> memo

To: Mr. Jason Bing
Ann Arbor Public School

From: Elizabeth Theile
Environmental Consulting & Technology, Inc. (ECT)

Date: March 25, 2024

Re: Threatened and Endangered Species Review
Lakewood Elementary School

1.0 INTRODUCTION

Environmental Consulting and Technology, Inc. (ECT) conducted a review of the Lakewood Elementary School (Project Site) located in Washtenaw County, Michigan for state or federal threatened and endangered (T&E) species that could occur within the Project Site and/or a surrounding review area around the Project Site. This summary is a review of publicly available sources, including the Michigan Natural Features Inventory (MNFI) database (MNFI 2024) and the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) tool (USFWS 2024b).

The MNFI, administered by Michigan State University, was used to determine whether the Project Site is in range for species listed as state-threatened or endangered under Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA), as amended. The MNFI continuously updates its database with information on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features referred to as element occurrences (EO). Records in the database indicate that a qualified observer has documented the presence of T&E species or special natural features. However, records within a query area do not guarantee the presence of T&E species at a site. Likewise, the absence of records in the database for a particular query area does not preclude the potential presence of T&E species at a specific site.

The USFWS IPaC system was used to determine whether the Project Site is in range for USFWS managed resources, such as species proposed or listed under the Endangered Species Act (ESA) of 1973 (16 U.S.C §1531-1544), designated critical habitat, migratory birds, inter-jurisdictional fishes, etc., and generates a list of these resources. This list indicates the potential for federally listed T&E species to be present within a designated search area such as a project and a 1-mile buffer. However, unlike the MNFI database, this list does not necessarily indicate the documented occurrence of T&E species within the designated search area. Conversely, T&E species not recorded in the MNFI database and not listed by the USFWS may be present at the Project Site. Additional habitat assessments and species-specific surveys may be required to further evaluate the potential presence of T&E species at a specific project site.

The USGS NHD, USFWS NWI, and the MWI were used to determine if potentially suitable wetland habitat was present for some species. These databases do not replace a field-delineated feature using United States Army Corp of Engineers (USACE) protocols. To determine if features are present, where features are located, size, and category onsite a field delineation must be completed following USACE wetland delineation protocol.

The presence of T&E species may not preclude activities or development but may require alterations in the Project plan, permitting, and/or mitigation. Special concern species, natural communities, and federal candidate species are not protected under state or federal endangered species legislation, but recommendations regarding their protection may be provided. The protection of a special concern and candidate species, as well as unique habitats, may prevent species from declining to the point of being listed as threatened or endangered in the future.

2.0 SITE LOCATION

The Project encompasses approximately 17.73 acres of wooded area and developed institutional land south of Mason Ave and encompassing Central St within Section 25 of Township 02S, Range 05E Washtenaw County, Michigan (**Figure 1, Appendix A**). Based on recent aerial photography, the Project Site consists of a developed area with a maintained grass lawn, paved parking areas, playgrounds, and other maintained athletic fields. Surrounding land cover includes the Lakewood Nature Area to the west and residential development surrounding the remainder of the Project Site.

3.0 THREATENED AND ENDANGERED SPECIES

ECT reviewed the Site, a 1-mile buffer around the Project Site for IPaC records. MNFI queries by Public Land Survey System sections, not buffers; therefore, Section 25 encompassing the Site was queried.

See **Appendix B** for a complete list of element occurrences generated by the MNFI database query and USFWS IPaC results.

The MNFI and IPaC were accessed on March 14, 2024.

3.1 Federal Threatened and Endangered Species

Federally listed T&E species and their designated critical habitat are protected under federal law the ESA. Listed wildlife species are protected from take and/or harm. ESA defines take as "…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." An incidental take permit may be required from USFWS if impacts to T&E species are unavoidable. A project may avoid the need for a permit through the implementation of avoidance measures or best management practices (BMPs). Exceptions allow for certain activities to take place during periods of inactivity (e.g., outside of nesting and breeding season), such as tree clearing in winter to avoid impacts to roosting bats and tree-nesting birds.

ECT reviewed the USFWS data to identify federally listed T&E species within the Project and a 1-mile buffer (**Table 1**). No designated critical habitat is located within the Site or 1-mile buffer.

Table 1: Federal Threatened and Endangered Species

Review Area	Listed Species Records in Review Area
Lakewood Elementary School Project and 1-mile Buffer	Indiana Bat (*Myotis sodalis*) Northern Long-eared Bat (*Myotis septentrionalis*) Tricolored Bat (*Perimyotis subflavus*) Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) Mitchell's Satyr Butterfly (*Neonympha mitchellii mitchellii*) Monarch Butterfly (*Danaus plexippus)* Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)

Indiana Bat (Endangered)

The Indiana bat is federally listed as endangered. Indiana bats roost and form maternity colonies under loose bark or in hollows and cavities of mature trees in the floodplain forest. In Michigan, savanna habitats adjacent to riparian corridors may have been historically important for roost sites, as the bats are thought to prefer sun-exposed trees for maximum warmth at the northern limit of their range. In winter, Indiana bats primarily hibernate in caves in Kentucky, Indiana, and Missouri, although a hibernacula site has been found in northern Michigan at a hydroelectric facility (MNFI 2024).

Based on a review of aerial imagery, trees occur within the Project Site and bordering the Site (see **Appendix A, Figure 2)** and could provide a potentially suitable habitat for Indiana bats. To determine whether these trees provide suitable habitat for these bat species, a habitat assessment would be necessary. However, according to the USFWS Project Design Guidelines for Federally Listed Bats in Michigan (USFWS 2023), if clearing of trees that are potentially suitable for roosting by listed bat species is necessary, a Project can proceed with tree clearing activities if: 1) all trees will be cleared during the inactive bat season (October 31 through April 1), 2) tree clearing will not remove greater than 10 acres of contiguous forested habitat, and 3) tree clearing will not results in the fragmentation of potentially suitable bat habitat. According to the USFWS, if a Project meets the criteria listed above, the Project poses no reasonable certainty of take and no potential for adverse effects to listed bats. If the Project can adhere to these three measures, a habitat assessment and USFWS coordination would not be required. A habitat assessment is recommended if adherence to these measures is not applicable for this Project.

Northern Long-Eared Bat (Endangered)

The northern long-eared bat (NLEB) is a federally l endangered bat. The NLEB lives in areas dominated by a mix of hardwood coniferous and deciduous trees. NLEB appears to prefer forests with low understory cover. NLEB has been associated with the karst topography of small caves and crevices in limestone cliffs as hibernacula. Upon emerging from hibernation, NLEB will roost in trees, bark crevices, and tree hollows. During summertime, this species will inhabit forested areas with large trees that have loose bark or deep crevices to roost in. NLEB are not tied to a specific natural community type but they will rarely roost in human-made structures and do not show preference towards dead trees compared to other bat species (MNFI 2024).

Based on a review of aerial imagery, trees occur within the Project Site and bordering the Site (see **Appendix A, Figure 2**) and could provide potentially suitable habitat for the Northern long-eared bat. To determine whether these trees provide suitable habitat for these bat species, a habitat assessment would be necessary. However, according to the USFWS Project Design Guidelines for Federally Listed Bats in Michigan (USFWS 2023), if clearing of trees that are potentially suitable for roosting by listed bat species is necessary, a Project can proceed with tree clearing activities if: 1) all trees will be cleared

during the inactive bat season (October 31 through April 1), 2) tree clearing will not remove greater than 10 acres of contiguous forested habitat, and 3) tree clearing will not results in the fragmentation of potentially suitable bat habitat. According to the USFWS, if a Project meets the criteria listed above, the Project poses no reasonable certainty of take and no potential for adverse effects to listed bats. If the Project can adhere to these three measures, a habitat assessment and USFWS coordination would not be required. A habitat assessment is recommended if adherence to these measures is not applicable for this Project.

Tricolored bat (Proposed endangered)

The Tricolored bat is a federally proposed endangered species and a draft ruling is pending to list the species as endangered (USFWS 2024c). During the winter, tricolored bats are often found in caves and abandoned mines, although in the southern United States, where caves are sparse, tricolored bats are often found roosting in road-associated culverts where they exhibit shorter torpor bouts and forage during warm nights. Both females and males roost among the leaves of living and standing dead hardwood trees, such as oak (*Quercus* spp.) and maple (*Acer* spp.), within upland, mature forests. Other roosting options may include rock crevices, pine (*Pinus* spp.) trees, caves, and man-made structures. The tricolored bat begins hibernating in early to late fall, individually roosting deep within caves and abandoned mines. Tricolored bats typically return to previous summer and winter roosts annually (USFWS 2024c).

Based on a review of aerial imagery, trees occur within the Project Site and bordering the Site (see **Appendix A, Figure 2**) and could provide a potentially suitable habitat for tricolored bats. To determine whether these trees provide suitable habitat for these bat species, a habitat assessment would be necessary. No written guidance has been established for the tricolored bat at this time. In ECT's opinion, guidance and recommendations followed for the NLEB and Indiana bat would also satisfy compliance requirements pursuant to Section 7 of the ESA for this proposed endangered species.

Eastern Massasauga Rattlesnake (Threatened)

The eastern massasauga rattlesnake (EMR) is federally listed as threatened. It is a small, thick-bodied rattlesnake that lives in shallow wetlands and adjacent uplands in portions of the Midwest region and Ontario, Canada. EMR has been found historically in a variety of wetland habitats, including bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forests. They will shift the habitats they use, depending on the season. Generally, they hibernate in or near wetlands in the spring, fall, and winter. In Michigan, the EMR inactive (hibernation) season occurs generally from November through March. During the EMR active season in summer, snakes migrate to drier, upland sites, ranging from forest openings to old fields, agricultural lands, and prairies ((USFWS 2022a). Habitat generally contains a mix of open and shaded areas for thermoregulation, the presence of a high water table for hibernation, and variable elevations between lowland and upland areas (MNFI 2024).

The USFWS has designated and mapped two levels of modeled habitat tier for EMR and issued General Project Design Guidelines with best management practices (BMPs) for each habitat tier. Tier 1 habitats are those known to be occupied by EMR or highly likely to be occupied by EMR. Tier 2 habitats are those with a high potential habitat in which EMR is likely to occur (USFWS 2017). According to the IPaC results, the Project Site is within the known range of the EMR, but not located within or in the vicinity of USFWS Tier 1 or Tier 2 habitat. The known range of EMR includes the entire lower peninsula of Michigan (USFWS 2017).

The USFWS NWI and the Michigan Wetlands Inventory do not map wetlands within the Project site (**Appendix A, Figures 2 and 3**). Based on a lack of suitable habitat, the Project is unlikely to affect the EMR due to a lack of suitable habitat.

Monarch Butterfly (Candidate)

The monarch butterfly is a federal candidate species that is being considered for listing under the ESA. Candidate species are not protected by the take prohibitions of the ESA; however, wildlife agencies are still encouraged to take opportunities to conserve the species. Although the monarch butterfly is known to forage on many wildflowers, monarch butterflies prefer open fields and meadows with milkweeds (*Asclepias* spp.), its larval host plant. Monarchs lay their eggs on milkweed plants and larvae feed on the milkweeds. The larva then pupates in a chrysalis before emerging as an adult butterfly. Adult monarchs feed on nectar from blooming native plants. In the fall, monarchs begin long-distance migration to overwintering habitats. Migration can be over 3,000 kilometers and last for months. In the spring, the cycle of generational migration continues as monarchs begin flying back to breeding grounds (USFWS 2022a).

The majority of the Project site is mown and maintained throughout the year, which leaves few areas for natural herbaceous vegetation to grow, which would give a low probability of milkweed being present in those areas; however, there may be suitable habitat present along the edges of the Project Site. If possible, avoid mowing milkweed and wildflowers to keep these habitats available to monarchs in the spring and summer. Based on the maintenance of the Project Site this Project is unlikely to affect the monarch butterfly species.

Mitchell's Satyr Butterfly (Endangered)

The Mitchell's satyr butterfly is federally listed as endangered. The Mitchell's satyr butterfly is one of the most geographically-restricted eastern butterflies. This butterfly is medium sized (1.75 in wingspan) and brown in color, with yellow-orange ringed eyespots on the underside of the hindwing. This species exclusively uses fens as habitat, which are a rare type of wetland. Historically, the Mitchell's satyr was found in New Jersey, Ohio, Michigan, Indiana and possibly Maryland. Today, the butterfly can be found in only nine locations in Michigan and one location in Indiana, along with a single county in Virginia and restricted areas within Mississippi and Alabama (MNFI 2024).

There are no mapped wetlands within the Project Site boundary, therefore Project activities are unlikely to affect this species.

Eastern Prairie Fringed Orchid (Threatened)

The eastern prairie fringed orchid is a federally listed, threatened plant. The eastern prairie fringed orchid is a stout (up to 1 m) plant found in wet prairies and bogs, in moist alkaline and lacustrine soils. It is primarily found in moist prairie remnants, particularly those associated with lake plains, but it can also occur in open or semi-open bogs and peaty lakeshores. Though rare, this orchid can readily colonize highly disturbed sites like ditches, uncut old fields, and even the edges of golf courses as long as competition is not overly intense and proper soil fungi are present (MNFI 2024).

The Project is not located within a lake plain, along a lakeshore nor are wet prairies or bogs present. The Project is unlikely to affect the eastern prairie fringed orchid due to a lack of suitable habitat.

3.2 State Threatened and Endangered Species

The NREPA confers legal protection to state-listed T&E species, including plants and animals, in Michigan. If impacts on the state-listed T&E species cannot be avoided, a state

Threatened/Endangered Permit may be required. The MDNR is the regulatory agency that makes decisions on state-listed species and any permit requirements.

Additionally, documented occurrences of T&E species within wetlands may affect the jurisdictional status of these features such that they are subject to Clean Water Act Section 404 permitting through the Department of Environment, Great Lakes, and Energy (EGLE).

ECT reviewed the MNFI for known element occurrence (EO) of State-Listed species within section 25 of Township 02S, Range 05E (**Table 2**).

Table 2: State Threatened and Endangered Species

Review Area	Listed Species Records in Review Area
T02S, R05E, Section 25	Little brown bat (*Myotis lucifugus*) Northern long-eared bat (*Myotis septentrionalis*) Indiana bat (*Myotis sodalis*) Least shrew (*Cryptotis parva*) Blanchard's cricket frog (*Acris blanchardi*) American bumble bee (*Bombus pensylvanica*) Eastern box turtle (*Terrapene Carolina Carolina*) False hop sedge (*Carex lupiformis*) Showy Orchis (*Galearis spectabilis*) Golden Seal (*Hydrastis canadensis*) Red mulberry (*Morus rubra*) Ginseng (*Panax quinquefolius*) Edible valerian (*Valeriana edulis var. ciliata*)

Little Brown Bat (Threatened)

The little brown bat is listed as a state threatened species. This species is small (wingspan of 22.9 to 26.7 cm) and is sandy brown to olive in color Little brown bats use a wide range of habitats and often use human-made structures for resting and maternity sites. They typically roost in caves and mines in the winter, and they can be found in trees, artificial structures, bat houses, under rocks and in piles of wood in the summer. Foraging habitat requirements are generalized, occurring primarily over streams and other bodies of water, along the margins of lakes and streams or in woodlands near water (MNFI 2024).

Based on a review of aerial imagery, trees occur within the Project Site and bordering the Site (see **Appendix A, Figure 2**) and could provide potentially suitable habitat for little brown bats. To determine whether these trees provide suitable habitat for these bat species, a habitat assessment would be necessary. No written guidance has been established for the little brown bat at this time. In ECT's opinion, guidance and recommendations followed for the NLEB and Indiana bat would also satisfy state threatened and endangered species compliance requirements.

Northern Long-Eared Bat (Threatened)

The northern long-eared bat (NLEB) is listed as a state-threatened species. The NLEB lives in areas dominated by a mix of hardwood coniferous and deciduous trees. NLEB appears to prefer habitats with low understory cover. NLEB has been associated with the karst topography of small caves and crevices in limestone cliffs as hibernacula. Upon emerging from hibernation, NLEB will roost in trees, bark crevices, and tree hollows. During summertime, this species will inhabit forested areas with large trees that have loose bark or deep crevices to roost in. NLEB are not tied to a specific natural

community type but they will rarely roost in human-made structures and do not show preference towards dead trees compared to other bat species (MNFI 2024).

The wooded area present onsite may provide suitable habitat for NLEB (see **Appendix A, Figure 2**), There is a potential that this Project could affect the NLEB bat due to lack of suitable habitat. See avoidance recommendations for NLEB in Section 3.1 for further information.

Indiana Bat (Endangered)

The Indiana bat is listed as a state and federally endangered species. Indiana bats roost and form maternity colonies under loose bark or in hollows and cavities of mature trees in the floodplain forest. In Michigan, savanna habitats adjacent to riparian corridors may have been historically important for roost sites, as the bats are thought to prefer sun-exposed trees for maximum warmth at the northern limit of their range. In winter, Indiana bats primarily hibernate in caves in Kentucky, Indiana, and Missouri, although a new hibernacula site has been found in northern Michigan at a hydroelectric facility (MNFI 2024).

Suitable habitat for Indiana is not found within the Project boundary, therefore this Project is unlikely to affect the Indiana bat. See avoidance recommendations for Indiana in Section 3.1 for further information.

Least Shrew (Threatened)

The least shrew is listed as a state-threatened species. The least shrew is one of the smallest of Michigan's shrews, with a body length of 2.5 to 3.3 inches (6.4 - 8.3 cm) and a short tail 0.5 to 0.75 (1.3 - 1.9 cm) long. Like many shrews, it has an elongated head, pointed nose, tiny eyes, and short grayish-brown fur. The least shrew inhabits dry upland meadows with dense coverage of grasses and forbs. It can also be found in marshy areas, fencerows, and woodland edges. Nests are often found tucked under rocks, logs, discarded lumber, metal sheeting, and hay bales left in fields over winter (MNFI 2024).

The trees present onsite may provide a suitable habitat for this species. If tree clearing is to occur, a survey should be completed during planning and design, and prior to any work being completed to determine if suitable habitat is present.

Blanchard's cricket frog (Threatened)

The Blanchard's cricket frog is small and tan, brown, gray, or olive green in color. Occasionally individuals may have green, reddish, or black blotches or a broad light-colored stripe on their backs. Blanchard's cricket frogs have a triangular mark between their eyes and on the top of the head. The distinctive breeding call is described as a rapid series of metallic clicks, similar to two pebbles being tapped together. This species inhabits open edges of permanent ponds and other bodies of water, with no preference for natural or man-made features (MNFI 2024).

Because no open water features are mapped onsite, this Project is unlikely to affect this species; however, if tree clearing is proposed an onsite water resource delineation should occur to determine if suitable bodies of water are present within the wooded area in the western portion of the site.

American bumble bee (Endangered)

The American bumble bee is listed as a state-endangered species. This species favors prairies and grasslands and is rarely associated with extensive forests. Queens of this species are relatively large, ranging from 2.1 to 2.5 cm. Workers are average sized at 1.4 to 1.8 cm and males are slightly larger than females at 1.6 to 2.2 cm. Characteristics of queens and workers include a black face and top of

the head; thorax with yellow along the anterior section and black posteriorly, with occasional yellow hairs mixed in; wings with a distinct black band. Considered a foraging generalist, this bumble bee will regularly visit floral resources in dunes, marshes, forest edges, farmland, and urban areas. Nests are above ground among tufts of long grass but occasionally occur underground in old rodent burrows. This species can also occupy agricultural landscapes, however, associated pressures such as ground management and pesticides may restrict populations in these areas (MNFI 2024).

It is possible that the wooded area present in the western portion of the site may provide foraging areas for the American bumble bee. If tree clearing in this area is not proposed, this Project is unlikely to affect the American bumble bee.

Eastern box turtle (Threatened)

The Eastern box turtle is listed as a state threatened species. In terms of appearance, the eastern box turtle is a small turtle with a highly domed top shell (carapace) and hinged **bottom** shell (plastron). The carapace has a midline raised ridge that averages 12-20 cm in length. The eastern box turtle is brown to black in color with a highly variable shell pattern that includes yellow and orange. Individuals can have plain or marked plastrons. A male is typically larger and more brightly colored than a female. This species is a terrestrial species and prefer forested habitats with sandy soils near a sources of water (e.g., stream, pond, lake, marsh, or swamp. This species requires nesting sites in sandy areas which have open space for reproduction (MNFI 2024).

Based on publicly available mapping (**Appendix A, Figures 2** and **3**) there is no suitable habitat present within the Project Site boundary. Due to the lack of suitable habitat, this Project is unlikely to affect the eastern box turtle.

False Hop Sedge (Threatened)

False hop sedge is listed as a state-threatened species. In terms of appearance, false hop sedge is a coarse, densely-tufted perennial with a thick, dark, scaly rootstalk. Leaves are smooth and V-shaped when young and have persistent brownish to reddish basal sheaths. False hop sedge is restricted to southern Lower Michigan, ranging to Bay County in the Thumb area east to Macomb County, and extending into Cass County in southwestern Michigan. The extant localities for this species include sites in the Bay, Hillsdale, and Washtenaw counties. Typical habitat includes a variety of wetlands such as swamps, marshes, wet woods, and floodplain forests (MNFI 2024)

There are no wetlands within the Project Site (see **Appendix A, Figure 2**). It is unlikely the Project will affect false hop sedge due to lack of suitable habitat.

Showy Orchis (Threatened)

The Showy Orchis is listed as a state-threatened species. Showy orchis is a low-growing orchid (6-20 cm) arising from a short, tuberless rhizome (underground stem) with one pair of ovate basal leaves and a single stout and often stubby flower stalk bearing from one to ten flowers. In Michigan, showy orchis is known primarily from the five southern-most tiers of counties in the Lower Peninsula, with its northern-most location in Bay County. This species is found primarily in rich deciduous woods, although vigorous woodland colonies are known to spread to more open habitats in Michigan (MNFI 2024).

Although the wooded area is present within the Project Site (**Appendix A, Figure 2**), this area is not likely to provide the correct type of habitat, therefore the Project is unlikely to affect this species.

Goldenseal (Threatened)

Goldenseal is listed as a state-threatened species. Goldenseal has an unbranched, hairy stem reaching 20-50 cm in height. Each stem produces one or two leaves near the top. These leaves are palmately divided (maple-like) into five to nine sharply pointed lobes with toothed margins. When fully flushed, the leaves become dull green, the veins appear deeply impressed on the upper leaf surface, and they expand up to about 25 cm wide. A solitary flower about 15 mm in width terminates the stem. Goldenseal typically inhabits shady, rich, mesic southern forests, usually under a canopy of beech-sugar maple or red oak-sugar maple. It frequently occurs in moist microhabitats near vernal pools, along forested streams, and also in southern floodplain forests, often in moist sandy loam, clay loam, or even organic (muck) soils (MNFI 2024).

MWI does not map hydric soils within the site (**Appendix A, Figure 3**). Due to the lack of suitable habitat, the Project is unlikely to affect this species.

Red Mulberry (Threatened)

Red mulberry is listed as a state-threatened species. Red mulberry is a small to medium-sized tree of forested floodplains and adjacent slopes, with a rounded, dense canopy and short trunk. The bark is a dark-reddish brown, separating into narrow, loose, flat strips and shallow, flat fissures. In Michigan red mulberry is almost always found within or near riparian areas, typically in floodplain forest communities or in mesic to dry-mesic forests in close proximity to river and stream drainages, especially along fertile slopes (MNFI 2024).

Although suitable habitat is located adjacent to the Project Site, none is located within the Project boundary (**Appendix A, Figures 2 and 3**). Due to a lack of suitable habitat, the Project is unlikely to affect this species.

Ginseng (Threatened)

Ginseng is listed as a state-threatened species. Ginseng grows from a fleshy and often forked taproot for which it is widely known. At maturity, it has a single whorl (growing from the same point along the stem) of 3-5 palmately compound leaves each with 3-5 stalked and toothed leaflets. The leaflets are widest just before they reach the abruptly pointed tip; typically, there are 3 large and 2 small leaflets. A central cluster (umbel) of small greenish-white flowers rises above the leaves and produces bright crimson, berry-like fruits at maturity, each bearing 1-3 seeds. This species is predominantly found in rich hardwoods, often on slopes or ravines, ranging even into swampy portions. It also occurs in wooded dune hollows and leeward slopes along the Lake Michigan shoreline (MNFI 2024).

The Project Site is mostly flat, and developed, with graded areas for buildings, parking lots, and athletic fields. No suitable habitat is present within the Project Site; therefore, this species likely will not be affected by Project activities.

Edible valerian (Threatened)

The edible valerian is listed as a state threatened species. The stem of an edible valerian has a basal rosette with leaf margins that are densely ciliate. The flowers are white and are longer than they are wide. This species is known to occur in alkaline fens in southern Lower Michigan. Typical habitat is alkaline fens in southern Michigan (MNFI 2024).

The edible valerian requires a specialized habitat that is somewhat rare. This habitat is not present within or directly abutting the Project Site. Due to lack of habitat, this Project is unlikely to affect the edible valerian.

4.0 SUMMARY

This Threatened and Endangered Species Review identified potential constraints that should be considered during the planning and design of the proposed Project. There are several species that may have potentially suitable habitat within the Project Site, including least shrew, Indiana bat, northern long-eared bat, little brown bat, tricolored bat, and Blanchard's cricket frog. As stated in former sections of this report, an on-site habitat assessment would be needed to determine if these areas provide habitat for certain species. To determine bat habitat, a field habitat assessment would be necessary to confirm the presence or absence of suitable tree roosting habitat. However, a habitat assessment would be unnecessary if tree clearing can be limited to the bat's inactive period from October 31 – April 1 and if no more than 10 acres of forested habitat is cleared.

5.0 REFERENCES

MNFI. 2024. “Michigan Natural Features Inventory - Michigan’s Rare Plants & Animals (Online Database).” 2024. https://mnfi.anr.msu.edu/species.

———. 2024. “Michigan Natural Features Inventory - Rare Species Explorer (Web Application).” 2024. https://mnfi.anr.msu.edu/species.

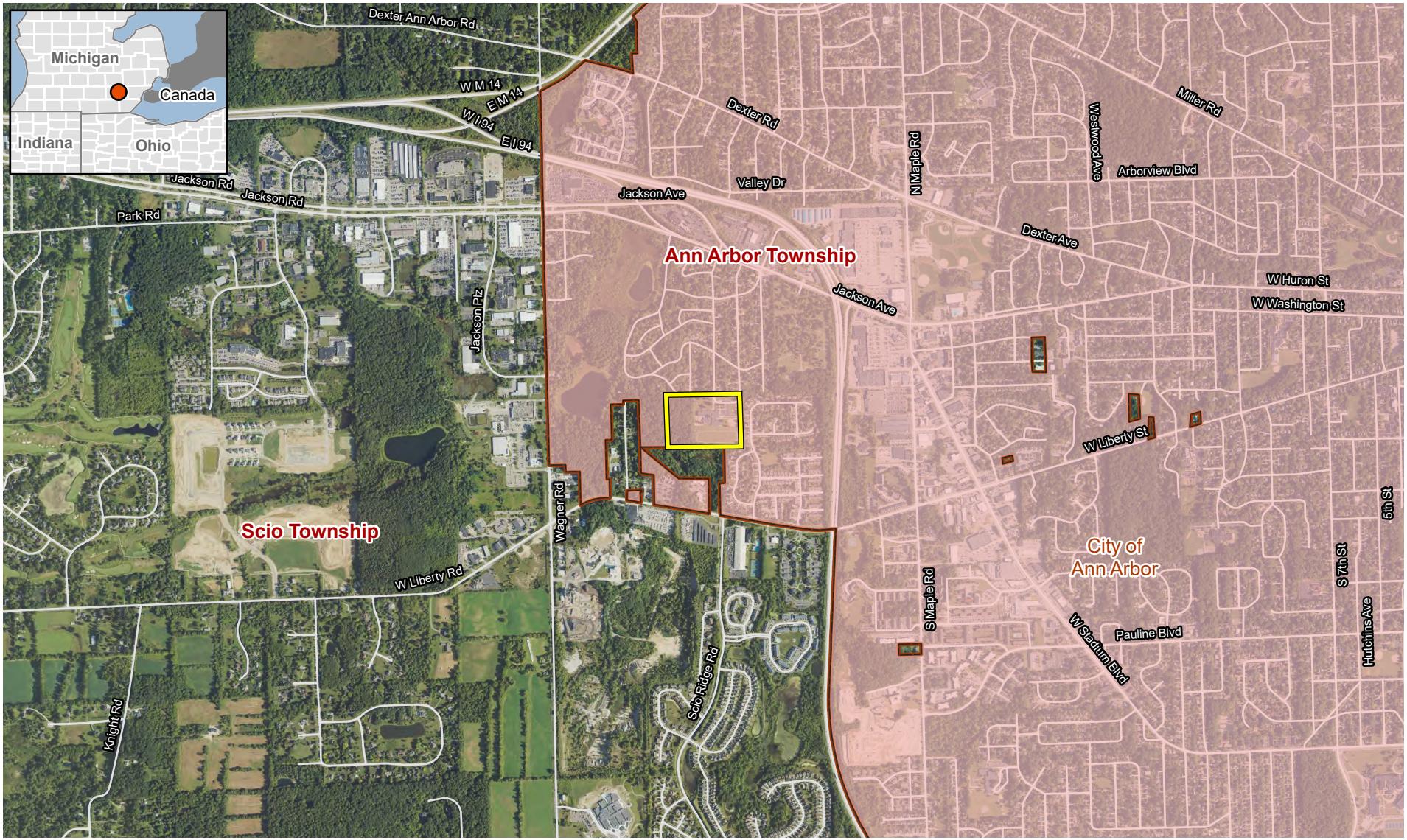
USFWS. 2017. “General Project Design Guidelines - Environmental Screening for Eastern Massasauga Rattlesnake in Michigan [March 14, 2017].” U.S. Fish and Wildlife Service.

———. 2024a. “Species Profile for Monarch Butterfly (Danaus plexippus). “ 2024. https://ecos.fws.gov/ecp/species/9743

———. 2024b. “USFWS - Information for Planning and Consultation (IPaC).” 2024. https://ecos.fws.gov/ipac/.

———. 2024c. “Species Profile for Tricolored Bat (Perimyotis subflavus). “ 2024. https://ecos.fws.gov/ecp/species/10515

Appendix A
Site Location Map



Site (± 17.73 Ac.)

City

Township Boundary

N

0 1,000 2,000

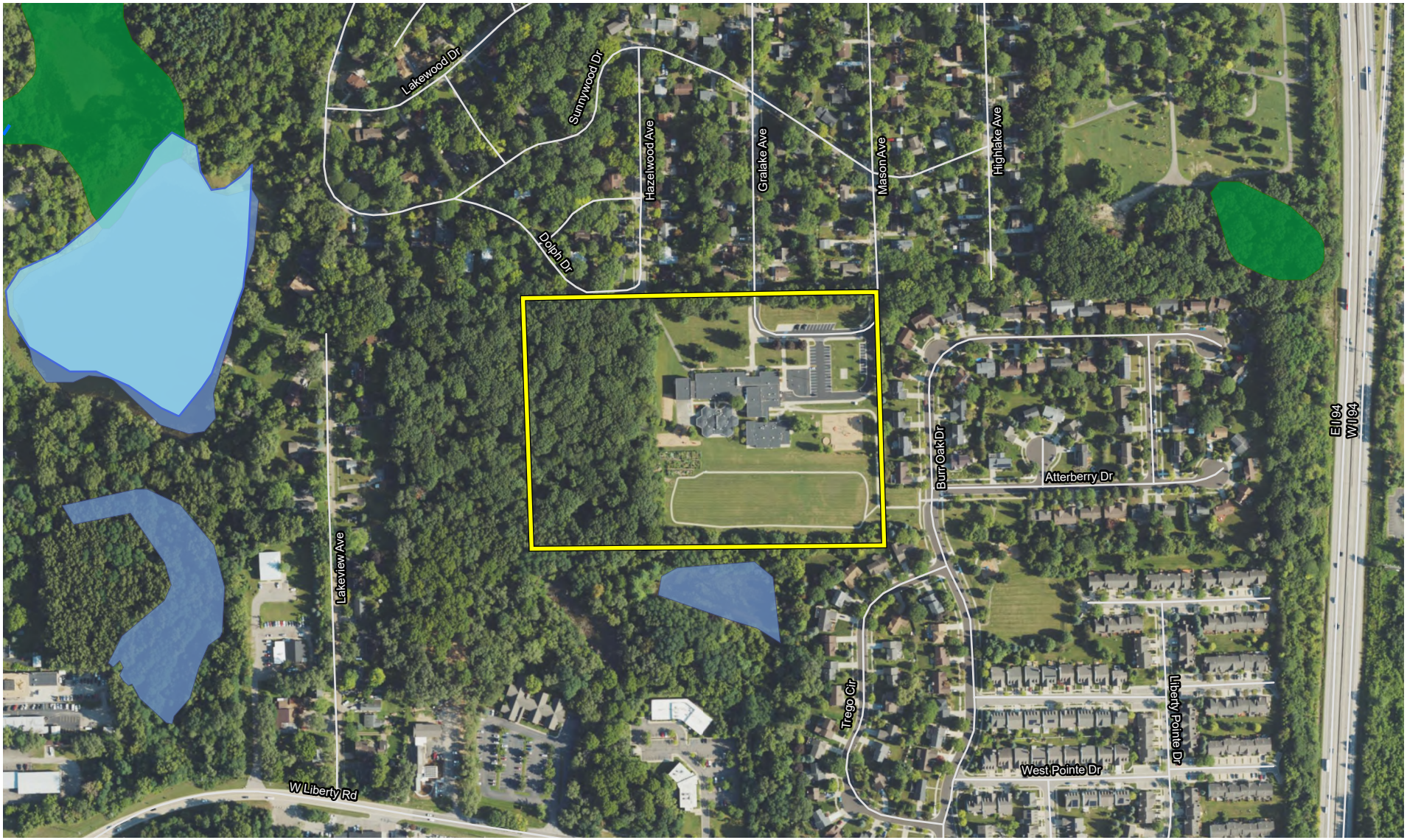
Feet

Base Layer: USDA NAIP, 2023

Figure 1
Site Location Map

Lakewood Elementary School
Washtenaw County, Michigan
Date: 3/21/2024

ECT



Site (± 17.73 Ac.)

National Hydrography Dataset

Watercourse

Waterbody

National Wetland Inventory (USFWS)

Freshwater Forested/Shrub Wetland

Freshwater Pond

N

0 250 500

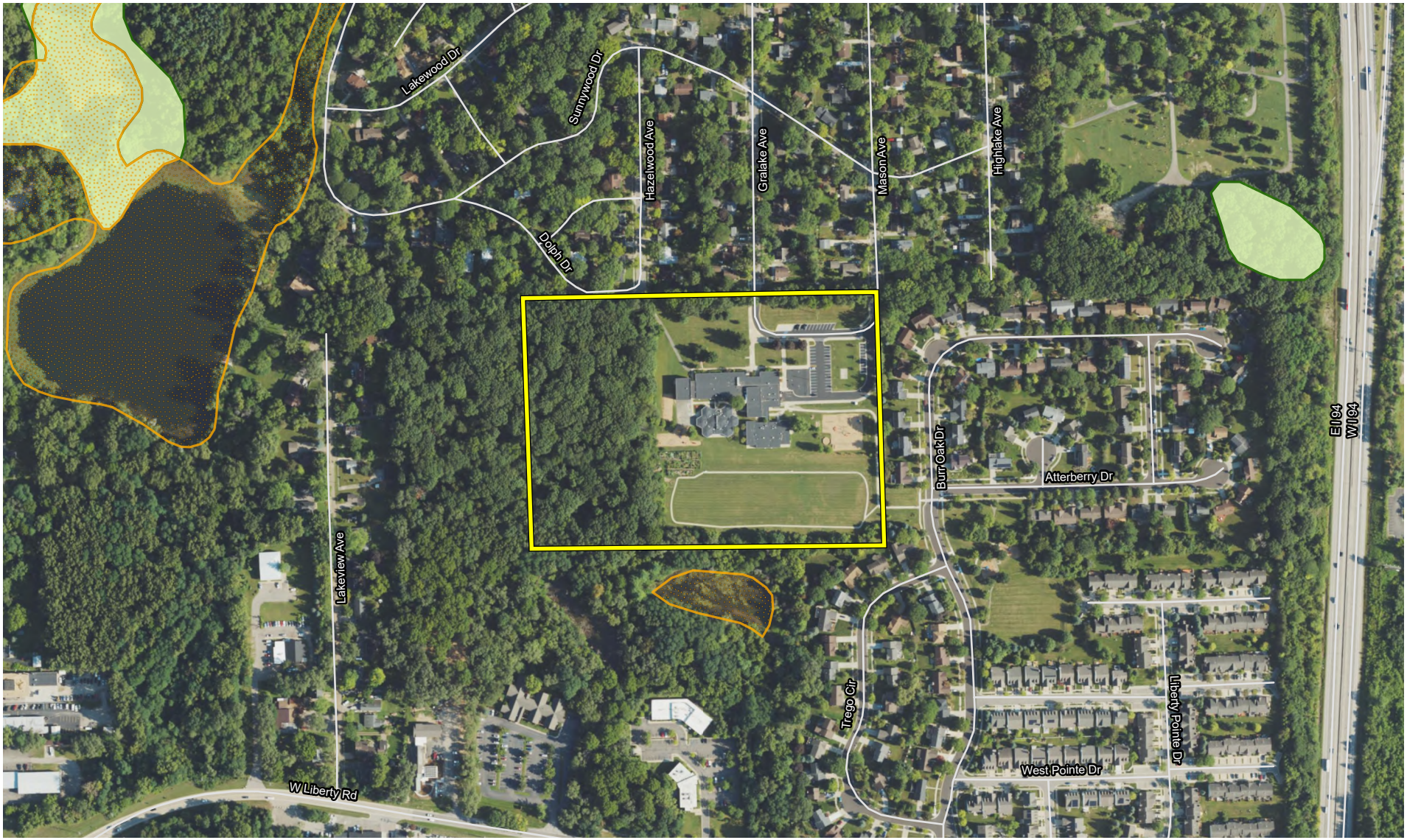
Feet

Base Layer: USDA NAIP, 2023

Figure 2
Surface Water Resources

Lakewood Elementary School
Washtenaw County, Michigan
Date: 3/21/2024

ECT



Site (± 17.73 Ac.)

Part 303 State Wetlands Inventory

Hydric Soils

NWI

NWI & Hydric Soils

N

0 250 500

Feet

Base Layer: USDA NAIP, 2023

Figure 3
Michigan Wetland Inventory

Lakewood Elementary School
Washtenaw County, Michigan
Date: 3/21/2024

ECT

Appendix B
IPaC Resource List
MNFI Database Query

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.

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Location

Washtenaw 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

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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.

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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).

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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
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Whooping Crane Grus americana No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/758	EXPN

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

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Insects

NAME	STATUS
Mitchell's Satyr Butterfly Neonympha mitchellii mitchellii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8062	Endangered
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid Platanthera leucophaea Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/601	Threatened

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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[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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 conservation 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 likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

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.

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
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

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

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"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

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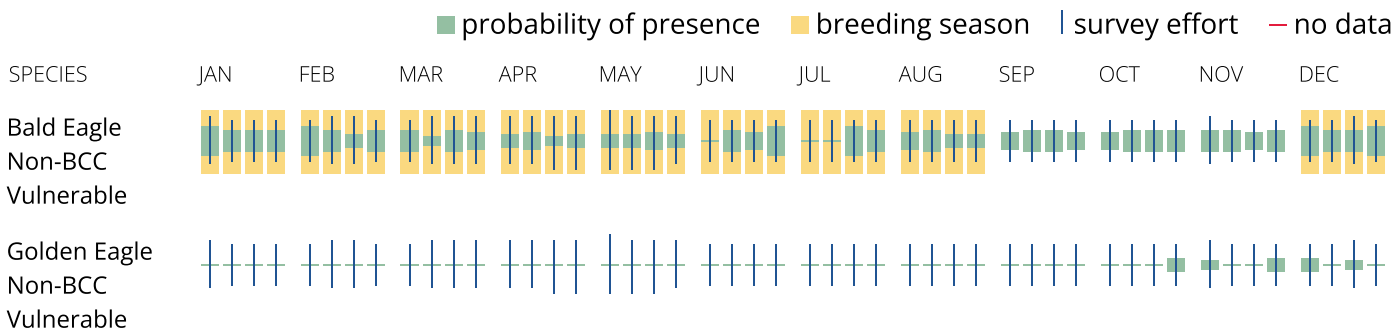
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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 a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

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Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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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 conservation 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

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

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

NAME	BREEDING SEASON

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American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
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
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

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Golden-winged Warbler Vermivora chrysoptera — Breeds May 1 to Jul 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8745

Kirtland's Warbler Setophaga kirtlandii — Breeds May 25 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8078

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Long-eared Owl asio otus — Breeds Mar 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

Pectoral Sandpiper Calidris melanotos — Breeds elsewhere

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

Red-headed Woodpecker Melanerpes erythrocephalus — Breeds May 10 to Sep 10

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

Rusty Blackbird Euphagus carolinus — Breeds elsewhere

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

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31

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

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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.
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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.

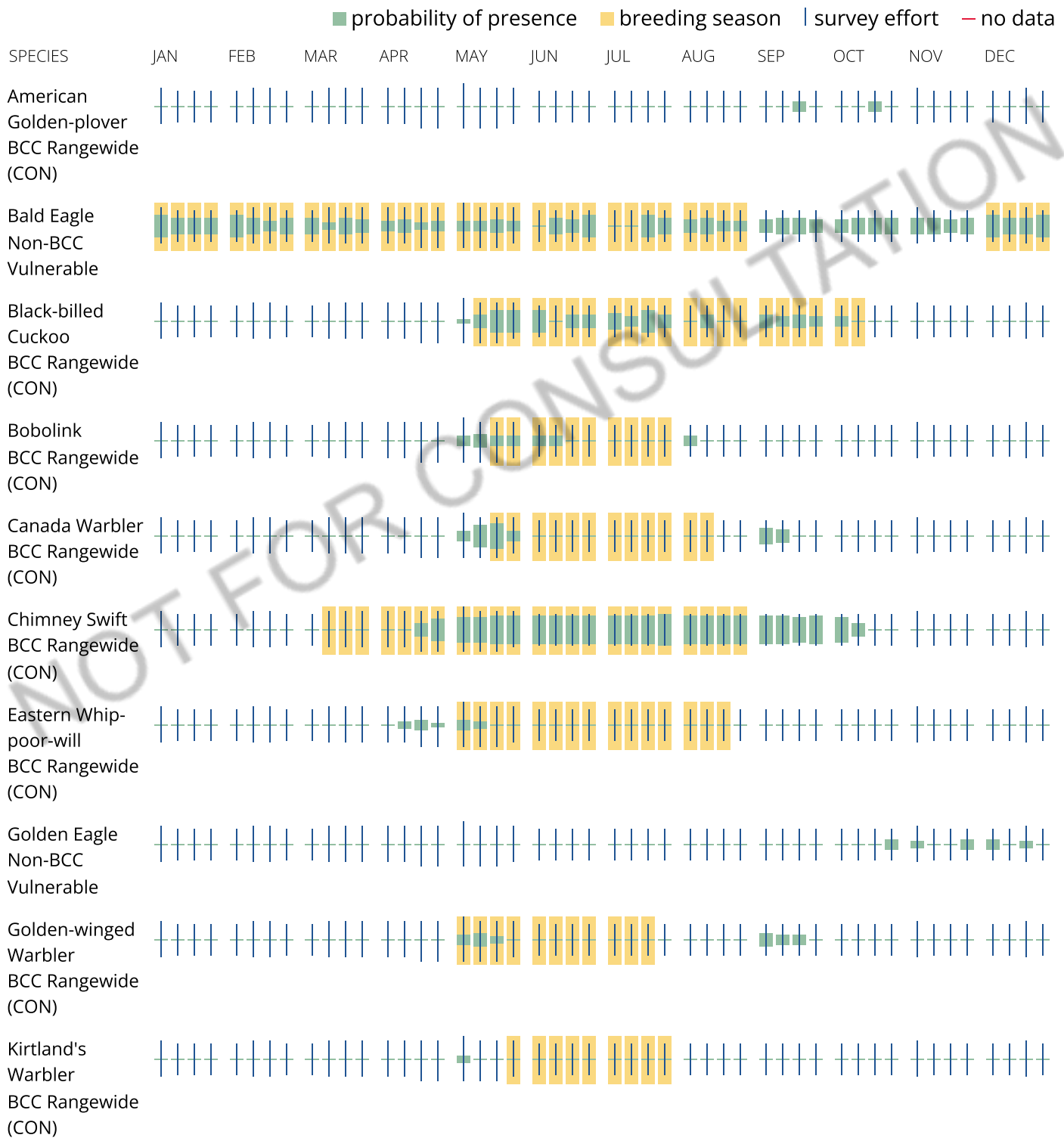
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

NOT FOR CONSULTATION

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.



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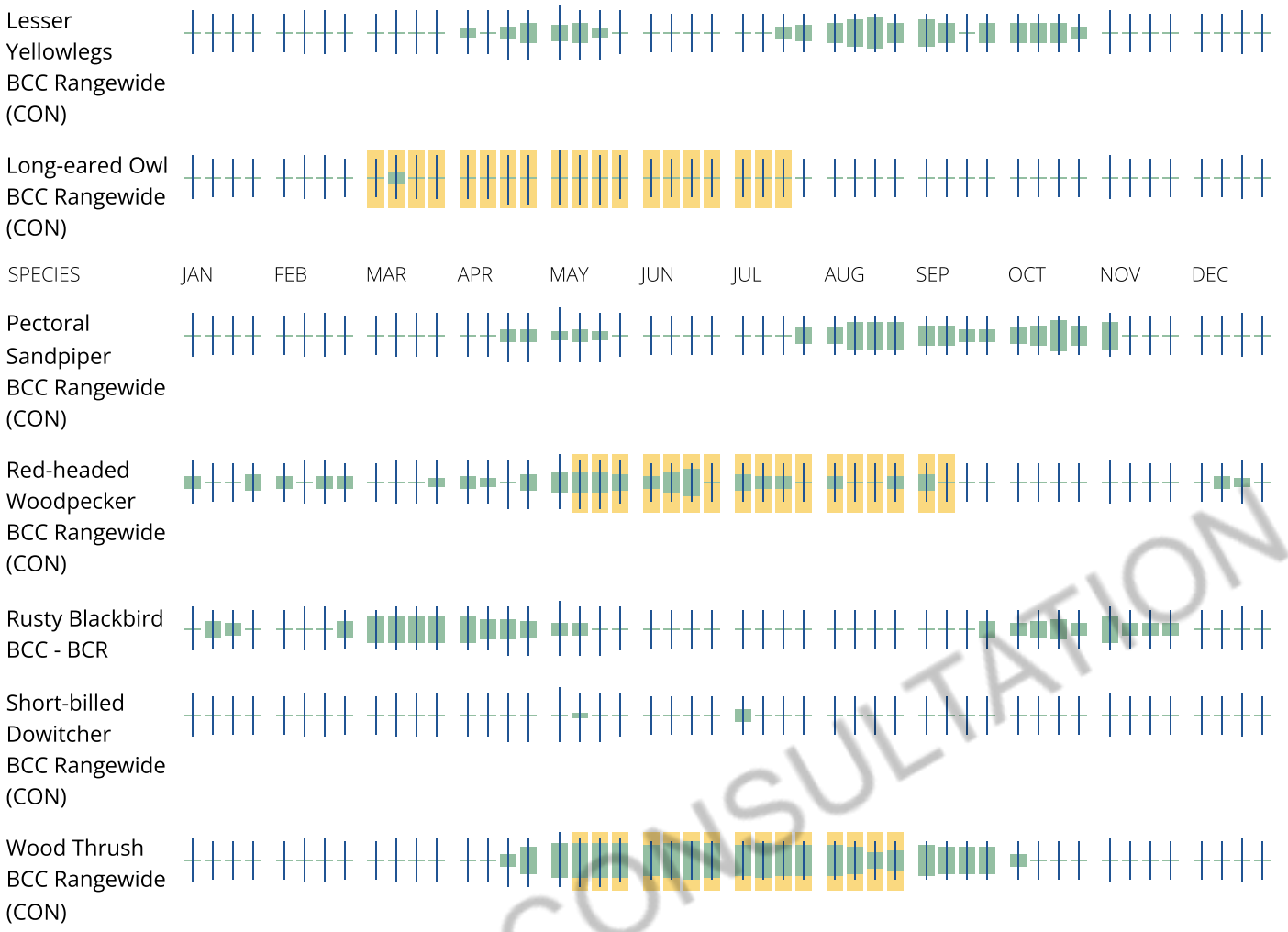

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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures 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 USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

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

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

How do I know if a bird is breeding, wintering 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 year-round), you may query your location using the RAIL Tool and look at 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 migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

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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.

This location did not intersect any wetlands mapped by NWI.

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.

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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.

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Michigan Natural Features Inventory

Web Database Search

MICHIGAN STATE UNIVERSITY EXTENSION

Search Results for Town 02S, Range 05E, Section 25

Query Results Generated on Mar 14, 2024

Displaying Record 1 to 22 of 22 Records Found

Database Updated on Mar 01, 2024

Abstract	Common Name	Scientific Name	State Status	Federal Status	First Observed Year	Last Observed Date	Element Category	Mapping Precision	Site of Observation	Best Documentation of EO	Town	Range	Section	County
	Blanchard's cricket frog	Acris blanchardi	T		1917	1917-11-09	Animal	S	FIRST SISTER LAKE	Ortenburger, A.I. 1917. UMMZ #51911-14.	02S	05E	25	Washtenaw
	Hairy angelica	Angelica venenosa	SC			1924-PRE	Plant	GX	Ypsilanti	Walpole, B.A. 1924. The Flora of Washtenaw County.	02S	05E	1, 2, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, 36	Washtenaw
	Cooper's milk vetch	Astragalus neglectus	SC		1928	1930-06-24	Plant	GX	SCIO		02S	05E	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	Washtenaw
	American bumble bee	Bombus pensylvanicus	E	UR	1914-05-22	1933-08-05			Ann Arbor, First Sister Lake; Third Sister Lake	Rowe, Logan, T. Wood, and D. Cuthrell. 2019. January 17 - Excel file with museum specimen data for the bumble bees of Michigan project.	02S	05E	23, 24, 25, 26, 27, 34, 35, 36	Washtenaw
	False hop sedge	Carex lupuliformis	T		1926	1926-07-21	Plant	GX	SCIO	Farwell, O.A. #7732, 1926 BLH.	02S	05E	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	Washtenaw
	Marsh wren	Cistothorus palustris	SC		2021-06-04	2021-06-04	Animal		First Sister Lake	Berger, Juliet. 2021-06-04. MNFI Special Species Form Cistothorus palustris.	02S	05E	25	Washtenaw
	Least shrew	Cryptotis parva	T		1941	1941-10-24	Animal	GX		Burt, W.H. 1941. #86449 UMMZ	02S	05E	25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	Washtenaw
	Showy orchis	Galearis spectabilis	T		1869	1894-05-23	Plant	GX	ANN ARBOR		02S	05E	12, 13, 14, 15, 22, 23, 24, 25,	Washtenaw

													26, 27, 28, 33, 34, 35, 36	
	Whiskered sunflower	Helianthus hirsutus	SC		1868	1868-09-16	Plant	GX	PENN CENTRAL RAILROAD	Allmendinger, E.C. 1868. MICH.	02S	05E	1, 11, 12, 13, 14, 22, 23, 24, 25, 26, 27, 34, 35, 36	Washtenaw
	Goldenseal	Hydrastis canadensis	T		1937-05-17	1974-05-07	Plant	M	Scio Township Sec 35	Hermann, F.J. 1937. #9188, 9222, 9279 MICH.	02S	05E	25, 26, 27, 34, 35, 36	Washtenaw
	Goldenseal	Hydrastis canadensis	T		1898	2018-08-06	Plant	GX	Huron Parkway/Cedar Bend Nature Area	Burnham, S.H. 1898. GH.	02S	05E	24, 25, 36	Washtenaw
	Goldenseal	Hydrastis canadensis	T		1935	1935-05-23	Plant	GX	Ann Arbor West	HERMANN, F.J. 1935. #6495 GH	02S	05E	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	Washtenaw
	Red mulberry	Morus rubra	T		1880	1880-05-18	Plant	GX	HURON RIVER	Spaulding, U.M. 1880. MICH.	02S	05E	13, 24, 25, 36	Washtenaw
	Little brown bat	Myotis lucifugus	T	UR	1948-08-16	1992-08-23			Pittsfield Village/Ann Arbor	UMMZ online catalog for all collections of the species Myotis lucifugus, downloaded from VertNet (www.vertnet.org) 2015-06-17 for the State of Michigan. Saved in Excel spreadsheet. Also point and polygon shapefiles created from the database catalogue.	02S	05E	1, 2, 3, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, 36	Washtenaw
	Northern long-eared bat	Myotis septentrionalis	T	LE	1902-03-01	2003-07-09			Ann Arbor	Kurta, A. Bat survey and Mine database information recieved 2013-03-15. Not for public viewing. NLEB-1.shp is the spatial representation of just the NLEB.	02S	05E	1, 2, 3, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, 36	Washtenaw
	Indiana bat	Myotis sodalis	E	LE	1946	1965-05-11	Animal	GX	Ann Arbor	Kurta, A. 1980. Status of the Indiana Bat, Myotis sodalis, in Michigan.	02S	05E	1, 2, 3, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, 36	Washtenaw
	American burying beetle	Nicrophorus americanus	X	LE		1916-08-07	Animal	GX	ANN ARBOR	University of Michigan Museum of Zoology. 1989. Records for Michigan Rare	02S	05E	1, 2, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26,	Washtenaw

									and Endangered Insects.			27, 34, 35, 36	
	Depressed ambersnail	Oxyloma peoriense	SC					Ann Arbor MI	Unknown. Unknown Date. 1 collected. Field Museum, Chicago.	02S	05E	24, 25	Washtenaw
	Ginseng	Panax quinquefolius	T	1867	1867	Plant	GX	ANN ARBOR EAST		02S	05E	1, 2, 10, 11, 12, 13, 14, 15, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, 36	Washtenaw
	Tall nut rush	Scleria triglomerata	SC	1838	1838-06-27	Plant	GX	CITY OF ANN ARBOR	First Geological Survey (J. Wright?). 1838. MICH, MSC.	02S	05E	1, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, 36	Washtenaw
	Eastern box turtle	Terrapene carolina carolina	T	1900	1900	Animal	G	ANN ARBOR	Tinkle, D.A. et al. 1979. Occurrence notecards for state survey of Endangered, Threatened Reptiles and Amphibians. Xerox of notecards.	02S	05E	1, 11, 12, 13, 14, 23, 24, 25, 26, 36	Washtenaw
	Edible valerian	Valeriana edulis var. ciliata	T	1860	1860	Plant		ANN ARBOR	E.E.B. 1860. Mich.	02S	05E	24, 25, 36	Washtenaw

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