

## **Appendix C**

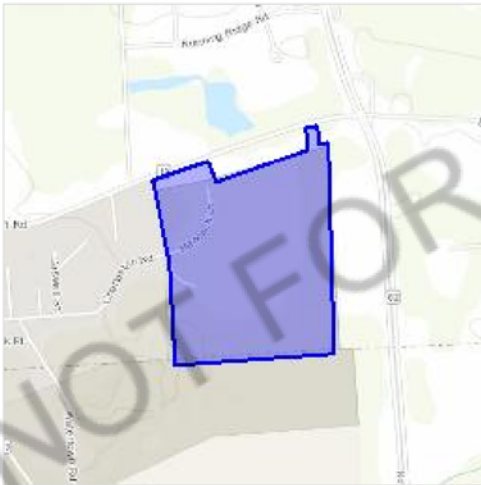
# IPaC resource list

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

Onondaga County, New York



## Local office

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 *Myotis sodalis* Endangered  
 There is **final** critical habitat for this species. Your location is outside the critical habitat.  
<https://ecos.fws.gov/ecp/species/5949>

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

## Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2202">https://ecos.fws.gov/ecp/species/2202</a>	Threatened

## 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.)
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>                      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.  <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	<p>Breeds Dec 1 to Aug 31</p>
<p><b>Black-billed Cuckoo</b> <i>Coccyzus erythrophthalmus</i>                      This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a></p>	<p>Breeds May 15 to Oct 10</p>
<p><b>Bobolink</b> <i>Dolichonyx oryzivorus</i>                      This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds May 20 to Jul 31</p>

**Canada Warbler** *Cardellina canadensis*

Breeds May 20 to Aug 10

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

**Cerulean Warbler** *Dendroica cerulea*

Breeds Apr 20 to Jul 20

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

<https://ecos.fws.gov/ecp/species/2974>

**Snowy Owl** *Bubo scandiacus*

Breeds elsewhere

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

**Wood Thrush** *Hylocichla mustelina*

Breeds May 10 to Aug 31

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

## 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.

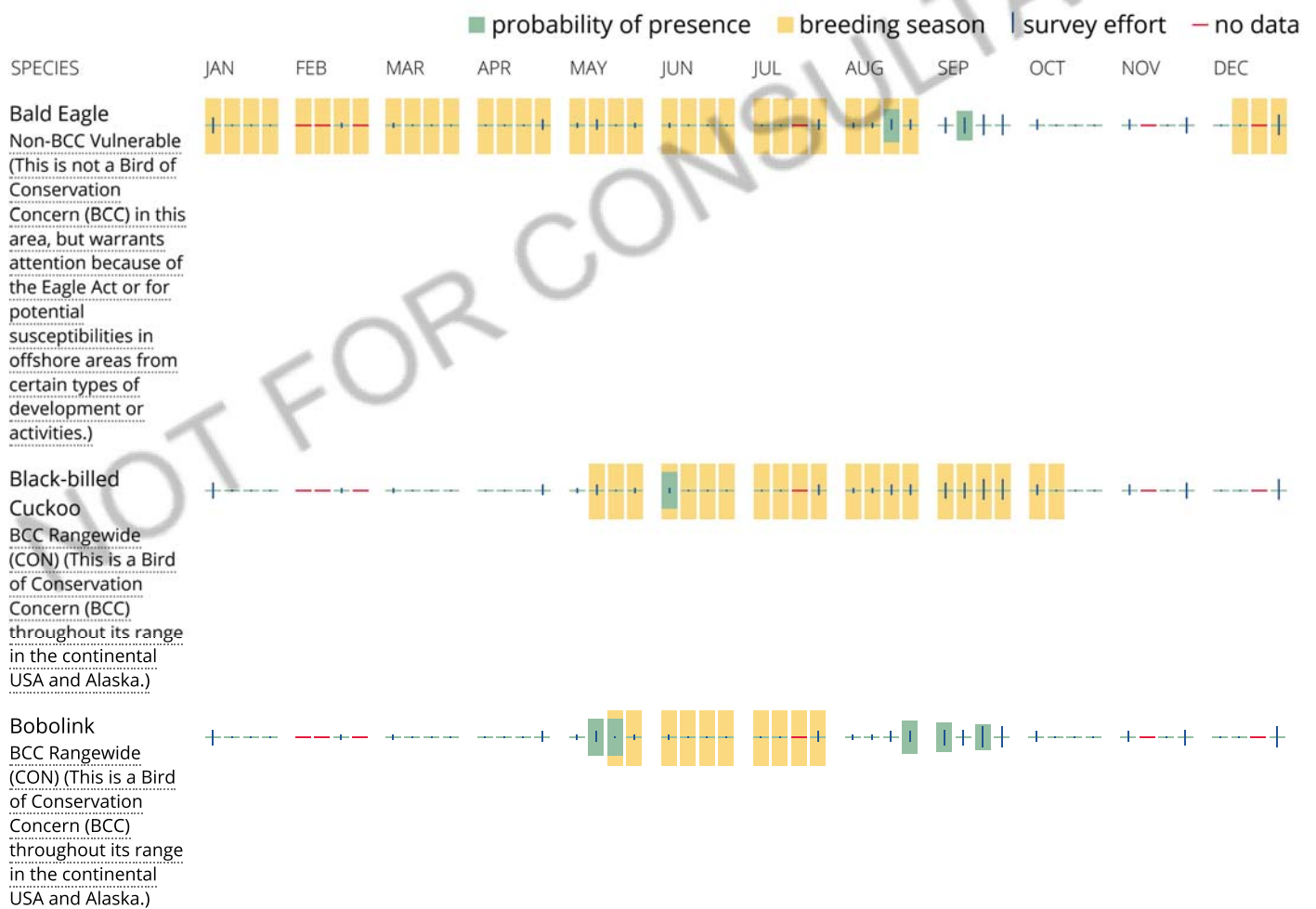
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**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.





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](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

## FRESHWATER FORESTED/SHRUB WETLAND

[PFO1A](#)[PFO1C](#)

## RIVERINE

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**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.

# Environmental Resource Mapper


Base Map: Satellite with Labels Using this map



Search


Tools


**Layers and Legend**



All Layers


 Unique Geological Features



 Waterbody Classifications for Rivers/Streams 


 Waterbody Classifications for Lakes

 State Regulated Freshwater Wetlands (Outside of the Adirondack Park)

 State Regulated Wetland Checkzone 

 Significant Natural Communities

 Natural Communities Near This Location 

 Rare Plants or Animals

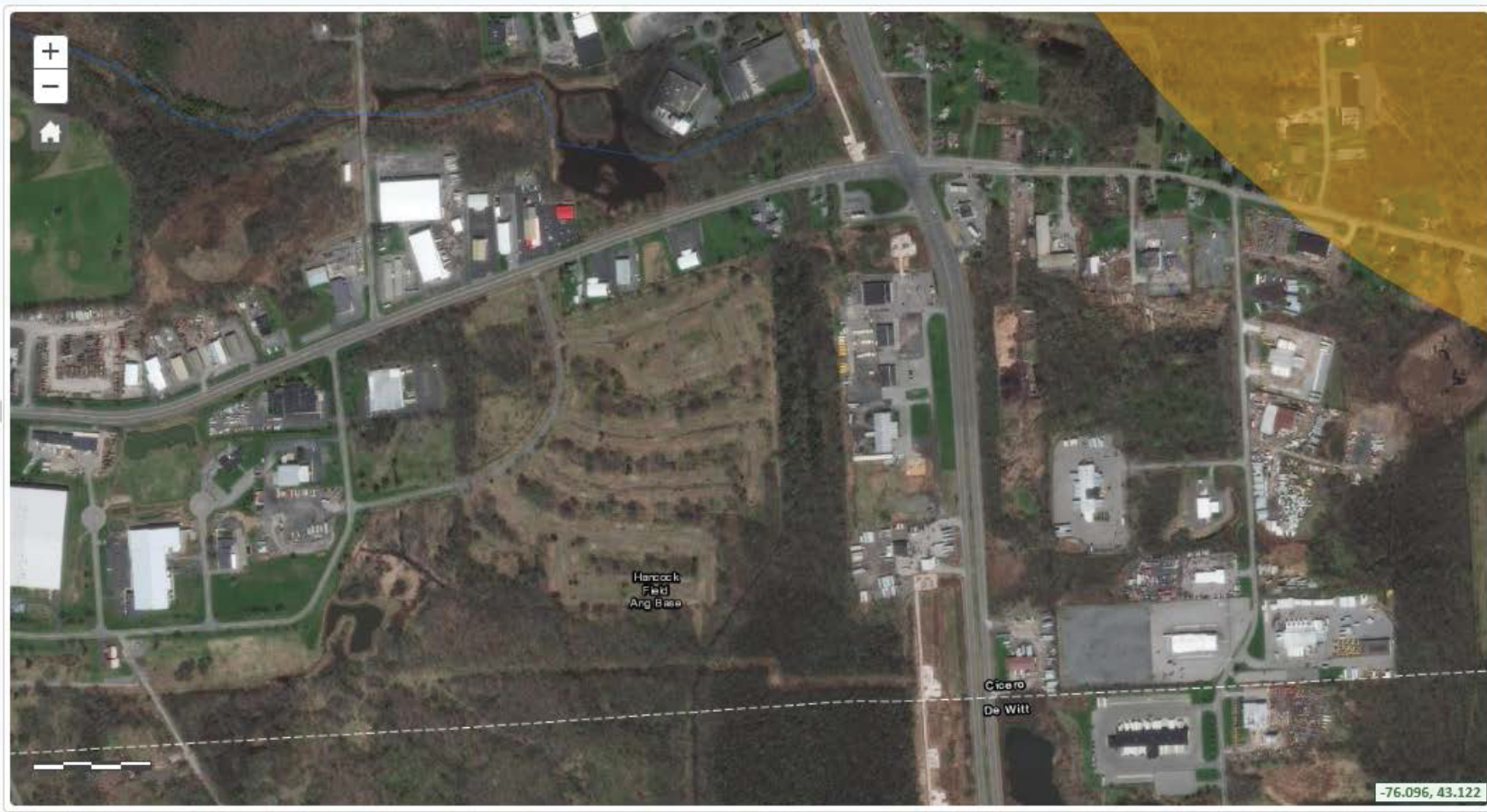
Other Wetland Layers

Reference Layers

Tell Me More...

Need A Permit?

Contacts





# **RARE, THREATENED, AND ENDANGERED SPECIES HABITAT ASSESSMENT**

**SYRACUSE REGIONAL AIRPORT AUTHORITY  
SYRACUSE HANCOCK INTERNATIONAL AIRPORT  
LAND RELEASE FOR FUTURE DEVELOPMENT  
TOWN OF CICERO, ONONDAGA COUNTY, NEW YORK**

May 2019

*Prepared for:*

Syracuse Regional Airport Authority  
1000 Colonel Eileen Collins Boulevard  
Syracuse, New York 13212

*Prepared by:*

C&S Engineers, Inc.  
499 Col. Eileen Collins Blvd.  
Syracuse, New York 13212

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## **1.0 INTRODUCTION**

An Environmental Assessment (EA) for the release of airport property at Syracuse Hancock International Airport (SYR) in Syracuse, Onondaga County, New York is being prepared for the Syracuse Regional Airport (SRAA). The EA will evaluate the environmental impacts associated with the proposed project to comply with Federal Aviation Administration (FAA) requirements to assess impacts associated with airport development projects. Since the proposed project will involve approvals from federal agencies, National Environmental Policy Act (NEPA) review is necessary. The FAA is the NEPA lead agency for the proposed project. C&S Engineers, Inc. (C&S) has conducted a rare, threatened, and endangered species habitat assessment as part of the EA. The Area of Interest (AOI) for delineation totals 99.1-acres and is depicted in the attached Figure 1 – Project Location Map. This report contains a review of published resource materials, existing site conditions, and the results of field investigation.

### **1.1 Project Description**

The proposed project involves the release of land currently located on SYR property for future development of a non-aeronautical related business. It is anticipated that future development on the proposed project site may include construction of multiple light manufacturing buildings and parking for approximately 300 employees. The lands proposed for release include portions of the Town of Cicero tax map number 057-02-23.0 and tax map number 057-02-22.1. A portion of the project site was previously occupied by U.S. Air Force housing units and is currently vacant. SYR intends to subdivide the parcels so that they can retain land associated with the Airport's future airside development.

### **1.2 Project Location**

The 99.1-acre AOI is located north of the airfield, along the south side of Taft Road in the Town of Cicero, New York (See Figure 1).

### **1.3 Agency Consultation**

A request was sent to the New York Natural Heritage Program (NYNHP) to identify rare or state listed animals or plants, or significant natural communities within the project site. A response from Natural Heritage dated May 29, 1029 (See Appendix A) indicates that they have no known records of rare or state-listed animals or plants documented within the vicinity of the AOI. The U.S. Fish and Wildlife Service (USFWS) Information, Planning and Conservation (IPaC) System was reviewed to identify any federally threatened or endangered species within the project area. The IPaC system listed the following species: Indiana bat (*Myotis sodalis*) (endangered), northern long-eared bat (*Myotis septentrionalis*) (threatened), and eastern massasauga (*Sistrurus catenatus*) (threatened) within the project area. This habitat assessment describes the suitability of the AOI to provide habitat for the above-mentioned state and federally protected species.

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## 2.0 FIELD SURVEYS

C&S Engineers, Inc. conducted field surveys to assess the suitability of habitat for those listed species known to occur within the vicinity of the project area. The field surveys occurred April 23, May 1, May 9, and May 14, 2019. The initial step is to identify the ecological cover types that occur on site. On site communities are then compared to each species' habitat preferences. If potentially suitable habitat is identified, these areas are investigated further to describe the habitat quality.

### 2.1 Existing Vegetative Communities

In March 2014, the New York State Department of Environmental Conservation (NYSDEC) published a report entitled *Ecological Communities of New York State*<sup>1</sup>, Second Edition (*Ecological Communities*) as part of the New York Natural Heritage Program inventory. The report is a revised and expanded version of the original 1990 version that lists and describes ecological systems, subsystems, and communities within New York State. The classification was developed to help assess and protect biological diversity of the state. An assessment of the vegetative cover types within the proposed project area was conducted consistent with the representative characteristics presented in *Ecological Communities*.

Based on review of aerial photography and information collected during C&S's site visit, the AOI is comprised of several communities including common reed marsh, floodplain forest, red maple hardwood swamp, shrub swamp, spruce/fir plantation, successional southern hardwoods, and urban vacant lot.

The definition of each cover type is provided below:

- Common reed marsh – A marsh that has been disturbed in which common reed (*Phragmites australis*) has become dominant.
- Floodplain forest – Typically a hardwood forest that occurs on mineral soils on low terraces of river floodplains and river deltas. These sites are characterized by their flood regime; low areas are annually flooded in spring and high areas are flooded irregularly. Trees include silver maple (*Acer sacharrinum*), ashes, cottonwood (*Populus deltoides*), red maple (*Acer rubrum*), elms, hickories, etc. Shrubs present often include spicebush (*Lindera benzoin*), American hornbeam (*Carpinus caroliniana*), speckled alder (*Alnus incana*), dogwoods, and viburnums. Honeysuckle shrubs and multiflora rose are invasive plants often observed. Herbaceous plants include poison ivy (*Toxicodendron radicans*), sensitive fern (*Onoclea sensibilis*), jewelweed (*Impatiens capensis*), etc.
- Red maple hardwood swamp – a hardwood swamp that occurs in poorly drained depressions or basins. Hydrology varies from permanently saturated to seasonally flooded. Red maple is either the only canopy dominant, or it is codominant with

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<sup>1</sup> Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2014. *Ecological Communities of New York State*. Second Edition. Accessed on October 9, 2017. Available at: [http://www.dec.ny.gov/docs/wildlife\\_pdf/ecocomm2014.pdf](http://www.dec.ny.gov/docs/wildlife_pdf/ecocomm2014.pdf)

ashes, elms, and yellow birch (*Betula alleghaniensis*). The shrub layer is typically present and well – developed; the herbaceous layer is often dominated with ferns, sedges, etc.

- Shrub swamp – A wetland dominated with true shrubs. In our part of the State, shrub swamps (not associated with lakes) are often comprised of dogwoods, alder, and willows.
- Spruce/fir plantation - A stand of softwoods planted for the cultivation and harvest of timber products, or to provide wildlife habitat, soil erosion control, windbreaks, or landscaping. These plantations may be monocultures with more than 90% of the canopy cover consisting of one species, or they may be mixed stands with two or more codominant species. Softwoods that are typically planted include Norway spruce (*Picea abies*), white spruce (*Picea glauca*), balsam fir (*Abies balsamea*), and Douglas fir (*Pseudotsuga menziesii*). Groundlayer vegetation is usually sparse, apparently because of the dense accumulation of leaf litter.
- Successional southern hardwoods – Successional forests develop on sites that have been cleared historically. This community is a hardwood or mixed forest whose characteristic trees include American elm (*Ulmus americana*), white ash (*Fraxinus Americana*), red maple, box elder (*Acer negundo*), silver maple, sassafras (*Sassafras albidum*), gray birch (*Betula populifolia*), hawthorns, eastern red cedar (*Juniperus virginiana*), and choke-cherry (*Prunus virginiana*).
- Urban vacant lot - The urban vacant lot is described by *Ecological Communities* as a terrestrial cultural community. Terrestrial cultural is defined as “a subsystem that includes communities that are either created and maintained by human activities, or are modified by human influence to such a degree that the physical conformation of the substrate, or the biological composition of the resident community is substantially different from the character of the substrate community as it existed prior to human influence.”

Figure 2 provides the ecological cover types mapped on site. Photographs depicting the site have been included as Appendix B.

Date: 5/29/2019  
Document Path: F:\Project\068 - Syracuse Regional Airport Authority\068036001 - Land Release Services (2018)\Planning\_Study\GIS\Projects\Wetlands\Figure 2 Eco Cover Map.mxd

**Legend**

-  Area of Interest
-  Common Reed Marsh
-  Floodplain Forest
-  Red Maple Hardwood
-  Red Maple Hardwood Swamp
-  Shrub Swamp
-  Spruce Coniferous Forest
-  Successional Southern Hardwoods
-  Successional shrubland
-  Urban Vacant Lot

**C&S Delineated Ditch/Stream**

-  Ditch
-  Stream



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User

Syracuse Hancock International Airport

# Ecological Cover Types

Figure 2



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## **2.2 Habitat Assessment**

### **2.2.1 Indiana Bat**

Indiana bats are listed as endangered at both the state and federal level, and many details of the species ecology are contained in the draft recovery plan prepared by USFWS<sup>2</sup>. These bats over-winter in caves and mines and migrate to summer habitat as early as mid-April in New York. Suitable winter habitat (hibernacula) includes underground voids such as caves or abandoned mines where winter temperature remains below 50° Fahrenheit (10°C) and above freezing, and are relatively stable. Suitable summer habitat for the Indiana bat consists of trees greater than 2.5 inches in diameter at breast height (dbh), with cracks, crevices, or exfoliating bark<sup>3</sup>.

During summer, groups of females, their dependent pups, and occasional males form groups called maternity colonies. Maternity colonies may be spread among multiple trees with individual bats changing roosts every few days. Trees used by large portions of a maternity colony for all or part of the summer are termed primary roosts. Trees used by smaller numbers of bats for short periods of time are called alternate roosts. Primary roost trees are typically large dead or dying trees with exfoliating bark that usually receive direct sunlight for more than half the day; habitats most typical for primary roosts include riparian zones, bottomland and floodplain forests, forested wetlands, and upland communities at elevations less than 900 feet above mean sea level (North American Vertical Datum of 1988)<sup>4</sup>. Males tend to roost individually or in small numbers in trees with exfoliating bark, cracks, and crevices. Throughout the summer, Indiana bats forage in semi-open to closed (open understory) forested habitats, forest edges (i.e. fencerow, maintained right-of-way corridor), and riparian areas. Most bats leave their summer areas by October and return to the caves.

The USFWS IPaC (see Attachment C) indicates that the project is within the range of Indiana bats. The 2007 draft recovery plan specifies that the nearest hibernacula is located in Jamesville, Onondaga County approximately 8.5-miles southeast of the AOI. Correspondence with the NYNHP reveals that there are no known summer occurrences (i.e. primary roosts, capture sites) for Indiana bat within the vicinity of the project. However, given that the project is within the range of the species, the possibility exists for this species to use the site during the summer months.

The USFWS indicates that suitable summer habitat consist of forested/wooded habitats where they roost, forage, and travel. This may also include some adjacent and interspersed non-forested habitats including emergent wetlands and adjacent edges of open areas.<sup>5</sup> The AOI is comprised of several forested community types. This includes forests and woodlots containing potential roosts, and linear features such as fencerows, riparian forests, and other wooded corridors. An experienced biologist traversed the AOI to identify trees and habitat patches that

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2 U.S. Fish and Wildlife Service (USFWS). 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.

3 U.S. Fish and Wildlife Service (USFWS). May 2017. Indiana Bat Project Review Fact Sheet, New York Field Office. 4 pp.

4 U.S. Fish and Wildlife Service (USFWS). 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.

<sup>5</sup> United States Fish and Wildlife Service. April 2019. Range-wide Indiana Bat Survey Guidelines. 64 pages.

are biologically similar and suitable for use by roosting and foraging bats. Potential roost trees are surveyed as part of the walkover as well. Potential roosts are defined as any tree, regardless of health (live, partially dead, or dead), dbh, or surrounding landscape features (canopy closure, solar exposure, understory clutter, relative distance from edges, travel corridors, and water) that exhibits at least one roosting structure (exfoliating bark, cracks and crevices, or cavities). Individual trees may be considered suitable habitat when they exhibit preferred characteristics and are within 1,000 feet of other forested habitat.

In order to further refine the habitat quality, we describe suitable habitat found on-site including our opinion as to the overall roosting and foraging quality. In addition, potential roost trees are identified as probably primary or secondary roosts.

#### **2.2.1.1 Identification of Overall Roost Quality**

Areas of high potential roost quality possess many or all of the following characteristics:

- Many potential roost trees
- Large diameter trees
- Relatively open understory
- Easy access to drinking water and foraging areas
- Easy access to suitable flyways

Most low quality roosting areas are young forest with cluttered understories and only an occasional roost tree.

#### **2.2.1.2 Identification of Potential Roost Trees**

During the field study, the location of each potential roost is surveyed and labeled as a potential primary or secondary roost. The determination includes consideration of 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. These trees are also free from vines or other obstructing vegetation that may preclude use by bats.

Trees considered potential primary roost potential possess the following characteristics:

- Greater than 9-inches dbh
- Extensive areas of exfoliating bark or cracks where bats can live
- Significant solar exposure of at least one potential roost area of the tree
- Within 1,000 feet from suitable habitat

Trees considered likely secondary roosts have the following characteristics:

- Greater than 5-inches dbh
- Exfoliating bark or cracks present

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- Potential roosting areas either too small to contain multiple bats or those roosting areas located in the shade
- Within 1,000 feet from suitable habitat

**2.2.1.3 Estimating Foraging Habitat Suitability**

Areas of high potential for use by foraging Indiana bats generally include the following:

- Forests with an open understory
- Forested wetlands
- Fencerows and other areas where forested habitat is bordered by open land
- Ponds or uncluttered streams, or rivers

Areas of limited potential generally include cluttered forest, scrub/shrub, and early successional forest.

**2.2.1.4 Hibernacula**

Lastly, a review of the project area for hibernacula is completed. Suitable winter habitat (hibernacula) includes underground voids such as caves or abandoned mines. The walkover failed to identify underground voids that may be used by hibernating Indiana bats.

**2.2.1.5 Potential Roost Tree Summary**

C&S identified 23 potential roost tree (PRT) clusters and individual roost trees within the AOI. Table 1 provides a summary of the PRTs observed.

**Table 1. Potential Roost Tree Summary**

<b>Id</b>	<b>Species</b>	<b>Roost Type</b>	<b>dbh (inches)</b>	<b>Roosting Structure</b>
1	Red maple	Primary	28	Exfoliating bark, cavities, cracks
2	Shagbark hickory	Primary	28	Exfoliating bark
3	Shagbark hickory	Primary	26	Exfoliating bark
4	Sugar maple	Secondary	14	Exfoliating bark, cavities, cracks
5	Red maple	Secondary	14	Exfoliating bark, cracks
6	Red maple	Secondary	12	Cavities
7	American elm	Secondary	30	Exfoliating bark
8	American elm	Secondary	12	Exfoliating bark
9	Red maple	Secondary	9	Exfoliating bark
10	Red maple	Secondary	10-14 (multibole)	Exfoliating bark
11	Red maple	Secondary	10	Exfoliating bark
12	Green ash	Secondary	26	Exfoliating bark, cracks
13	Cottonwood	Secondary	16	Exfoliating bark

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<b>Id</b>	<b>Species</b>	<b>Roost Type</b>	<b>dbh (inches)</b>	<b>Roosting Structure</b>
14	Snag	Secondary	18	Cracks, cavities
15	Shagbark hickory	Secondary	4-12 (cluster)	Exfoliating bark
16	Shagbark hickory	Secondary	8-20 (cluster)	Exfoliating bark
17	Red maple	Secondary	30	Cavities
18	Shagbark hickory	Secondary	12-15 (cluster)	Exfoliating bark
19	Cottonwood	Secondary	40	Cracks
20	Black cherry	Secondary	12	Exfoliating bark
21	Shagbark hickory	Secondary	4-12 (cluster)	Exfoliating bark
22	Shagbark hickory	Secondary	8	Exfoliating bark
23	Sugar maple	Secondary	20-24 (multibole)	Exfoliating bark, cracks

**2.2.1.6 Indiana Bat Habitat Assessment Results**

The project site contains suitable summer Indiana bat habitat. No winter habitat was identified during the field surveys. The following table provides an overview of the habitat found on site.

**Table 2. Indiana Bat Habitat Summary**

<b>Habitat Suitability</b>	<b>Acreage</b>
No roosting/limited foraging	12.24
Limited roosting/limited foraging	6.57
High roosting/limited foraging	0.0
No roosting/high foraging	61.1
Limited roosting/high foraging	0.12
High roosting/high foraging	19.05

Figure 3 provides an overview of the potential roosting areas and potential roost trees observed on site. Figure 4 depicts the general foraging suitability within the AOI. As noted, suitable Indiana bat habitat occurs on site. Future development will require consideration to the potential to effect this state and federally listed species. The most significant habitat occurs within the southern portion of the AOI. This area shown in Figures 3 and 4 is described as both high roosting and high foraging habitat.






**2.2.2 Northern long-eared bat**

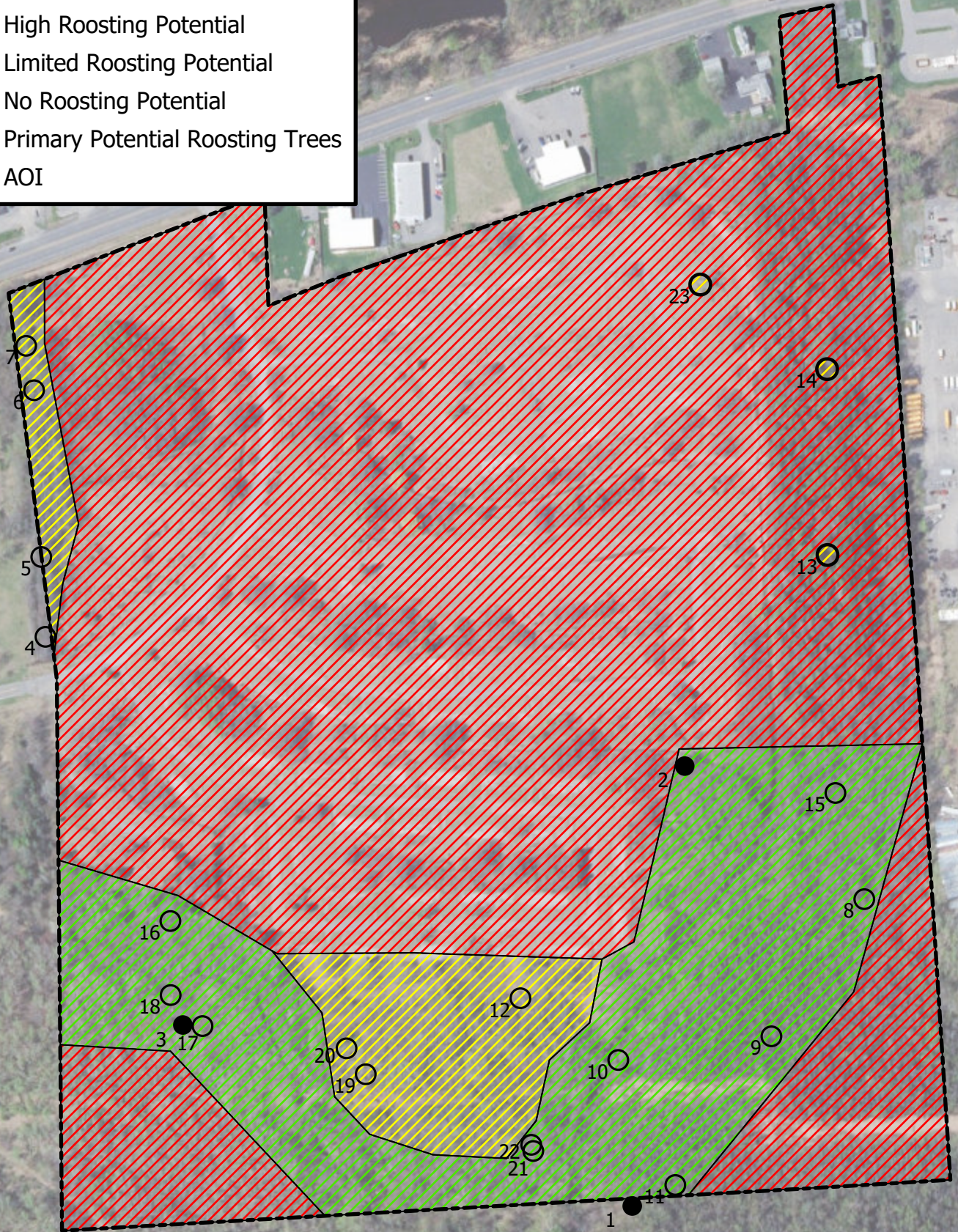
The northern long-eared bat is listed as threatened at the state and federal level. The northern long-eared bat winters in caves and mines and migrates seasonally to summer roosts in dead and decadent trees. Northern long-eared bats are typically associated with mature interior forest<sup>6</sup> and tend to avoid woodlands with significant edge habitat<sup>7</sup>. They may most often be found in

<sup>6</sup> Carroll, S. K., T. C. Carter and G. A. Feldhamer. 2002. Placement of nets for bats: effects on perceived fauna. *Southeastern Naturalist* 1:193-198.

<sup>7</sup> Yates, M. and R. Muzika. 2006. Effect of forest structure and fragmentation on site occupancy of bat species in Missouri Ozark forests. *Journal of Wildlife Management* 70:1238-1248.

# Legend

-  High Roosting Potential
-  Limited Roosting Potential
-  No Roosting Potential
-  Primary Potential Roosting Trees
-  AOI






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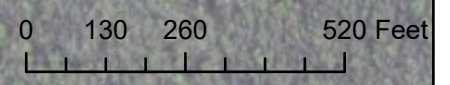
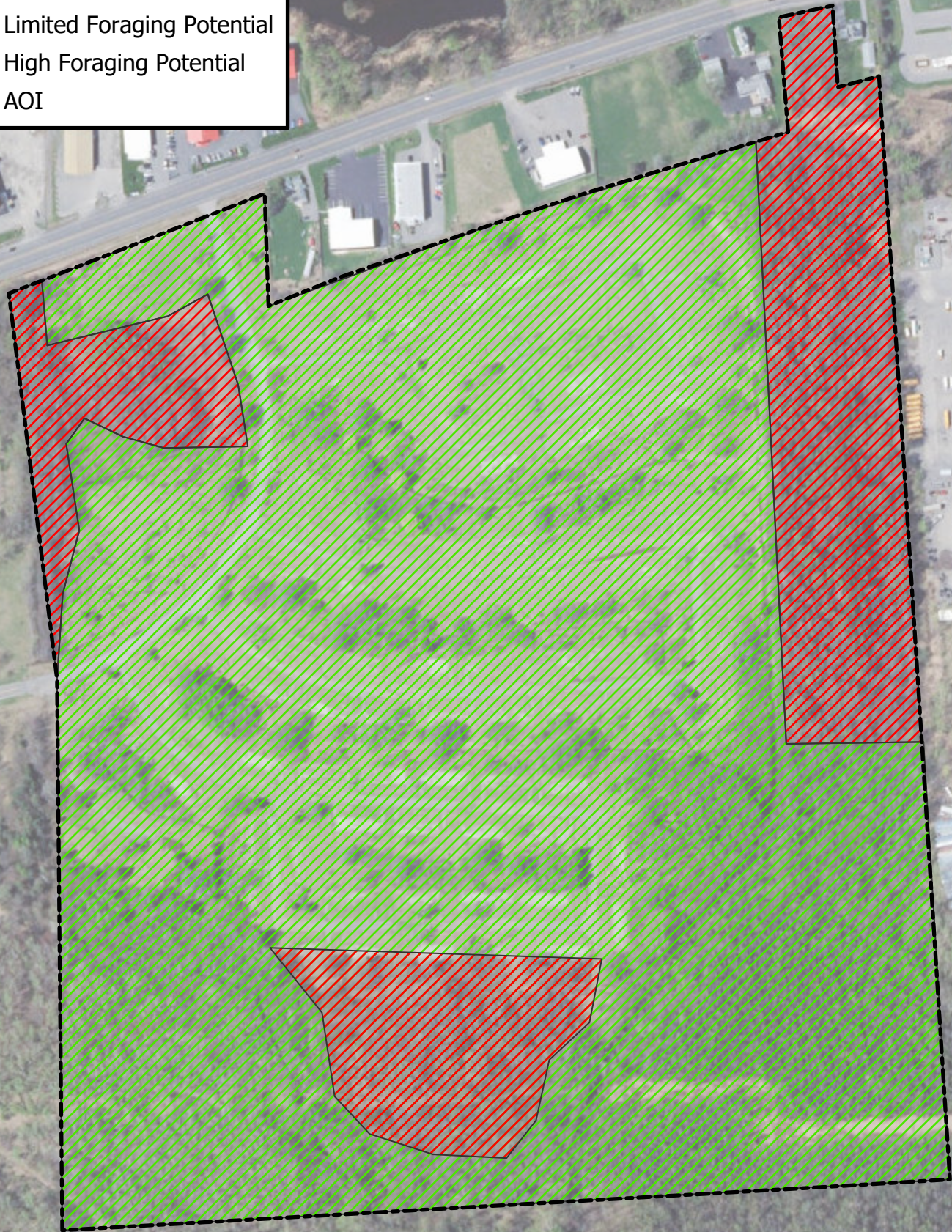


Syracuse Hancock International Airport  
**Potential Roosting Areas**  
Figure 3

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# Legend

-  Limited Foraging Potential
-  High Foraging Potential
-  AOI



Syracuse Hancock International Airport  
**Potential Foraging Areas**  
Figure 4

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cluttered or densely forested areas including in uplands and at streams or vernal pools<sup>8</sup>. They may use small openings or canopy gaps as well. Some research suggests that northern long-eared bats forage on forested ridges and hillsides rather than in riparian or floodplain forests. Captures from New York suggest that northern long-eared bats may also be found using younger forest types<sup>9</sup>. This species selects day roosts in dead or live trees under loose bark, or in cavities and crevices, and may sometimes use caves as night roosts<sup>10</sup>. They may also roost in buildings or behind shutters. A variety of tree species are used for roosting. The structural complexity of surrounding habitat and availability of roost trees may be important factors in roost selection<sup>11</sup>. Roosts of female bats tend to be large diameter, tall trees, and in at least some areas, located within a less dense canopy<sup>12</sup>. Northern long-eared bats hibernate in caves and mines where the air temperature is constant, preferring cooler areas with high humidity<sup>13</sup>.

A site visit was conducted to visually assess the suitability of the AOI for northern long eared bats. The project site contains suitable habitat. According to USFWS, suitable Indiana bat habitat is also considered suitable for northern long-eared bats. In addition, this species is known to use smaller diameter roost trees ( $\geq 3$  inches dbh), and use man-made structures (i.e. bridges, houses, bat houses) for roosting.<sup>14</sup>

The NYNHP maintains data regarding known occurrences of northern long-eared bat hibernacula and summer roosts. NYNHP correspondence indicates no documented occurrences of these features in the vicinity of the AOI. According to publicly available USFWS data, there are no known northern long-eared bat roost trees in Onondaga County. USFWS data indicate the nearest northern long-eared bat hibernaculum is located about 8.5-miles southeast near Jamesville, Onondaga County.

The northern long-eared bat was listed as threatened under ESA on April 2, 2015. The USFWS issued a 4(d) rule for this species, which was published in the *Federal Register* on January 14, 2016. The 4(d) rule prohibits “incidental take” within white-nose impacted areas of the northern long-eared bat’s range when a proposed action is within a known hibernaculum, includes tree removal within 0.25 mile of a known hibernaculum, or cuts or destroys a known, occupied maternity roost tree or other trees within a 150-foot radius from the maternity roost tree during the pup season from June 1 through July 31. Incidental take for other activities is covered under

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8 Brooks, R. T. and W. M. Ford. 2005. Bat Activity in a Forest Landscape of Central Massachusetts. *Northeastern Naturalist* 12:447-462.

9 New York Natural Heritage Program. 2016. Online Conservation Guide for *Myotis septentrionalis*. Available from: <http://www.acris.nynhp.org/guide.php?id=7407>. Accessed October 9, 2017.

10 U.S. Fish and Wildlife Service. 2013. 12-Month finding on a petition to list the eastern small-footed bat and the northern long-eared bat as threatened or endangered; Listing the northern long-eared bat as an endangered species; Proposed rule. Vol. 78 No.

11 Carter, T. C. and G. A. Feldhamer. 2005. Roost tree use by maternity colonies of Indiana bats and northern long-eared bats in southern Illinois. *Forest Ecology and Management* 219:259-268.

12 Sasse, D. B. and P. J. Pekins. 1996. Summer roosting ecology of northern long-eared bats (*Myotis septentrionalis*) in the White Mountain National Forest. Pp. 91-101 in *Proceedings of the Bats and Forests Symposium of the British Columbia Ministry of Forest*.

13 U.S. Fish and Wildlife Service. 2013. 12-Month finding on a petition to list the eastern small-footed bat and the northern long-eared bat as threatened or endangered; Listing the northern long-eared bat as an endangered species; Proposed rule. Vol. 78 No.

14 United States Fish and Wildlife Service. April 2019. Range-wide Indiana Bat Survey Guidelines. 64 pages.

the Programmatic Biological Opinion associated with the 4(d) rule. Notably, “incidental take” is defined by the ESA as take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” For example, harvesting trees may result in a “take” of bats that are roosting in the trees, but the purpose of the activity is not to harm bats.

The NYNHP data indicate the AOI is not within 0.25 mile of a hibernaculum or within 150 feet of a known maternity roost. As a result, no avoidance or minimization measures are required to maintain consistency with ESA and the 4(d) rule established by the USFWS.

In New York, a permit is required for the “take” of protected species under the Uniform Procedures Act that includes direct impact to the species as well as adverse modification to habitat. NYSDEC considers impacts to “occupied” habitat as well as direct impacts to the species; however, requirements for northern long-eared bat protection are consistent with USFWS in areas that are not considered “occupied habitat”. Occupied habitat is defined as those areas within five (5) miles of a known hibernacula, or 1.5 miles from a documented summer occurrence. The proposed project areas are not in occupied habitat, and therefore no additional NYSDEC requirements are required.

### **2.2.3 Eastern massasauga**

The preferred habitat of the eastern massasauga throughout its range is wet areas including wet prairies, marshes and low areas along rivers and lakes. During portions of the year, massasauga may also use adjacent uplands. These snakes typically hibernate in wetland areas and other poorly drained sites<sup>15</sup>. Gravid females are sedentary, and stay in the core wetland area during the gestation period<sup>16</sup>. The two known populations of massasauga in New York generally inhabit boggy, forested wetlands with open areas of low growing vegetation<sup>17</sup>. The closest known population to the AOI is located in Cicero Swamp Wildlife Management Area (Cicero Swamp) according to the *Status Assessment for Eastern Massasauga (Sistrurus c. catenatus)* prepared by the USFWS and dated 1998<sup>18</sup>. Cicero Swamp is located approximately 0.3-miles (at its closest proximity) northeast of the site.

The massasauga population in Cicero Swamp has been widely studied and is primarily found within a 37-hectare (91.4-acre) peatland shrubland core area located in the northwest corner of the swamp<sup>19</sup>. During the summer months, gravid females remain within this core area where

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15 Szymanski, Jennifer. USFWS. Status Assessment for the Eastern Massasauga (*Sistrurus c. catenatus*). 1998. 71 pp.

16 Johnson. G. 1995. Spatial ecology, habitat preference and habitat management of the Eastern Massasauga, *Sistrurus c. catenatus* in a New York weakly-minerotrophic peatland. Ph.D. Thesis. State University of New York.

17 NYSDEC. Eastern Massasauga Fact Sheet. Available from <http://www.dec.ny.gov/animals/7154.html>. Accessed October 9, 2017.

18 Szymanski, Jennifer. USFWS. Status Assessment for the Eastern Massasauga (*Sistrurus c. catenatus*). 1998. 71 pp.

19 Breisch and Johnson. The Eastern Massasauga Rattlesnake in New York: Occurrence and Habitat Management. 1999. 8 pp.

as non-gravid females and male adult massasauga will use the surrounding swamp, upland forests, and fields<sup>20</sup>. The core area is approximately 1.7-miles northeast of the site.

- The AOI does not contain wetlands characteristic of the primary habitat for massasauga or gravid females. Therefore, the project will not affect habitat that could potentially be used by gravid females, or serve as potential hibernacula.
- On site habitat could be used by foraging snakes. However, based on estimated home ranges of massasauga in Cicero Swamp, the snakes are not expected to move great distances from the core area. For instance, the greatest mean range length of non-gravid females is estimated at 0.75 miles, males 0.5 miles, and gravid females 0.18 miles<sup>21</sup>. The AOI is located >1.7 miles from the core area in Cicero Swamp. As such, massasauga are not anticipated to occur in the AOI. Therefore, the project is not anticipated to affect the rattlesnake.

### **3.0 CONCLUSIONS**

A detailed habitat assessment for state and federally listed species was prepared for the Syracuse Regional Airport Authority for the AOI associated with the Land Release for Future Development Project. Correspondence with the NYNHP and USFWS indicates that the Indiana bat (state and federally endangered), northern long-eared bat (state and federally threatened), and eastern massasauga (state endangered, federally threatened) are known to occur near the project area. This habitat assessment describes the suitability of the AOI to provide habitat for the above-mentioned state and federally protected species.

Suitable summer habitat occurs on site for the Indiana bat. Avoidance and minimization of preferred on-site habitat is recommended. The preferred on-site habitat is generally depicted as the high foraging and high roosting areas shown in Figures 3 and 4. *All* tree-clearing activities on site should occur during winter months to avoid direct impacts to this species.

Suitable summer habitat for northern long-eared bats is also present on site; however, the AOI is not located within 0.25 miles of a hibernaculum, within 150 feet of a known maternity roost, or in areas considered occupied by NYSDEC. As such, no avoidance and minimization measures are required to maintain consistency with state and federal regulations.

Lastly, the project site does not contain suitable primary habitat for massasauga. Therefore, the project will not affect habitat that could potentially be used by gravid females, or serve as potential hibernacula. On site habitat could be used by foraging snakes. However, based on estimated home ranges of massasauga in Cicero Swamp, the snakes are not expected to move great distances from the core area. As such, massasauga are not anticipated to occur in the AOI.

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<sup>20</sup> Johnson. G. 1995. Spatial ecology, habitat preference and habitat management of the Eastern Massasauga, *Sistrurus c. catenatus* in a New York weakly-minerotrophic peatland. Ph.D. Thesis. State University of New York.

<sup>21</sup> Johnson. G. 1995. Spatial ecology, habitat preference and habitat management of the Eastern Massasauga, *Sistrurus c. catenatus* in a New York weakly-minerotrophic peatland. Ph.D. Thesis. State University of New York.

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