

Threatened and Endangered Species Habitat Assessment

Genesee Industrial Land
City of Mount Morris and Genesee Township
Genesee County, Michigan

Prepared For:

Detroit Regional Partnership, RACER Trust,
and RACER Properties LLC

Project No. 2501089
March 2026

Threatened and Endangered Species Habitat Assessment

**Genesee Industrial Land
City of Mount Morris and Genesee Township
Genesee County, Michigan**

**Parcel Nos. 57-07-100-017, 57-07-100-018, 11-07-200-035,
and 11-07-400-016**

**Prepared for:
Detroit Regional Partnership
Detroit, Michigan**

**RACER Trust
RACER Properties LLC
Detroit, Michigan**

**March 18, 2026
Project No. 2501089**

Table of Contents

Introduction3

Database Review.....3

 Species Listed by the Michigan Natural Features Inventory3

 Species Listed by the USFWS.....3

State and Federal Regulations.....4

Site Investigation4

 Wetlands.....4

 Uplands5

 Potential Habitat for Threatened and Endangered Species5

 Wildlife Observations5

Conclusions5

List of Figures

- Figure 1 – Location Map
- Figure 2 – Site Plan
- Figure 3 – Bat Map

List of Tables

- Table 1 – Summary of Listed Threatened and Endangered Species
- Table 2 – Plant Community Inventory

List of Appendices

- Appendix 1 Michigan Natural Features Inventory Rare Species Review and Section 7 Comments
- Appendix 2 United States Fish and Wildlife Services’ IPaC Resource List
- Appendix 3 Site Photographs

List of Abbreviations/Acronyms

AOI	Area of Investigation
BMP	Best Management Practice
DBH	Diameter at Breast Height
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EMR	Eastern Massasauga Rattlesnake
ESA	Endangered Species Act
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
IPaC	Information for Planning and Consultation
JPA	Joint Permit Application
MDNR	Michigan Department of Natural Resources
MNFI	Michigan Natural Features Inventory
NLEB	Northern Long-Ear Bat
No.	Number
OBL	Obligate
T&E	Threatened and Endangered

UPL Upland
U.S. United States
USFWS United States Fish and Wildlife Service

Introduction

Fishbeck completed a threatened and endangered (T&E) species habitat assessment to determine the likelihood of protected species occurring within the Genesee Industrial Land described below. In Michigan, T&E species are protected by the Michigan Department of Natural Resources (MDNR) and the U.S. Fish and Wildlife Service (USFWS).

On November 12 and 14, 2025, Fishbeck staff evaluated approximately 81 acres in the City of Mount Morris and Genesee Township, Genesee County, Michigan (the Area of Investigation or AOI). The AOI is in Section 7, Township 8 North, Range 7 East, and is comprised of four parcels: Parcel Nos. 57-07-100-017, 57-07-100-018, 11-07-200-035, and 11-07-400-016. The AOI is north of East Stanley Road and otherwise bound by generally undeveloped lands with occasional buildings/structures, utility corridors, and a railroad. The Location Map is included as **Figure 1**.

The T&E Species evaluation included a review of the Michigan Natural Features Inventory (MNFI) T&E species database and the USFWS Information for Planning and Consultation (IPaC) website. Fishbeck staff inspected the AOI, identified its plant communities and habitat, and compared this data to the required habitat for the listed protected species.

Database Review

MNFI reviewed their database for known occurrences of protected species within 1.5 miles of the AOI.

Appendix 1 contains documentation received from the MNFI. This documentation includes a response letter dated November 3, 2025, that summarizes all known occurrences of legally protected and special concern species within 1.5 miles of the AOI. It also includes Section 7 comments, dated November 3, 2025, to assist with consultation needs pursuant to Section 7(a)(4) of the Endangered Species Act (ESA).

Fishbeck consulted the USFWS's IPaC website for an unofficial list of federally protected species that could occur in the AOI. **Appendix 2** contains the USFWS's IPaC unofficial species list, downloaded on November 4, 2025.

Table 1 summarizes the federal and state T&E species listed in the IPaC unofficial species list and the MNFI rare species review, as well as the required habitat for the noted species. The table's last column evaluates the likelihood that site development will impact these species, based upon whether the known occurrences are historic and if appropriate habitat for these species was present. The MNFI Section 7 comments listed more federal species than the IPaC report, because the MNFI search criteria extended beyond the AOI. The additional species are not provided in **Table 1**.

Species Listed by the Michigan Natural Features Inventory

The MNFI rare species review advised that no state-listed T&E species nor special concern species have been recorded within 1.5 miles of the AOI and that adverse impacts are unlikely to occur. The Michigan designation of "Special Concern" indicates that species are declining or relict in the state. While not protected by law, the MNFI recommends that efforts be taken to minimize impacts to these species.

Species Listed by the USFWS

The USFWS's IPaC listed three federally protected species, and one species proposed for listing that have the potential to occur within the AOI: Indiana bat (*Myotis sodalis*), Northern long-eared bat (NLEB) (*Myotis septentrionalis*), Eastern massasauga rattlesnake (EMR) (*Sistrurus catenatus*), and monarch butterfly (*Danaus plexippus*).

The MNFI provided comments on the Indiana bat, Poweshiek skipperling (*Oarisma poweshiek*), NLEB, and EMR. Of these species, the MNFI indicated that suitable habitat appeared to be present within 1.5 miles of the AOI for the Indiana bat and NLEB.

State and Federal Regulations

The Michigan Endangered Species Act, part of the Natural Resources and Environmental Protection Act (MCL 324.36501-07), protects species indigenous to the state that are listed as endangered or threatened. It prohibits taking, possessing, transporting, or selling these species unless permitted by the DNR.

Federally listed T&E species are protected by the “take” prohibitions under Section 9 of the ESA of 1973. Section 9 of the ESA prohibits the unpermitted “take” of threatened or endangered species. The term “take” means to harass, hunt, shoot, capture, trap, kill, collect, wound, harm, or pursue the protected species, or to significantly degrade habitat to the extent where the noted activities may occur.

Proposed endangered or proposed threatened species are in danger of extinction; however, they are not yet protected by the take prohibitions stipulated under Section 9 of the ESA. Under Section 7(a)(4) of the ESA, federal agencies or projects with federal funding must confer with USFWS if actions may jeopardize the continued existence of proposed endangered or proposed threatened species. Candidate species are not yet listed or proposed for listing. Consultation with the USFWS under Section 7 of the ESA is not required for candidate species.

Bald and golden eagles are not species protected under the Federal ESA; however, birds and their nests are protected under the Bald and Golden Eagle Protection Act of 1940. This Act prohibits the unpermitted take and disturbance of eagles. With regards to eagles, “Take” is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.” “Disturb” is defined as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause based on the best available scientific information, 1) injury to an eagle, 2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior” (USFWS; 16 U.S.C. 668-668d). Suitable habitat for eagles consists of forested areas near bodies of water. Specifically, they prefer the tops of tall mature trees or tall snags that provide extensive viewsheds, as birds of prey rely heavily on their line-of-sight.

Site Investigation

Fishbeck staff conducted a meander survey and characterized the plant communities in the AOI. The AOI topography was relatively flat with depressional areas throughout. The AOI was observed to have dirt roads throughout, used by off-road vehicles, as they were too narrow for a standard car. Wetland and upland landcover types were observed; however, the dominant cover consisted of forests with a dense understory of invasive shrubs. Three streams were observed at various locations beneath the dirt roads, culverted for vehicle access. The approximate extent of land cover types is noted on **Figure 2**. Representative photographs of the AOI communities are included as **Appendix 3**.

An inventory of plant species was completed for each community type and is provided in **Table 2**. **Table 2** also notes whether observed plants are native or nonnative and their wetland indicator status. Species with indicator statuses of obligate wetland (OBL), facultative wetland (FACW), and facultative (FAC) are considered wetland species. Species with indicator statuses of facultative upland (FACU) and upland (UPL) are considered upland species. Facultative species are also commonly present in upland plant communities.

The following is a brief description of the identified land cover and the associated plant communities.

Wetlands

Wetlands were observed and delineated throughout the AOI. Forested, scrub-shrub, and emergent wetlands were observed, with one wetland having open water in the middle. Three streams were also identified in the AOI. The dominant wetland type was forested wetlands with closed canopies, dominated by cottonwoods (*Populus deltoides*) and American elm (*Ulmus americana*). The dominant shrubs observed in the forested and scrub-shrub

wetlands included invasive buckthorns (*Rhamnus cathartica* and *Frangula alnus*). Emergent wetlands were observed less frequently. The large forested, emergent, and open-water wetland noted on **Figure 2** had the highest diversity of emergent wetland plants, with the invasive common reed (*Phragmites australis* subspecies *australis*) as the dominant herbaceous plant observed. Due to the lack of uniqueness of the wetlands, one comprehensive plant list is provided.

Uplands

The majority of the AOI consisted of a dry-mesic southern forest with an understory of dense invasive shrubs, including buckthorns, autumn olive (*Elaeagnus umbellata*), and honeysuckles (*Lonicera* species). Black cherries (*Prunus serotina*), shagbark hickories (*Carya ovata*), and oaks (*Quercus* species) were observed throughout the AOI that have peeling/flaking bark and are known to be used by bat species. Occasional evergreen trees were observed, primarily Scotch pine (*Pinus sylvestris*) and red cedar (*Juniperus virginiana*). There was one area south of a stream that was only evergreen trees; otherwise, they were mixed throughout, mainly in the AOI south of the utility corridor that bisected the AOI.

The other upland landcover observed included disturbed fields. These areas appeared to have been historically disturbed by clearing/mowing and consisted of weedy and mostly nonnative species. The dominant plants included tall goldenrod (*Solidago altissima*), Queen-Anne's lace (*Daucus carota*), and hairy aster (*Symphyotrichum pilosum*).

Potential Habitat for Threatened and Endangered Species

Suitable summer roosting habitat for bat species was observed throughout the forested areas, with exfoliating bark, cracks, and crevices on many trees. Large stands of suitable roosting trees were recorded and are shown on **Figure 3**. Additional suitable summer roosting trees were observed throughout the AOI.

Swamp milkweed (*Asclepias incarnata*) was observed as an isolated plant in the AOI, unlikely to be used by monarch butterflies due to its low abundance.

No threatened or endangered species were observed in the AOI. Additionally, no eagles or eagle nests were observed during the field survey. According to Cornell's online eBird Species Mapper (citizen observations), there are no recorded observations of bald or golden eagles within the vicinity of the AOI. The nearest bald eagle observation was over 1.6 miles away to the southeast. The absence of species observed during field surveys does not preclude their future presence within the AOI.

Wildlife Observations

Wildlife species observed in the AOI included blue jays (*Cyanocitta cristata*) and a red-tailed hawk (*Buteo jamaicensis*). Additionally, tracks of white-tailed deer (*Odocoileus virginianus*) were observed.

Conclusions

The AOI is predominantly forested, with wetlands and uplands, and a dense understory of invasive shrubs. Occasional emergent wetlands and three streams were observed, as well as disturbed fields and off-road vehicle trails. No T&E species were observed in the AOI. The absence of T&E species observed during field surveys does not preclude their future presence within the AOI.

Table 1 summarizes T&E species known to be present in the vicinity of the AOI, their habitat descriptions, and determinations of the effect on these species resulting from site development. **Table 1** concludes No Effect for monarch butterflies and the EMR, and May Affect, with Potential to Not Likely Adversely Affect bat species.

The AOI overlaps USFWS modeled bat habitat (**Figure 3**), and contained cottonwoods, shagbark hickories, black cherries, and American elms with a diameter at breast height of greater than 3 inches, that had cracks, crevices, and exfoliating bark. These tree species are known to be utilized by protected bat species, thus providing suitable

summer roosting habitat. If more than 20 acres of contiguous forest and/or 10 acres of modeled bat habitat are removed, site development May Affect bat species. A more detailed habitat assessment or a presence/absence survey would likely be required to ensure that high-quality roosting habitat is not affected. Presence/absence surveys may offer greater flexibility if the listed bats are found not to be present.

Site development May Affect, but would Not Likely Adversely Affect bat species if the following Best Management Practices (BMPs) can be implemented:

- For trees larger than 3 inches Diameter at Breast Height (DBH), conduct tree-clearing activities from October 1 through April 14. Do not clear trees greater than 3 inches DBH from April 15 through September 30.
- Do not clear more than ten contiguous acres of forest habitat.
- Ensure cutting does not result in the loss of connectivity among other forest patches at least five acres in size.
- For new or replacement of lights, use downward-facing, full-cut-off lens lights or the BUG system. Direct temporary lighting away from suitable bat habitat during the bat's active season.

Trees less than 3 inches DBH and shrubs can be removed anytime, as they are not considered suitable habitat for bats.

While site development is anticipated to have No Effect on the EMR, the following BMPs could be implemented throughout site development:

- Use of wildlife-safe materials to ensure EMR or other wildlife aren't entangled.
- Play the "60-Second Snakes: The Eastern Massasauga Rattlesnake" YouTube video by the Michigan Department of Natural Resources, or review and provide the *EMRfactsheetSept2016* at the job site.
- If an EMR (or other federal species) is observed, contact the USFWS within 24 hours ([517-351-2555](tel:517-351-2555) or EastLansing@fws.gov).

The USFWS All Species Determination Key should be completed based on the final design of development in the AOI and would finalize effect determinations based on the proposed development and associated impacts. The USFWS All Species Determination Key will be required to be completed, if a JPA is required or federal funds are used.

Figures

Hard copy is intended to be 8.5"x11" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

Genesee Industrial Land
 East Stanley Road, Mount Morris and Genesee Township, Michigan
 Threatened and Endangered Species Habitat Assessment

PROJECT NO.
2501089

FIGURE NO.
3

LEGEND

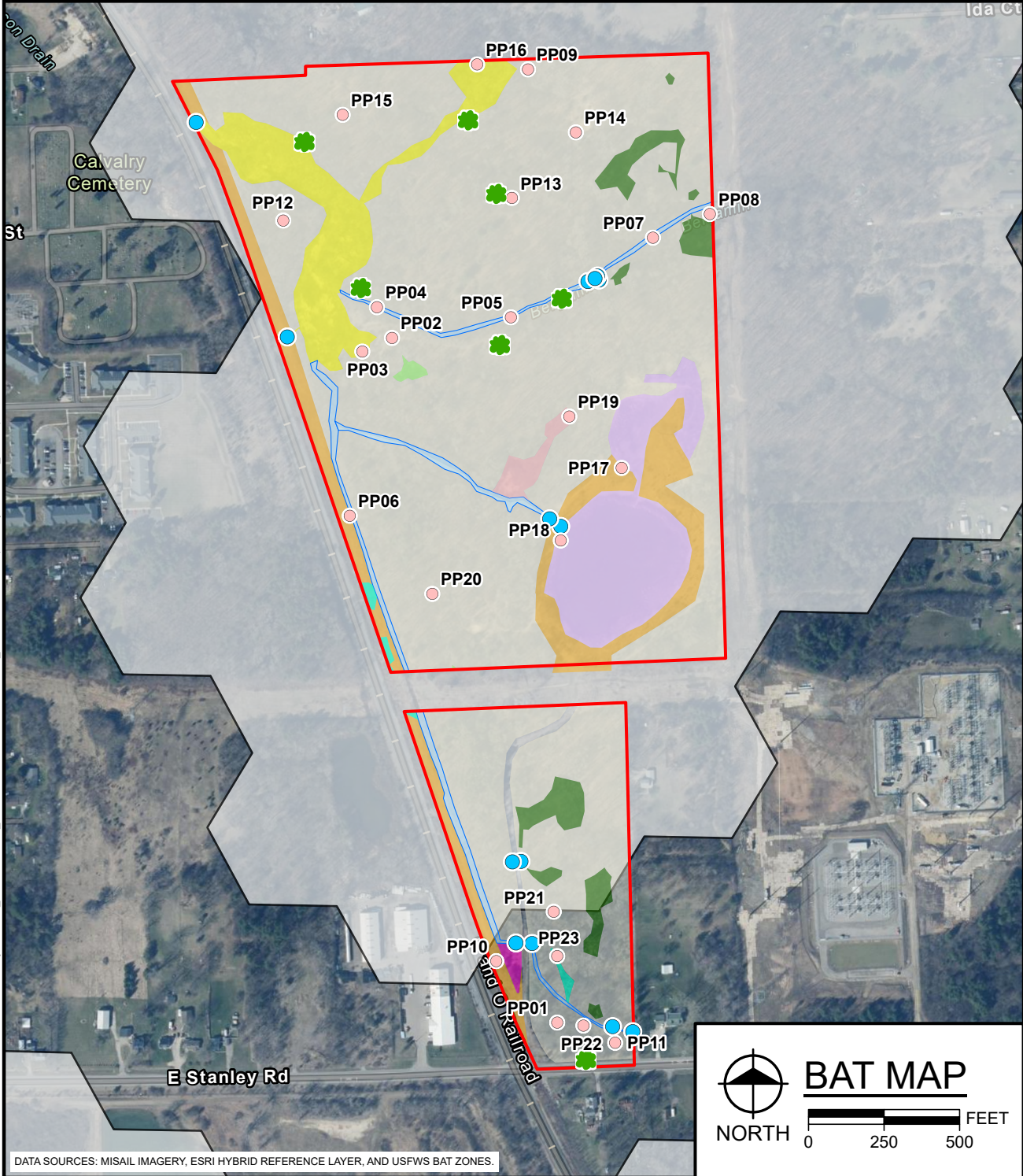
- Culvert
- Photo Point
- Tree Location
- Area of Investigation
- Michigan Bat Conservation Zone 5 (Modeled Bat Habitat)

Uplands

- Disturbed Field
- Forest
- Forest - Evergreen Dominant

Wetlands

- Emergent and Scrub-Shrub
- Forested, Emergent, Open Water
- Forested, Emergent, Scrub-shrub, Stream
- Emergent
- Forested
- Scrub-shrub
- Stream



DATA SOURCES: MISAIL IMAGERY, ESRI HYBRID REFERENCE LAYER, AND USFWS BAT ZONES.



BAT MAP

0 250 500 FEET

PLOT INFO: Z:\2025\2501089\CAD\GIS\Proj\Wetlands_TE\2501089_10_Genesee Industrial\T&E Review\TE_HabitaAssessment.aprx Layout: FIG03_Bat Map Date: 1/7/2026 12:47 PM User: crotlier

Tables

Table 1 - Summary of Listed Threatened and Endangered Species

Genesee Industrial Land, Mount Morris and Genesee Township, Genesee County, Michigan

Scientific Name	Common Name	Federal Status	State Status	Last Observed	Category	Habitat	Likelihood of Project Impacting Species (Effect Determinations)
Federal and State Listed Species:							
<i>Danaus plexippus</i>	Monarch Butterfly	PT			Insect	Open fields and rights-of-ways containing milkweed species. Monarchs rely on their obligate host plant (milkweed, primarily <i>Asclepias</i> spp.) for breeding.	No Effect - Development is unlikely to significantly impact milkweed or monarch populations due to lack of milkweed populations.
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	E	T		Mammal	Hibernates in caves and mines, swarming in surrounding wooded areas in autumn. Roosts and forages in upland and wetland forests during spring and summer. Suitable NLEB roost trees include any tree that is greater than or equal to 3 inches DBH, which contain cracks, crevices, exfoliating bark, or cavities and is within 1,000 feet of a forest/woodlot. Suitable summer roosts can include bridges (if joints, crevices, cracks, cave-like structures, etc. are present) or culverts (a minimum of 4 feet in diameter and 50 feet long) and are located below the third county tier of Michigan and within 1,000 feet of suitable forested habitat.	May Affect, with Potential to Not Likely to Adversely Affect - The AOI had species of trees known to be used by bat species for summer roosting habitat. MNFI commented that there appears to be suitable habitat within 1.5 miles of the AOI.
<i>Myotis sodalis</i>	Indiana Bat	E	E		Mammal	Roosts and forms maternity colonies under loose bark or in hollows and cavities of mature trees in the floodplain forest and adjacent savanna and upland forest. Foraging occurs primarily in areas along woodland edges, woodland clearings and over small woodland ponds. Suitable Indiana bat roost trees include any tree that is greater than or equal to 5 inches DBH, which contain cracks, crevices, exfoliating bark, or cavities and is within 1,000 feet of a forest/woodlot. Suitable summer roosts can contain bridges (if joints, crevices, cracks, cave like structures, etc. are present) or culverts (a minimum of 4 feet in diameter and 50 feet long) and are located below the third county tier of Michigan and within 1,000 feet of suitable forested habitat.	May Affect, with Potential to Not Likely to Adversely Affect - The AOI had species of trees known to be used by bat species for summer roosting habitat. MNFI commented that there appears to be suitable habitat within 1.5 miles of the AOI.
<i>Sistrurus catenatus catenatus</i>	Eastern Massasauga Rattlesnake	T	T		Reptile	A variety of wetland habitats containing: open, sunny areas intermixed with shaded areas, presumably for thermoregulation; presence of the water table near the surface for hibernation; and variable elevations between adjoining lowland and upland habitats. Habitats include bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forest. In warmer months, some snakes move to upland shrubby fields and grasslands, including pastures and hay fields.	No Effect - While the AOI contained uplands and wetlands, marginal suitable habitat was restricted to the northwestern quadrant of the AOI near the emergent/shrub wetland but was heavily degraded by dense Phragmites in the open areas that . MNFI commented that there does not appear to be suitable habitat within 1.5 miles of the AOI. The AOI falls within EMR range but is outside of Tier 1 and Tier 2 EMR habitat, as designated by the USFWS.

Notes: E=Endangered, T=Threatened, PE=Proposed Endangered, X=Extirpated

Table 2 – Plant Community Inventory

Genesee Industrial Land, Mount Morris and Genesee Township, Genesee County, Michigan

SCIENTIFIC NAME	COMMON NAME	PHYSIOGNOMY	Native STATUS	WETLAND STATUS
Wetlands				
<i>Andropogon virginicus</i>	broom-sedge	Grass	Native	FACU
<i>Asclepias incarnata</i>	swamp milkweed	Forb	Native	OBL
<i>Carex hystericina</i>	porcupine sedge	Sedge	Native	OBL
<i>Carex lacustris</i>	lakebank sedge	Sedge	Native	OBL
<i>Carex stricta</i>	uptight sedge	Sedge	Native	OBL
<i>Carya cordiformis</i>	bitternut hickory	Tree	Native	FAC
<i>Carya ovata</i>	shagbark hickory	Tree	Native	FACU
<i>Cirsium arvense</i>	Canada thistle	Forb	Non-Native	FACU
<i>Cornus amomum</i>	silky dogwood	Shrub	Native	FACW
<i>Cornus sericea</i>	red-osier	Shrub	Native	FACW
<i>Daucus carota</i>	Queen-Annes-lace	Forb	Non-Native	UPL
<i>Dulichium arundinaceum</i>	three-way sedge	Sedge	Native	OBL
<i>Equisetum arvense</i>	common horsetail	Fern	Native	FAC
<i>Euthamia caroliniana</i>	lakes flat-topped goldenrod	Forb	Native	FACW
<i>Fagus grandifolia</i>	American beech	Tree	Native	FACU
<i>Fragula alnus</i>	glossy buckthorn	Shrub	Non-Native	FAC
<i>Fraxinus pennsylvanica</i>	red ash	Tree	Native	FACW
<i>Glyceria striata</i>	fowl manna grass	Grass	Native	OBL
<i>Hackelia virginiana</i>	beggars lice	Forb	Native	FACU
<i>Juncus articulatus</i>	jointed rush	Rush	Native	OBL
<i>Juncus effusus</i>	soft-stemmed rush	Rush	Native	OBL
<i>Juncus tenuis</i>	path rush	Rush	Native	FAC
<i>Juncus torreyi</i>	Torreys rush	Rush	Native	FACW
<i>Leersia virginica</i>	white grass	Grass	Native	FACW
<i>Lonicera tatarica</i>	tartarian honeysuckle	Shrub	Non-Native	FACU
<i>Lycopus americanus</i>	common water horehound	Forb	Native	OBL
<i>Lythrum salicaria</i>	purple loosestrife	Forb	Non-Native	OBL
<i>Phalaris arundinacea</i>	reed canary grass	Grass	Non-Native	FACW
<i>Phragmites australis var. australis</i>	common reed	Grass	Non-Native	FACW
<i>Physocarpus opulifolius</i>	ninebark	Shrub	Native	FACW
<i>Poa pratensis</i>	Kentucky bluegrass	Grass	Non-Native	FACU
<i>Populus deltoides</i>	cottonwood	Tree	Native	FAC
<i>Prunella vulgaris</i>	self-heal	Forb	Native	FAC
<i>Ranunculus repens</i>	creeping buttercup	Forb	Non-Native	FAC
<i>Rhamnus cathartica</i>	common buckthorn	Tree	Non-Native	FAC
<i>Rumex crispus</i>	curly dock	Forb	Non-Native	FAC
<i>Salix amygdaloides</i>	peach-leaved willow	Tree	Native	FACW
<i>Salix discolor</i>	pussy willow	Shrub	Native	FACW
<i>Scirpus atrovirens</i>	green bulrush	Sedge	Native	OBL
<i>Scirpus pendulus</i>	rufous bulrush	Sedge	Native	OBL
<i>Solidago altissima</i>	tall goldenrod	Forb	Native	FACU
<i>Solidago gigantea</i>	late goldenrod	Forb	Native	FACW
<i>Solidago sempervirens</i>	seaside goldenrod	Forb	Non-Native	FACW
<i>Sorghastrum nutans</i>	Indian grass	Grass	Native	FACU
<i>Spiraea alba</i>	meadowsweet	Shrub	Native	FACW
<i>Symphotrichum lateriflorum</i>	calico aster	Forb	Native	FAC
<i>Thelypteris palustris</i>	marsh fern	Fern	Native	FACW
<i>Toxicodendron radicans</i>	poison-ivy	Vine	Native	FAC
<i>Typha angustifolia</i>	narrow-leaved cat-tail	Forb	Non-Native	OBL
<i>Ulmus americana</i>	American elm	Tree	Native	FACW
<i>Verbena hastata</i>	blue vervain	Forb	Native	FACW

Table 2 – Plant Community Inventory

Genesee Industrial Land, Mount Morris and Genesee Township, Genesee County, Michigan

SCIENTIFIC NAME	COMMON NAME	PHYSIOGNOMY	Native STATUS	WETLAND STATUS
<i>Vitis riparia</i>	river-bank grape	Vine	Native	FAC
Upland Forest				
<i>Acer platanoides</i>	norway maple	Tree	Non-Native	UPL
<i>Acer saccharum</i>	sugar maple	Tree	Native	FACU
<i>Andropogon virginicus</i>	broom-sedge	Grass	Native	FACU
<i>Anemone virginiana</i>	thimbleweed	Forb	Native	FACU
<i>Berberis vulgaris</i>	common barberry	Shrub	Non-Native	FACU
<i>Betula papyrifera</i>	paper birch	Tree	Native	FACU
<i>Bromus inermis</i>	smooth brome	Grass	Non-Native	UPL
<i>Carex pensylvanica</i>	sedge	Sedge	Native	UPL
<i>Carpinus caroliniana</i>	blue-beech	Tree	Native	FAC
<i>Carya cordiformis</i>	bitternut hickory	Tree	Native	FAC
<i>Carya ovata</i>	shagbark hickory	Tree	Native	FACU
<i>Celastrus orbiculatus</i>	oriental bittersweet	Vine	Non-Native	UPL
<i>Cichorium intybus</i>	chicory	Forb	Non-Native	FACU
<i>Cornus foemina</i>	gray dogwood	Shrub	Native	FAC
<i>Daucus carota</i>	queen-annes-lace	Forb	Non-Native	UPL
<i>Elaeagnus umbellata</i>	autumn-olive	Shrub	Non-Native	FACU
<i>Equisetum arvense</i>	common horsetail	Fern	Native	FAC
<i>Fagus grandifolia</i>	american beech	Tree	Native	FACU
<i>Fragaria vesca</i>	woodland strawberry	Forb	Native	FACU
<i>Fragaria virginiana</i>	wild strawberry	Forb	Native	FACU
<i>Frangula alnus</i>	glossy buckthorn	Shrub	Non-Native	FAC
<i>Glechoma hederacea</i>	ground-ivy	Forb	Non-Native	FACU
<i>Gleditsia triacanthos</i>	honey locust	Tree	Native	FAC
<i>Hackelia virginiana</i>	beggars lice	Forb	Native	FACU
<i>Juglans nigra</i>	black walnut	Tree	Native	FACU
<i>Juncus tenuis</i>	path rush	Rush	Native	FAC
<i>Juniperus virginiana</i>	red-cedar	Tree	Native	FACU
<i>Lespedeza violacea</i>	bush-clover	Forb	Native	UPL
<i>Ligustrum obtusifolium</i>	border privet	Shrub	Non-Native	FACU
<i>Lonicera maackii</i>	amur honeysuckle	Shrub	Non-Native	UPL
<i>Lonicera morrowii</i>	morrow honeysuckle	Shrub	Non-Native	FACU
<i>Lonicera tatarica</i>	tartarian honeysuckle	Shrub	Non-Native	FACU
<i>Melilotus officinalis</i>	yellow sweet-clover	Forb	Non-Native	FACU
<i>Phragmites australis var. australis</i>	reed	Grass	Non-Native	FACW
<i>Pinus strobus</i>	white pine	Tree	Native	FACU
<i>Pinus sylvestris</i>	scotch pine	Tree	Non-Native	FACU
<i>Populus deltoides</i>	cottonwood	Tree	Native	FAC
<i>Populus grandidentata</i>	big-tooth aspen	Tree	Native	FACU
<i>Populus tremuloides</i>	quaking aspen	Tree	Native	FAC
<i>Prunella vulgaris</i>	self-heal	Forb	Native	FAC
<i>Prunus serotina</i>	wild black cherry	Tree	Native	FACU
<i>Quercus alba</i>	white oak	Tree	Native	FACU
<i>Quercus muehlenbergii</i>	chinquapin oak	Tree	Native	FACU
<i>Quercus palustris</i>	pin oak	Tree	Native	FACW
<i>Quercus rubra</i>	red oak	Tree	Native	FACU
<i>Quercus velutina</i>	black oak	Tree	Native	UPL
<i>Rhamnus cathartica</i>	common buckthorn	Tree	Non-Native	FAC
<i>Rhus typhina</i>	staghorn sumac	Shrub	Native	FACU
<i>Rosa multiflora</i>	multiflora rose	Shrub	Non-Native	FACU

Table 2 – Plant Community Inventory

Genesee Industrial Land, Mount Morris and Genesee Township, Genesee County, Michigan

SCIENTIFIC NAME	COMMON NAME	PHYSIOGNOMY	NATIVE STATUS	WETLAND STATUS
<i>Rubus allegheniensis</i>	common blackberry	Shrub	Native	FACU
<i>Rubus occidentalis</i>	black raspberry	Shrub	Native	UPL
<i>Solidago gigantea</i>	late goldenrod	Forb	Native	FACW
<i>Sorghastrum nutans</i>	indian grass	Grass	Native	FACU
<i>Symphotrichum lateriflorum</i>	calico aster	Forb	Native	FAC
<i>Symphotrichum pilosum</i>	hairy aster	Forb	Native	FACU
<i>Ulmus americana</i>	american elm	Tree	Native	FACW
<i>Viburnum opulus</i>	european highbush-cranberry	Shrub	Non-Native	FACW
<i>Vitis riparia</i>	river-bank grape	Vine	Native	FAC
<i>Zanthoxylum americanum</i>	prickly-ash	Shrub	Native	FACU
Upland Disturbed Fields				
<i>Cornus foemina</i>	gray dogwood	Shrub	Native	FAC
<i>Cornus sericea</i>	red-osier	Shrub	Native	FACW
<i>Daucus carota</i>	queen-annes-lace	Forb	Non-Native	UPL
<i>Elaeagnus umbellata</i>	autumn-olive	Shrub	Non-Native	FACU
<i>Frangula alnus</i>	glossy buckthorn	Shrub	Non-Native	FAC
<i>Juglans cinerea</i>	butternut	Tree	Native	FACU
<i>Lonicera tatarica</i>	tartarian honeysuckle	Shrub	Non-Native	FACU
<i>Monarda fistulosa</i>	wild-bergamot	Forb	Native	FACU
<i>Pinus sylvestris</i>	scotch pine	Tree	Non-Native	FACU
<i>Phragmites australis var. australis</i>	reed	Grass	Non-Native	FACW
<i>Plantago lanceolata</i>	english plantain	Forb	Non-Native	FACU
<i>Plantago major</i>	common plantain	Forb	Non-Native	FACU
<i>Poa pratensis</i>	kentucky bluegrass	Grass	Non-Native	FACU
<i>Populus deltoides</i>	cottonwood	Tree	Native	FAC
<i>Pteridium aquilinum</i>	bracken fern	Fern	Native	FACU
<i>Rhamnus cathartica</i>	common buckthorn	Tree	Non-Native	FAC
<i>Rubus allegheniensis</i>	common blackberry	Shrub	Native	FACU
<i>Rubus occidentalis</i>	black raspberry	Shrub	Native	UPL
<i>Salix discolor</i>	pussy willow	Shrub	Native	FACW
<i>Solidago altissima</i>	tall goldenrod	Forb	Native	FACU
<i>Solidago canadensis</i>	canada goldenrod	Forb	Native	FACU
<i>Spiraea alba</i>	meadowsweet	Shrub	Native	FACW
<i>Symphotrichum pilosum</i>	hairy aster	Forb	Native	FACU
<i>Verbascum blattaria</i>	moth mullein	Forb	Non-Native	FACU
Notes: OBL = Obligate wetland, FACW = Facultative wetland, FAC = Facultative, FACU = Facultative upland, UPL=Upland				

Appendix 1

Chelsea Trottier
Fishbeck
31440 Northwestern Hwy
Suite 250
Farmington Hills, MI 48334

November 3, 2025

Re: Rare Species Review #5646 – 81.5 acres in Genesee Township and City of Mount Morris, Genesee County, MI

Hello:

The location for the proposed project was checked against known localities for rare species and unique natural features, which are recorded in the Michigan Natural Features Inventory (MNFI) natural heritage database. This continuously updated database is a comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features. The absence of records in the database for a particular site may mean that the site has not been surveyed. The only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "a person shall not take, possess, transport, ...fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an Endangered Species Permit from the Michigan Department of Natural Resources (MDNR), Wildlife Division. Responsibility to protect endangered and threatened species is not limited to the lists below. Other species may be present that have not been recorded in the database.



MSU EXTENSION

Michigan Natural
Features Inventory

PO Box 13036
Lansing MI 48901

(517) 284-6200
Fax (517) 373-9566

mnfi.anr.msu.edu

There are no known occurrences of at-risk species and/or rare natural communities within 1.5 miles of the project site and it is highly unlikely that adverse impacts will occur. This response reflects a desktop review of the database and MNFI cannot fully evaluate this project without visiting the area. MNFI offers several levels of [Rare Species Reviews](#), including field surveys which I would be happy to discuss with you.

Sincerely,

Nicolette Sexton

Nicolette Sexton
Environmental Review Assistant
Michigan Natural Features Inventory

Comments for Rare Species Review #5646:

It is important to note that it is the applicant's responsibility to comply with both state and federal threatened and endangered species legislation. Therefore, if a state listed species occurs at a project site, and you think you need an endangered species permit, please contact Amy Bleisch at DNR-Wildlife Division, DNR-StateTEPermit@michigan.gov and review details on the [MDNR's Threatened/Endangered Species](#) resource page. If a federally listed species is involved and, you think a permit is needed, please contact Jessica Pruden, U.S. Fish and Wildlife Service, East Lansing office, 517-351-8316, or Jessica_Pruden@fws.gov.

NOTE: Special concern species and natural communities are not protected under endangered species legislation, but efforts should be taken to minimize any or all impacts. Please consult MNFI's [Rare Species pages](#) for additional information on Michigan's rare plants and animals.

Section 7 Comments for Rare Species Review #5646

81.5 acres in Genesee Township and City of Mount Morris, Genesee County, MI

Chelsea Trottier

Fishbeck

31440 Northwestern Hwy

Suite 250

Farmington Hills, MI 48334

November 3, 2025

For projects involving Federal funding or a federal agency authorization

The following information is provided to assist you with Section 7 compliance of the Federal Endangered Species Act (ESA). The ESA directs all Federal agencies "to work to conserve endangered and threatened species. Section 7 of the ESA, called "Interagency Cooperation," is the means by which Federal agencies ensure their actions, including those they authorize or fund, do not jeopardize the existence of any listed species."

The project falls within the range of the following federally listed/proposed/candidate species which have been identified by the U.S. Fish and Wildlife Service (USFWS) to occur in Genesee County, Michigan:

Federally endangered

Indiana bat – there does appear to be suitable habitat within 1.5 miles of the project. Indiana bats (*Myotis sodalis*) are found only in the eastern United States and are typically confined to the southern three tiers of counties in Michigan. Indiana bats that summer in Michigan winter in caves in Indiana and Kentucky. This species forms colonies and forages in riparian and mature floodplain habitats. Nursery roost sites are usually located under loose bark or in hollows of trees near riparian habitat. Indiana bats typically avoid houses or other artificial structures and typically roost underneath loose bark of dead elm, maple and ash trees. Other dead trees used include oak, hickory and cottonwood. Foraging typically occurs over slow-moving, wooded streams and rivers as well as in the canopy of mature trees. Movements may also extend into the outer edge of the floodplain and to nearby solitary trees. A summer colony's foraging area usually encompasses a stretch of stream over a half-mile in length. Upland areas isolated from floodplains and non-wooded streams are generally avoided.

Management and Conservation: Every March, the USFWS publishes [survey guidelines](#) to assist project proponents (both Federal and non-Federal) with conservation planning for Federally listed bats in Michigan. We strongly encourage project managers and their designated representatives to use the U.S. Fish and Wildlife Service (USFWS) online planning tool [Information for Planning and Consultation](#) (IPaC) to evaluate potential effects of proposed activities on listed bats and other Federally listed species in Michigan. Projects that complete consultation or coordination through IPaC automatically adhere to the recommendations provided in these guidelines and are not required to implement any additional conservation measures for listed bats.

Poweshiek skipperling – there does not appear to be suitable habitat within 1.5 miles of the project. The state threatened and federally endangered poweshiek skipperling (*Oarisma poweshiek*) has been known to occur near the project area. In Michigan, the poweshiek skipperling inhabits alkaline wetlands known as fens. This habitat is characterized by scattered tamaracks, poison sumac, and dogwood clones with a ground cover of sedges and other herbaceous species. The poweshiek skipperling has a single generation each year. Egg laying is believed to occur on sedges and rushes. Eggs are laid sometime around early July; larvae (caterpillar stage) hibernate through the winter on the underside of the blade of grass on which they have been feeding on. In early April, they resume feeding. Adult flight dates occur late June through the first three weeks of July.

Management and Conservation: the primary threat to the continued survival of this species is habitat loss and modification. Many of the wetland complexes occupied currently have been altered or drained for agriculture or

development. Wetland alteration also can lead to invasion by exotic plant species such as glossy buckthorn (*Rhamnus frangula*), purple loosestrife (*Lythrum salicaria*), common buckthorn (*Rhamnus cathartica*), and the common reed (*Phragmites australis*). In addition, landscape-scale processes that may be important for maintaining suitable poweshiek habitat and/or creating new habitat, such as wildfires, fluctuations in hydrologic regimes, and flooding from beaver (*Castor canadensis*) activity, have been virtually eliminated or altered throughout the species' range.

Northern long-eared bat – Northern long-eared bat (*M. septentrionalis*) numbers in the northeast US have declined up to 99 percent. Loss or degradation of summer habitat, wind turbines, disturbance to hibernacula, predation, and pesticides have contributed to declines in Northern long-eared bat populations. However, no other threat has been as severe to the decline as White-nose Syndrome (WNS). WNS is a fungus that thrives in the cold, damp conditions in caves and mines where bats hibernate. The disease is believed to disrupt the hibernation cycle by causing bats to repeatedly awake thereby depleting vital energy reserves. This species was federally listed in May 2015 primarily due to the threat from WNS.

Although no known hibernacula or roost trees have been documented within 1.5 miles of the project site, this activity occurs within the designated WNS zone (i.e., within 150 miles of positive counties/districts impacted by WNS). Also, there does appear to be suitable habitat within 1.5 miles of the project.

Also called northern bat or northern myotis, this bat is distinguished from other *Myotis* species by its long ears. In Michigan, northern long-eared bats hibernate in abandoned mines and caves in the Upper Peninsula; they also commonly hibernate in the Tippy Dam spillway in Manistee County. This species is a regional migrant with migratory distance largely determined by locations of suitable hibernacula sites.

Northern long-eared bats typically roost and forage in forested areas. During the summer, these bats roost singly or in colonies underneath bark, in cavities or in crevices of both living and dead trees. Roost trees are selected based on the suitability to retain bark or provide cavities or crevices. Common roost trees in southern Lower Michigan include species of ash, elm and maple. Foraging occurs primarily in areas along woodland edges, woodland clearings and over small woodland ponds. Moths, beetles, and small flies are common food items. Like all temperate bats this species typically produces only 1-2 young per year.

Management and Conservation: Every March, the USFWS publishes [survey guidelines](#) to assist project proponents (both Federal and non-Federal) with conservation planning for Federally listed bats in Michigan. We strongly encourage project managers and their designated representatives to use the U.S. Fish and Wildlife Service (USFWS) online planning tool [Information for Planning and Consultation](#) (IPaC) to evaluate potential effects of proposed activities on listed bats and other Federally listed species in Michigan. Projects that complete consultation or coordination through IPaC automatically adhere to the recommendations provided in these guidelines and are not required to implement any additional conservation measures for listed bats.

Federally threatened

Eastern massasauga rattlesnake (EMR) – there does not appear to be suitable habitat within 1.5 miles of the project. The project falls outside Tier 1/Tier 2 EMR habitat as designated by the U.S. Fish & Wildlife Service (USFWS). The federally threatened and state special concern Eastern massasauga rattlesnake (*Sistrurus catenatus*) is Michigan's only venomous snake and is found in a variety of wetland habitats including bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forests. Eastern massasaugas occur throughout the Lower Peninsula but are not found in the Upper Peninsula. Populations in southern Michigan are typically associated with open wetlands, particularly prairie fens, while those in northern Michigan are better known from lowland coniferous forests, such as cedar swamps. These snakes normally overwinter in crayfish or small mammal burrows often close to the groundwater level and emerge in spring as water levels rise. During late spring, these snakes move into adjacent uplands they spend the warmer months foraging in shrubby fields and grasslands in search of mice and voles, their favorite food.

Often described as “shy and sluggish”, these snakes avoid human confrontation and are not prone to strike, preferring to leave the area when they are threatened. However, like any wild animal, they will protect themselves from anything

they see as a potential predator. Their short fangs can easily puncture skin and they do possess potent venom. Like many snakes, the first human reaction may be to kill the snake, but it is important to remember that all snakes play vital roles in the ecosystem. Some may eat harmful insects. Others like the massasauga consider rodents a delicacy and help control their population. Snakes are also a part of a larger food web and can provide food to eagles, herons, and several mammals.

Management and Conservation: protection of extant populations and suitable wetland and adjacent upland habitats is crucial for successful conservation of the Eastern Massasauga. Maintaining or restoring open habitat conditions is critical for this species. Fragmentation of suitable wetland-upland habitat complexes by roads or other barriers should be avoided or minimized. Land management practices such as timber harvesting, mowing, disking or prescribed burning should be conducted in such a manner so as to minimize the potential for adverse impacts to massasaugas (e.g., conducting management activities during the snakes' inactive season (November through early March) or on days when snakes are less likely to be active on the surface during the active season). Protecting suitable hibernation sites also is critical.

USFWS Section 7 Consultation Technical Assistance can be found at:

<https://www.fws.gov/service/esa-section-7-consultation>

The website offers step-by-step instructions to guide you through the Section 7 consultation process with prepared templates for documenting "no effect" as well as requesting concurrence on "may affect, but not likely to adversely affect" determinations.

Please let us know if you have questions.

Nicolette Sexton
Environmental Review Assistant
Michigan Natural Features Inventory

Appendix 2

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

Genesee County, Michigan



Local office

Michigan Ecological Services Field Office

☎ (517) 351-2555

📠 (517) 351-1443

2651 Coolidge Road Suite 101

East Lansing, MI 48823-6360

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 species¹ 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 Fisheries²).

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. IPaC only shows species that are regulated by USFWS (see FAQ).
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> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> Wherever found This species only needs to be considered if the following condition applies: <ul style="list-style-type: none">• For all Projects: Project is within EMR Range No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Proposed Threatened

Wherever found

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/9743>

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.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

Bald Eagle *Haliaeetus leucocephalus*

Breeds Dec 1 to Aug 31

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>

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 "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "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.

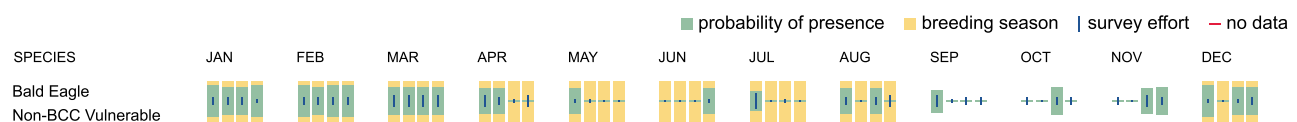
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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 & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence 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 an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 line or no data line (red horizontal) 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 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 and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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.

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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 $0.05/0.25 = 0.2$.

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.

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.

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.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

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:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
<p>Bald Eagle <i>Haliaeetus leucocephalus</i></p> <p>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.</p> <p>https://ecos.fws.gov/ecp/species/1626</p>	Breeds Dec 1 to Aug 31
<p>Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9399</p>	Breeds May 15 to Oct 10
<p>Bobolink <i>Dolichonyx oryzivorus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 20 to Jul 31
<p>Canada Warbler <i>Cardellina canadensis</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 20 to Aug 10
<p>Chimney Swift <i>Chaetura pelagica</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Mar 15 to Aug 25
<p>Golden-winged Warbler <i>Vermivora chrysoptera</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/8745</p>	Breeds May 1 to Jul 20
<p>Lesser Yellowlegs <i>Tringa flavipes</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Pectoral Sandpiper <i>Calidris melanotos</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Sep 10
<p>Rusty Blackbird <i>Euphagus carolinus</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Semipalmated Sandpiper <i>Calidris pusilla</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Wood Thrush <i>Hylocichla mustelina</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Aug 31

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 "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "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.

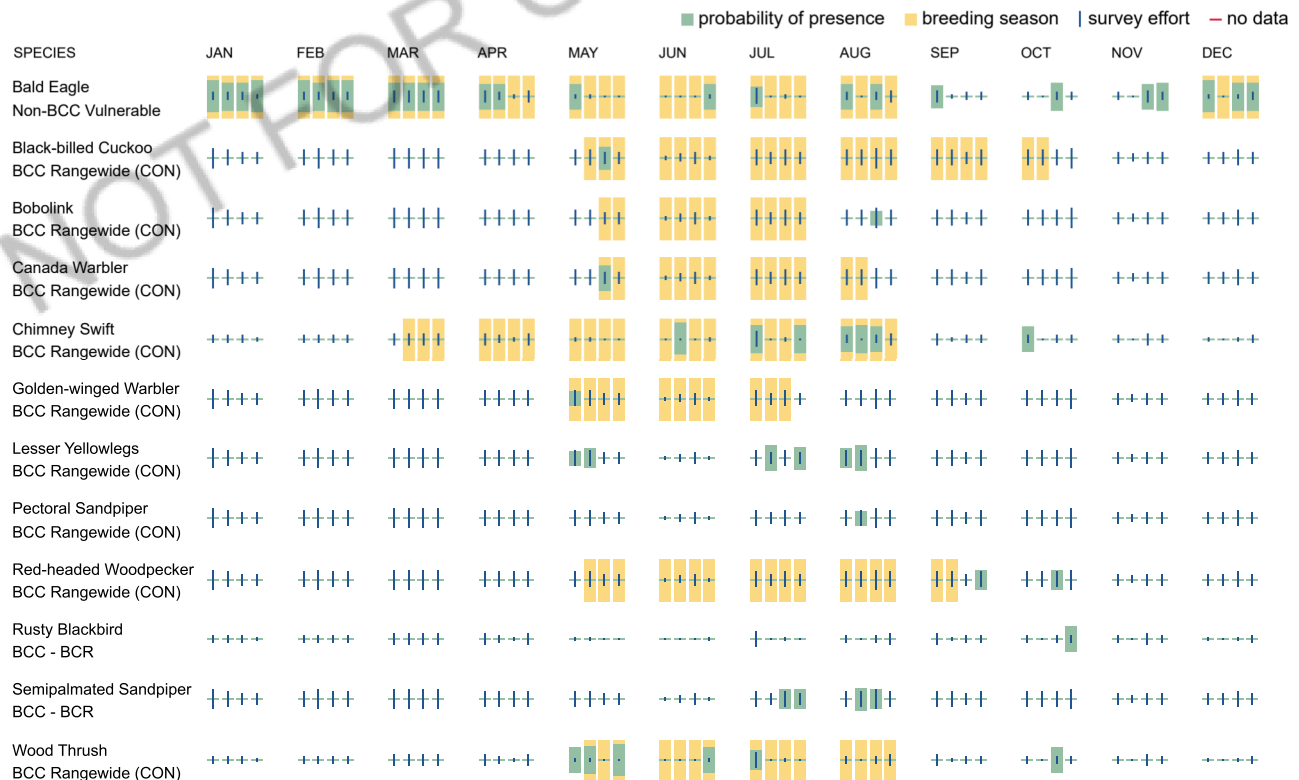
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Migratory Bird FAQs

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

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) 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 list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

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) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection 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, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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 to 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, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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 Rangelwide" 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 [Bald and Golden Eagle Protection 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 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 BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

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.

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 look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 does not represent all birds present in your project area. 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 and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and

minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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 $0.05/0.25 = 0.2$.

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.

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.

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.

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 (NWI)

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

[PSS1C](#)

FRESHWATER POND

[PUBGx](#)

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

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

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.

NOT FOR CONSULTATION

Appendix 3



PP01, Facing Northeast



PP01, Facing Northwest



PP01, Facing Southeast



PP01, Facing Southwest

Upland Forest with Dense Shrub Understory



PP02, Facing East



PP02, Facing North



PP02, Facing South



PP02, Facing West

Shrub Opening at Edge of Upland Forest with Dirt Road



PP03, Facing Northeast



PP03, Facing Northwest



PP03, Facing Southeast



PP03, Facing Southwest

Emergent Wetland



PP04, Facing Southeast



PP04, Facing Southwest



PP05, Facing Northeast



PP05, Facing Southwest

Costello Drain with Dense Shrub Wetland Fringes



PP06, Facing East



PP06, Facing North



PP06, Facing South



PP06, Facing West

Upland Shrub and Forest Fringe of a Stream (Top) and Upland Disturbed Field (Bottom)



PP07, Facing Northeast



PP07, Facing Northwest



PP07, Facing Southeast



PP07, Facing Southwest

Upland Forest with Dense Shrub Understory at Top of Costello Drain (Right)



PP08, Facing East



PP08, Facing North



PP08, Facing South



PP08, Facing West

Eastern Edge of AOI with Forest and Herbaceous Utility Corridor



PP09, Facing East



PP09, Facing North



PP09, Facing South



PP09, Facing West

Upland Forest with Dense Shrub Understory



PP10, Facing Northwest



PP10, Facing Southeast



PP11, Facing East



PP11, Facing North

Upland Disturbed Field and Dirt Road (Top) and Upland Forest with Shrub Understory



PP12, Facing East



PP12, Facing North



PP12, Facing South



PP12, Facing West

Upland Forest with Dense Shrub Understory



PP13, Facing Northeast



PP13, Facing Northwest



PP13, Facing Southeast



PP13, Facing Southwest

Upland Forest with Dense Shrub Understory



PP14, Facing East



PP14, Facing North



PP14, Facing South



PP14, Facing West

Dirt Roads through the Upland Forest and Shrub Understory



PP15, Facing East



PP15, Facing North



PP15, Facing South



PP15, Facing West

Upland Forest with Dense Shrub Understory



PP16, Facing East



PP16, Facing North



PP16, Facing South



PP16, Facing West

Forested Wetland



PP17, Facing Northeast



PP17, Facing Northwest



PP17, Facing South



PP17, Facing West

Emergent Wetland



PP18, Facing East



PP19, Facing Northeast



PP19, Facing Southwest



PP20, Facing East

Open Water (Top Left) and Upland Forest with Dense Shrub Understory



PP20, Facing North



PP20, Facing South



PP20, Facing West

Upland Forest with Shrub Understory



PP21, Facing East



PP21, Facing North



PP21, Facing South



PP21, Facing West

Upland Forest with Dense Shrub Understory



PP22, Facing East



PP22, Facing North



PP22, Facing South



PP22, Facing West

Upland Forest with Dense Shrub Understory



PP23, Facing North



PP23, Facing South

Sparsely Vegetated Linear Emergent Wetland