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AUG 05 2025

PUBLIC SERVICE
COMMISSION

July 29, 2025

Kentucky State Board on Electric Generation
211 Sower Boulevard
PO Box 615
Frankfort, KY 40602

Re: Wood Duck Solar 2024-00337

Dear Siting Board Members,

The Wood Duck Solar Project is a threat to many things in Barren and Edmonson County. It is a threat to the delicate ecosystem and the waterways. It is a threat to endangered species. It is a threat to the culture and way of life for people who hunt, fish and live off of the land. It is a threat to our farmers, both livestock and crops. It is a threat to our children who stand to be injured from the breakage of glass and contamination of water and soil. It is an economic threat to farmers and to every property owner in the area.

It is a threat to the economic vitality of the South-Central Kentucky tourist industry. It is a threat to Mammoth Cave and all of the business who thrive from tourism dollars. There is no way to accurately projected loss of revenue should Mammoth Cave and Green River become contaminated.

I spend a lot of time in Barren County. I have a degree in animal science and spent a good part of my life working in the Arabian Horse Industry. I know the value of animals and wildlife. I know this area is filled with wildlife and native species of flowers and grasses. It is home to some of the most amazing critters in the world and people come from all over the world to experience nature in this area.

I can't believe that Barren County and Kentucky would **consider** a solar project in this area with the mere possibility of endangering life in the cave, whether by batteries, solar panel chemicals, glass breakage or the rusting of the metal frames, posts and wire.

I have reviewed the Critical Issues Analysis by Cardno which is now Stantec, dated November 27, 2022. It is my understanding this report was provided to the local planning commission and they asked three questions.

1. " Member Maria Westcott asked if this would affect bird migration patterns.

Mr. Dutton, the attorney for Wood Duck/Geenex states, "There is **no evidence** that the migration of birds are affected by solar panels or by this type of development."

2. Member Maria Westcott asked about the endangered or threatened species that would be affected by the development and if there were any mitigation measures implemented into the proposal.

Mr. Dutton referenced the exhibit they submitted and stated that the study has not verified that the species exist on this property, but that they may be there in that region.

Kentucky Fish and Wildlife will be discussed at the state level when this is presented to the Public Service Commission of Kentucky and at that time, they will have construction and mitigation measures implemented when KY Game and Fish lets them know.”

3. Chairman Tommy Gum asked to verify that the Kentucky Game and Fish will be engaged and consulted in regard to all endangered/threatened species and bird mitigation issues.

Kelley Pope, Manager of Project Development with Geenex, said that they would have to be included at the State PSC meeting and that Geenex would abide by all requirements pertaining to the endangered/threatened species list.” Source: minutes from the planning commission meeting.

If the local planning commissioners had asked questions of depth, you would not be reading this today. The report clearly raised the issue of Mammoth Cave and many endangered species in our county, stating these are federally protected waterways and under WOTUS (Waters of the US) and protection of the USACE.

The report did not address the issue of contaminants, and all of the potential ways by which the solar panels, batteries, wire frames, wire posts, wire fences, glass shards, rust, zinc oxide, lead, and a host of other chemicals can contaminate the soil and the water. Now that we know these things, what do we do? The siting board should cancel this project and protect the cave, water, waterways and crops.

I do not see this report listed among the attachments from Wood Duck/Geenex to the PSC, so I am submitting a copy. Please note this study refers to Edmonson County which has a Solar Land Use Ordinance. I believe these references to be in error and ask the PSC to confirm and notify the Edmonson County Judge Executive if any solar panels are slated for Edmonson County property. The planning commission did not ask any questions about this.

It is understood that the PSC doesn't consider habitat, but in view of the economic impact to Mammoth Cave and that natural habitat of this community, we are **asking your consideration for the economic impact on the county and the state, the scenic impact and the threats it poses to all others.**

This report states there are **2 federally endangered species, 17 state-endangered species, twenty state-threatened species and 1 federal candidate species** that have the potential to occur within the project area. Additionally, the project area is within **2 critical habitat units for the Indiana bat.** Section 1-1

However, refer to section 5-2 and it states **79 FEDERAL and STATE-LISTED species** are identified.

The project has eleven forested (PFO) wetlands, 8 emergent (PEM) wetlands and 34 ponded (PUB) wetlands totally 46.85 acres within the project area. Two perennial streams, 2 intermittent streams and 18 ephemeral drainages were identified totally 63,254.99 feet of waterways within the project area. Section 1-1

“There are 2 names streams within the project area: Little Sinking Creek and Gardner Creek. From the perspective of **observable aerial imagery**, both streams and their tributaries are entirely within the Little Sinking Creek watershed (HUC 051100020702) which does not have significant surface connection to any major waterway or traditional navigable water. (TNW).

“The Little Sinking Creek is self-contained and water that falls within this watershed percolates through soil to the karst features below. Though there is no superficial hydrological connection, water within the project area eventually drains north to tributaries of Mammoth Cave National Park, which eventually drains to Green River, a TNW.” Section 1-1

Dye test show that water from the Little Sinking Creek drainage does drain to the Turnhold Spring Basin in Mammoth Cave. The USFEWS lists the Kentucky cave shrimp as a species which may potentially occupy the project area and while the area is within habitat for the shrimp, designated critical habitat is restricted to Mammoth Cave and they have voiced this concern to the Siting Board. Section 5-4

“DUE TO THIS CONNCECTION, it is their recommendation that the streams and associated wetlands within the project area would be classified as **WOTUS** under the current regulations and therefore, would likely be classified as jurisdictional by the **USACE**.” Section 1-1

The report references that one archeological site was recorded, three historic structures, and three historic cemeteries. I believe these sites be granted protection with 1,000 feet buffers.

The “Project area” is not defined in this report. However, the map on section 5-1 used 2 km which is 1.243 miles and a 1-mile buffer. It is unknown what was used throughout the study.

I believe there are many more cemeteries than are identified in this study: Bon Ayr, Merry Oaks, Old Zion, Denton, Shiloh, Dripping Springs road (front yard – Martin’s, perhaps), Hillside on New Bowling Road, Walnut Hill, Woodland, Rocky Hill, Settle Cemetery and several unnamed.

Report states that 13 cemeteries are located within 1.243 miles of the project outline Section 5-4). We disagree with this assessment and disagree that a 100-foot avoidance buffer is sufficient.

This is a desk top study and did not include all of the parcels in the study. This needs to be corrected and resubmitted.

Hydrology, section 3-1 “The project is located within the Little Sinking Creek sub-watershed, portion of the Barren watershed. FEMA FIRM panels indicate the 100-year floodplain is present on approximately 81.4 acres of the project, concentrated along Gardner and Little Sinking Creek.

The NHD maps have Gardner and Little Sinking Creeks within the project area which flows west and sink, percolating through the ground to tributaries of the Mammoth Cave and thus the Green River...”

Land Use, section 3-1 states, “The project area is 10 miles south of Mammoth Cave National Park and within **critical habitat for Indiana bat**. The report failed to list all of the endangered species. Residents will tell you there are bats in this area.

The U.S. Geological Service (USGS) National Structures Dataset (NSD) maps eight churches and six cemeteries within one mile of the project. Yet, the report states there are 13 cemeteries located within 1.243 miles of the project outline. These should all be protected and buffered by at least 1,000 feet.

It also states there are 449.37 acres of Deciduous Forest and 610.92 acres of cultivated crops. This assessment is incorrect because it fails to identify any areas which are cattle.

Soil Series: This study identified 39 soil map units and according to their own study, most of this land is PRIME, STATEWIDE IMPORTANCE OR POTENTIAL PRIME LAND. Section 3-5

10 – soils are PRIME farmland

11 - Farmland of statewide importance

11 - not prime farmland

7 – are PRIME land, if drained or managed in some manner

39 total

Farmland of Statewide Importance refers to land beyond prime and unique farmland that is deemed significant for the production of food, feed, fiber, forage and oilseed crops within a state as determined by the relevant state agency.

This may include tracts of land that have been designated for agriculture by state law. If not national or statewide importance, land is considered to be land of local importance for the production of food, feed, fiber, forage and oilseed crops.

Prime farmland is defined by the U.S. Department of Agriculture as land with the best combination of physical and chemical characteristics for producing food, feed, forage and oilseed crops.

Kentucky quotes statistics that solar is not destroying farm land. This project is completely destroying farmland. **It is destroying 28 out of 39 prime, prime eligible or statewide designated farms! This should be of concern to any person reviewing this project.**

Threatened and Endangered Species Review: The report identified **79 federal and state** listed species as having the POTENTIAL to **occur within or be affected** by the project. "The project is located entirely within two Indiana Bat Critical Habitat Unit (CHU). Section 5-1. There are bats, birds, mollusks, mammals, fish, reptiles, insects, arthropods, flatworms, and plants.

Of the 79 species identified, 40 have a moderate to high potential to occupy the project area. Two are federally endangered species, 17 are state-endangered species and 20 state-threatened species and one federal candidate species. Section 5-4

Dye test show that water from the Little Sinking Creek drainage does drain to the Turnhold Spring Basin in Mammoth Cave. The USFWS lists the Kentucky cave shrimp as a species which may potentially occupy the project area and while the area is within habitat for the shrimp, designated critical habitat is restricted to Mammoth Cave. Section 5-4

Regardless of who makes the designation, the endangered Kentucky cave shrimp must be protected and Barren County should be a good neighbor.

MODERATE potential of occupying the project area: short-eared owl, Bachman's sparrow, vesper sparrow, flycatcher, golden-winged warblers, blackburnian warblers.

HIGH to MODERATE Potential of occupying the project area: several bat species: long-eared bat, Indiana, gray, little brown, eastern pipistrelle and eastern small-footed bat. The eastern glass lizards, crown snake, milkweed for butterflies, elfin skimmer and double-ringed pennant dragonflies are at risk. Section 5-5

Sinkhole ponds, seeps, or openings may support epiphytic sedge and spotted pondweed while dry woodlands, glades and prairies support plain frostweed and fringed nutrush. Eggert's sunflower, buffalo clover, American chestnut, Woods bunchflower, manna-grass, ludwigia and rough dropseed, narrow leaved bluecurls are also present and at risk. Section 5-5.

How can the public be reasonably assured that this company will take every precaution to identify anything of significance? Will they have someone trained to identify the flowers and grasses? Will they stop production if a bat or bat droppings are found? We think not.

The company has not exhibited transparency with the community.

Landowners have already cleared hundreds of acres in anticipation of the project thereby perhaps already disturbing their natural homes.

This report **failed to address the migratory birds** such as the Sand Hill Cranes which forage in this area every year. As the crops will be replaced with solar, the food source of corn and soybeans will be eliminated affecting their migratory path and survival.

There are also eagles in this area, located off Merry Oaks Railton Road.

The community should not accept a “taking” of any endangered species. It’s the natural habitat and wildlife that makes the beauty of Barren County and connects it to Mammoth Cave, people and nature. Connecting people to nature, is what Barren County does best.

Wetlands: The study identified 11 forested wetlands, 9 emergent wetlands and 34 ponded wetlands totally 46.85 acres.

Waterbodies: Two perennial streams (Little Sinking Creek and Gardner Creek) , 2 intermittent and 18 ephemeral streams were identified for over 63,254 feet of water in the project area. Section 5-7

Jurisdictional Summary: “..waterways and waterbodies are likely to percolate and drain beneath the ground to a greater karst system, including **Mammoth Cave** and **greater Green River**. These should be classified as WOTUS and under the jurisdiction of the USACE. Section 5-8

Cultural Resources: We request the SHPO office to help identified contributing structures, especially the Denton Cemetery and a designation of the Merry Oaks Historic district.

Mammoth Cave references:

The Little Sinking Creek is self-contained and water that falls within this watershed percolates through soil to the karst features below. Though there is no superficial hydrological connection, water within the Project area eventually drains **north** to tributaries of Mammoth Cave National Park, which eventually drains to the Green River, a TNW. Section 1-1

The NHD maps Gardner and Little Sinking Creeks within the Project area which flows **west** and sink, percolating through the ground to tributaries of the Mammoth Cave and thus the Green River. Section 3.1

The Project area is 10 miles south of Mammoth Cave National Park and is within Little Sinking Creek watershed. Section 5-1

Dye test show that water from the Little Sinking Creek drainage does drain to the Turnhold Spring Basin in Mammoth Cave.

There is no disputing the science. All cave invertebrates listed by the state database should also be given a determination of moderate likelihood to occur within the project area. Section 5-4

From the perspective **of observable aerial imagery**, the identified streams and wetlands appear to lack surface connection to major waterways or waterbodies but likely percolate and drain beneath the ground to a greater karst system, including Mammoth Cave and greater Green River (see Section 3.1 for more information). Section 5-4

And in Conclusion:

From the perspective of **observable aerial imagery**, while there is no surface connection to any major waterway or TNW, the Little Sinking Creek is self-contained and water that falls within this watershed

percolates through soil to the karst features below north to tributaries of **Mammoth Cave National Park**, which eventually drains to the **Green River**. Section 6-1

I hope the siting board will consider the threats this project proposes to everything it touches. And while the board does not consider location, it must consider the **economic vitality** of the area, the dependence on tourism dollars, and the threats to the waterways which are vital to the cave and the Amish communities. We must preserve this section of land for future generations.

Allowing this solar project to interrupt the natural beauty of this area is a travesty.

Sincerely,

A handwritten signature in blue ink, appearing to read "John A. Casper".

John A. Casper
10825 Frankfort Road
Waddy, KY 40076

Attachment: Critical Issues Analysis

Critical Issues Analysis

Wood Duck Solar Project

Barren County, Kentucky



 **Cardno**

now

 **Stantec**

Document Information

Prepared for Geenex Solar
Project Name Wood Duck Solar Project
Project Number E3222500600
Project Manager Chad Martin
Date November 27, 2022

Prepared for:



Geenex Solar
1000 NC Music Factory Blvd
Suite C3
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Prepared by:



now



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Appendix A USFWS IPaC Official Species List

Appendix B Permit Matrix

Acronyms

AJD	Approved Jurisdictional Determination	NWP	Nationwide Permit
CHU	Critical Habitat Unit	NWI	National Wetland Inventory
CIA	Critical Impacts Analysis	OSA	Office of State Archaeology
CWA	Clean Water Act	PEM	Palustrine Emergent Wetland
FEMA	Federal Emergency Management Agency	PFO	Palustrine Forested Wetland
FIRM	Flood Insurance Rate Map	PUB	Palustrine Unconsolidated Bottom
GIS	Geographic information systems	SHPO	State Historic Preservation Office
IPaC	Information for Planning and Consultation	SWPPP	Stormwater Pollution Prevention Plan
HUC	Hydrologic Unit Code	T&E	Threatened and Endangered
KHC	Kentucky Heritage Council	TNW	Traditionally Navigable Waterway
KYNHP	Kentucky Natural Heritage Program	USACE	U.S. Army Corps of Engineers
NHD	National Hydrography Dataset	USDA	U.S. Department of Agriculture
NLCD	National Land Cover Dataset	USEPA	U.S. Environmental Protection Agency
NOI	Notice of Intent	USFWS	U.S. Fish and Wildlife Service
NRCS	Natural Resources Conservation Service	USGS	U.S. Geological Service
NRHP	National Register of Historic Places	WOTUS	Waters of the U.S.

1 Executive Summary

Cardno, now Stantec (Cardno) was contracted by Geenex Solar (Geenex) to conduct a Critical Impact Analysis (CIA) on approximately 2,308 acres, referenced to as the Wood Duck Solar Project (Project). The Project consists of multiple parcels in Barren County, Kentucky, and was evaluated for the potential presence of environmental and cultural resources by Cardno in May 2022. The tasks performed as part of this assessment included a review of threatened and endangered (T&E) species, a cultural resources literature review, and a desktop review of potential waters of the United States (WOTUS). The methodology, results, and recommendations of the review as it pertains to the Project are contained within and summarized below.

Cardno conducted a threatened and endangered species review utilizing the The U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), the Kentucky Natural Heritage Program (KYNHP), and the Office of Kentucky Nature Preserves databases. In total, Cardno identified **two (2) federally endangered species, seventeen (17) state-endangered species, twenty (20) state-threatened species, and one (1) federal candidate species** that have the potential to occur within the Project area. Additionally, the Project area is within **two critical habitat units** for the Indiana bat.

In compliance with Section 404 of the Clean Water Act (CWA), this report contains a preliminary desktop evaluation of potential wetland features that may fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE). Cardno reviewed the USFWS National Wetland Inventory (NWI) database and the National Hydrography Dataset (NHD) to determine the potential for wetlands and waterbodies to exist within the Project area.

Cardno scientists identified **eleven (11) forested (PFO) wetlands, eight (8) emergent (PEM) wetlands and thirty-four (34) ponded (PUB) wetlands** totaling 46.85 acres within the Project area. **Two (2) perennial streams, two (2) intermittent streams, and eighteen (18) ephemeral drainages** were identified, totaling 63,254.99 feet of waterways within the Project area.

There are **two named streams** within the Project area: Little Sinking creek and Gardner creek. From the perspective of observable aerial imagery, **both streams and their tributaries are entirely within the Little Sinking Creek sub watershed (HUC 051100020702), which does not have significant surface connection to any major waterway or traditional navigable water (TNW). The Little Sinking Creek is self-contained and water that falls within this watershed percolates through soil to the karst features below. Though there is no superficial hydrological connection, water within the Project area eventually drains north to tributaries of Mammoth Cave National Park, which eventually drains to the Green River, a TNW. Due to this connection, it is Cardno's determination that the streams and associated wetlands within the Project area would be classified as WOTUS under the current regulations, and therefore would likely be classified as jurisdictional by the USACE. If construction activities will impact WOTUS, then coordination with the USACE Louisville District Office to obtain a jurisdictional determination (JD) for the streams, wetlands, and ponds identified onsite is recommended.**

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) FM21061C0275B, 21009C0150C, 21009C0255C, and 21009C0260C indicate the 100-year floodplain is present on approximately 81.4 acres of the Project, concentrated along Gardner Creek and Little Sinking Creek.

If any drainages and/or ponds are deemed 'jurisdictional' by the USACE, the proposed Project could be completed under a Nationwide Permit (NWP) 51 and/or 57. Additionally, the Project would need to develop a Storm Water Pollution Prevention Plan (SWPPP) and provide Notice of Intent (NOI) prior to Project construction. As stated in the text of the NWPs, the discharge of dredged or fill material into wetlands and non-tidal WOTUS must not cause the loss of greater than ½-acre of wetlands and non-tidal WOTUS. If impacts from the construction of the energy generation facility and associated infrastructure including roads,

parking lots, stormwater management facilities, and pipelines permanently impact less than ½-acre then the Project may proceed under a NWP. Permanent impacts which exceed the ½-acre threshold for NWPs will require an Individual Permit.

Cardno's cultural resource specialists reviewed information regarding known archeological and historic sites, as well as prior cultural resources studies, available through the Kentucky Office of State Archaeology and Kentucky Heritage Council. Cardno also reviewed USGS topographic maps, current, and historic aerial imagery for evidence of historic use within the Project area. One archaeological site was recorded within the Project boundary and was determined ineligible for the NRHP by the SHPO. Three historic structures have been recorded within the Project area. Reassessment of these features is recommended to determine potential eligibility in the NRHP. There are also three historic cemeteries within the Project area. A 100-foot avoidance buffer is recommended around these resources to minimize the impact of development as the project moves forward.

Due to the presence of known archeological sites within proximity of the Project area, and because previous cultural resource surveys have not been conducted on the majority of the Project area, the SHPO may request that a Phase I survey be conducted within federally jurisdictional areas within the Project area.

2 Introduction

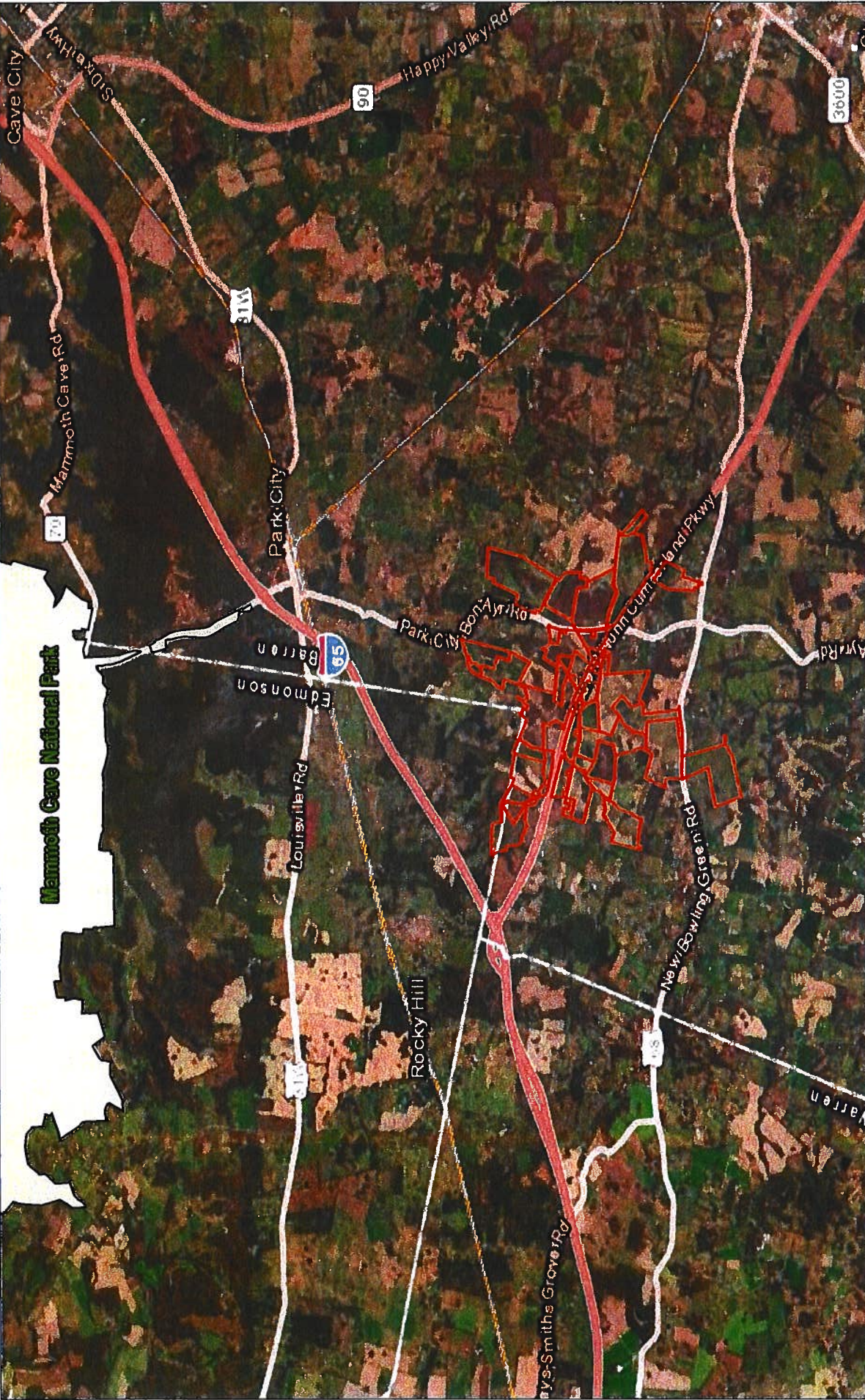
Cardno was contracted by Geenex to perform a preliminary desktop review for potential listed species habitat, cultural resources, and potential WOTUS that exist within the Project area in Barren and Edmonson Counties, Kentucky (**Figure 2-1**). The Project consists of approximately 2,308 acres of land that was reviewed via desktop by Cardno in May 2022.



This report contains a desktop review of all resources that potentially fall under the jurisdiction of the USACE.

Cardno conducted desktop investigations to:



- > Identify potential environmental permits that may be required to construct the Project,
- > identify potential waters of the U.S. and presence of listed species and/or habitat; and
- > Review and document cultural resources that may be located within or in close proximity to the Project area that may be impacted by Project activities.

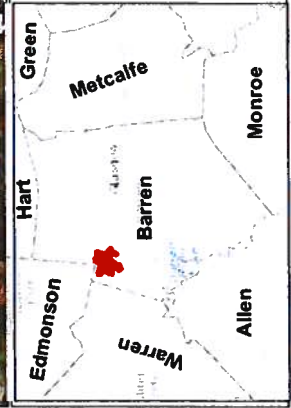
The results of the desktop investigations are provided in this report. A permitting matrix is provided in **Appendix B**.



 	
Critical Impact Analysis Wood Duck Solar Barren County, Kentucky	
Project Area Overview	
Date: April 2022	Project No: E321201503
Figures: 2-1	



-  Project Boundary
-  National park or forest



3 Site Location

The Project area is located in a rural setting approximately five miles northwest of Glasgow, Kentucky in Barren County. According to the United States Environmental Protection Agency (USEPA) Ecoregions of Kentucky map, the Project area falls within the **Western Pennyroyal Karst Plain (71e)** of the Interior Plateau (71). The Interior Plateau has extensive plains interrupted in places by dissected uplands, knobs, deeply incised master streams, and large areas of karst. The Western Pennyroyal Karst Plain is weakly dissected, underlain by **Middle Mississippian limestones**, and is extensively farmed. Sinkholes, ponds, springs, sinking streams and dry valleys occur. Underground drainage is well developed, stream density is low. Potential natural vegetation is mapped as a mosaic of bluestem prairie and oak-hickory forest. Tobacco, livestock, corn, soybean and grain farming are most frequent (Woods, et al., 2002).

3.1 Hydrology

The Project is located within the **Little Sinking Creek sub-watershed** (Hydrologic Unit Code 12 [HUC12] – 051100020702) portion of the **Barren watershed** (HUC8 - 05110002) (FEMA, 2022). FEMA FIRM panels FM21061C0275B, 21009C0150C, 21009C0255C, and 21009C0260C indicate the 100-year floodplain is present on approximately 81.4 acres of the Project, concentrated along Gardner and Little Sinking Creek (**Figure 3-1**). The NHD maps Gardner and Little Sinking Creeks within the Project area which flows west and sink, percolating through the ground to tributaries of the Mammoth Cave and thus the Green River. Topography is mostly flat to lightly hilled and utilized for crops or livestock.

3.2 Land Use

The Project and surrounding areas consist mainly of pasture and crops, with tracts of undeveloped riparian forested areas. The entire Project area is located on private land and is bisected by Cumberland Parkway, running east to Glasgow. Additionally, the Project area is 10 miles south of Mammoth Cave National Park and within critical habitat for Indiana bat. The U.S. Geological Service (USGS) National Structures Dataset (NSD) maps eight churches and six cemeteries within one mile of the Project (USGS, 2022); sensitive features are depicted in **Figure 3-2**.

The National Land Cover Dataset (NLCD) maps the vast majority of the Project area as Pasture/Hay, comprising of 46.45% of the Project area (**Figure 3-3**). Nine additional cover land types are mapped within the Project area (**Table 3-1**).

Table 3-1 NLCD Land Cover Types Within the Project area

NLCD Land Cover Type	Acres within Project area	Percentage of Project area
Developed, Open Space	8.29	0.39
Developed, Low Intensity	1.25	0.06
Developed, High Intensity	0.31	0.01
Deciduous Forest	449.37	21.30
Mixed Forest	46.88	2.22
Shrub/Scrub	8.66	0.41
Pasture/Hay	980.21	46.45
Cultivated Crops	610.92	28.95
Woody Wetlands	3.70	0.18
Open Water	0.60	0.03
Total	1,732.9	100%

(USGS, 2019)



Edmonson **Hart** **Green**

Warren **Barren** **Monroe**

Allen

Metcalfe

Project Boundary

Other hydrologic connections

Streams and Rivers

100-year Floodplain

Watersheds

Cardno **Stantec**

Critical Impact Analysis
Wood Duck Solar
Barren County, Kentucky

Project Area Overview

North Arrow

Scale: 0 to 0.6 Miles

Date: April 2022

Project No: E321201503

Figure: **3-1**

Date Created: 5/10/2022

Date Revised: 5/10/2022

File Path: I:\usa\scd\08 cardno corp AUC\04Data-4FS\PROJECT\SIG\Genex Solar\E321201503\Overview.mxd

GIS Analyst: kelsey a anderson



Critical Issues Analysis
Wood Duck Solar
Barren County, Kentucky

Sensitive Resources within One Mile

Date: May 2022

Project No: E321201503

Figure No: 3-3

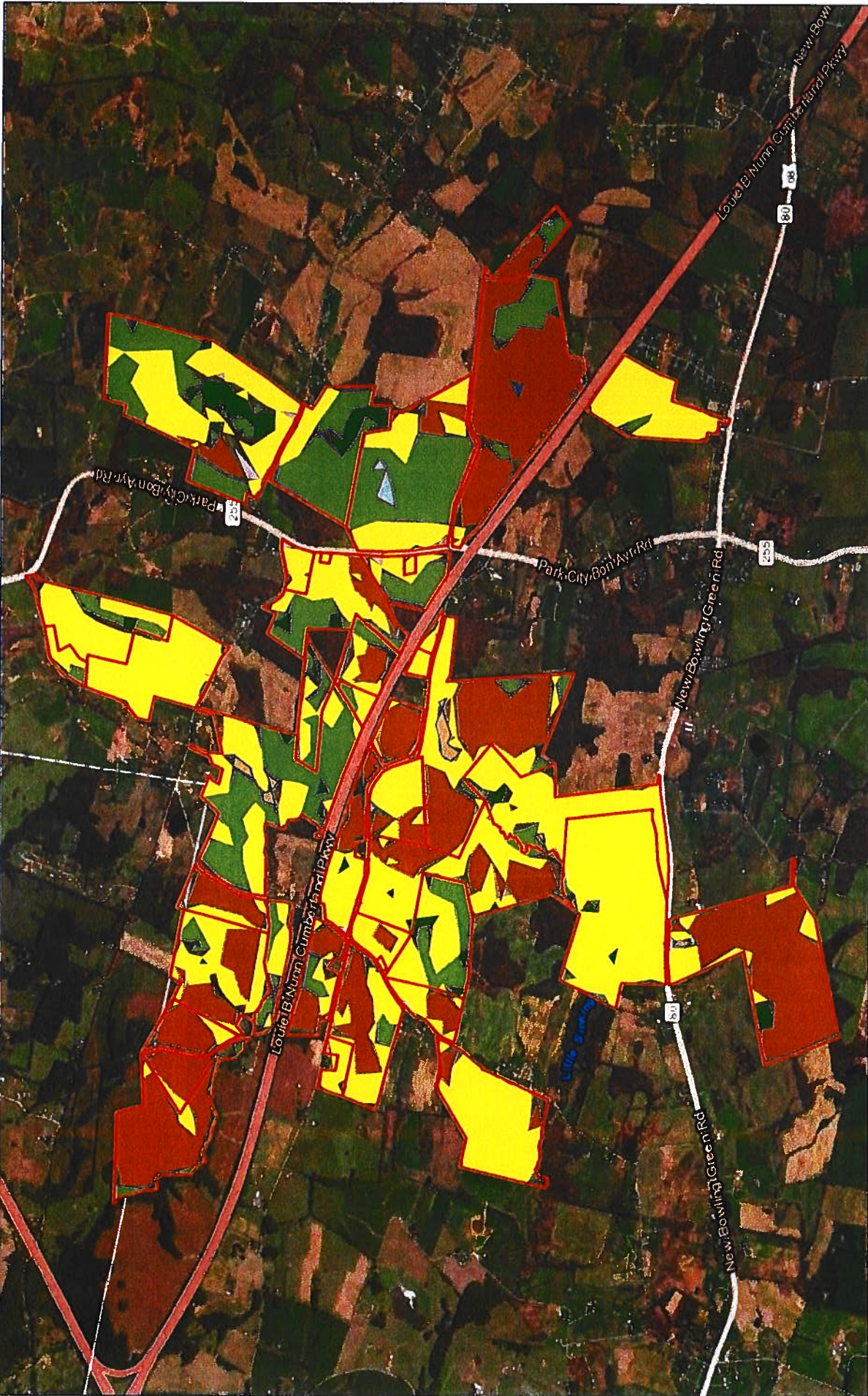
0 2,600 Feet

Cemetery

Church

Project Area

Kentucky Sinkholes



Project No:
E321201503

Figure No:
3-3

Critical Issues Analysis
Wood Duck Solar
Barren County, Kentucky

NLCD within Project Area

Project Area

- Project Area
- Open Water
- Developed, Open Space
- Developed, Low Intensity

Developed, Medium Intensity

- Developed, Medium Intensity
- Developed, High Intensity
- Deciduous Forest
- Evergreen Forest
- Shrub/Scrub

Grassland/Herbaceous

- Grassland/Herbaceous
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands

0 2,250 Feet

Date Created: 5/6/2022 Date Revised: 5/6/2022 File Path: I:\usacsf08\cardno\zrp\AU004\Data-AFS\PROJECTS\Gaenar_Solar\E322506000 - Wood Duck Solar\GIS\NLCD.mxd
 GIS Analyst: kelsey.a.anderson

3.3 Soil Series

Soils within the Project can be generally described as well drained soils, permeable soils located on hilly positions with Mississippian limestone and shales of Mississippian age (Kentucky Geological Survey, 2007) According to the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) website, the Project is located within thirty-nine soil map units, which are listed below (Table 3-2). There were four soil types within the Project boundaries that met the criteria as described by the National Technical Committee for Hydric Soils (Figure 3-4). Ten of the soils are considered prime farmland, eleven are farmland of statewide importance and eleven are not prime farmland. Seven are prime farmland only if drained or managed in some manner.

Table 3-2 Characteristics of Soil Mapping Units within the Project area

Soil Name	Soil Symbol	Drainage Class	Permeability	Surface Runoff	Meets Prime Farmland	Meets Hydric Criteria	% of Project area
Soil Survey: Barren County Area, Kentucky (KY646)							
Baxter gravelly silt loam, 6 to 12 percent slopes, eroded	BaC2	Well drained	Moderately high to high	Medium	Farmland of statewide importance	No	11.60%
Baxter gravelly silt loam, 12 to 20 percent slopes, eroded	BaD2	Well drained	Moderately high to high	Medium	Not prime farmland	No	3.80%
Baxter gravelly silt loam, 20 to 30 percent slopes, eroded	BaE2	Well drained	Moderately high to high	High	Not prime farmland	No	0.40%
Baxter cherty silty clay loam, 12 to 20 percent slopes, severely eroded	BcD3	Well drained	Moderately high to high	High	Not prime farmland	No	1.10%
Christian cherty loam, 6 to 12 percent slopes, eroded	CeC2	Well drained	Moderately high to high	Medium	Farmland of statewide importance	No	0.50%
Christian cherty loam, 12 to 20 percent slopes, eroded	CeD2	Well drained	Moderately high to high	High	Not prime farmland	No	4.20%
Christian cherty sandy clay loam, 12 to 20 percent slopes, severely eroded	ChD3	Well drained	Moderately high to high	High	Not prime farmland	No	0.30%
Christian silt loam, 2 to 6 percent slopes	CIB	Well drained	Moderately high to high	Low	All areas are prime farmland	No	0.70%
Christian silt loam, 6 to 12 percent slopes, eroded	CIC2	Well drained	Moderately high to high	Medium	Farmland of statewide importance	No	6.90%
Christian silty clay loam, 6 to 12 percent slopes, severely eroded	CnC3	Well drained	Mod high to high	Medium	Not prime farmland	No	0.10%
Crider silt loam, 2 to 6 percent slopes	CrB	Well drained	Very low to moderately high	--	All areas are prime farmland	No	1.70%

Crider silt loam, 6 to 12 percent slopes, eroded	CrC2	Well drained	Very low to moderately high	--	Farmland of statewide importance	No	1.30%
Dickson silt loam, 2 to 6 percent slopes	DcB	Moderately well drained	Moderately low to moderately high	Low	All areas are prime farmland	No	22.30%
Dickson silt loam, 6 to 12 percent slopes, eroded	DcC2	Moderately well drained	Moderately low to moderately high	Medium	Farmland of statewide importance	No	7.20%
Gullied land	Gu	--	--	---	Not prime farmland	No	0.20%
Hamblen silt loam	Ha	Moderately well drained	Moderately high to high	Very low	Prime farmland if protected from flooding or not frequently flooded during the growing season	No	1.80%
Humphreys cherty silt loam, 2 to 6 percent slopes	HuB	Well drained	High	Low	All areas are prime farmland	No	0.10%
Melvin silt loam	Me	Poorly drained	Moderately high to high	Very low	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	Yes	2.30%
Mountview silt loam, 2 to 6 percent slopes	MoB	Well drained	Moderately high to high	Low	All areas are prime farmland	No	4.20%
Mountview silt loam, 6 to 12 percent slopes, eroded	MoC2	Well drained	Moderately high to high	Medium	Farmland of statewide importance	No	4.20%
Newark silt loam	Nn	Somewhat poorly drained	Moderately high to high	Very low	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	Yes	4.50%
Robinsonville gravelly silt loam (sensabaugh)	Rg	Well drained	Moderately high to high	Very low	Prime farmland if protected from flooding or not frequently flooded during the growing season	No	0.40%
Rock land	Ro	--	--	--	Not prime farmland	No	0.10%
Sango silt loam, 0 to 2 percent slopes	SaA	Moderately well drained	Moderately low to moderately high	Very low	All areas are prime farmland	No	1.30%
Sango silt loam, 2 to 6 percent slopes	SaB	Moderately well drained	Moderately low to moderately high	Low	All areas are prime farmland	No	9.70%
Staser silt loam	St	Well drained	Moderately high to high	Very low	Prime farmland if protected from flooding or not frequently flooded during the growing season	No	0.60%
Taft silt loam	Ta	Somewhat poorly drained	Moderately low to moderately high	Very low	Prime farmland if drained	Yes	6.80%
Talbott cherty silty clay loam, 2 to 6 percent slopes, eroded (vertrees)	TbB2	Well drained	Moderately high to high	Low	All areas are prime farmland	No	0.00%

Talbott cherty silty clay, 6 to 12 percent slopes, severely eroded (vertrees)	TcC3	Well drained	Moderately high	Medium	Not prime farmland	No	0.20%
Tarklin gravelly silt loam, 6 to 12 percent slopes	TrC	Moderately well drained	Very low to moderately high	Medium	Farmland of statewide importance	No	0.40%
Water	W	--	--	--	Not prime farmland	No	0.30%

Soil Survey: Edmonson County Area, Kentucky (KY646)

Baxter gravelly silt loam, 6 to 12 percent slopes, eroded	BaC2	Well drained	Moderately high to high	Medium	Farmland of statewide importance	No	0.20%
Baxter gravelly silt loam, 12 to 20 percent slopes, eroded	BaD2	Well drained	Moderately high to high	Medium	Not prime farmland	No	0.10%
Caneyville silt loam, 6 to 12 percent slopes, eroded	CaC2	Well drained	Moderately high	Medium	Farmland of statewide importance	No	0.00%
Crider silt loam, 2 to 6 percent slopes	CrB	Well drained	Very low to moderately high	--	All areas are prime farmland	No	0.00%
Crider silt loam, 6 to 12 percent slopes, eroded	CrC2	Well drained	Very low to moderately high	--	Farmland of statewide importance	No	0.00%
Nolin silt loam, 0 to 2 percent slopes, frequently flooded	No	Well drained	Moderately high to high	Low	Prime farmland if protected from flooding or not frequently flooded during the growing season	Yes	0.10%
Otwell silt loam, 6 to 12 percent slopes, rarely flooded	OtC	Moderately well drained	Very low to moderately low	Medium	Farmland of statewide importance	No	0.10%
Otwell silt loam, 2 to 6 percent slopes, occasionally flooded	OwB	Moderately well drained	Very low to moderately low	Low	All areas are prime farmland	No	0.30%

(NRCS, 2022)

It should be noted that caution must be used when comparing the list of hydric components to soil survey maps. Many of the soil lists have ranges in water table depths that allow the soil component to range from hydric to non-hydric depending on the location of the soil within the landscape as described in the map unit. Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for observations made during onsite investigations.

4 Assessment Methodology

Cardno conducted a desktop review of the Project area utilizing local and federal Geographic information systems (GIS) data to identify potential habitat for listed species, wetlands, hydric soils, floodplains, and cultural resources that could affect the Project development process.

Federal and state resources were reviewed to identify potential habitat that may be found for listed species in the Project area. Results of the threatened and endangered species review are provided in **Section 5.1**.

Cardno conducted a desktop environmental assessment of the Project area utilizing local and federal GIS data to identify potential wetlands, waterbodies, hydric soils, and floodplains that could affect the Project development process. Potential WOTUS were identified from the USFWS NWI GIS data layer, USGS topographic maps, and floodplain data. Results of the WOTUS analysis are provided in **Sections 5.2- 5.4**.

Cardno's cultural resource specialists reviewed information regarding known archeological and historic sites, available through the Kentucky Heritage Council (KHC), Office of State Archaeology (OSA), and other various sources. Cardno also reviewed USGS topographic maps, current, and historic aerial photographs for evidence of historic use of the proposed Project area. The results of this literature review are provided in **Section 5.5**.

5 Results of Findings

5.1 Threatened and Endangered Species Review

Cardno conducted desktop environmental assessments for listed species within the Project area. Table 5-1 lists the 79 federal and state-listed species identified by the USFWS IPaC (USFWS, 2022) and the KNP (Office of Kentucky Nature Preserves, 2018) databases as having the potential to occur within or be affected by the Project. A copy of the IPaC is provided in Appendix A. The Project is located entirely within two Indiana Bat Critical Habitat Unit (CHU), with a majority of the Project being in CHU 13, and a minority of the most northwest portion in Edmonson County being within CHU 14. Only those species with a moderate to high likelihood of occupying the Project area are discussed below.

Table 5-1 Barren and Edmonson County Listed Threatened and Endangered Species

Group	Common Name	Scientific Name	Likelihood of Occupance	Federal Status	State Status
Birds	Short-eared Owl ²	<i>Asio flammeus</i>	Moderate	--	E
	Least Flycatcher ²	<i>Empidonax minimus</i>	Moderate	--	E
	Peregrine Falcon ²	<i>Falco peregrinus</i>	Low	--	E
	Bachman's Sparrow ²	<i>Peucaea aestivalis</i>	Moderate	--	E
	Pied-billed Grebe ²	<i>Podilymbus podiceps</i>	Low	--	E
	Vesper Sparrow ²	<i>Pooecetes gramineus</i>	Moderate	--	E
	Red-breasted Nuthatch ²	<i>Sitta canadensis</i>	Low	--	E
	Golden-winged Warbler ²	<i>Vermivora chrysoptera</i>	Moderate	--	E
	Northern Shoveler ²	<i>Spatula clypeata</i>	Low	--	E
	Great Egret ²	<i>Ardea alba</i>	Low	--	T
	Brown Creeper ²	<i>Certhia americana</i>	Low	--	T
	Northern Harrier ²	<i>Circus hudsonius</i>	Moderate	--	T
	Least Bittern ²	<i>Ixobrychus exilis</i>	Low	--	T
	Hooded Merganser ²	<i>Lophodytes cucullatus</i>	Low	--	T
	Yellow-crowned Night-heron ²	<i>Nyctanassa violacea</i>	Low	--	T
	Blackburnian Warbler ²	<i>Setophaga fusca</i>	Moderate	--	T
	American Coot ²	<i>Fulica americana</i>	Low	--	E

Table 5-1 Barren and Edmonson County Listed Threatened and Endangered Species

	Blue-winged Teal ²	<i>Spatula discors</i>	Low	--	T
	Fanshell ²	<i>Cyprogenia stegaria</i>	Low	E	E
	Northern Riffleshell ²	<i>Epioblasma rangiana</i>	Low	E	E
	Snuffbox 1,2	<i>Epioblasma triquetra</i>	Low	E	E
	Pink Mucket ²	<i>Lampsilis abrupta</i>	Low	E	E
	Pocketbook ²	<i>Lampsilis ovata</i>	Low	--	E
	Kentucky Creekshell ²	<i>Leaunio ortmanni</i>	Low	--	E
	Spectaclecase ²	<i>Margaritifera monodonta</i>	Low	E	E
	Ring Pink ²	<i>Obovaria retusa</i>	Low	E	E
Molluscs	Sheepnose ²	<i>Plethobasus cyphus</i>	Low	E	E
	Clubshell ²	<i>Pleurobema clava</i>	Low	E	E
	Rough Pigtoe ²	<i>Pleurobema plenum</i>	Low	E	E
	Pyramid Pigtoe ²	<i>Pleurobema rubrum</i>	Low	--	E
	Rabbitsfoot ²	<i>Theliderma cylindrica</i>	Low	T	E
	Elktoe ²	<i>Alasmidonta marginata</i>	Low	--	T
	Little Spectaclecase ²	<i>Leaunio lienosus aquilonius</i>	Low	--	T
	Round Hickorynut ²	<i>Obovaria subrotunda</i>	Low	--	T
	A Terrestrial Snail) ²	<i>Helicodiscus notius specus</i>	Low	--	T
	Northern Myotis ^{1,2}	<i>Myotis septentrionalis</i>	Moderate	T	E
	Indiana Bat ^{1,2}	<i>Myotis sodalis</i>	High	E	E
	Gray Myotis ^{1,2}	<i>Myotis grisescens</i>	Moderate	E	T
Mammals	Eastern Small-footed Myotis ²	<i>Myotis leibii</i>	Moderate	--	T
	Little Brown Bat ²	<i>Myotis lucifugus</i>	Moderate	--	T
	Eastern Pipistrelle ²	<i>Perimyotis subflavus</i>	Moderate	--	T
	Western Sand Darter ²	<i>Ammocrypta clara</i>	Low	--	E
Fish	Longhead Darter ²	<i>Percina macrocephala</i>	Low	--	E

Table 5-1 Barren and Edmonson County Listed Threatened and Endangered Species

	Spotted Darter ²	<i>Nothonotus maculatus</i>	Low	--	T
	Scarlet Kingsnake ²	<i>Lampropeltis elapsoides</i>	Low	--	E
	Northern Pinesnake ²	<i>Pituophis melanoleucus melanoleucus</i>	Low	--	E
Reptiles	Coal Skink ²	<i>Plestiodon anthracinus</i>	Moderate	--	E
	Eastern Slender Glass Lizard ²	<i>Ophisaurus attenuatus longicaudus</i>	Moderate	--	T
	Southeastern Crowned Snake ²	<i>Tantilla coronata</i>	Moderate	--	T
	Monarch Butterfly ^{1,2}	<i>Danaus plexippus 1</i>	Moderate	C	--
	Double-ringed Pennant ²	<i>Celithemis verna</i>	Low	--	E
	Elusive Clubtail ²	<i>Stylurus notatus</i>	Moderate	--	E
Insects	Elfin Skimmer ²	<i>Nannothemis bella</i>	Low	--	E
	A Geometrid Moth ²	<i>Lyctosis permagnaria</i>	Low	--	E
	Surprising Cave Beetle ²	<i>Pseudanophthalmus inexpectatus</i>	Low	--	T
	A Cave Obligate Beetle ²	<i>Pseudanophthalmus pubescens intrepidus</i>	Low	--	T
	Kentucky Cave Shrimp ^{1,2}	<i>Palaemonias ganteri</i>	Moderate	E	E
	An Ectocommensal Ostracod ²	<i>Sagittocythere stygia</i>	Moderate	--	T
Other Arthropods	An Amphipod ²	<i>Crangonyx longidactylus</i>	Moderate	--	T
	A Cave Obligate Springtail ²	<i>Arrhopalites altus</i>	Moderate	--	T
	A Cave Obligate Springtail ²	<i>Arrhopalites bimus</i>	Moderate	--	T
Flatworms	A Cave Obligate Planarian ²	<i>Sphalloplana buchanani</i>	Moderate	--	T
	Epiphytic Sedge ²	<i>Carex decomposita</i>	Moderate	--	T
	Prairie Gentian ²	<i>Gentiana puberulenta</i>	Low	--	E
	Plains Frostweed ²	<i>Helianthemum bicknellii</i>	Moderate	--	E
Plants	Eggert's Sunflower ²	<i>Helianthus eggertii</i>	Moderate	--	T
	Western Dwarf Dandelion ²	<i>Krigia occidentalis</i>	Low	--	E
	Crossleaf Milkwort ²	<i>Polygala cruciata</i>	Low	--	E

Table 5-1 Barren and Edmonson County Listed Threatened and Endangered Species

Spotted Pondweed ²	<i>Potamogeton pulcher</i>	Moderate	--	T
Grassleaf Arrowhead ²	<i>Sagittaria graminea</i>	Low	--	T
Sessile-fruited Arrowhead ²	<i>Sagittaria rigida</i>	Low	--	E
Fringed Nutrush ²	<i>Scleria ciliata</i>	Moderate	--	E
Buffalo Clover ²	<i>Trifolium reflexum</i>	Moderate	--	E
Wood's Bunchflower ²	<i>Veratrum woodii</i>	Moderate	--	T
American Chestnut ²	<i>Castanea dentata</i>	Moderate	--	E
Sharp-scaled Manna-grass ²	<i>Glyceria acutiflora</i>	Moderate	--	E
Hairy Ludwigia ²	<i>Ludwigia hirtella</i> -	Moderate	--	E
Rough Dropseed ²	<i>Sporobolus clandestinus</i>	Moderate	--	T
Narrowleaved Bluecurls ²	<i>Trichostema setaceum</i>	Moderate	--	E

¹ = identified by USFWS IPaC, ² = identified by state sources for counties

C = Candidate, E = Endangered, T = Threatened

Source (USFWS 2022); (MNHP 2022); (KNP 2018)

Of the 79 species identified within Barren and Edmonson County, 40 have a moderate to high potential to occupy the Project area: **two (2)** federally endangered species, **seventeen (17)** state-endangered species, **twenty (20)** state-threatened species, and **one (1)** federal candidate species. The Project area is vast in size and includes a variety of habitat, including openings, cropland and pasture, deciduous forest, riparian areas, and ponds. The Project area is 10 miles south of Mammoth Cave National Park and is within Little Sinking Creek watershed. Headwater streams within the Project area have no obvious superficial connection, indicating that there is high likelihood of karst drainage features, including sinkholes and seeps, within the Project area which drain to the cave system and aquifer beneath. Additionally, **dye tests show that water from the Little Sinking Creek drainage does drain to the Turnhole Spring Basin in Mammoth Cave.** The USFWS lists the Kentucky cave shrimp as a species which may potentially occupy the Project area and while the area is within habitat for the shrimp, designated critical habitat is restricted to Mammoth Cave. Given this, Cardno determined that this species and all additional cave invertebrates listed by the state database should also be given a determination of moderate likelihood to occur within the Project area.

The short-eared owl, Bachman's sparrow, and vesper sparrow prefer flat, treeless and open countryside, fields, and pasture for nesting, while the least flycatcher occupy openings and breeds in mixed woodlands or deciduous trees around clearings. Golden-winged warblers breed in brush areas where cleared fields are regrowing to woods and occupy open woodlands and undergrowth which are likely present. The deciduous forest patches may also support Blackburnian warblers. These species have a moderate chance of occurring within the Project area.

Streams within the Project area are unlikely to provide suitable habitat for listed mussels or fish due to their size and lack of superficial hydrologic connectivity. However, there is high to moderate potential for several bat species to find suitable foraging habitat and maternity or roosting habitat along the riparian corridors within the Project area, especially due to relatively close distance to the more significant cave features of Mammoth Cave and potential for karst features within the Project area. Bats which have potential to occupy

the area include the northern long-eared bat, Indiana, gray, little brown, eastern pipistrelle, and eastern small-footed bat. Additionally, there is known hibernaculum for Indiana bats at Coach Cave in Edmonson County.

The eastern glass lizards burrow in grassy areas, dry rocky hillsides, open forest, and prairies. Deciduous woodlands, meadows, and dry oak woodlands may support the southeastern crown snake. Pasture, openings, roadways, and cropland may contain milkweeds for monarch butterflies. The elfin skimmer and double-ringed pennant dragonflies may find suitable foraging plants along waterways and streams within the Project area.

Sinkhole ponds, seeps, or openings may support epiphytic sedge and spotted pondweed while dry woodlands, glades, and prairies may support plains frostweed, and fringed nutrush. Open forest may have suitable habitat for Eggert's sunflower and the disturbed openings may support buffalo clover. American chestnut has been reported recently from these counties and their mesic forests. Wood's bunchflower can also occupy this same habitat. Sharp-scaled manna-grass prefers slow and shallow water, wet pastures, ad pond margins which may be present. Barrens, savannas, and prairies may host hairy ludwigia and rough dropseed. Finally, narrowleaved bluecurls can occupy both dry upland oak-hickory forest, dry to moist old fields, and disturbed areas which are present.

5.2 Wetlands

Potential WOTUS were identified from the NWI GIS data layer (USFWS, 2022). Cardno's desktop investigations identified eleven (11) forested wetland (PFO), eight (8) emergent wetland and thirty-four (34) ponded wetlands (PUB) (Table 5-2) totaling 46.85 acres within the Project area (Figure 5-1).

Table 5-2 Identified Wetlands within the Project area

Wetland ID	Type	Acreage	Potentially Jurisdictional
WET-01	PFO	2.88	Not likely
WET-02	PFO	0.88	Likely
WET-02	PFO	0.14	Likely
WET-02	PFO	3.06	Likely
WET-03	PFO	3.22	Likely
WET-04	PFO	3.94	Likely
WET-05	PFO	0.06	Likely
WET-06	PFO	4.08	Not likely
WET-07	PFO	0.15	Not likely
WET-08	PFO	4.05	Likely
WET-09	PUB	1.52	Likely
WET-10	PEM	1.31	Likely
WET-11	PEM	0.30	Likely
WET-12	PEM	0.90	Likely
WET-13	PEM	0.43	Likely
WET-14	PEM	0.46	Likely
WET-15	PEM	0.15	Not likely
WET-16	PEM	0.21	Likely
WET-17	PUB	0.24	Likely
WET-18	PUB	0.58	Likely
WET-19	PUB	2.70	Likely

WET-20	PUB	0.43	Likely
WET-21	PUB	0.83	Not likely
WET-22	PUB	0.24	Not likely
WET-23	PUB	0.37	Not likely
WET-24	PUB	0.28	Not likely
WET-25	PUB	0.54	Not likely
WET-26	PUB	1.09	Likely
WET-27	PUB	0.56	Likely
WET-28	PUB	0.25	Likely
WET-29	PUB	0.22	Not likely
WET-30	PUB	0.74	Not likely
WET-31	PUB	0.44	Not likely
WET-32	PUB	1.79	Not likely
WET-33	PUB	0.65	Likely
WET-34	PUB	0.92	Not likely
WET-35	PUB	0.29	Not likely
WET-36	PUB	0.19	Likely
WET-37	PUB	0.01	Likely
WET-38	PUB	0.18	Likely
WET-39	PUB	0.18	Not likely
WET-40	PUB	0.02	Not likely
WET-41	PUB	0.22	Not likely
WET-42	PUB	0.23	Likely
WET-43	PUB	0.19	Not likely
WET-44	PUB	0.18	Likely
WET-45	PUB	0.34	Not likely
WET-46	PUB	0.88	Likely
WET-47	PUB	0.21	Not likely
WET-48	PUB	0.34	Likely
WET-49	PUB	0.20	Not likely
WET-50	PUB	0.16	Not likely
WET-51	PFO	2.18	Likely
WET-52	PEM	0.26	Not likely
Total Non-jurisdictional		15.70	
Total Jurisdictional		31.15	
TOTAL		46.85	

5.3 Waterbodies

Two (2) perennial streams, **two (2)** intermittent, and **eighteen (18)** ephemeral streams were identified within the Project boundary and are listed below in **Table 5-3** and **Figure 5-1**.

Table 5-3 Identified Streams within the Project area

Stream ID	Flow Type	Stream Length (feet)	Potentially Jurisdictional
S-1 (Gardner Creek)	Perennial	8,477.15	Likely
S-2 (Little Sinking Creek)	Perennial	13,668.65	Likely
S-3	Ephemeral	4,115.56	Likely
S-4	Ephemeral	613.91	Likely
S-5	Ephemeral	3,870.04	Likely
S-6	Intermittent	2,082.64	Likely
S-7	Ephemeral	1,419.12	Likely
S-8	Ephemeral	5,546.11	Likely
S-9	Ephemeral	13.71	Likely
S-10	Ephemeral	2,426.44	Likely
S-11	Ephemeral	908.84	Likely
S-12	Ephemeral	1,551.01	Likely
S-13	Ephemeral	1,880.23	Likely
S-14	Ephemeral	2,269.91	Likely
S-15	Intermittent	2,173.59	Likely
S-16	Ephemeral	2,216.70	Likely
S-17	Ephemeral	476.87	Likely
S-18	Ephemeral	177.34	Likely
S-19	Ephemeral	2,056.99	Likely
S-20	Ephemeral	1,325.35	Likely
S-21	Ephemeral	2,196.47	Likely
S-22	Intermittent	3,788.38	Likely
Total Jurisdictional		63,254.99	
Total Non-Jurisdictional		0.00	
Total		63,254.99	

5.4 Jurisdictional Summary

While Cardno cannot formally determine the jurisdictional status of a waterbody or wetland, features in the Project area have evaluated for potential federal jurisdiction from the desktop perspective. Our interpretation is made based on available documentation from the USEPA, including guidance on the "Current Implementation of Waters of the United States" which refers to the original 1986/1988 promulgation and subsequent Supreme Court cases which further defined the term, with the most current definition determined by the 2008 ruling following the *Rapanos v. United States* case (USEPA, 2021).

The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters (TNW),

- Wetlands adjacent to TNWs,
- Non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and,
- Wetlands that directly abut such tributaries.

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent,
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent, and,
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

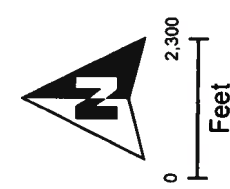
The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow), and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

From the perspective of observable aerial imagery, the identified streams and wetlands appear to lack surface connection to major waterways or waterbodies but likely percolate and drain beneath the ground to a greater karst system, including Mammoth Cave and greater Green River (see **Section 3.1** for more information). Based on these observations, it was Cardno's determination that streams and associated wetlands within the Project area would be classified as WOTUS under the current WOTUS regulations, and therefore would likely be classified as jurisdictional by the USACE.



- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Ephemeral Stream
- Intermittent
- Perennial
- Project Boundary



Critical Impact Analysis

Wood Duck Solar

Barren County, Kentucky

Wetlands and Waterbodies

Overview


Date: April 2022

Project No: 6321201503

Figure: 5-1

Data Source: Basemap: Bing Maps Aerial (2020)





Location: B. Humphreys

Legend

	Ephemeral Stream		Freshwater Emergent Wetland
	Intermittent Stream		Freshwater Forested/Shrub Wetland
	Perennial Stream		Freshwater Pond
	Project Boundary		

North Arrow

0 1,250 Feet

Cardno now **Stantec**

Critical Impact Analysis
Wood Duck Solar
Barren County, Kentucky

Wetlands and Waterbodies Overview

Date: April 2022	Project No: E321201503	Figure: 5-3
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Figure 5-3 Architectural and Archaeological Resources identified within the Project Area

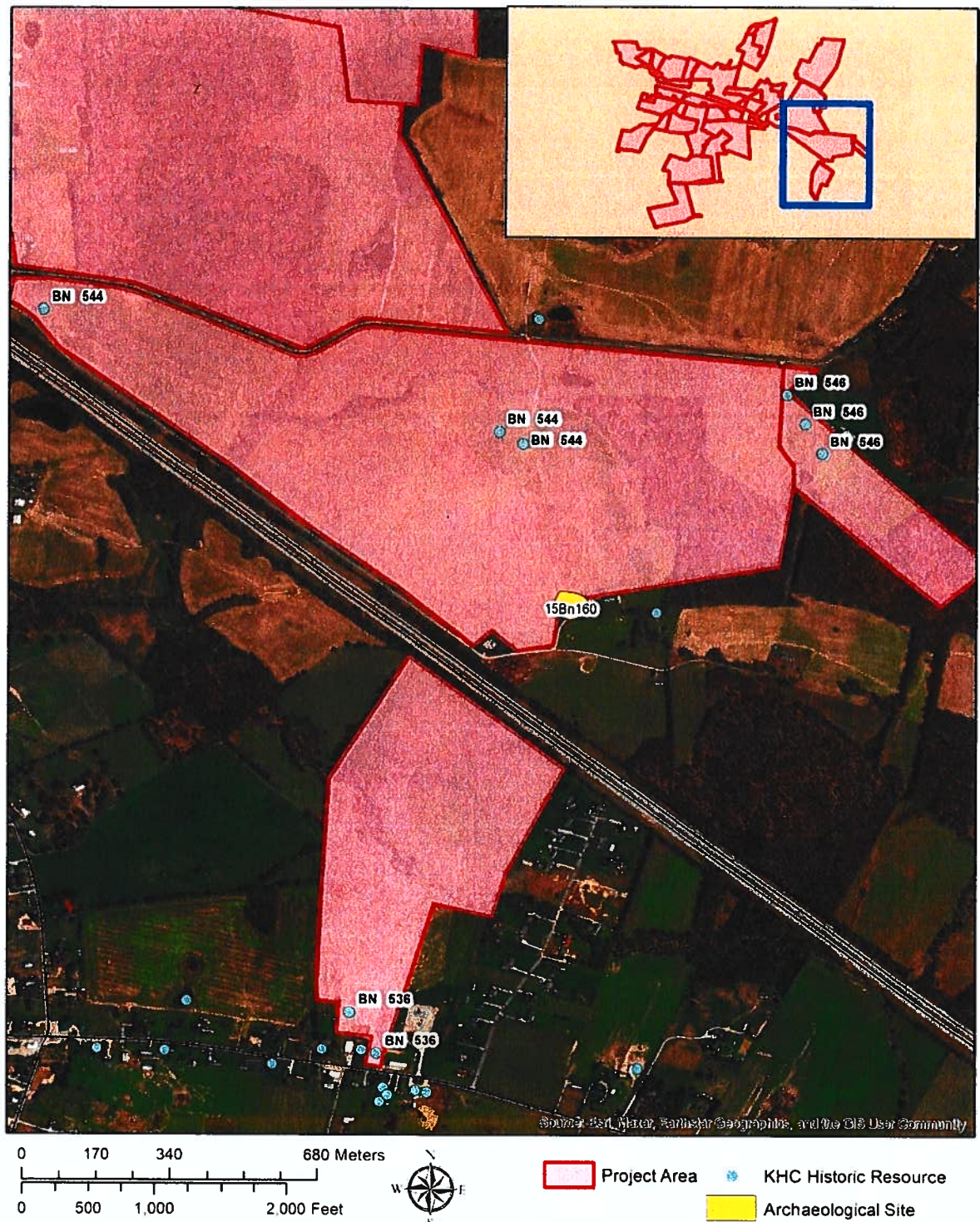


Figure 5-2 Previously Identified Cultural Resources

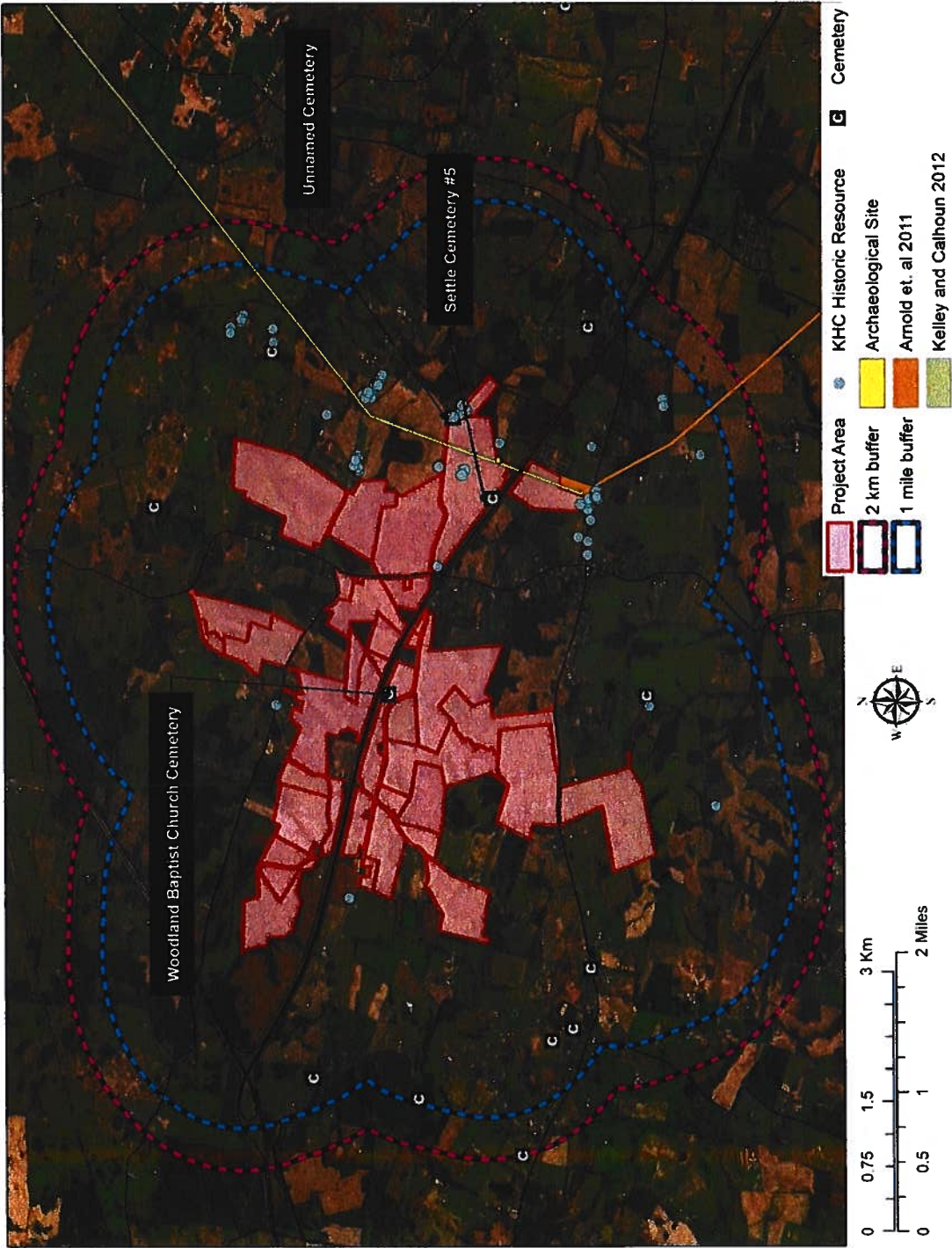


Table 5-4 KHC Survey Structures (note gray highlighted structures fall within APE).

Site	Site Sub #	Resource	Location	NRHP Status
BN 199		HOUSE	RICK RD	UNDETERMINED
BN 200		HOUSE	RICK RD	UNDETERMINED
BN 203		TENANT HOUSE	BON AYR - CROSSROADS HWY 68-	UNDETERMINED
BN 210		HOUSE (BURNED 1982)	AT APPLE GROVE	DEMOLISHED
BN 211		HOUSE	314 J MARTIN RD	MEETS N/R CRITERIA
BN 211	1	SHED	314 J MARTIN RD	UNDETERMINED
BN 211	2	OUTBUILDING	314 J MARTIN RD	UNDETERMINED
BN 211	3	OUTBUILDING	314 J MARTIN RD	UNDETERMINED
BN 211	4	BARN	314 J MARTIN RD	UNDETERMINED
BN 211	5	BARN	314 J MARTIN RD	UNDETERMINED
BN 212		HOUSE #MISSING#	FLOWERS RD	UNDETERMINED
BN 476		ONE-ROOM SCHOOL	2109 OAK GROVE CHURCH ROAD	UNDETERMINED
BN 534		HOUSE	316 FURLONG RD	UNDETERMINED
BN 534	1	MACHINE SHED	316 FURLONG RD	UNDETERMINED
BN 534	2	BARN	316 FURLONG RD	UNDETERMINED
BN 535		BARN	7938 NEW BOWLING GREEN RD	UNDETERMINED
BN 536		HOUSE	8230 AND 8180 NEW BOWLING GREEN RD	UNDETERMINED
BN 536	1	MACHINE SHED	8230 AND 8180 NEW BOWLING GREEN RD	UNDETERMINED
BN 536	2	BARN	8230 AND 8180 NEW BOWLING GREEN RD	UNDETERMINED
BN 536	3	BARN	8230 AND 8180 NEW BOWLING GREEN RD	UNDETERMINED
BN 537		BARN	8137A NEW BOWLING GREEN RD	UNDETERMINED
BN 537	1	GARAGE	8137A NEW BOWLING GREEN RD	UNDETERMINED
BN 538		HOUSE	8157 NEW BOWLING GREEN RD	UNDETERMINED
BN 538	1	CARPORT	8157 NEW BOWLING GREEN RD	UNDETERMINED
BN 538	2	CARPORT	8157 NEW BOWLING GREEN RD	UNDETERMINED
BN 538	3	SHED	8157 NEW BOWLING GREEN RD	UNDETERMINED
BN 539		BARN	DEARING RD	UNDETERMINED

BN 540		BON AYR MISSIONARY BAPTIST CHURCH	8285 NEW BOWLING GREEN RD	UNDETERMINED
BN 541		BARN	8347 NEW BOWLING GREEN RD	UNDETERMINED
BN 542		BARN	86 BON AYR RD	UNDETERMINED
BN 543		BARN	844 DISMAN RD	UNDETERMINED
BN 544		BARN	MAYHEW RD	UNDETERMINED
BN 544	1	BARN	MAYHEW RD	UNDETERMINED
BN 544	2	BARN	MAYHEW RD	UNDETERMINED
BN 545		BARN	MAYHEW RD	UNDETERMINED
BN 546		BARN	595 MAYHEW RD	UNDETERMINED
BN 546	1	OUTBUILDING	595 MAYHEW RD	UNDETERMINED
BN 546	2	CEMETERY	595 MAYHEW RD	UNDETERMINED
BN 547		BARN	447 MAYHEW RD	UNDETERMINED
BN 548		BARN	5951 DRIPPING SPRINGS RD	UNDETERMINED
BN 548	1	SHED	5951 DRIPPING SPRINGS RD	UNDETERMINED
BN 548	2	SHED	5951 DRIPPING SPRINGS RD	UNDETERMINED
BN 548	3	HOUSE	5951 DRIPPING SPRINGS RD	UNDETERMINED
BN 548	4	MOBILE HOME	5951 DRIPPING SPRINGS RD	UNDETERMINED
BN 549		HOUSE	6039 DRIPPING SPRINGS RD	UNDETERMINED
BN 549	1	GARAGE	6039 DRIPPING SPRINGS RD	UNDETERMINED
BN 549	2	OUTBUILDING	6039 DRIPPING SPRINGS RD	UNDETERMINED
BN 549	3	SHED	6039 DRIPPING SPRINGS RD	UNDETERMINED
BN 550		HOUSE	6107 DRIPPING SPRINGS RD	UNDETERMINED
BN 550	1	SHED	6107 DRIPPING SPRINGS RD	UNDETERMINED
BN 551		BARN	6100 & 6132 DRIPPING SPRINGS RD	UNDETERMINED
BN 551	1	BARN	6100 & 6132 DRIPPING SPRINGS RD	UNDETERMINED
BN 551	2	SHED	6100 & 6132 DRIPPING SPRINGS RD	UNDETERMINED
BN 551	3	MOBILE HOME	6100 & 6132 DRIPPING SPRINGS RD	UNDETERMINED
BN 551	4	MOBILE HOME	6100 & 6132 DRIPPING SPRINGS RD	UNDETERMINED
BN 552		BARN	6499 DRIPPING SPRINGS RD	UNDETERMINED

5.5 Cultural Resources

Cardno's cultural resource specialists reviewed previously recorded architectural resources, archaeological sites, cemeteries, and other cultural resources that may pose critical issues to the proposed project. Cardno focused on previously recorded resources within 2 km (1.2 mi) of the APE, but also examined the larger region where appropriate. For the literature review the following resources were consulted:

- National Historic Landmark List and National Register of Historic Places (NRHP);
- Kentucky Office of State Archaeology (OSA) Site files;
- Kentucky Heritage Council (KHC) Site files
- Cultural Resources Management Reports;
- County Maps and Atlases

No National Historic Landmarks or NRHP listed resources are located within 2 km of the proposed APE.

Due to a policy change, the OSA only provided data for the area of direct impact (APE). These data indicate that two previous archaeological surveys have been completed within portions of the proposed project APE. In 2011 Arnold et.al completed an archaeological survey for the Beckton-Bon Ayer substation and transmission line in Barren County (Arnold et. al 2011). In 2012 Kelley and Calhoun completed a Phase I survey for the proposed Cave City-Bon Ayr 69kv transmission line in Barren County (Kelley and Calhoun 2012) (Figure 5-2). These surveys intersect a portion of the southeastern section of the current project area.

The OSA data also indicate that one site identified within Kelley and Calhoun's survey area is located partially within the current project Area. The OSA GIS database lists Site 15Bn160 as a historic farm/residence dating to the first half of the 20th century (Figure 5-3). The site was recommended as not eligible for nomination to the NRHP. Given this assessment, Site 15Bn160 should not be a critical issue for the proposed solar farm.

Data provided by the KHC architectural resources database indicates that 27 surveyed architectural resources are located within 1 mile of the proposed APE (Figures 5-2 and 5-3; Table 5-4)). All are located in Barren County. These resources comprise 64 individual structures, including barns, silos, sheds, and other out buildings). Portions of three resources (eight total structures), BN 536 (n=2), BN 544 (n=3), BN 546 (n=3), are located within the proposed project area. The individual structures include six barns, one outbuilding, and one cemetery. All of these resources are located in the southeastern portion of the proposed project area. The NRHP status of these resources has not been determined. Survey and reassessment of these resources to determine their NRHP eligibility is recommended. In addition to the resources within the proposed APE, two additional structures, a machine shed from Resource BN 536 and a barn from Resource BN 547 (see Table 5-4) are located outside of, but immediately adjacent to the proposed APE. The remaining 23 resources are situated within one mile of the proposed APE. Of these structures, only the house at Resource BN 211 has been determined to meet NRHP criteria. This structure is located more than 1 km from northeastern boundary of the APE and should not pose a critical issue for the proposed solar farm.





Legend

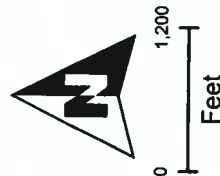
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Project Boundary

Scale

0 970 Feet

North Arrow

 		Cardno now Stantec	
Critical Impact Analysis Wood Duck Solar Barren County, Kentucky		Wetlands and Waterbodies Overview	
Date: April 2022	Project No.: E321201503	Figure: 5-6	



- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Project Boundary

- Ephemeral Stream
- Intermittent Stream
- Perennial Stream





Critical Impact Analysis
Wood Duck Solar
Barren County, Kentucky

Wetlands and Waterbodies Overview

Date: April 2022 Project No: E321201503 Figure: **5-4**

Legend

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Project Boundary
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream

0 970
Feet

Date Created 11/27/2022 Date Revised 11/27/2022 File Path: \\usaussis08.cardno.com\AU0040\data-AF\IPROJECTS\Genex Solar\E321201503000_237801898 - Wood Duck Solar\GIS\WETLANDS AND WATERBODIES.mxd
GIS Analyst: kelsey.a.anderson

6 Conclusion

Cardno reviewed current and historic mapping, as well as local, state, and federal GIS data layers as part of a desktop investigation during its natural and cultural resources assessment.

The USFWS IPaC and state natural heritage databases listed some concern for impacts to federally listed species within the Project area. **Two (2)** federally endangered species, **seventeen (17)** state-endangered species, **twenty (20)** state-threatened species, and **one (1)** federal candidate species. The Project area is within two critical habitat units for the Indiana bat.

Cardno scientists identified potentially **two (2)** perennial streams, **two (2)** intermittent, and **eighteen (18)** ephemeral streams were identified within the Project Area. **Eleven (11)** PFO wetlands, **eight (8)** PEM wetlands, and **thirty-four (34)** PUB ponds, totaling 46.85 acres, were identified within the Project Area. The FIRMs FM21061C0275B, 21009C0150C, 21009C0255C, and 21009C0260C indicate the 100-year floodplain is present on approximately 81.4 acres of the Project, concentrated along Gardner and Little Sinking Creek.

From the perspective of observable aerial imagery, while there is no surface connection to any major waterway or TNW, the Little Sinking Creek is self-contained and water that falls within this watershed percolates through soil to the karst features below north to tributaries of Mammoth Cave National Park, which eventually drains to the Green River. Due to this connection, it is Cardno's determination that the streams and associated wetlands within the Project area would be classified as WOTUS under the current regulations, and therefore would likely be classified as jurisdictional by the USACE. Coordination with the USACE Louisville District Office to obtain an approved jurisdictional determination (AJD) for the streams, wetlands, and ponds identified onsite is recommended if the Project would impact these areas.

Only the USACE may issue determinations on the jurisdictional status of the streams and wetlands identified within the Project. If any of the identified streams or wetlands are deemed jurisdictional by the USACE, the Project may proceed under a NWP 51, 14 and/or 57. Nationwide 51 requires a pre-construction notification to the USACE for loss of WOTUS over 1/10 acres and allows for construction, expansion or modification of land-based renewable energy production facilities, including attendant features. For Electric Utility Line and Telecommunications Activities, each separate and distant crossing of waters of the United States may be covered by its own NWP authorization. If the only activity requiring USACE authorization is the construction, maintenance, repair, and removal of electrical utility lines, then a NWP 57 may be used. As stated in the text of the NWPs, the discharge of dredged or fill material into wetlands and non-tidal WOTUS must not cause the loss of greater than ½-acre of wetlands and non-tidal WOTUS. Permanent impacts which exceed the ½-acre threshold for NWPs will require an Individual Permit.

The results of the cultural review identified **one** archaeological site within the Project boundary, which was determined ineligible for the NRHP by the SHPO. **Three** historic structures have been recorded within the Project area. Reassessment of these features is recommended to determine potential eligibility in the NRHP. There are also **three** historic cemeteries within the Project area. A 100-foot avoidance buffer is recommended around these resources to minimize the impact of development as the project moves forward.

Due to the presence of known archeological sites within proximity of the Project area, and because previous cultural resource surveys have not been conducted on the majority of the Project area, the SHPO may request that a Phase I survey be conducted within federally jurisdictional areas within the Project area.

BN 552	3	MILK HOUSE	6499 DRIPPING SPRINGS RD	UNDETERMINED
BN 552	4	SILO	6499 DRIPPING SPRINGS RD	UNDETERMINED
BN 552	2	BARN	6499 DRIPPING SPRINGS RD	UNDETERMINED
BN 552	5	BARN	6499 DRIPPING SPRINGS RD	UNDETERMINED
BN 552	6	CEMETERY	6499 DRIPPING SPRINGS RD	UNDETERMINED
BN 552	1	RETAINING WALL	6499 DRIPPING SPRINGS RD	UNDETERMINED
BN 553		BARN	151 J. MARTIN RD	UNDETERMINED
BN 553	1	HOUSE RUINS	151 J. MARTIN RD	UNDETERMINED

Within the Project Boundary

Cemetery records indicate that 13 historic cemeteries are located within 2 km of the proposed project APE. Ten are located well outside of the APE boundary and do not pose critical issues for the proposed solar farm. Three cemeteries; Woodland Baptist Church Cemetery, Settle Cemetery #5, and an unnamed cemetery (KHC Resource BN 546 002) Are all located within the proposed APE. A 100-foot avoidance buffer is recommended around all of these resources to minimize the impact of development as the project moves forward.

Due to the presence of known archeological sites within proximity of the Project area, and because previous cultural resource surveys have not been conducted on the majority of the Project area, the SHPO may request that a Phase I survey be conducted within federally jurisdictional areas within the Project area.



Species Information

Species observations for selected counties

Linked life history provided courtesy of NatureServe Explorer .
Records may include both recent and historical observations.
[US Status Definitions](#) [Kentucky Status Definitions](#)

List Species observations in 2 selected counties.
Selected counties are: Barren, Edmonson.

Scientific Name and Life History	Common Name and Pictures	Class	County	US Status	KY Status	WAP	Reference
<i>Accipiter cooperii</i>		Cooper's Hawk		Barren	N	N	Reference
<i>Accipiter cooperii</i>		Cooper's Hawk		Edmonson	N	N	Reference
<i>Accipiter striatus</i>	Yes	Sharp-shinned Hawk	Aves	Edmonson	N	S	Reference
<i>Accipiter striatus</i>	Yes	Sharp-shinned Hawk	Aves	Barren	N	S	Reference
<i>Acris crepitans</i>		Eastern Cricket Frog	Aves	Barren	N	N	Reference
<i>Acris crepitans</i>		Eastern Cricket Frog	Aves	Edmonson	N	N	Reference
<i>Actinonaias ligamentina</i>		Mucket	Aves	Edmonson	N	N	Reference
<i>Aegolius acadicus</i>		Northern Saw-whet Owl	Aves	Barren	N	N	Reference
<i>Agelaius phoeniceus</i>		Red-winged Blackbird	Aves	Barren	N	N	Reference
<i>Agelaius phoeniceus</i>		Red-winged Blackbird	Aves	Edmonson	N	N	Reference
<i>Agkistrodon contortrix</i>		Eastern Copperhead	Aves	Edmonson	N	N	Reference

IPaC User Contact Information

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<i>Agkistrodon contortrix</i>		Eastern Copperhead	Aves	Barren	N	N	Reference
<i>Aix sponsa</i>		Wood Duck	Aves	Edmonson	N	N	Reference
<i>Aix sponsa</i>		Wood Duck	Aves	Barren	N	N	Reference
<i>Alasmidonta marginata</i>	Yes	Elktoe	Bivalvia	Edmonson	N	T	Reference
<i>Alasmidonta viridis</i>	Yes	Slippershell Mussel	Bivalvia	Edmonson	N	S	Reference
<i>Alasmidonta viridis</i>	Yes	Slippershell Mussel	Bivalvia	Barren	N	S	Reference
<i>Alosa chrysochloris</i>		Skipjack Herring	Bivalvia	Barren	N	N	Reference
<i>Alosa chrysochloris</i>		Skipjack Herring	Bivalvia	Edmonson	N	N	Reference
<i>Amblema plicata</i>		Threeridge	Bivalvia	Edmonson	N	N	Reference
<i>Amblema plicata</i>		Threeridge	Bivalvia	Barren	N	N	Reference
<i>Ambloplites rupestris</i>		Rock Bass	Bivalvia	Barren	N	N	Reference
<i>Ambloplites rupestris</i>		Rock Bass	Bivalvia	Edmonson	N	N	Reference
<i>Amblyopsis spelaea</i>	Yes	Northern Cavefish	Actinopterygii	Edmonson	N	S	Reference
<i>Ambystoma jeffersonianum</i>		Jefferson Salamander	Actinopterygii	Edmonson	N	N	Reference
<i>Ambystoma jeffersonianum</i>		Jefferson Salamander	Actinopterygii	Barren	N	N	Reference
<i>Ambystoma maculatum</i>		Spotted Salamander	Actinopterygii	Barren	N	N	Reference
<i>Ambystoma maculatum</i>		Spotted Salamander	Actinopterygii	Edmonson	N	N	Reference
<i>Ambystoma opacum</i>		Marbled Salamander	Actinopterygii	Edmonson	N	N	Reference
<i>Ambystoma opacum</i>		Marbled Salamander	Actinopterygii	Barren	N	N	Reference

<i>Ambystoma texanum</i>		Small-mouthed Salamander	Actinopterygii	Edmonson	N	N	Reference
<i>Ambystoma tigrinum</i>		Eastern Tiger Salamander	Actinopterygii	Edmonson	N	N	Reference
<i>Ambystoma tigrinum</i>		Eastern Tiger Salamander	Actinopterygii	Barren	N	N	Reference
<i>Ameiurus catus</i>		White Catfish	Actinopterygii	Barren	N	N	Reference
<i>Ameiurus melas</i>		Black Bullhead	Actinopterygii	Barren	N	N	Reference
<i>Ameiurus melas</i>		Black Bullhead	Actinopterygii	Edmonson	N	N	Reference
<i>Ameiurus natalis</i>		Yellow Bullhead	Actinopterygii	Edmonson	N	N	Reference
<i>Ameiurus natalis</i>		Yellow Bullhead	Actinopterygii	Barren	N	N	Reference
<i>Ameiurus nebulosus</i>		Brown Bullhead	Actinopterygii	Edmonson	N	N	Reference
<i>Ammocrypta clara</i>	Yes	Western Sand Darter	Actinopterygii	Edmonson	N	E	Reference
<i>Ammocrypta pellucida</i>		Eastern Sand Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Ammodramus savannarum</i>	Yes	Grasshopper Sparrow	Aves	Edmonson	N	N	Reference
<i>Ammodramus savannarum</i>	Yes	Grasshopper Sparrow	Aves	Barren	N	N	Reference
<i>Anas acuta</i>		Northern Pintail	Aves	Barren	N	N	Reference
<i>Anas crecca</i>		Green-winged Teal	Aves	Barren	N	N	Reference
<i>Anas platyrhynchos</i>		Mallard	Aves	Barren	N	N	Reference
<i>Anas platyrhynchos</i>		Mallard	Aves	Edmonson	N	N	Reference
<i>Anas rubripes</i>	Yes	American Black Duck	Aves	Edmonson	N	N	Reference
<i>Anas rubripes</i>	Yes	American Black Duck	Aves	Barren	N	N	Reference
<i>Anaxyrus americanus</i>		American Toad	Aves	Barren	N	N	Reference
<i>Anaxyrus americanus</i>		American Toad	Aves	Edmonson	N	N	Reference

<i>Anaxyrus fowleri</i>		Fowler's Toad	Aves	Edmonson	N	N	Reference
<i>Anaxyrus fowleri</i>		Fowler's Toad	Aves	Barren	N	N	Reference
<i>Anguilla rostrata</i>	Yes	American Eel	Actinopterygii	Edmonson	N	N	Reference
<i>Anser albifrons</i>		Greater White-fronted Goose	Actinopterygii	Barren	N	N	Reference
<i>Anser albifrons</i>		Greater White-fronted Goose	Actinopterygii	Edmonson	N	N	Reference
<i>Anser caerulescens</i>		Snow Goose	Actinopterygii	Edmonson	N	N	Reference
<i>Anser caerulescens</i>		Snow Goose	Actinopterygii	Barren	N	N	Reference
<i>Anser rossii</i>		Ross's Goose	Actinopterygii	Barren	N	N	Reference
<i>Anthus rubescens</i>		American Pipit	Actinopterygii	Barren	N	N	Reference
<i>Antigone canadensis</i>		Sandhill Crane	Actinopterygii	Barren	N	N	Reference
<i>Antigone canadensis</i>		Sandhill Crane	Actinopterygii	Edmonson	N	N	Reference
<i>Antroselates spiralis</i>	Yes	Shaggy Cavesnail	Gastropoda	Edmonson	N	S	Reference
<i>Antrostomus carolinensis</i>	Yes	Chuck-will's-widow	Aves	Edmonson	N	N	Reference
<i>Antrostomus carolinensis</i>	Yes	Chuck-will's-widow	Aves	Barren	N	N	Reference
<i>Antrostomus vociferus</i>	Yes	Eastern Whip-poor-will	Aves	Barren	N	N	Reference
<i>Antrostomus vociferus</i>	Yes	Eastern Whip-poor-will	Aves	Edmonson	N	N	Reference
<i>Apalone spinifera spinifera</i>		Eastern Spiny Softshell	Aves	Barren	N	N	Reference
<i>Apalone spinifera spinifera</i>		Eastern Spiny Softshell	Aves	Edmonson	N	N	Reference
<i>Aphredoderus sayanus</i>		Pirate Perch	Aves	Edmonson	N	N	Reference
<i>Aplodinotus grunniens</i>		Freshwater Drum	Aves	Edmonson	N	N	Reference

<i>Aplodinotus grunniens</i>		Freshwater Drum	Aves	Barren	N	N	Reference
<i>Archilochus colubris</i>		Ruby-throated Hummingbird	Aves	Edmonson	N	N	Reference
<i>Archilochus colubris</i>		Ruby-throated Hummingbird	Aves	Barren	N	N	Reference
<i>Arcidens confragosus</i>		Rock Pocketbook	Aves	Edmonson	N	N	Reference
<i>Ardea alba</i>	Yes	Great Egret	Aves	Barren	N	T	Reference
<i>Ardea herodias</i>		Great Blue Heron	Aves	Barren	N	N	Reference
<i>Ardea herodias</i>		Great Blue Heron	Aves	Edmonson	N	N	Reference
<i>Arrhopalites altus</i>		A Cave Obligate Springtail	Aves	Edmonson	N	T	Reference
<i>Arrhopalites bimus</i>		A Cave Obligate Springtail	Aves	Barren	N	T	Reference
<i>Asio flammeus</i>	Yes	Short-eared Owl	Aves	Edmonson	N	E	Reference
<i>Asio flammeus</i>	Yes	Short-eared Owl	Aves	Barren	N	E	Reference
<i>Aspidoscelis sexlineata</i>	Yes	Six-lined Racerunner	Reptilia	Barren	N	S	Reference
<i>Aspidoscelis sexlineata</i>	Yes	Six-lined Racerunner	Reptilia	Edmonson	N	S	Reference
<i>Aythya affinis</i>	Yes	Lesser Scaup	Aves	Barren	N	N	Reference
<i>Aythya americana</i>		Redhead	Aves	Barren	N	N	Reference
<i>Aythya americana</i>		Redhead	Aves	Edmonson	N	N	Reference
<i>Aythya collaris</i>		Ring-necked Duck	Aves	Edmonson	N	N	Reference
<i>Aythya collaris</i>		Ring-necked Duck	Aves	Barren	N	N	Reference
<i>Aythya marila</i>	Yes	Greater Scaup	Aves	Barren	N	N	Reference
<i>Aythya valisineria</i>		Canvasback	Aves	Barren	N	N	Reference

<i>Baeolophus bicolor</i>		Tufted Titmouse	Aves	Barren	N	N	Reference
<i>Baeolophus bicolor</i>		Tufted Titmouse	Aves	Edmonson	N	N	Reference
<i>Barbicambarus cornutus</i>	Yes	Bottlebrush Crayfish	Malacostraca	Barren	N	S	Reference
<i>Barbicambarus cornutus</i>	Yes	Bottlebrush Crayfish	Malacostraca	Edmonson	N	S	Reference
<i>Bartramia longicauda</i>	Yes	Upland Sandpiper	Aves	Barren	N	H	Reference
<i>Batrisesodes henroti</i>		A Cave Obligate Beetle	Aves	Barren	N	H	Reference
<i>Batrisesodes henroti</i>		A Cave Obligate Beetle	Aves	Edmonson	N	H	Reference
<i>Batrisesodes hubrichti</i>		A Cave Obligate Beetle	Aves	Barren	N	H	Reference
<i>Belba bulbipedata</i>		A Cave Obligate Mite	Aves	Edmonson	N	H	Reference
<i>Blarina brevicauda</i>		Northern Short-tailed Shrew	Aves	Edmonson	N	N	Reference
<i>Blarina brevicauda</i>		Northern Short-tailed Shrew	Aves	Barren	N	N	Reference
<i>Bombycilla cedrorum</i>		Cedar Waxwing	Aves	Barren	N	N	Reference
<i>Bombycilla cedrorum</i>		Cedar Waxwing	Aves	Edmonson	N	N	Reference
<i>Botaurus lentiginosus</i>	Yes	American Bittern	Aves	Barren	N	H	Reference
<i>Branta canadensis</i>		Canada Goose	Aves	Barren	N	N	Reference
<i>Branta canadensis</i>		Canada Goose	Aves	Edmonson	N	N	Reference
<i>Bubo virginianus</i>		Great Horned Owl	Aves	Edmonson	N	N	Reference
<i>Bubo virginianus</i>		Great Horned Owl	Aves	Barren	N	N	Reference

<i>Bubulcus ibis</i>	Yes	Cattle Egret	Aves	Barren	N	S	Reference
<i>Bucephala albeola</i>		Bufflehead	Aves	Barren	N	N	Reference
<i>Buteo jamaicensis</i>		Red-tailed Hawk	Aves	Barren	N	N	Reference
<i>Buteo jamaicensis</i>		Red-tailed Hawk	Aves	Edmonson	N	N	Reference
<i>Buteo lagopus</i>		Rough-legged Hawk	Aves	Edmonson	N	N	Reference
<i>Buteo lagopus</i>		Rough-legged Hawk	Aves	Barren	N	N	Reference
<i>Buteo lineatus</i>		Red-shouldered Hawk	Aves	Barren	N	N	Reference
<i>Buteo lineatus</i>		Red-shouldered Hawk	Aves	Edmonson	N	N	Reference
<i>Buteo platypterus</i>		Broad-winged Hawk	Aves	Edmonson	N	N	Reference
<i>Buteo platypterus</i>		Broad-winged Hawk	Aves	Barren	N	N	Reference
<i>Butorides virescens</i>	Yes	Green Heron	Aves	Barren	N	N	Reference
<i>Butorides virescens</i>	Yes	Green Heron	Aves	Edmonson	N	N	Reference
<i>Calcarius lapponicus</i>		Lapland Longspur	Aves	Barren	N	N	Reference
<i>Calidris alba</i>	Yes	Sanderling	Aves	Barren	N	N	Reference
<i>Calidris alpina</i>	Yes	Dunlin	Aves	Barren	N	N	Reference
<i>Calidris himantopus</i>	Yes	Stilt Sandpiper	Aves	Barren	N	N	Reference
<i>Calidris melanotos</i>		Pectoral Sandpiper	Aves	Barren	N	N	Reference
<i>Calidris melanotos</i>		Pectoral Sandpiper	Aves	Edmonson	N	N	Reference
<i>Calidris minutilla</i>		Least Sandpiper	Aves	Barren	N	N	Reference
<i>Cambarus tenebrosus</i>		Cavespring Crayfish	Aves	Barren	N	N	Reference

<i>Cambarus tenebrosus</i>		Cavespring Crayfish	Aves	Edmonson	N	N	Reference
<i>Campostoma oligolepis</i>		Largescale Stoneroller	Aves	Edmonson	N	N	Reference
<i>Campostoma oligolepis</i>		Largescale Stoneroller	Aves	Barren	N	N	Reference
<i>Canis latrans</i>		Coyote	Aves	Barren	N	N	Reference
<i>Canis latrans</i>		Coyote	Aves	Edmonson	N	N	Reference
<i>Carassius auratus</i>		Goldfish	Aves	Edmonson	N	N	Reference
<i>Carassius auratus</i>		Goldfish	Aves	Barren	N	N	Reference
<i>Cardellina canadensis</i>	Yes	Canada Warbler	Aves	Edmonson	N	S	Reference
<i>Cardellina pusilla</i>		Wilson's Warbler	Aves	Edmonson	N	N	Reference
<i>Cardellina pusilla</i>		Wilson's Warbler	Aves	Barren	N	N	Reference
<i>Cardinalis cardinalis</i>		Northern Cardinal	Aves	Barren	N	N	Reference
<i>Cardinalis cardinalis</i>		Northern Cardinal	Aves	Edmonson	N	N	Reference
<i>Carphophis amoenus</i>		Common Wormsnake	Aves	Edmonson	N	N	Reference
<i>Carphophis amoenus</i>		Common Wormsnake	Aves	Barren	N	N	Reference
<i>Carpionodes carpio</i>		River Carpsucker	Aves	Edmonson	N	N	Reference
<i>Carpionodes cyprinus</i>		Quillback	Aves	Edmonson	N	N	Reference
<i>Carpionodes cyprinus</i>		Quillback	Aves	Barren	N	N	Reference
<i>Carpionodes velifer</i>	Yes	Highfin Carpsucker	Actinopterygii	Edmonson	N	N	Reference
<i>Castor canadensis</i>		American Beaver	Actinopterygii	Edmonson	N	N	Reference
<i>Castor canadensis</i>		American Beaver	Actinopterygii	Barren	N	N	Reference

<i>Cathartes aura</i>		Turkey Vulture	Actinopterygii	Edmonson	N	N	Reference
<i>Cathartes aura</i>		Turkey Vulture	Actinopterygii	Barren	N	N	Reference
<i>Catharus fuscescens</i>		Veery	Actinopterygii	Edmonson	N	N	Reference
<i>Catharus guttatus</i>		Hermit Thrush	Actinopterygii	Edmonson	N	N	Reference
<i>Catharus guttatus</i>		Hermit Thrush	Actinopterygii	Barren	N	N	Reference
<i>Catharus minimus</i>		Gray-cheeked Thrush	Actinopterygii	Edmonson	N	N	Reference
<i>Catharus ustulatus</i>		Swainson's Thrush	Actinopterygii	Edmonson	N	N	Reference
<i>Catharus ustulatus</i>		Swainson's Thrush	Actinopterygii	Barren	N	N	Reference
<i>Catostomus commersonii</i>		White Sucker	Actinopterygii	Barren	N	N	Reference
<i>Catostomus commersonii</i>		White Sucker	Actinopterygii	Edmonson	N	N	Reference
<i>Celithemis verna</i>		Double-ringed Pennant	Actinopterygii	Edmonson	N	E	Reference
<i>Cemophora coccinea</i>	Yes	Scarletsnake	Reptilia	Edmonson	N	S	Reference
<i>Cemophora coccinea</i>	Yes	Scarletsnake	Reptilia	Barren	N	S	Reference
<i>Centronyx henslowii</i>	Yes	Henslow's Sparrow	Aves	Barren	N	S	Reference
<i>Centronyx henslowii</i>	Yes	Henslow's Sparrow	Aves	Edmonson	N	S	Reference
<i>Certhia americana</i>		Brown Creeper	Aves	Barren	N	T	Reference
<i>Certhia americana</i>		Brown Creeper	Aves	Edmonson	N	T	Reference
<i>Chaetura pelagica</i>		Chimney Swift	Aves	Edmonson	N	N	Reference
<i>Chaetura pelagica</i>		Chimney Swift	Aves	Barren	N	N	Reference
<i>Charadrius vociferus</i>		Killdeer	Aves	Barren	N	N	Reference
<i>Charadrius vociferus</i>		Killdeer	Aves	Edmonson	N	N	Reference

<i>Chelydra serpentina</i>		Snapping Turtle	Aves	Barren	N	N	Reference
<i>Chelydra serpentina</i>		Snapping Turtle	Aves	Edmonson	N	N	Reference
<i>Chlidonias niger</i>	Yes	Black Tern	Aves	Barren	N	N	Reference
<i>Chondestes grammacus</i>		Lark Sparrow	Aves	Barren	N	S	Reference
<i>Chordeiles minor</i>		Common Nighthawk	Aves	Barren	N	N	Reference
<i>Chroicocephalus philadelphia</i>		Bonaparte's Gull	Aves	Barren	N	N	Reference
<i>Chroicocephalus philadelphia</i>		Bonaparte's Gull	Aves	Edmonson	N	N	Reference
<i>Chrosomus erythrogaster</i>		Southern Redbelly Dace	Aves	Barren	N	N	Reference
<i>Chrosomus erythrogaster</i>		Southern Redbelly Dace	Aves	Edmonson	N	N	Reference
<i>Chrysemys picta</i>		Painted Turtle	Aves	Edmonson	N	N	Reference
<i>Chrysemys picta</i>		Painted Turtle	Aves	Barren	N	N	Reference
<i>Circus hudsonius</i>	Yes	Northern Harrier	Aves	Edmonson	N	T	Reference
<i>Circus hudsonius</i>	Yes	Northern Harrier	Aves	Barren	N	T	Reference
<i>Cistothorus palustris</i>		Marsh Wren	Aves	Barren	N	N	Reference
<i>Cistothorus platensis</i>	Yes	Sedge Wren	Aves	Edmonson	N	S	Reference
<i>Clangula hyemalis</i>		Long-tailed Duck	Aves	Barren	N	N	Reference
<i>Clinostomus funduloides</i>		Rosyside Dace	Aves	Barren	N	N	Reference
<i>Coccothraustes vespertinus</i>		Evening Grosbeak	Aves	Edmonson	N	N	Reference
<i>Coccyzus americanus</i>	Yes	Yellow-billed Cuckoo	Aves	Barren	N	N	Reference
<i>Coccyzus americanus</i>	Yes	Yellow-billed Cuckoo	Aves	Edmonson	N	N	Reference

<i>Coccyzus erythrophthalmus</i>		Black-billed Cuckoo	Aves	Edmonson	N	N	Reference
<i>Coccyzus erythrophthalmus</i>		Black-billed Cuckoo	Aves	Barren	N	N	Reference
<i>Colaptes auratus</i>		Northern Flicker	Aves	Barren	N	N	Reference
<i>Colaptes auratus</i>		Northern Flicker	Aves	Edmonson	N	N	Reference
<i>Colinus virginianus</i>	Yes	Northern Bobwhite	Aves	Edmonson	N	N	Reference
<i>Colinus virginianus</i>	Yes	Northern Bobwhite	Aves	Barren	N	N	Reference
<i>Coluber constrictor</i>		North American Racer	Aves	Barren	N	N	Reference
<i>Coluber constrictor</i>		North American Racer	Aves	Edmonson	N	N	Reference
<i>Columba livia</i>		Rock Pigeon	Aves	Edmonson	N	N	Reference
<i>Columba livia</i>		Rock Pigeon	Aves	Barren	N	N	Reference
<i>Contopus cooperi</i>		Olive-sided Flycatcher	Aves	Barren	N	N	Reference
<i>Contopus cooperi</i>		Olive-sided Flycatcher	Aves	Edmonson	N	N	Reference
<i>Contopus virens</i>		Eastern Wood-Pewee	Aves	Edmonson	N	N	Reference
<i>Contopus virens</i>		Eastern Wood-Pewee	Aves	Barren	N	N	Reference
<i>Coragyps atratus</i>		Black Vulture	Aves	Barren	N	N	Reference
<i>Coragyps atratus</i>		Black Vulture	Aves	Edmonson	N	N	Reference
<i>Corbicula fluminea</i>		Asian Clam	Aves	Barren	N	N	Reference
<i>Corbicula fluminea</i>		Asian Clam	Aves	Edmonson	N	N	Reference
<i>Corvus brachyrhynchos</i>		American Crow	Aves	Edmonson	N	N	Reference
<i>Corvus brachyrhynchos</i>		American Crow	Aves	Barren	N	N	Reference

<i>Corynorhinus rafinesquii</i>	Yes	Rafinesque's Big-eared Bat	Mammalia	Barren	N	S	Reference
<i>Corynorhinus rafinesquii</i>	Yes	Rafinesque's Big-eared Bat	Mammalia	Edmonson	N	S	Reference
<i>Cottus bairdii</i>		Mottled Sculpin	Mammalia	Barren	N	N	Reference
<i>Cottus carolinae</i>		Banded Sculpin	Mammalia	Barren	N	N	Reference
<i>Cottus carolinae</i>		Banded Sculpin	Mammalia	Edmonson	N	N	Reference
<i>Crangonyx longidactylus</i>	Yes	An Amphipod (Crangonyx longidactylus)	Malacostraca	Barren	N	T	Reference
<i>Crangonyx packardii</i>		Packard's Cave Amphipod	Malacostraca	Barren	N	N	Reference
<i>Crotalus horridus</i>	Yes	Timber Rattlesnake	Reptilia	Barren	N	N	Reference
<i>Crotalus horridus</i>	Yes	Timber Rattlesnake	Reptilia	Edmonson	N	N	Reference
<i>Cryptobranchus alleganiensis alleganiensis</i>	Yes	Eastern Hellbender	Amphibia	Edmonson	N	S	Reference
<i>Cryptobranchus alleganiensis alleganiensis</i>	Yes	Eastern Hellbender	Amphibia	Barren	N	S	Reference
<i>Cryptotis parva</i>		Least Shrew	Amphibia	Barren	N	N	Reference
<i>Cryptotis parva</i>		Least Shrew	Amphibia	Edmonson	N	N	Reference
<i>Cyanocitta cristata</i>		Blue Jay	Amphibia	Edmonson	N	N	Reference
<i>Cyanocitta cristata</i>		Blue Jay	Amphibia	Barren	N	N	Reference
<i>Cycleptus elongatus</i>	Yes	Blue Sucker	Actinopterygii	Edmonson	N	N	Reference
<i>Cyclonaias nodulata</i>		Wartyback	Actinopterygii	Edmonson	N	N	Reference
<i>Cyclonaias pustulosa</i>		Pimpleback	Actinopterygii	Edmonson	N	N	Reference
<i>Cyclonaias tuberculata</i>		Purple Wartyback	Actinopterygii	Edmonson	N	N	Reference
<i>Cygnus olor</i>		Mute Swan	Actinopterygii	Barren	N	N	Reference

<i>Cyprinella galactura</i>		Whitetail Shiner	Actinopterygii	Barren	N	N	Reference
<i>Cyprinella spiloptera</i>		Spotfin Shiner	Actinopterygii	Barren	N	N	Reference
<i>Cyprinella spiloptera</i>		Spotfin Shiner	Actinopterygii	Edmonson	N	N	Reference
<i>Cyprinella whipplei</i>		Steelcolor Shiner	Actinopterygii	Edmonson	N	N	Reference
<i>Cyprinella whipplei</i>		Steelcolor Shiner	Actinopterygii	Barren	N	N	Reference
<i>Cyprinus carpio</i>		Common Carp	Actinopterygii	Barren	N	N	Reference
<i>Cyprinus carpio</i>		Common Carp	Actinopterygii	Edmonson	N	N	Reference
<i>Cyprogenia stegaria</i>	Yes	Fanshell	Bivalvia	Edmonson	E	E	Reference
<i>Danaus plexippus</i>		Monarch	Bivalvia	Edmonson	N	N	Reference
<i>Danaus plexippus</i>		Monarch	Bivalvia	Barren	N	N	Reference
<i>Dasypus novemcinctus</i>		Nine-banded Armadillo	Bivalvia	Barren	N	N	Reference
<i>Dasypus novemcinctus</i>		Nine-banded Armadillo	Bivalvia	Edmonson	N	N	Reference
<i>Deroceras reticulatum</i>		Gray Fieldslug	Bivalvia	Edmonson	N	N	Reference
<i>Desmognathus fuscus</i>	Yes	Northern Dusky Salamander	Amphibia	Edmonson	N	N	Reference
<i>Desmognathus fuscus</i>	Yes	Northern Dusky Salamander	Amphibia	Barren	N	N	Reference
<i>Didelphis virginiana</i>		Virginia Opossum	Amphibia	Barren	N	N	Reference
<i>Didelphis virginiana</i>		Virginia Opossum	Amphibia	Edmonson	N	N	Reference
<i>Dolichonyx oryzivorus</i>	Yes	Bobolink	Aves	Barren	N	S	Reference
<i>Dorosoma cepedianum</i>		Gizzard Shad	Aves	Barren	N	N	Reference
<i>Dorosoma cepedianum</i>		Gizzard Shad	Aves	Edmonson	N	N	Reference

<i>Dorosoma petenense</i>		Threadfin Shad	Aves	Edmonson	N	N	Reference
<i>Dorosoma petenense</i>		Threadfin Shad	Aves	Barren	N	N	Reference
<i>Dryobates pubescens</i>		Downy Woodpecker	Aves	Barren	N	N	Reference
<i>Dryobates pubescens</i>		Downy Woodpecker	Aves	Edmonson	N	N	Reference
<i>Dryobates villosus</i>		Hairy Woodpecker	Aves	Edmonson	N	N	Reference
<i>Dryobates villosus</i>		Hairy Woodpecker	Aves	Barren	N	N	Reference
<i>Dryocopus pileatus</i>		Pileated Woodpecker	Aves	Barren	N	N	Reference
<i>Dryocopus pileatus</i>		Pileated Woodpecker	Aves	Edmonson	N	N	Reference
<i>Dumetella carolinensis</i>		Gray Catbird	Aves	Barren	N	N	Reference
<i>Dumetella carolinensis</i>		Gray Catbird	Aves	Edmonson	N	N	Reference
<i>Elimia semicarinata</i>		Fine-ridged Elimia	Aves	Edmonson	N	N	Reference
<i>Ellipsaria lineolata</i>	Yes	Butterfly	Bivalvia	Edmonson	N	N	Reference
<i>Elliptio crassidens</i>	Yes	Elephantear	Bivalvia	Edmonson	N	S	Reference
<i>Empidonax alnorum</i>		Alder Flycatcher	Bivalvia	Barren	N	N	Reference
<i>Empidonax flaviventris</i>		Yellow-bellied Flycatcher	Bivalvia	Barren	N	N	Reference
<i>Empidonax flaviventris</i>		Yellow-bellied Flycatcher	Bivalvia	Edmonson	N	N	Reference
<i>Empidonax minimus</i>	Yes	Least Flycatcher	Aves	Edmonson	N	E	Reference
<i>Empidonax minimus</i>	Yes	Least Flycatcher	Aves	Barren	N	E	Reference

<i>Empidonax traillii</i>	Yes	Willow Flycatcher	Aves	Barren	N	N	Reference
<i>Empidonax traillii</i>	Yes	Willow Flycatcher	Aves	Edmonson	N	N	Reference
<i>Empidonax virescens</i>		Acadian Flycatcher	Aves	Edmonson	N	N	Reference
<i>Empidonax virescens</i>		Acadian Flycatcher	Aves	Barren	N	N	Reference
<i>Epioblasma rangiana</i>	Yes	Northern Riffleshell	Bivalvia	Edmonson	E	E	Reference
<i>Epioblasma triquetra</i>	Yes	Snuffbox	Bivalvia	Edmonson	E	E	Reference
<i>Eptesicus fuscus</i>		Big Brown Bat	Bivalvia	Edmonson	N	N	Reference
<i>Eptesicus fuscus</i>		Big Brown Bat	Bivalvia	Barren	N	N	Reference
<i>Eremophila alpestris</i>		Horned Lark	Bivalvia	Edmonson	N	N	Reference
<i>Eremophila alpestris</i>		Horned Lark	Bivalvia	Barren	N	N	Reference
<i>Erimystax dissimilis</i>		Streamline Chub	Bivalvia	Barren	N	N	Reference
<i>Erimystax dissimilis</i>		Streamline Chub	Bivalvia	Edmonson	N	N	Reference
<i>Erimyzon claviformis</i>		Western Creek Chubsucker	Bivalvia	Edmonson	N	N	Reference
<i>Esox americanus</i>		Grass Pickerel	Bivalvia	Edmonson	N	N	Reference
<i>Esox americanus</i>		Grass Pickerel	Bivalvia	Barren	N	N	Reference
<i>Esox masquinongy</i>		Muskellunge	Bivalvia	Barren	N	N	Reference
<i>Esox masquinongy</i>		Muskellunge	Bivalvia	Edmonson	N	N	Reference
<i>Etheostoma barbouri</i>	Yes	Teardrop Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma barbouri</i>	Yes	Teardrop Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma barrenense</i>		Splendid Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma blennioides</i>		Greenside Darter	Actinopterygii	Barren	N	N	Reference

<i>Etheostoma blennioides</i>	Greenside Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma caeruleum</i>	Rainbow Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma caeruleum</i>	Rainbow Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma flabellare</i>	Fantail Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma flabellare</i>	Fantail Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma jimmycarter</i>	Bluegrass Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma kantuckeense</i>	Highland Rim Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma kennicotti</i>	Stripetail Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma lawrencei</i>	Headwater Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma nigrum</i>	Johnny Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma nigrum</i>	Johnny Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma rafinesquei</i>	Kentucky Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma simoterum</i>	Snubnose Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma simoterum</i>	Snubnose Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma spectabile</i>	Orangethroat Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma spectabile</i>	Orangethroat Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma squamiceps</i>	Spottail Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma squamiceps</i>	Spottail Darter	Actinopterygii	Barren	N	N	Reference

<i>Etheostoma stigmaeum</i>		Speckled Darter	Actinopterygii	Barren	N	N	Reference
<i>Etheostoma stigmaeum</i>		Speckled Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma zonale</i>		Banded Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Etheostoma zonale</i>		Banded Darter	Actinopterygii	Barren	N	N	Reference
<i>Euphagus carolinus</i>	Yes	Rusty Blackbird	Aves	Barren	N	N	Reference
<i>Euphagus carolinus</i>	Yes	Rusty Blackbird	Aves	Edmonson	N	N	Reference
<i>Euphagus cyanocephalus</i>		Brewer's Blackbird	Aves	Barren	N	N	Reference
<i>Eurycea cirrigera</i>		Southern Two-lined Salamander	Aves	Barren	N	N	Reference
<i>Eurycea cirrigera</i>		Southern Two-lined Salamander	Aves	Edmonson	N	N	Reference
<i>Eurycea longicauda</i>		Long-tailed Salamander	Aves	Edmonson	N	N	Reference
<i>Eurycea longicauda</i>		Long-tailed Salamander	Aves	Barren	N	N	Reference
<i>Eurycea lucifuga</i>		Cave Salamander	Aves	Barren	N	N	Reference
<i>Eurycea lucifuga</i>		Cave Salamander	Aves	Edmonson	N	N	Reference
<i>Eurynia dilatata</i>		Spike	Aves	Barren	N	N	Reference
<i>Eurynia dilatata</i>		Spike	Aves	Edmonson	N	N	Reference
<i>Falco columbarius</i>		Merlin	Aves	Edmonson	N	N	Reference
<i>Falco columbarius</i>		Merlin	Aves	Barren	N	N	Reference
<i>Falco peregrinus</i>	Yes	Peregrine Falcon	Aves	Barren	N	E	Reference
<i>Falco sparverius</i>	Yes	American Kestrel	Aves	Barren	N	N	Reference
<i>Falco sparverius</i>	Yes	American Kestrel	Aves	Edmonson	N	N	Reference

<i>Faxonius barrenensis</i>		Barren River Crayfish	Aves	Barren	N	N	Reference
<i>Faxonius compressus</i>		Slender Crayfish	Aves	Barren	N	N	Reference
<i>Faxonius immunis</i>		Calico Crayfish	Aves	Edmonson	N	N	Reference
<i>Faxonius juvenilis</i>		Kentucky River Crayfish	Aves	Barren	N	N	Reference
<i>Faxonius putnami</i>		Phallic Crayfish	Aves	Barren	N	N	Reference
<i>Faxonius putnami</i>		Phallic Crayfish	Aves	Edmonson	N	N	Reference
<i>Forbesichthys agassizii</i>	Yes	Spring Cavefish	Actinopterygii	Edmonson	N	N	Reference
<i>Forbesichthys agassizii</i>	Yes	Spring Cavefish	Actinopterygii	Barren	N	N	Reference
<i>Fulica americana</i>		American Coot	Actinopterygii	Barren	N	E	Reference
<i>Fundulus catenatus</i>		Northern Studfish	Actinopterygii	Barren	N	N	Reference
<i>Fundulus catenatus</i>		Northern Studfish	Actinopterygii	Edmonson	N	N	Reference
<i>Fundulus notatus</i>		Blackstripe Topminnow	Actinopterygii	Edmonson	N	N	Reference
<i>Fusconaia flava</i>		Wabash Pigtoe	Actinopterygii	Edmonson	N	N	Reference
<i>Fusconaia subrotunda</i>	Yes	Longsolid	Bivalvia	Edmonson	N	S	Reference
<i>Galumna alata</i>		A Cave Obligate Mite	Bivalvia	Edmonson	N	H	Reference
<i>Gambusia affinis</i>		Western Mosquitofish	Bivalvia	Edmonson	N	N	Reference
<i>Gastrophryne carolinensis</i>		Eastern Narrow-mouthed Toad	Bivalvia	Edmonson	N	N	Reference
<i>Gastrophryne carolinensis</i>		Eastern Narrow-mouthed Toad	Bivalvia	Barren	N	N	Reference
<i>Gavia immer</i>		Common Loon	Bivalvia	Barren	N	N	Reference

<i>Gavia immer</i>		Common Loon	Bivalvia	Edmonson	N	N	Reference
<i>Gavia pacifica</i>		Pacific Loon	Bivalvia	Barren	N	N	Reference
<i>Gavia stellata</i>		Red-throated Loon	Bivalvia	Barren	N	N	Reference
<i>Geothlypis formosa</i>	Yes	Kentucky Warbler	Aves	Barren	N	N	Reference
<i>Geothlypis formosa</i>	Yes	Kentucky Warbler	Aves	Edmonson	N	N	Reference
<i>Geothlypis philadelphia</i>		Mourning Warbler	Aves	Edmonson	N	N	Reference
<i>Geothlypis philadelphia</i>		Mourning Warbler	Aves	Barren	N	N	Reference
<i>Geothlypis trichas</i>		Common Yellowthroat	Aves	Barren	N	N	Reference
<i>Geothlypis trichas</i>		Common Yellowthroat	Aves	Edmonson	N	N	Reference
<i>Glaucomys volans</i>		Southern Flying Squirrel	Aves	Edmonson	N	N	Reference
<i>Graptemys geographica</i>		Northern Map Turtle	Aves	Edmonson	N	N	Reference
<i>Graptemys geographica</i>		Northern Map Turtle	Aves	Barren	N	N	Reference
<i>Graptemys ouachitensis</i>		Ouachita Map Turtle	Aves	Edmonson	N	N	Reference
<i>Gyrinophilus porphyriticus duryi</i>		Kentucky Spring Salamander	Aves	Barren	N	N	Reference
<i>Haemorhous mexicanus</i>		House Finch	Aves	Barren	N	N	Reference
<i>Haemorhous mexicanus</i>		House Finch	Aves	Edmonson	N	N	Reference
<i>Haemorhous purpureus</i>		Purple Finch	Aves	Edmonson	N	N	Reference
<i>Haemorhous purpureus</i>		Purple Finch	Aves	Barren	N	N	Reference

<i>Haliaeetus leucocephalus</i>	Yes	Bald Eagle	Aves	Barren	N	S	Reference
<i>Haliaeetus leucocephalus</i>	Yes	Bald Eagle	Aves	Edmonson	N	S	Reference
<i>Helicodiscus notius specus</i>		A Terrestrial Snail (Helicodiscus notius specus)	Aves	Barren	N	T	Reference
<i>Helicodiscus punctatellus</i>		Punctate Coil	Aves	Edmonson	N	S	Reference
<i>Helmitheros vermivorum</i>		Worm-eating Warbler	Aves	Edmonson	N	N	Reference
<i>Helmitheros vermivorum</i>		Worm-eating Warbler	Aves	Barren	N	N	Reference
<i>Hemidactylium scutatum</i>		Four-toed Salamander	Aves	Barren	N	N	Reference
<i>Hemidactylium scutatum</i>		Four-toed Salamander	Aves	Edmonson	N	N	Reference
<i>Heterodon platirhinos</i>		Eastern Hog-nosed Snake	Aves	Barren	N	N	Reference
<i>Heterodon platirhinos</i>		Eastern Hog-nosed Snake	Aves	Edmonson	N	N	Reference
<i>Hiodon alosoides</i>		Goldeye	Aves	Edmonson	N	N	Reference
<i>Hiodon alosoides</i>		Goldeye	Aves	Barren	N	N	Reference
<i>Hiodon tergisus</i>		Mooneye	Aves	Edmonson	N	N	Reference
<i>Hirundo rustica</i>		Barn Swallow	Aves	Barren	N	N	Reference
<i>Hirundo rustica</i>		Barn Swallow	Aves	Edmonson	N	N	Reference
<i>Hyaella azteca</i>		No Common Name (Hyaella azteca)	Aves	Barren	N	N	Reference
<i>Hyaella azteca</i>		No Common Name (Hyaella azteca)	Aves	Edmonson	N	N	Reference
<i>Hybopsis amblops</i>		Bigeye Chub	Aves	Edmonson	N	N	Reference
<i>Hybopsis amblops</i>		Bigeye Chub	Aves	Barren	N	N	Reference

<i>Hydroprogne caspia</i>		Caspian Tern	Aves	Barren	N	N	Reference
<i>Hyla chrysoscelis</i>		Cope's Gray Treefrog	Aves	Barren	N	N	Reference
<i>Hyla chrysoscelis</i>		Cope's Gray Treefrog	Aves	Edmonson	N	N	Reference
<i>Hylocichla mustelina</i>	Yes	Wood Thrush	Aves	Barren	N	N	Reference
<i>Hylocichla mustelina</i>	Yes	Wood Thrush	Aves	Edmonson	N	N	Reference
<i>Hypentelium nigricans</i>		Northern Hog Sucker	Aves	Edmonson	N	N	Reference
<i>Hypentelium nigricans</i>		Northern Hog Sucker	Aves	Barren	N	N	Reference
<i>Hypophthalmichthys molitrix</i>		Silver Carp	Aves	Edmonson	N	N	Reference
<i>Ichthyomyzon bdellium</i>		Ohio Lamprey	Aves	Edmonson	N	N	Reference
<i>Ichthyomyzon castaneus</i>	Yes	Chestnut Lamprey	Petromyzontida	Edmonson	N	S	Reference
<i>Ictalurus furcatus</i>		Blue Catfish	Petromyzontida	Barren	N	N	Reference
<i>Ictalurus punctatus</i>		Channel Catfish	Petromyzontida	Barren	N	N	Reference
<i>Ictalurus punctatus</i>		Channel Catfish	Petromyzontida	Edmonson	N	N	Reference
<i>Icteria virens</i>		Yellow-breasted Chat	Petromyzontida	Edmonson	N	N	Reference
<i>Icteria virens</i>		Yellow-breasted Chat	Petromyzontida	Barren	N	N	Reference
<i>Icterus galbula</i>		Baltimore Oriole	Petromyzontida	Barren	N	N	Reference
<i>Icterus galbula</i>		Baltimore Oriole	Petromyzontida	Edmonson	N	N	Reference
<i>Icterus spurius</i>		Orchard Oriole	Petromyzontida	Edmonson	N	N	Reference
<i>Icterus spurius</i>		Orchard Oriole	Petromyzontida	Barren	N	N	Reference
<i>Ictiobus bubalus</i>		Smallmouth Buffalo	Petromyzontida	Edmonson	N	N	Reference

<i>Ictiobus cyprinellus</i>		Bigmouth Buffalo	Petromyzontida	Edmonson	N	N	Reference
<i>Ixobrychus exilis</i>	Yes	Least Bittern	Aves	Barren	N	T	Reference
<i>Junco hyemalis</i>		Dark-eyed Junco	Aves	Barren	N	S	Reference
<i>Junco hyemalis</i>		Dark-eyed Junco	Aves	Edmonson	N	S	Reference
<i>Kinosternon subrubrum</i>	Yes	Eastern Mud Turtle	Chelonia	Edmonson	N	N	Reference
<i>Kleptochthonius cerberus</i>		A Cave Obligate Pseudoscorpion	Chelonia	Edmonson	N	H	Reference
<i>Kleptochthonius hageni</i>		A Cave Obligate Pseudoscorpion	Chelonia	Edmonson	N	S	Reference
<i>Kleptochthonius hubrichti</i>		A Cave Obligate Pseudoscorpion	Chelonia	Barren	N	H	Reference
<i>Labidesthes sicculus</i>		Brook Silverside	Chelonia	Barren	N	N	Reference
<i>Labidesthes sicculus</i>		Brook Silverside	Chelonia	Edmonson	N	N	Reference
<i>Lampetra aepyptera</i>		Least Brook Lamprey	Chelonia	Edmonson	N	N	Reference
<i>Lampetra aepyptera</i>		Least Brook Lamprey	Chelonia	Barren	N	N	Reference
<i>Lampropeltis calligaster</i>		Prairie Kingsnake	Chelonia	Barren	N	N	Reference
<i>Lampropeltis calligaster</i>		Prairie Kingsnake	Chelonia	Edmonson	N	N	Reference
<i>Lampropeltis elapsoides</i>	Yes	Scarlet Kingsnake	Reptilia	Edmonson	N	E	Reference
<i>Lampropeltis nigra</i>		Eastern Black Kingsnake	Reptilia	Edmonson	N	N	Reference
<i>Lampropeltis nigra</i>		Eastern Black Kingsnake	Reptilia	Barren	N	N	Reference

<i>Lampropeltis triangulum</i>		Eastern Milksnake	Reptilia	Barren	N	N	Reference
<i>Lampropeltis triangulum</i>		Eastern Milksnake	Reptilia	Edmonson	N	N	Reference
<i>Lampsilis abrupta</i>	Yes	Pink Mucket	Bivalvia	Edmonson	E	E	Reference
<i>Lampsilis cardium</i>		Plain Pocketbook	Bivalvia	Edmonson	N	N	Reference
<i>Lampsilis fasciola</i>		Wavyrayed Lampmussel	Bivalvia	Edmonson	N	N	Reference
<i>Lampsilis ovata</i>	Yes	Pocketbook	Bivalvia	Edmonson	N	E	Reference
<i>Lampsilis siliquoidea</i>		Fatmucket	Bivalvia	Edmonson	N	N	Reference
<i>Lampsilis siliquoidea</i>		Fatmucket	Bivalvia	Barren	N	N	Reference
<i>Lampsilis teres</i>		Yellow Sandshell	Bivalvia	Edmonson	N	N	Reference
<i>Lanius ludovicianus</i>	Yes	Loggerhead Shrike	Aves	Edmonson	N	S	Reference
<i>Lanius ludovicianus</i>	Yes	Loggerhead Shrike	Aves	Barren	N	S	Reference
<i>Larus argentatus</i>		Herring Gull	Aves	Barren	N	N	Reference
<i>Larus californicus</i>		California Gull	Aves	Barren	N	N	Reference
<i>Larus delawarensis</i>		Ring-billed Gull	Aves	Barren	N	N	Reference
<i>Larus delawarensis</i>		Ring-billed Gull	Aves	Edmonson	N	N	Reference
<i>Larus fuscus</i>		Lesser Black-backed Gull	Aves	Barren	N	N	Reference
<i>Lasionycteris noctivagans</i>	Yes	Silver-haired Bat	Mammalia	Barren	N	N	Reference
<i>Lasionycteris noctivagans</i>	Yes	Silver-haired Bat	Mammalia	Edmonson	N	N	Reference
<i>Lasiurus borealis</i>		Eastern Red Bat	Mammalia	Edmonson	N	N	Reference
<i>Lasiurus borealis</i>		Eastern Red Bat	Mammalia	Barren	N	N	Reference
<i>Lasiurus cinereus</i>		Hoary Bat	Mammalia	Barren	N	N	Reference

<i>Lasiurus cinereus</i>		Hoary Bat	Mammalia	Edmonson	N	N	Reference
<i>Lasiurus seminolus</i>	Yes	Seminole Bat	Mammalia	Edmonson	N	N	Reference
<i>Lasiurus seminolus</i>	Yes	Seminole Bat	Mammalia	Barren	N	N	Reference
<i>Lasmigona complanata</i>		White Heelsplitter	Mammalia	Edmonson	N	N	Reference
<i>Lasmigona costata</i>		Flutedshell	Mammalia	Edmonson	N	N	Reference
<i>Leaunio lienosus aquilonius</i>	Yes	Little Spectaclecase	Bivalvia	Edmonson	N	T	Reference
<i>Leaunio lienosus aquilonius</i>	Yes	Little Spectaclecase	Bivalvia	Barren	N	T	Reference
<i>Leaunio ortmanni</i>	Yes	Kentucky Creekshell	Bivalvia	Barren	N	E	Reference
<i>Leaunio ortmanni</i>	Yes	Kentucky Creekshell	Bivalvia	Edmonson	N	E	Reference
<i>Leiothlypis celata</i>		Orange-crowned Warbler	Bivalvia	Edmonson	N	N	Reference
<i>Leiothlypis celata</i>		Orange-crowned Warbler	Bivalvia	Barren	N	N	Reference
<i>Leiothlypis peregrina</i>		Tennessee Warbler	Bivalvia	Barren	N	N	Reference
<i>Leiothlypis peregrina</i>		Tennessee Warbler	Bivalvia	Edmonson	N	N	Reference
<i>Leiothlypis ruficapilla</i>		Nashville Warbler	Bivalvia	Edmonson	N	N	Reference
<i>Leiothlypis ruficapilla</i>		Nashville Warbler	Bivalvia	Barren	N	N	Reference
<i>Lepisosteus oculatus</i>		Spotted Gar	Bivalvia	Edmonson	N	N	Reference
<i>Lepisosteus osseus</i>		Longnose Gar	Bivalvia	Edmonson	N	N	Reference
<i>Lepisosteus osseus</i>		Longnose Gar	Bivalvia	Barren	N	N	Reference
<i>Lepomis cyanellus</i>		Green Sunfish	Bivalvia	Barren	N	N	Reference
<i>Lepomis cyanellus</i>		Green Sunfish	Bivalvia	Edmonson	N	N	Reference
<i>Lepomis gulosus</i>		Warmouth	Bivalvia	Edmonson	N	N	Reference

<i>Lepomis gulosus</i>		Warmouth	Bivalvia	Barren	N	N	Reference
<i>Lepomis humilis</i>		Orangespotted Sunfish	Bivalvia	Barren	N	N	Reference
<i>Lepomis humilis</i>		Orangespotted Sunfish	Bivalvia	Edmonson	N	N	Reference
<i>Lepomis macrochirus</i>		Bluegill	Bivalvia	Edmonson	N	N	Reference
<i>Lepomis macrochirus</i>		Bluegill	Bivalvia	Barren	N	N	Reference
<i>Lepomis megalotis</i>		Longear Sunfish	Bivalvia	Barren	N	N	Reference
<i>Lepomis megalotis</i>		Longear Sunfish	Bivalvia	Edmonson	N	N	Reference
<i>Lepomis microlophus</i>		Redear Sunfish	Bivalvia	Edmonson	N	N	Reference
<i>Lepomis microlophus</i>		Redear Sunfish	Bivalvia	Barren	N	N	Reference
<i>Leptodea fragilis</i>		Fragile Papershell	Bivalvia	Edmonson	N	N	Reference
<i>Leucophaeus atricilla</i>		Laughing Gull	Bivalvia	Barren	N	N	Reference
<i>Leucophaeus pipixcan</i>		Franklin's Gull	Bivalvia	Barren	N	N	Reference
<i>Limnothlypis swainsonii</i>	Yes	Swainson's Warbler	Aves	Edmonson	N	N	Reference
<i>Lithasia obovata</i>		Shawnee Rocksnail	Aves	Edmonson	N	N	Reference
<i>Lithasia obovata</i>		Shawnee Rocksnail	Aves	Barren	N	N	Reference
<i>Lithobates catesbeianus</i>		American Bullfrog	Aves	Edmonson	N	N	Reference
<i>Lithobates catesbeianus</i>		American Bullfrog	Aves	Barren	N	N	Reference
<i>Lithobates clamitans</i>		Green Frog	Aves	Barren	N	N	Reference

<i>Lithobates clamitans</i>		Green Frog	Aves	Edmonson	N	N	Reference
<i>Lithobates palustris</i>		Pickereel Frog	Aves	Edmonson	N	N	Reference
<i>Lithobates palustris</i>		Pickereel Frog	Aves	Barren	N	N	Reference
<i>Lithobates sphenocephalus</i>		Southern Leopard Frog	Aves	Barren	N	N	Reference
<i>Lithobates sphenocephalus</i>		Southern Leopard Frog	Aves	Edmonson	N	N	Reference
<i>Lithobates sylvaticus</i>		Wood Frog	Aves	Edmonson	N	N	Reference
<i>Lithobates sylvaticus</i>		Wood Frog	Aves	Barren	N	N	Reference
<i>Lontra canadensis</i>		Northern River Otter	Aves	Barren	N	N	Reference
<i>Lontra canadensis</i>		Northern River Otter	Aves	Edmonson	N	N	Reference
<i>Lophodytes cucullatus</i>	Yes	Hooded Merganser	Aves	Edmonson	N	T	Reference
<i>Lophodytes cucullatus</i>	Yes	Hooded Merganser	Aves	Barren	N	T	Reference
<i>Loxia leucoptera</i>		White-winged Crossbill	Aves	Barren	N	N	Reference
<i>Luxilus chrysocephalus</i>		Striped Shiner	Aves	Barren	N	N	Reference
<i>Luxilus chrysocephalus</i>		Striped Shiner	Aves	Edmonson	N	N	Reference
<i>Lynx rufus</i>		Bobcat	Aves	Edmonson	N	N	Reference
<i>Lynx rufus</i>		Bobcat	Aves	Barren	N	N	Reference
<i>Lythrurus fasciolaris</i>		Scarlet Shiner	Aves	Barren	N	N	Reference
<i>Lythrurus fasciolaris</i>		Scarlet Shiner	Aves	Edmonson	N	N	Reference
<i>Lythrurus fumeus</i>		Ribbon Shiner	Aves	Edmonson	N	N	Reference
<i>Lytrosis permagnaria</i>		A Geometrid Moth	Aves	Edmonson	N	E	Reference

<i>Macrhybopsis hyostoma</i>	Yes	Shoal Chub	Actinopterygii	Edmonson	N	N	Reference
<i>Macrhybopsis hyostoma</i>	Yes	Shoal Chub	Actinopterygii	Barren	N	N	Reference
<i>Macrhybopsis storeriana</i>		Silver Chub	Actinopterygii	Edmonson	N	N	Reference
<i>Macrocheilus troglodytes</i>		A Cave Obligate Mite	Actinopterygii	Edmonson	N	H	Reference
<i>Mareca americana</i>		American Wigeon	Actinopterygii	Barren	N	N	Reference
<i>Mareca strepera</i>		Gadwall	Actinopterygii	Barren	N	N	Reference
<i>Mareca strepera</i>		Gadwall	Actinopterygii	Edmonson	N	N	Reference
<i>Margaritifera monodonta</i>	Yes	Spectaclecase	Bivalvia	Edmonson	E	E	Reference
<i>Marmota monax</i>		Woodchuck	Bivalvia	Barren	N	N	Reference
<i>Megaceryle alcyon</i>		Belted Kingfisher	Bivalvia	Edmonson	N	N	Reference
<i>Megaceryle alcyon</i>		Belted Kingfisher	Bivalvia	Barren	N	N	Reference
<i>Megaloniaias nervosa</i>		Washboard	Bivalvia	Edmonson	N	N	Reference
<i>Megascops asio</i>		Eastern Screech-Owl	Bivalvia	Barren	N	N	Reference
<i>Megascops asio</i>		Eastern Screech-Owl	Bivalvia	Edmonson	N	N	Reference
<i>Melanerpes carolinus</i>		Red-bellied Woodpecker	Bivalvia	Edmonson	N	N	Reference
<i>Melanerpes carolinus</i>		Red-bellied Woodpecker	Bivalvia	Barren	N	N	Reference
<i>Melanerpes erythrocephalus</i>	Yes	Red-headed Woodpecker	Aves	Barren	N	N	Reference
<i>Melanerpes erythrocephalus</i>	Yes	Red-headed Woodpecker	Aves	Edmonson	N	N	Reference
<i>Melanitta americana</i>		Black Scoter	Aves	Barren	N	N	Reference

<i>Melanitta deglandi</i>	White-winged Scoter	Aves	Barren	N	N	Reference
<i>Melanitta perspicillata</i>	Surf Scoter	Aves	Barren	N	N	Reference
<i>Meleagris gallopavo</i>	Wild Turkey	Aves	Barren	N	N	Reference
<i>Meleagris gallopavo</i>	Wild Turkey	Aves	Edmonson	N	N	Reference
<i>Melospiza georgiana</i>	Swamp Sparrow	Aves	Barren	N	N	Reference
<i>Melospiza georgiana</i>	Swamp Sparrow	Aves	Edmonson	N	N	Reference
<i>Melospiza lincolnii</i>	Lincoln's Sparrow	Aves	Edmonson	N	N	Reference
<i>Melospiza lincolnii</i>	Lincoln's Sparrow	Aves	Barren	N	N	Reference
<i>Melospiza melodia</i>	Song Sparrow	Aves	Barren	N	N	Reference
<i>Melospiza melodia</i>	Song Sparrow	Aves	Edmonson	N	N	Reference
<i>Mephitis mephitis</i>	Striped Skunk	Aves	Edmonson	N	N	Reference
<i>Mephitis mephitis</i>	Striped Skunk	Aves	Barren	N	N	Reference
<i>Mergus merganser</i>	Common Merganser	Aves	Barren	N	N	Reference
<i>Mergus serrator</i>	Red-breasted Merganser	Aves	Barren	N	N	Reference
<i>Mesodon thyroidus</i>	White-lip Globe	Aves	Barren	N	N	Reference
<i>Mesodon thyroidus</i>	White-lip Globe	Aves	Edmonson	N	N	Reference
<i>Mesodon zaletus</i>	Toothed Globe	Aves	Edmonson	N	N	Reference
<i>Micromenetus dilatatus</i>	Bugle Sprite	Aves	Barren	N	N	Reference
<i>Micropterus dolomieu</i>	Smallmouth Bass	Aves	Barren	N	N	Reference
<i>Micropterus dolomieu</i>	Smallmouth Bass	Aves	Edmonson	N	N	Reference
<i>Micropterus punctulatus</i>	Spotted Bass	Aves	Edmonson	N	N	Reference

<i>Micropterus punctulatus</i>	Spotted Bass	Aves	Barren	N	N	Reference
<i>Micropterus salmoides</i>	Largemouth Bass	Aves	Barren	N	N	Reference
<i>Micropterus salmoides</i>	Largemouth Bass	Aves	Edmonson	N	N	Reference
<i>Microtus ochrogaster</i>	Prairie Vole	Aves	Edmonson	N	N	Reference
<i>Microtus ochrogaster</i>	Prairie Vole	Aves	Barren	N	N	Reference
<i>Microtus pennsylvanicus</i>	Meadow Vole	Aves	Edmonson	N	N	Reference
<i>Microtus pinetorum</i>	Woodland Vole	Aves	Edmonson	N	N	Reference
<i>Microtus pinetorum</i>	Woodland Vole	Aves	Barren	N	N	Reference
<i>Mimus polyglottos</i>	Northern Mockingbird	Aves	Barren	N	N	Reference
<i>Mimus polyglottos</i>	Northern Mockingbird	Aves	Edmonson	N	N	Reference
<i>Minytrema melanops</i>	Spotted Sucker	Aves	Edmonson	N	N	Reference
<i>Minytrema melanops</i>	Spotted Sucker	Aves	Barren	N	N	Reference
<i>Mniotilta varia</i>	Black-and-white Warbler	Aves	Barren	N	N	Reference
<i>Mniotilta varia</i>	Black-and-white Warbler	Aves	Edmonson	N	N	Reference
<i>Molothrus ater</i>	Brown-headed Cowbird	Aves	Edmonson	N	N	Reference
<i>Molothrus ater</i>	Brown-headed Cowbird	Aves	Barren	N	N	Reference
<i>Morone chrysops</i>	White Bass	Aves	Barren	N	N	Reference
<i>Morone chrysops</i>	White Bass	Aves	Edmonson	N	N	Reference
<i>Morone mississippiensis</i>	Yellow Bass	Aves	Barren	N	N	Reference

<i>Moxostoma anisurum</i>		Silver Redhorse	Aves	Barren	N	N	Reference
<i>Moxostoma anisurum</i>		Silver Redhorse	Aves	Edmonson	N	N	Reference
<i>Moxostoma breviceps</i>		Smallmouth Redhorse	Aves	Edmonson	N	N	Reference
<i>Moxostoma breviceps</i>		Smallmouth Redhorse	Aves	Barren	N	N	Reference
<i>Moxostoma carinatum</i>		River Redhorse	Aves	Barren	N	N	Reference
<i>Moxostoma carinatum</i>		River Redhorse	Aves	Edmonson	N	N	Reference
<i>Moxostoma duquesnei</i>		Black Redhorse	Aves	Edmonson	N	N	Reference
<i>Moxostoma duquesnei</i>		Black Redhorse	Aves	Barren	N	N	Reference
<i>Moxostoma erythrurum</i>		Golden Redhorse	Aves	Barren	N	N	Reference
<i>Moxostoma erythrurum</i>		Golden Redhorse	Aves	Edmonson	N	N	Reference
<i>Mustela frenata</i>	Yes	Long-tailed Weasel	Mammalia	Barren	N	N	Reference
<i>Myiarchus crinitus</i>		Great Crested Flycatcher	Mammalia	Edmonson	N	N	Reference
<i>Myiarchus crinitus</i>		Great Crested Flycatcher	Mammalia	Barren	N	N	Reference
<i>Myotis austroriparius</i>	Yes	Southeastern Myotis	Mammalia	Edmonson	N	S	Reference
<i>Myotis grisescens</i>	Yes	Gray Myotis	Mammalia	Edmonson	E	T	Reference
<i>Myotis grisescens</i>	Yes	Gray Myotis	Mammalia	Barren	E	T	Reference
<i>Myotis leibii</i>	Yes	Eastern Small-footed Myotis	Mammalia	Barren	N	T	Reference
<i>Myotis leibii</i>	Yes	Eastern Small-footed Myotis	Mammalia	Edmonson	N	T	Reference

<i>Myotis lucifugus</i>	Yes	Little Brown Bat	Mammalia	Edmonson	N	T	Reference
<i>Myotis lucifugus</i>	Yes	Little Brown Bat	Mammalia	Barren	N	T	Reference
<i>Myotis septentrionalis</i>	Yes	Northern Myotis	Mammalia	Barren	T	E	Reference
<i>Myotis septentrionalis</i>	Yes	Northern Myotis	Mammalia	Edmonson	T	E	Reference
<i>Myotis sodalis</i>	Yes	Indiana Bat	Mammalia	Edmonson	E	E	Reference
<i>Myotis sodalis</i>	Yes	Indiana Bat	Mammalia	Barren	E	E	Reference
<i>Nannothemis bella</i>		Elfin Skimmer	Mammalia	Edmonson	N	E	Reference
<i>Necturus maculosus</i>		Mudpuppy	Mammalia	Edmonson	N	N	Reference
<i>Neotoma magister</i>	Yes	Allegheny Woodrat	Mammalia	Barren	N	N	Reference
<i>Neotoma magister</i>	Yes	Allegheny Woodrat	Mammalia	Edmonson	N	N	Reference
<i>Neovison vison</i>		American Mink	Mammalia	Edmonson	N	N	Reference
<i>Neovison vison</i>		American Mink	Mammalia	Barren	N	N	Reference
<i>Nerodia sipedon</i>		Common Watersnake	Mammalia	Barren	N	N	Reference
<i>Nerodia sipedon</i>		Common Watersnake	Mammalia	Edmonson	N	N	Reference
<i>Notemigonus crysoleucas</i>		Golden Shiner	Mammalia	Edmonson	N	N	Reference
<i>Notemigonus crysoleucas</i>		Golden Shiner	Mammalia	Barren	N	N	Reference
<i>Nothonotus bellus</i>		Orangefin Darter	Mammalia	Barren	N	N	Reference
<i>Nothonotus bellus</i>		Orangefin Darter	Mammalia	Edmonson	N	N	Reference
<i>Nothonotus maculatus</i>	Yes	Spotted Darter	Actinopterygii	Edmonson	N	T	Reference
<i>Nothonotus tippecanoe</i>		Tippecanoe Darter	Actinopterygii	Edmonson	N	N	Reference

<i>Notophthalmus viridescens</i>		Eastern Newt	Actinopterygii	Edmonson	N	N	Reference
<i>Notophthalmus viridescens</i>		Eastern Newt	Actinopterygii	Barren	N	N	Reference
<i>Notropis ariommus</i>		Popeye Shiner	Actinopterygii	Barren	N	N	Reference
<i>Notropis ariommus</i>		Popeye Shiner	Actinopterygii	Edmonson	N	N	Reference
<i>Notropis atherinoides</i>		Emerald Shiner	Actinopterygii	Edmonson	N	N	Reference
<i>Notropis atherinoides</i>		Emerald Shiner	Actinopterygii	Barren	N	N	Reference
<i>Notropis boops</i>		Bigeye Shiner	Actinopterygii	Barren	N	N	Reference
<i>Notropis buchanani</i>	Yes	Ghost Shiner	Actinopterygii	Edmonson	N	N	Reference
<i>Notropis leuciodus</i>		Tennessee Shiner	Actinopterygii	Barren	N	N	Reference
<i>Notropis micropteryx</i>		Highland Shiner	Actinopterygii	Barren	N	N	Reference
<i>Notropis micropteryx</i>		Highland Shiner	Actinopterygii	Edmonson	N	N	Reference
<i>Notropis photogenis</i>		Silver Shiner	Actinopterygii	Edmonson	N	N	Reference
<i>Notropis photogenis</i>		Silver Shiner	Actinopterygii	Barren	N	N	Reference
<i>Notropis volucellus</i>		Mimic Shiner	Actinopterygii	Barren	N	N	Reference
<i>Notropis volucellus</i>		Mimic Shiner	Actinopterygii	Edmonson	N	N	Reference
<i>Noturus elegans</i>		Elegant Madtom	Actinopterygii	Edmonson	N	N	Reference
<i>Noturus elegans</i>		Elegant Madtom	Actinopterygii	Barren	N	N	Reference
<i>Noturus eleutherus</i>		Mountain Madtom	Actinopterygii	Edmonson	N	N	Reference
<i>Noturus flavus</i>		Stonecat	Actinopterygii	Barren	N	N	Reference
<i>Noturus miurus</i>		Brindled Madtom	Actinopterygii	Barren	N	N	Reference
<i>Noturus miurus</i>		Brindled Madtom	Actinopterygii	Edmonson	N	N	Reference

<i>Noturus nocturnus</i>		Freckled Madtom	Actinopterygii	Edmonson	N	N	Reference
<i>Noturus nocturnus</i>		Freckled Madtom	Actinopterygii	Barren	N	N	Reference
<i>Nyctanassa violacea</i>	Yes	Yellow-crowned Night-heron	Aves	Barren	N	T	Reference
<i>Nycticeius humeralis</i>		Evening Bat	Aves	Barren	N	N	Reference
<i>Nycticeius humeralis</i>		Evening Bat	Aves	Edmonson	N	N	Reference
<i>Obliquaria reflexa</i>		Threehorn Wartyback	Aves	Edmonson	N	N	Reference
<i>Obovaria retusa</i>	Yes	Ring Pink	Bivalvia	Edmonson	E	E	Reference
<i>Obovaria subrotunda</i>	Yes	Round Hickorynut	Bivalvia	Edmonson	N	T	Reference
<i>Ochrotomys nuttalli</i>		Golden Mouse	Bivalvia	Edmonson	N	N	Reference
<i>Ochrotomys nuttalli</i>		Golden Mouse	Bivalvia	Barren	N	N	Reference
<i>Odocoileus virginianus</i>		White-tailed Deer	Bivalvia	Barren	N	N	Reference
<i>Odocoileus virginianus</i>		White-tailed Deer	Bivalvia	Edmonson	N	N	Reference
<i>Oncorhynchus mykiss</i>		Rainbow Trout	Bivalvia	Edmonson	N	N	Reference
<i>Oncorhynchus mykiss</i>		Rainbow Trout	Bivalvia	Barren	N	N	Reference
<i>Ondatra zibethicus</i>	Yes	Muskrat	Mammalia	Barren	N	N	Reference
<i>Ondatra zibethicus</i>	Yes	Muskrat	Mammalia	Edmonson	N	N	Reference
<i>Opheodrys aestivus</i>		Rough Greensnake	Mammalia	Edmonson	N	N	Reference
<i>Opheodrys aestivus</i>		Rough Greensnake	Mammalia	Barren	N	N	Reference
<i>Ophisaurus attenuatus longicaudus</i>	Yes	Eastern Slender Glass Lizard	Reptilia	Barren	N	T	Reference

<i>Ophisaurus attenuatus longicaudus</i>	Yes	Eastern Slender Glass Lizard	Reptilia	Edmonson	N	T	Reference
<i>Oporornis agilis</i>		Connecticut Warbler	Reptilia	Edmonson	N	N	Reference
<i>Opsopoeodus emiliae</i>	Yes	Pugnose Minnow	Actinopterygii	Edmonson	N	N	Reference
<i>Orconectes pellucidus</i>	Yes	Mammoth Cave Crayfish	Malacostraca	Edmonson	N	S	Reference
<i>Orconectes pellucidus</i>	Yes	Mammoth Cave Crayfish	Malacostraca	Barren	N	S	Reference
<i>Oxyura jamaicensis</i>		Ruddy Duck	Malacostraca	Barren	N	N	Reference
<i>Palaemonias ganteri</i>	Yes	Mammoth Cave Shrimp	Malacostraca	Edmonson	E	E	Reference
<i>Pandion haliaetus</i>	Yes	Osprey	Aves	Barren	N	S	Reference
<i>Pandion haliaetus</i>	Yes	Osprey	Aves	Edmonson	N	S	Reference
<i>Pantherophis guttatus</i>	Yes	Red Cornsnake	Reptilia	Barren	N	S	Reference
<i>Pantherophis guttatus</i>	Yes	Red Cornsnake	Reptilia	Edmonson	N	S	Reference
<i>Pantherophis spiloides</i>		Gray Ratsnake	Reptilia	Edmonson	N	N	Reference
<i>Pantherophis spiloides</i>		Gray Ratsnake	Reptilia	Barren	N	N	Reference
<i>Paravitrea lapilla</i>		Gem Supercoil	Reptilia	Edmonson	N	H	Reference
<i>Parkesia motacilla</i>	Yes	Louisiana Waterthrush	Aves	Edmonson	N	N	Reference
<i>Parkesia motacilla</i>	Yes	Louisiana Waterthrush	Aves	Barren	N	N	Reference
<i>Parkesia noveboracensis</i>		Northern Waterthrush	Aves	Barren	N	N	Reference
<i>Parkesia noveboracensis</i>		Northern Waterthrush	Aves	Edmonson	N	N	Reference
<i>Passer domesticus</i>		House Sparrow	Aves	Edmonson	N	N	Reference

<i>Passer domesticus</i>		House Sparrow	Aves	Barren	N	N	Reference
<i>Passerculus sandwichensis</i>	Yes	Savannah Sparrow	Aves	Barren	N	S	Reference
<i>Passerculus sandwichensis</i>	Yes	Savannah Sparrow	Aves	Edmonson	N	S	Reference
<i>Passerella iliaca</i>		Fox Sparrow	Aves	Edmonson	N	N	Reference
<i>Passerella iliaca</i>		Fox Sparrow	Aves	Barren	N	N	Reference
<i>Passerina caerulea</i>		Blue Grosbeak	Aves	Barren	N	N	Reference
<i>Passerina caerulea</i>		Blue Grosbeak	Aves	Edmonson	N	N	Reference
<i>Passerina cyanea</i>		Indigo Bunting	Aves	Edmonson	N	N	Reference
<i>Passerina cyanea</i>		Indigo Bunting	Aves	Barren	N	N	Reference
<i>Pelecanus erythrorhynchos</i>		American White Pelican	Aves	Barren	N	N	Reference
<i>Percina caprodes</i>		Logperch	Aves	Barren	N	N	Reference
<i>Percina caprodes</i>		Logperch	Aves	Edmonson	N	N	Reference
<i>Percina copelandi</i>		Channel Darter	Aves	Edmonson	N	N	Reference
<i>Percina evides</i>		Gilt Darter	Aves	Edmonson	N	N	Reference
<i>Percina evides</i>		Gilt Darter	Aves	Barren	N	N	Reference
<i>Percina macrocephala</i>	Yes	Longhead Darter	Actinopterygii	Barren	N	E	Reference
<i>Percina maculata</i>		Blackside Darter	Actinopterygii	Barren	N	N	Reference
<i>Percina maculata</i>		Blackside Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Percina phoxocephala</i>		Slenderhead Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Percina phoxocephala</i>		Slenderhead Darter	Actinopterygii	Barren	N	N	Reference
<i>Percina sciera</i>		Dusky Darter	Actinopterygii	Barren	N	N	Reference
<i>Percina sciera</i>		Dusky Darter	Actinopterygii	Edmonson	N	N	Reference
<i>Percina shumardi</i>		River Darter	Actinopterygii	Edmonson	N	N	Reference

<i>Percina stictogaster</i>		Frecklebelly Darter	Actinopterygii	Barren	N	N	Reference
<i>Percopsis omiscomaycus</i>	Yes	Trout-Perch	Actinopterygii	Barren	N	S	Reference
<i>Perimyotis subflavus</i>	Yes	Eastern Pipistrelle	Mammalia	Barren	N	T	Reference
<i>Perimyotis subflavus</i>	Yes	Eastern Pipistrelle	Mammalia	Edmonson	N	T	Reference
<i>Peromyscus leucopus</i>		White-footed Mouse	Mammalia	Edmonson	N	N	Reference
<i>Peromyscus leucopus</i>		White-footed Mouse	Mammalia	Barren	N	N	Reference
<i>Peromyscus maniculatus bairdii</i>		Prairie Deermouse	Mammalia	Barren	N	N	Reference
<i>Petrochelidon pyrrhonota</i>		Cliff Swallow	Mammalia	Edmonson	N	N	Reference
<i>Petrochelidon pyrrhonota</i>		Cliff Swallow	Mammalia	Barren	N	N	Reference
<i>Peucaea aestivalis</i>	Yes	Bachman's Sparrow	Aves	Barren	N	E	Reference
<i>Peucaea aestivalis</i>	Yes	Bachman's Sparrow	Aves	Edmonson	N	E	Reference
<i>Phalacrocorax auritus</i>		Double-crested Cormorant	Aves	Barren	N	S	Reference
<i>Phalacrocorax auritus</i>		Double-crested Cormorant	Aves	Edmonson	N	S	Reference
<i>Phenacobius uranops</i>	Yes	Stargazing Minnow	Actinopterygii	Barren	N	S	Reference
<i>Phenacobius uranops</i>	Yes	Stargazing Minnow	Actinopterygii	Edmonson	N	S	Reference
<i>Pheucticus ludovicianus</i>		Rose-breasted Grosbeak	Actinopterygii	Edmonson	N	S	Reference
<i>Pheucticus ludovicianus</i>		Rose-breasted Grosbeak	Actinopterygii	Barren	N	S	Reference

<i>Philomycus carolinianus</i>		Carolina Mantleslug	Actinopterygii	Edmonson	N	N	Reference
<i>Pimephales notatus</i>		Bluntnose Minnow	Actinopterygii	Edmonson	N	N	Reference
<i>Pimephales notatus</i>		Bluntnose Minnow	Actinopterygii	Barren	N	N	Reference
<i>Pimephales promelas</i>		Fathead Minnow	Actinopterygii	Barren	N	N	Reference
<i>Pimephales vigilax</i>		Bullhead Minnow	Actinopterygii	Barren	N	N	Reference
<i>Pimephales vigilax</i>		Bullhead Minnow	Actinopterygii	Edmonson	N	N	Reference
<i>Pipilo erythrophthalmus</i>		Eastern Towhee	Actinopterygii	Edmonson	N	N	Reference
<i>Pipilo erythrophthalmus</i>		Eastern Towhee	Actinopterygii	Barren	N	N	Reference
<i>Piranga olivacea</i>		Scarlet Tanager	Actinopterygii	Barren	N	N	Reference
<i>Piranga olivacea</i>		Scarlet Tanager	Actinopterygii	Edmonson	N	N	Reference
<i>Piranga rubra</i>		Summer Tanager	Actinopterygii	Edmonson	N	N	Reference
<i>Piranga rubra</i>		Summer Tanager	Actinopterygii	Barren	N	N	Reference
<i>Pituophis melanoleucus melanoleucus</i>	Yes	Northern Pinesnake	Reptilia	Barren	N	E	Reference
<i>Pituophis melanoleucus melanoleucus</i>	Yes	Northern Pinesnake	Reptilia	Edmonson	N	E	Reference
<i>Plestiodon anthracinus</i>	Yes	Coal Skink	Reptilia	Edmonson	N	E	Reference
<i>Plestiodon fasciatus</i>		Common Five-lined Skink	Reptilia	Edmonson	N	N	Reference
<i>Plestiodon fasciatus</i>		Common Five-lined Skink	Reptilia	Barren	N	N	Reference

<i>Plestiodon inexpectatus</i>	Yes	Southeastern Five-lined Skink	Reptilia	Edmonson	N	S	Reference
<i>Plestiodon laticeps</i>		Broad-headed Skink	Reptilia	Edmonson	N	N	Reference
<i>Plestiodon laticeps</i>		Broad-headed Skink	Reptilia	Barren	N	N	Reference
<i>Plethobasus cyphus</i>	Yes	Sheepnose	Bivalvia	Edmonson	E	E	Reference
<i>Plethodon dorsalis</i>		Northern Zigzag Salamander	Bivalvia	Edmonson	N	N	Reference
<i>Plethodon dorsalis</i>		Northern Zigzag Salamander	Bivalvia	Barren	N	N	Reference
<i>Plethodon glutinosus</i>		Northern Slimy Salamander	Bivalvia	Barren	N	N	Reference
<i>Plethodon glutinosus</i>		Northern Slimy Salamander	Bivalvia	Edmonson	N	N	Reference
<i>Pleurobema clava</i>	Yes	Clubshell	Bivalvia	Edmonson	E	E	Reference
<i>Pleurobema plenum</i>	Yes	Rough Pigtoe	Bivalvia	Edmonson	E	E	Reference
<i>Pleurobema rubrum</i>	Yes	Pyramid Pigtoe	Bivalvia	Edmonson	N	E	Reference
<i>Pleurobema sintoxia</i>		Round Pigtoe	Bivalvia	Edmonson	N	N	Reference
<i>Pleurocera alveare</i>	Yes	Rugged Hornsnail	Gastropoda	Barren	N	S	Reference
<i>Podiceps auritus</i>	Yes	Horned Grebe	Aves	Barren	N	N	Reference
<i>Podiceps grisegena</i>		Red-necked Grebe	Aves	Barren	N	N	Reference
<i>Podiceps nigricollis</i>		Eared Grebe	Aves	Barren	N	N	Reference
<i>Podilymbus podiceps</i>	Yes	Pied-billed Grebe	Aves	Edmonson	N	E	Reference
<i>Poecile atricapillus</i>		Black-capped Chickadee	Aves	Edmonson	N	N	Reference
<i>Poecile carolinensis</i>		Carolina Chickadee	Aves	Edmonson	N	N	Reference

<i>Poecile carolinensis</i>		Carolina Chickadee	Aves	Barren	N	N	Reference
<i>Polioptila caerulea</i>		Blue-gray Gnatcatcher	Aves	Barren	N	N	Reference
<i>Polioptila caerulea</i>		Blue-gray Gnatcatcher	Aves	Edmonson	N	N	Reference
<i>Pomoxis annularis</i>		White Crappie	Aves	Edmonson	N	N	Reference
<i>Pomoxis annularis</i>		White Crappie	Aves	Barren	N	N	Reference
<i>Pomoxis nigromaculatus</i>		Black Crappie	Aves	Barren	N	N	Reference
<i>Pomoxis nigromaculatus</i>		Black Crappie	Aves	Edmonson	N	N	Reference
<i>Pooecetes gramineus</i>		Vesper Sparrow	Aves	Barren	N	E	Reference
<i>Porphyrio martinicus</i>		Purple Gallinule	Aves	Edmonson	N	N	Reference
<i>Potamilus alatus</i>		Pink Heelsplitter	Aves	Edmonson	N	N	Reference
<i>Potamilus ohioensis</i>		Pink Papershell	Aves	Edmonson	N	N	Reference
<i>Procambarus acutus</i>		White River Crawfish	Aves	Edmonson	N	N	Reference
<i>Procyon lotor</i>		Northern Raccoon	Aves	Edmonson	N	N	Reference
<i>Procyon lotor</i>		Northern Raccoon	Aves	Barren	N	N	Reference
<i>Progne subis</i>		Purple Martin	Aves	Edmonson	N	N	Reference
<i>Progne subis</i>		Purple Martin	Aves	Barren	N	N	Reference
<i>Protonotaria citrea</i>	Yes	Prothonotary Warbler	Aves	Barren	N	N	Reference
<i>Protonotaria citrea</i>	Yes	Prothonotary Warbler	Aves	Edmonson	N	N	Reference
<i>Pseudacris brachyphona</i>		Mountain Chorus Frog	Aves	Barren	N	N	Reference
<i>Pseudacris brachyphona</i>		Mountain Chorus Frog	Aves	Edmonson	N	N	Reference

<i>Pseudacris crucifer</i>		Spring Peeper	Aves	Edmonson	N	N	Reference
<i>Pseudacris crucifer</i>		Spring Peeper	Aves	Barren	N	N	Reference
<i>Pseudacris feriarum</i>		Upland Chorus Frog	Aves	Barren	N	N	Reference
<i>Pseudacris triseriata</i>		Western Chorus Frog	Aves	Barren	N	N	Reference
<i>Pseudacris triseriata</i>		Western Chorus Frog	Aves	Edmonson	N	N	Reference
<i>Pseudanophthalmus audax</i>		Bold Cave Beetle	Aves	Edmonson	N	H	Reference
<i>Pseudanophthalmus inexpectatus</i>		Surprising Cave Beetle	Aves	Edmonson	N	T	Reference
<i>Pseudanophthalmus pubescens intrepidus</i>		A Cave Obligate Beetle	Aves	Barren	N	T	Reference
<i>Pseudemys concinna</i>		River Cooter	Aves	Edmonson	N	N	Reference
<i>Pseudosinella espanita</i>		A Cave Obligate Springtail	Aves	Edmonson	N	S	Reference
<i>Pseudotriton montanus diastictus</i>	Yes	Midland Mud Salamander	Amphibia	Edmonson	N	N	Reference
<i>Pseudotriton ruber</i>		Red Salamander	Amphibia	Edmonson	N	N	Reference
<i>Ptychobranthus fasciolaris</i>		Kidneyshell	Amphibia	Edmonson	N	N	Reference
<i>Pyganodon grandis</i>		Giant Floater	Amphibia	Edmonson	N	N	Reference
<i>Pyganodon grandis</i>		Giant Floater	Amphibia	Barren	N	N	Reference
<i>Pylodictis olivaris</i>		Flathead Catfish	Amphibia	Barren	N	N	Reference
<i>Pylodictis olivaris</i>		Flathead Catfish	Amphibia	Edmonson	N	N	Reference
<i>Quadrula quadrula</i>		Mapleleaf	Amphibia	Edmonson	N	N	Reference
<i>Quiscalus quiscula</i>		Common Grackle	Amphibia	Edmonson	N	N	Reference

<i>Quiscalus quiscula</i>	Common Grackle	Amphibia	Barren	N	N	Reference
<i>Recurvirostra americana</i>	American Avocet	Amphibia	Barren	N	N	Reference
<i>Regina septemvittata</i>	Queensnake	Amphibia	Barren	N	N	Reference
<i>Regina septemvittata</i>	Queensnake	Amphibia	Edmonson	N	N	Reference
<i>Regulus calendula</i>	Ruby-crowned Kinglet	Amphibia	Edmonson	N	N	Reference
<i>Regulus calendula</i>	Ruby-crowned Kinglet	Amphibia	Barren	N	N	Reference
<i>Regulus satrapa</i>	Golden-crowned Kinglet	Amphibia	Barren	N	N	Reference
<i>Regulus satrapa</i>	Golden-crowned Kinglet	Amphibia	Edmonson	N	N	Reference
<i>Reithrodontomys humulis</i>	Eastern Harvest Mouse	Amphibia	Barren	N	N	Reference
<i>Reithrodontomys humulis</i>	Eastern Harvest Mouse	Amphibia	Edmonson	N	N	Reference
<i>Rhinichthys obtusus</i>	Western Blacknose Dace	Amphibia	Barren	N	N	Reference
<i>Sagittocythere stygia</i>	An Ectocommensal Ostracod	Amphibia	Edmonson	N	T	Reference
<i>Salmo trutta</i>	Brown Trout	Amphibia	Edmonson	N	N	Reference
<i>Sander canadensis</i>	Sauger	Amphibia	Edmonson	N	N	Reference
<i>Sander vitreus</i>	Walleye	Amphibia	Edmonson	N	N	Reference
<i>Sayornis phoebe</i>	Eastern Phoebe	Amphibia	Barren	N	N	Reference
<i>Sayornis phoebe</i>	Eastern Phoebe	Amphibia	Edmonson	N	N	Reference
<i>Scalopus aquaticus</i>	Eastern Mole	Amphibia	Barren	N	N	Reference
<i>Scalopus aquaticus</i>	Eastern Mole	Amphibia	Edmonson	N	N	Reference

<i>Scaphiopus holbrookii</i>	Yes	Eastern Spadefoot	Amphibia	Edmonson	N	N	Reference
<i>Scaphiopus holbrookii</i>	Yes	Eastern Spadefoot	Amphibia	Barren	N	N	Reference
<i>Sceloporus undulatus</i>		Eastern Fence Lizard	Amphibia	Barren	N	N	Reference
<i>Sceloporus undulatus</i>		Eastern Fence Lizard	Amphibia	Edmonson	N	N	Reference
<i>Scincella lateralis</i>		Little Brown Skink	Amphibia	Edmonson	N	N	Reference
<i>Scincella lateralis</i>		Little Brown Skink	Amphibia	Barren	N	N	Reference
<i>Sciurus carolinensis</i>		Eastern Gray Squirrel	Amphibia	Barren	N	N	Reference
<i>Sciurus carolinensis</i>		Eastern Gray Squirrel	Amphibia	Edmonson	N	N	Reference
<i>Sciurus niger</i>		Eastern Fox Squirrel	Amphibia	Edmonson	N	N	Reference
<i>Sciurus niger</i>		Eastern Fox Squirrel	Amphibia	Barren	N	N	Reference
<i>Scolopax minor</i>	Yes	American Woodcock	Aves	Edmonson	N	N	Reference
<i>Scolopax minor</i>	Yes	American Woodcock	Aves	Barren	N	N	Reference
<i>Scoterpes copei</i>		A Cave Obligate Milliped	Aves	Barren	N	N	Reference
<i>Scoterpes copei</i>		A Cave Obligate Milliped	Aves	Edmonson	N	N	Reference
<i>Seiurus aurocapilla</i>		Ovenbird	Aves	Edmonson	N	N	Reference
<i>Seiurus aurocapilla</i>		Ovenbird	Aves	Barren	N	N	Reference
<i>Selasphorus rufus</i>		Rufous Hummingbird	Aves	Barren	N	N	Reference
<i>Semotilus atromaculatus</i>		Creek Chub	Aves	Barren	N	N	Reference

<i>Semotilus atromaculatus</i>		Creek Chub	Aves	Edmonson	N	N	Reference
<i>Setophaga americana</i>		Northern Parula	Aves	Edmonson	N	N	Reference
<i>Setophaga americana</i>		Northern Parula	Aves	Barren	N	N	Reference
<i>Setophaga caerulescens</i>		Black-throated Blue Warbler	Aves	Barren	N	N	Reference
<i>Setophaga caerulescens</i>		Black-throated Blue Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga castanea</i>		Bay-breasted Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga castanea</i>		Bay-breasted Warbler	Aves	Barren	N	N	Reference
<i>Setophaga cerulea</i>	Yes	Cerulean Warbler	Aves	Barren	N	N	Reference
<i>Setophaga cerulea</i>	Yes	Cerulean Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga citrina</i>		Hooded Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga citrina</i>		Hooded Warbler	Aves	Barren	N	N	Reference
<i>Setophaga coronata</i>		Yellow-rumped Warbler	Aves	Barren	N	N	Reference
<i>Setophaga coronata</i>		Yellow-rumped Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga discolor</i>	Yes	Prairie Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga discolor</i>	Yes	Prairie Warbler	Aves	Barren	N	N	Reference
<i>Setophaga dominica</i>		Yellow-throated Warbler	Aves	Barren	N	N	Reference
<i>Setophaga dominica</i>		Yellow-throated Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga fusca</i>		Blackburnian Warbler	Aves	Edmonson	N	T	Reference

<i>Setophaga fusca</i>		Blackburnian Warbler	Aves	Barren	N	T	Reference
<i>Setophaga magnolia</i>		Magnolia Warbler	Aves	Barren	N	N	Reference
<i>Setophaga magnolia</i>		Magnolia Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga palmarum</i>		Palm Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga palmarum</i>		Palm Warbler	Aves	Barren	N	N	Reference
<i>Setophaga pensylvanica</i>		Chestnut-sided Warbler	Aves	Barren	N	N	Reference
<i>Setophaga pensylvanica</i>		Chestnut-sided Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga petechia</i>		Yellow Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga petechia</i>		Yellow Warbler	Aves	Barren	N	N	Reference
<i>Setophaga pinus</i>		Pine Warbler	Aves	Barren	N	N	Reference
<i>Setophaga pinus</i>		Pine Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga ruticilla</i>		American Redstart	Aves	Edmonson	N	N	Reference
<i>Setophaga ruticilla</i>		American Redstart	Aves	Barren	N	N	Reference
<i>Setophaga tigrina</i>	Yes	Cape May Warbler	Aves	Edmonson	N	N	Reference
<i>Setophaga virens</i>	Yes	Black-throated Green Warbler	Aves	Barren	N	N	Reference
<i>Sialia sialis</i>		Eastern Bluebird	Aves	Barren	N	N	Reference
<i>Sialia sialis</i>		Eastern Bluebird	Aves	Edmonson	N	N	Reference
<i>Sitta canadensis</i>		Red-breasted Nuthatch	Aves	Barren	N	E	Reference
<i>Sitta canadensis</i>		Red-breasted Nuthatch	Aves	Edmonson	N	E	Reference

<i>Sitta carolinensis</i>		White-breasted Nuthatch	Aves	Edmonson	N	N	Reference
<i>Sitta carolinensis</i>		White-breasted Nuthatch	Aves	Barren	N	N	Reference
<i>Sorex fumeus</i>	Yes	Smoky Shrew	Mammalia	Barren	N	N	Reference
<i>Sorex longirostris</i>	Yes	Southeastern Shrew	Mammalia	Barren	N	N	Reference
<i>Spatula clypeata</i>		Northern Shoveler	Mammalia	Barren	N	E	Reference
<i>Spatula discors</i>		Blue-winged Teal	Mammalia	Barren	N	T	Reference
<i>Spatula discors</i>		Blue-winged Teal	Mammalia	Edmonson	N	T	Reference
<i>Sphaerium fabale</i>		River Fingernailclam	Mammalia	Edmonson	N	N	Reference
<i>Sphaerium simile</i>		Grooved Fingernailclam	Mammalia	Edmonson	N	N	Reference
<i>Sphalloplana buchanani</i>		A Cave Obligate Planarian	Mammalia	Edmonson	N	T	Reference
<i>Sphyrapicus varius</i>		Yellow-bellied Sapsucker	Mammalia	Edmonson	N	N	Reference
<i>Sphyrapicus varius</i>		Yellow-bellied Sapsucker	Mammalia	Barren	N	N	Reference
<i>Spinus pinus</i>		Pine Siskin	Mammalia	Barren	N	N	Reference
<i>Spinus pinus</i>		Pine Siskin	Mammalia	Edmonson	N	N	Reference
<i>Spinus tristis</i>		American Goldfinch	Mammalia	Edmonson	N	N	Reference
<i>Spinus tristis</i>		American Goldfinch	Mammalia	Barren	N	N	Reference
<i>Spiza americana</i>	Yes	Dickcissel	Aves	Barren	N	N	Reference
<i>Spiza americana</i>	Yes	Dickcissel	Aves	Edmonson	N	N	Reference
<i>Spizella pallida</i>		Clay-colored Sparrow	Aves	Barren	N	N	Reference

<i>Spizella passerina</i>		Chipping Sparrow	Aves	Barren	N	N	Reference
<i>Spizella passerina</i>		Chipping Sparrow	Aves	Edmonson	N	N	Reference
<i>Spizella pusilla</i>	Yes	Field Sparrow	Aves	Edmonson	N	N	Reference
<i>Spizella pusilla</i>	Yes	Field Sparrow	Aves	Barren	N	N	Reference
<i>Spizelloides arborea</i>		American Tree Sparrow	Aves	Barren	N	N	Reference
<i>Spizelloides arborea</i>		American Tree Sparrow	Aves	Edmonson	N	N	Reference
<i>Stelgidopteryx serripennis</i>		Northern Rough-winged Swallow	Aves	Barren	N	N	Reference
<i>Stelgidopteryx serripennis</i>		Northern Rough-winged Swallow	Aves	Edmonson	N	N	Reference
<i>Sterna forsteri</i>		Forster's Tern	Aves	Barren	N	N	Reference
<i>Sterna hirundo</i>		Common Tern	Aves	Barren	N	N	Reference
<i>Storeria dekayi</i>		Dekay's Brownsnake	Aves	Barren	N	N	Reference
<i>Storeria dekayi</i>		Dekay's Brownsnake	Aves	Edmonson	N	N	Reference
<i>Storeria occipitomaculata</i>		Red-bellied Snake	Aves	Edmonson	N	N	Reference
<i>Storeria occipitomaculata</i>		Red-bellied Snake	Aves	Barren	N	N	Reference
<i>Strix varia</i>		Barred Owl	Aves	Edmonson	N	N	Reference
<i>Strix varia</i>		Barred Owl	Aves	Barren	N	N	Reference
<i>Strophitus undulatus</i>		Creeper	Aves	Barren	N	N	Reference
<i>Strophitus undulatus</i>		Creeper	Aves	Edmonson	N	N	Reference
<i>Sturnella magna</i>	Yes	Eastern Meadowlark	Aves	Edmonson	N	N	Reference
<i>Sturnella magna</i>	Yes	Eastern Meadowlark	Aves	Barren	N	N	Reference

<i>Sturnella neglecta</i>		Western Meadowlark	Aves	Barren	N	N	Reference
<i>Sturnus vulgaris</i>		European Starling	Aves	Barren	N	N	Reference
<i>Sturnus vulgaris</i>		European Starling	Aves	Edmonson	N	N	Reference
<i>Stygobromus exilis</i>		Central Kentucky Cave Amphipod	Aves	Barren	N	N	Reference
<i>Stygobromus vitreus</i>	Yes	An Amphipod (Stygobromus vitreus)	Malacostraca	Barren	N	S	Reference
<i>Stygobromus vitreus</i>	Yes	An Amphipod (Stygobromus vitreus)	Malacostraca	Edmonson	N	S	Reference
<i>Stylurus notatus</i>		Elusive Clubtail	Malacostraca	Edmonson	N	E	Reference
<i>Sylvilagus floridanus</i>		Eastern Cottontail	Malacostraca	Edmonson	N	N	Reference
<i>Sylvilagus floridanus</i>		Eastern Cottontail	Malacostraca	Barren	N	N	Reference
<i>Synaptomys cooperi</i>	Yes	Southern Bog Lemming	Mammalia	Barren	N	N	Reference
<i>Synaptomys cooperi</i>	Yes	Southern Bog Lemming	Mammalia	Edmonson	N	N	Reference
<i>Tachycineta bicolor</i>		Tree Swallow	Mammalia	Edmonson	N	N	Reference
<i>Tachycineta bicolor</i>		Tree Swallow	Mammalia	Barren	N	N	Reference
<i>Tamias striatus</i>		Eastern Chipmunk	Mammalia	Edmonson	N	N	Reference
<i>Tantilla coronata</i>	Yes	Southeastern Crowned Snake	Reptilia	Edmonson	N	T	Reference
<i>Terrapene carolina</i>		Eastern Box Turtle	Reptilia	Edmonson	N	N	Reference
<i>Terrapene carolina</i>		Eastern Box Turtle	Reptilia	Barren	N	N	Reference

<i>Thamnophis sirtalis</i>		Common Gartersnake	Reptilia	Barren	N	N	Reference
<i>Thamnophis sirtalis</i>		Common Gartersnake	Reptilia	Edmonson	N	N	Reference
<i>Theliderma cylindrica</i>	Yes	Rabbitsfoot	Bivalvia	Edmonson	T	E	Reference
<i>Theliderma cylindrica</i>	Yes	Rabbitsfoot	Bivalvia	Barren	T	E	Reference
<i>Theliderma metanevra</i>		Monkeyface	Bivalvia	Edmonson	N	N	Reference
<i>Thoburnia atripinnis</i>	Yes	Blackfin Sucker	Actinopterygii	Barren	N	S	Reference
<i>Thryomanes bewickii</i>	Yes	Bewick's Wren	Aves	Edmonson	N	H	Reference
<i>Thryothorus ludovicianus</i>		Carolina Wren	Aves	Edmonson	N	N	Reference
<i>Thryothorus ludovicianus</i>		Carolina Wren	Aves	Barren	N	N	Reference
<i>Toxostoma rufum</i>		Brown Thrasher	Aves	Barren	N	N	Reference
<i>Toxostoma rufum</i>		Brown Thrasher	Aves	Edmonson	N	N	Reference
<i>Trachemys scripta elegans</i>		Red-eared Slider	Aves	Edmonson	N	N	Reference
<i>Trachemys scripta elegans</i>		Red-eared Slider	Aves	Barren	N	N	Reference
<i>Tringa flavipes</i>	Yes	Lesser Yellowlegs	Aves	Barren	N	N	Reference
<i>Tringa melanoleuca</i>		Greater Yellowlegs	Aves	Barren	N	N	Reference
<i>Tringa semipalmata</i>		Willet	Aves	Barren	N	N	Reference
<i>Triodopsis tridentata</i>		Northern Threetooth	Aves	Barren	N	N	Reference
<i>Triodopsis tridentata</i>		Northern Threetooth	Aves	Edmonson	N	N	Reference
<i>Tritogonia verrucosa</i>		Pistolgrip	Aves	Edmonson	N	N	Reference
<i>Troglodytes aedon</i>		House Wren	Aves	Edmonson	N	N	Reference

<i>Troglodytes aedon</i>		House Wren	Aves	Barren	N	N	Reference
<i>Troglodytes hiemalis</i>		Winter Wren	Aves	Barren	N	N	Reference
<i>Troglodytes hiemalis</i>		Winter Wren	Aves	Edmonson	N	N	Reference
<i>Truncilla donaciformis</i>		Fawnsfoot	Aves	Edmonson	N	N	Reference
<i>Truncilla truncata</i>		Deertoe	Aves	Edmonson	N	N	Reference
<i>Turdus migratorius</i>		American Robin	Aves	Edmonson	N	N	Reference
<i>Turdus migratorius</i>		American Robin	Aves	Barren	N	N	Reference
<i>Typhlichthys subterraneus</i>	Yes	Southern Cavefish	Actinopterygii	Barren	N	S	Reference
<i>Typhlichthys subterraneus</i>	Yes	Southern Cavefish	Actinopterygii	Edmonson	N	S	Reference
<i>Tyrannochthonius hypogeus</i>		A Cave Obligate Pseudoscorpion	Actinopterygii	Edmonson	N	S	Reference
<i>Tyrannus tyrannus</i>		Eastern Kingbird	Actinopterygii	Edmonson	N	N	Reference
<i>Tyrannus tyrannus</i>		Eastern Kingbird	Actinopterygii	Barren	N	N	Reference
<i>Tyto alba</i>	Yes	Barn Owl	Aves	Barren	N	S	Reference
<i>Tyto alba</i>	Yes	Barn Owl	Aves	Edmonson	N	S	Reference
<i>Urocyon cinereoargenteus</i>	Yes	Gray Fox	Mammalia	Barren	N	N	Reference
<i>Urocyon cinereoargenteus</i>	Yes	Gray Fox	Mammalia	Edmonson	N	N	Reference
<i>Ursus americanus</i>		American Black Bear	Mammalia	Barren	N	N	Reference
<i>Utterbackia imbecillis</i>		Paper Pondshell	Mammalia	Edmonson	N	N	Reference
<i>Utterbackiana suborbiculata</i>		Flat Floater	Mammalia	Edmonson	N	N	Reference
<i>Vermivora chrysoptera</i>	Yes	Golden-winged Warbler	Aves	Edmonson	N	E	Reference

<i>Vermivora cyanoptera</i>	Yes	Blue-winged Warbler	Aves	Edmonson	N	N	Reference
<i>Vermivora cyanoptera</i>	Yes	Blue-winged Warbler	Aves	Barren	N	N	Reference
<i>Vireo flavifrons</i>		Yellow-throated Vireo	Aves	Barren	N	N	Reference
<i>Vireo flavifrons</i>		Yellow-throated Vireo	Aves	Edmonson	N	N	Reference
<i>Vireo gilvus</i>		Warbling Vireo	Aves	Edmonson	N	N	Reference
<i>Vireo gilvus</i>		Warbling Vireo	Aves	Barren	N	N	Reference
<i>Vireo griseus</i>		White-eyed Vireo	Aves	Barren	N	N	Reference
<i>Vireo griseus</i>		White-eyed Vireo	Aves	Edmonson	N	N	Reference
<i>Vireo olivaceus</i>		Red-eyed Vireo	Aves	Edmonson	N	N	Reference
<i>Vireo olivaceus</i>		Red-eyed Vireo	Aves	Barren	N	N	Reference
<i>Vireo philadelphicus</i>		Philadelphia Vireo	Aves	Barren	N	N	Reference
<i>Vireo philadelphicus</i>		Philadelphia Vireo	Aves	Edmonson	N	N	Reference
<i>Vireo solitarius</i>		Blue-headed Vireo	Aves	Edmonson	N	N	Reference
<i>Vireo solitarius</i>		Blue-headed Vireo	Aves	Barren	N	N	Reference
<i>Virginia valeriae</i>		Smooth Earthsnake	Aves	Barren	N	N	Reference
<i>Virginia valeriae</i>		Smooth Earthsnake	Aves	Edmonson	N	N	Reference
<i>Vulpes vulpes</i>		Red Fox	Aves	Edmonson	N	N	Reference
<i>Vulpes vulpes</i>		Red Fox	Aves	Barren	N	N	Reference
<i>Zenaida macroura</i>		Mourning Dove	Aves	Edmonson	N	N	Reference
<i>Zenaida macroura</i>		Mourning Dove	Aves	Barren	N	N	Reference

<i>Zonotrichia albicollis</i>	White-throated Sparrow	Aves	Barren	N	N	Reference
<i>Zonotrichia albicollis</i>	White-throated Sparrow	Aves	Edmonson	N	N	Reference
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	Aves	Edmonson	N	N	Reference
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	Aves	Barren	N	N	Reference

965 species are listed

Crustaceans

NAME	STATUS
Kentucky Cave Shrimp <i>Palaemonias ganteri</i>	Endangered
There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5008	

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i>	Final
https://ecos.fws.gov/ecp/species/5949#crithab	

Mammals

NAME

STATUS

Gray Bat *Myotis grisescens*

Endangered

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- The project area includes potential gray bat habitat.

Species profile: <https://ecos.fws.gov/ecp/species/6329>

General project design guidelines:

<https://ipac.ecosphere.fws.gov/project/TTTEV46RU5D3JH4N2O2OWSCXRU/documents/generated/6422.pdf>

Indiana Bat *Myotis sodalis*

Endangered

There is **final** critical habitat for this species. Your location overlaps the critical habitat.

This species only needs to be considered under the following conditions:

- The project area includes known 'swarming 1' habitat.
- The project area includes known 'swarming 2' habitat.

Species profile: <https://ecos.fws.gov/ecp/species/5949>

General project design guidelines:

<https://ipac.ecosphere.fws.gov/project/TTTEV46RU5D3JH4N2O2OWSCXRU/documents/generated/6422.pdf>

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species.

Species profile: <https://ecos.fws.gov/ecp/species/9045>

General project design guidelines:

<https://ipac.ecosphere.fws.gov/project/TTTEV46RU5D3JH4N2O2OWSCXRU/documents/generated/6422.pdf>

Clams

NAME

STATUS

Snuffbox Mussel *Epioblasma triquetra*

Endangered

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/4135>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

No critical habitat has been designated for this species.

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

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. 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.

Project Summary

Project Code: 2022-0040301
Event Code: None
Project Name: Wood Duck Solar
Project Type: Power Gen - Solar
Project Description: Cardno, now Stantec (Cardno) is pleased to submit our proposal for a Critical Issues Analysis (CIA) and Permit Matrix on approximately 2,308 acres near Glasgow, Kentucky. This proposal is based on scoping information provided via email on April 20, 2022 between Ms. Amanda Corll and Chad Martin. A complete report will be provided to Geenex that will describe the results of the critical issues analysis and preliminary permitting assessment.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.0356555,-86.07457231069537,14z>



Counties: Barren and Edmonson counties, Kentucky

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Kentucky Ecological Services Field Office

J C Watts Federal Building, Room 265

330 West Broadway

Frankfort, KY 40601-8670

(502) 695-0468

Attachment(s):

- Official Species List



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0468 Fax: (502) 695-1024
<http://www.fws.gov/frankfort/>

In Reply Refer To:
Project Code: 2022-0040301
Project Name: Wood Duck Solar

May 06, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

7 References

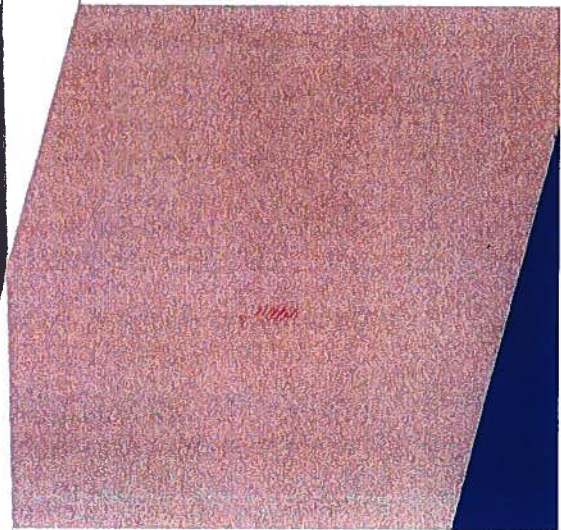
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Wood Duck Solar Project
Critical Issues Analysis

APPENDIX

A

USFWS IPAC OFFICIAL SPECIES
LIST





KY Office of Kentucky Nature Preserves

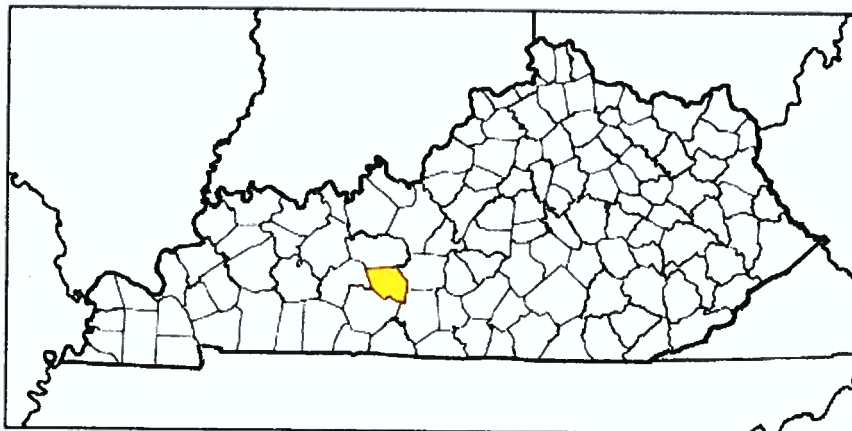
KY Rare Plant Database | Status/Rank Explanation | Glossary | Credits



Additional Resources:



Search Results : Edmonson County



- [*Aureolaria patula*](#) - Spreading False Foxglove - State: S, USFWS --
- [*Carex decomposita*](#) - Epiphytic Sedge - State T, USFWS --
- [*Dodecatheon frenchii*](#) - French's Shooting Star - State S, USFWS --
- [*Gentiana puberulenta*](#) - Prairie Gentian - State E, USFWS --
- [*Helianthemum bicknellii*](#) - Plains Frostweed - State E, USFWS --
- [*Helianthus eggertii*](#) - Eggert's Sunflower - State T, USFWS --
- [*Heteranthera limosa*](#) - Blue Mud-plantain - State S, USFWS --
- [*Krigia occidentalis*](#) - Western Dwarf Dandelion - State E, USFWS --
- [*Lespedeza stuevei*](#) - Tall Bush-clover - State S, USFWS --
- [*Ludwigia hirtella*](#) - Hairy Ludwigia - State E, USFWS --
- [*Polygala cruciata*](#) - Crossleaf Milkwort - State E, USFWS --
- [*Potamogeton pulcher*](#) - Spotted Pondweed - State T, USFWS --
- [*Sagittaria graminea*](#) - Grassleaf Arrowhead - State T, USFWS --
- [*Sagittaria rigida*](#) - Sessile-fruited Arrowhead - State E, USFWS --
- [*Scleria ciliata*](#) - Fringed Nutrush - State E, USFWS --
- [*Symphotrichum pratense*](#) - Barrens Silky Aster - State S, USFWS ---
- [*Trifolium reflexum*](#) - Buffalo Clover - State E, USFWS --
- [*Veratrum woodii*](#) - Wood's Bunchflower - State T, USFWS --
- [*Viola septemloba* var. *egglestonii*](#) - Eggleston's Violet - State S, USFWS --

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Additional Resources:

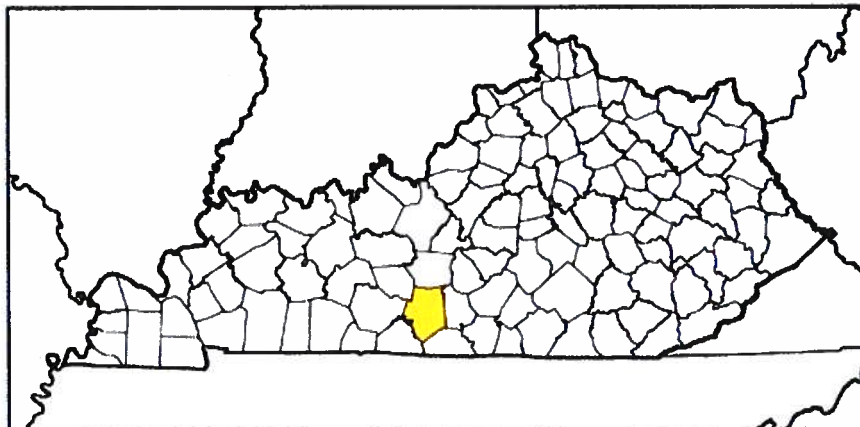


NatureServe
Explorer



UNIVERSITY OF TENNESSEE
HERBARIUM

Search Results : Barren County



- Aureolaria patula* - Spreading False Foxglove State S, USFWS --
Castanea dentata - American Chestnut State E, USFWS --
Glyceria acutiflora - Sharp-scaled Manna-grass State E, USFWS --
Helianthemum bicknellii - Plains Frostweed State E, USFWS --
Helianthus eggertii - Eggert's Sunflower State T, USFWS --
Heteranthera limosa - Blue Mud-plantain State S, USFWS --
Lespedeza capitata - Round-head Bush-clover State S, USFWS --
Lespedeza stuevei - Tall Bush-clover State S, USFWS --
Ludwigia hirtella - Hairy Ludwigia State E, USFWS --
Sporobolus clandestinus - Rough Dropseed State T, USFWS --
Symphyotrichum pratense - Barrens Silky Aster State S, USFWS --
Trichostema setaceum - Narrowleaved Bluecurls State E, USFWS --
Trifolium reflexum - Buffalo Clover State E, USFWS --

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APPENDIX

B

PERMIT MATRIX

