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Threatened and Endangered Species Habitat Assessment

Fiero Industrial Land
Pontiac, Oakland County, Michigan

Prepared For:

Detroit Regional Partnership, RACER Trust, and RACER Properties LLC

Project No. 2501089
March 2026

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Threatened and Endangered Species Habitat Assessment
Fiero Industrial Land
Pontiac, Oakland County, Michigan

Parcel No. 64-14-20-201-004

Prepared for:
Detroit Regional Partnership
Detroit, Michigan

RACER Trust
RACER Properties LLC
Detroit, Michigan

March 2, 2026
Project No. 2501089

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List of Abbreviations/Acronyms

AOI	Area of Investigation
BMP	Best Management Practice
EMR	Eastern Massasauga Rattlesnake
ESA	Endangered Species Act
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
IPaC	Information for Planning and Consultation
MDNR	Michigan Department of Natural Resources
MNFI	Michigan Natural Features Inventory
NLEB	Northern Long-Ear Bat
NREPA	Natural Resources and Environmental Protection Act
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 Fiero 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 10, 2025, Fishbeck conducted a meander survey of approximately 18.2 acres of vacant land on Parcel No. 64-14-20-201-004 (the Area of Investigation [AOI]) in the City of Pontiac, Oakland County, Michigan, for the presence of T&E species' habitat. The AOI is in Section 20, Township 3 North, Range 10 East. Residential streets bind the AOI to the south and west, and industrial properties are to the north and east. The Location Map is included as Figure 1.

The T&E Species evaluation included a rare species review by the Michigan Natural Features Inventory (MNFI) and a review of the USFWS Information for Planning and Consultation (IPaC) website. Fishbeck staff also inspected the AOI in the field to identify plant communities and habitats, and compared this data with the required habitats for the listed species identified by the MNFI and USFWS.

Database Review

The 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 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 four state-listed T&E species have known occurrences recorded within 1.5 miles of the AOI: peregrine falcon (*Falco peregrinus*), wavy-rayed lampmussel (*Lampsilis fasciola*), rayed bean mussel (*Paetulonio fabalis*), and bastard pennyroyal (*Trichostema dichotomum*). The MNFI advised that the documented occurrences were historical or far removed from the AOI and are of no concern.

The Michigan designation of "Special Concern" indicates that a species is declining or relict in the state. While not protected by law, the MNFI recommends efforts to minimize impacts on these species. MNFI advised that four special concern species had documented occurrences within 1.5 miles of the AOI: hairy angelica (*Angelica venenose*), rainbow (*Cambarunio iris*), creek heelsplitter (*Lasmigona compressa*), and Clinton's bulrush (*Trichophorum clintonii*). These species are not discussed further because they are not legally protected, and the MNFI advises that the documented occurrences are historical and of no concern.

Species Listed by the USFWS

The USFWS listed four federally protected species and two proposed species for listing that have the potential to occur within the AOI: Indiana bat (*Myotis sodalis*), Eastern massasauga rattle snake (EMR) (*Sistrurus catenatus catenatus*), rayed bean mussel, salamander mussel (*Simpsonaias ambigua*), snuffbox mussel (*Epioblasma triquetra*), and monarch butterfly (*Danaus Plexippus*).

The MNFI provided comments on the Indiana bat, Northern long-eared bat (NLEB) (*Myotis septentrionalis*), Poweshiek skipperling (*Oarsima Poweshiek*), snuffbox mussel, rayed bean mussel, Eastern prairie fringed orchid (*Platanthera leucophaea*), 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, NLEB, snuffbox mussel, and rayed bean mussel.

State and Federal Regulations

State-listed T&E species are protected under Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act (NREPA). Section 36505 of Part 324 states that "… a person shall not take, possess, transport, import, export, process, sell, offer for sale, buy, or offer to buy" … "any species of fish, plants, or wildlife" provided in Section 324.36505(1)(a)-(d) except as allowed by that Part. The MDNR oversees compliance with Part 365 of the NREPA.

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 to characterize the plant communities in the AOI. The AOI topography was relatively flat with a slight slope down from the west to the east half of the property. There was an area that was a significantly lower elevation that contained evergreen trees and horned sumacs along the south border. The entire AOI consisted of a paved or gravel substrate, with herbaceous plants growing in cracks and crevices. There were a few fields without concrete/gravel that had vegetative cover and consisted primarily of nonnative

weedy species. Eastern cottonwoods (*Populus deltoides*), an early-successional species, were observed along the east fence line. A planted tree line of Scotch pine (*Pinus sylvestris*) was observed along the south and west, with occasional other deciduous and evergreen tree species. There was also a fenced-in area along the southern boundary that had scotch pine, common juniper (*Juniperus virginiana*), and staghorn sumac (*Rhus typhina*). See photo PP07, Facing East (in Appendix 3). Other species dominant throughout the AOI consisted of various grasses (*Poa* species [sp.], *Lolium perenne*, and *Bromus inermis*), Queen-Anne's-Lace (*Daucus carota*), tall goldenrod (*Solidago altissima*), and spotted knapweed (*Centaurea stoebe*). Of the 43 species observed, 16 were native, 26 were nonnative, and one plant was not identified to species and ranged from native to nonnative.

The approximate extent of the land cover types is noted on Figure 2. Representative photographs of the AOI communities are included as Appendix 3.

As plant species were generally consistent across the AOI regardless of land cover type, Table 2 provides a comprehensive inventory of the observed plant species. 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.

Potential Habitat for Threatened and Endangered Species

The AOI was observed to have less than 10 cottonwood trees with a diameter at breast height greater than 3 inches along the eastern fence line. Protected bat species use cottonwoods; however, the trees are not within 1,000 feet of a forest. Due to the low number of trees and their distance from a forest, these trees are unlikely to serve as summer roosting habitat for bats.

Common milkweed (*Asclepias syriaca*) was observed as a single plant in the AOI, unlikely to be used by monarch butterflies.

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 1.2 miles away to the southeast.

Wildlife Observations

Wildlife species observed in the AOI included a white-tailed deer (*Odocoileus virginianus*) and a mourning dove (*Zenaida macroura*).

Conclusions

The AOI is predominantly a concrete and gravel substrate, with occasional disturbed areas containing nonnative, invasive plants and trees along the perimeter. The AOI generally contains many weedy and nonnative species. 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 all T&E species.

While No Effect is concluded for the Indiana bat, the following Best Management Practices (BMPs) could be implemented:

- For trees larger than 3 inches diameter at breast height, conduct tree-clearing activities from October 1 through April 14. Do not clear trees greater than 3 inches diameter at breast height from April 15 through September 30.
- 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.

Figures

NORTH

LOCATION MAP

0 500 1,000 FEET

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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.

Fiero Industrial Land

824 Saint Clair Street, Pontiac, Oakland County, Michigan

Threatened and Endangered Species Habitat Assessment

PROJECT NO.
2501089

FIGURE NO.
1

PLOT INFO: Z:\2025\2501089\CAD\GIS\Proj\Wetlands_TE\2501089.09_Fiero Industrial\T&E Review\TE_HabitatAssessment.aprx Layout: FIG01_Location Map Date: 1/7/2026 9:11 AM User: ctrottier

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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.

Fiero Industrial Land

824 Saint Clair Street, Pontiac, Oakland County, Michigan

Threatened and Endangered Species Habitat Assessment

PROJECT NO.
2501089

FIGURE NO.
2

PLOT INFO: Z:\2025\2501089\CAD\GIS\ProjWetlands_TE\2501089.09_Fiero Industrial\T&E Review\TE_HabitatAssessment.aprx Layout: FIG02_Site Map Date: 1/7/2026 9:11 AM User: ctrotier

Tables

Table 1 - Summary of Listed Threatened and Endangered Species
Fiero Industrial Land, Pontiac, Oakland 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:							
Danaus plexippus	Monarch Butterfly	PT			Insect	Open fields and rights-of-ways containing milkweed species. Monarchs rely on their obligate host plant (milkweed, primarily *Asclepias* spp.) for breeding.	**No Effect -** Development is unlikely to significantly impact milkweed or monarch populations due to lack of significant milkweed populations.
Epioblasma triquetra	Snuffbox	E	E		Mussel	Small to medium-sized creeks in areas with a swift current, and some larger rivers with sand, gravel and cobble substrate.	**No Effect** - Suitable habitat was not observed within the AOI.
Falco peregrinus	Peregrine falcon		T	2022	Bird	Historically this bird nested on cliffs but will utilize man-made buildings in urban environments.	**No Effect** - Suitable habitat was not observed within the AOI.
Lampsilis fasciola	Wavyrayed Lampmussel		T	1978	Mussel	Small-medium sized shallow streams, in and near riffles, with good current and sand and/or gravel substrate.	**No Effect** - Suitable habitat was not observed within the AOI.
Myotis sodalis	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.	**No Effect** - MNFI commented that there appears to be suitable habitat within 1.5 miles of the AOI. The AOI had minimal amount of trees known to be used by bat species for summer roosting habitat along the eastern fence line that were more than 1,000 feet from a forest.
Paetulunio fabalis	Rayed Bean	E	E	pre-1935	Mussel	Small, shallow rivers, in and near riffles and often near aquatic vegetation. It also occurs along shallow, wave-swept shores of lakes. Found in the Clinton River.	**No Effect** - Suitable habitat was not observed within the AOI.
Simpsonaias ambigua	Salamander Mussel	PE	E		Mussel	The species can be found in medium to large rivers and lakes in silt or sand under flat stones.	**No Effect** - Suitable habitat was not observed within the AOI.
Sistrurus catenatus catenatus	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** - Suitable habitat was not observed within the AOI.
Trichostema dichotomum	Bastard Pennyroyal		T	1916	Plant	Oak savannas.	**No Effect** - Suitable habitat was not observed within the AOI.

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

Table 2 – Plant Community Inventory

Fiero Industrial Land, Pontiac, Oakland County, Michigan

SCIENTIFIC NAME	COMMON NAME	PHYSIOGNOMY	Native STATUS	WETLAND STATUS
Acer negundo	box-elder	Tree	Native	FAC
Acer platanoides	Norway maple	Tree	Non-Native	UPL
Ailanthus altissima	tree-of-heaven	Tree	Non-Native	UPL
Asclepias syriaca	common milkweed	Forb	Native	UPL
Bromus inermis	smooth brome	Grass	Non-Native	UPL
Catalpa speciosa	Northern catalpa	Tree	Non-Native	FACU
Centaurea stoebe	spotted knapweed	Forb	Non-Native	UPL
Cichorium intybus	chicory	Forb	Non-Native	FACU
Cirsium arvense	Canada thistle	Forb	Non-Native	FACU
Cirsium vulgare	bull thistle	Forb	Non-Native	FACU
Dactylis glomerata	orchard grass	Grass	Non-Native	FACU
Daucus carota	Aueen-Anne's-lace	Forb	Non-Native	UPL
Elaeagnus umbellata	autumn-olive	Shrub	Non-Native	FACU
Euthamia graminifolia	grass-leaved goldenrod	Forb	Native	FAC
Festuca species	fescue	Grass	Varies	FACU-UPL
Frangula alnus	glossy buckthorn	Shrub	Non-Native	FACW
Gleditsia triacanthos	honey locust	Tree	Native	FAC
Hackelia virginiana	beggar's lice	Forb	Native	FACU
Juglans nigra	black walnut	Tree	Native	FACU
Juncus anthelatus	large path rush	Rush	Native	FACW
Juniperus communis	common or ground juniper	Shrub	Native	FACU
Lolium perenne	ryegrass	Grass	Non-Native	FACU
Lonicera morrowii	morrow honeysuckle	Shrub	Non-Native	FACU
Phragmites australis var. australis	reed	Grass	Non-Native	FACW
Pinus sylvestris	Scotch pine	Tree	Non-Native	FACU
Poa pratensis	Kentucky bluegrass	Grass	Non-Native	FACU
Populus deltoides	cottonwood	Tree	Native	FAC
Populus tremuloides	quaking aspen	Tree	Native	FAC
Pyrus calleryana	callery pear	Tree	Non-Native	UPL
Rhamnus cathartica	common buckthorn	Tree	Non-Native	FAC
Rhus typhina	staghorn sumac	Shrub	Native	FACU
Rosa multiflora	multiflora rose	Shrub	Non-Native	FACU
Rumex crispus	curly dock	Forb	Non-Native	FAC
Salix amygdaloides	peach-leaved willow	Tree	Native	FACW
Setaria faberi	foxtail	Grass	Non-Native	FACU
Solidago altissima	tall goldenrod	Forb	Native	FACU
Symphyotrichum lateriflorum	calico aster	Forb	Native	FAC
Symphyotrichum pilosum	white oldfield American-aster	Forb	Native	FACU
Taraxacum officinale	red seeded dandelion	Forb	Non-Native	FACU
Ulmus pumila	Siberian elm	Tree	Non-Native	FACU
Verbascum thapsus	common mullein	Forb	Non-Native	UPL
Verbena urticifolia	white vervain	Forb	Native	FAC
Vitis riparia	river-bank grape	Vine	Native	FAC
Notes: OBL = Obligate wetland, FACW = Facultative wetland, FAC = Facultative, FACU = Facultative upland, UPL=Upland				

Appendix 1

MICHIGAN STATE UNIVERSITY | Extension

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

November 3, 2025

Re: Rare Species Review #5645 – 18 acres in City of Pontiac, Oakland 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.

Although several at-risk species and/or natural communities have been documented within 1.5 miles of the project location it is 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

MSU EXTENSION

Michigan Natural Features Inventory

PO Box 13036
Lansing MI 48901

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

mnfi.anr.msu.edu

Comments for Rare Species Review #5645

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.

Table 1: Occurrences of Threatened & Endangered Species within 1.5 miles of Project Site

Element Category	Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	EO Rank	First Observed Date	Last Observed Date
Animal	*Falco peregrinus*	Peregrine falcon		T	G4	S3	A?	2011	2022
Animal	*Lampsilis fasciola*	Wavyrayed lampmussel		T	G4	S2	H	1977	1978
Animal	*Paetulunio fabalis*	Rayed bean	LE	E	G2	S1S2	H	1935-pre	1935-pre
Plant	*Trichostema dichotomum*	Bastard pennyroyal		T	G5	S2	H	1916	1916-09-15

Comments for Table 1

All of the above EO's are historical and/or far removed from the project area, no concerns.

Table 2: Occurrences of Special Concern Species and Natural Communities within 1.5 miles of Project Site

Element Category	Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	EO Rank	First Observed Date	Last Observed Date
Animal	*Cambarunio iris*	Rainbow		SC	G4G5	S3	H	1935-pre	1981-08-17
Animal	*Lasmigona compressa*	Creek heelsplitter		SC	G5	S3	H		
Plant	*Angelica venenosa*	Hairy angelica		SC	G5	S3	H	1915	1915-08-19
Plant	*Angelica venenosa*	Hairy angelica		SC	G5	S3	H	1880	1880-08-20
Plant	*Trichophorum clintonii*	Clinton's bulrush		SC	G4	S3	H	1915	1916-06-04

Comments for Table 2

All of the above EO's are historical, no concerns.

Codes to accompany table

State Protection Status Code Definitions
E = Endangered
T = Threatened
SC = Special concern

Federal Protection Status Code Definitions
LE = listed endangered
LT = listed threatened
LELT = partly listed endangered and partly listed threatened
PDL = proposed delist
E(S/A) = endangered based on similarities/appearance
PS = partial status (federally listed in only part of its range)
C = species being considered for federal status

Global Heritage Status Rank Definitions (G RANK)
The priority assigned by NatureServe's national office for data collection and protection based upon the element's status throughout its entire world-wide range. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.
G1 = critically imperiled globally because of extreme rarity (5 or fewer occurrences range-wide or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.
G2 = imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.
G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single western state, a physiographic region in the East) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.
G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
Q = Taxonomy uncertain

State Heritage Status Rank Definitions (S RANK)
The priority assigned by the Michigan Natural Features Inventory for data collection and protection based upon the element's status within the state. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.
S1 = Critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.
S2 = Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.
S3 = Rare or uncommon in state (on the order of 21 to 100 occurrences). S4 = apparently secure in state, with many occurrences.
S5 = demonstrably secure in state and essentially ineradicable under present conditions.
SX = apparently extirpated from state.

EO Rank Codes

Element Occurrence (EO) ranks refer to the viability or ecological integrity of the occurrence; they provide an assessment of the likelihood that if current conditions prevail the EO will persist for a defined period of time, typically 20-100 years.

A - Excellent estimated viability/ecological integrity
A? - Possibly excellent estimated viability/ecological integrity
AB - Excellent or good estimated viability/ecological integrity
AC - Excellent, good, or fair estimated viability/ecological integrity
B - Good estimated viability/ecological integrity
B? - Possibly good estimated viability/ecological integrity
BC - Good or fair estimated viability/ecological integrity
BD - Good, fair, or poor estimated viability/ecological integrity
C - Fair estimated viability/ecological integrity
C? - Possibly fair estimated viability/ecological integrity
CD - Fair or poor estimated viability/ecological integrity
D - Poor estimated viability/ecological integrity
D? - Possibly poor estimated viability/ecological integrity
E - Verified extant (viability/ecological integrity not assessed)
F - Failed to find
F? - Possibly failed to find
H - Historical
H? - Possibly historical
X - Extirpated
X? - Possibly extirpated
U - Unrankable
NR - Not ranked

Section 7 Comments for Rare Species Review #5645
18 acres in City of Pontiac, Oakland 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 Oakland 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. In Michigan, the poweshiek skipperling (*Oarisma poweshiek)* 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. This rare insect has a single generation each year. Egg laying is believed to occur on sedges and rushes sometime around early July. Poweshiek larvae (caterpillar stage) hibernate through the winter on the food source on which they have been feeding on. In early April, they become active and continue developing until they pupate and emerge as adult butterflies. Adults have a lifespan of only 1-2 weeks and can be seen in late June through the first three weeks of July. Nectar plants include black-eyed susan (*Rudbeckia hirta*) and palespike lobelia (*Lobelia spicata*).

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*).

Snuffbox – there does appear to be suitable habitat within 1.5 miles of the project. The snuffbox mussel (*Epioblasma triquetra)* inhabits rivers and streams with cobble, gravel, or sand bottoms in swift currents and usually is deeply buried in the substrate. Freshwater mussels require a fish host to complete their life cycle. Eggs are fertilized and develop into larvae within the gills of the female mussel. These larvae, called glochidia, are released into the water and must attach to a suitable fish host to survive and transform into the adult mussel. In Michigan, the only host fish known for snuffbox is the log perch (*Percina caprodes*). In other parts of their range the banded sculpin (*Cottus carolinae*) is also a known host. After completing the parasitic stage and reaching adulthood, this mussel remains relatively sessile on the river bottom, living between 8-10 years. The best time to survey for snuffbox is April through September.

Management and Conservation: this mussel is sensitive to river impoundment, siltation, and disturbance, due to its requirement for clean, swift current and relative immobility as an adult. To maintain the current populations in Michigan, rivers need to be protected to reduce silt loading and run-off. Maintaining or establishing vegetated riparian buffers can aid in controlling many of the threats to mussels. Control of zebra mussels is critical to preserving native mussels. And as with all mussels, protection of their hosts' habitat is also crucial. Because the life cycle of the snuffbox is inherently linked with that of the logperch in Michigan, conservation and management of this fish species is needed to ensure that of the snuffbox.

Rayed bean – there does appear to be suitable habitat within 1.5 miles of the project. The rayed bean (*Villosa fabalis*) mussel typically inhabits smaller, headwater creeks and streams, but can also be found in larger rivers and glacial lakes. It prefers sand or gravel substrates and is often found around roots of aquatic vegetation. Limits of the breeding season are not known but gravid specimens have been found in May. Freshwater mussels require a fish host to complete their life cycle. Eggs are fertilized and develop into larvae within the gills of the female mussel. These larvae, called glochidia, are released into the water and must attach to a suitable fish host to survive and transform into the adult mussel. This small mussel is usually less than 1.5 inches long. The smooth textured shell is green, yellowish-green, or brown with several dark green lines. The rayed bean mussel has experienced a 73 percent reduction across its range. Dams and pollution have contributed to this reduction.

Management and Conservation: the rayed bean is historically rare in Michigan. Like other mussels, threats to the rayed bean include: natural flow alterations, siltation, channel disturbance, point and non-point source pollution, and exotic species. Maintenance or establishment of vegetated riparian buffers can help protect mussel habitats from many of their threats. Control of zebra mussels is critical to preserving native mussels. And as with all mussels, protection of their hosts habitat is also crucial.

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 prairie fringed orchid – there does not appear to be suitable habitat within 1.5 miles of the project. The federally threatened and state endangered prairie fringed orchid *(Platanthera leucophaea)* occurs in two distinct habitats in Michigan - wet prairies and bogs. It thrives best in the lakeplain wet or wet-mesic prairies that border Saginaw Bay and Lake Erie. This species frequently persists in degraded prairie remnants, ditches, railroad rights-of-ways, fallow agricultural fields, and similar habitats where artificial disturbance creates a moist mineral surface conducive to germination.

Unlike many other *Platanthera* species, *P. leucophaea* is long-lived, with individuals documented to live more than 30 years. Flowering occurs during late June through early July. The white blossoms produce a heavy fragrance at dusk that attracts many moths, including the primary pollinators of *P. leucophaea*, hawkmoths (Lepidoptera: Sphingidae). Hawkmoths are likely co-adapted pollinators, since their tongues are long enough to reach the nectar that lies deep in the spur of the flower. Capsules mature in September, releasing hundreds of thousands of airborne seeds. Plants may not flower every year but frequently produce only a single leaf above ground, possibly even becoming dormant when conditions are unsuitable, such as the onset of drought.

Management and Conservation: this species requires the maintenance of natural hydrological cycles and open habitat. Activities such as shrub removal are likely to benefit the species, but other management such as prescribed fire is not well understood. Caution and proper monitoring should be employed if using prescribed fire in occupied habitat. Spring fires should be conducted prior to emergence (mid-April). Poaching is also a threat.

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

Oakland 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 species[1] 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[2]).

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 Myotis sodalis 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

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) Sistrurus catenatus Wherever found This species only needs to be considered if the following condition applies: • 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

Clams

NAME	STATUS
Rayed Bean Villosa fabalis Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5862	Endangered

Salamander Mussel Simpsonaias ambigua Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6208	Proposed Endangered
Snuffbox Mussel Epioblasma triquetra Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4135	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus 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	Proposed 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.

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-incidental-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.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 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.

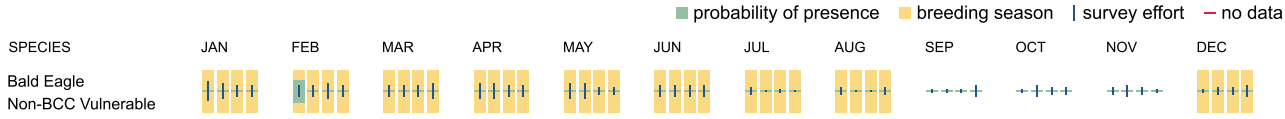
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.



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-incidental-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
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink Dolichonyx oryzivorus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden-winged Warbler Vermivora chrysoptera This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

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.

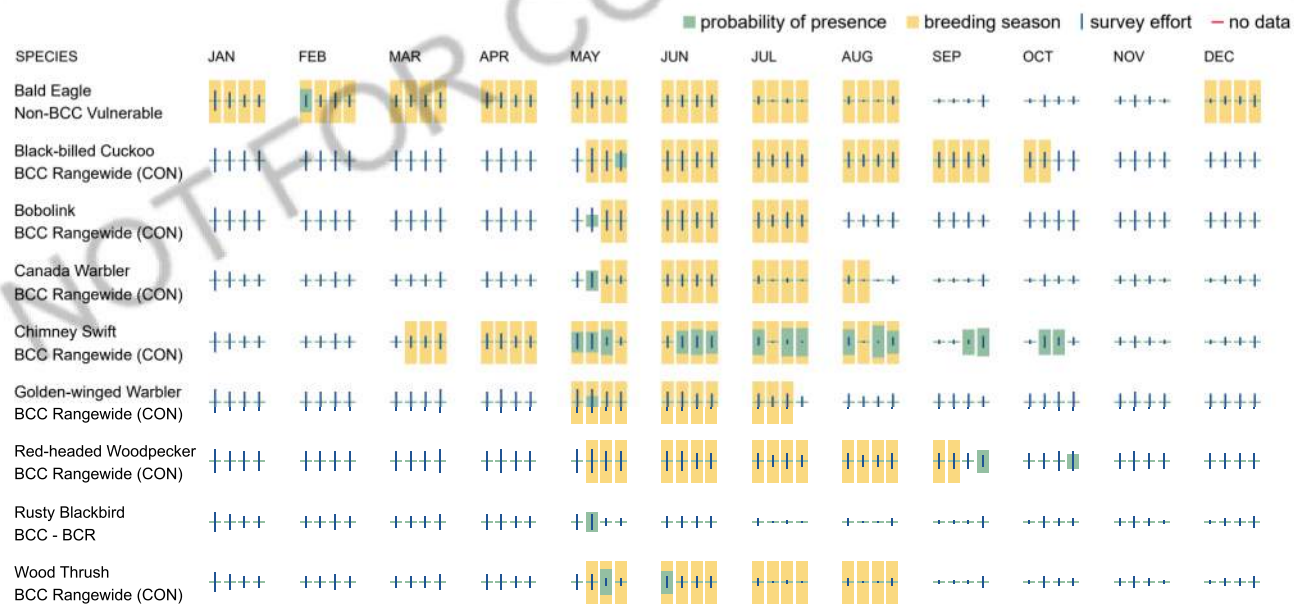
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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 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 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.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

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

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

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

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid 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.

Appendix 3

PP01, Facing Northeast

PP01, Facing Northwest

PP01, Facing South

PP01, Facing West

Disturbed Uplands and Areas with Concrete

PP02, Facing North

PP02, Facing East

PP02, Facing South

PP02, Facing West

Disturbed Uplands

PP03, Facing North

PP03, Facing Southeast

PP03, Facing Southwest

PP03, Facing West

Disturbed Uplands

PP04, Facing East

PP04, Facing North

PP04, Facing South

PP04, Facing West

Disturbed Uplands

PP05, Facing East

PP05, Facing North

PP05, Facing South

PP05, Facing West

Disturbed Uplands

PP06, Facing South

PP06, Facing West

Areas with Concrete

PP07, Facing East

PP07, Facing North

PP07, Facing South

PP07, Facing West

Disturbed Uplands and Areas with Concrete

PP08, Facing East

PP08, Facing North

PP08, Facing South

PP08, Facing West

Disturbed Uplands and Areas with Concrete and Gravel

PP09, Facing East

PP09, Facing South

Areas with Concrete and Gravel