

Republic Wind Project

APPENDIX

B

FULL SOILS TABLE

Appendix B - Soils within Project Boundary				
Symbol	Description	Hydric Rating	Project Boundary Area (AC)	Project Boundary Area (%)
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	9	9,248	28%
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	9	7,259	22%
Pa	Pandora silt loam	92	2,060	6%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	6	1,988	6%
GwA	Glynwood silt loam, 0 to 2 percent slopes	6	1,747	5%
HoA	Hoytville clay loam, 0 to 1 percent slopes	91	1,076	3%
MnB	Milton silt loam, 2 to 6 percent slopes	0	761	2%
NpA	Nappanee silt loam, 0 to 2 percent slopes	5	755	2%
DmA	Digby loam, 1 to 4 percent slopes	5	445	1%
MnA	Milton silt loam, 0 to 2 percent slopes	0	435	1%
KbA	Kibbie fine sandy loam, 0 to 2 percent slopes	5	402	1%
HkB	Haskins loam, 2 to 6 percent slopes	5	383	1%
RmB	Rawson loam, 2 to 6 percent slopes	0	373	1%
HaB	Haney loam, 2 to 6 percent slopes	0	367	1%
Gwg5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	6	362	1%
Co	Colwood silt loam	94	349	1%
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	6	314	1%
HkA	Haskins loam, 0 to 2 percent slopes	5	301	1%
RbA	Randolph silt loam, 0 to 2 percent slopes	4	287	1%
SdA	Seward loamy fine sand, 0 to 2 percent slopes	0	272	1%
GaB	Gallman loam, 2 to 6 percent slopes	0	260	1%
Ch	Chagrin silt loam, occasionally flooded	0	257	1%
Pt	Pits, quarries	0	241	1%
Sh	Shoals silt loam, 0 to 2 percent slopes, frequently flooded	5	203	1%
Bp	Bono silty clay, loamy substratum	100	186.65	0.57%
FcA	Fitchville silt loam, 1 to 4 percent slopes	2	181	1%
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	7	172	1%
SpB	Spinks loamy sand, 2 to 6 percent slopes	0	163	1%
Le	Lenawee silty clay loam	100	150.12	0.46%
RoB	Rimer loamy fine sand, 1 to 4 percent slopes	3	132	0%
GwB	Glynwood silt loam, 2 to 6 percent slopes	2	119	0%
SoB	Spinks fine sand, 2 to 6 percent slopes	3	111	0%
SdB	Seward loamy fine sand, 2 to 6 percent slopes (Seneca Co.)	0	104	0%
BdB	Belmore loam, 2 to 6 percent slopes (Seneca County)	0	86	0%
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	6	77	0%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	91	77	0%
Mm	Millsdale silty clay loam	95	75	0%
Mo	Mermill loam (Sandusky County)	96	72	0%
CnB	Channahon silt loam, 2 to 6 percent slopes	0	68	0%
BaB	Belmore loam, 2 to 6 percent slopes (Sandusky County)	0	60	0%
Sb	Sebring silt loam	100	59.71	0.18%
Pe	Pewamo silty clay loam, 0 to 1 percent slopes	91	54	0%
Mf	Millgrove loam	95	43	0%
HaA	Haney loam, 0 to 2 percent slopes	0	41	0%
GaA	Gallman loam, 0 to 2 percent slopes	0	41	0%
HbB	Haskins sandy loam, 1 to 4 percent slopes	5	40	0%
MrD2	Morley silt loam, 12 to 18 percent slopes, eroded	0	35	0%

Appendix B - Soils within Project Boundary				
Symbol	Description	Hydric Rating	Project Boundary Area (AC)	Project Boundary Area (%)
DrB	Dunbridge sandy loam, 1 to 4 percent slopes (Seneca County)	2	35	0%
NpB	Nappanee silt loam, 2 to 6 percent slopes	5	25	0%
BfF2	Belmore-Morley complex, 18 to 50 percent slopes, eroded	0	20	0%
DuB	Dunbridge sandy loam, 1 to 4 percent slopes (Sandusky County)	2	19	0%
HaC2	Haney loam, 6 to 12 percent slopes, eroded	0	18	0%
MrF2	Morley silt loam, 18 to 50 percent slopes, eroded	0	16	0%
Me	Mermill loam (Sandusky County)	92	15	0%
SeB	Seward loamy fine sand, 2 to 6 percent slopes (Sandusky Co.)	0	13	0%
W	Water	0	13	0%
TeA	Tedrow loamy fine sand, 0 to 2 percent slopes	5	9	0%
RoA	Rimer loamy sand, 0 to 2 percent slopes	0	3	0%
Ru	Ross silt loam, occasionally flooded	0	2	0%
TOTAL			32,477.72	100%

Republic Wind Project

APPENDIX

C

RTE SPECIES INFORMATION

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

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.

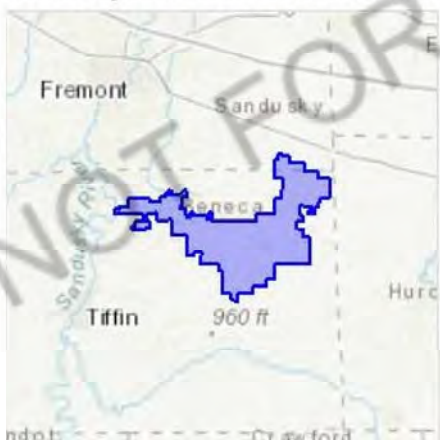
Project information

NAME

Proposed Project 2018 - Sandusky & Seneca Counties

LOCATION

Sandusky and Seneca counties, Ohio

**DESCRIPTION**


Proposed

Project 2018 - Sandusky & Seneca Counties, layout 054 Nov 2017

Local office

Ohio Ecological Services Field Office

☎ (614) 416-8993

 (614) 416-8994

4625 Morse Road, Suite 104
Columbus, OH 43230-8355

NOT FOR CONSULTATION

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. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species

¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

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.

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

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Kirtland's Warbler <i>Setophaga kirtlandii</i> (= <i>Dendroica kirtlandii</i>) No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8078	Endangered
Piping Plover <i>Charadrius melodus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6039	Endangered
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1864	Threatened

Flowering Plants

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

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

³. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.

2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

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

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or are known to have particular vulnerabilities in your project location. To learn more about the levels of concern for birds on your list, 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 specific project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the scientific name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain time-frame) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain time-frame). 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 can be found [below](#).

NAME	BREEDING SEASON
American Bittern <i>Botaurus lentiginosus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6582	Breeds Apr 1 to Aug 31
American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC), but is of concern in this area either 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 Mar 20 to Sep 15
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20

Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> 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 <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Eastern Whip-poor-will <i>Antrostomus vociferus</i> 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 <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC), but is of concern in this area either 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
Golden-winged Warbler <i>Vermivora chrysoptera</i> 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
Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
King Rail <i>Rallus elegans</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Least Bittern <i>Ixobrychus exilis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6175	Breeds Aug 16 to Oct 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere

Long-eared Owl <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> 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 <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Willow Flycatcher <i>Empidonax traillii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482	Breeds May 20 to Aug 31
Wood Thrush <i>Hylocichla mustelina</i> 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.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties 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.

- 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.

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 counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

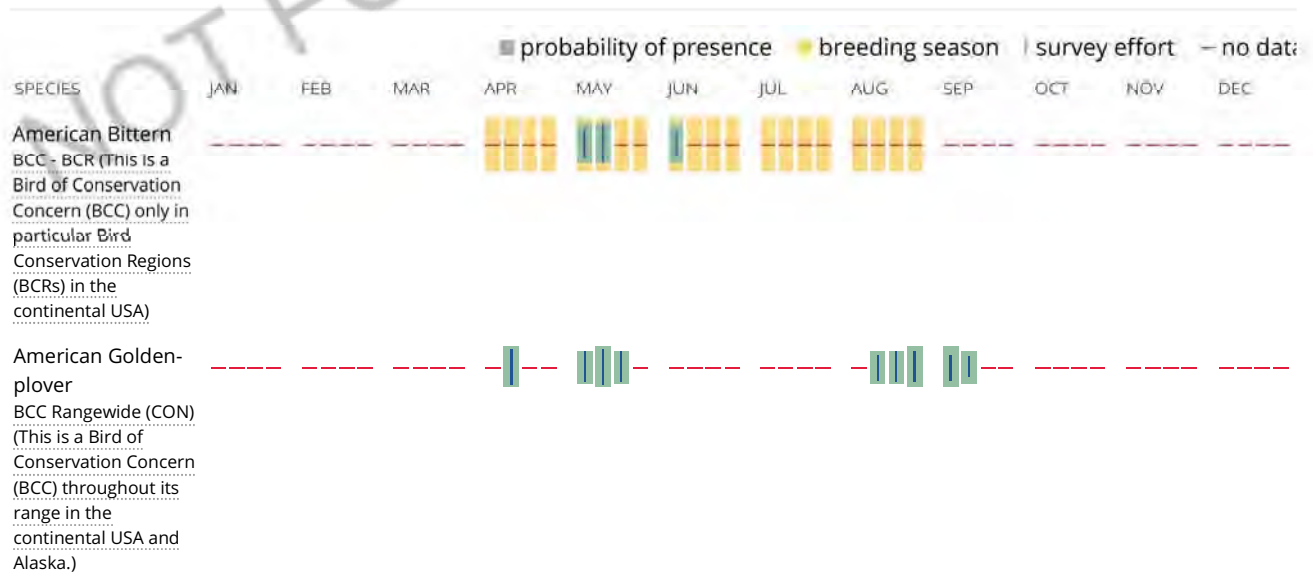
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Bald Eagle

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

**Black Tern**

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

**Black-billed Cuckoo**

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

**Bobolink**

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

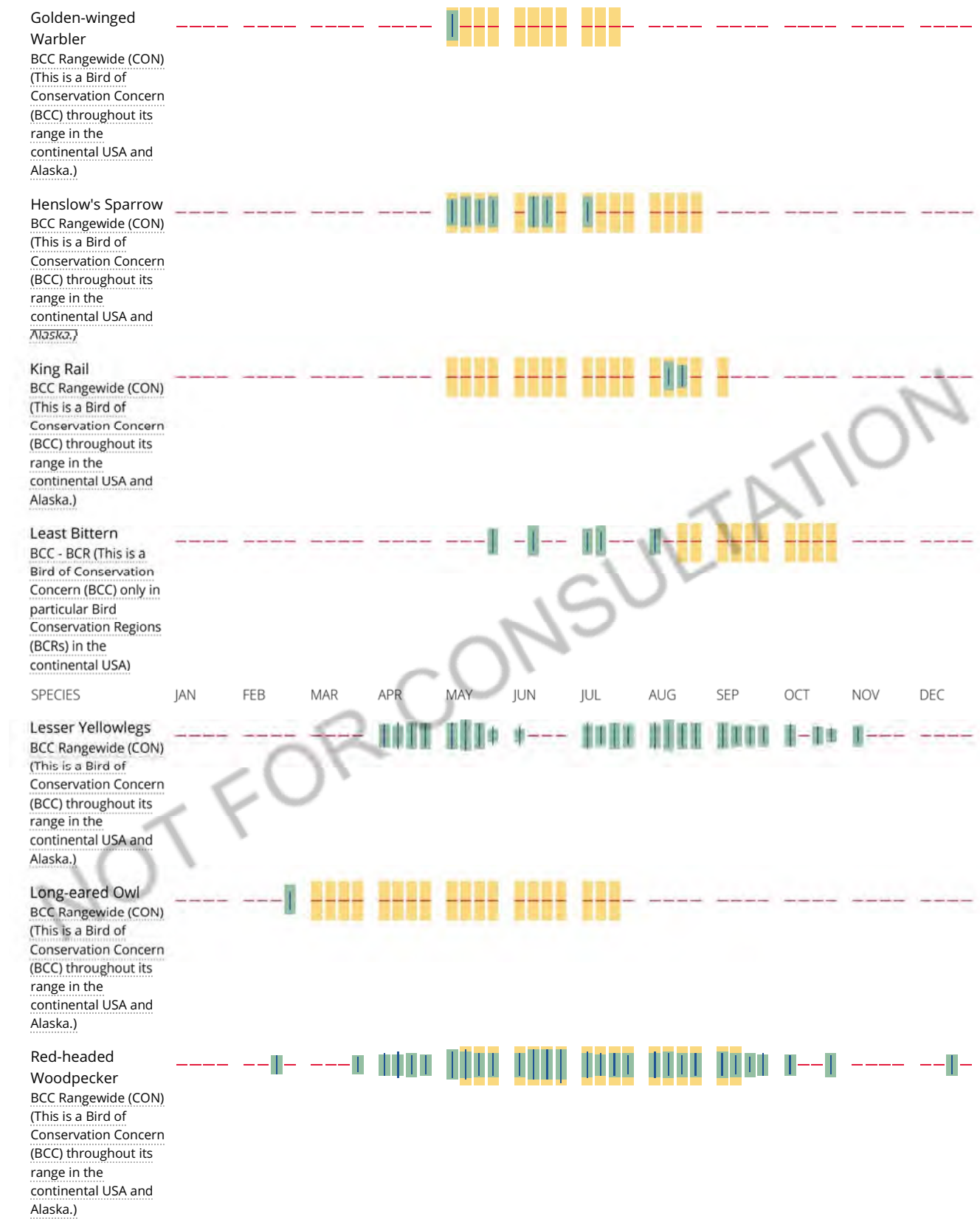
**Eastern Whip-poor-will**

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

**Golden Eagle**

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







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. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in [Birds of North America \(BNA\) Online](#) under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a [subscription](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the [Endangered Species Act \(ESA\)](#).

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](#). The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data 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.

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

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame 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).

[Avoidance and minimization measures](#) should be implemented to reduce impacts to birds on your list, and all other birds that may occur in your project area. Nationwide Standard Conservation Measures can be applied for any project, regardless of project type or location.

If measures exist that are specific to your activity or to any of the species on your list that are confirmed to exist at your project area, these should also be considered for implementation in addition to the Nationwide Standard Conservation Measures. Implementation of avoidance and minimization measures is particularly important for BCC birds of rangewide concern.

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

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

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

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

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

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

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1A](#)

[PEM1C](#)

[PEM1Ch](#)

[PEM1B](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1C](#)

[PFO1A](#)

[PFO1/SS1C](#)

[PSS1/EM1C](#)

[PSS1C](#)

[PFO1/EM1C](#)

FRESHWATER POND

[PUBGx](#)

[PUBG](#)

RIVERINE

[R2UBH](#)

A full description for each wetland code can be found at the National Wetlands Inventory website:

<https://ecos.fws.gov/ipac/wetlands/decoder>

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

SANDUSKY COUNTY

State Status	Federal Status	County	Category	Species	CommonName	Sensitive Species	Most Recent Record	FWS
Endangered	Endangered	Sandusky	Bird	Bubulcus ibis	Cattle Egret	No	2004	
Endangered		Sandusky	Bird	Charadrius melodus	Piping Plover	No		*
Endangered		Sandusky	Bird	Circus cyaneus	Northern Harrier	No	1996	
Endangered	Endangered	Sandusky	Bird	Dendroica kirtlandii	Kirtland's Warbler	No		*
Endangered	Endangered	Sandusky	Invert. - fw bivalve	Villosa fabalis	Rayed Bean	No	1971	
Endangered	Endangered Candidate	Sandusky	Mammal	Myotis sodalis	Indiana Myotis	Yes		*
Endangered		Sandusky	Reptile - Snake	Sistrurus catenatus catenatus	Eastern Massasauga	Yes		*
Threatened		Sandusky	Bird	Nycticorax nycticorax	Black-crowned Night-Heron	No	2002	
Threatened		Sandusky	Fish	Anguilla rostrata	American Eel	No	1988	
Threatened		Sandusky	Fish	Moxostoma valenciennesi	Greater Redhorse	No	2010	
Threatened		Sandusky	Insect - moth	Faronta rubripennis	The Pink-streak	No	1986	
Threatened		Sandusky	Invert. - fw bivalve	Ligumia recta	Black Sandshell	No	1999	
Threatened		Sandusky	Invert. - fw bivalve	Obliquaria reflexa	Threehorn Wartyback	No	2011	
Threatened		Sandusky	Invert. - fw bivalve	Unio merus tetralasmus	Pondhorn	No	2010	
Species of Concern		Sandusky	Amphibian - Frog / Toad	Acris crepitans crepitans	Eastern Cricket Frog	No	1999	
Species of Concern		Sandusky	Bird	Ardea alba	Great Egret	No	2014	
Species of Concern		Sandusky	Bird	Cistothorus palustris	Marsh Wren	No	2013	
Species of Concern		Sandusky	Bird	Dolichonyx oryzivorus	Bobolink	No	2013	
Species of Concern		Sandusky	Bird	Porzana carolina	Sora Rail	No	2013	
Species of Concern		Sandusky	Fish	Esox masquinongy	Muskellunge	No	1999	
Species of Concern		Sandusky	Fish	Moxostoma carinatum	River Redhorse	No	2010	
Species of Concern		Sandusky	Invert. - fw bivalve	Alasmidonta marginata	Elktoe	No	1995	
Species of Concern		Sandusky	Invert. - fw bivalve	Cyclonaias tuberculata	Purple Wartyback	No	1995	
Species of Concern		Sandusky	Invert. - fw bivalve	Lampsilis fasciola	Wavy-rayed Lampmussel	No	1992	
Species of Concern		Sandusky	Invert. - fw bivalve	Pleurobema sintoxia	Round Pigtoe	No	1994	
Species of Concern		Sandusky	Invert. - fw bivalve	Ptychobranchus fasciolaris	Kidneyshell	No	1992	
Species of Concern		Sandusky	Invert. - fw bivalve	Truncilla truncata	Deertoe	No	2011	
Species of Concern		Sandusky	Mammal	Eptesicus fuscus	Big Brown Bat	No	2007	
Species of Concern		Sandusky	Mammal	Lasiurus borealis	Red Bat	No	2007	
Species of Concern		Sandusky	Mammal	Myotis lucifugus	Little Brown Bat	No	2007	
Species of Concern	Threatened	Sandusky	Mammal	Myotis septentrionalis	Northern Long-eared Bat	No		*
Species of Concern		Sandusky	Mammal	Peromyscus maniculatus	Deer Mouse	No	1968	
Species of Concern		Sandusky	Mammal	Synaptomys cooperi	Southern Bog Lemming	No	1938	
Species of Concern		Sandusky	Mammal	Taxidea taxus	Badger	No	2007	
Special Interest		Sandusky	Bird	Anas clypeata	Northern Shoveler	No	2013	
Special Interest		Sandusky	Bird	Aythya americana	Redhead	No	2013	
Special Interest		Sandusky	Bird	Catharus guttatus	Hermit Thrush	No	2013	
Special Interest		Sandusky	Bird	Certhia americana	Brown Creeper	No	2013	
Special Interest		Sandusky	Bird	Dendroica caerulescens	Black-throated Blue Warbler	No	2013	
Special Interest		Sandusky	Bird	Dendroica magnolia	Magnolia Warbler	No	2013	
Special Interest		Sandusky	Bird	Empidonax minimus	Least Flycatcher	No	2013	
Special Interest		Sandusky	Bird	Gallinago delicata	Wilson's Snipe	No	2013	
Special Interest		Sandusky	Bird	Junco hyemalis	Dark-eyed Junco	No	2013	
Special Interest		Sandusky	Bird	Oporornis philadelphia	Mourning Warbler	No	2013	
Special Interest		Sandusky	Bird	Regulus satrapa	Golden-crowned Kinglet	No	2013	
Special Interest		Sandusky	Bird	Wilsonia canadensis	Canada Warbler	No	2013	
Extirpated		Sandusky	Invert. - fw bivalve	Actinonaias ligamentina ligamentina	Mucket	No	1995	



Sandusky County

Scientific Name	Common Name	Last Observed	State Status	Federal Status
<i>Acorus americanus</i>	American Sweet-flag	2011-06-30	P	
<i>Conyza ramosissima</i>	Bushy Horseweed	2009-06-30	P	
<i>Cypripedium candidum</i>	White Lady's-slipper	1995-05-30	E	
<i>Descurainia pinnata</i>	Tansy Mustard	1960-04-30	T	
<i>Juncus balticus</i>	Baltic Rush	1960-05-28	P	
<i>Moehringia lateriflora</i>	Grove Sandwort	1991-07-13	P	
<i>Packera paupercula</i>	Balsam Squaw-weed	1992-05-19	T	
<i>Platanthera leucophaea</i>	Prairie Fringed Orchid	2012-06-26	T	FT
<i>Sphenopholis obtusata</i> var. <i>obtusata</i>	Prairie Wedge Grass	1992-07	T	
<i>Triglochin palustris</i>	Marsh Arrow-grass	1959-08-12	P	
<i>Viola nephrophylla</i>	Northern Bog Violet	1967-09	T	



Ohio Division of Wildlife
Ohio Natural Heritage Database
Date Accessed: March 6, 2015
Status based on 2014-15 Rare Plant List.

Status:

X = Extirpated

E = Endangered

T = Threatened

P = Potentially Threatened

List Created: July 2016

SENECA COUNTY

State Status	Federal Status	County	Category	Species	CommonName	Sensitive Species	Most Recent Record	FWS
Endangered		Seneca	Bird	Bartramia longicauda	Upland Sandpiper	No	1998	
Endangered		Seneca	Bird	Circus cyaneus	Northern Harrier	No	2004	
Endangered		Seneca	Bird	Lanius ludovicianus	Loggerhead Shrike	No	2000	
Endangered		Seneca	Insect - odonate	Gomphus externus	Plains Clubtail	No	2005	
Endangered	Endangered	Seneca	Invert. - fw bivalve	Epioblasma torulosa rangiana	Northern Riffleshell	No	1976	
Endangered	Endangered	Seneca	Invert. - fw bivalve	Villosa fabalis	Rayed Bean	No	1971	
Endangered	Endangered	Seneca	Mammal	Myotis sodalis	Indiana Myotis	Yes		*
Threatened		Seneca	Fish	Moxostoma valenciennesi	Greater Redhorse	No	2009	
Threatened		Seneca	Invert. - fw bivalve	Ligumia recta	Black Sandshell	No	2008	
Species of Concern		Seneca	Bird	Ammodramus henslowii	Henslow's Sparrow	No	2014	
Species of Concern		Seneca	Bird	Ardea alba	Great Egret	No	2011	
Species of Concern		Seneca	Bird	Cistothorus palustris	Marsh Wren	No	1997	
Species of Concern		Seneca	Bird	Colinus virginianus	Northern Bobwhite	No	2006	
Species of Concern		Seneca	Bird	Dolichonyx oryzivorus	Bobolink	No	2014	
Species of Concern		Seneca	Fish	Esox masquinongy	Muskellunge	No	1981	
Species of Concern		Seneca	Fish	Moxostoma carinatum	River Redhorse	No	2009	
Species of Concern		Seneca	Insect - moth	Smerinthus cerisyi	One-Eyed Sphinx	No	1956	
Species of Concern		Seneca	Invert. - fw bivalve	Alasmidonta marginata	Elktoe	No	2008	
Species of Concern		Seneca	Invert. - fw bivalve	Cyclonaias tuberculata	Purple Wartyback	No	2009	
Species of Concern		Seneca	Invert. - fw bivalve	Lampsilis fasciola	Wavy-rayed Lampmussel	No	1971	
Species of Concern		Seneca	Invert. - fw bivalve	Lasmigona compressa	Creek Heelsplitter	No	1936	
Species of Concern		Seneca	Invert. - fw bivalve	Pleurobema sintoxia	Round Pigtoe	No	2008	
Species of Concern		Seneca	Invert. - fw bivalve	Ptychobranhus fasciolaris	Kidneyshell	No	2008	
Species of Concern		Seneca	Mammal	Eptesicus fuscus	Big Brown Bat	No	2012	
Species of Concern		Seneca	Mammal	Lasiurus borealis	Red Bat	No	2012	
Species of Concern		Seneca	Mammal	Lasiurus cinereus	Hoary Bat	No	2012	
Species of Concern		Seneca	Mammal	Myotis lucifugus	Little Brown Bat	No	2012	
Species of Concern	Threatened	Seneca	Mammal	Myotis septentrionalis	Northern Long-eared Bat	No	2012	
Species of Concern		Seneca	Mammal	Perimyotis subflavus	Tri-colored Bat	No	2012	
Species of Concern		Seneca	Mammal	Peromyscus maniculatus	Deer Mouse	No	1975	
Species of Concern		Seneca	Mammal	Synaptomys cooperi	Southern Bog Lemming	No	1937	
Species of Concern		Seneca	Mammal	Taxidea taxus	Badger	No	2007	
Special Interest		Seneca	Bird	Carpodacus purpureus	Purple Finch	No	2005	
Extirpated		Seneca	Invert. - fw bivalve	Actinonaias ligamentina ligamentina	Mucket	No	1976	



Seneca County

Scientific Name	Common Name	Last Observed	State Status	Federal Status
<i>Betula pumila</i>	Swamp Birch	1994-05-25	T	
<i>Carex alata</i>	Broad-winged Sedge	2004-06-22	P	
<i>Carex bebbii</i>	Bebb's Sedge	1999-07-15	P	
<i>Carex cryptolepis</i>	Little Yellow Sedge	2007-06-28	P	
<i>Carex lasiocarpa</i>	Slender Sedge	1993-06-22	P	
<i>Carex pseudocyperus</i>	Northern Bearded Sedge	2013-08-19	E	
<i>Carex viridula</i>	Little Green Sedge	1990-05	T	
<i>Collema crispum</i>	Crinkled Jelly Lichen	1962-07-09	X	
<i>Cypripedium candidum</i>	White Lady's-slipper	1994-05-25	E	
<i>Eleocharis engelmannii</i>	Engelmann's Spike-rush	1969-09-09	E	
<i>Eleocharis quinqueflora</i>	Few-flowered Spike-rush	2013-08-19	T	
<i>Phragmites australis</i> ssp. <i>american</i>	American Reed Grass	2006-10-18	P	
<i>Potamogeton gramineus</i>	Grass-like Pondweed	1986-06-05	E	
<i>Rhynchospora alba</i>	White Beak-rush	2013-08-19	P	
<i>Spiranthes lucida</i>	Shining Ladies'-tresses	1980-06-06	P	



Ohio Division of Wildlife
Ohio Natural Heritage Database
Date Accessed: March 6, 2015
Status based on 2014-15 Rare Plant List.

Status:

X = Extirpated

E = Endangered

T = Threatened

P = Potentially Threatened

List Created: July 2016



OHIO'S LISTED SPECIES

WILDLIFE THAT ARE CONSIDERED TO BE
ENDANGERED, THREATENED, SPECIES OF CONCERN,
SPECIAL INTEREST, EXTIRPATED, OR EXTINCT IN OHIO



Blanding's turtle
Emydoidea blandingii

photo by TIM DANIEL



WILDLIFE THAT ARE CONSIDERED TO BE ENDANGERED, THREATENED, SPECIES OF CONCERN, SPECIAL INTEREST, EXTIRPATED, OR EXTINCT IN OHIO

The Division of Wildlife's mission is to conserve and improve the fish and wildlife resources and their habitats, and promote their use and appreciation by the public so that these resources continue to enhance the quality of life for all Ohioans. The Division has legal authority over Ohio's fish and wildlife, which includes about 56 species of mammals, 200 species of breeding birds, 84 species and subspecies of amphibians and reptiles, 170 species of fish, 100 species of mollusks, and 20 species of crustaceans. In addition, there are thousands of species of insects and other invertebrates which fall under the Division's jurisdiction. Furthermore, Ohio law grants authority to the chief of the Division to adopt rules restricting the taking or possession of native wildlife threatened with statewide extirpation and to develop and periodically update a list of endangered species (Ohio Revised Code 1531.25).

The status of native wildlife species is very important to the Division. While the listing process identifies individual wildlife species needing protection, it also serves as a powerful tool in the

Division's planning process. It provides direction for the allocation of personnel time and funds in Division programs and projects.

The first list of Ohio's endangered wildlife was adopted in 1974 and included 71 species. An extensive examination of the list is conducted every five years. The Division seeks input from our staff along with other noted professional and amateur wildlife experts across Ohio. In 2001, as part of our comprehensive management plan, the Division initiated a reevaluation of the endangered species list. During this process, the need for an additional state-list category was recognized and has been designated as "Special Interest." The name of the previous special interest category has been changed to "Species of Concern," but retains its original definition.

Therefore, in addition to endangered the Division uses five other categories: threatened, species of concern, special interest, extirpated, and extinct, to further define the status of selected wildlife. These categories and the species contained within them are dynamic and will be revised as our knowledge of the status of Ohio's wildlife evolves.

Definitions of these categories, a summary of the numbers of species and subspecies in each category, and the list of species and subspecies in each category follow:

ENDANGERED - A native species or subspecies threatened with extirpation from the state. The danger may result from one or more causes, such as habitat loss, pollution, predation, interspecific competition, or disease.

THREATENED - A species or subspecies whose survival in Ohio is not in immediate jeopardy, but to which a threat exists. Continued or increased stress will result in its becoming endangered.

SPECIES OF CONCERN - A species or subspecies which might become threatened in Ohio under continued or increased stress. Also, a species or subspecies for which there is some concern but for which information is insufficient to permit an adequate status evaluation. This category may contain species designated as a furbearer or game species but whose statewide population is dependent on the quality and/or quantity of habitat and is not adversely impacted by regulated harvest.

SPECIAL INTEREST - A species that occurs periodically and is capable of breeding in Ohio. It is at the edge of a larger, contiguous range with viable population(s) within the core of its range. These species have no federal endangered or threatened status, are at low breeding densities in the state, and have not been recently released to enhance Ohio's wildlife diversity. With the exception of efforts to conserve occupied areas, minimal management efforts will be directed for these species because it is unlikely to result in significant increases in their populations within the state.

EXTIRPATED - A species or subspecies that occurred in Ohio at the time of European settlement and that has since disappeared from the state.

EXTINCT - A species or subspecies that occurred in Ohio at the time of European settlement and that has since disappeared from its entire range.

**Number of Species in Major Taxa Classified as
Endangered, Threatened, Species of Concern, Special Interest,
Extirpated, or Extinct in Ohio**

Taxon	Endangered	Threatened	Species of Concern	Special Interest	Extirpated	Extinct
Mammals	3	2	20	1	10	0
Birds	12	6	20	39	6	2
Reptiles	5	4	11	0	0	0
Amphibians	5	1	2	0	0	0
Fishes	22	11	8	0	9	2
Mollusks	24	4	8	0	11	6
Crayfishes	0	2	3	0	0	0
Isopods	2	1	0	0	0	0
Pseudoscorpions	1	0	0	0	0	0
Dragonflies	13	3	1	0	0	0
Damselflies	3	3	0	0	0	0
Caddisflies	3	6	3	0	0	0
Mayflies	2	0	1	0	0	0
Midges	1	3	1	0	0	0
Crickets	0	0	1	0	0	0
Butterflies	8	1	2	1	1	0
Moths	14	4	22	11	0	0
Beetles	3	2	7	0	0	1
Total	121	53	110	52	37	11

See page
4

See page
6

See page
7

See page
9

See page
10

See page
10

OHIO's ENDANGERED SPECIES

NOTE: *E & *T denote federal (U.S. Fish and Wildlife Service)
listed endangered and threatened species respectively.

MAMMALS ENDANGERED

Indiana myotis *E	<i>Myotis sodalis</i>
Allegheny woodrat	<i>Neotoma magister</i>
Black bear	<i>Ursus americanus</i>

BIRDS ENDANGERED

American bittern	<i>Botaurus lentiginosus</i>
Northern harrier	<i>Circus cyaneus</i>
King rail	<i>Rallus elegans</i>
Piping plover *E	<i>Charadrius melodus</i>
Common tern	<i>Sterna hirundo</i>
Black tern	<i>Chlidonias niger</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Kirtland's warbler *E	<i>Setophaga kirtlandii</i>
Lark sparrow	<i>Chondestes grammacus</i>
Snowy egret	<i>Egretta thula</i>
Cattle egret	<i>Bubulcus ibis</i>
Upland sandpiper	<i>Bartramia longicauda</i>

REPTILES ENDANGERED

Copperbelly watersnake *T	<i>Nerodia erythrogaster neglecta</i>
Plains gartersnake	<i>Thamnophis radix</i>
Timber rattlesnake	<i>Crotalus horridus</i>
Massasauga	<i>Sistrurus catenatus</i>
Smooth greensnake	<i>Opheodrys vernalis</i>

AMPHIBIANS ENDANGERED

Eastern hellbender	<i>Cryptobranchus alleganiensis alleganiensis</i>
Blue-spotted salamander	<i>Ambystoma laterale</i>
Green salamander	<i>Aneides aeneus</i>
Cave salamander	<i>Eurycea lucifuga</i>
Eastern spadefoot	<i>Scaphiopus holbrookii</i>

FISHES ENDANGERED

Ohio lamprey	<i>Ichthyomyzon bdellium</i>
Northern brook lamprey	<i>Ichthyomyzon fossor</i>
Mountain brook lamprey	<i>Ichthyomyzon greeleyi</i>
Lake sturgeon	<i>Acipenser fulvescens</i>
Shovelnose sturgeon	<i>Scaphirhynchus platyrhynchus</i>

Spotted gar	<i>Lepisosteus oculatus</i>
Shortnose gar	<i>Lepisosteus platostomus</i>
Cisco (or Lake herring)	<i>Coregonus artedii</i>
Goldeye	<i>Hiodon alosoides</i>
Shoal chub	<i>Macrhybopsis hyostoma</i>
Pugnose minnow	<i>Opsopoeodus emiliae</i>
Popeye shiner	<i>Notropis ariommus</i>
Longnose sucker	<i>Catostomus catostomus</i>
Northern madtom	<i>Noturus stigmosus</i>
Scioto madtom *E	<i>Noturus trautmani</i>
Pirate perch	<i>Aphredoderus sayanus</i>
Western banded killifish	<i>Fundulus diaphanus menona</i>
Spotted darter	<i>Etheostoma maculatum</i>
Iowa darter	<i>Etheostoma exile</i>
Gilt darter	<i>Percina evides</i>
Bigeye shiner	<i>Notropis boops</i>
Tonguetied minnow	<i>Exoglossum laurae</i>

MOLLUSKS ENDANGERED

Snuffbox *E	<i>Epioblasma triquetra</i>
Ebonyshell	<i>Fusconaia ebenas</i>
Fanshell *E	<i>Cyprogenia stegaria</i>
Butterfly	<i>Ellipsaria lineolata</i>
Elephantear	<i>Elliptio crassidens crassidens</i>
Purple catspaw *E	<i>Epioblasma obliquata obliquata</i>
White catspaw *E	<i>Epioblasma obliquata perobliqua</i>
Northern riffleshell *E	<i>Epioblasma torulosa rangiana</i>
Longsolid	<i>Fusconaia subrotunda</i>
Pink mucket *E	<i>Lampsilis orbiculata</i>
Pocketbook	<i>Lampsilis ovata</i>
Yellow sandshell	<i>Lampsilis teres</i>
Eastern pondmussel	<i>Ligumia nasuta</i>
Washboard	<i>Megalanaia nervosa</i>
Sheepnose *E	<i>Plethobasus cyphus</i>
Clubshell *E	<i>Pleurobema clava</i>
Ohio pigtoe	<i>Pleurobema cordatum</i>
Pyramid pigtoe	<i>Pleurobema rubrum</i>
Rabbitsfoot *T	<i>Quadrula cylindrica cylindrica</i>
Monkeyface	<i>Quadrula metanевра</i>

MOLLUSKS (CONT.) ENDANGERED

Wartyback	<i>Quadrula nodulata</i>
Purple lilliput	<i>Toxolasma lividum</i>
Rayed bean *E	<i>Villosa fabalis</i>
Little spectaclecase	<i>Villosa lienosa</i>

DRAGONFLIES ENDANGERED

Hine's emerald *E	<i>Somatochlora hineana</i>
Mottled darner	<i>Aeshna clepsydra</i>
Plains clubtail	<i>Gomphus externus</i>
American emerald	<i>Cordulia shurtleffi</i>
Uhler's sundragon	<i>Helocordulia uhleri</i>
Frosted whiteface	<i>Leucorrhinia frigida</i>
Elfin skimmer	<i>Nannothemis bella</i>
Canada darner	<i>Aeshna canadensis</i>
Racket-tailed emerald	<i>Dorocordulia libera</i>
Brush-tipped emerald	<i>Somatochlora walshii</i>
Blue corporal	<i>Ladona deplanata</i>
Chalk-fronted corporal	<i>Ladona julia</i>
Yellow-sided skimmer	<i>Libellula flava</i>

DAMSELFLIES ENDANGERED

Lilypad forktail	<i>Ischnura kellicotti</i>
Seepage dancer	<i>Argia bipunctulata</i>
River jewelwing	<i>Calopteryx aequabilis</i>

CADDISFLIES ENDANGERED

—	<i>Chimarra socia</i>
—	<i>Oecetis eddlestoni</i>
—	<i>Brachycentrus nigrosoma</i>

MAYFLIES ENDANGERED

—	<i>Rhithrogena pellucida</i>
—	<i>Litobrancha recurvata</i>

MIDGES ENDANGERED

—	<i>Rheopelopia acra</i>
---	-------------------------

BUTTERFLIES ENDANGERED

Persius dusky wing	<i>Erynnis persius</i>
--------------------	------------------------

Frosted elfin	<i>Callophrys irus</i>
Karner blue *E	<i>Lycaeides melissa samuelis</i>
Purplish copper	<i>Lycaena helloides</i>
Swamp metalmark	<i>Calephelis muticum</i>
Regal fritillary	<i>Speyeria idalia</i>
Mitchell's satyr *E	<i>Neonympha mitchellii</i>
Grizzled skipper	<i>Pyrgus centaureae wyandot</i>

MOTHS ENDANGERED

Unexpected cynia	<i>Cynia inopinatus</i>
Graceful underwing	<i>Catocala gracilis</i>
—	<i>Spartiniphaga inops</i>
—	<i>Hypocoena enervata</i>
—	<i>Papaipema silphii</i>
—	<i>Papaipema beeriana</i>
—	<i>Lithophane semiusta</i>
—	<i>Trichoclea artesta</i>
—	<i>Tricholita notata</i>
—	<i>Melanchra assimilis</i>
Pointed swallow	<i>Epiglaea apiata</i>
—	<i>Ufeus plicatus</i>
—	<i>Ufeus satyricus</i>
Hebard's noctuid moth	<i>Erythroecia hebardii</i>

BEETLES ENDANGERED

Ohio cave beetle	<i>Pseudanophthalmus ohioensis</i>
American burying beetle *E	<i>Nicrophorus americanus</i>
Water penny beetle	<i>Dicranopselapus variegatus</i>

ISOPODS ENDANGERED

Fern cave isopod	<i>Caecidotea filicispeluncae</i>
—	<i>Caecidotea insula</i>

PSEUDOSCORPIONS ENDANGERED

Buckskin cave pseudoscorpion	<i>Apochthonius hobbsi</i>
------------------------------	----------------------------

OHIO's THREATENED SPECIES

NOTE: *E & *T denote federal (U.S. Fish and Wildlife Service)
listed endangered and threatened species respectively.

MAMMALS THREATENED

Eastern harvest mouse	<i>Reithrodontomys humulis</i>
Northern long-eared bat *T	<i>Myotis septentrionalis</i>

BIRDS THREATENED

Black-crowned night-heron	<i>Nycticorax nycticorax</i>
Barn owl	<i>Tyto alba</i>
Least bittern	<i>Ixobrychus exilis</i>
Rufa red knot *T	<i>Calidris canutus rufa</i>
Trumpeter swan	<i>Cygnus buccinator</i>
Sandhill crane	<i>Grus canadensis</i>

REPTILES THREATENED

Kirtland's snake	<i>Clonophis kirtlandii</i>
Spotted turtle	<i>Clemmys guttata</i>
Blanding's turtle	<i>Emydoidea blandingii</i>
Lake Erie watersnake	<i>Nerodia sipedon insularum</i>

AMPHIBIANS THREATENED

Mud salamander	<i>Pseudotriton montanus</i>
----------------	------------------------------

FISHES THREATENED

Brook trout	<i>Salvelinus fontinalis</i>
Greater redhorse	<i>Moxostoma valenciennesi</i>
Channel darter	<i>Percina copelandi</i>
American eel	<i>Anguilla rostrata</i>
Paddlefish *M	<i>Polyodon spathula</i>
Bigmouth shiner	<i>Notropis dorsalis</i>
Lake chubsucker	<i>Erimyzon sucetta</i>
River darter	<i>Percina shumardi</i>
Tippecanoe darter	<i>Etheostoma tippecanoe</i>
Blue sucker	<i>Cycleptus elongatus</i>
Mountain madtom	<i>Noturus eleutherus</i>

MOLLUSKS THREATENED

Black sandshell	<i>Ligumia recta</i>
Threehorn wartyback	<i>Obliquaria reflexa</i>
Fawnsfoot	<i>Truncilla donaciformis</i>
Pondhorn	<i>Unimerus tetralasmus</i>

CRAYFISHES THREATENED

Sloan's crayfish	<i>Orconectes sloanii</i>
Cavespring crayfish	<i>Cambarus tenebrosus</i>

DRAGONFLIES THREATENED

Riffle snaketail	<i>Ophiogomphus carolus</i>
Harlequin darter	<i>Gomphaeschna furcillata</i>
Green-faced clubtail	<i>Gomphus viridifrons</i>

DAMSELFLIES THREATENED

Boreal bluet	<i>Enallagma boreale</i>
Northern bluet	<i>Enallagma cyathigerum</i>
Marsh bluet	<i>Enallagma ebrium</i>

CADDISFLIES THREATENED

–	<i>Psilotreta indecisa</i>
–	<i>Hydroptila albicornis</i>
–	<i>Hydroptila artesa</i>
–	<i>Hydroptila koryaki</i>
–	<i>Hydroptila talledaga</i>
–	<i>Hydroptila valhalla</i>

MIDGES THREATENED

–	<i>Bethbilbeckia floridensis</i>
–	<i>Apsectrotanypus johnsoni</i>
–	<i>Radotanypus florens</i>

BUTTERFLIES THREATENED

Silver-bordered fritillary	<i>Boloria selene</i>
----------------------------	-----------------------

MOTHS THREATENED

Wayward nymph	<i>Catocala antinympha</i>
–	<i>Spartiniphaga panatela</i>
–	<i>Fagitana littera</i>
The pink-streak	<i>Faronta rubripennis</i>

BEETLES THREATENED

–	<i>Cicindela hirticollis</i>
Cobblestone tiger beetle	<i>Cicindela marginipennis</i>

ISOPODS THREATENED

Frost cave isopod	<i>Caecidotea rotunda</i>
-------------------	---------------------------

OHIO's SPECIES of CONCERN

NOTE: *E & *T denote federal (U.S. Fish and Wildlife Service)
listed endangered and threatened species respectively.

MAMMALS SPECIES OF CONCERN

Pygmy shrew	<i>Sorex hoyi</i>
Star-nosed mole	<i>Condylura cristata</i>
Eastern small-footed bat	<i>Myotis leibii</i>
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>
Little brown bat	<i>Myotis lucifugus</i>
Big brown bat	<i>Eptesicus fuscus</i>
Tri-colored bat	<i>Perimyotis subflavus</i>
Woodland jumping mouse	<i>Napaeozapus insignis</i>
Badger	<i>Taxidea taxus</i>
Ermine	<i>Mustela erminea</i>
Smoky shrew	<i>Sorex fumerus</i>
Deer mouse	<i>Peromyscus maniculatus</i>
Prairie vole	<i>Microtus ochrogaster</i>
Woodland vole	<i>Microtus pinetorum</i>
Southern bog lemming	<i>Synaptomys cooperi</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>
Red bat	<i>Lasiurus borealis</i>
Hoary bat	<i>Lasiurus cinereus</i>
Snowshoe hare	<i>Lepus americanus</i>
Gray Fox	<i>Urocyon cinereoargenteus</i>

BIRDS SPECIES OF CONCERN

Sharp-shinned hawk	<i>Accipiter striatus</i>
Sedge wren	<i>Cistothorus platensis</i>
Marsh wren	<i>Cistothorus palustris</i>
Henslow's sparrow	<i>Ammodramus henslowii</i>
Cerulean warbler	<i>Setophaga cerulea</i>
Prothonotary warbler	<i>Protonotaria citrea</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Northern bobwhite	<i>Colinus virginianus</i>
Common moorhen	<i>Gallinula chloropus</i>
Great egret	<i>Ardea alba</i>
Sora rail	<i>Porzana carolina</i>
Virginia rail	<i>Rallus limicola</i>
Ruffed grouse	<i>Bonasa umbellus</i>
American coot	<i>Fulica americana</i>
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>
Common nighthawk	<i>Chordeiles minor</i>
Eastern whip-poor-will	<i>Caprimugus vaciferus</i>

Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>
Vesper sparrow	<i>Pooecetes gramineus</i>
Grasshopper sparrow	<i>Ammodramus savannarum</i>

MOLLUSKS SPECIES OF CONCERN

Purple wartyback	<i>Cyclonaias tuberculata</i>
Wavyrayed lampmussel	<i>Lampsilis fasciola</i>
Round pigtoe	<i>Pleurobema sintoxia</i>
Salamander mussel	<i>Simpsonaias ambigua</i>
Deertoe	<i>Truncilla truncata</i>
Elktoe	<i>Alasmidonta marginata</i>
Kidneyshell	<i>Ptychobranchus fasciolaris</i>
Creek heelsplitter	<i>Lasmigona compressa</i>

REPTILES SPECIES OF CONCERN

Woodland box turtle	<i>Terrapene carolina carolina</i>
Ouachita map turtle	<i>Graptemys ouachitensis</i>
Black kingsnake	<i>Lampropeltis getula nigra</i>
Eastern gartersnake (melanistic)	<i>Thamnophis sirtalis sirtalis</i>
Northern rough greensnake	<i>Opheodrys aestivus</i>
Eastern foxsnake	<i>Pantherophis gloydi</i>
Queensnake	<i>Regina septemvittata</i>
Little brown skink	<i>Scincella lateralis</i>
Smooth earthsnake	<i>Virginia valeriae</i>
Short-headed gartersnake	<i>Thamnophis brachystoma</i>
Eastern hognose snake	<i>Heterodon platirhinos</i>

AMPHIBIANS SPECIES OF CONCERN

Four-toed salamander	<i>Hemidactylium scutatum</i>
Eastern cricket frog	<i>Acris crepitans crepitans</i>

FISHES SPECIES OF CONCERN

Lake trout	<i>Salvelinus namaycush</i>
Lake whitefish	<i>Coregonus clupeaformis</i>
Burbot	<i>Lota lota</i>
Muskellunge	<i>Esox masquinongy</i>
Least darter	<i>Etheostoma microperca</i>
Blue catfish	<i>Ictalurus furcatus</i>
Longnose dace	<i>Rhinichthys cataractae</i>
Western creek chubsucker	<i>Erimyzon clariformis</i>

CRAYFISHES SPECIES OF CONCERN

Great Lakes crayfish	<i>Orconectes propinquus</i>
Northern crayfish	<i>Orconectes virilis</i>
Allegheny crayfish	<i>Orconectes obscurus</i>

DRAGONFLIES SPECIES OF CONCERN

Tiger spiketail	<i>Cordulegaster erronea</i>
-----------------	------------------------------

MAYFLIES SPECIES OF CONCERN

–	<i>Maccaffertium ithica</i>
---	-----------------------------

MIDGES SPECIES OF CONCERN

–	<i>Cantopelopia gesta</i>
---	---------------------------

CADDISFLIES SPECIES OF CONCERN

–	<i>Hydroptila chattanooga</i>
–	<i>Asynarchus montanus</i>
–	<i>Nemotaulius hostilis</i>

BUTTERFLIES SPECIES OF CONCERN

Two-spotted skipper	<i>Euphyes bimacula</i>
Dusted skipper	<i>Atrytonopsis hianna</i>

MOTHS SPECIES OF CONCERN

Milnei's looper moth	<i>Euchlaena milnei</i>
Buck moth	<i>Hemileuca maia</i>
One-eyed sphinx	<i>Smerinthus cerisyi</i>
Precious underwing	<i>Catocala pretiosa</i>
–	<i>Macrochilo bivittata</i>
–	<i>Phalaenostola hanhami</i>
–	<i>Paectes abrostolella</i>
–	<i>Capis curvata</i>
–	<i>Tarachidia binocula</i>
–	<i>Apamea mixta</i>
–	<i>Agroperina lutosa</i>
Columbine borer	<i>Papaipema leucostigma</i>
Bracken borer moth	<i>Papaipema pterisii</i>
Osmunda borer moth	<i>Papaipema speciosissima</i>
–	<i>Chytonix sensilis</i>
–	<i>Amolita roseola</i>
Goat sawfly	<i>Homoglaea hircina</i>
–	<i>Brachylomia algens</i>

Purple arches	<i>Polia purpurissata</i>
Scurfy quaker	<i>Homorthodes furfurata</i>
–	<i>Trichosilia manifesta</i>
–	<i>Agonopterix pteleae</i>

BEETLES SPECIES OF CONCERN

Six-banded longhorn beetle	<i>Dryobius sexnotatus</i>
–	<i>Cicindela splendida</i>
–	<i>Cicindela ancocisconensis</i>
–	<i>Cicindela cursitans</i>
–	<i>Cicindela cuprascens</i>
–	<i>Cicindela macra</i>
Whirligig beetle	<i>Gyretes sinuatus</i>

CRICKETS SPECIES OF CONCERN

Laricis tree cricket	<i>Oecanthus laricis</i>
----------------------	--------------------------

OHIO's SPECIAL INTEREST

NOTE: *E & *T denote federal (U.S. Fish and Wildlife Service)
listed endangered and threatened species respectively.

MAMMALS SPECIAL INTEREST

Evening bat	<i>Nycticeius humeralis</i>
-------------	-----------------------------

BIRDS SPECIAL INTEREST

Canada warbler	<i>Wilsonia canadensis</i>
Magnolia warbler	<i>Setophaga magnolia</i>
Northern waterthrush	<i>Seiurus noveboracensis</i>
Winter wren	<i>Troglodytes troglodytes</i>
Black-throated blue warbler	<i>Setophaga caerulescens</i>
Brown creeper	<i>Certhia americana</i>
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>
Bell's vireo	<i>Vireo bellii</i>
Long-eared owl	<i>Asio otus</i>
Mourning warbler	<i>Oporornis philadelphia</i>
Northern saw-whet owl	<i>Aegolius acadicus</i>
Pine siskin	<i>Carduelis pinus</i>
Purple finch	<i>Carpodacus purpureus</i>
Red-breasted nuthatch	<i>Sitta canadensis</i>
Short-eared owl	<i>Asio flammeus</i>
Western meadowlark	<i>Sturnella neglecta</i>
Golden-crowned kinglet	<i>Regulus satrapa</i>
Blackburnian warbler	<i>Setophaga fusca</i>
Wilson's snipe	<i>Gallinago delicata</i>
Gadwall	<i>Anas strepera</i>
Green-winged teal	<i>Anas crecca</i>
Northern pintail	<i>Anas acuta</i>
Northern shoveler	<i>Anas clypeata</i>
Redhead	<i>Aythya americana</i>
Ruddy duck	<i>Oxyura jamaicensis</i>
American black duck	<i>Anas rubripes</i>
Wilson's phalarope	<i>Phalaropus tricolor</i>
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>
Common raven	<i>Corvus corax</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Yellow-crowned night-heron	<i>Nyctanassa violacea</i>
Hermit thrush	<i>Catharus guttatus</i>
Least flycatcher	<i>Empidonax minimus</i>
Nashville warbler	<i>Oreothlypis ruficapilla</i>
Veery	<i>Catharus fuscescens</i>
Common merganser	<i>Mergus merganser</i>

Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>
Golden-winged warbler	<i>Vermivora chrysoptera</i>
Blue-headed vireo	<i>Vireo solitarius</i>

BUTTERFLIES SPECIAL INTEREST

Olympia marble	<i>Euchloe olympia</i>
----------------	------------------------

MOTHS SPECIAL INTEREST

Slender clearwing	<i>Hemaris gracilis</i>
—	<i>Sphinx lucitiosa</i>
—	<i>Tathorhynchus exsiccatus</i>
—	<i>Catocala marmorata</i>
—	<i>Catocala maestosa</i>
Subflava sedge borer moth	<i>Archana subflava</i>
—	<i>Caradrina meralis</i>
—	<i>Calophasia lunula</i>
—	<i>Leucania insueta</i>
—	<i>Protorthodes incincta</i>
Variegated orange moth	<i>Epelis truncataria</i>

OHIO's EXTIRPATED SPECIES

NOTE: *E & *T denote federal (U.S. Fish and Wildlife Service)
listed endangered and threatened species respectively.

MAMMALS EXTIRPATED

Rice rat	<i>Oryzomys palustris</i>
Porcupine	<i>Erethizon dorsatum</i>
Timber wolf	<i>Canis lupus</i>
Marten	<i>Martes americanus</i>
Fisher	<i>Martes pennanti</i>
Mountain lion	<i>Puma concolor</i>
Lynx	<i>Lynx canadensis</i>
Wapiti (Elk)	<i>Cervus elaphus</i>
Bison	<i>Bison bison</i>
Southern red-backed vole	<i>Clethrionomys gapperi</i>

BIRDS EXTIRPATED

Swallow-tailed kite	<i>Elanoides forficatus</i>
Greater prairie-chicken	<i>Tympanuchus cupido</i>
Ivory-billed woodpecker	<i>Campephilus principalis</i>
Bachman's sparrow	<i>Aimophila aestivalis</i>
Golden-winged warbler	<i>Vermivora chrysoptera</i>
Bewick's wren	<i>Thryomanes bewickii</i>

FISHES EXTIRPATED

Alligator gar	<i>Lepisosteus spatula</i>
Pugnose shiner	<i>Notropis anogenus</i>
Longhead darter	<i>Percina macrocephala</i>
Diamond darter	<i>Crystallaria cincotta</i>
Spoonhead sculpin	<i>Cottus ricei</i>
Blackchin shiner	<i>Notropis heterodon</i>
Blacknose shiner	<i>Notropis heterolepis</i>
Mississippi silvery minnow	<i>Hybognathus nuchalis</i>
Great Lakes mottled sculpin	<i>Cottus bairdii kumlieni</i>

MOLLUSKS EXTIRPATED

Orangefoot pimpleback *E	<i>Plethobasus cooperianus</i>
Rough pigtoe *E	<i>Pleurobema plenum</i>
Fat pocketbook *E	<i>Potamilus capax</i>
Winged mapleleaf *E	<i>Quadrula fragosa</i>
Mucket	<i>Actinonaias l. ligamentina</i>
Spectaclecase	<i>Cumberlandia monodonta</i>
Cracking pearly mussel *E	<i>Hemistena lata</i>
White wartyback	<i>Plethobasus cicatricosus</i>
Hickorynut	<i>Obovaria olivaria</i>
Ring pink	<i>Obovaria retusa</i>
Scale shell	<i>Leptodea leptodon</i>

BUTTERFLIES EXTIRPATED

Mustard white	<i>Pieris napi</i>
---------------	--------------------

OHIO's EXTINCT SPECIES

NOTE: *E & *T denote federal (U.S. Fish and Wildlife Service)
listed endangered and threatened species respectively.

BIRDS EXTINCT

Passenger pigeon	<i>Ectopistes migratorius</i>
Carolina parakeet	<i>Conuropsis carolinensis</i>

FISHES EXTINCT

Harelip sucker	<i>Lagochila lacera</i>
Blue pike	<i>Sander vitreus glaucus</i>

MOLLUSKS EXTINCT

Leafshell	<i>Epioblasma flexuosa</i>
Forkshell	<i>Epioblasma lewisi</i>
Round snuffbox	<i>Epioblasma personata</i>
Cincinnati riffleshell	<i>Epioblasma phillipsi</i>
Scioto pigtoe	<i>Pleurobema bournianum</i>
Tubercled blossom	<i>Epioblasma torulosa torulosa</i>

BEETLES EXTINCT

Kramer's cave beetle	<i>Pseudanophthalmus krameri</i>
----------------------	----------------------------------

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

2/2/2018 1:42:23 PM

in

Case No(s). 17-2295-EL-BGN

Summary: Application Exhibit J Appendices B and C electronically filed by Teresa Orahoo
on behalf of Sally W. Bloomfield