar and suitable for use by roosting and foraging bats based on literature (Brack 1983, Foster and Kurta 1999, Caceres and Barclay 2000, Kurta 2004, Carter and Feldhamer 2005), habitat models (3D/Environmental 1995), and experience with the species. The overall suitability of each habitat patch is rated for its overall roosting and foraging quality for bats on a scale from low to high.

In addition to delineating habitat patches within the Project area, biologists identify potential roost trees within the LOD. Each tree is mapped and ranked as high, moderate, or low roost potential. Final determination includes consideration of diameter at breast height (dbh), roosting structures (exfoliating bark, cracks and crevices, cavities), and tree health (live, partially dead, dead). Emphasis is placed on roost structure (as opposed to tree species) because Indiana bats roost in many species of trees.



Though not included as part of agency correspondence for the Project, suitable summer habitat for the Indiana bat is also considered suitable for the federally and state-threatened northern long-eared bat (*Myotis septentrionalis*). Both bat species use similar trees for roosting, although the northern long-eared bat is less specialized. All potential Indiana bat roosts are suitable for northern long-eared bats. Some trees, such as large, live trees with hollow limbs and trees between 3 and 5 inches (7.6 and 12.7 cm) dbh have higher potential for use by northern long-eared bats. As such, roosting potential is reported separately for each species.

## **4.2 Portal Searches**

Concurrent with assessing potential summer habitat, ESI completes portal searches to identify any winter habitat on-site potentially suitable for bat use. Portal searches are completed in accordance with Appendix H of USFWS 2020 *Range-wide Indiana Bat Survey Guidelines* (USFWS 2020).

### **4.2.1 Desktop Assessment**

A desktop assessment is completed to determine whether any evidence of mining occurs within 3 miles (4.8 km) of the Project. Assessment includes review of databases maintained by New York and a visual search of aerial photography for landscape anomalies indicative of mining activities. Assessment efforts help identify features for direct inspection in the field and areas where portals are likely found.

### **4.2.2 Pedestrian Surveys**

A thorough pedestrian survey is completed to locate and evaluate mine features and portals. Biologists trained to detect evidence of past mining techniques search not only for holes in the ground, but also tailings, slag, benches, high-walls, seams, vents, drainage, abandoned structures, and areas of auger activity that could indicate the potential presence of open mine portals. Biologists also identify signs of past mining efforts that express themselves in biological and topographic terms, such as changes in slope and topography inconsistent with natural conditions, spoil, old roads, and physical or chemical alterations to streams.

In cases where evidence of mining is observed, biologists follow the evidence back to its source (provided access is available) to determine whether an open portal is present. Where field observations reveal indications (such as haul roads or mining benches) of potential mine openings outside the search area, the search is extended until signs of mining activities end or as far as land access permission is obtained. Any observed openings are addressed following Appendix H of the USFWS 2020 *Range-wide Indiana Bat Survey Guidelines* (USFWS 2020).

## **5.0 Results**

### **5.1 Detailed Habitat Assessment**

#### **5.1.1 Habitat Patches**

Two habitat patches were delineated within the Project area and ranked for potential to support roosting and foraging Indiana and northern long-eared bats (Table 1). Roosting potential for both the Indiana and northern long-eared bat was ranked as moderate at both patches based on the presence of large, mature trees and a few snags within each patch. Foraging potential at both patches was ranked low based on presence of subcanopy clutter and a lack of defined edges, corridors, wetlands, or streams. Habitat mapping is provided in Figure 3. Representative photographs are provided in Appendix B.

#### **5.1.2 Potential Roost Tree Survey**

One potential roost tree was identified within the LOD: a dead northern red oak (*Quercus rubra*) exhibiting cracks and exfoliating bark and ranked as a secondary roost for both Indiana and northern long-eared bats (Table 2; Appendix B). No potential roost trees were identified within the Project's solar array boundaries.

### **5.2 Portal Searches**

A desktop assessment for potential winter habitat within the Project area determined no current or historic mining activity occurs within 3 miles (4.8 km) of the Project. A pedestrian portal search was completed within the Project area concurrent with detailed habitat assessments. No potentially suitable winter habitat was observed.

## **6.0 Discussion**

Detailed habitat assessments for federally listed bats were completed on 16 March 2021. Roosting potential was ranked moderate throughout the Project area; however, only a single tree within the LOD was identified a potential secondary roost for either the Indiana or northern long-eared bat. No potential roost trees occur within the Project's solar array boundaries.

Summer tree clearing associated with the Project's solar array boundaries will not impact any roost trees for listed bats. Further, any additional clearing associated with the Project will be completed between 1 November and 31 March, when bats are not present on the landscape.



Table 1. Habitat patches and ranking for the Prickly Pear Solar Project in Westchester County, New York.

Patch ID	Size (ac)	Habitat Type	Canopy Closure (%)	Subcanopy		Roosting Potential MYSO/MYSE	Foraging Potential MYSO/MYSE	Patch Description
				Clutter	Composition			
HAB-001	5.40	Mixed Forest	> 75	M	Saplings, shrubs, and canopy tree limbs	M/M	L/L	Moderate roosting potential due to presence of large mature trees and few snags.
HAB-002	7.92	Mixed Forest	> 75	M	Saplings, shrubs, and canopy tree limbs	M/M	L/L	Moderate roosting potential due to presence of large mature trees and few snags.

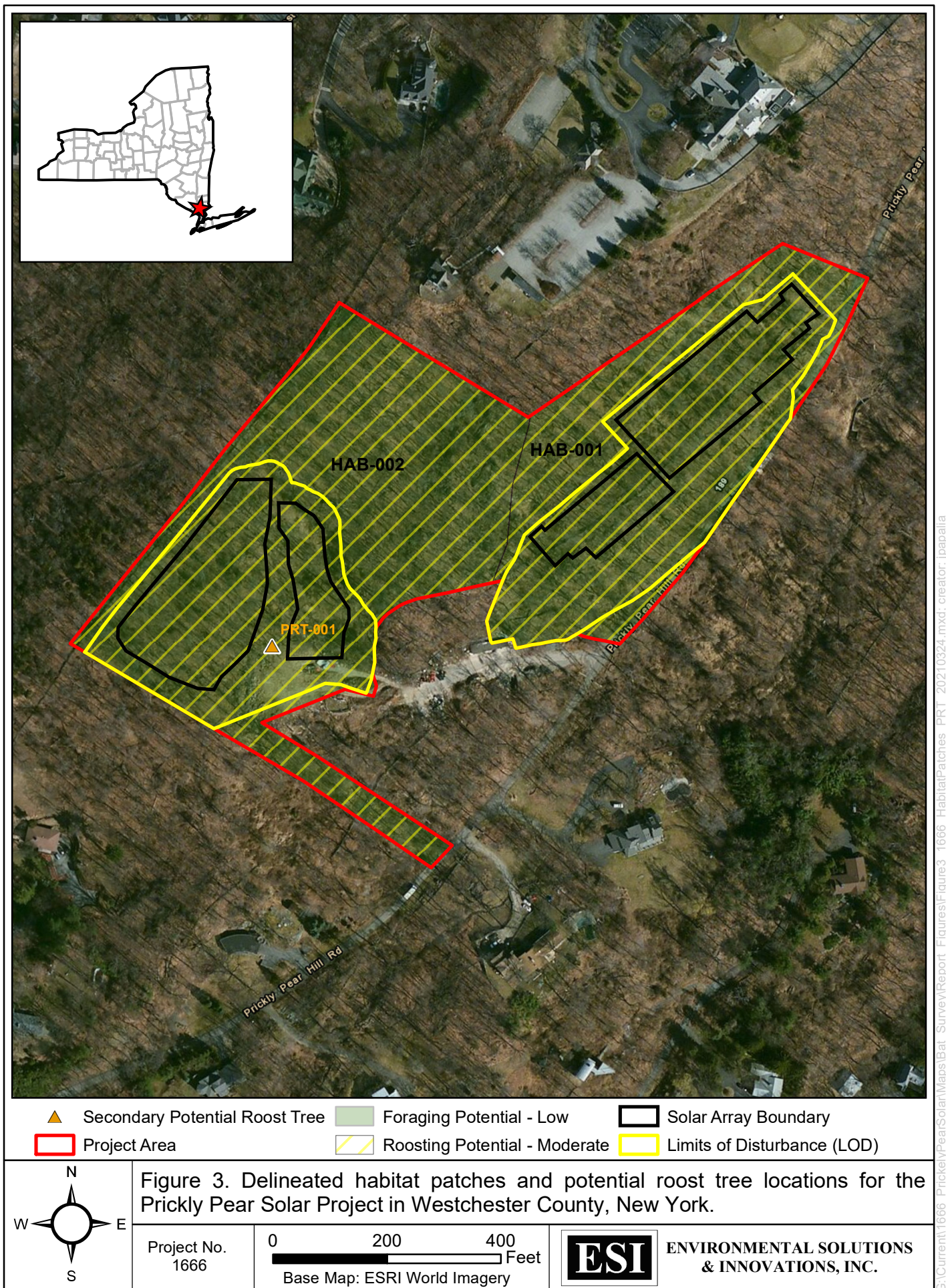
**Subcanopy Clutter:** M = Moderate

**Roosting/Foraging Potential:** L = Low, M = Moderate

Table 2. Potential roost trees identified for the Prickly Pear Solar Project in Westchester County, New York.

Name	Roost Tree Species	Tree Health	DBH (in) <sup>1</sup>	Primary/Secondary	Latitude	Longitude
PRT-001	<i>Quercus rubra</i>	Dead	90	Secondary	41.217352	-73.903621

<sup>1</sup>DBH = Diameter at Breast Height





Therefore, the Project **May Affect**, but is **Not Likely to Adversely Affect** the Indiana bat.

## 7.0 Literature Cited

- 3D/Environmental. 1995. Literature summary and habitat suitability index model. Components of summer habitat for the Indiana bat, *Myotis sodalis*. Authors: R. C. Romme, K. Tyrell, V. Brack, Jr. Report submitted to the Indiana Department of Natural Resources, Division of Wildlife, Bloomington, Indiana by 3D/Environmental, Cincinnati, Ohio. Federal Aid Project E-1-7, Study No. 8, 38 pp.
- Brack, V., Jr. 1983. The nonhibernating ecology of bats in Indiana with emphasis on the endangered Indiana bat, *Myotis sodalis*. Unpublished Ph.D. dissertation, Purdue University, West Lafayette, Indiana. 280 pp.
- Brack, V., Jr., S. A. Johnson, and R. K. Dunlap. 2003. Wintering populations of bats in Indiana, with emphasis on the endangered Indiana Myotis, *Myotis sodalis*. Proceedings of the Indiana Academy of Science 112:61-74.
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- Caceres, M. C. and R. M. R. Barclay. 2000. *Myotis septentrionalis*. Mammalian Species 634:1-4.
- Carter, T. C. and G. A. Feldhamer. 2005. Roost tree use by maternity colonies of the Indiana bats and the northern long-eared bats in southern Illinois. Forest Ecology and Management 219:259-268.
- Foster, R. W. and A. Kurta. 1999. Roosting ecology of the northern bat (*Myotis septentrionalis*) and comparisons with the endangered Indiana bat (*Myotis sodalis*). Journal of Mammalogy 80:659-672.
- Johnson, S. A., V. Brack, Jr., and R. K. Dunlap. 2002. Management of hibernacula in the state of Indiana. Pages 100-109 in The Indiana Bat: Biology and Management of an Endangered Species (A. Kurta and J. Kennedy, eds.). Bat Conservation International, Austin, Texas. 253 pp.
- Johnson, S. A., V. Brack, Jr., and R. E. Rolley. 1998. Overwinter weight loss of Indiana bats (*Myotis sodalis*) from hibernacula subject to human visitation. American Midland Naturalist 139:255-261.
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Mining, A Technical Interactive Forum (K. C. Vories and A. Harrington, eds.). 16-18 November 2004. Louisville, Kentucky. U.S. Department of the Interior, Office of Surface Mining, Alton, Illinois, and Coal Research Center, Southern Illinois University, Carbondale, Illinois. 229 pp.

USFWS. 2007. Indiana bat (*Myotis sodalis*) draft recovery plan: First revision. U.S. Department of Interior, Fish and Wildlife Service, Fort Snelling, Minnesota. 258 pp.

USFWS. 2019. 2019 Indiana bat (*Myotis sodalis*) population status update. U.S. Department of the Interior, Fish and Wildlife Service, Indiana Ecological Services Field Office, Bloomington, Indiana. 9 pp.

USFWS. 2020. Range-wide Indiana bat survey guidelines - March 2020. U.S. Department of the Interior, Fish and Wildlife Service. 65pp.

**APPENDIX A**  
**AGENCY CORRESPONDENCE**

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Westchester County, New York



## Local offices

### Long Island Ecological Services Field Office

☎ (631) 286-0485

📠 (631) 286-4003

340 Smith Road  
Shirley, NY 11967-2258

### New York Ecological Services Field Office

☎ (607) 753-9334

📠 (607) 753-9699

3817 Luker Road  
Cortland, NY 13045-9385

<http://www.fws.gov/northeast/nyfo/es/section7.htm>

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).



1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

## Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/5949">https://ecos.fws.gov/ecp/species/5949</a>	Endangered

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

**Bald Eagle** *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Sep 1 to Aug 31

**Black-billed Cuckoo** *Coccyzus erythrophthalmus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9399>

Breeds May 15 to Oct 10

**Black-capped Chickadee** *Poecile atricapillus praticus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds Apr 10 to Jul 31

**Bobolink** *Dolichonyx oryzivorus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Jul 31

**Canada Warbler** *Cardellina canadensis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Aug 10

**Golden Eagle** *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds elsewhere

**Prairie Warbler** *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31



**Red-headed Woodpecker** *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

**Rusty Blackbird** *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

**Wood Thrush** *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

**Yellow-bellied Sapsucker** *sphyrapicus varius*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8792>

Breeds May 10 to Jul 15

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events

- and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
  3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

**Breeding Season (■)**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

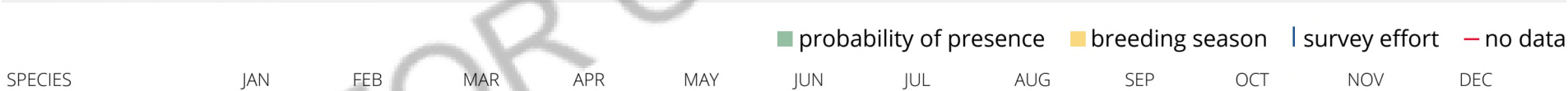
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



**Bald Eagle**

Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

**Black-billed Cuckoo**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

**Black-capped Chickadee**

BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

**Bobolink**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

**Canada Warbler**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

**Golden Eagle**

Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)





**Prairie Warbler**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

**Red-headed Woodpecker**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

**Rusty Blackbird**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

**Wood Thrush**

BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

**Yellow-bellied Sapsucker**

BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).



Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

# Facilities

## National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

## Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

## 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](http://www.dec.ny.gov)

December 15, 2020

Michael Doud  
Matrix Development  
153 Mercer Street #4  
New York, NY 10012

Re: Prickley Pear Solar  
County: Westchester Town/City: Cortlandt

Dear Mr. Doud :

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 3 Office, Division of Environmental Permits, at [dep.r3@dec.ny.gov](mailto:dep.r3@dec.ny.gov).

Sincerely,



Heidi Krahling  
Environmental Review Specialist  
New York Natural Heritage Program



**The following state-listed animals have 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.

**For information about any permit considerations for the project, please contact the NYSDEC Region 3 Office, Department of Environmental Permits, at [dep.r3@dec.ny.gov](mailto:dep.r3@dec.ny.gov), (845) 256-3054.**

**The following species have been documented in the Lower Hudson River and so could occur in the vicinity of the project site.**

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>FEDERAL LISTING</i>	
<b>Fish</b>				
<b>Shortnose Sturgeon</b>	<i>Acipenser brevirostrum</i>	Endangered	Endangered	1091
<b>Atlantic Sturgeon</b>	<i>Acipenser oxyrinchus</i>	No Open Season	Endangered	11464

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](http://www.guides.nynhp.org), and from NYSDEC at [www.dec.ny.gov/animals/7494.html](http://www.dec.ny.gov/animals/7494.html).

**APPENDIX B**  
**REPRESNTATIVE PHOTOGRAPHS**





Habitat Patch HAB-001



Habitat Patch HAB-001





Habitat Patch HAB-001



Habitat Patch HAB-001





Habitat Patch HAB-001



Habitat Patch HAB-001





Habitat Patch HAB-002



Habitat Patch HAB-002





Habitat Patch HAB-002



Habitat Patch HAB-002





Habitat Patch HAB-002



Habitat Patch HAB-002





PRT-001



PRT-001



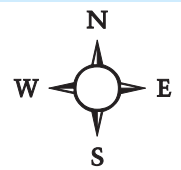


Figure 1: Location Map  
Matrix Solar Farm  
Croton on Hudson, NY  
Source: Westchester County GIS





Figure 2: Regional Context with Adjacent Open Space Parcels - 2018 Aerial Photo  
Matrix Solar Farm  
Croton on Hudson, Westchester County, NY  
Basemap: Westchester County GIS



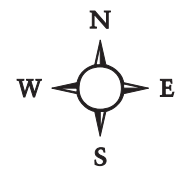


Figure 3: Solar Farm Site Showing Areas to be Cleared - 2018 Aerial Photo  
Matrix Solar Farm  
Croton on Hudson, Westchester County, NY  
Basemap: Westchester County GIS





Figure 4: Site on 2000 Aerial Photo  
Matrix Solar Farm  
Croton on Hudson, Westchester County, NY  
Basemap: Westchester County GIS



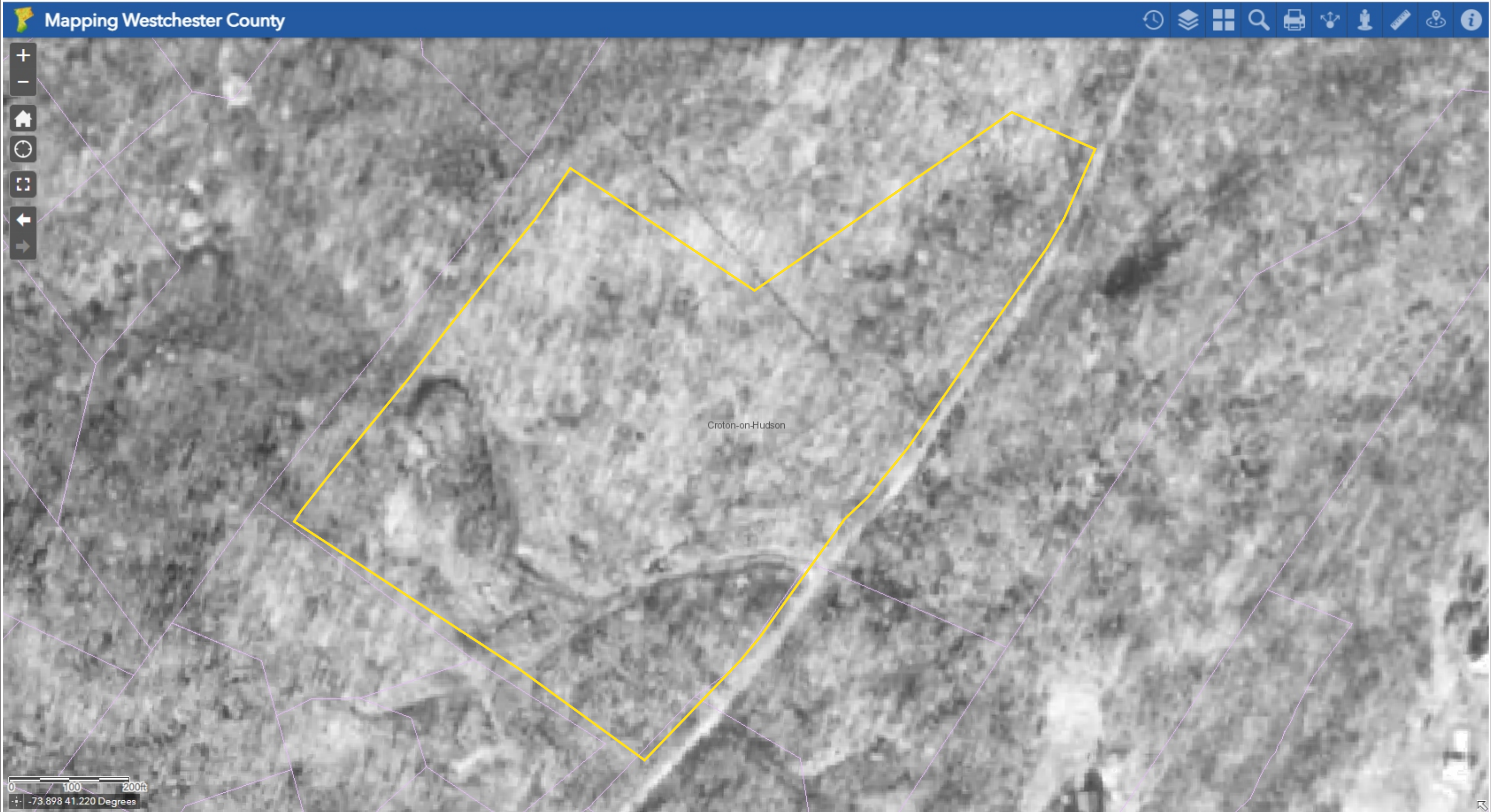


Figure 5: Site on 1960 Aerial Photo  
Matrix Solar Farm  
Croton on Hudson, Westchester County, NY  
Basemap: Westchester County GIS