APPENDIX C - THREATENED AND ENDANGERED SPECIES REPORT

Protected Species Report
EASTERN KENTUCKY POWER COOPERATIVE

Liberty RICE Plant Project
Project No. 168547

October 9, 2024

Protected Species Report

prepared for

EASTERN KENTUCKY POWER COOPERATIVE
Liberty RICE Plant Project
Casey County, Kentucky

Project No. 168547

October 9, 2024

prepared by

Burns & McDonnell Engineering Company, Inc.

EXECUTIVE SUMMARY

Eastern Kentucky Power Cooperative (EKPC) contracted Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to evaluate property identified for the development of the Liberty reciprocating internal combustion engine (RICE) Plant Project and associated transmission line rebuild in Casey County, Kentucky, (Project). The property is an approximately 100-acre area centered at coordinates 37.370160°, -84.959488° with a transmission line rebuild along an approximately 8-mile-long 150-foot wide existing right of way (ROW) segment for a total area of approximately 244 acres (Project Area). The Project Area was evaluated for potential effects to species protected under the Endangered Species Act (ESA) of 1973, 16 U.S.C. § 1531 et seq.; Kentucky Department of Fish and Wildlife Resources (KDFWR) statutes and regulations; and the Bald and Golden Eagle Protection Act (BGEPA) 16 U.S.C. § 668.

Burns & McDonnell biologists identified the state and federally listed threatened or endangered species that should be considered in the Project's effects analysis. In addition, Burns & McDonnell evaluated the potential of the proposed Project to affect bald (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). The candidate and proposed endangered species are not currently afforded formal protection under the ESA but have been included in this analysis. Based on the desktop literature review and onsite assessments performed March 27 and August 19-22, 2024, it is Burns & McDonnell's professional opinion that development of the proposed Project has the potential to affect state and federally listed bat species. Potential roost trees that could be possible habitat for the listed bat species were identified on site. If roost trees can be avoided during construction or if all tree clearing can be conducted during the winter, non-roosting season, listed bat species will not likely be adversely affected. There was no other observed habitat for other protected species, therefore the project is anticipated to have no effect to any other state or federally listed species. In addition, no bald or golden eagle species or nests were observed therefore it is anticipated the proposed Project would have no effect on either bald or golden eagles.

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
BGEPA	Bald and Golden Eagle Protection Act
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
EKPC	Eastern Kentucky Power Cooperative
EPA	Environmental Protection Agency
ESA	Endangered Species Act
IPaC	Information for Planning and Conservation
KDFWR	Kentucky Department of Fish and Wildlife Resources
MBTA	Migratory Bird Treaty Act
Project	Liberty RICE Plant Project
Project Area	Area encompassing footprint of Project development
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

EKPC contracted Burns & McDonnell to evaluate an approximately 244-acre property and electric utility right-of-way identified for the development of the Project, in Casey County, Kentucky for potential effects to species protected under the Endangered Species Act (ESA) of 1973, KDFWR statutes and regulations, and Bald and Golden Eagle Protection Act (BGEPA). This report provides information for the methods and results of the protected species background review and habitat assessment survey performed for the Project throughout the entire Project Area. These assessments were performed on March 27 and August 19-22, 2024, to identify the potential presence of protected species habitats within the Project Area, and to evaluate the potential for effects to species that could result from Project development.

1.1 Project Description

The Project Area is located in Casey County, Kentucky. The site location primarily consists of active agricultural land, forested habitat around valleys/ravines, smaller sections of maintained grass, and old field meadow. On the proposed RICE location, there is one homestead with a few outbuildings and a barn. The 150-foot-wide utility ROW was cleared and is periodically maintained to keep down woody species. The Project area contained wetlands, streams, and open water ponds. See Figures in Appendix A for maps of the Project location.

1.2 Project Activities

The Project involves the construction and operation of a new reciprocating internal combustion engine plant and associated transmission line rebuild. Construction associated with development of the proposed Project may require survey; clearing and grading; site stabilization; construction; and restoration and revegetation. Necessary erosion and sedimentation control best management practices will be installed concurrent with clearing and grading activities to limit the amount of impact the Project has to the surrounding area.

1.3 Project Area and Setting

Level III Ecoregions as defined by the U.S. Environmental Protection Agency (EPA, 2024a) as areas where the type, quality, and quantity of environmental resources are generally similar. The proposed Project Area is within the Interior Plateau Level III Ecoregion. The Interior Plateau is further subdivided into ten Level IV ecoregions. The Project Area is within the Eastern Highland Rim (EHR) Level IV ecoregion of Interior Plateau. The Interior Plateau was historically plains interrupted in places by dissected uplands, knobs, a few deeply incised master streams, and large areas of karst. The EHR has

undulating plains, hills, and karst. Soils have developed from residuum and not from glacial till deposits. Historically the ecoregion supported a potential natural vegetation of oak–hickory forest and bluestem prairie (Woods et al., 2002). Today, white oak dominates upland forests and bottomland trees grow along streams. Streams a nutrient-rich and moderate in gradient. Riffle substrates are composed of cobble, gravel, or bedrock. Anthropogenic activities have led to the degradation of historic conditions within the ecoregion.

The Project Area is spread across four watersheds. The Project Area's approximately northwestern half is largely within the Lower Brush Creek-Green River watershed, hydrologic unit code (HUC) 051100010108, with a smaller portion in the Upper Brush Creek watershed, HUC 051100010107. The southeastern portion of the Project Area is mostly within the Doe Creek-Green River watershed, HUC 051100010106, with a small segment reaching into the Trace Fork watershed, HUC 051100010110 (EPA, 2024b). The FEMA dataset indicates that the Survey Area crosses three floodplains. The floodplains are associated with Brush Creek, Moccasin Creek, and the Green River.

During onsite field investigations Burns & McDonnell identified six vegetation communities within the Project Area, consisting of maintained turf grass, row crop agricultural, pasture, shrub uplands, forested uplands, and open water ponds. Refer to Table 1-1 for a summary of the dominant plant species observed within the Project Area. Representative photographs of the vegetation communities and potential habitat identified within the Project Area can be found in Appendix B.

Table 1-1: Dominant Vegetation Observed within the Project Area

Stratum	Scientific Name	Common Name
Tree	*Liriodendron tulipifera*	Tulip Poplar
	Acer saccharum	Sugar Maple
	Fagus grandifolia	American Beech
	Ulmus americana	American Elm
Shrub / Sapling	*Lonicera maackii*	Honeysuckle
	Fagus grandifolia	American Beech
Herbaceous	*Packera glabella*	Butterweed
	Glycine max	Soybean
	Poa pratensis	Kentucky Blue Grass
	Bromus arvensis	Field Brome
	Podophyllum peltatum	Mayapple
	Lamium amplexicaule	Henbit
	Rubus allegheniensis	Blackberry

1.4 Protected Species Review and Habitat Assessment Methods

Prior to field investigations, Burns & McDonnell biologists reviewed the USFWS Information for Planning and Conservation (IPaC) system to obtain a project-specific list of federally protected species or designated critical habitat that should be evaluated in the Project's effects analysis. In addition, the KDFWR's protected species list for Casey County was reviewed to determine the potential for protected species or their habitat to occur within the Project Area.

Reviews were conducted for each species identified in the protected species lists to gather pertinent information regarding species' distinct physical characteristics and various habitat needs.

2.0 REGULATORY FRAMEWORK

2.1 Endangered Species Act

The ESA provides protection for plants and animals on the Secretary of the Interior's list of threatened or endangered species by prohibiting the take of the listed species (16 USC § 1531-1543). The ESA defines take as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct (16 USC § 1532)[1]. Section 7 of the ESA states that it is the responsibility of Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence, or result in the destruction or adverse modification of habitat determined to be critical to the conservation of, any such species.

According to the USFWS, coordination under Section 7 of the Endangered Species Act is required whenever there is a federal nexus for a Project. If there is no federal nexus and after completing a threatened and endangered species review, it is determined that the proposed Project will not affect federally listed species or critical habitat (no positive or negative impacts to federally listed species or critical habitat), no further consultation or contact with the USFWS is necessary (USFWS, 2024b).

2.2 Bald and Golden Eagle Protection Act

The BGEPA provides protection of the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) by prohibiting take of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 USC § 668). The BGEPA, in 50 CFR part 22.3, defines take as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb, and defines disturb as to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available:

- Injury to an eagle;
- A decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or
- Nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

2.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) provides protection for migratory birds listed in 50 CFR part 10.13 by making it unlawful at any time, by any means or in any manner, to pursue; hunt; take; capture;

[1] See also 50 CFR § 17.3 for the regulatory definitions of "harass" and "harm" as used in the definition of "take".

kill; attempt to take, capture, or kill; possess; offer for sale; sell; offer to barter; barter; offer to purchase; purchase; deliver for shipment; ship; export; import; cause to be shipped, exported, or imported; deliver for transportation; transport or cause to be transported; carry or cause to be carried; or receive for shipment, transportation, carriage, or export; any migratory bird, any part, nest, or egg of any such bird, unless allowed by permit (16 USC § 703). The MBTA defines take as to pursue or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 CFR part 10.12).

2.4 Kentucky State Listed Species Protection

The KDFWR is granted authority from the state of Kentucky to protect state listed threatened or endangered species. Kentucky law (301 KAR 3:061) states that it is unlawful for any person to import, transport, possess, process, sell or offer for sale any endangered species of fish and wildlife, or parts thereof. Nor shall any article be made in whole or from any part or parts of any species of fish and wildlife designated as endangered by this administrative regulation.

3.0 FEDERAL & STATE PROTECTED SPECIES

3.1 Federal and State Protected Species

An endangered species is one that is in danger of extinction throughout all or a significant portion of its natural range. A threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. A candidate species is one that is currently in the assessment process to determine if listing is appropriate using the listing factors in Section 4 of the ESA.

The USFWS IPAC identified ten endangered species, one threatened species, one proposed endangered, one candidate species, and one experimental population of non-essential species to be considered in the Project's effects analysis (Appendix C). Additionally, the KDFWR Species list identifies Kentucky state threatened and endangered species that have potential to be within Casey County (Appendix C). Table 3-1 identifies the federal and state protected species with the potential to occur in the Project Area.

Table 3-1: Federal and State Protected Species with Potential to Occur in Casey County, Kentucky

Common Name	Scientific Name	Federal Listing Status[a]	State Listing Status[b]
Birds			
Vesper Sparrow	*Pooecetes gramineus*	Not Listed	Endangered
Whooping Crane	*Grus americana*	Experimental, Non-essential	Not Listed
Red-breasted Nuthatch	*Sitta canadensis*	Not Listed	Endangered
Great Egret	*Ardea alba*	Not Listed	Threatened
Northern Harrier	*Circus hudsonius*	Not Listed	Threatened
Blue-winged Teal	*Spatula discors*	Not Listed	Threatened
Mussels			
Fanshell	*Cyprogenia stegaria*	Endangered	Not Listed
Pink Mucket	*Lampsilis abrupta*	Endangered	Not Listed
Salamander Mussel	*Simpsonaias ambigua*	Proposed Endangered	Threatened
Snuffbox Mussel	*Epioblasma triquetra*	Endangered	Endangered
Purple Lilliput	*Toxolasma lividum*	Not Listed	Endangered
Little Spectaclecase	*Leaunio lienosus*	Not Listed	Threatened
Insects			
Monarch Butterfly	*Danaus plexippus*	Candidate	Not Listed
Maine Snaketail	*Ophiogomphus mainensis*	Not Listed	Endangered
Zebra Clubtail	*Stylurus scudderi*	Not Listed	Endangered

Common Name	Scientific Name	Federal Listing Status[a]	State Listing Status[b]
Mammals			
Gray Bat	*Myotis grisescens*	Endangered	Not Listed
Indiana Bat	*Myotis sodalis*	Endangered	Not Listed
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered	Endangered
Little Brown Bat	*Myotis lucifugus*	Not Listed	Threatened
Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered	Threatened
Fish			
Longhead Darter	*Percina macrocephala*	Not Listed	Endangered

Source: USFWS, 2024a; KDFWR, 2024
(a) Federally listed species identified by USWFS with potential to occur within Project Area (USFWS, 2024a)
(b) State listed species identified by KDFWR with potential to occur within Casey County (KDFWR, 2024)

4.0 EFFECTS ANALYSIS AND DETERMINATION

Based on the life history of each species and the habitat data collected during the field investigations, Burns & McDonnell biologists evaluated the potential for each species to occur within the proposed Project Area. Locations for potential roost trees, water resources, and photos can be seen on Figure 2 located in Appendix A with photos in Appendix B. Based on the results of analysis, each species was ranked into one of the following categories.

- Known to occur – The species has been previously documented within the Project Area or was observed during field investigations.
- May occur – The Project Area is within the species' currently known range, and habitat type, soil, etc., resemble those known to be utilized by the species.
- Unlikely to occur – The Project Area is within the species' currently known range, but habitat type, soil, etc., do not resemble those known to be utilized by the species, or the Project Area is clearly outside the species' currently known range.
- Does not occur – The species does not occur within the Project Area due to absence of habitat.

Once each species' potential to occur within the Project Area was categorized, Burns & McDonnell biologists evaluated the proposed Project's potential to affect each species to establish a recommended determination of effect. These recommended determinations follow the effects determinations guidance as put forth by the USFWS (USFWS, 2024c) and include:

- No effect – The proposed action will not affect federally listed species or critical habitat.
- May affect, but is not likely to adversely affect – The proposed action may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial.
- May affect, is likely to adversely affect – Adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial.

In addition to the federally and state listed species; Burns & McDonnell biologists evaluated the proposed Project's potential to impact the bald eagle to establish a recommended determination of impact, as follows:

- May impact – Adverse impacts to protected species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions.

- No impact – The proposed action will not impact protected species or critical habitat.

Table 4-1 summarizes the list of federal and state protected species with potential to occur in, their corresponding potential to occur within the Project vicinity, and Burns & McDonnell's recommended determination of effect.

Table 4-1: Protected Species Potential to Occur and Effects Determination within the Project Area

Common Name[ab]	Potential to Occur within the Project Vicinity	Recommended Effects Determination[c]
Birds		
Vesper Sparrow	Unlikely to occur. Suitable grassland habitat is not present within the Project Area.	No Effect
Whooping Crane	Unlikely to occur. The Project Area is located within the species' migratory range; however, preferred habitat of wet prairies adjacent to inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats are not present within the Project Area.	No Effect
Red-breasted Nuthatch	Unlikely to occur. Suitable coniferous forest or mountain habitat is not present within the Project Area.	No Effect
Great Egret	Unlikely to occur. Suitable food source along with wetland or marsh habitat is not present within the Project Area.	No Effect
Northern Harrier	Unlikely to occur. Could possibly be found hunting/foraging in agricultural fields, but unlikely due to the lack of open terrain marsh or wet grassland breeding habitat within or adjacent to the Project Area.	No Effect
Blue-winged Teal	Unlikely to occur. Wetland or mudflat habitat is not present within the Project Area.	No Effect
Mussels		
Fanshell	Unlikely to occur. Streams on site did not have suitable size or gravel riffles support this species	No Effect
Pink Mucket	Unlikely to occur. Streams on site did not have suitable substrate or flow to support this mussel species	No Effect
Salamander Mussel	Unlikely to occur. Streams on site did not have suitable substrate or flow to support this mussel species	No Effect
Snuffbox Mussel	Unlikely to occur. Streams on site did not have suitable substrate or flow to support this mussel species	No Effect
Purple Lilliput	Likely to occur. Streams on site had potentially suitable habitat in the form of small and medium sized streams with sand and gravel substrates. However, no in-stream work is anticipated.	No Effect
Little Spectaclecase	Likely to occur. Streams on site had potentially suitable habitat in the form of small and medium sized streams with sand and gravel substrates. However, no in-stream work is anticipated.	No Effect
Insects		
Monarch Butterfly	Likely to occur. Suitable nectar habitat is present throughout the ROW portion of the project on grasslands, prairies, and meadows. Suitable larval host plants are present in sparse quantities within grasslands with presence of milkweed. Not all	May affect, but is not likely to adversely affect

Common Name[ab]	Potential to Occur within the Project Vicinity	Recommended Effects Determination[c]
	suitable habitat will be disturbed by the project. Disturbed areas will be reseeded following project completion.	
Maine Snaketail	Unlikely to occur. Stream morphology, velocity, and site elevation does not provide suitable habitat in the Project Area.	No Effect
Zebra Clubtail	Unlikely to occur. Necessary stream velocity and rapids are not present within the Project Area.	No Effect
Mammals		
Gray Bat	May occur within or adjacent to the Project Area. No effect. Unlikely to occur. No karst features were observed in or directly adjacent to the Project Area and no roosting habitat impacts anticipated. Streams and rivers crossed by the transmission line provide suitable foraging habitat and commuting corridors.	May affect but is not likely to adversely affect.
Indiana Bat	May occur within or adjacent to the Project Area. Potential roost trees are present within the project area. If roost trees can be avoided during construction or if all tree clearing can be conducted during the winter, non-roosting season, direct impacts to bats can be avoided.	May affect, but is not likely to adversely affect
Northern Long-eared Bat	May occur within or adjacent to the Project Area. Potential roost trees are present within the project area. If roost trees can be avoided during construction or if all tree clearing can be conducted during the winter, non-roosting season, direct impacts to bats can be avoided.	May affect, but is not likely to adversely affect
Little Brown Bat	May occur within or adjacent to the Project Area. Potential roost trees are present within the project area. If roost trees can be avoided during construction or if all tree clearing can be conducted during the winter, non-roosting season, direct impacts to bats can be avoided.	May affect, but is not likely to adversely affect
Tricolored Bat	May occur within or adjacent to the Project Area. Forested areas and potential roost trees are present within the project area. If all trees, including roost trees, can be avoided during construction or if all tree clearing can be conducted during the winter, non-roosting season, direct impacts to bats can be avoided.	May affect, but is not likely to adversely affect
Fish		
Longhead Darter	Unlikely to occur. Necessary stream velocity with rapids is not present within the Project Area	No Effect
Other Federally Protected Species		
Bald eagle	Likely to occur. Although bald eagles may traverse the Project Area, specifically along the Green River searching for food resources, no known nests are present in the Project Area.	No Effect
Golden eagle	Unlikely to occur. Project Area lies outside of the general breeding range of the species. No nests were observed within or adjacent to the Project Area.	No Effect

(a) USFWS Information for Planning and Consultation Unofficial Species List (USFWS, 2024a)
(b) Casey County Species List (KDFWR, 2024)
(c) Determinations based on U.S. Fish and Wildlife Service nomenclature (USFWS, 2024c)

5.0 CONCLUSIONS

Based on literature reviews and the results of the habitat assessments conducted on March 27 and August 19-22 2024, it is Burns & McDonnell's professional scientific opinion that the proposed Project may affect but is not likely to adversely affect state and federally listed bat species. The potential roost trees that could be possible habitat for the listed bat species were identified on site. If clearing of trees, including roost trees, can be avoided during construction or if all tree clearing can be conducted during the winter, non-roosting season, listed bat species will not likely be adversely affected. It is Burns & McDonnell's professional scientific opinion that the proposed Project will have no effect on bald eagles or golden eagles, or any other federally or state listed species.

The results and conclusions presented in the report are Burns & McDonnell's professional scientific opinion based on the information available during the literature review, the onsite habitat assessment, and Burns & McDonnell's understanding and interpretation of the ESA and BGEPA. Official determinations of effect can only be obtained through consultation with the USFWS and KDFWR.

6.0 LITERATURE CITED

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APPENDIX A - FIGURES

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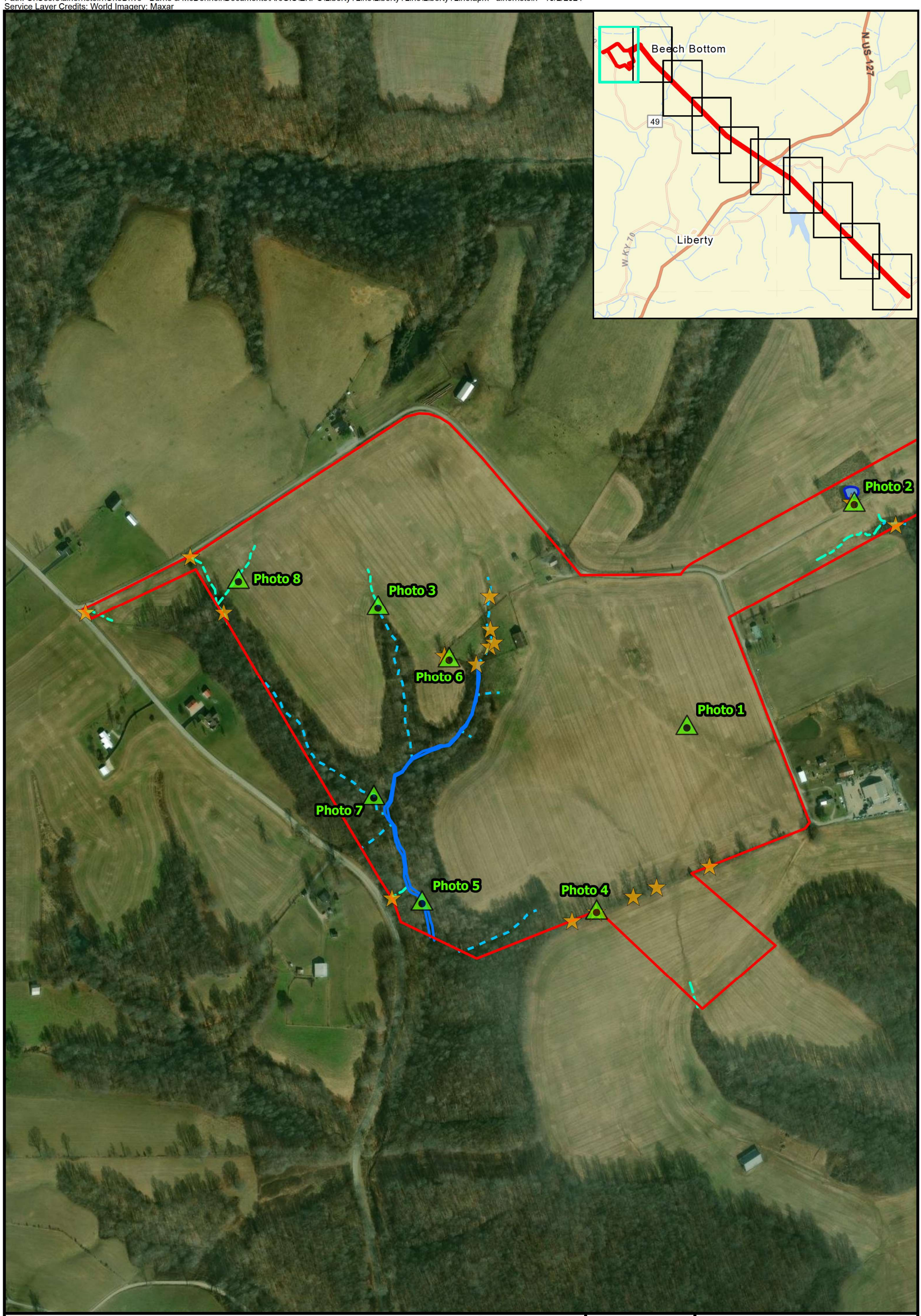

Survey Area
Photo Point
Potential Roost Tree

Wetland Type
Emergent
Scrub-Shrub
Pond

Stream Classification
Ephemeral
Intermittent
Perennial

NORTH

400 200 0 400
Scale in Feet

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Figure 2
Protected Species Survey Map
Liberty RICE Plant Project
EKPC
Casey County, KY

Source: Burns & McDonnell, ESRI

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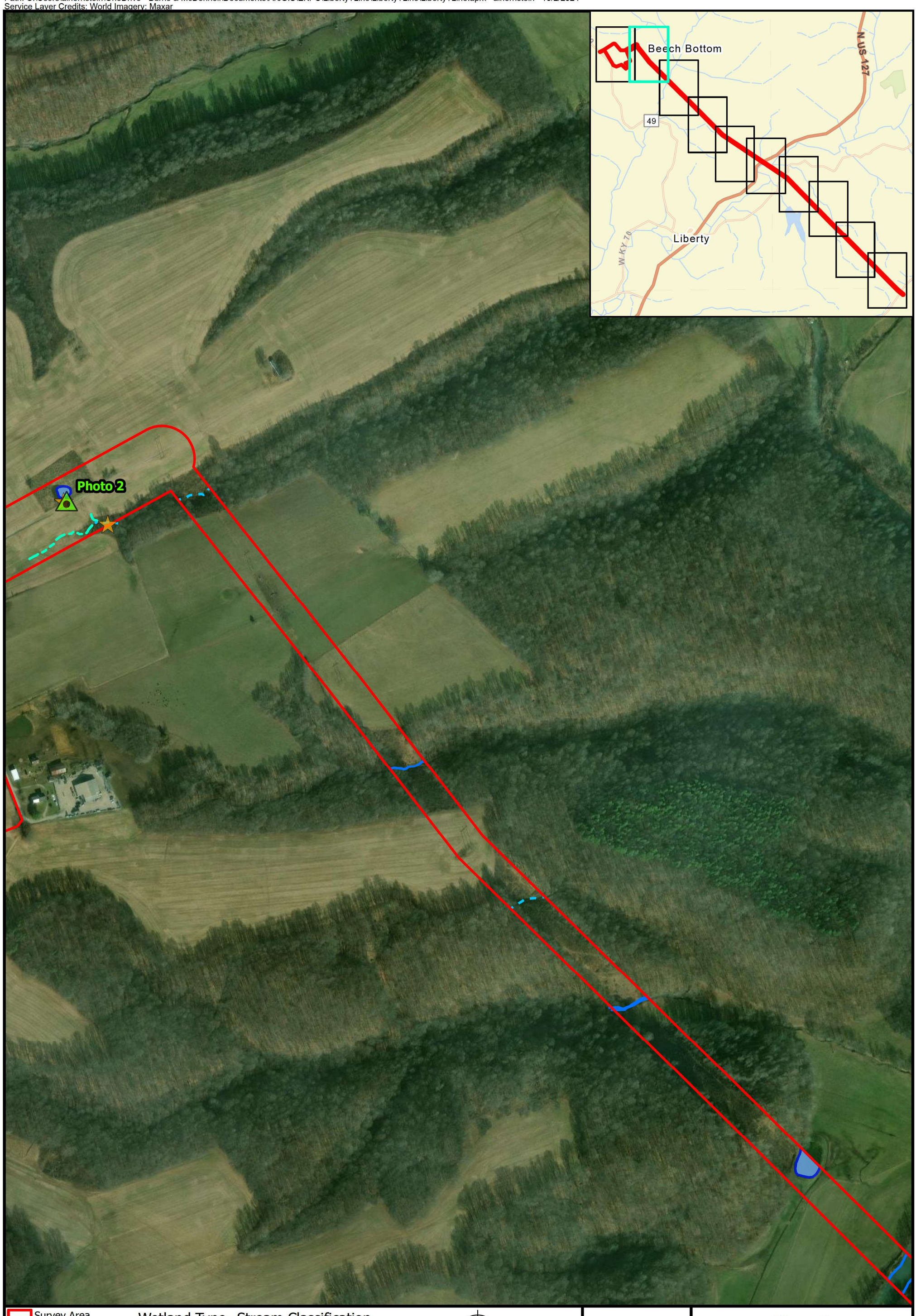

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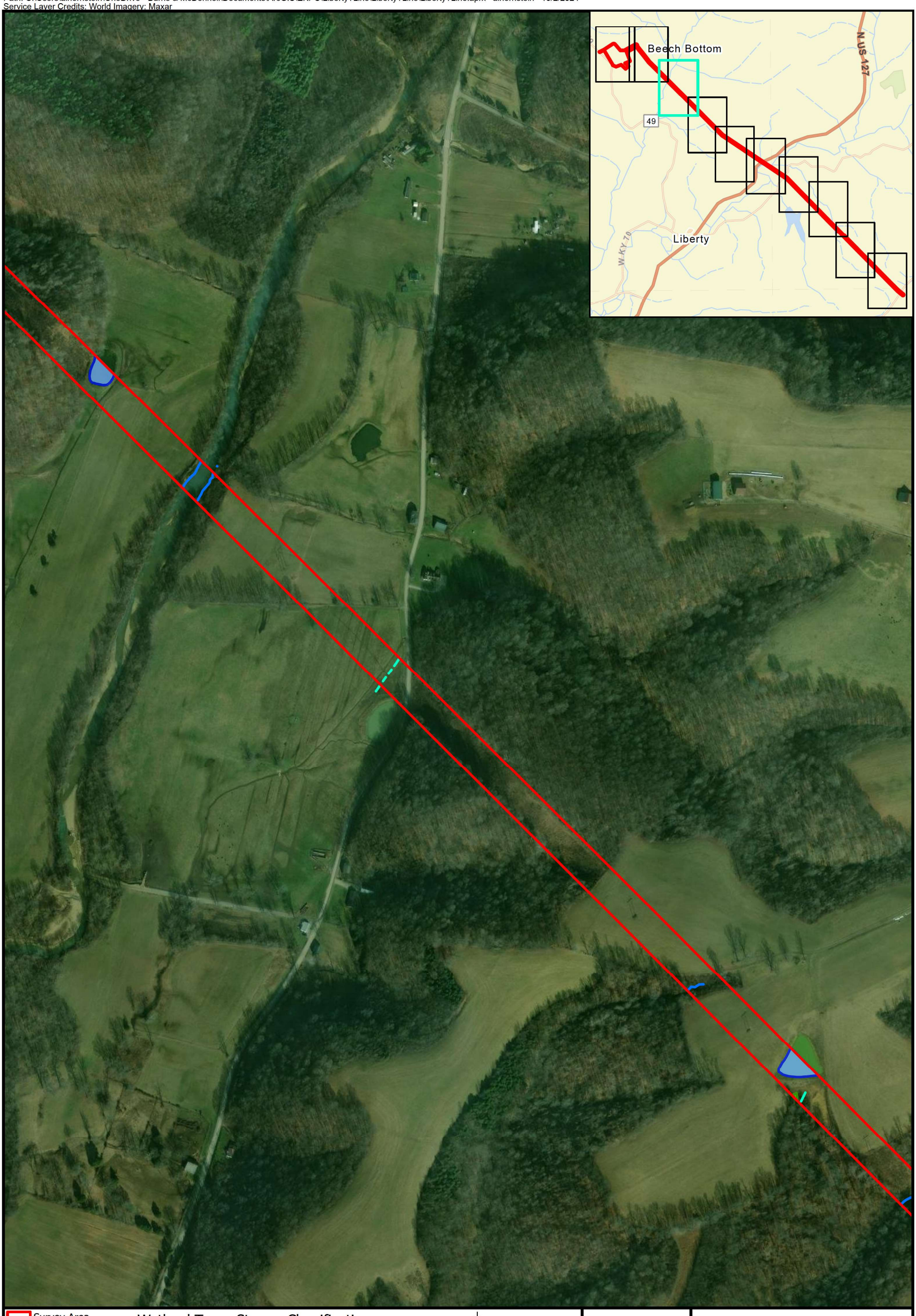

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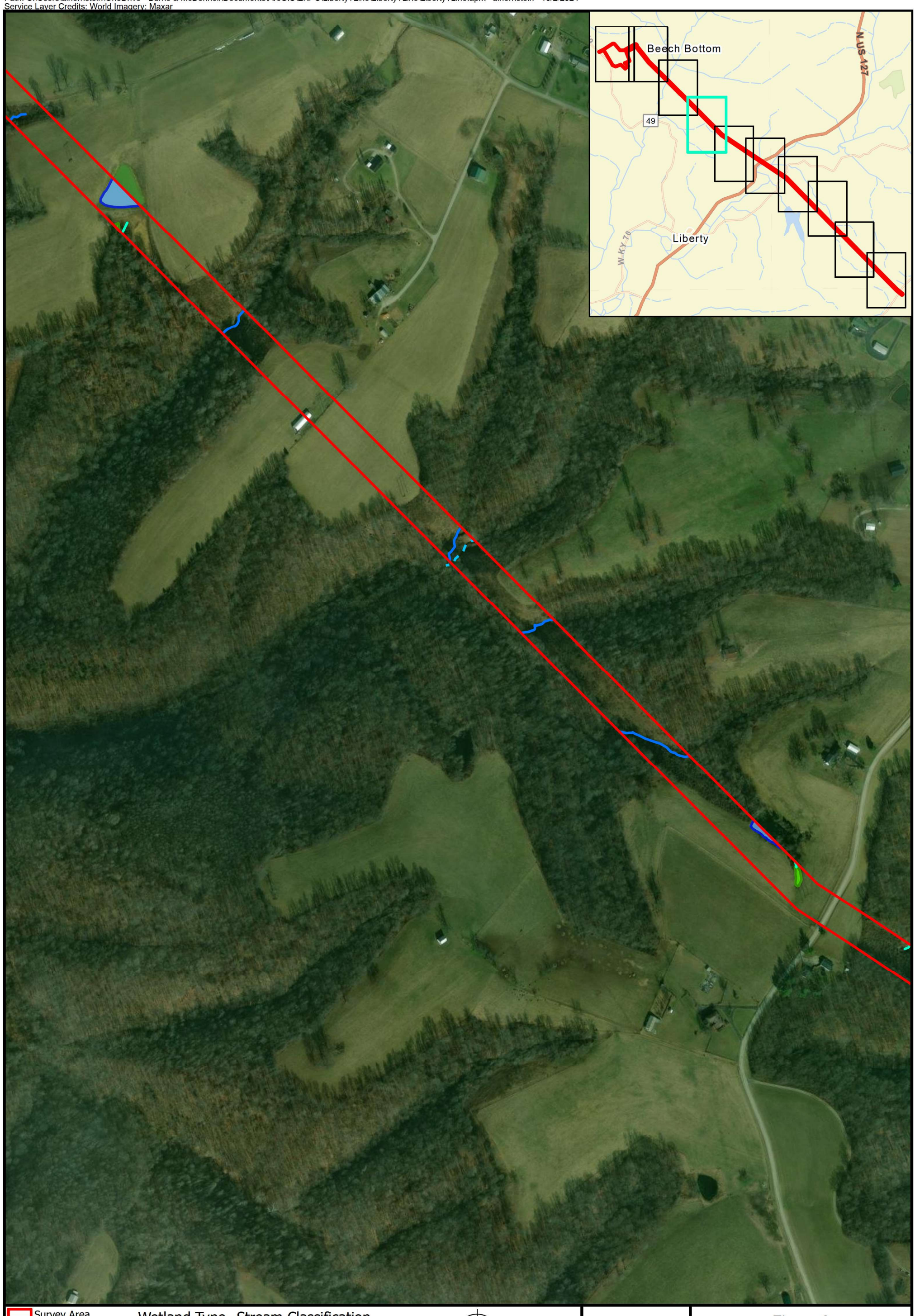

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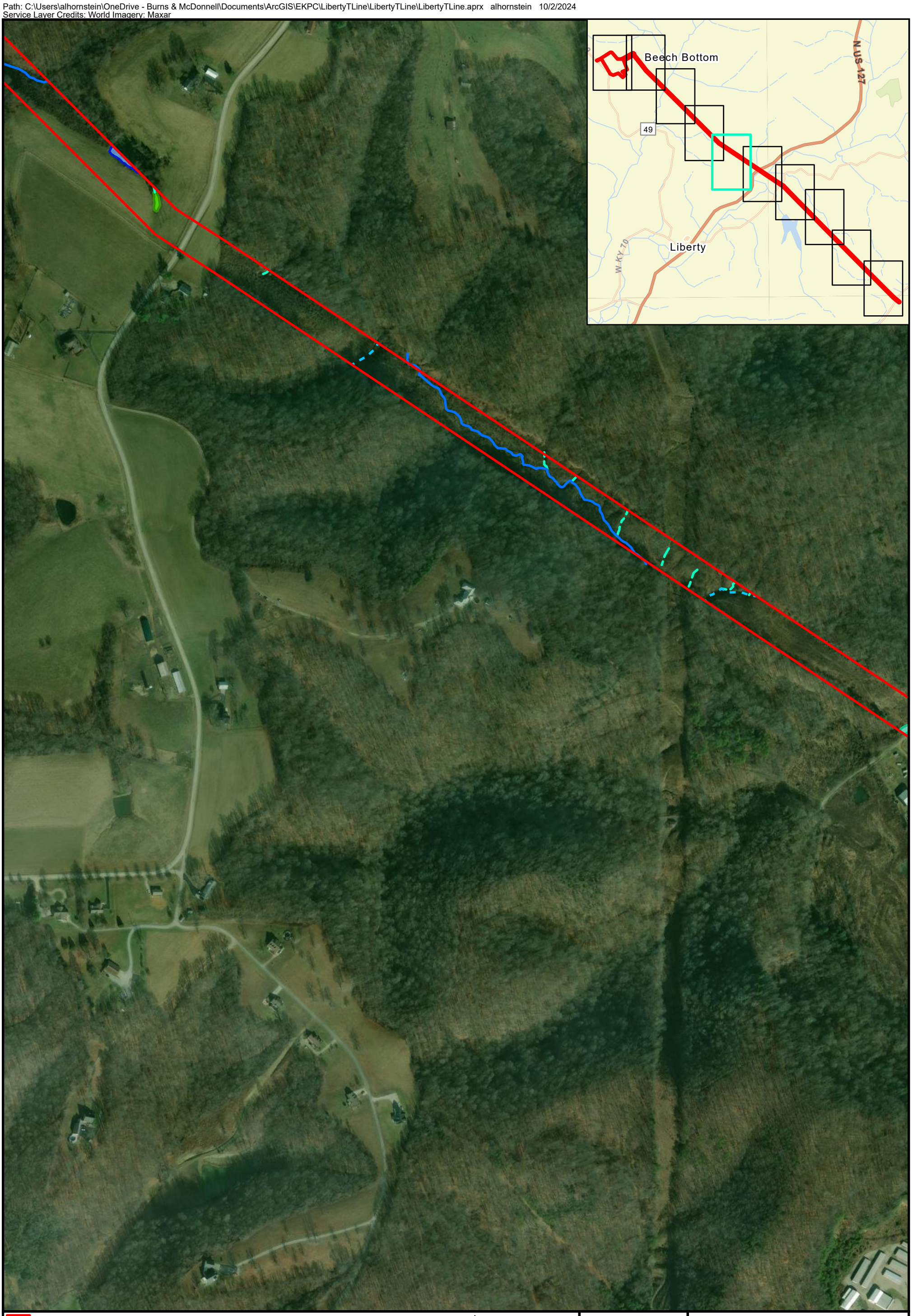

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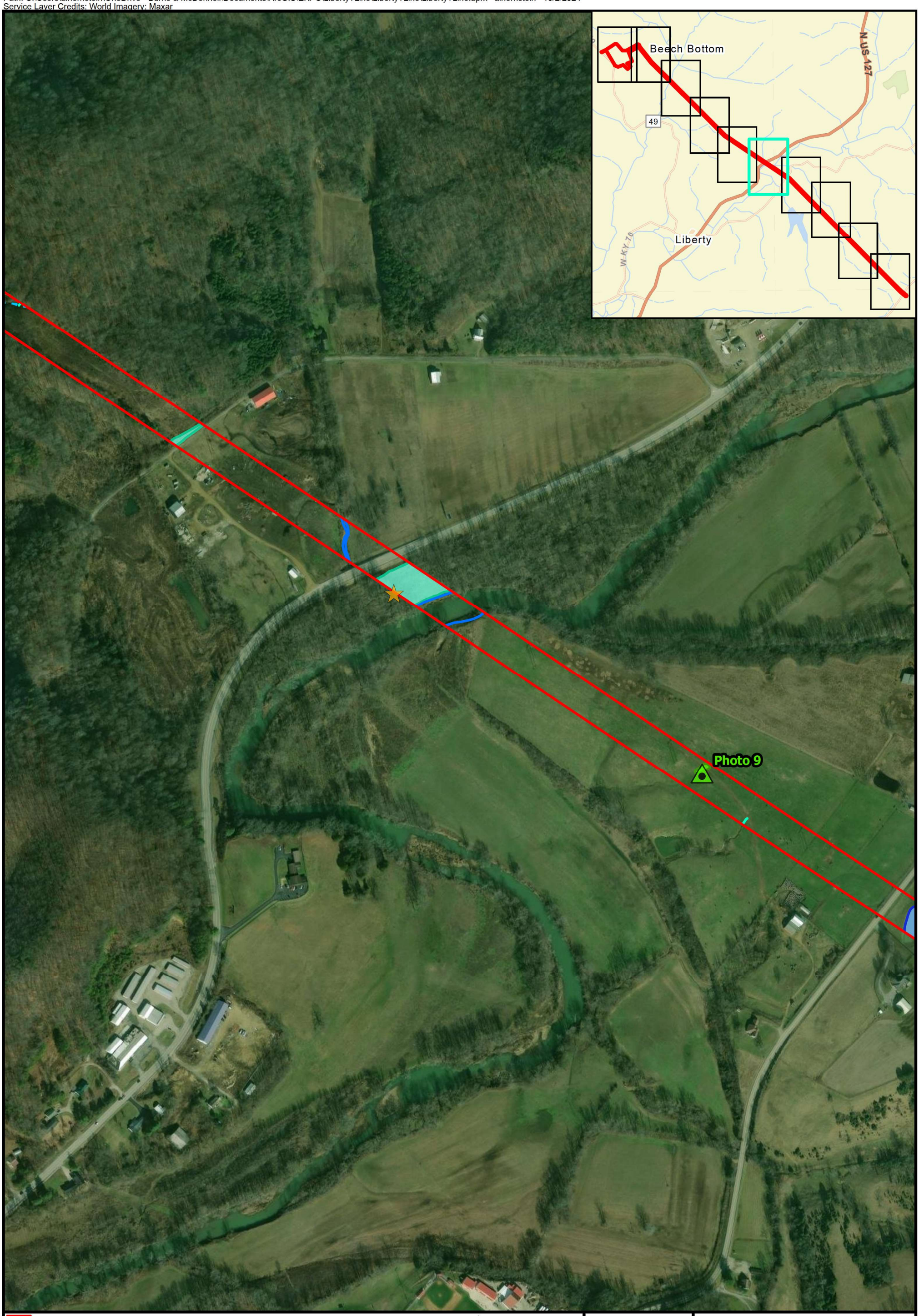

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Scale in Feet

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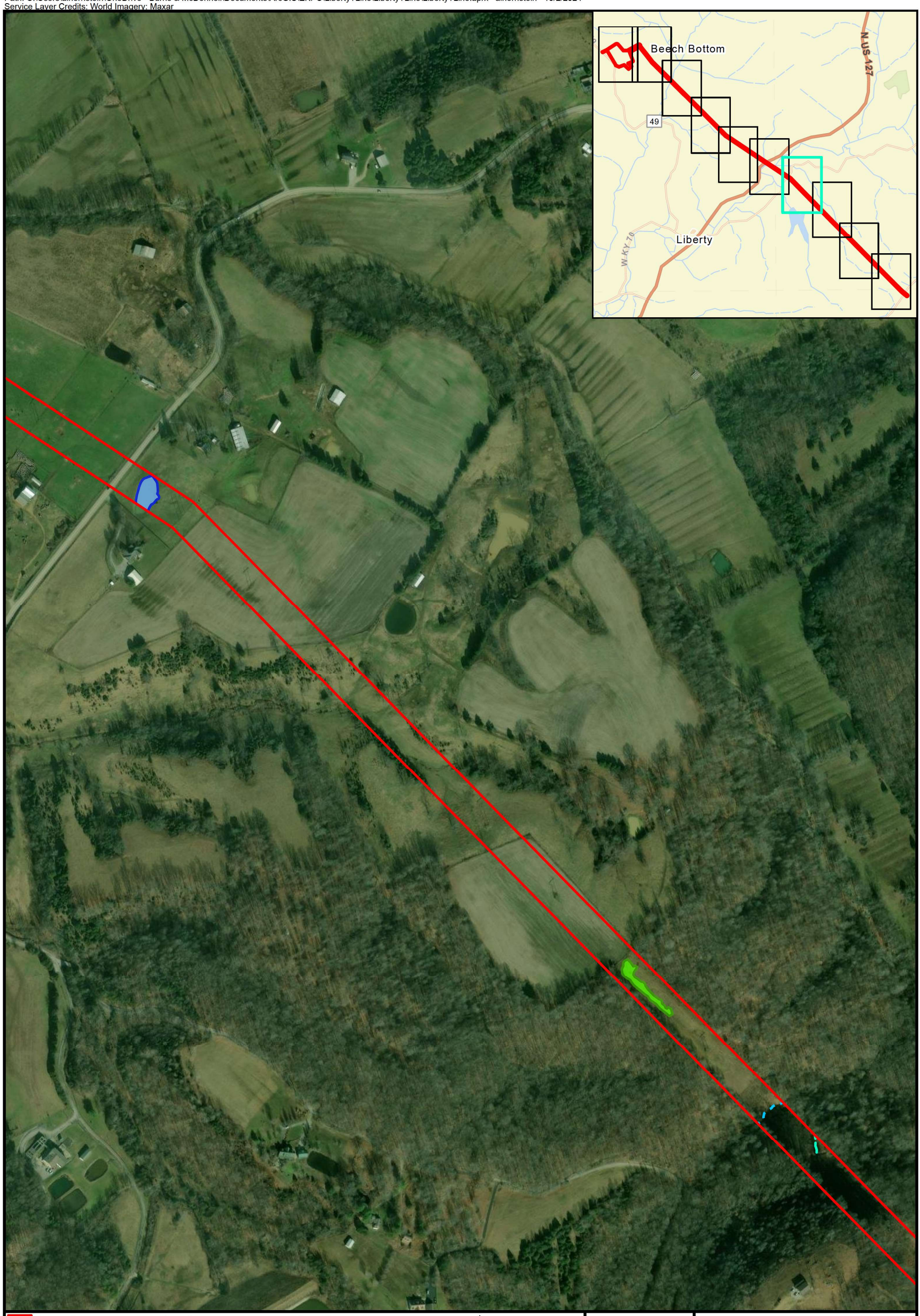
Figure 2
Protected Species Survey Map
Liberty RICE Plant Project
EKPC
Casey County, KY

Source: Burns & McDonnell, ESRI

Issued: 10/2/2024

Path: C:\Users\alhornstein\OneDrive - Burns & McDonnell\Documents\ArcGIS\EKPC\LibertyTLine\LibertyTLine\LibertyTLine.aprx alhornstein 10/2/2024
Service Layer Credits: World Imagery: Maxar



BURNS McDONNELL

Figure 2
Protected Species Survey Map
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EKPC
Casey County, KY

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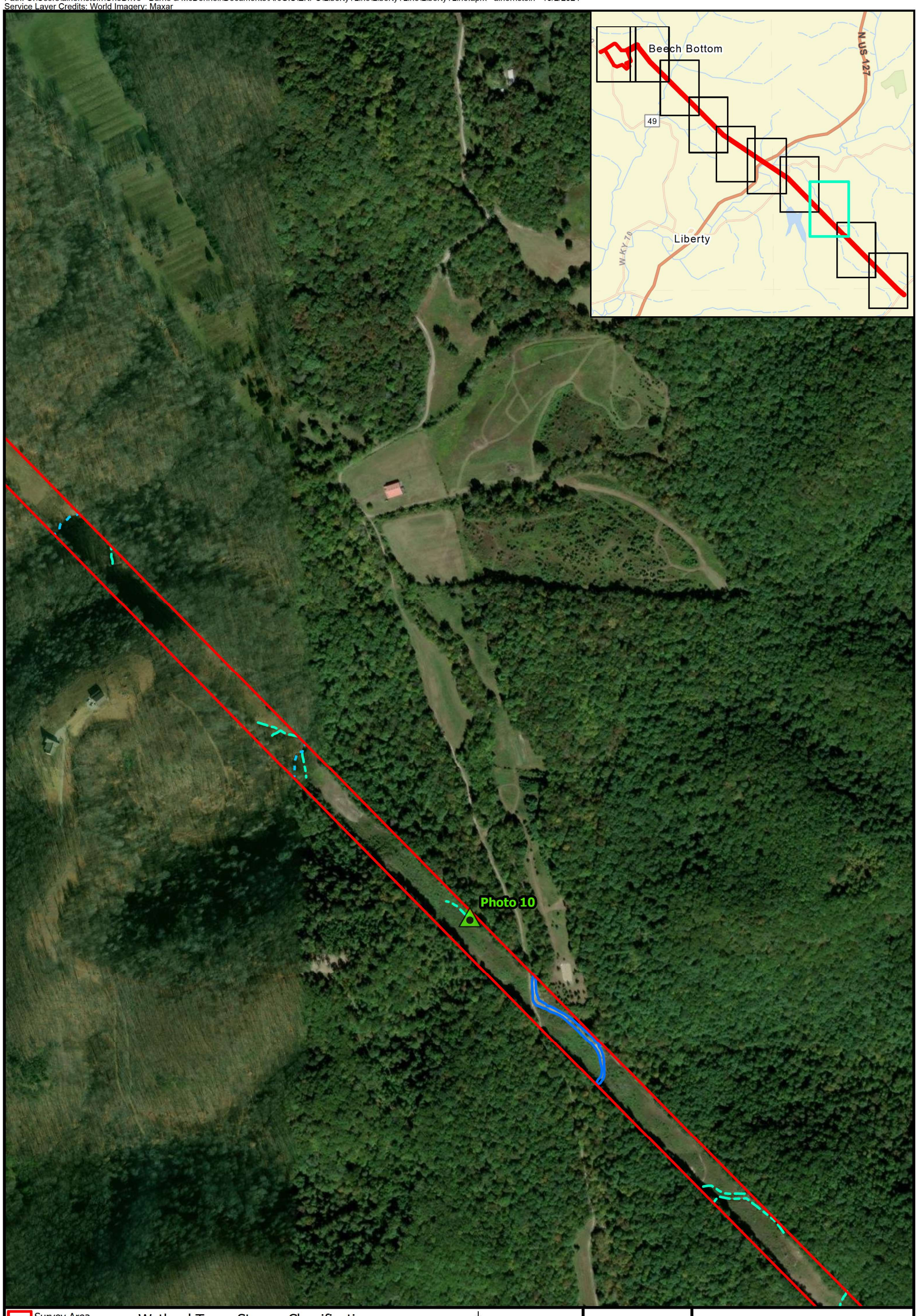

Source: Burns & McDonnell, ESRI

Issued: 10/2/2024

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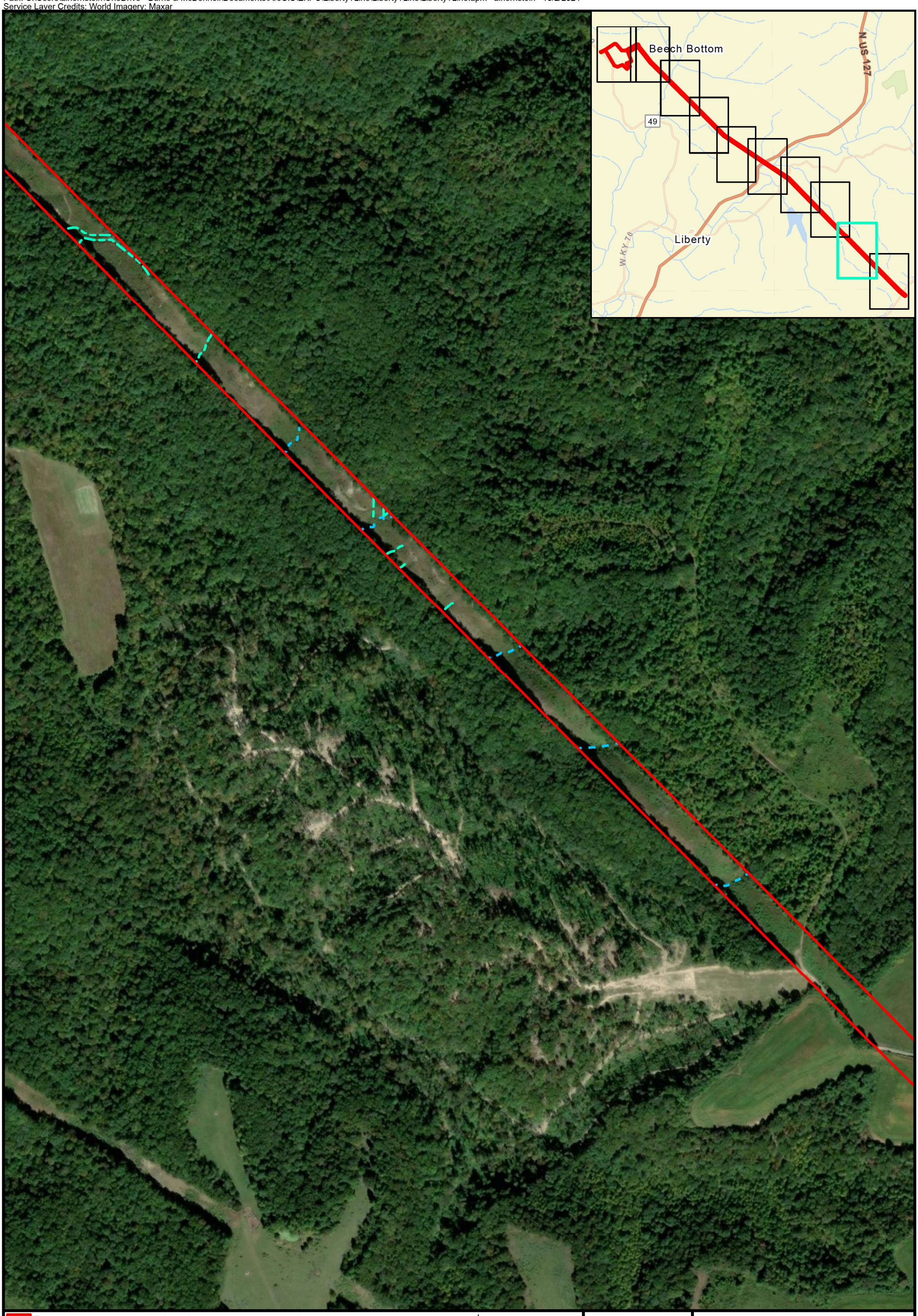

BURNS McDONNELL

Figure 2
Protected Species Survey Map
Liberty RICE Plant Project
EKPC
Casey County, KY

Source: Burns & McDonnell, ESRI

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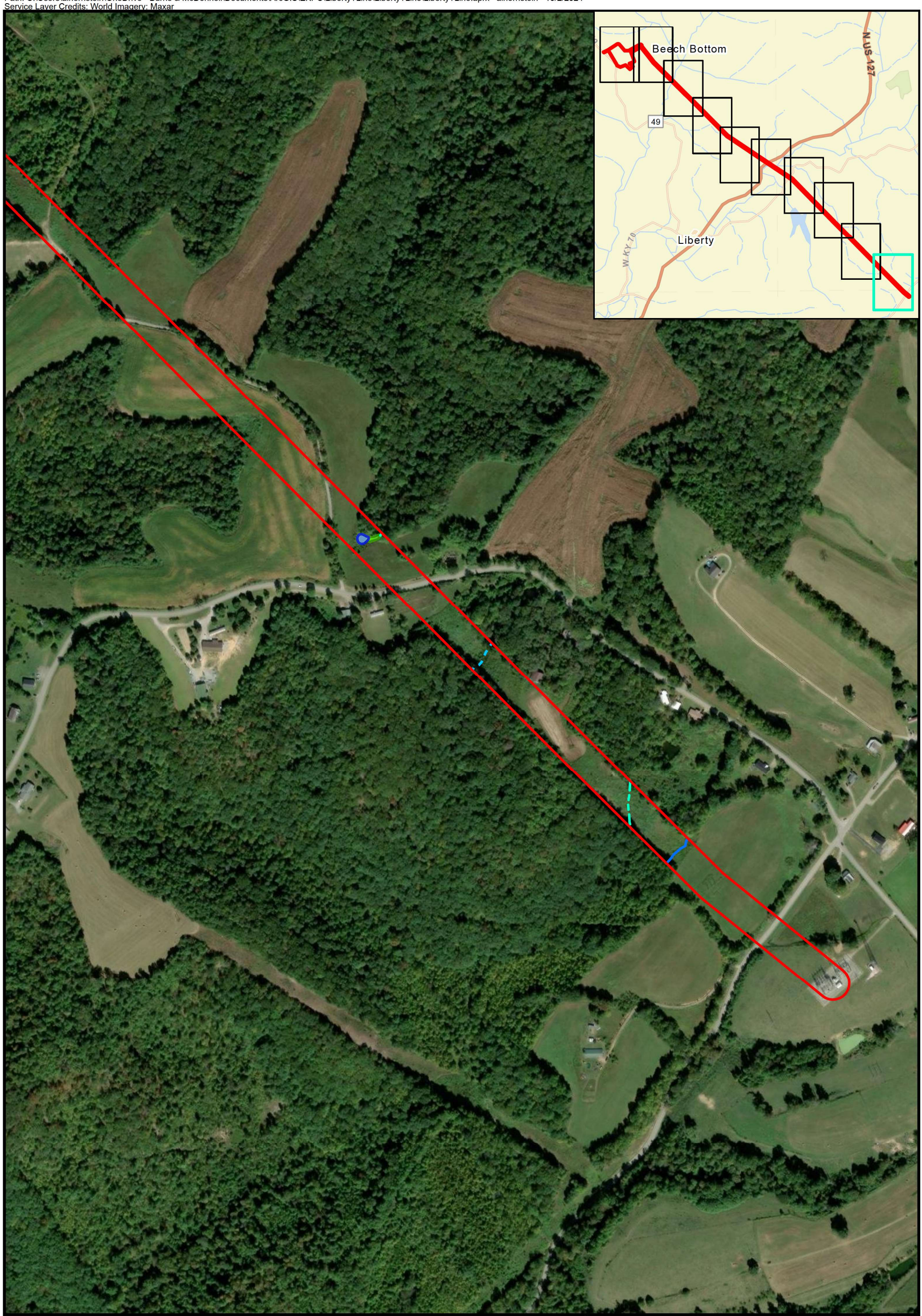
Service Layer Credits: World Imagery: Maxar



Survey Area
Photo Point
Potential Roost Tree

Wetland Type
Emergent
Scrub-Shrub
Pond

Stream Classification
Ephemeral
Intermittent
Perennial

NORTH

400 200 0 400
Scale in Feet

BURNS McDONNELL

Figure 2
Protected Species Survey Map
Liberty RICE Plant Project
EKPC
Casey County, KY

Source: Burns & McDonnell, ESRI

Issued: 10/2/2024

APPENDIX B - PHOTOGRAPH LOG

Photo 1: View of representative active agricultural habitat, facing southeast.

Photo 2: View of representative open water pond habitat, facing north.

Photo 3: View of representative maintained grass habitat, facing south.

Photo 4: View of representative forested habitat, facing west.

Photo 5: View of representative perennial stream and forested habitat, facing south.

Photo 6: View of representative potential roost tree, facing west.

Photo 7: View of representative intermittent stream habitat, facing south.

Photo 8: View of representative ephemeral stream habitat, facing southwest.

Photo 9: View of representative pasture habitat, facing southeast.

Photo 10: View of representative old field habitat, facing southeast.

APPENDIX C - SPECIES LISTS

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Casey and Taylor counties, Kentucky

Local office

Kentucky Ecological Services Field Office

(502) 695-0467
(502) 695-1024
kentuckyes@fws.gov

J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* Wherever found This species only needs to be considered if the following condition applies: • The project area includes potential gray bat habitat. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* Wherever found This species only needs to be considered if the following condition applies: • The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

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

Clams

NAME	STATUS
Fanshell Cyprogenia stegaria Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4822	Endangered
Pink Mucket (pearlymussel) Lampsilis abrupta Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7829	Endangered
Salamander Mussel Simpsonaias ambigua Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6208	Proposed Endangered
Snuffbox Mussel Epioblasma triquetra Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4135	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

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

There are no critical habitats at this location.

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

Bald & Golden Eagles

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

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

Additional information can be found using the following links:

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

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

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

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read

"Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

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

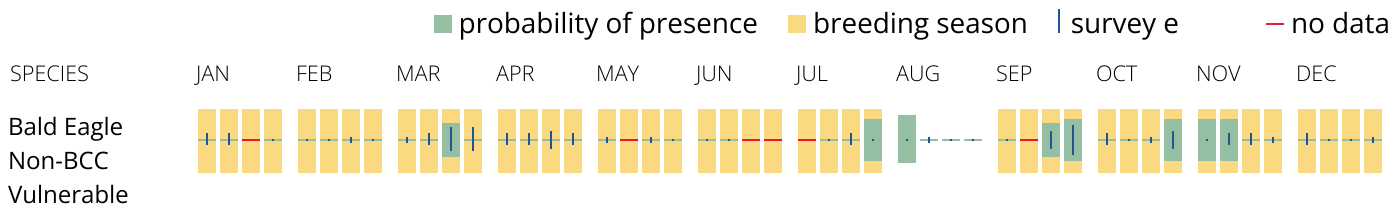
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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



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

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

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

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

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

What if I have eagles on my list?

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

Migratory birds

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

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

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

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

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

NAME	BREEDING SEASON

Bald Eagle Haliaeetus leucocephalus — Breeds Sep 1 to Jul 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Bobolink Dolichonyx oryzivorus — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cerulean Warbler Setophaga cerulea — Breeds Apr 23 to Jul 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2974

Chimney Swift Chaetura pelagica — Breeds Mar 15 to Aug 25
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Eastern Whip-poor-will Antrostomus vociferus — Breeds May 1 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Field Sparrow Spizella pusilla — Breeds Mar 1 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Grasshopper Sparrow Ammodramus savannarum perpallidus — Breeds Jun 1 to Aug 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8329

Kentucky Warbler Geothlypis formosa — Breeds Apr 20 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prairie Warbler Setophaga discolor — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prothonotary Warbler Protonotaria citrea — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker Melanerpes erythrocephalus — Breeds May 10 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the

probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

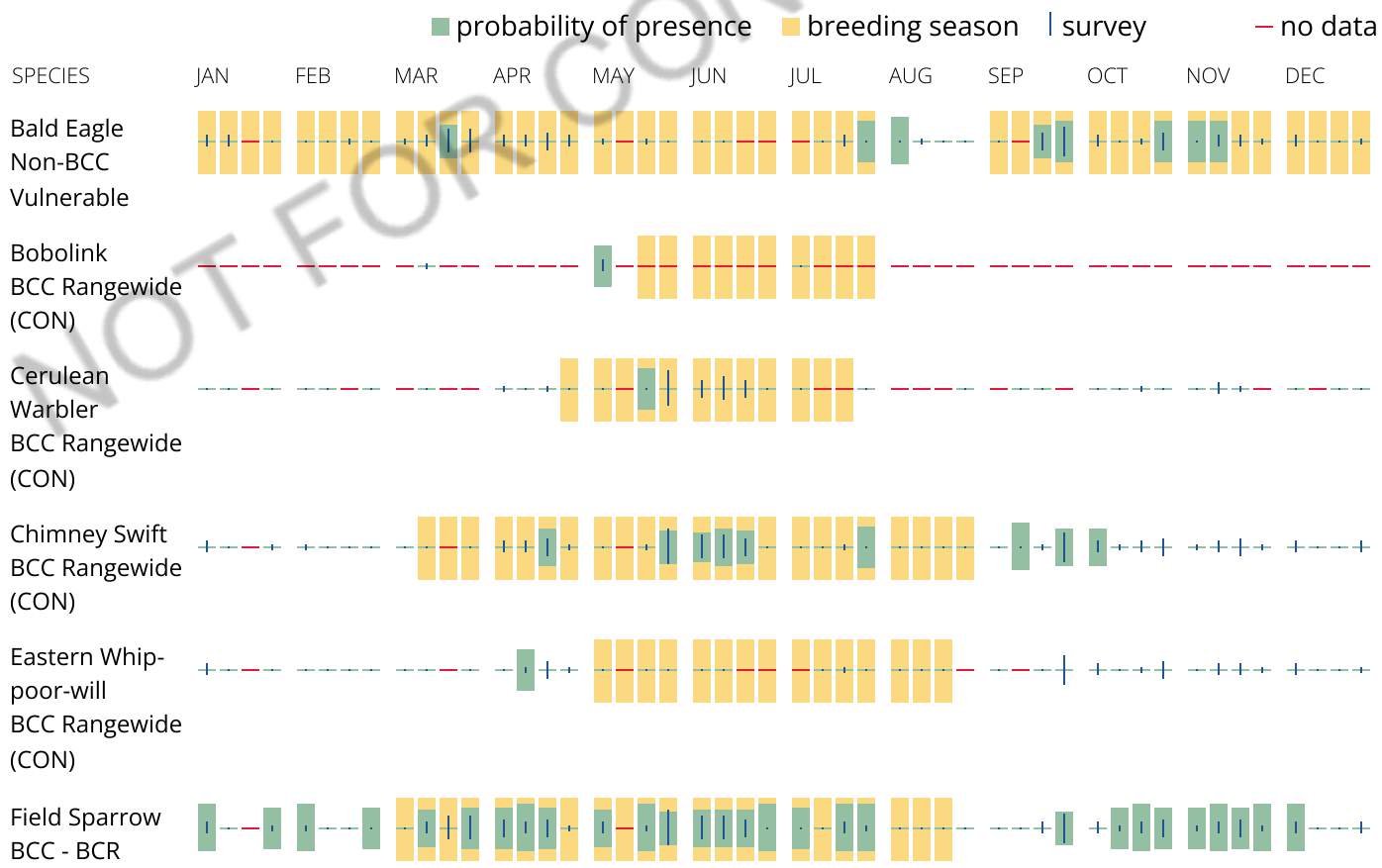
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

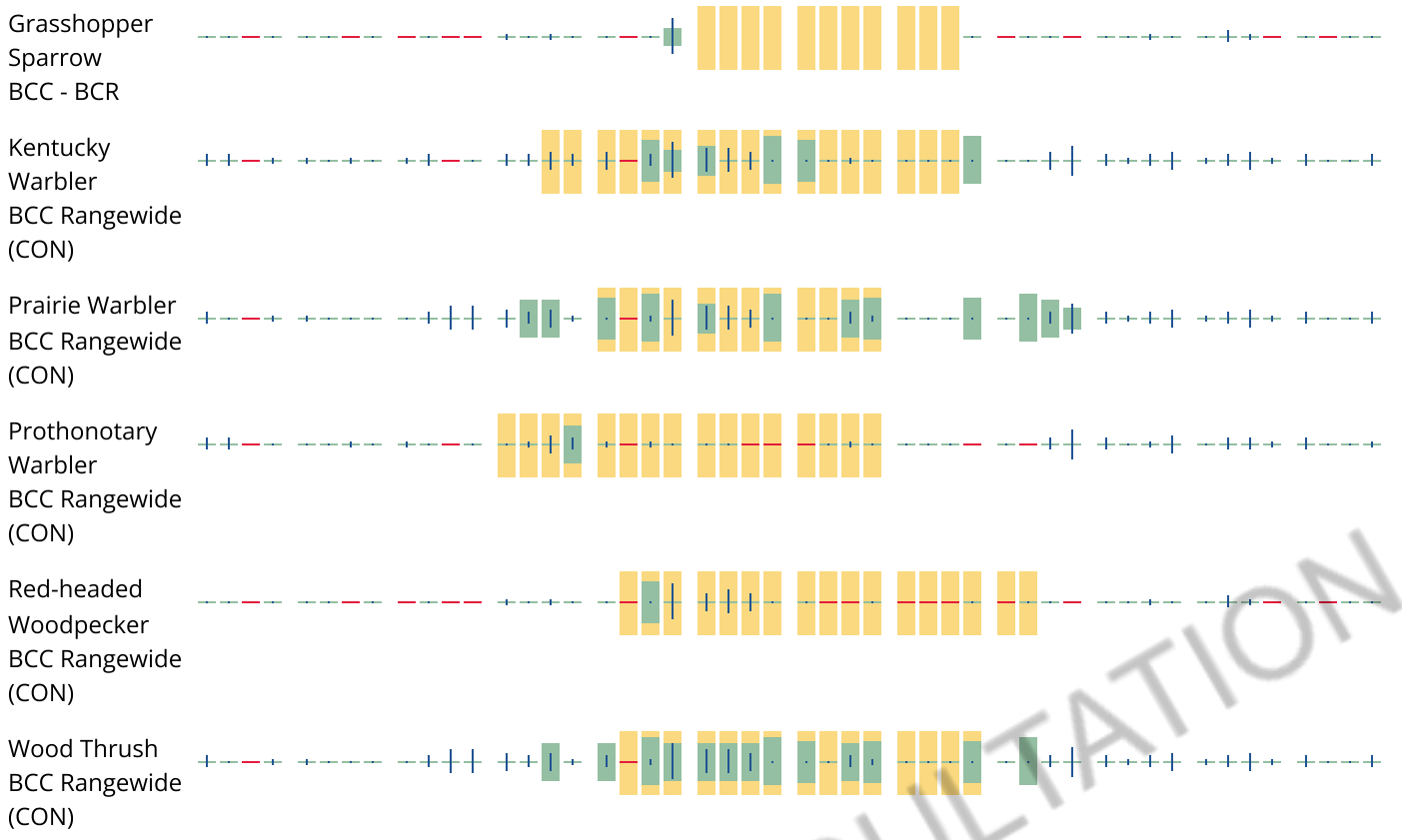
Survey E ort ( )
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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

No Data ( )
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.





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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

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

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

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

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

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

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

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

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

Data limitations

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

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

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

Data exclusions

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

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local

government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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 1 selected county.
Selected county is: Casey.

Scientific Name and Life History	Common Name and Pictures	Class	County	US Status	KY Status	WAP	Reference
Accipiter cooperii	Cooper's Hawk	Aves	Casey	N	N		Reference
Accipiter striatus	Sharp-shinned Hawk	Aves	Casey	N	S	Yes	Reference
Acris blanchardi	Blanchard's Cricket Frog	Amphibia	Casey	N	N	Yes	Reference
Acris crepitans	Eastern Cricket Frog	Amphibia	Casey	N	N		Reference
Actinonaias ligamentina	Mucket	Bivalvia	Casey	N	N		Reference
Agelaius phoeniceus	Red-winged Blackbird	Aves	Casey	N	N		Reference
Agkistrodon contortrix	Eastern Copperhead	Reptilia	Casey	N	N		Reference
Aix sponsa	Wood Duck	Aves	Casey	N	N		Reference
Alosa chrysochloris	Skipjack Herring	Actinopterygii	Casey	N	N		Reference
Amblema plicata	Threeridge	Bivalvia	Casey	N	N		Reference
Ambloplites rupestris	Rock Bass	Actinopterygii	Casey	N	N		Reference
Ambystoma barbouri	Streamside Salamander	Amphibia	Casey	N	N	Yes	Reference
Ambystoma jeffersonianum	Jefferson Salamander	Amphibia	Casey	N	N		Reference

Ambystoma maculatum	Spotted Salamander	Amphibia	Casey	N	N		Reference
Ambystoma opacum	Marbled Salamander	Amphibia	Casey	N	N		Reference
Ameiurus natalis	Yellow Bullhead	Actinopterygii	Casey	N	N		Reference
Ammodramus savannarum	Grasshopper Sparrow	Aves	Casey	N	N	Yes	Reference
Anas platyrhynchos	Mallard	Aves	Casey	N	N		Reference
Anas rubripes	American Black Duck	Aves	Casey	N	N	Yes	Reference
Anaxyrus americanus	American Toad	Amphibia	Casey	N	N		Reference
Anaxyrus fowleri	Fowler's Toad	Amphibia	Casey	N	N		Reference
Aneides aeneus	Green Salamander	Amphibia	Casey	N	N	Yes	Reference
Antigone canadensis	Sandhill Crane	Aves	Casey	N	N		Reference
Antrostomus carolinensis	Chuck-will's-widow	Aves	Casey	N	N	Yes	Reference
Antrostomus vociferus	Whip-poor-will	Aves	Casey	N	N	Yes	Reference
Apalone spinifera spinifera	Eastern Spiny Softshell	Chelonia	Casey	N	N		Reference
Archilochus colubris	Ruby-throated Hummingbird	Aves	Casey	N	N		Reference
Ardea alba	Great Egret	Aves	Casey	N	T	Yes	Reference
Ardea herodias	Great Blue Heron	Aves	Casey	N	N		Reference
Baeolophus bicolor	Tufted Titmouse	Aves	Casey	N	N		Reference
Barbicambarus cornutus	Bottlebrush Crayfish	Malacostraca	Casey	N	S	Yes	Reference
Blarina brevicauda	Northern Short-tailed Shrew	Mammalia	Casey	N	N		Reference
Bombycilla cedrorum	Cedar Waxwing	Aves	Casey	N	N		Reference
Bonasa umbellus	Ruffed Grouse	Aves	Casey	N	N	Yes	Reference
Branta canadensis	Canada Goose	Aves	Casey	N	N		Reference

Bubo virginianus	Great Horned Owl	Aves	Casey	N	N		Reference
Buteo jamaicensis	Red-tailed Hawk	Aves	Casey	N	N		Reference
Buteo lineatus	Red-shouldered Hawk	Aves	Casey	N	N		Reference
Buteo platypterus	Broad-winged Hawk	Aves	Casey	N	N		Reference
Butorides virescens	Green Heron	Aves	Casey	N	N	Yes	Reference
Cambarus graysoni	Twospot Crayfish	Malacostraca	Casey	N	N	Yes	Reference
Cambarus ortmanni	Ortmann's Mudbug	Malacostraca	Casey	N	N	Yes	Reference
Campostoma anomalum	Central Stoneroller	Actinopterygii	Casey	N	N		Reference
Campostoma oligolepis	Largescale Stoneroller	Actinopterygii	Casey	N	N		Reference
Canis latrans	Coyote	Mammalia	Casey	N	N		Reference
Cardinalis cardinalis	Northern Cardinal	Aves	Casey	N	N		Reference
Carphophis amoenus	Common Wormsnake	Reptilia	Casey	N	N		Reference
Castor canadensis	American Beaver	Mammalia	Casey	N	N		Reference
Cathartes aura	Turkey Vulture	Aves	Casey	N	N		Reference
Catharus guttatus	Hermit Thrush	Aves	Casey	N	N		Reference
Catharus minimus	Gray-cheeked Thrush	Aves	Casey	N	N		Reference
Catostomus commersonii	White Sucker	Actinopterygii	Casey	N	N		Reference
Chaetura pelagica	Chimney Swift	Aves	Casey	N	N		Reference
Charadrius vociferus	Killdeer	Aves	Casey	N	N		Reference
Chelydra serpentina	Snapping Turtle	Chelonia	Casey	N	N		Reference
Chordeiles minor	Common Nighthawk	Aves	Casey	N	N		Reference
Chrosomus erythrogaster	Southern Redbelly Dace	Actinopterygii	Casey	N	N		Reference

Chrysemys picta	Painted Turtle	Chelonia	Casey	N	N		Reference
Circus hudsonius	Northern Harrier	Aves	Casey	N	T	Yes	Reference
Coccyzus americanus	Yellow-billed Cuckoo	Aves	Casey	N	N	Yes	Reference
Colaptes auratus	Northern Flicker	Aves	Casey	N	N		Reference
Colinus virginianus	Northern Bobwhite	Aves	Casey	N	N	Yes	Reference
Coluber constrictor	North American Racer	Reptilia	Casey	N	N		Reference
Columba livia	Rock Pigeon	Aves	Casey	N	N		Reference
Contopus virens	Eastern Wood-Pewee	Aves	Casey	N	N		Reference
Coragyps atratus	Black Vulture	Aves	Casey	N	N		Reference
Corbicula fluminea	Asiatic Clam	Bivalvia	Casey	N	N		Reference
Corvus brachyrhynchos	American Crow	Aves	Casey	N	N		Reference
Cottus carolinae	Banded Sculpin	Actinopterygii	Casey	N	N		Reference
Crotalus horridus	Timber Rattlesnake	Reptilia	Casey	N	N	Yes	Reference
Cryptobranchus alleganiensis alleganiensis	Eastern Hellbender	Amphibia	Casey	N	S	Yes	Reference
Cyanocitta cristata	Blue Jay	Aves	Casey	N	N		Reference
Cyprinella galactura	Whitetail Shiner	Actinopterygii	Casey	N	N		Reference
Cyprinella spiloptera	Spotfin Shiner	Actinopterygii	Casey	N	N		Reference
Cyprinella whipplei	Steelcolor Shiner	Actinopterygii	Casey	N	N		Reference
Cyprinus carpio	Common Carp	Actinopterygii	Casey	N	N		Reference
Deroceras laeve	Meadow Slug	Gastropoda	Casey	N	N		Reference
Desmognathus fuscus	Northern Dusky Salamander	Amphibia	Casey	N	N	Yes	Reference
Diadophis punctatus edwardsii	Northern Ringneck Snake	Reptilia	Casey	N	N		Reference

Didelphis virginiana	Virginia Opossum	Mammalia	Casey	N	N		Reference
Dorosoma cepedianum	Gizzard Shad	Actinopterygii	Casey	N	N		Reference
Dryobates pubescens	Downy Woodpecker	Aves	Casey	N	N		Reference
Dryobates villosus	Hairy Woodpecker	Aves	Casey	N	N		Reference
Dryocopus pileatus	Pileated Woodpecker	Aves	Casey	N	N		Reference
Dumetella carolinensis	Gray Catbird	Aves	Casey	N	N		Reference
Elimia semicarinata	Fine-ridged Elimia	Gastropoda	Casey	N	N		Reference
Empidonax virescens	Acadian Flycatcher	Aves	Casey	N	N		Reference
Epioblasma triquetra	Snuffbox	Bivalvia	Casey	E	E	Yes	Reference
Eptesicus fuscus	Big Brown Bat	Mammalia	Casey	N	N		Reference
Eremophila alpestris	Horned Lark	Aves	Casey	N	N		Reference
Ericymba buccata	Silverjaw Minnow	Actinopterygii	Casey	N	N		Reference
Esox americanus	Grass Pickerel	Actinopterygii	Casey	N	N		Reference
Etheostoma barbouri	Teardrop Darter	Actinopterygii	Casey	N	N	Yes	Reference
Etheostoma blennioides	Greenside Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma caeruleum	Rainbow Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma flabellare	Fantail Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma jimmycarter	Bluegrass Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma kennicotti	Stripetail Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma lawrencei	Headwater Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma nigrum	Johnny Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma obeyense	Barcheek Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma Orientale	Eastrim Darter	Actinopterygii	Casey	N	N		Reference

Etheostoma rafinesquei	Kentucky Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma simoterum	Snubnose Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma spectabile	Orangethroat Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma squamiceps	Spottail Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma stigmaeum	Speckled Darter	Actinopterygii	Casey	N	N		Reference
Etheostoma zonale	Banded Darter	Actinopterygii	Casey	N	N		Reference
Eurycea cirrigera	Southern Two-lined Salamander	Amphibia	Casey	N	N		Reference
Eurycea longicauda	Long-tailed Salamander	Amphibia	Casey	N	N		Reference
Eurycea lucifuga	Cave Salamander	Amphibia	Casey	N	N		Reference
Eurynia dilatata	Spike	Bivalvia	Casey	N	N		Reference
Falco sparverius	American Kestrel	Aves	Casey	N	N	Yes	Reference
Faxonius putnami	Phallic Crayfish	Malacostraca	Casey	N	N		Reference
Faxonius rusticus	Rusty Crayfish	Malacostraca	Casey	N	N	Yes	Reference
Fundulus catenatus	Northern Studfish	Actinopterygii	Casey	N	N		Reference
Gallinago delicata	Wilson's Snipe	Aves	Casey	N	N	Yes	Reference
Gambusia affinis	Western Mosquitofish	Actinopterygii	Casey	N	N		Reference
Gastrophryne carolinensis	Eastern Narrow-mouthed Toad	Amphibia	Casey	N	N		Reference
Geothlypis formosa	Kentucky Warbler	Aves	Casey	N	N	Yes	Reference
Geothlypis trichas	Common Yellowthroat	Aves	Casey	N	N		Reference
Glaucomys volans	Southern Flying Squirrel	Mammalia	Casey	N	N		Reference
Graptemys geographica	Northern Map Turtle	Chelonia	Casey	N	N		Reference

Gyrinophilus porphyriticus duryi	Kentucky Spring Salamander	Amphibia	Casey	N	N		Reference
Haemorhous mexicanus	House Finch	Aves	Casey	N	N		Reference
Haemorhous purpureus	Purple Finch	Aves	Casey	N	N		Reference
Haliaeetus leucocephalus	Bald Eagle	Aves	Casey	N	S	Yes	Reference
Helmitheros vermivorum	Worm-eating Warbler	Aves	Casey	N	N		Reference
Hemidactylium scutatum	Four-toed Salamander	Amphibia	Casey	N	N		Reference
Heterodon platirhinos	Eastern Hog-nosed Snake	Reptilia	Casey	N	N		Reference
Hirundo rustica	Barn Swallow	Aves	Casey	N	N		Reference
Hyalella azteca	No Common Name (Hyalella azteca)	Malacostraca	Casey	N	N		Reference
Hybopsis amblops	Bigeye Chub	Actinopterygii	Casey	N	N		Reference
Hyla chrysoscelis	Cope's Gray Treefrog	Amphibia	Casey	N	N		Reference
Hylocichla mustelina	Wood Thrush	Aves	Casey	N	N	Yes	Reference
Hypentelium nigricans	Northern Hog Sucker	Actinopterygii	Casey	N	N		Reference
Ictalurus punctatus	Channel Catfish	Actinopterygii	Casey	N	N		Reference
Icteria virens	Yellow-breasted Chat	Aves	Casey	N	N		Reference
Icterus galbula	Baltimore Oriole	Aves	Casey	N	N		Reference
Icterus spurius	Orchard Oriole	Aves	Casey	N	N		Reference
Junco hyemalis	Dark-eyed Junco	Aves	Casey	N	S		Reference
Labidesthes sicculus	Brook Silverside	Actinopterygii	Casey	N	N		Reference
Lampetra aepyptera	Least Brook Lamprey	Petromyzontida	Casey	N	N		Reference

Lampropeltis nigra	Eastern Black Kingsnake	Reptilia	Casey	N	N		Reference
Lampropeltis triangulum	Eastern Milksnake	Reptilia	Casey	N	N		Reference
Lampsilis cardium	Plain Pocketbook	Bivalvia	Casey	N	N		Reference
Lampsilis siliquoidea	Fatmucket	Bivalvia	Casey	N	N		Reference
Lanius ludovicianus	Loggerhead Shrike	Aves	Casey	N	S	Yes	Reference
Larus argentatus	Herring Gull	Aves	Casey	N	N		Reference
Lasiurus borealis	Eastern Red Bat	Mammalia	Casey	N	N		Reference
Lasiurus cinereus	Hoary Bat	Mammalia	Casey	N	N		Reference
Lasmigona costata	Flutedshell	Bivalvia	Casey	N	N		Reference
Leaunio lienosus	Little Spectaclecase	Bivalvia	Casey	N	T	Yes	Reference
Leiothlypis peregrina	Tennessee Warbler	Aves	Casey	N	N		Reference
Lepisosteus osseus	Longnose Gar	Actinopterygii	Casey	N	N		Reference
Lepomis cyanellus	Green Sunfish	Actinopterygii	Casey	N	N		Reference
Lepomis gulosus	Warmouth	Actinopterygii	Casey	N	N		Reference
Lepomis macrochirus	Bluegill	Actinopterygii	Casey	N	N		Reference
Lepomis megalotis	Longear Sunfish	Actinopterygii	Casey	N	N		Reference
Lepomis microlophus	Redear Sunfish	Actinopterygii	Casey	N	N		Reference
Lithasia obovata	Shawnee Rocksnail	Gastropoda	Casey	N	N		Reference
Lithobates catesbeianus	American Bullfrog	Amphibia	Casey	N	N		Reference
Lithobates clamitans	Green Frog	Amphibia	Casey	N	N		Reference
Lithobates palustris	Pickerel Frog	Amphibia	Casey	N	N		Reference
Lithobates sphenocephalus	Southern Leopard Frog	Amphibia	Casey	N	N		Reference
Lithobates sylvaticus	Wood Frog	Amphibia	Casey	N	N		Reference

Lontra canadensis	Northern River Otter	Mammalia	Casey	N	N		Reference
Luxilus chrysocephalus	Striped Shiner	Actinopterygii	Casey	N	N		Reference
Lynx rufus	Bobcat	Mammalia	Casey	N	N		Reference
Lythrurus fasciolaris	Scarlet Shiner	Actinopterygii	Casey	N	N		Reference
Lythrurus fumeus	Ribbon Shiner	Actinopterygii	Casey	N	N		Reference
Lythrurus umbratilis	Redfin Shiner	Actinopterygii	Casey	N	N		Reference
Maccaffertium bednariki	A Heptageniid Mayfly	Insecta	Casey	N	S	Yes	Reference
Megaceryle alcyon	Belted Kingfisher	Aves	Casey	N	N		Reference
Megascops asio	Eastern Screech-Owl	Aves	Casey	N	N		Reference
Melanerpes carolinus	Red-bellied Woodpecker	Aves	Casey	N	N		Reference
Melanerpes erythrocephalus	Red-headed Woodpecker	Aves	Casey	N	N	Yes	Reference
Meleagris gallopavo	Wild Turkey	Aves	Casey	N	N		Reference
Melospiza georgiana	Swamp Sparrow	Aves	Casey	N	N		Reference
Melospiza melodia	Song Sparrow	Aves	Casey	N	N		Reference
Mephitis mephitis	Striped Skunk	Mammalia	Casey	N	N		Reference
Mesodon thyroidus	White-lip Globe	Gastropoda	Casey	N	N		Reference
Micromenetus dilatatus	Bugle Sprite	Gastropoda	Casey	N	N		Reference
Micropterus dolomieu	Smallmouth Bass	Actinopterygii	Casey	N	N		Reference
Micropterus salmoides	Largemouth Bass	Actinopterygii	Casey	N	N		Reference
Micropterus punctulatus	Spotted Bass	Actinopterygii	Casey	N	N		Reference
Microtus ochrogaster	Prairie Vole	Mammalia	Casey	N	N		Reference
Microtus pinetorum	Woodland Vole	Mammalia	Casey	N	N		Reference

Mimus polyglottos	Northern Mockingbird	Aves	Casey	N	N		Reference
Minytrema melanops	Spotted Sucker	Actinopterygii	Casey	N	N		Reference
Mniotilta varia	Black-and-white Warbler	Aves	Casey	N	N		Reference
Molothrus ater	Brown-headed Cowbird	Aves	Casey	N	N		Reference
Morone chrysops	White Bass	Actinopterygii	Casey	N	N		Reference
Morone saxatilis	Striped Bass	Actinopterygii	Casey	N	N		Reference
Moxostoma anisurum	Silver Redhorse	Actinopterygii	Casey	N	N		Reference
Moxostoma breviceps	Smallmouth Redhorse	Actinopterygii	Casey	N	N		Reference
Moxostoma carinatum	River Redhorse	Actinopterygii	Casey	N	N		Reference
Moxostoma duquesnei	Black Redhorse	Actinopterygii	Casey	N	N		Reference
Moxostoma erythrurum	Golden Redhorse	Actinopterygii	Casey	N	N		Reference
Myiarchus crinitus	Great Crested Flycatcher	Aves	Casey	N	N		Reference
Myotis lucifugus	Little Brown Bat	Mammalia	Casey	N	T	Yes	Reference
Myotis septentrionalis	Northern Long-Eared Bat	Mammalia	Casey	E	E	Yes	Reference
Necturus maculosus	Mudpuppy	Amphibia	Casey	N	N		Reference
Neotoma magister	Allegheny Woodrat	Mammalia	Casey	N	N	Yes	Reference
Neovison vison	American Mink	Mammalia	Casey	N	N		Reference
Nerodia sipedon	Common Watersnake	Reptilia	Casey	N	N		Reference
Nocomis effusus	Redtail Chub	Actinopterygii	Casey	N	N		Reference
Notemigonus crysoleucas	Golden Shiner	Actinopterygii	Casey	N	N		Reference
Nothonotus bellus	Orangefin Darter	Actinopterygii	Casey	N	N		Reference
Nothonotus rufilineatus	Redline Darter	Actinopterygii	Casey	N	N		Reference

Nothonotus tippecanoe	Tippecanoe Darter	Actinopterygii	Casey	N	N		Reference
Notophthalmus viridescens	Eastern Newt	Amphibia	Casey	N	N		Reference
Notropis ariommus	Popeye Shiner	Actinopterygii	Casey	N	N		Reference
Notropis atherinoides	Emerald Shiner	Actinopterygii	Casey	N	N		Reference
Notropis boops	Bigeye Shiner	Actinopterygii	Casey	N	N		Reference
Notropis leuciodus	Tennessee Shiner	Actinopterygii	Casey	N	N		Reference
Notropis micropteryx	Highland Shiner	Actinopterygii	Casey	N	N		Reference
Notropis photogenis	Silver Shiner	Actinopterygii	Casey	N	N		Reference
Notropis rubellus	Rosyface Shiner	Actinopterygii	Casey	N	N		Reference
Notropis stramineus	Sand Shiner	Actinopterygii	Casey	N	N		Reference
Notropis telescopus	Telescope Shiner	Actinopterygii	Casey	N	N		Reference
Notropis volucellus	Mimic Shiner	Actinopterygii	Casey	N	N		Reference
Noturus elegans	Elegant Madtom	Actinopterygii	Casey	N	N		Reference
Noturus eleutherus	Mountain Madtom	Actinopterygii	Casey	N	N		Reference
Noturus flavus	Stonecat	Actinopterygii	Casey	N	N		Reference
Noturus miurus	Brindled Madtom	Actinopterygii	Casey	N	N		Reference
Odocoileus virginianus	White-tailed Deer	Mammalia	Casey	N	N		Reference
Oncorhynchus mykiss	Rainbow Trout	Actinopterygii	Casey	N	N		Reference
Ondatra zibethicus	Muskrat	Mammalia	Casey	N	N	Yes	Reference
Opheodrys aestivus	Rough Greensnake	Reptilia	Casey	N	N		Reference
Ophiogomphus mainensis	Maine Snaketail	Insecta	Casey	N	E	Yes	Reference
Pandion haliaetus	Osprey	Aves	Casey	N	S	Yes	Reference
Pantherophis spiloides	Gray Ratsnake	Reptilia	Casey	N	N		Reference
Parkesia motacilla	Louisiana Waterthrush	Aves	Casey	N	N	Yes	Reference

Passer domesticus	House Sparrow	Aves	Casey	N	N		Reference
Passerella iliaca	Fox Sparrow	Aves	Casey	N	N		Reference
Passerina caerulea	Blue Grosbeak	Aves	Casey	N	N		Reference
Passerina cyanea	Indigo Bunting	Aves	Casey	N	N		Reference
Percina caprodes	Logperch	Actinopterygii	Casey	N	N		Reference
Percina copelandi	Channel Darter	Actinopterygii	Casey	N	N		Reference
Percina macrocephala	Longhead Darter	Actinopterygii	Casey	N	E	Yes	Reference
Percina maculata	Blackside Darter	Actinopterygii	Casey	N	N		Reference
Percina phoxocephala	Slenderhead Darter	Actinopterygii	Casey	N	N		Reference
Percina sciera	Dusky Darter	Actinopterygii	Casey	N	N		Reference
Percina stictogaster	Frecklebelly Darter	Actinopterygii	Casey	N	N		Reference
Percopsis omiscomaycus	Trout-Perch	Actinopterygii	Casey	N	S	Yes	Reference
Perimyotis subflavus	Tricolored Bat	Mammalia	Casey	PE	T	Yes	Reference
Peromyscus leucopus	White-footed Mouse	Mammalia	Casey	N	N		Reference
Petrochelidon pyrrhonota	Cliff Swallow	Aves	Casey	N	N		Reference
Phenacobius uranops	Stargazing Minnow	Actinopterygii	Casey	N	S	Yes	Reference
Pheucticus ludovicianus	Rose-breasted Grosbeak	Aves	Casey	N	S		Reference
Physa acuta	Pewter Physa	Gastropoda	Casey	N	N		Reference
Pimephales notatus	Bluntnose Minnow	Actinopterygii	Casey	N	N		Reference
Pimephales promelas	Fathead Minnow	Actinopterygii	Casey	N	N		Reference
Pipilo erythrophthalmus	Eastern Towhee	Aves	Casey	N	N		Reference
Piranga olivacea	Scarlet Tanager	Aves	Casey	N	N		Reference
Piranga rubra	Summer Tanager	Aves	Casey	N	N		Reference

Plestiodon fasciatus	Common Five-lined Skink	Reptilia	Casey	N	N		Reference
Plethodon dorsalis	Northern Zigzag Salamander	Amphibia	Casey	N	N		Reference
Plethodon glutinosus	Northern Slimy Salamander	Amphibia	Casey	N	N		Reference
Plethodon ventralis	Southern Zigzag Salamander	Amphibia	Casey	N	N		Reference
Pleurobema sintoxia	Round Pigtoe	Bivalvia	Casey	N	N		Reference
Pluvialis dominica	American Golden-plover	Aves	Casey	N	N	Yes	Reference
Poecile carolinensis	Carolina Chickadee	Aves	Casey	N	N		Reference
Polioptila caerulea	Blue-gray Gnatcatcher	Aves	Casey	N	N		Reference
Pomoxis annularis	White Crappie	Actinopterygii	Casey	N	N		Reference
Pomoxis nigromaculatus	Black Crappie	Actinopterygii	Casey	N	N		Reference
Pooecetes gramineus	Vesper Sparrow	Aves	Casey	N	E		Reference
Procyon lotor	Northern Raccoon	Mammalia	Casey	N	N		Reference
Progne subis	Purple Martin	Aves	Casey	N	N		Reference
Protonotaria citrea	Prothonotary Warbler	Aves	Casey	N	N	Yes	Reference
Pseudacris brachyphona	Mountain Chorus Frog	Amphibia	Casey	N	N		Reference
Pseudacris crucifer	Spring Peeper	Amphibia	Casey	N	N		Reference
Pseudacris feriarum	Upland Chorus Frog	Amphibia	Casey	N	N		Reference
Pseudotriton montanus diastictus	Midland Mud Salamander	Amphibia	Casey	N	N	Yes	Reference
Pseudotriton ruber	Red Salamander	Amphibia	Casey	N	N		Reference
Ptychobranchus fasciolaris	Kidneyshell	Bivalvia	Casey	N	N		Reference

Pyganodon grandis	Giant Floater	Bivalvia	Casey	N	N		Reference
Pylodictis olivaris	Flathead Catfish	Actinopterygii	Casey	N	N		Reference
Quiscalus quiscula	Common Grackle	Aves	Casey	N	N		Reference
Regina septemvittata	Queensnake	Reptilia	Casey	N	N		Reference
Regulus satrapa	Golden-crowned Kinglet	Aves	Casey	N	N		Reference
Sayornis phoebe	Eastern Phoebe	Aves	Casey	N	N		Reference
Scalopus aquaticus	Eastern Mole	Mammalia	Casey	N	N		Reference
Sceloporus undulatus	Eastern Fence Lizard	Reptilia	Casey	N	N		Reference
Scincella lateralis	Little Brown Skink	Reptilia	Casey	N	N		Reference
Sciurus carolinensis	Eastern Gray Squirrel	Mammalia	Casey	N	N		Reference
Sciurus niger	Eastern Fox Squirrel	Mammalia	Casey	N	N		Reference
Scolopax minor	American Woodcock	Aves	Casey	N	N	Yes	Reference
Seiurus aurocapilla	Ovenbird	Aves	Casey	N	N		Reference
Semotilus atromaculatus	Creek Chub	Actinopterygii	Casey	N	N		Reference
Setophaga americana	Northern Parula	Aves	Casey	N	N		Reference
Setophaga cerulea	Cerulean Warbler	Aves	Casey	N	N	Yes	Reference
Setophaga citrina	Hooded Warbler	Aves	Casey	N	N		Reference
Setophaga coronata	Yellow-rumped Warbler	Aves	Casey	N	N		Reference
Setophaga discolor	Prairie Warbler	Aves	Casey	N	N	Yes	Reference
Setophaga dominica	Yellow-throated Warbler	Aves	Casey	N	N		Reference
Setophaga magnolia	Magnolia Warbler	Aves	Casey	N	N		Reference
Setophaga palmarum	Palm Warbler	Aves	Casey	N	N		Reference
Setophaga petechia	Yellow Warbler	Aves	Casey	N	N		Reference

Setophaga pinus	Pine Warbler	Aves	Casey	N	N		Reference
Setophaga ruticilla	American Redstart	Aves	Casey	N	N		Reference
Setophaga virens	Black-throated Green Warbler	Aves	Casey	N	N	Yes	Reference
Sialia sialis	Eastern Bluebird	Aves	Casey	N	N		Reference
Simpsonaias ambigua	Salamander Mussel	Bivalvia	Casey	N	T	Yes	Reference
Sitta canadensis	Red-breasted Nuthatch	Aves	Casey	N	E		Reference
Sitta carolinensis	White-breasted Nuthatch	Aves	Casey	N	N		Reference
Sorex fumeus	Smoky Shrew	Mammalia	Casey	N	N	Yes	Reference
Sorex hoyi	Pygmy Shrew	Mammalia	Casey	N	N	Yes	Reference
Sorex longirostris	Southeastern Shrew	Mammalia	Casey	N	N	Yes	Reference
Spatula discors	Blue-winged Teal	Aves	Casey	N	T		Reference
Spinus tristis	American Goldfinch	Aves	Casey	N	N		Reference
Spiza americana	Dickcissel	Aves	Casey	N	N	Yes	Reference
Spizella passerina	Chipping Sparrow	Aves	Casey	N	N		Reference
Spizella pusilla	Field Sparrow	Aves	Casey	N	N	Yes	Reference
Spizelloides arborea	American Tree Sparrow	Aves	Casey	N	N		Reference
Stelgidopteryx serripennis	Northern Rough-winged Swallow	Aves	Casey	N	N		Reference
Sternotherus odoratus	Eastern Musk Turtle	Chelonia	Casey	N	N		Reference
Storeria dekayi	Dekay's Brownsnake	Reptilia	Casey	N	N		Reference
Storeria occipitomaculata	Red-bellied Snake	Reptilia	Casey	N	N		Reference
Streptopelia decaocto	Eurasian Collared-dove	Aves	Casey	N	N		Reference

Strix varia	Barred Owl	Aves	Casey	N	N		Reference
Strophitus undulatus	Creeper	Bivalvia	Casey	N	N		Reference
Sturnella magna	Eastern Meadowlark	Aves	Casey	N	N	Yes	Reference
Sturnus vulgaris	European Starling	Aves	Casey	N	N		Reference
Stylurus scudderi	Zebra Clubtail	Insecta	Casey	N	E	Yes	Reference
Sylvilagus floridanus	Eastern Cottontail	Mammalia	Casey	N	N		Reference
Tachycineta bicolor	Tree Swallow	Aves	Casey	N	N		Reference
Tamias striatus	Eastern Chipmunk	Mammalia	Casey	N	N		Reference
Terrapene carolina	Eastern Box Turtle	Chelonia	Casey	N	N		Reference
Thamnophis sirtalis	Common Gartersnake	Reptilia	Casey	N	N		Reference
Thryomanes bewickii	Bewick's Wren	Aves	Casey	N	H	Yes	Reference
Thryothorus ludovicianus	Carolina Wren	Aves	Casey	N	N		Reference
Toxolasma lividum	Purple Lilliput	Bivalvia	Casey	N	E	Yes	Reference
Toxostoma rufum	Brown Thrasher	Aves	Casey	N	N		Reference
Trachemys scripta elegans	Red-eared Slider	Chelonia	Casey	N	N		Reference
Tringa solitaria	Solitary Sandpiper	Aves	Casey	N	N	Yes	Reference
Tritogonia verrucosa	Pistolgrip	Bivalvia	Casey	N	N		Reference
Troglodytes aedon	House Wren	Aves	Casey	N	N		Reference
Troglodytes hiemalis	Winter Wren	Aves	Casey	N	N		Reference
Turdus migratorius	American Robin	Aves	Casey	N	N		Reference
Tyrannus tyrannus	Eastern Kingbird	Aves	Casey	N	N		Reference
Urocyon cinereoargenteus	Gray Fox	Mammalia	Casey	N	N	Yes	Reference
Ursus americanus	American Black Bear	Mammalia	Casey	N	N		Reference

Vaejovis carolinianus	Southern Unstriped Scorpion	Arachnida	Casey	N	N		Reference
Vermivora cyanoptera	Blue-winged Warbler	Aves	Casey	N	N	Yes	Reference
Villosa iris	Rainbow (genus Villosa)	Bivalvia	Casey	N	N		Reference
Vireo flavifrons	Yellow-throated Vireo	Aves	Casey	N	N		Reference
Vireo gilvus	Warbling Vireo	Aves	Casey	N	N		Reference
Vireo griseus	White-eyed Vireo	Aves	Casey	N	N		Reference
Vireo olivaceus	Red-eyed Vireo	Aves	Casey	N	N		Reference
Virginia valeriae elegans	Western Earth Snake	Reptilia	Casey	N	N		Reference
Vulpes vulpes	Red Fox	Mammalia	Casey	N	N		Reference
Zapus hudsonius	Meadow Jumping Mouse	Mammalia	Casey	N	N		Reference
Zenaida macroura	Mourning Dove	Aves	Casey	N	N		Reference
Zonotrichia albicollis	White-throated Sparrow	Aves	Casey	N	N		Reference
Zonotrichia leucophrys	White-crowned Sparrow	Aves	Casey	N	N		Reference

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