



MEMO

TO	Lynn Bark Energy Center, LLC
FROM	Environmental Resources Management, Inc.
DATE	28 July 2026
REFERENCE	0787742
SUBJECT	Protected Species Habitat Assessment for Lynn Bark Transmission Line Project

1. INTRODUCTION

Environmental Resources Management, Inc. (ERM) is pleased to provide the following Protected Species Habitat Assessment for the Lynn Bark Transmission Line Project (Project), an approximately 6.3-mile transmission line within forested, undeveloped land in Martin County, Kentucky, which is planned to connect the Lynn Bark Energy Center to the substation located on the Martin County Solar Project. The assessment includes a desktop analysis and a field survey for protected species habitat that may have the potential to affect the development of the Project. ERM recognizes that the U.S. Fish and Wildlife Service (USFWS) and Kentucky Department of Fish and Wildlife Resources (KDFWR) have responsibility for the protection of various natural resources within the Commonwealth of Kentucky.

2. SITE LOCATION

The Project is situated on approximately 201 acres located in Martin County, Kentucky. The Project is located approximately 15 miles northeast of the town of Prestonsburg, and is situated within 16 parcels, summarized below in Table 1. Access to the Project is available from Kentucky Route 906 (Coldwater Road) to the north, Kentucky Route 3 from the west, and Kentucky Route 1439 (S. Wolf Creek Road) from the east. Additionally, unnamed roads run adjacent to and throughout the Project. Figures 1 and 2 in Attachment A display the Project location on aerial imagery and topographic map.

3. METHODOLOGY

Overall conditions of the Project were assessed utilizing readily available datasets from the U.S. Geological Survey (USGS) National Mapper, aerial orthoimagery, USGS topographic maps, the Multi-Resolution Land Characteristics (MRLC) Consortium National Land Cover Database (NLCD), and observations during the habitat survey. ERM reviewed published occurrence records of protected species from available online data sources, including the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation Tool (IPaC), the Kentucky Geological Survey Karst Occurrence Map, and the Office of Kentucky Nature Preserves (OKNP) Biological Assessment Tool (KYBAT).



The Kentucky Nongame Species Conservation Act (KRS 150.183) is the primary law that governs the legal listing of threatened and endangered species in Kentucky. According to this act, species listed as “endangered” and “threatened” are legally protected under state law and are managed by the KDFWR.

A habitat assessment was conducted July 6 through 13, 2026. The survey included a targeted pedestrian and vehicular field survey for potential habitat for the species identified by the OKNP KYBAT, and USFWS IPaC data. Representative photographs from the habitat survey observations are included in Attachment B.

ERM additionally reviewed wetland and waterbody data obtained from the wetland delineation effort which was completed simultaneously as the habitat survey for potential protected aquatic species habitat. ERM utilized the delineation data in lieu of utilizing USGS National Hydrography Dataset and USFWS National Wetland Inventory in this assessment.

Following the completion of the desktop and field assessments, an analysis and discussion of the identified species, associated habitat, presence/absence of potential habitat, and recommendations for further actions to de-risk the Project’s potential impact on protected species is summarized.

4. RESULTS

4.1 EXISTING OVERALL CONDITIONS

The Project is in the Dissected Appalachian Plateau Level IV EPA Ecoregion. Topography consists of steep ridges, deep coves, and narrow valleys. The main use of land cover is mining and silviculture within abundant forested areas (Woods et. al 2002). Elevation within the Project ranges from 640 to 1,280 feet above mean sea level (AMSL). The Project is located in Coldwater Fork Watershed (HUC 050702010603; USGS 2025). The Project is a linear shape sloping diagonally northwest to southeast and is mostly surrounded by highly dissected forested ridges and reclaimed mine sites. The Site is located within the Legacy Wildlife Management Area and the Pocahontas Wildlife Management Area.

Observations from the Project visit (July 6–13, 2026) and aerial photographs identified the Project as being comprised predominantly of naturally regenerated hardwood forest dominated by chestnut oak (*Quercus montana*), bitternut hickory (*Carya cordiformis*), white pine (*Pinus strobus*), and tulip poplar (*Liriodendron tulipifera*). Reclaimed mine sites were dominated by Chinese bushclover (*Lespedeza cuneata*), autumn olive (*Elaeagnus umbellata*), black locust (*Robinia pseudoacacia*), and blackberry (*Rubus sp.*).

A GIS analysis of land use on the Project utilizing the MRLC NLCD characterized the most common land use of the Project as deciduous forest, which comprised 57.3% of the Project (115.0 acres). The second most common land use type is barren land (rock/sand/clay) (27.1%, 54.3 acres), followed by mixed forest (4.8%, 9.7 acres), grassland/herbaceous (3.6%, 7.3 acres), developed, open space (2.6%, 5.3 acres), developed, low intensity (1.5%, 3.1 acres), pasture/hay (1.2%, 2.5 acres). All other land use types – developed, medium intensity, shrub/scrub, evergreen forest, developed, high intensity – each represent less than

1% of the total Project, respectively. According to GIS analysis of the NLCD, wetland land use types are not present on the Project (MLRC 2025). A map of land use in the Project is provided in Attachment A (Figure 3).

The Kentucky Speleological Survey (KSS) is an organization that studies cave and karst resources throughout the Commonwealth of Kentucky. ERM requested data on July 12, 2026, from KSS regarding potential karst and cave habitat located within the Project. KSS reported there are no known caves within the Project Area or within a 1-mile buffer (Attachment E). The Kentucky Geological Survey Karst Occurrence Map, maintained by the University of Kentucky was analyzed for potential karst and cave habitat located within the Project. Based on a review of the Karst Occurrence in Kentucky Map, the Project is in an area underlain by bedrock with limited or no potential for Karst development and the presence of Karst features at the Project is unlikely (Paylor & Currens, 2002).

ERM conducted wetland delineations on July 7-9, 2026, August 9-11, 2024, and July 14-18, 2025. Full results of the delineations are included in a subsequent deliverable. Features observed during the delineation included 0.32 acre of wetlands and 1,380 linear feet of stream features. No open waterbodies were observed within the Project. A figure depicting the features identified during the delineation is included as Figure 4 and overall habitat as Figure 5 in Attachment A.

The Client noted to ERM that an underground mining system existed at the Project from 1925 to 1950. Mining shafts, portals, or other associated features have potential to provide habitat for protected bat species; however, none of those features were observed by ERM during the site visit.

4.2 PROTECTED SPECIES ASSESSMENT

4.2.1 FEDERAL SPECIES

Reports generated using the IPaC website (USFWS 2025a) identified one federally protected species including:

- Indiana bat (*Myotis sodalist*; FE)

Additionally, the monarch butterfly (*Danaus plexippus*) and Tricolored bat (*Perimyotis subflavus*) were identified in the IPaC report and listed as federally proposed threatened and federally proposed endangered. These species are not currently protected under the Endangered Species Act of 1973; however, they warrant analysis due to public opinion and their impending uplisting (USFWS 2025b).

Bird species that are protected by the Migratory Bird Treaty Act (MBTA) or the Bald and Golden Eagle Protection Act (BGEPA) are identified as USFWS Birds of Conservation Concern (BCC) list. The IPaC report did not include any species on the BCC list, and there are no documented cases of bald or golden eagles being present within the Project. No BCC was observed during the site visit.

Additionally, no designated USFWS critical habitat was identified within the Project. A copy of the IPaC report is included in Attachment C.

4.2.2 KENTUCKY SPECIES

The OKNP KYBAT data (OKNP 2025) was utilized to assess potential natural resources and protected species within a one-mile buffer of the Project. KYBAT did not identify protected species or protected species habitat occurrences within the Project.

The KYBAT report additionally identified the following historically occurring species within a 1-mile radius of the Project:

- Northern long-eared bat (*Myotis septentrionalis*; NLEB; SE, FE)
- Common raven (*Corvus corax*; ST, MBTA)
- Rafinesque's big-eared bat (*Corynorhinus rafinesquii*; SS)

A copy of the KYBAT report is included in Attachment D.

4.2.3 SPECIES HABITAT ANALYSIS

An on-site habitat assessment occurred concurrently with the wetland delineation. Table 1 presents a summary of the federal and state listed species, their suitable habitats, and related findings. Species with suitable habitat within the Project are discussed in more detail below the table.

TABLE 1. PROTECTED SPECIES POTENTIALLY OCCURRING AT OR IN THE VICINITY OF THE PROJECT.

Type	Species	Protection Status	Preferred Habitat	Preferred Habitat Observed in Project?	Likelihood for Occurrence in Project
Mammals	Indiana bat (<i>Myotis sodalis</i>)	FE	Mixed, hardwood, and coniferous forests and riparian areas. Hibernation occurs in caves and abandoned mines. Roosts in sloughing bark and small crevices/cracks of dead or dying trees.	Yes	Possible; all forested areas within the Project provide suitable summer roosting habitat.
	Tricolored Bat (<i>Perimyotis subflavus</i>)	PFE	Hibernation occurs in caves and abandoned mines. Roost among leaves of live or recently dead deciduous hardwood trees, but may also be found in Spanish moss, pine trees, and occasionally human structures.	Yes	Possible; Cave-like features observed in the Project may provide potential hibernation habitat. Forested areas and dead trees observed in the Project provide potential habitat.
	Northern long-eared bat (<i>Myotis septentrionalis</i>)	FE, SE	May be found roosting singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags, or dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines.	Yes	Possible; Suitable mature forest habitat observed in the Project. There is federally known NLEB habitat within the project buffer.

Type	Species	Protection Status	Preferred Habitat	Preferred Habitat Observed in Project?	Likelihood for Occurrence in Project
Mammals	Rafinesque's big-eared bat (<i>Corynorhinus rafinesquii</i>)	SS	Roosts in cave entrances, hollow hardwood trees, abandoned buildings and under bridges and in the forests.	Yes	Possible; Suitable mature forest habitat observed in the Project.
Birds	Common raven (<i>Corvus corax</i>)	ST, MBTA	Extremely common in woodlands, usually in coniferous forests and along rocky coastlines.	Yes	Possible; Suitable forested habitat present within the Project.
Insects	Monarch butterfly (<i>Danaus plexippus</i>)	PFT	Breeding exclusively occurs on patches of milkweed; otherwise, may occupy old fields and mixed woodland habitats.	Yes	Possible; Milkweed in limited quantities was observed within the project.

Note: FE = Federally Endangered; FC = Federal Candidate; FT = Federally Threatened; PFE = Proposed Federally Endangered, SE = State Endangered, ST = State Threatened, SS = State Special Concern, EXPN = Experimental Population, Non-Essential, BGEPA = Bald and Golden Eagle Protection Act, MBTA = Migratory Bird Treaty Act.

Source: USFWS 2025b, OKNP 2025.

4.2.3.1 BATS

During the summer, northern long-eared bats (NLEB) and Indiana bats roost underneath bark, in cavities, and in crevices of live and dead trees that provide suitable roosting habitat, with access to nearby open areas for foraging opportunities. Tricolored bats roost in alive and/or dead leaf clusters in the foliage of live and dead trees and sometimes utilize bridges and culverts for roosting. Rafinesque's big-eared bat prefers feeding in mature forested areas, while often roosting in hollows, cavities, or the loose bark of trees. The Project provides suitable foraging habitats for all listed bat species. Potential summer roosting habitat for the NLEB, Indiana bat, Rafinesque's big-eared bat, and tricolored bat is located throughout the Project in the forested areas. If tree clearing is anticipated to occur for this Project, timing restrictions for tree clearing and/or additional bat-specific surveys may be required. The inactive season for bats in Kentucky is from November 16 – March 31.

4.2.3.2 BIRDS

There are no documented occurrences of migratory birds or BCC within the Project. However, there is a documented occurrence of the common raven within a one-mile buffer of the Project, which occurred on October 19, 2007. Suitable forested areas were identified within the Project which could be classified as potential habitat for the common raven. The Project should incorporate avoidance and minimizations measures for Project activities taking place in these forested habitats and initiate coordination with OKNP to determine additional measures to minimize risk of potential disturbance to common ravens.

4.2.3.3 INSECTS

The monarch butterfly can be found in a variety of habitats, such as forests, agricultural fields, and meadows; however, wildflowers for feeding adults and native milkweeds (*Asclepias* spp.) as host plants must be available. During the field survey conducted from July 7-9, 2026, one distinct observation of milkweed was made within the far eastern portion of the Project area adjacent to a substation. Since the monarch butterfly is currently a proposed threatened species, no additional coordination with USFWS is required regarding this species at this time. If the species is listed prior to project completion, additional coordination may be necessary.

5. CONCLUSIONS AND RECOMMENDATIONS

The Project is predominately forested areas, and reclaimed mine sites dominated by disturbance adapted species and naturally regenerated hardwood forest on steep slopes. Portions of habitat within the Project are highly disturbed, this includes the reclaimed mine sites and open field clearings dominated by disturbance adapted species. Portions of the Project, which are comprised of mixed hardwood forest, are less disturbed and present potential habitat for the tricolored bat, Rafinesque's big-eared bat, northern long-eared bat, Indiana bat, and the common raven. Additionally, potential habitat for the monarch butterfly is present as milkweed was observed within an herbaceous opening inside the Project. Suitable habitat was observed for multiple federal and state protected species; however, no designated

critical habitat is present in the Project. Based on the habitat assessment observations, considerations of the above-mentioned species, and current design plans, ERM concludes that there is some potential for federally or state listed threatened and endangered species to occur in the Project. Development of the proposed Project has the potential to affect species under the jurisdiction of the USFWS and KDFWR.

Consultation with USFWS is advised under Section 7 of the Endangered Species Act (ESA) if the Project has a federal nexus, such as Clean Water Act (CWA) 404 permitting, to determine potential Project impacts to federally listed species and recommended mitigation measures to ensure compliance. If the Project had no federal nexus, informal consultation is recommended as a best management practice to ensure general compliance with MBTA, BEGPA, and Section 10 of the Endangered Species Act. The MBTA and BGEPA prohibit individuals from intentionally taking, possessing, transporting, and selling or purchasing migratory birds and eagles along with their parts, nests, or eggs without a valid permit. Any person or organization who plans activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures.

Additional coordination with KDFWR may be required due the Site being located with state wildlife management areas.

The Project should incorporate avoidance and minimizations measures of wetlands and forested areas to reduce impacts to listed species. If avoidance of habitat impact cannot be incorporated into the Project design, specific presence/probable absence surveys may be necessary.

The following summarizes recommendations of next steps:

- Avoid and/or minimize impacts to forested areas to the greatest extent practicable.
- Initiate correspondence with USFWS, KDFWR, and OKNP for further comment and recommendations for the project to de-risk potential impacts to protected species.
- If the Project cannot avoid cutting trees, perform applicable species presence/probable absence surveys under the direction of USFWS and KDFWR.

6. REFERENCES

- Kentucky Office of Nature Preserves. (2026). Kentucky Biological Assessment Tool (KYBAT) Data Request 240910M01 (June 12, 2026).
- Kentucky Speleological Survey. (2026). Landform data request.
<https://ksscaves.com/index.php/data-request2?chronoform=submit-landform&event=submit>
- Multi-Resolution Land Characteristics (MRLC) Consortium. (2025). National Land Cover Database. United States Geological Survey. <https://www.mrlc.gov/>
- Paylor, R. J., & Currens, J. C. (2002). Karst occurrence in Kentucky (Map and Chart 33, Series 12). Kentucky Geological Survey.
https://kgs.uky.edu/kgsweb/olops/pub/kgs/mc33_12.pdf
- United States Fish and Wildlife Service. (2026a). Information for Planning and Consultation (IPaC) Tool. <https://ecos.fws.gov/ipac/>
- United States Fish and Wildlife Service. (2026b). Listing Status.
<https://ipac.ecosphere.fws.gov/status/list>
- United States Geological Survey. (2026). The National Map.
<https://apps.nationalmap.gov/viewer/>
- Woods, A. J., Omernik, J. M., Martin, W. H., Pond, G. J., Andrews, W. M., Call, S. M., Comstock, J. A., & Taylor, D. D. (2006). Ecoregions of Kentucky.
https://gaftp.epa.gov/EPADDataCommons/ORD/Ecoregions/ky/ky_front.pdf



ATTACHMENT A – FIGURES

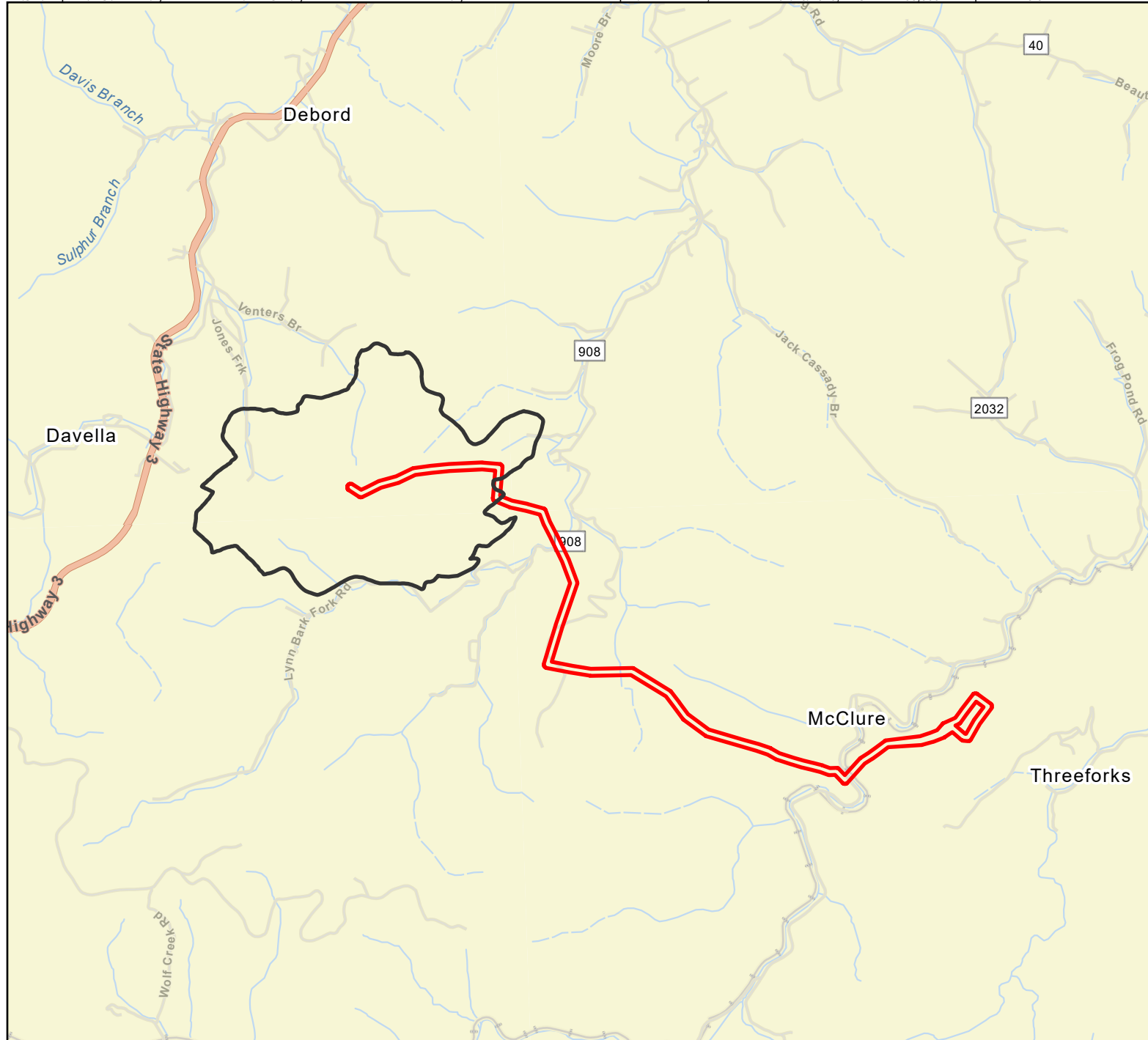
Figure 1 – Site Location Map

Figure 2 – Topographic Map

Figure 3 – Land Classification Map

Figure 4 – Wetland Delineation Map

Figure 5 – Habitat Map



Legend

-  Transmission Line Boundary
-  Solar Farm Boundary

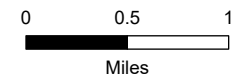
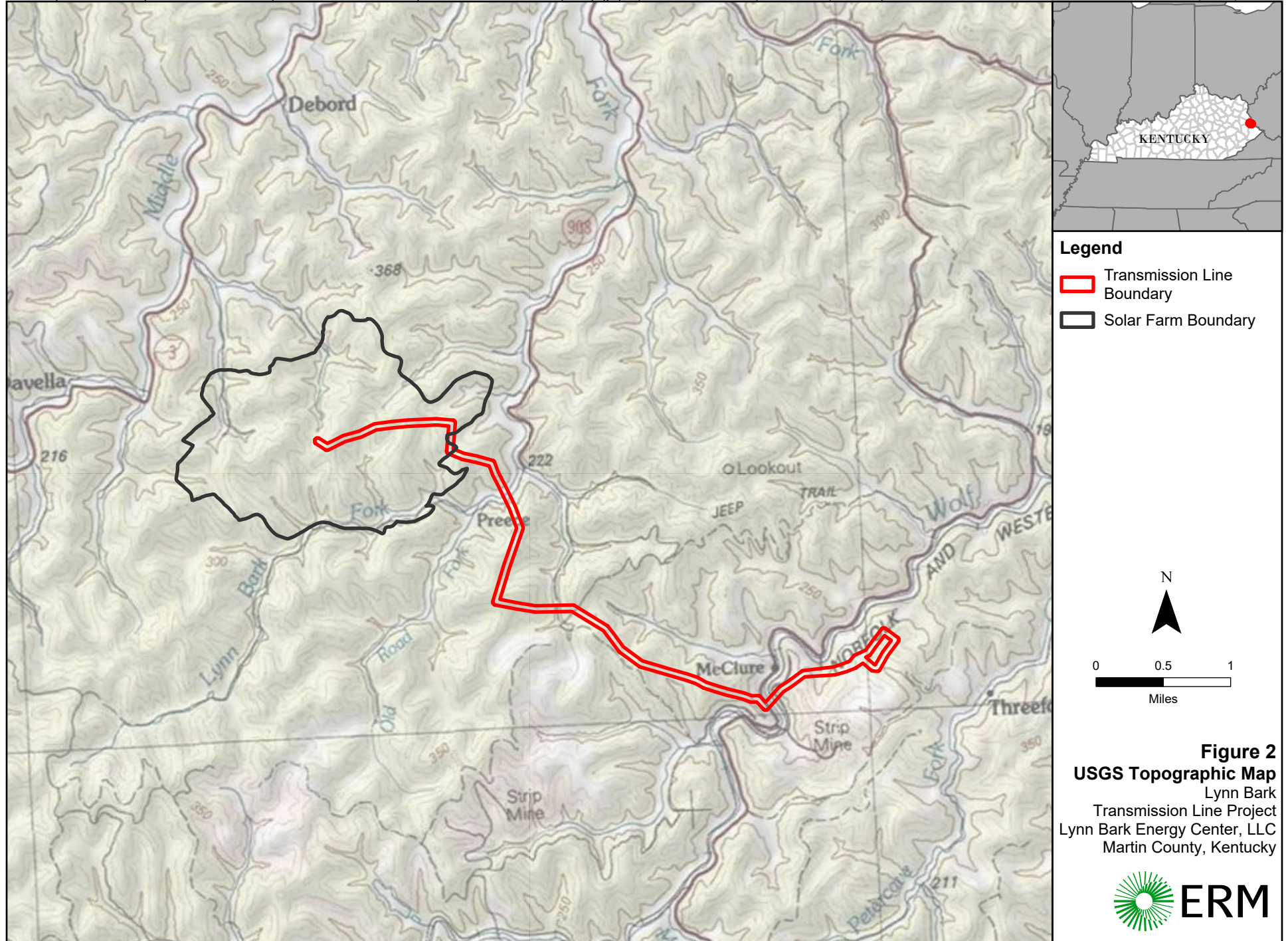


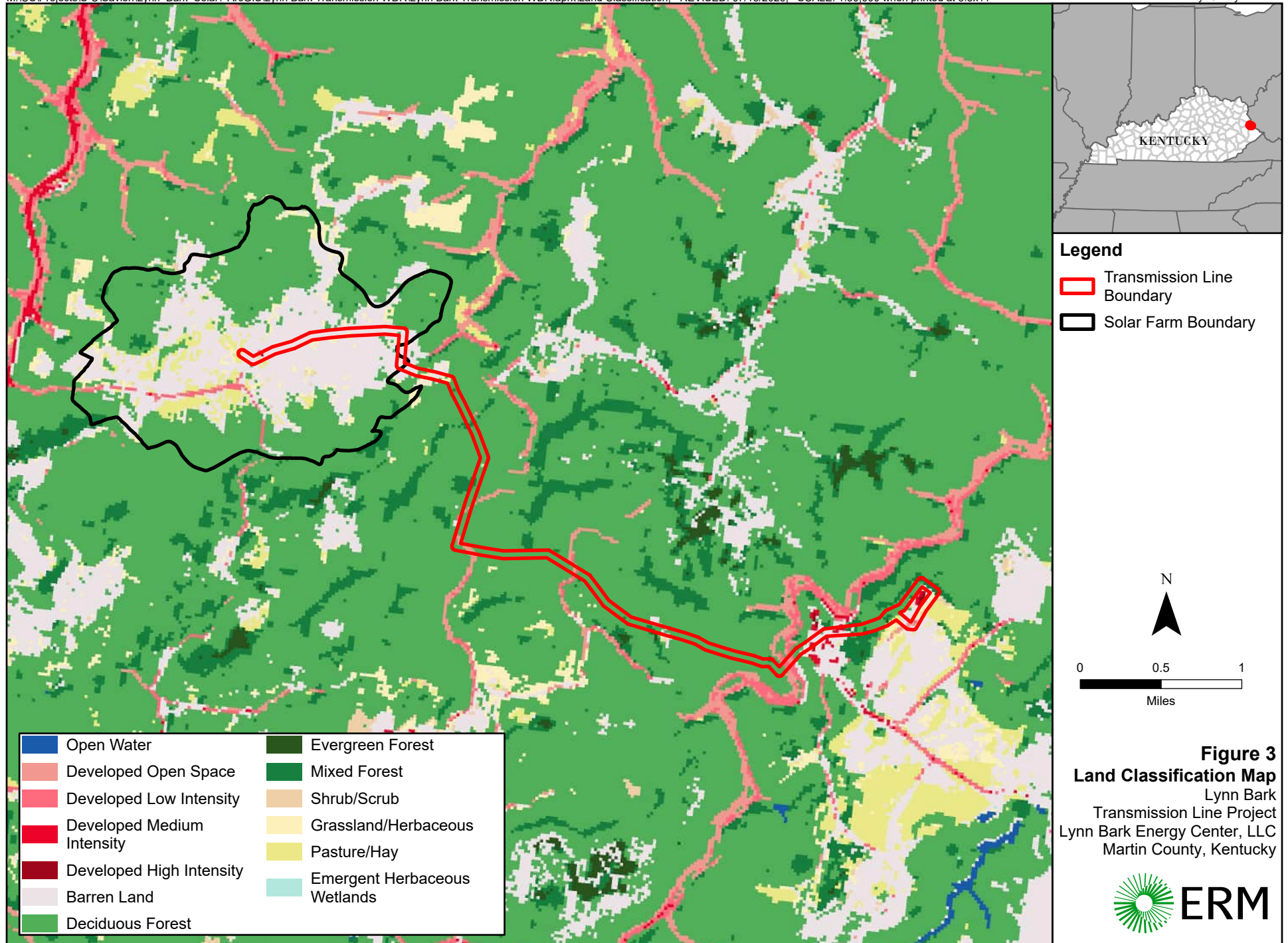
Figure 1

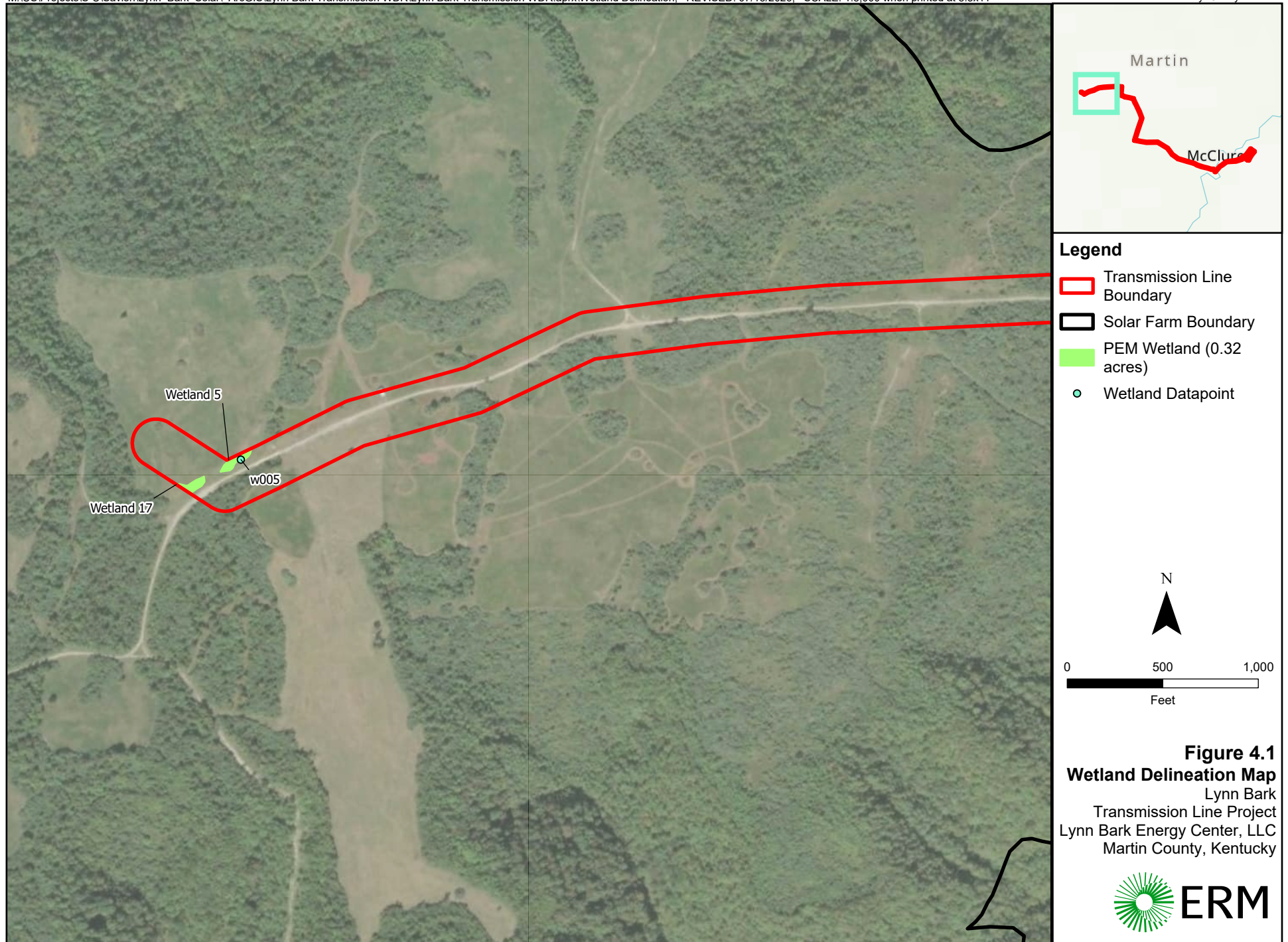
Site Map

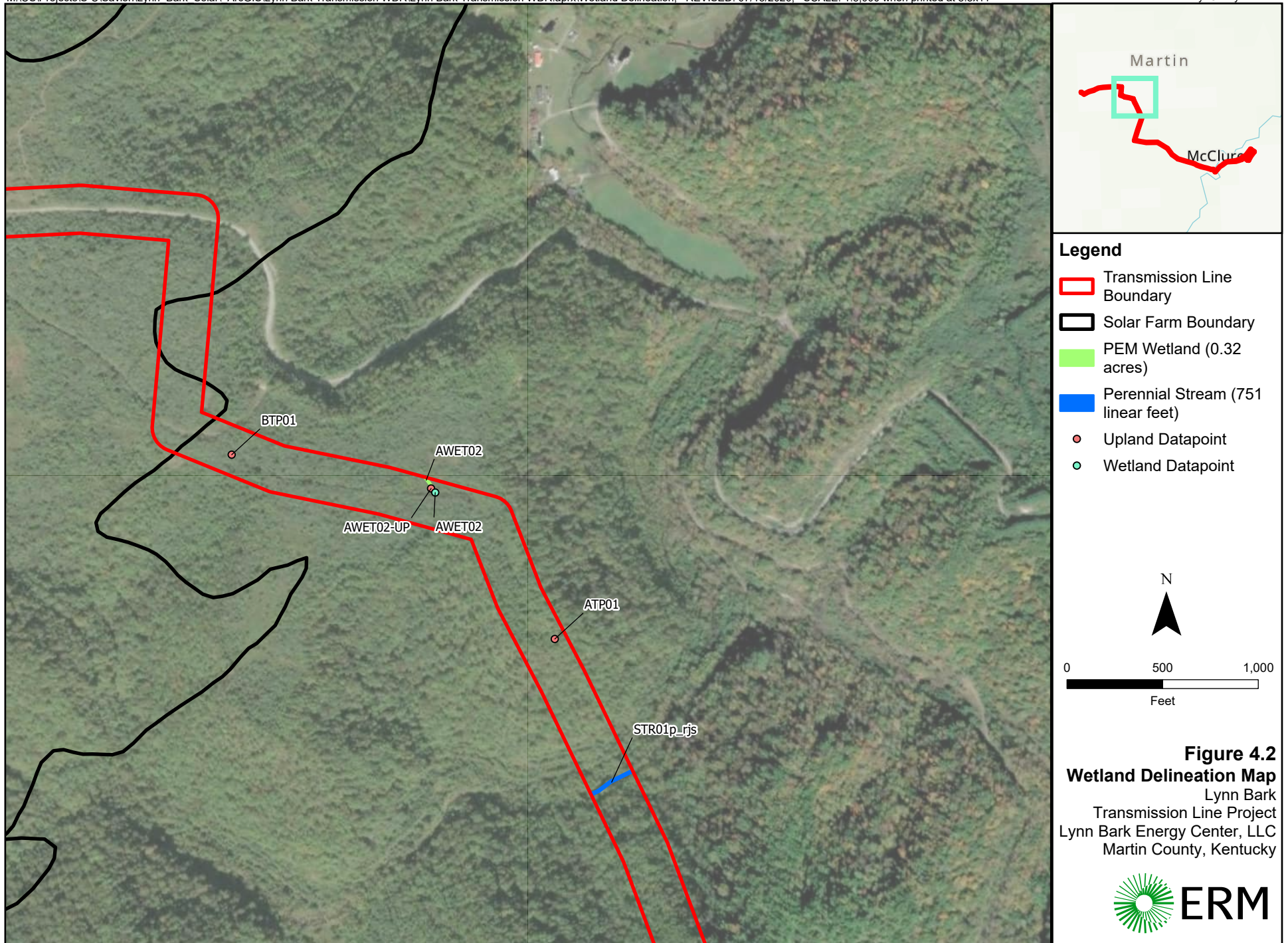
Lynn Bark
Transmission Line Project
Lynn Bark Energy Center, LLC
Martin County, Kentucky

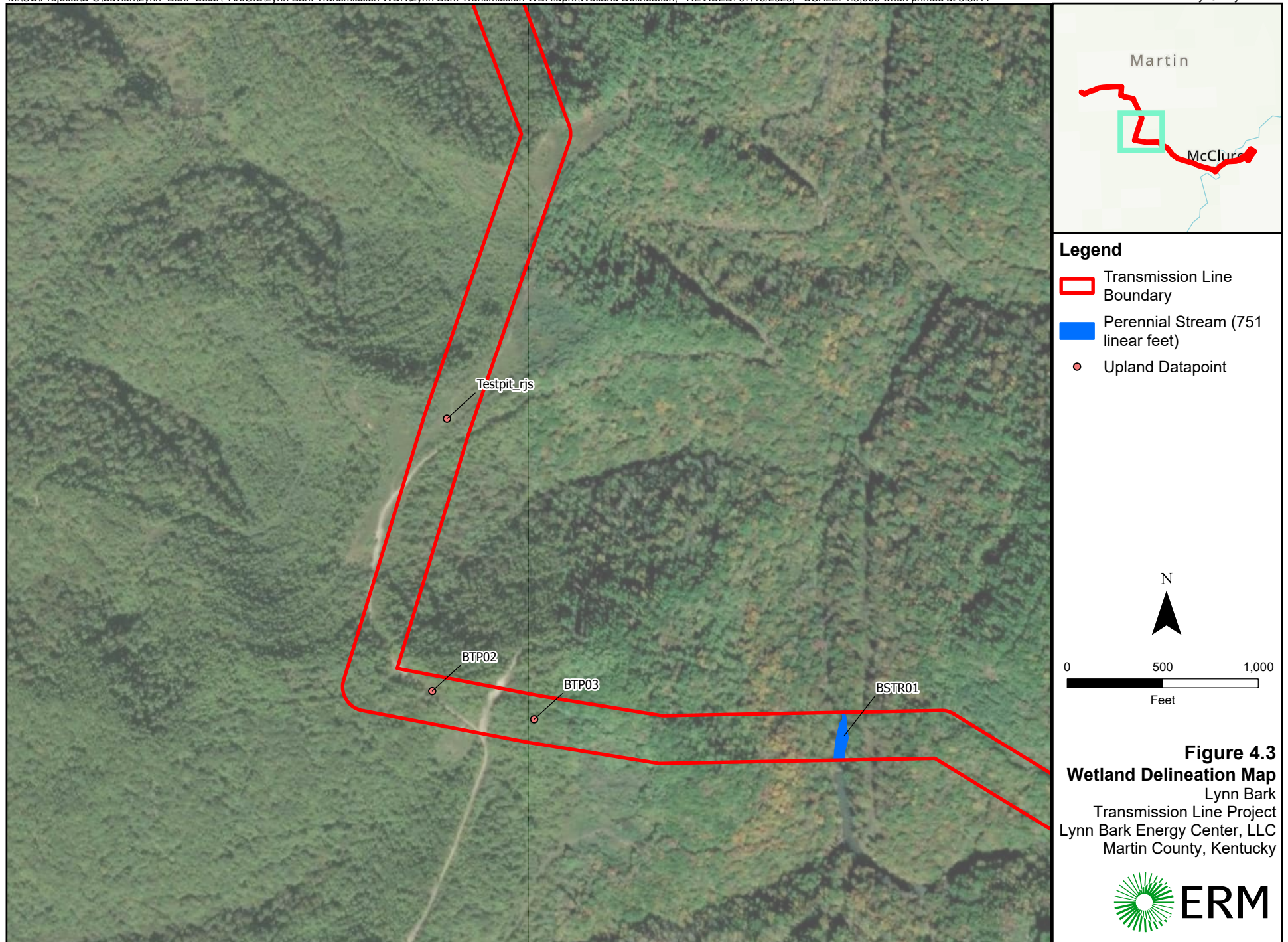


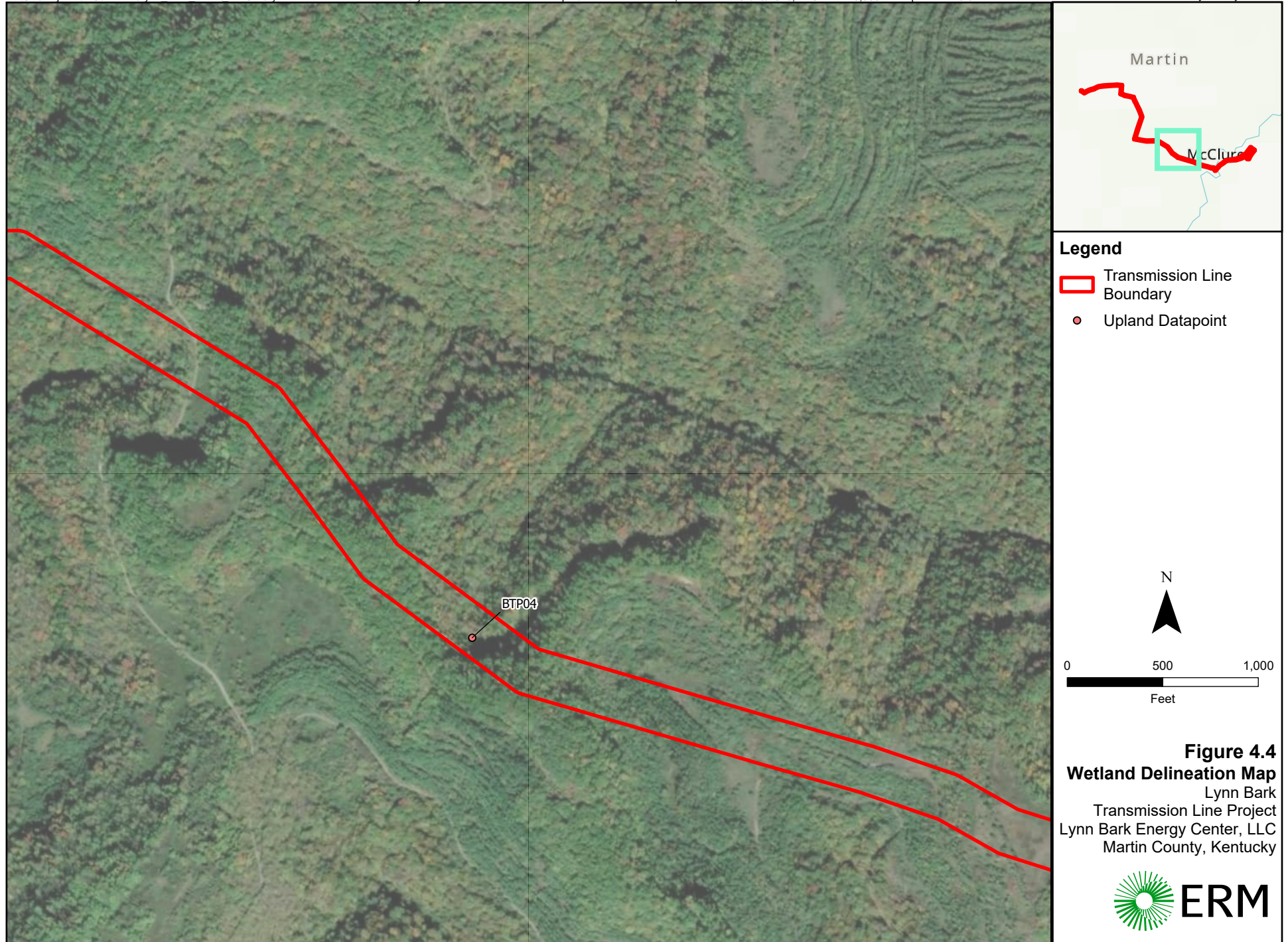


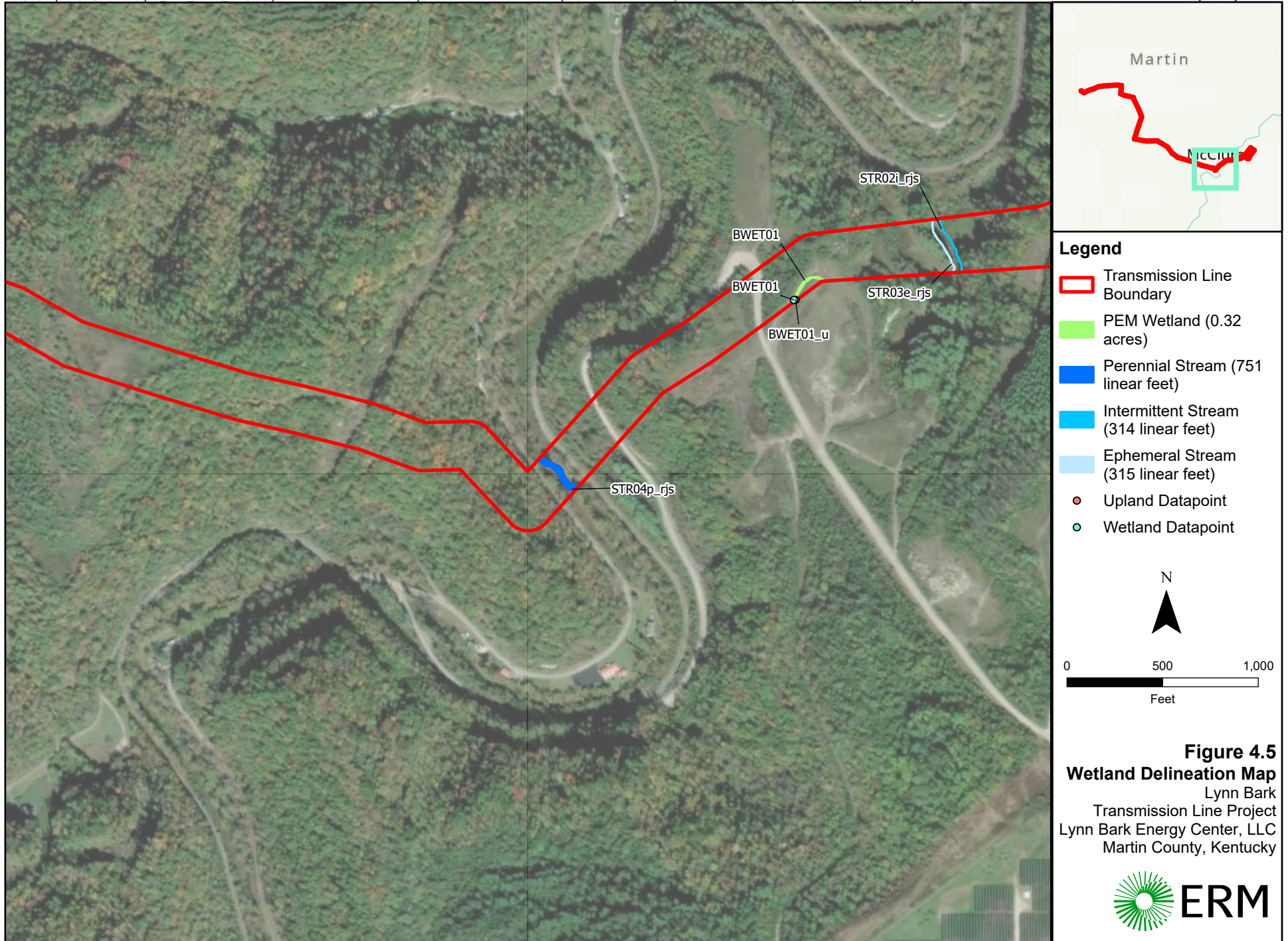


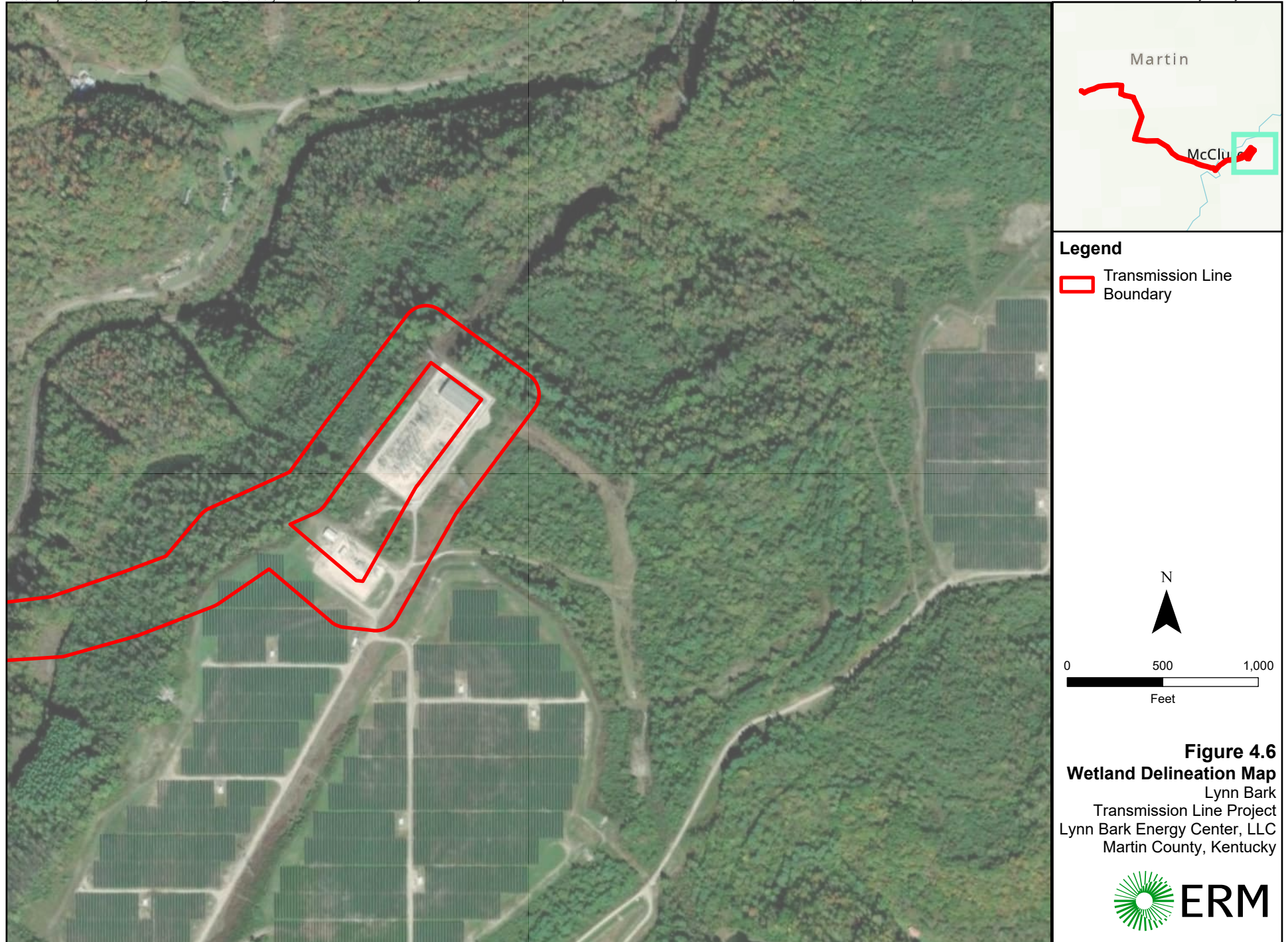


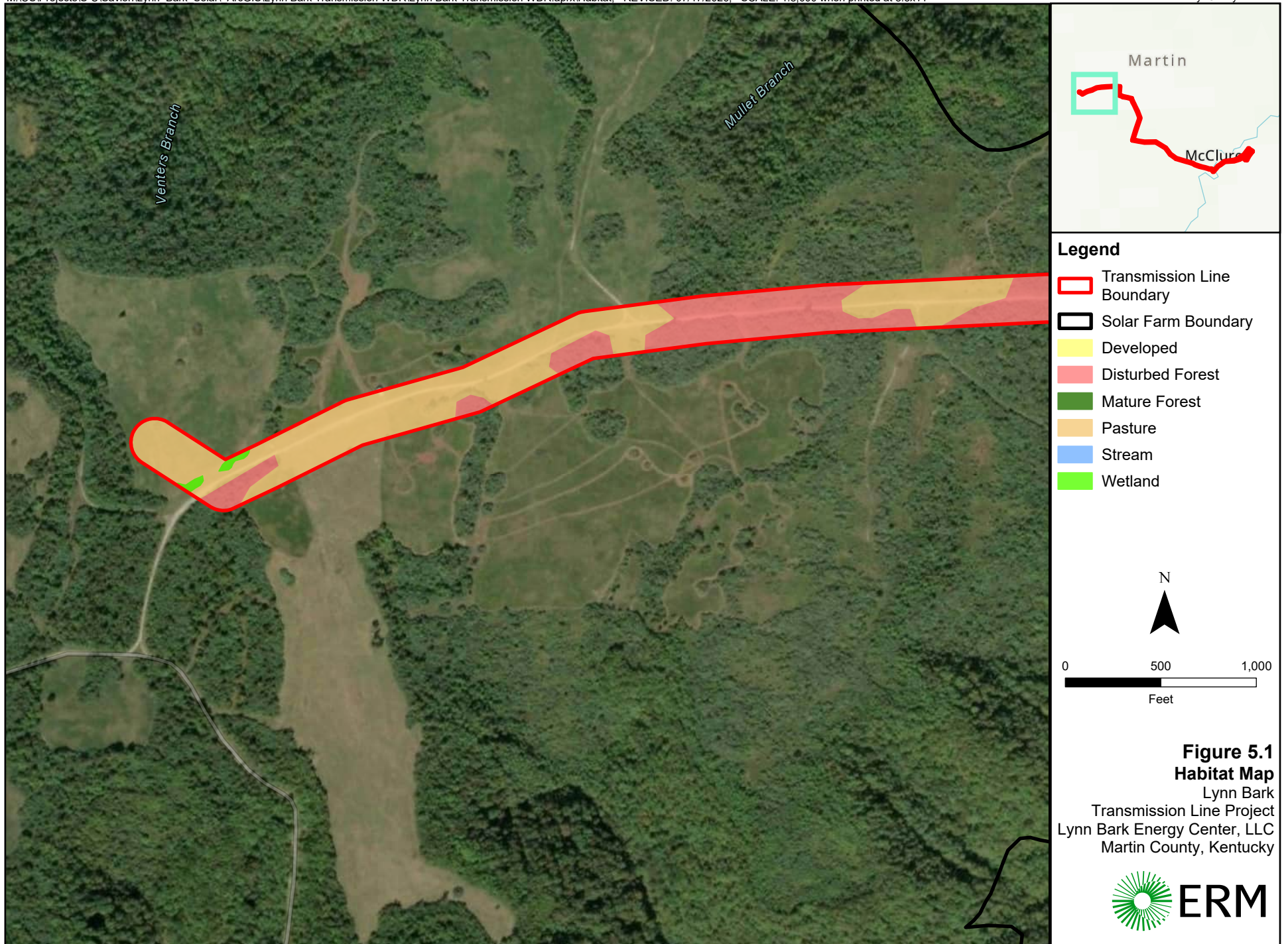


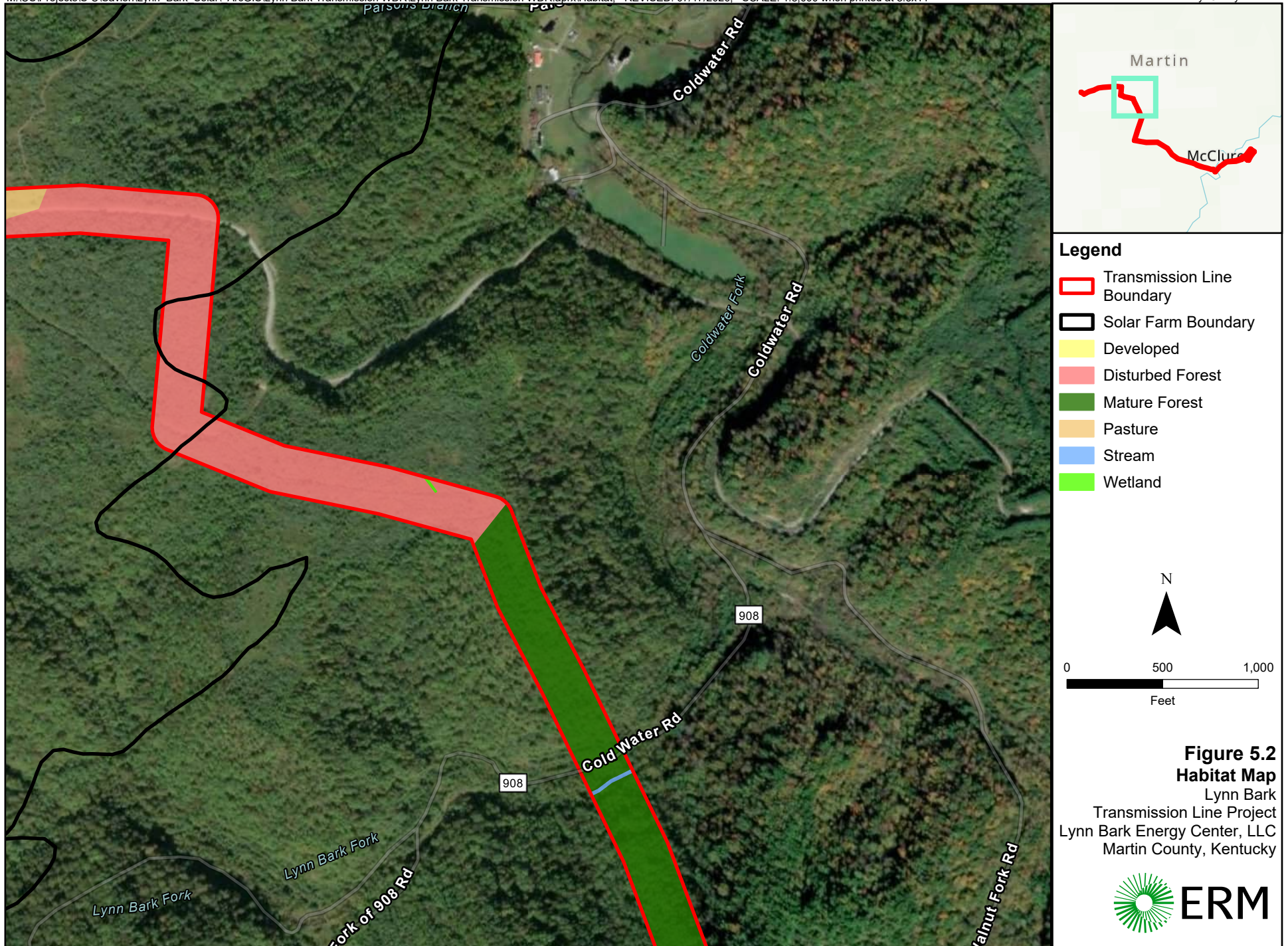


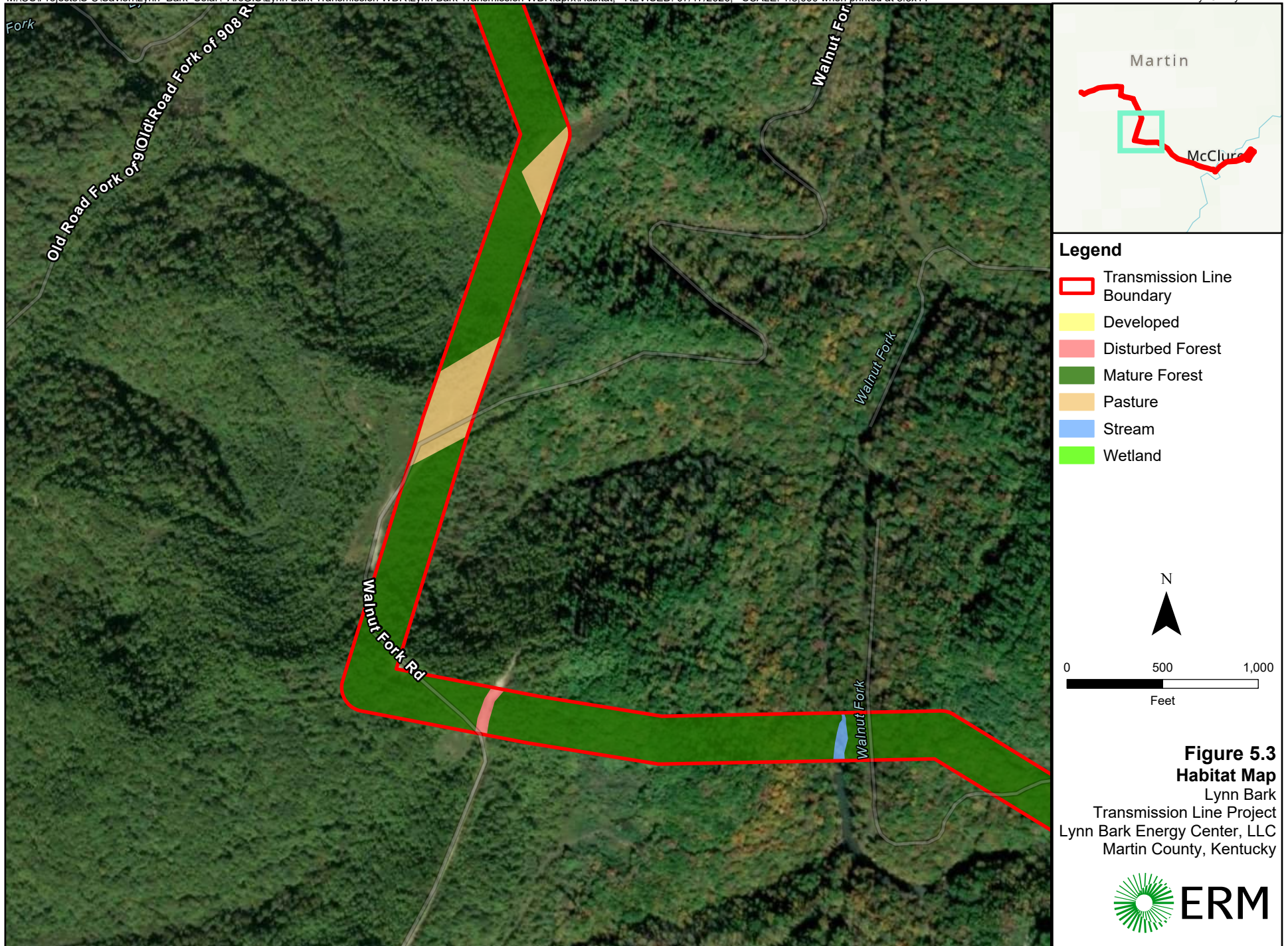


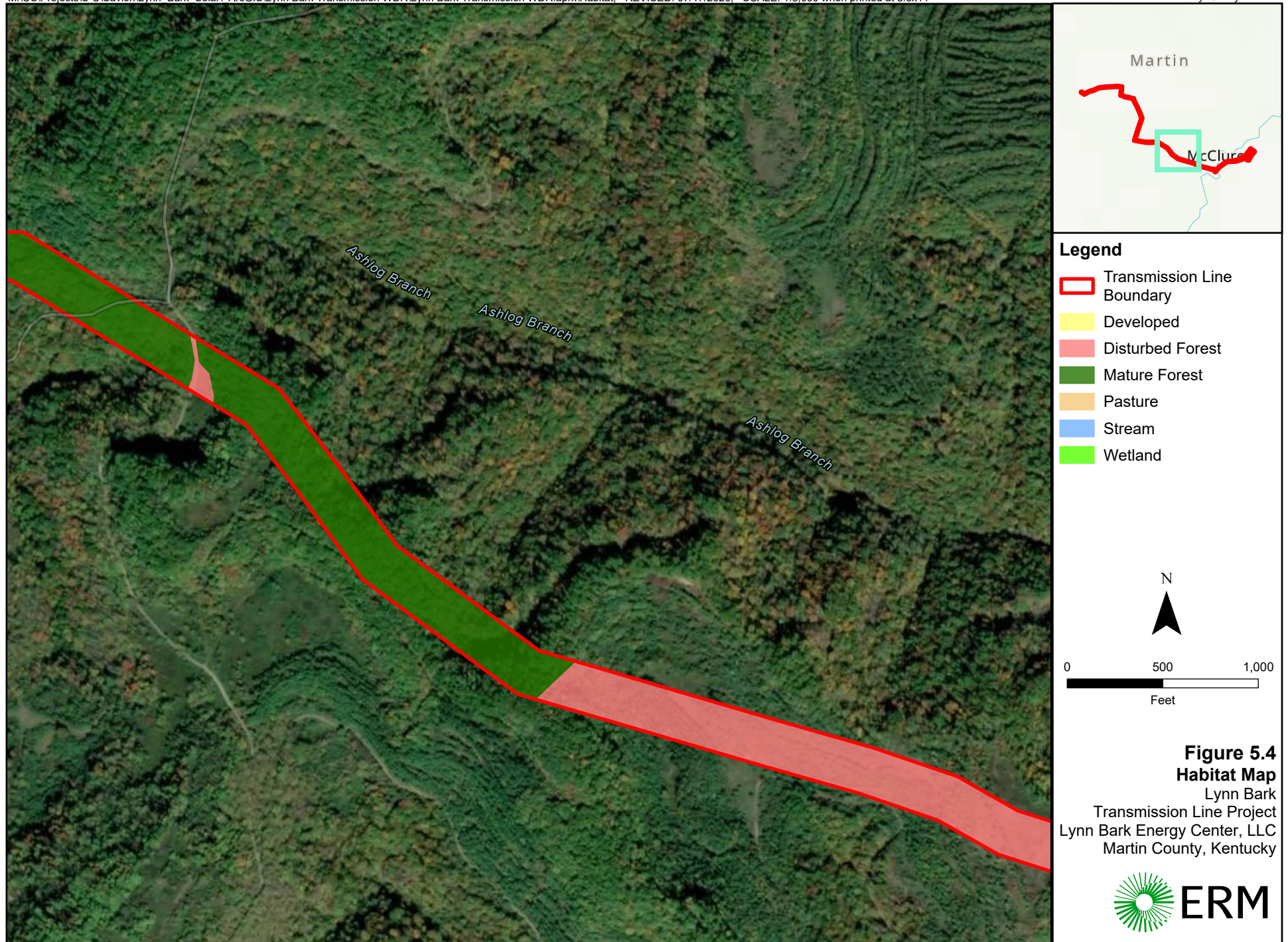


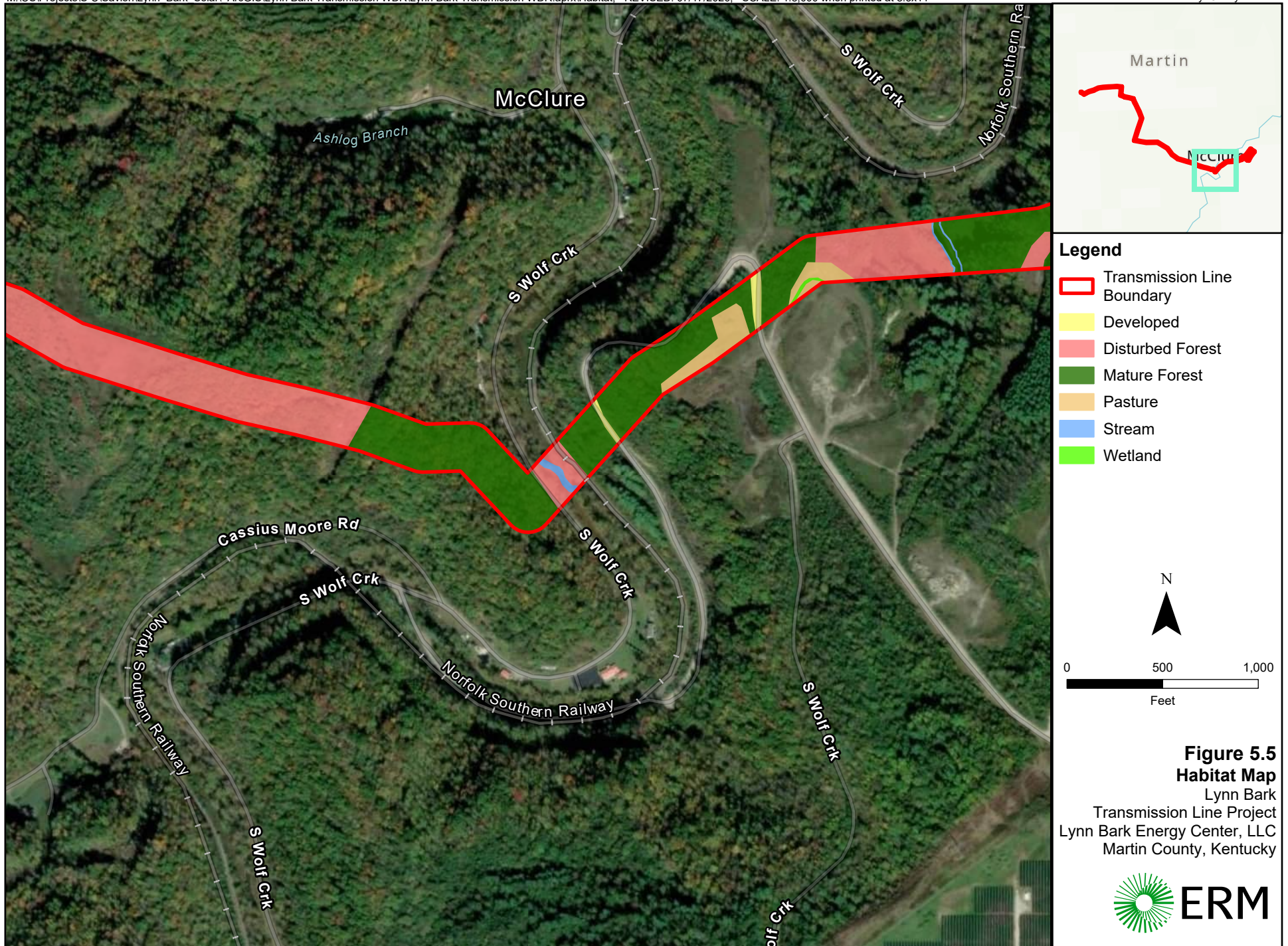


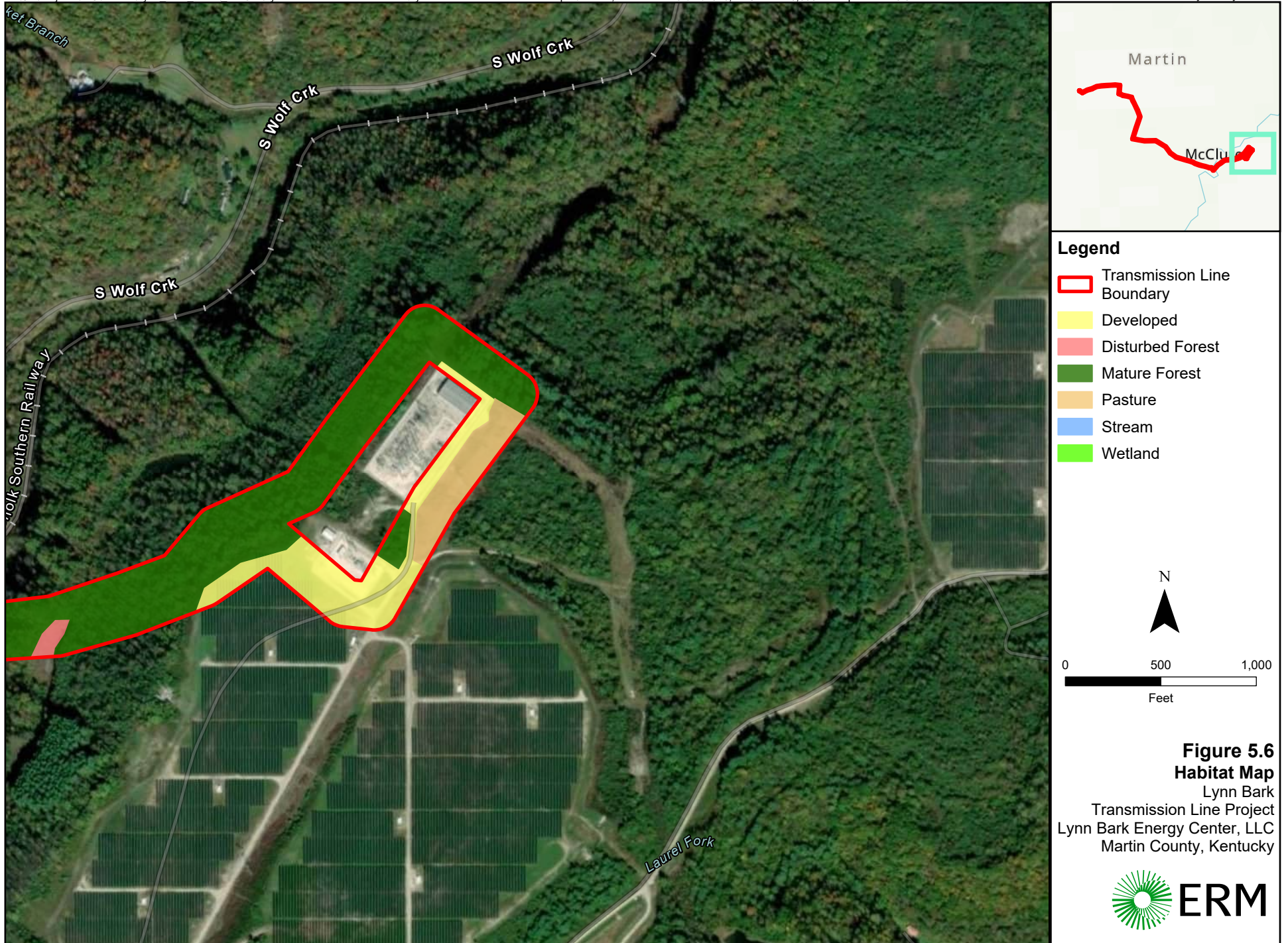














ATTACHMENT B – PHOTOGRAPH LOG

SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO.	DATE
1.	07 July 2026
DESCRIPTION Photo facing east of thick grove of shrubs, Rubis, and juvenile trees in the northwest portion of the Site.	



PHOTO NO.	DATE
2.	16 July 2025
DESCRIPTION Photo facing north of small rock outcrop along slope in the western portion of the Site.	



Lynn Bark Photographic Log

SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO. 3.	DATE 08 July 2026	
DESCRIPTION Photo facing south of open field in the west, central portion of the Site.		

PHOTO NO. 4.	DATE 08 July 2026	
DESCRIPTION North facing photo of a forested slope consisting of young trees.		

SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO.

5.

DATE

08 July 2026

DESCRIPTION

Photo of beaver pond within
Walnut fork in the central
portion of the Site.



PHOTO NO.

6.

DATE

08 July 2026

DESCRIPTION

Cross section photo of
Walnut Fork below beaver
dam.



Lynn Bark Photographic Log

SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO. 7.	DATE 08 July 2026	
DESCRIPTION Photo of forested road corridor in the central portion of the Site.		

PHOTO NO. 8.	DATE 08 July 2026	
DESCRIPTION Photo facing east of open field dominated by lespedeza cuneata in the central portion of the Site.		

Lynn Bark Photographic Log

SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO. 9.	DATE 08 July 2026	
DESCRIPTION Photo facing west of cove between ridges. Oak, hickory, and maple dominant forest.		

PHOTO NO. 10.	DATE 09 July 2026	
DESCRIPTION Vernal pool with tadpoles in the central portion of the Site.		

Lynn Bark Photographic Log

SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO.	DATE	
11.	09 July 2026	
DESCRIPTION North facing photo of linear opening with exposed rock, juncus sp, and lespedeza cuneata.		

PHOTO NO.	DATE	
12.	09 July 2026	
DESCRIPTION Photo facing south of slope containing Eastern pine, sycamore, blackberry, sourwood, and Chinese bush clover.		

Lynn Bark Photographic Log

SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO.

13.

DATE

09 July 2026

DESCRIPTION

East facing photo of opening created by transmission line in the eastern portion of the Site.



PHOTO NO.

14.

DATE

09 July 2026

DESCRIPTION

Photo of small rock outcrop facing north in eastern portion of the Site.



SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO.

15.

DATE

09 July 2026

DESCRIPTION

Photo of highwall with
crevices along road in the
eastern portion of the Site.



PHOTO NO.

16.

DATE

09 July 2026

DESCRIPTION

Photo of open herbaceous
field facing east within the
eastern portion of the Site.



SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO.

17.

DATE

09 July 2026

DESCRIPTION

Photo of Milkweed in the
eastern portion of the Site
adjacent to the substation.



PHOTO NO.

18.

DATE

08 July 2026

DESCRIPTION

Photo of wetland BWET01
facing south.



Lynn Bark Photographic Log

SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO.

19.

DATE

09 July 2026

DESCRIPTION

Photo facing east of opening
along existing transmission
line ROW.



PHOTO NO.

20.

DATE

09 July 2026

DESCRIPTION

Autumn olive thicket in the
eastern portion of the Site
adjacent to the west of the
Substation.



SITE LOCATION: Lynn Bark
Transmission Line. Martin County,
Kentucky

PHOTO NO. 21.	DATE 16 July 2025	
DESCRIPTION Photo of wetland AWET02 facing east.		



ATTACHMENT C - USFWS INFORMATION PLANNING AND CONSULTATION (IPAC)

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

Martin County, 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 species¹ 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 Fisheries²).

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

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

NAME	STATUS
Indiana bat <i>Myotis sodalis</i> 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
Tricolored bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

NAME	STATUS
Monarch butterfly <i>Danaus plexippus</i> Wherever found There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

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

There are no critical habitats at this location.

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

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The [data](#) in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the [Supplemental Information on Migratory Birds and Eagles document](#) to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

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

Bald & Golden Eagles FAQs

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

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$;

at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

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

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

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

Survey Timeframe

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

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior [authorization](#) by the Department of Interior U.S. Fish and Wildlife Service (FWS).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The [data](#) in this location indicates that no migratory birds of concern have been observed in this area. This does not mean [birds of concern](#) are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the [Supplemental Information on Migratory Birds and Eagles document](#) to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine what migratory birds of concern may be present (e.g. your local FWS field office, state surveys, your own surveys).

Migratory Bird FAQs

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

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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

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

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

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

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

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

Proper interpretation and use of your migratory bird report

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

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

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

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

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

Survey Timeframe

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

Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

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

Wetland information is not available at this time

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

Data limitations

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

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

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

Data exclusions

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

Data precautions

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



ATTACHMENT D - OFFICE OF KENTUCKY NATURE
PRESERVES BIOLOGICAL ASSESSMENT TOOL REPORT



Andy Beshear
Governor

Energy and Environment Cabinet Office of Kentucky Nature Preserves

300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

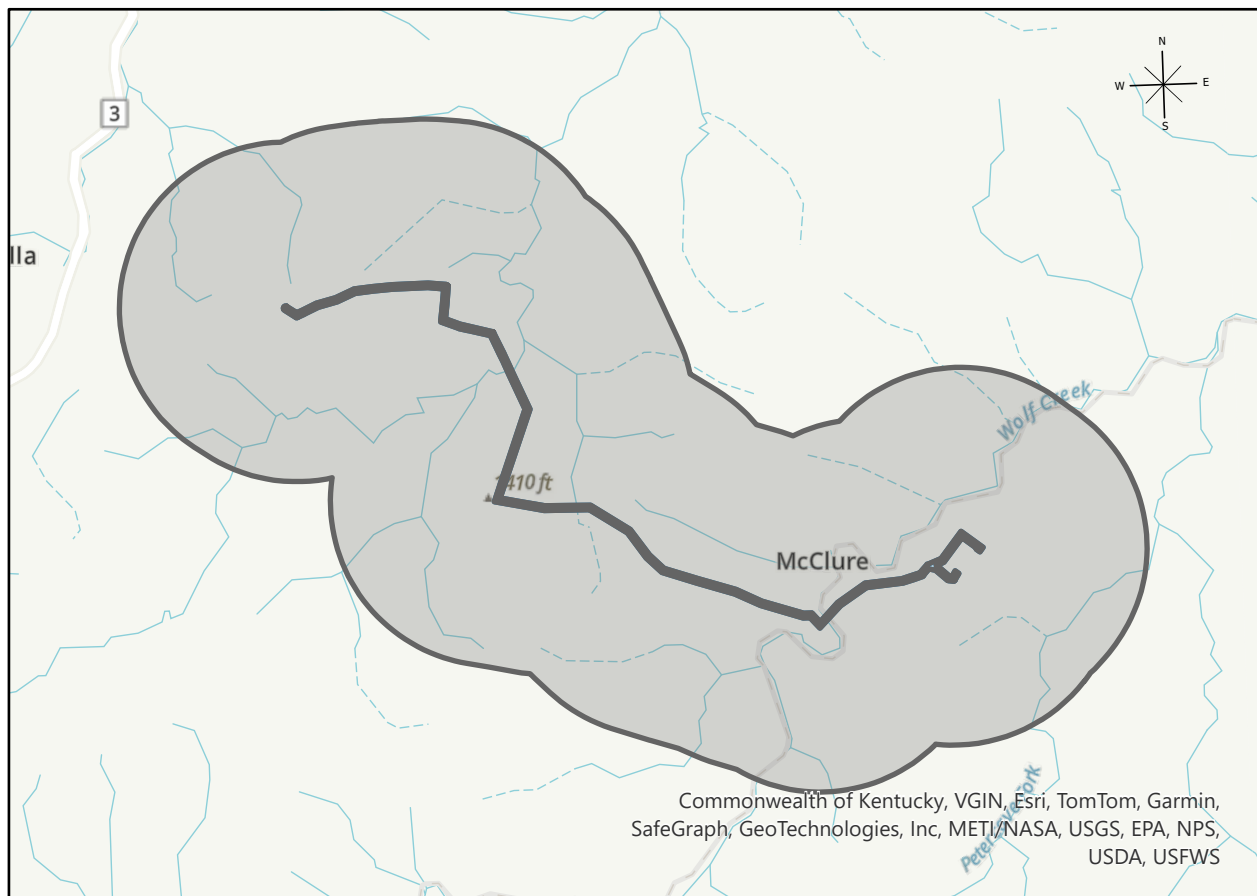
John Lyons
Secretary

Zack Couch
Executive Director

Requested on Friday, June 12, 2026 by Morgan Johnson, ERM

Re: Kentucky Biological Assessment Data Request 260612M01
Savion Energy - Lynn Bark Transmission Line
Energy Transfer - Transmission Line, 1 mile buffer.
MARTIN County, Kentucky

This letter is in response to your data request for the project referenced above. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants, animals, features, or exemplary natural communities monitored by the Office of Kentucky Nature Preserves are noted within your submitted project area.





Andy Beshear
Governor

Energy and Environment Cabinet Office of Kentucky Nature Preserves

300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

John Lyons
Secretary

Zack Couch
Executive Director

Thank you for using the Office of Kentucky Nature Preserves' Biological Assessment Tool.

This report provides site-specific biological data for the proposed project area, offering documented occurrences of rare, threatened, and endangered species. Unlike other tools which may model potential species presence, this tool delivers verified field data collected by biologists, ensuring an accurate understanding of site conditions. Some regulatory processes request this information for project siting, permitting, and conservation planning. Understanding the presence of endangered, threatened, or special concern plants, animals or exemplary natural communities may help avoid delays, mitigate risks, and support compliance with environmental guidelines.

Key Findings included in the report:

- A - Occurrences which intersect the project area
- B - Occurrences which intersect the buffer around the project area
- C - References and Recommendations relevant to occurrences near to or within the project area

We would like to take this opportunity to remind you of the [terms of the data request license](#), which you agreed upon in order to submit your request. Data and data products received from the Office of Kentucky Nature Preserves, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Office of Kentucky Nature Preserves. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Office of Kentucky Nature Preserves.

Please note that the quantity and quality of data are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed and new plants and animals are still being discovered. For these reasons, we cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. These reports summarize the existing information known to the Kentucky Natural Heritage Database at the time of the request. They should never be regarded as final statements on the occurrences being considered, nor should they be substituted for on-site surveys required for environmental assessments. Please note that certain sensitive occurrences may be listed in this table but are not represented in the accompanying map.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office by email at EEC.KYBAT@ky.gov.

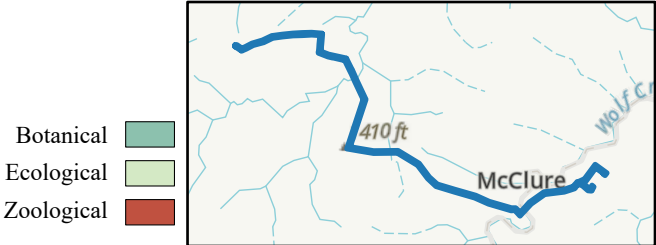
Sincerely,

Alexis R. Sheehan
Database Administrator
Office of Kentucky Nature Preserves

Sydnie Hansen
GIS Analyst
Office of Kentucky Nature Preserves

A. Project Area - Occurrence Report

This section details occurrences that have been documented within the project footprint through direct field surveys. Presence is based on confirmed biological observations. The table below includes the species' status at state and federal levels, as well as the dates each occurrence was last observed. Please review Precision, as it is indicative of the location uncertainty of the individual records.

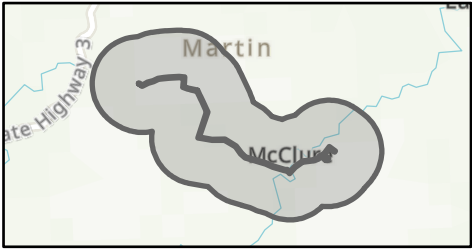


There were no occurrences found within your project footprint based on available data.

B. Buffer Area - Occurrence Report

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

- Botanical
- Ecological
- Zoological

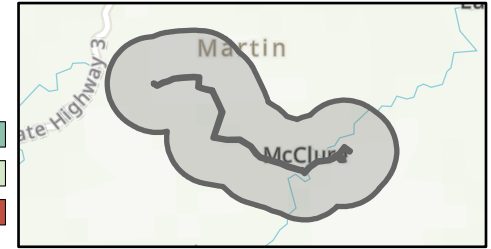


ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
12423	Mammals	Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	Sec.		Special Concern	G3	S3	Yes	2008-08-11		
12579	Breeding Birds	Corvus corax	Common Raven	Min.		Threatened	G5	S1S2	Yes	2007-10-19		
25489	Mammals	Myotis septentrionalis	Northern Long-Eared Bat	Sec.	Endangered	Endangered	G2G3	S1	Yes	2008-08-11		
25490	Mammals	Myotis septentrionalis	Northern Long-Eared Bat	Sec.	Endangered	Endangered	G2G3	S1	Yes	2008-08-08		

C. References and Recommendations (1 of 8)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological



A record of the federally protected Indiana bat (*Myotis sodalis*), the northern long-eared bat (*Myotis septentrionalis*), the gray bat (*Myotis grisescens*), and/ or the Virginia big-eared bat (*Corynorhinus townsendii virginianus*) is located in your project aoi or buffer. Per U.S. Fish and Wildlife Service, under the Endangered Species Act (ESA) and National Environmental Policy Act (NEPA), projects must assess and avoid impacts to caves, mines, rock shelters, bridges, culverts, forested habitats, and water bodies that serve as roosting, foraging, or commuting areas. To comply with federal law and minimize harm, proponents should conduct habitat assessments, follow survey guidelines, implement conservation measures, and coordinate with the Service as needed; more details can be found at <http://www.fws.gov>. Coordinate with USFWS Kentucky Field Office at (502) 695-0468 or KentuckyES@fws.gov

This project area overlaps with one or more wetlands recorded in the 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. Visit <https://www.fws.gov/program/national-wetlands-inventory>.

The proposed project area overlaps with the species range for *Cryptobranchus alleganiensis alleganiensis*, Eastern Hellbender. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at <https://app.fw.ky.gov/kyswap/> for information on possible management, research and habitat restoration efforts.

The proposed project area overlaps with the species range for *Aneides aeneus*, Green Salamander. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at <https://app.fw.ky.gov/kyswap/> for information on possible management, research and habitat restoration efforts.

The proposed project area overlaps with the species range for *Desmognathus fuscus*, Northern Dusky Salamander. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at <https://app.fw.ky.gov/kyswap/> for information on possible management, research and habitat restoration efforts.

The proposed project area overlaps with the species range for *Desmognathus ochrophaeus*, Allegheny Mountain Dusky Salamander. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at <https://app.fw.ky.gov/kyswap/> for information on possible management, research and habitat restoration efforts.

The proposed project area overlaps with the species range for *Podilymbus podiceps*, Pied-billed Grebe. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at <https://app.fw.ky.gov/kyswap/> for information on possible management, research and habitat restoration efforts.

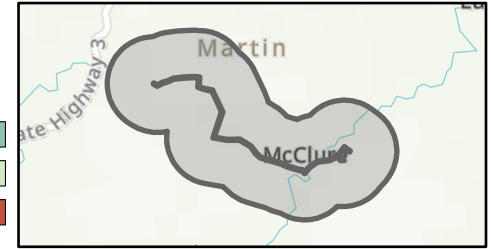
The proposed project area overlaps with the species range for *Podiceps auritus*, Horned Grebe. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at <https://app.fw.ky.gov/kyswap/> for information on possible management, research and habitat restoration efforts.

The proposed project area overlaps with the species range for *Botaurus lentiginosus*, American Bittern. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at <https://app.fw.ky.gov/kyswap/> for information on possible management, research and habitat restoration efforts.

C. References and Recommendations (2 of 8)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological

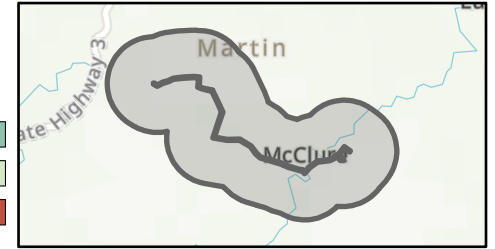


The proposed project area overlaps with the species range for <i>Butorides virescens</i> , Green Heron. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Nycticorax nycticorax</i> , Black-crowned Night-heron. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Anas rubripes</i> , American Black Duck. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Aythya marila</i> , Greater Scaup. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Aythya affinis</i> , Lesser Scaup. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Lophodytes cucullatus</i> , Hooded Merganser. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Pandion haliaetus</i> , Osprey. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Haliaeetus leucocephalus</i> , Bald Eagle. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Circus hudsonius</i> , Northern Harrier. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Accipiter striatus</i> , Sharp-shinned Hawk. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Falco sparverius</i> , American Kestrel. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

C. References and Recommendations (3 of 8)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological

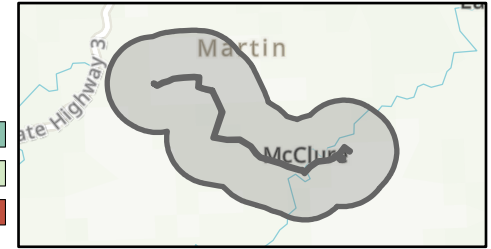


The proposed project area overlaps with the species range for <i>Falco peregrinus</i> , Peregrine Falcon. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Bonasa umbellus</i> , Ruffed Grouse. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Colinus virginianus</i> , Northern Bobwhite. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Tringa flavipes</i> , Lesser Yellowlegs. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Tringa solitaria</i> , Solitary Sandpiper. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Actitis macularius</i> , Spotted Sandpiper. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Calidris pusilla</i> , Semipalmated Sandpiper. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Gallinago delicata</i> , Wilson's Snipe. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Scolopax minor</i> , American Woodcock. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Chlidonias niger</i> , Black Tern. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

C. References and Recommendations (4 of 8)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological

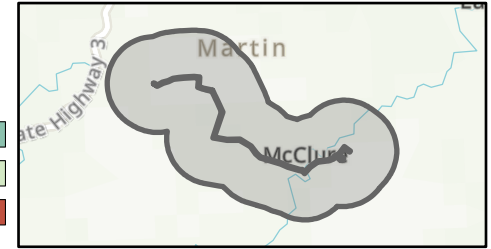


The proposed project area overlaps with the species range for <i>Coccyzus americanus</i> , Yellow-billed Cuckoo. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Asio flammeus</i> , Short-eared Owl. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Antrostomus vociferus</i> , Whip-poor-will. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Melanerpes erythrocephalus</i> , Red-headed Woodpecker. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Empidonax traillii</i> , Willow Flycatcher. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Empidonax minimus</i> , Least Flycatcher. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Riparia riparia</i> , Bank Swallow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Corvus corax</i> , Common Raven. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Cistothorus stellaris</i> , Sedge Wren. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Hylocichla mustelina</i> , Wood Thrush. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

C. References and Recommendations (5 of 8)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological

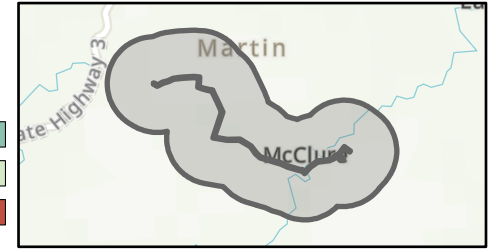


The proposed project area overlaps with the species range for <i>Vermivora cyanoptera</i> , Blue-winged Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Vermivora chrysoptera</i> , Golden-winged Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Setophaga tigrina</i> , Cape May Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Setophaga virens</i> , Black-throated Green Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Setophaga discolor</i> , Prairie Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Setophaga striata</i> , Blackpoll Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Setophaga cerulea</i> , Cerulean Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Protonotaria citrea</i> , Prothonotary Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Limnothlypis swainsonii</i> , Swainson's Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Parkesia motacilla</i> , Louisiana Waterthrush. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

C. References and Recommendations (6 of 8)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical 
Ecological 
Zoological 

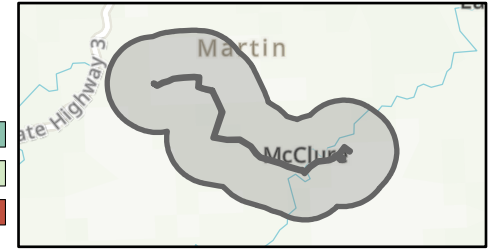


The proposed project area overlaps with the species range for <i>Geothlypis formosa</i> , Kentucky Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Cardellina canadensis</i> , Canada Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Spiza americana</i> , Dickcissel. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Spizella pusilla</i> , Field Sparrow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Passerculus sandwichensis</i> , Savannah Sparrow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Ammodramus savannarum</i> , Grasshopper Sparrow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Centronyx henslowii</i> , Henslow's Sparrow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Dolichonyx oryzivorus</i> , Bobolink. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Sturnella magna</i> , Eastern Meadowlark. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Euphagus carolinus</i> , Rusty Blackbird. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Myotis lucifugus</i> , Little Brown Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

C. References and Recommendations (7 of 8)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological

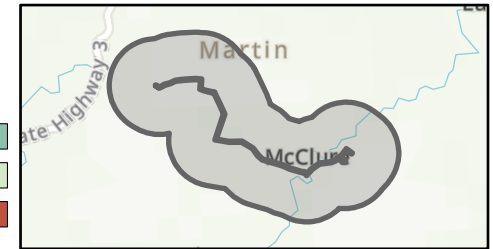


The proposed project area overlaps with the species range for <i>Myotis grisescens</i> , Gray Myotis. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Myotis sodalis</i> , Indiana Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Myotis leibii</i> , Eastern Small-footed Myotis. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Myotis septentrionalis</i> , Northern Long-Eared Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Perimyotis subflavus</i> , Tricolored Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Corynorhinus rafinesquii</i> , Rafinesque's Big-eared Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Sylvilagus obscurus</i> , Appalachian Cottontail. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Neotoma magister</i> , Allegheny Woodrat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Spilogale putorius</i> , Eastern Spotted Skunk. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Crotalus horridus</i> , Timber Rattlesnake. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

C. References and Recommendations (8 of 8)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological



The proposed project area overlaps with the species range for <i>Cambarus hatfieldi</i> , Tug Valley Crayfish. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Cambarus callainus</i> , Big Sandy Crayfish. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Anodontoides ferussacianus</i> , Cylindrical Papershell. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for <i>Fusconaia subrotunda</i> , Longsolid. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area includes an operating solar power plant.
The proposed project area includes a substation.
The proposed project area includes an interstate natural gas pipeline.
The proposed project area includes an intrastate natural gas pipeline.
The proposed project area includes a gas and oil well.
The proposed project area includes a gas well.
The proposed project area includes an oil well.

Thank you for using the Office of Kentucky Nature Preserves Biological Assessment Tool.

OKNP's species dataset relies on continuous monitoring and surveying for species of concern throughout the state. Any records of species of concern found within this project area would greatly benefit the quality and comprehensiveness of the statewide dataset for rare, threatened and endangered species. If you would like to contribute any additional species information, please do not hesitate to contact our office by email at EEC.KYBAT@ky.gov or by phone at 502-782-7828.

Quick Key

For a full report key, visit kynaturepreserves.org

Global Rank (GRANK) - Estimate of species abundance on a global scale

GX	Presumed extinct
GH	Possibly extinct; Missing
G1	Extremely Rare
G2	Rare
G3	Uncommon
G4	Common
G5	Very Common
GNR	Not ranked
GU	Unrankable due to lack of information
?	Indicates Uncertainty
T #	Appended for infraspecific taxa
Q	Indicates Questionable

State Rank (SRANK) - Estimate of species abundance in Kentucky

SX	Presumed extirpated
SH	Possibly extirpated
S2	Rare
S3	Uncommon
S4	Many Occurrences
S5	Very Common
SNR	Not ranked
SU	Unrankable due to lack of information
SNA	Not Applicable
?	Indicates Uncertainty
B	Indicates breeding population
N	Indicates non-breeding population

Precision - The precision of a record

Sec.	Seconds; Can be accurately mapped within a 3-second radius (approximately 100 ft)
Min.	Minutes; Can be mapped within a 1-minute radius (approximately 1.5 miles)
Gen.	General; Only known to a place name (within about 5 miles)
Cnty.	County; Only known to the county
Quad.	Quad; Only known to the county



ATTACHMENT E - KENTUCKY SPELEOLOGICAL SURVEY
DATA REQUEST



Re: KSS Database Request - Madison Solar Project ERM

From sean vanderhoff <vanders33@yahoo.com>

Date Mon 6/15/2026 8:50 AM

To Morgan Johnson <morgan.a.johnson@erm.com>

Cc Christian DeCelle <ctdecelle@gmail.com>; Fareedi Maaz F. <maaz.fareedi@gmail.com>

You don't often get email from vanders33@yahoo.com. [Learn why this is important](#)

EXTERNAL MESSAGE

Hi Morgan,

A search of our database did not return any cave locations within 1-mile of the provided shapefile *Easement* in Martin County, Kentucky.

There is a \$50 fee for search origination, plus \$10 per record, for a total of **\$50**. You will be invoiced by our organization Treasurer.

This data is shared to aid in our organizational goals of conservation, research, and exploration of caves throughout the Commonwealth of Kentucky. Please remember that data reported by KSS is as has been reported to us, but not guaranteed to be complete or correct. There may be unknown caves, sinks or other unreported or unknown karst features. Additionally unreported or filled in cave entrances can open or subside at any time. Use caution when using this data.

Please mark supplied locations as Privileged and Confidential on all maps associated with this project.

Please note our updated guidelines on request turnaround timing:

KSS is a volunteer organization. We do try to process standard requests as fast as possible, but cannot guarantee a turnaround time. We try to process non-voted requests in less than 1 month, and will attempt to vote on more complicated requests within 2 months.

Requestors can contact us if a quick turnaround time is specifically needed.

Timing is greatly reduced if an ArcGIS .shp file is provided

Sean Vanderhoff

Kentucky Speleological Survey

On Friday, June 12, 2026 at 12:08:55 PM EDT, KSS Website Form <wordpress@kss.caves.org> wrote:

From: Morgan A Johnson morgan.a.johnson@erm.com
Organization: ERM

Address: 901 Woodland St
Phone: 9313375529

Project Title: Madison Solar Project

Data Request:

Caves or other karst features in or within a 1-mile buffer of the project area

Intended Use:

To determine whether any caves or karst areas have the potential to be impacted by the project