Kimley»Horn

MEMORANDUM

To:	*Western Meadowlark ProjectCo LLC*
From:	Cassie Baumgartner *Kimley-Horn and Associates, Inc.*
Date:	July 31, 2026
Subject:	Tonganoxie, Reno, and Stranger Townships, Leavenworth County, Kansas - Project BlueStem – *Threatened and Endangered Species Memorandum*

INTRODUCTION

Kimley-Horn was contracted by Western Meadowlark ProjectCo LLC to review the Project BlueStem study area for potential species constraints. The study area is located in Sections 20, 21, 22, 27, and 28 of Township 11S, Range 21E in Tonganoxie, Reno, and Stranger Townships, Leavenworth County, Kansas, see **Figure 1**. The study area is comprised of 7 parcels totaling 1,148 acres and is bound to the north by Honey Creek Road, to the west by 22nd Street, to the south by the Hemphill Road, and is bisected by 214th Street in the central portion of the site (the "study area"). Kimley-Horn reviewed available background data and conducted site visits on May 11-13, 2026, and July 22, 2026, to assist in determining if there are any potential species constraints for the study area.

SITE DESCRIPTION

The majority of the study area consists of rangeland, woodland, and wetlands, with smaller scattered odd areas throughout the site, which includes impervious surfaces and streams. There are several residences and associated outbuildings along the perimeter of the site located off of 22nd Street, Honey Creek Road, and 24th Street. The surrounding parcels adjacent to the study area are primarily composed of rangeland, cropland, woodland, streams, and ponds, see **Figure 2**.

FEDERAL SPECIES

USFWS Federally Listed Threatened, Endangered, and Proposed Species

Kimley-Horn conducted a preliminary review of the potential for federally listed threatened, endangered, and proposed species to occur within the study area or be affected by the proposed project for the purposes of due diligence in compliance with the Endangered Species Act (ESA). Project BlueStem is a privately funded project that is not anticipated to have a federal nexus; therefore, effects determinations for federal species were assessed under Section 9 and 10 of the ESA. A list of the threatened, endangered, and proposed species, and designated critical habitat that could occur within the study area was obtained on July 23, 2026, and evaluated from the USFWS Information for Planning and Consultation (IPaC) online planning tool. The resource list is not considered official USFWS correspondence for ESA consultation. Habitat descriptions for the identified species were compared to the land cover within or near the study area. The resource list obtained via the USFWS IPaC for the project identified five species that should be considered in an effects analysis. The resource list is included in **Attachment A**, and the identified species are reviewed below in **Table 1**.

Table 1: USFWS Federally Listed Threatened, Endangered, and Proposed Species

Species	Federal Status	Preferred Habitat
Myotis septentrionalis (Northern Long-eared Bat [NLEB])	Endangered	During summer, NLEB roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. This bat uses tree species based on suitability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures like barns and sheds. Northern long-eared bats spend winter hibernating in caves and mines. No critical habitat has been designated for this species.
Argynnis idalia occidentalis (Western Regal Fritillary)	Proposed Threatened	The western regal fritillary occupies open, sunny tall-grass prairie and related native prairie habitats, including upland and wet prairies, damp meadows, marshes, and wet fields maintained by periodic natural disturbance. Preferred habitat contains three essential components: violet host plants, nectar-producing plants, and native warm-season bunch grasses that provide protective cover throughout all life stages. No critical habitat has been designated for this species
Danaus plexippus (Monarch Butterfly)	Proposed Threatened	The monarch butterfly requires grassland habitats where milkweed and flowers are present. North American populations of the monarch butterfly typically follow a seasonal migration pattern. The study area is not located within the proposed critical habitat for the monarch butterfly.
Asclepias meadii (Mead's Milkweed)	Threatened	Mead's milkweed primarily occurs in mesic to dry mesic habitats dominated by grasses and forbs. It is most commonly associated with drought- and fire-adapted vegetation such as tallgrass prairie but can also occur in hay meadows and in thin-soiled glades or barrens. No critical habitat has been designated for this species
Platanthera praeclara (Western Prairie Fringed Orchid)	Threatened	The western prairie fringed orchid primarily occurs in moist grass-dominated habitats, including wet tallgrass prairies and sedge meadows. It is typically associated with grassland-wetland environments that experience periodic moisture and disturbance, such as fire, and can occur in rural landscapes with low-intensity land use. No critical habitat has been designated for this species

STATE SPECIES

Kansas Department of Wildlife and Parks

State and federally listed species are protected in Kansas as designated by the *Kansas Nongame and Endangered Species Conservation Act* of 1975[1]. Kimley-Horn submitted a request on May 4, 2026, to the Kansas Department of Wildlife and Parks (KDWP) for an ecological review of the project. KDWP responded on May 19, 2026, requesting additional project information. The requested information was provided by the client and subsequently submitted to KDWP. On May 26, 2026, KDWP issued an official report in response. KDWP confirmed that no state-listed species or critical habitat are present within the study area.

Following a revision to the study area boundary, Kimley-Horn submitted an updated request to KDWP on July 23, 2026. At the time of this report, an official response has not yet been received. Because the revision only involved the addition of an adjacent parcel, no changes to the findings of the May 26, 2026, KDWP report are anticipated.

In addition to correspondence with KDWP, Kimley-Horn evaluated the potential threatened and endangered species using the KDWP ecological review tool (ERT)[2]. A known sighting of Mead's milkweed habitat was identified as potentially overlapping the easternmost portion of the study area. Mead's milkweed is a Species of Concern in Kansas and is a federally threatened species. The last known sighting of this species in this area was 1998.

In addition to threatened and endangered species, Ecological Focus Areas (EFAs) identified by the KDWP represent landscapes within Kansas where conservation actions can be applied for maximum benefit to wildlife. EFAs include suites of Species of Greatest Conservation Need and priority habitats, along with targeted conservation actions designed to address specific resource concerns. One Aquatic Ecological Focus Area overlaps with the eastern portion of the study area, corresponding to the Lower Republican Aquatic EFA. The 2025 Kansas Wildlife Action Plan[3] states that the Species of Greatest Conservation Need in this EFA are largely aquatic species (crustaceans, fish mayflies, mussels, aquatic plants, and turtles). None of these species were identified by the ERT.

ADDITIONAL SPECIES CONSIDERATIONS

Migratory Birds

The Migratory Bird Treaty Act (MBTA) makes it illegal for anyone to "take, possess, import, export, transport, sell, purchase, barter, or offer for sale, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations by the USFWS". The phrase "incidental take" is used when migratory birds are taken or killed because of an otherwise lawful activity but the "take" is not the purpose of that activity. According to the IPaC resource list, 14 migratory species on the Birds of Conservation Concern (BCC) list have been identified within the study area. The BCC list was updated in 2023 by the USFWS and is an effort to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act."

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[1] Kansas Department of Parks and Wildlife, *Kansas Nongame and Endangered Species Conservation Act* of 1975. Accessed at link.
[2] Kansas Department of Parks and Wildlife, Ecological Review Tool. Accessed at link.
[3] Kansas Department of Parks and Wildlife, 2025 *State Wildlife Action Plan*. Accessed at link.

Bald and Golden Eagles

According to the USFWS, the Bald and Golden Eagle Protection Act (BGEPA) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment. Kimley-Horn conducted a preliminary review of the potential for Bald and Golden Eagle habitat to occur on the study area or be affected by the project for the purposes of due diligence in complying with the BGEPA. Kimley-Horn downloaded and reviewed the IPaC official species list (**Attachment A**) to assess for the potential for Bald and Golden Eagles to occur within the study area. Consultation with the USFWS noted the potential for bald eagles in the vicinity of the study area.

SUITABLE HABITAT INVESTIGATION

Field Habitat Assessment Methodology

A field habitat assessment was completed by a qualified Kimley-Horn biologist. Suitable habitat within the study area was assessed for using the Subjective Evaluation of Terrestrial Wildlife Habitats (2004) developed by KDWP Environmental Services Section. This is a subjective evaluation procedure which provides a reasonable holistic biological evaluation of the various habitat types within the study area and was used to rapidly quantify a development project's probable impact on terrestrial wildlife habitats.

Field data forms from this assessment are included in **Appendix B**.

Western Prairie Fringed Orchid Survey Methodology

A western prairie fringed orchid field habitat assessment was completed by a qualified Kimley-Horn biologist. A wetland delineation was completed at the same time as the suitable habitat assessment. The Floristic Quality Assessment described by the USFWS Chicago Ecological Service Field Office Species Survey Guidelines for the eastern prairie fringed orchid (2017) was used to determine the likelihood for presence of the western prairie fringed orchid within delineated wetland areas. These survey guidelines are included in **Appendix C**.

The eastern prairie fringed orchid is similar to the western prairie fringed orchid; however, it inhabits primarily areas east of the Mississippi River whereas the western prairie fringed orchid inhabits primarily areas west of the Mississippi River. Both species occur in moist tallgrass prairies and sedge meadows. Based on the similarities between the two species, the eastern prairie fringed orchid field habitat assessment was used in lieu of a western prairie fringed orchid field habitat assessment as USFWS has not developed a protocol for the western prairie fringed orchid.

On-Site Field Habitat Assessment

Kimley-Horn completed protected species field habitat assessments on May 11-13, 2026, and July 23, 2026.

Habitat types identified within the study area included rangeland, woodland (riparian and upland), streams, and odd areas. Odd areas are defined as small tracts of land which generally do not meet the criteria of other habitat communities and include farmsteads, field corners, small abandoned crop fields, vegetated gullies, permanently vegetated fencerows or field borders, waterways, or any other such area which provides wildlife food and/or cover and adds vegetative diversity to the landscape.

Habitat types were assessed for a qualitative threshold using an “R-value” to determine habitat quality. For all habitat types the qualitative thresholds for ratings are: Excellent Habitat = 8.0-10.0; Good = 5.6-7.9; Fair = 3.1-5.5; Poor = 0.0-3.0.

Twenty-four wetlands were delineated within the study area. While some of the wetlands were identified as sedge meadows, none were determined to be high quality (Native Floristic Quality Index of less than 20). The wetland delineation is included under a separate cover.

Field habitat assessment notes are described below in **Table *2*** and are depicted in **Figure 3.**

Table 2: Field Habitat Assessment Notes

Habitat Type	Acreage within Study Area	Quality Rating (R-value)	Notes
Rangeland	936	Good (7)	The majority of the study area consists of rangeland made up of native or seeded grasses, forbs, and shrubs, and may be used for grazing or hay production. These areas may provide suitable habitat for species such as the monarch butterfly, Mead's milkweed, and western regal fritillary. A monarch butterfly and common milkweed (food source for the monarch) were observed in rangeland areas.
Riparian Woodland	151	Good (6.25)	Riparian woodland occurs throughout the study area, with the greatest extent concentrated in the southwestern corner adjacent to watercourses and associated floodplain areas. These woodlands occur on alluvial soils influenced by nearby drainage features. The dominant tree species observed were a mix of elm, willow, cottonwood, and cedar. Riparian woodland could provide suitable habitat for the NLEB.
Wetland	22	Good (6)	Wetlands were identified throughout the study area. Wetlands consist of areas where soils are periodically inundated or saturated with water and vegetation is dominated by hydrophytic species. Wetlands could provide suitable habitat for the western prairie fringed orchid and western regal fritillary.

Habitat Type	Acreage within Study Area	Quality Rating (R-value)	Notes
Upland Woodland	20	Fair (5.5)	Upland woodland occurs throughout the study area on higher ground outside of floodplain and stream corridors. The dominant tree species observed were a mix of elm, walnut, and cedar. Upland woodland could provide suitable habitat for the NLEB.
Odd Area	19	Fair (5)	Odd areas within the study area primarily consisted of farmsteads or fence rows. Odd areas were not considered suitable habitat for species identified by the USFWS or the Kansas KDWP.

Findings

Federal Species

Based on the information reviewed, potential suitable habitat for listed and sensitive species was identified within the study area, see **Figure 4**. Therefore, Kimley-Horn identified potential species constraints that could require additional planning.

Table 3: Federal Species Findings

Species	Suitable Habitat Within Study Area	Total Potential Species Habitat	Habitat Determination
Federally Listed Species			
Myotis septentrionalis (NLEB)	Woodland	171 acres	Based on the known preferred habitat for the NLEB and the presence of suitable habitat identified during the site visit, the species has the potential to occur within the study area.
Asclepias meadii (Mead's milkweed)	Rangeland	936 acres	Based on the known preferred habitat for Mead's milkweed and suitable habitat observed during the site visit, the species has the potential to occur within the study area. Rangeland within the study area has an R value of 7, indicating good habitat quality.

Species	Suitable Habitat Within Study Area	Total Potential Species Habitat	Habitat Determination
Platanthera praeclara (Western prairie fringed orchid)	None	0 acres	Sedge meadows were identified on site, however, none were determined to be high quality (Native Floristic Quality Index of less than 20). Because of this, is unlikely that the western prairie fringed orchid is present in wetlands on site.
Federally Proposed Species			
Danaus plexippus (Monarch butterfly)	Rangeland	936 acres	Based on the known preferred habitat for the monarch butterfly, the presence of suitable habitat, and a monarch butterfly observation, the species has the potential to inhabit the study area. Rangeland within the study area has an R value of 7 indicating good habitat quality.
Argynnis idalia occidentalis (Western regal fritillary)	Rangeland, Wetland	958 acres	Based on the known preferred habitat for the western regal fritillary and the presence of suitable habitat identified during the site visit, the species has the potential to occur within the study area. Rangeland within the study area has an R value of 7, indicating good habitat quality, while wetland habitat has an R value of 6, indicating good habitat quality.

KDWP Correspondence

Based on KDWP's previous review, no significant impacts to critical wildlife habitats or listed threatened and endangered species or species of conservation concern are anticipated. No KDWP permits or authorizations are required provided construction begins within one year and project plans remain unchanged. If construction is delayed or plans are modified, or as design and disturbance limits are finalized, additional review may be required. Coordination with other regulatory agencies may also be necessary.

Migratory Birds and Bald and Golden Eagle Findings

Areas of woodland, which contained mature hardwoods suitable for nesting or temporary stopovers, were located throughout the study area. Undisturbed rangeland could also provide suitable nesting habitat for ground nesting migratory birds. Migratory birds, including a red-headed woodpecker, were observed on site. No bald or golden eagle nests were observed during the site visit; however, the site visit did not include a comprehensive stick nest survey, so the potential for migratory birds and eagles to occur within the study area should be considered.

MITIGATION

Federally Listed Species

Absent a federal nexus, mitigation for the northern long-eared bat, western regal fritillary, monarch butterfly, Mead's milkweed, and western prairie fringed orchid are not anticipated.

Bald and Golden Eagles

If tree clearing is anticipated within 660 feet of an eagle nest, an incidental take permit may be required. Given no eagle nests were identified within the study area, no mitigation is anticipated at this time.

State Listed Species

Based on official correspondence with KDWP, no state-listed species were identified within the study area. No significant impacts to critical wildlife habitats are anticipated; therefore, no special mitigation measures are recommended.

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VOLUNTARY CONSERVATION MEASURES

Federally Listed Species

Kimley-Horn recommends avoiding tree clearing from November 1 to March 15 to avoid potential impacts to the NLEB.

Kimley-Horn recommends reseeding disturbed grasslands with a native seed mix to avoid potential impacts to the monarch butterfly and the western regal fritillary.

Kimley-Horn recommends avoiding or minimizing wetland impacts to the extent practicable to avoid potential impacts to the western regal fritillary.

Migratory Birds

Kimley-Horn recommends considering tree clearing timing restrictions to limit potential impacts to migratory birds and their habitat.

State Listed Species

The KDWP recommends avoiding tree removal from June 1 through July 31 to minimize impacts to bats.

The KDWP recommends avoiding or minimizing disturbance to streams, rivers, riparian corridors, wetlands, springs, floodplains, native prairie, and woodland habitats, especially during sensitive periods such as the fish spawning season (March 1–August 31), and using bridges or other span structures for stream crossings where feasible.

The KDWP recommends siting new infrastructure, staging areas, laydown yards, access routes, stockpiles, and borrow areas in previously disturbed or lower-quality habitats or existing developed areas to the extent practicable.

The KDWP recommends minimizing removal of native upland and riparian vegetation during construction, maintenance, and repair activities, and restoring temporarily disturbed areas using regionally appropriate native species in coordination with KDWP Ecological Services Division guidance.

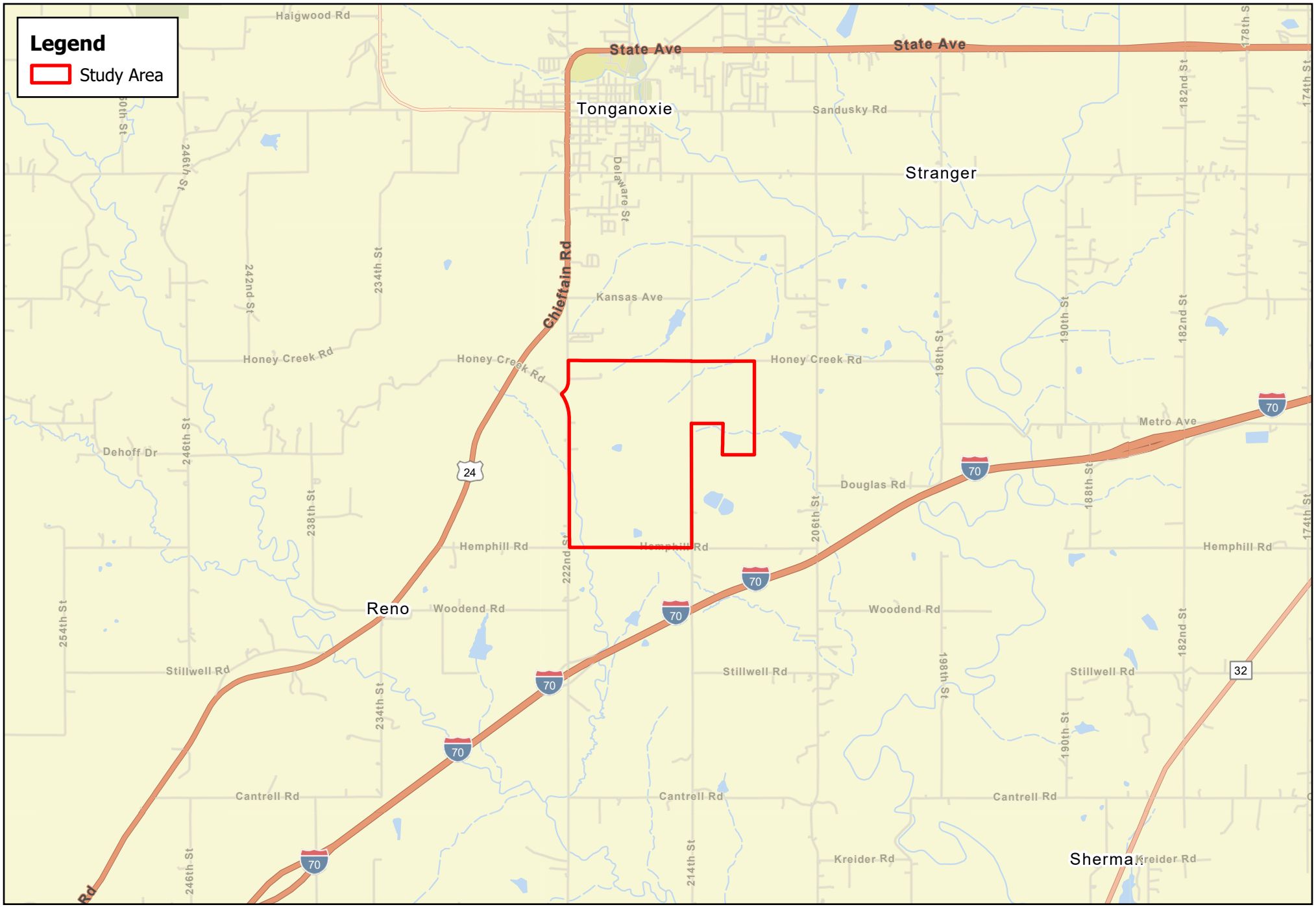
The KDWP recommends implementing APLIC-recommended avian protection measures, including line marking and perch deterrents in areas of documented or repeated avian mortality, supported by monitoring and adaptive management.

The KDWP recommends preventing the introduction and spread of invasive species through equipment cleaning prior to site access and maintaining invasive species control until native vegetation is established.

The KDWP recommends reducing wildlife disturbance by using noise reduction strategies (e.g., vegetative buffers, siting, and acoustic barriers) and minimizing light pollution with shielded, low-intensity, warm-colored lighting (<3000K).

The KDWP recommends minimizing water use and resource impacts by implementing efficient cooling systems, avoiding sensitive aquatic habitats, incorporating water reuse strategies, and optimizing energy efficiency through equipment design and renewable energy integration.

Figures

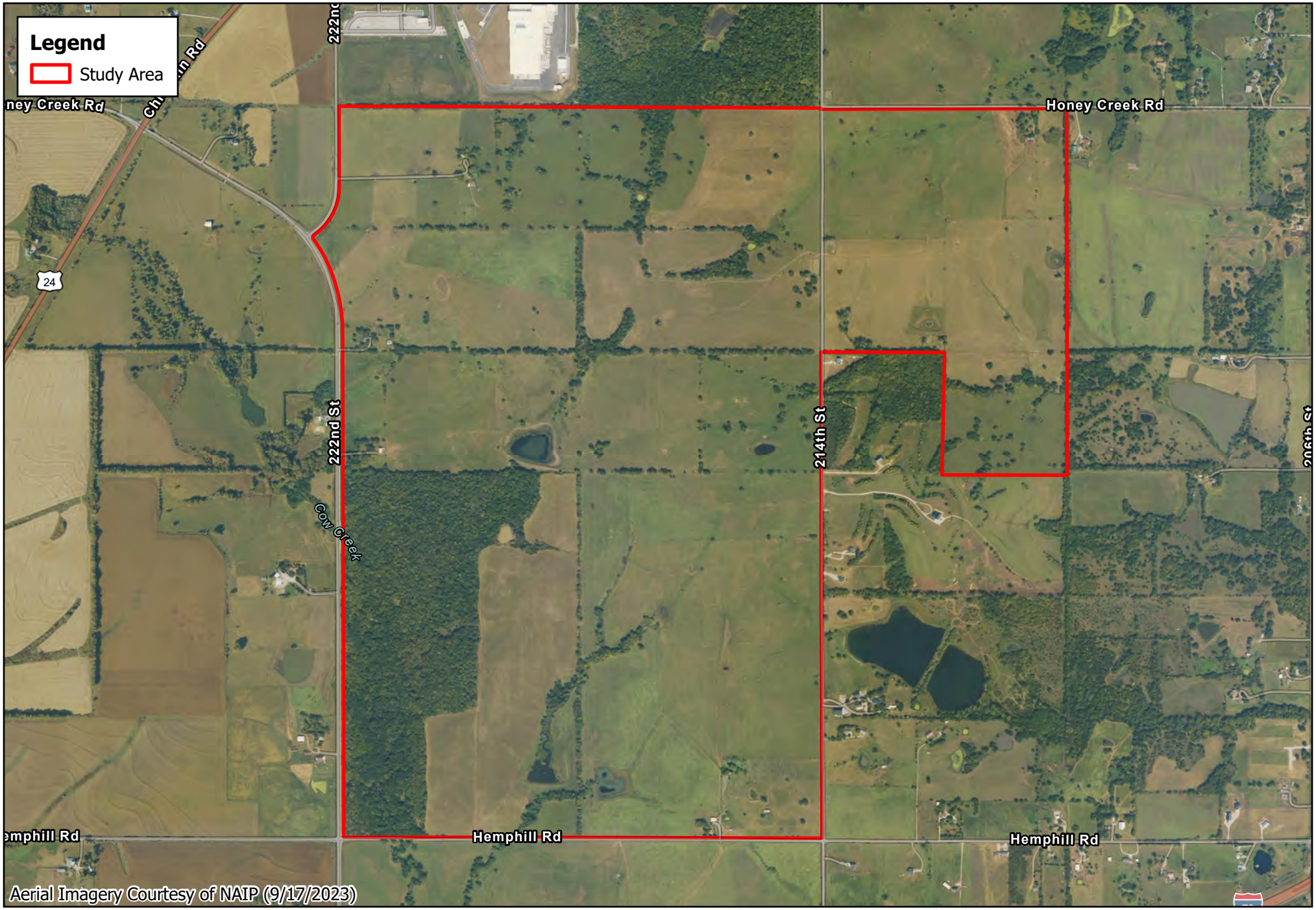


Kimley»Horn

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Figure 1. Project Location
Tonganoxie, Reno, Stranger Townships
Leavenworth County, KS

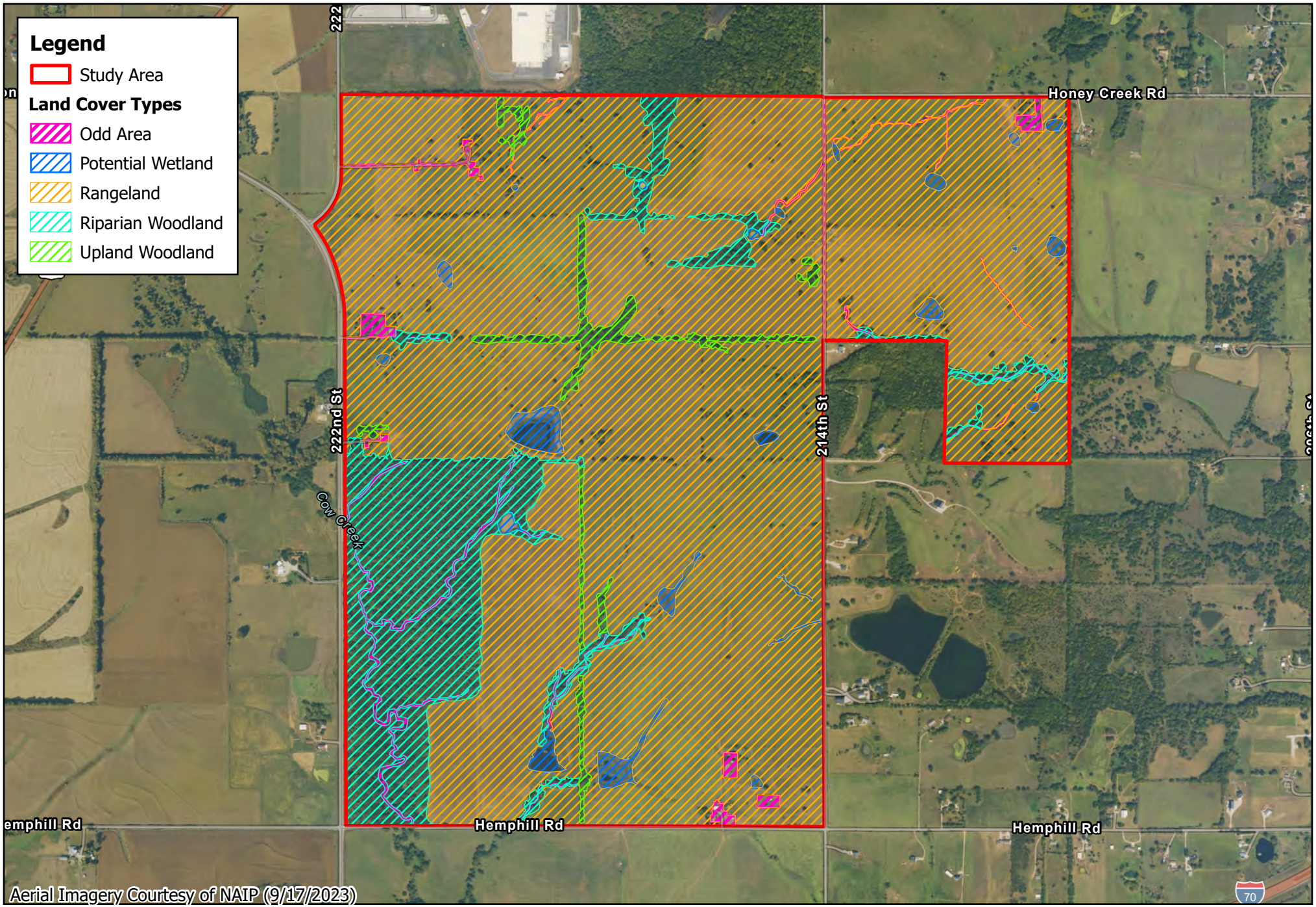


Kimley»Horn

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US Feet

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Figure 2. Study Area Boundary
Tonganoxie, Reno, Stranger Townships
Leavenworth County, KS

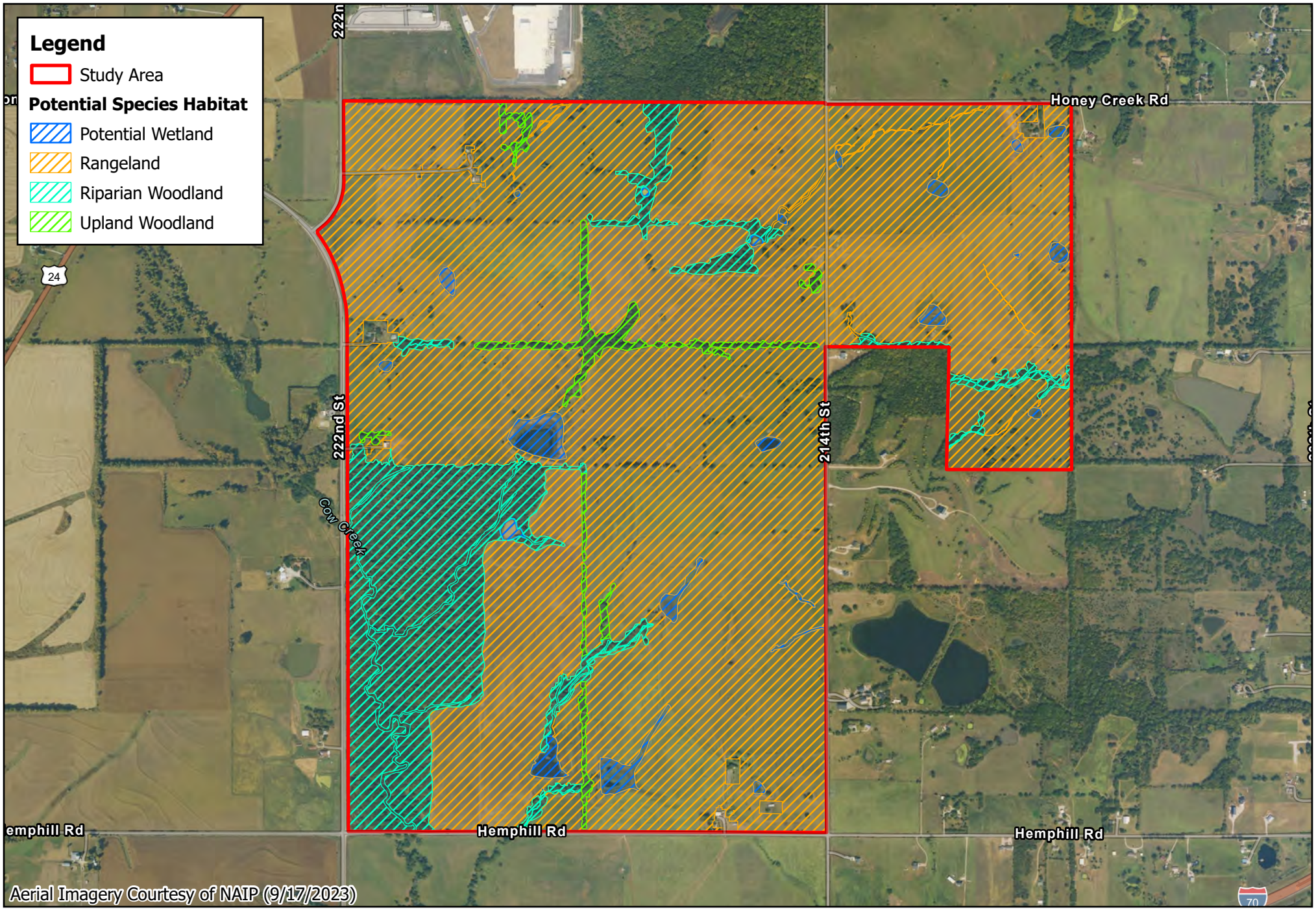


Kimley»Horn

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US Feet

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Figure 3. Cover Types
Tonganoxie, Reno, Stranger Township
Leavenworth County, KS



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US Feet

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Figure 4. Potential Species Habitat
Tonganoxie, Reno, Stranger Townships
Leavenworth County, KS

ATTACHMENT A

Agency Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, KS 66502-2801
Phone: (785) 539-3474 Fax: (785) 539-8567

In Reply Refer To: 07/23/2026 13:31:08 UTC
Project Code: 2026-0120181
Project Name: Project BlueStem

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

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

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, KS 66502-2801
(785) 539-3474

PROJECT SUMMARY

Project Code: 2026-0120181
Project Name: Project BlueStem
Project Type: Data Center
Project Description: Project is proposed to be developed
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.0693915,-95.08415284677432,14z



Counties: Leavenworth County, Kansas

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

MAMMALS

NAME	STATUS
Northern Long-Eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

INSECTS

NAME	STATUS
Monarch butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Western regal fritillary *Argynnis idalia occidentalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/12017	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Mead's milkweed *Asclepias meadii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8204	Threatened
Western prairie fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Private Entity
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Operations Office
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Pratt, KS 67124-8174

Kansas
Department of
Wildlife and Parks

Phone: (620) 672-5911
Fax: (620) 672-2972
www.ksoutdoors.gov

Christopher Kennedy, Secretary

Laura Kelly, Governor

Kansas Department of Wildlife and Parks Ecological Review Report

Contact Information

Company/Organization:	Kimley-Horn
Submitted By:	Lexi Daniels
Phone:	6516430450
Email:	lexi.daniels@kimley-horn.com
Mailing Address:	767 N Eustis St St Paul, MN 55114

The following project information has been submitted by Lexi Daniels. All project locations are assumed to be precise and accurate for the purpose of this Ecological Review. The provider of the project data entry is solely responsible for the project location and thus the correctness/accuracy of the Kansas Department of Wildlife and Parks (KDWP) Ecological Review Report content. If the project location(s) or scope of work changes, the project sponsor must resubmit the project (with updated information) for further review.

Project Information

Automated Determination:	**Further Review by KDWP Required**

Report Generation Date:	07/23/2026
Project Sponsor:	
Project Title:	Project BlueStem
KDWP Tracking Number:	ERT20260946
Project Size (acres):	1150.51
County(ies):	• Leavenworth
HUC 8 Watershed(s):	• LOWER KANSAS. KANSAS, MISSOURI.
Section-Township-Range:	S27-T11S-R21E, S28-T11S-R21E, S21-T11S-R21E, S20-T11S-R21E, S22-T11S-R21E
Latitude/Longitude (Project Centroid):	39.07045/-95.08167
Project Details Accuracy Certified:	Yes
Project Activities:	• Borrow, waste, and staging area (including temporary asphalt/concrete plants) creation/operation • Data center construction/maintenance/decommissioning • Detention basin, bioswale, rain garden, other bio-retention area construction/maintenance • Parking areas, loading docks, etc. construction/improvements • Pre-development site clearing, grubbing, grading

Project Description

This site is proposed to be developed.

Ecological Review Findings: Further Review by KDWP Required

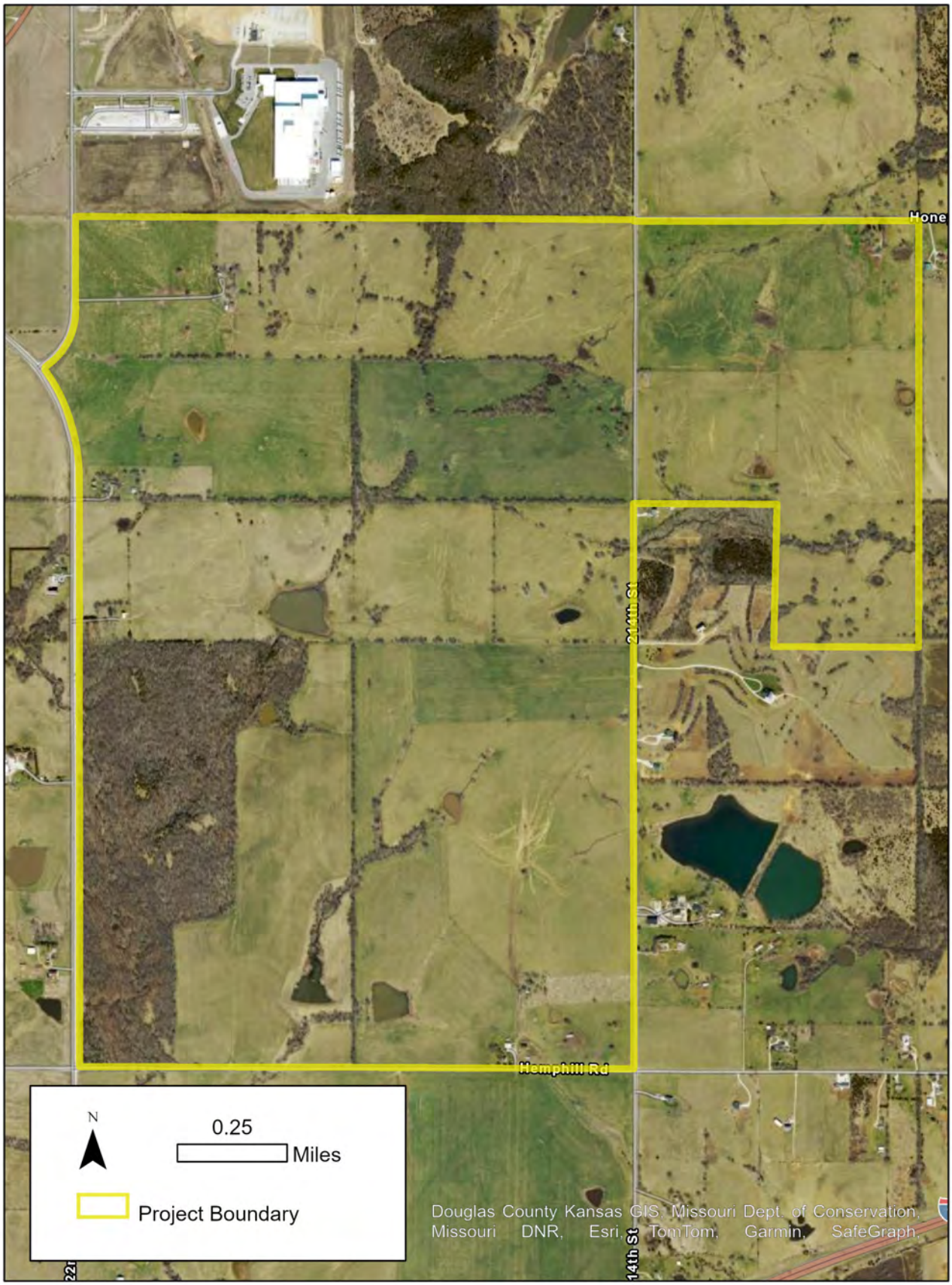
Preliminary review of the project information provided indicates further review is required by KDWP staff to evaluate and assess potential impacts to critical wildlife habitats, current state-listed threatened or endangered species and species in need of conservation, as well as KDWP-managed areas for which this agency has administrative authority. If proposed project type activities have triggered the need for additional review, KDWP staff will determine if submitted information is sufficient to complete our comprehensive review of potential project impacts. **Issuance of an Action Permit may be required by this Department prior to the start of construction.** However, receipt of this report does not confirm that an Action Permit will be required. Within 30 days, you will be contacted by KDWP. This correspondence will either be a request for more information or provide this agency’s determination

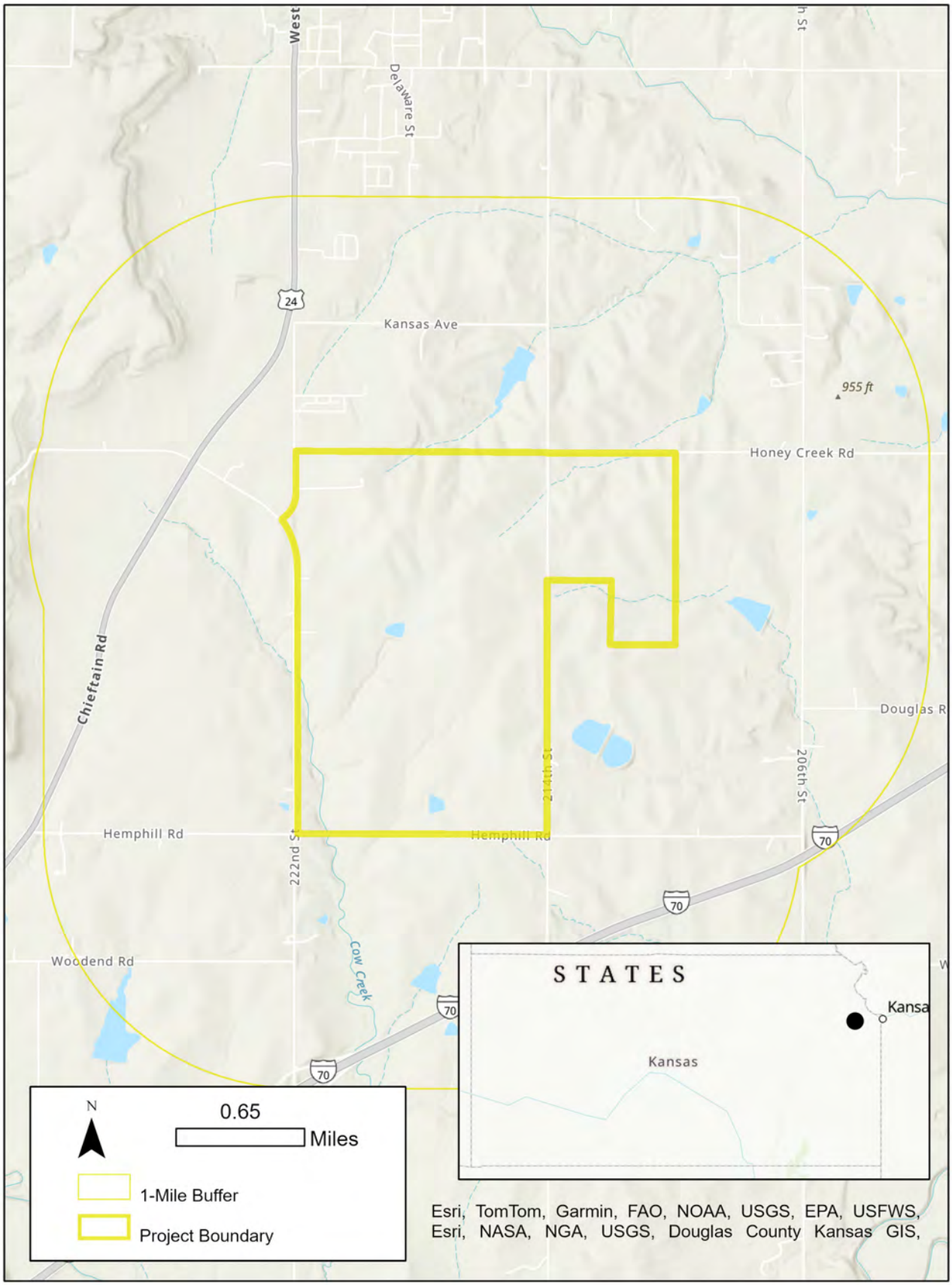
regarding the necessity of Action Permit issuance. This report should not be construed as project clearance or completed coordination with KDWP. We ask that all other necessary permits be held in abeyance until conditions necessary to protect threatened and endangered species have been determined and established.

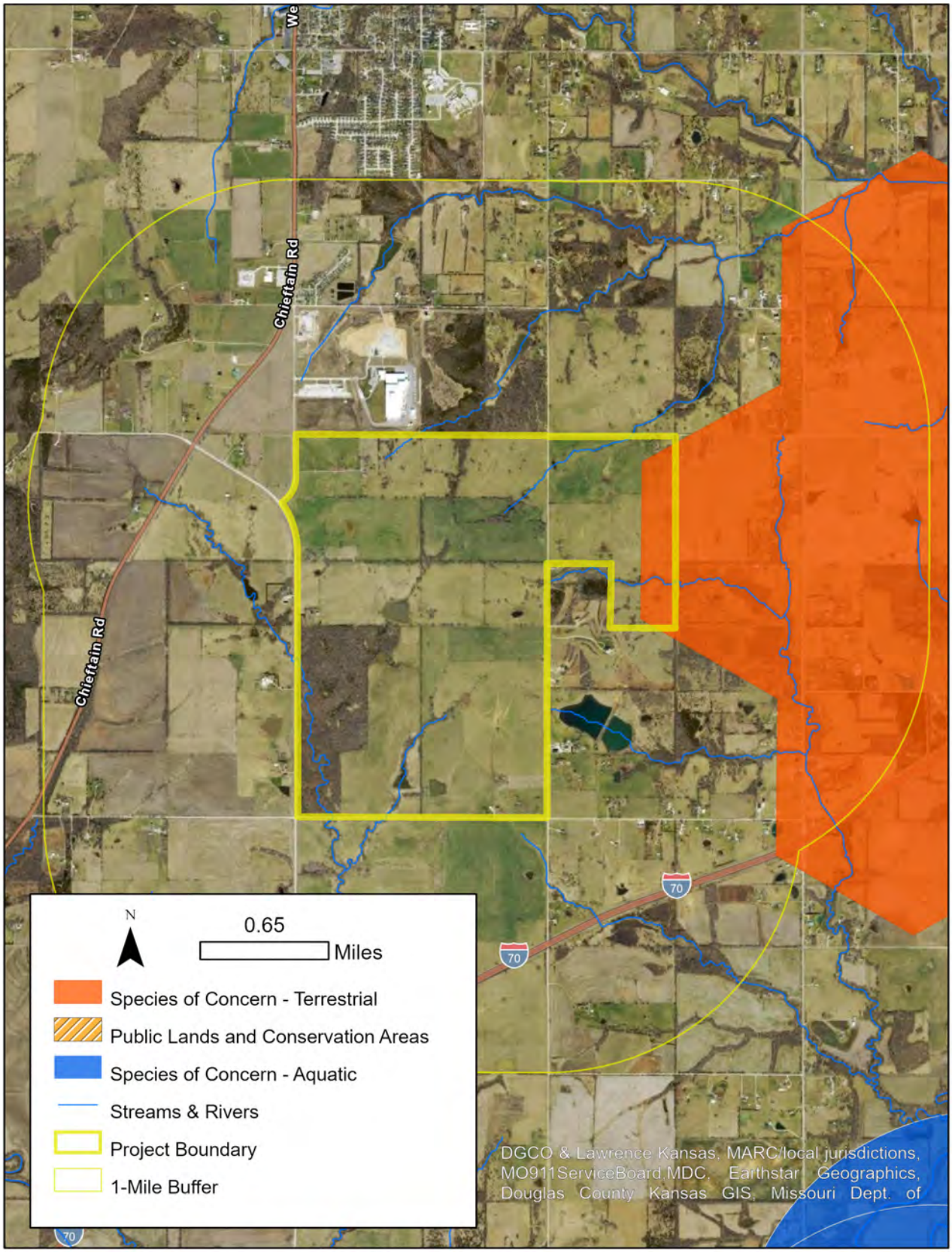
Conflict Details

Project Type Activity Conflicts

Your selection of "Data center construction/maintenance/decommissioning" caused the conflict, and will require further review by KDWP staff


Hone
Hemphill Rd
N
0.25
Miles
Project Boundary
Douglas County Kansas GIS, Missouri Dept. of Conservation, Missouri DNR, Esri, TomTom, Garmin, SafeGraph


West
Delaware St
24
Kansas Ave
955 ft
Honey Creek Rd
Chieftain Rd
Douglas R
214th St
206th St
Hemphill Rd
Hemphill Rd
222nd St
70
70
70
70
Woodend Rd
Cow Creek
STATES
Kansa
Kansas
N
0.65
Miles
1-Mile Buffer
Project Boundary
Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS,
Esri, NASA, NGA, USGS, Douglas County Kansas GIS,


Chieftain Rd
Chieftain Rd
70
70
N
0.65
Miles
Species of Concern - Terrestrial
Public Lands and Conservation Areas
Species of Concern - Aquatic
Streams & Rivers
Project Boundary
1-Mile Buffer
DGCO & Lawrence Kansas, MARC/local jurisdictions, MO911ServiceBoard,MDC, Earthstar Geographics, Douglas County Kansas GIS, Missouri Dept. of

KDWP Statutory Authority

Legal authority for the conservation and recovery of state-listed wildlife species is delegated to KDWP through K.S.A 32-957 through 32-963, 32-1009 through 32-1012, 32-1033, and K.S.A. 32-960a and 32-960b cited as the Kansas Nongame and Endangered Species Conservation Act. These statutory directives are implemented through K.A.R. 115-15-1 through 115-15-4. Additional review authorities are granted to KDWP through K.S.A 82a-825 and 82a-326 known as the Water Projects Environmental Coordination Act.

Agency Contact Information

General Inquiries:	Kansas Department of Wildlife and Parks Operations Office 512 SE 25th Ave. Pratt, KS 67124 KDWP.kdwpinfo@ks.gov 620-672-5911

Ecological Review Inquiries:	Kansas Department of Wildlife and Parks Ecological Services Division 512 SE 25th Ave. Pratt, KS 67124 KDWP.ess@ks.gov 620-672-0798

ATTACHMENT B

Field Datasheets

SUBJECTIVE EVALUATION OF
TERRESTRIAL WILDLIFE HABITATS, 2004

Developed by: KANSAS DEPARTMENT OF WILDLIFE AND PARKS
ENVIRONMENTAL SERVICES SECTION (Revised 2004)

These subjective evaluation procedures are to be used to rapidly quantify a development project's probable impact on terrestrial wildlife habitats. These procedures have been developed and revised by current and former employees of the Kansas Fish & Game Commission (KDWP), Soil Conservation Service (NRCS), and from NRCS Kansas Fish and Wildlife Habitat Analysis Procedure (190-V-NMB, Amend. KS1, May 1984). They are designed to provide a reasonable holistic biological evaluation of the various habitat types. Findings from a project evaluation using these procedures are to be recorded on standard field forms (included).

Each habitat type or community present within the impact area will be rated. The assessment will provide a quantitative value (R) from 0.0 to 10.0 that represents the quality of the habitat being evaluated compared to the optimal habitat (i.e. reference site) type for the geographical area in question, with a score of 10.0 representing reference site conditions.

On the following pages, the evaluation steps for each habitat type are shown. Also included is a field key. Please keep in mind the criteria keys are only guides to obtain uniformity in evaluating different tracts. In general, the information provided is to serve as a standardized checklist for identifying habitat communities by placing a value on their quality. However, if professional judgment determines the habitat characteristics are different than those indicated by the key, or there exists a unique habitat or wildlife resource not adequately covered by the given criteria, a narrative description can be developed in the field and a quality rating made. Such field-developed evaluations must be documented through a narrative description of the criteria used and attaching it to the field report.

TERRESTRIAL WILDLIFE HABITATS

There are six main habitat types that this procedure is designed to evaluate:
(see individual guidelines for habitat descriptions)

1. Woodlands (both riparian and upland)
2. Rangeland
3. Pastureland
4. Cropland
5. Wetlands
6. Odd areas

For all habitat types the qualitative thresholds for ratings are:
Excellent Habitat = 8.0 - 10.0; Good = 5.6 - 7.9; Fair = 3.1 - 5.5; Poor = 0.0 - 3.0

With most seasonal and permanently resident terrestrial wildlife, a 10.0 habitat value generally represents the highest quality vegetative-structural community that can be achieved. High-quality wildlife habitat may be influenced by plant characteristics such as species composition, age class, or growth form. Other site characteristics that influence habitat quality include geomorphic variations in land structure (cliffs, rock outcrops, caves, etc.), and ecological site or spatial relationships to adjacent habitats that provide resource requirements for wildlife (forage materials, nesting sites, shelter, etc.)

When evaluating large areas, it is not uncommon to encounter several parcels of the same habitat type that have significantly different quality values due to various reasons (i.e. grazed mature woodland will have a lower quality than ungrazed mature woodland). Such parcels should be evaluated and documented separately. Use professional judgement when determining if these characteristics exist.

Interspersion (IV)

Interspersion is rated as a separate entity for all habitat communities. It is determined by counting the number of habitat types adjacent to the habitat being evaluated. The numbers of adjacent habitat types are summed, and the appropriate interspersion value is added to the quality rating (R), however, **a habitat's R-value cannot exceed 10 regardless of level of interspersion**. Adjacent habitat types to be evaluated for interspersion should include aquatic habitats as well. The following habitat types should be considered for interspersion:

1. Woodlands
2. Rangeland
3. Pastureland
4. Cropland
5. Wetlands
6. Odd areas
7. Streams (ephemeral, intermittent, perennial)
8. Impoundments (ponds, lakes, reservoirs)

The following table summarizes the interspersion values to be added to R-value of the habitat type being evaluated.

Number of adjacent habitat types

	0	**1**	**2**	**3**	**4+**
IV value	**-0.5**	**0**	**+0.5**	**1.0**	**1.5**

WOODLAND EVALUATION

Woodland is an area having woody plant species that produce canopy cover of at least 25% of the basal area. Woodlands dominated by invasive exotic or naturalized species should be rated lower than sites having native species historically indigenous to that landscape. Sites that have woody colonization due to the suppression of fire or other management effects should be rated lower. Subjectivity to account for these instances should be applied by selecting an appropriate value from the range of points in the "Species Groups" ratings.

Although trees dominate woodland areas, other vegetative cover such as shrubs, vines, grasses, and forbs often are often found intermixed within woodlands constituting the understory. The habitat value of the overall woodland is enhanced by the presence and abundance of these other vegetation types, as well as habitat provided by dead timber (standing/fallen) and other woody debris and leaf litter. Den trees are also included as a component in the evaluation because of the refuge and nesting habitat they provide to a variety of fauna.

Two categories of woodland can be identified:

Riparian Woodland = Timber along watercourses most readily identified where floodplains exist. Generally, in Kansas, these areas can be identified in the USDA-NRCS County Soil Survey Manual as flat to gently sloping well to poorly drained soils along watercourses. Deeply incised streams often have been separated from their floodplains due to a variety of natural and anthropogenic activities. Woodlands adjacent to these areas should be evaluated as riparian, and delineated by alluvial soil types from soil survey maps.

Upland Woodland = All timber not associated with a floodplain or stream. Upland woodlands typically can be delineated with the use of soil survey maps.

Procedure

1. Review the species group and plant form components of the woodland key. Traverse the tract sufficiently to obtain a reliable indication of vegetative composition and distribution. Record species of trees, shrubs, vines, grasses, and forbs encountered in as much detail as possible.

2. Record an estimated percentage of canopy cover.

3. Using the woodland key, tabulate the applicable component points (40 points maximum). Determine quality rating by dividing total component points by four (4). Identify adjacent habitat types and add interspersion value (IV).

4. If an evaluator’s estimation of canopy density is challenged by an individual or entity to be less than the 25% required by the woodland definition, evidence should be presented to document this challenge. Specific measurements of canopy closure can be performed using a vertical point sampling device and tallying the number of hits where the crosshairs are covered by foliage, aerial photographs and dot matrix scales, spherical densitometers, hemispherical camera lens photographs, or by measuring tree crown widths and calculating the % surface area covered.

WOODLAND KEY Evaluate for composition and distribution of components throughout stand.

Estimated Canopy Cover (minimum 25%) 70%

Species Groups	Points
All 5 species groups (Nut, Mast, Fruit, Seed, Evergreen)	6 to 10
4-5 species groups	3 to 6
Nut or mast + 2 other spp. groups	1 to 3
2-3 spp. groups	1 to 3
1 species group	1

Plant Form	Score each plant form as
Trees over 12" dbh	Abundant = 3 points
Trees over 25' tall	Common = 2 points
Trees 3'-25' tall	Sparse = 1 point
Trees up to 3' tall	Absent = 0 points
Shrubs	
Vines	
Grass	
Forbs	
Debris and/or Standing Dead, Snags	
Den Trees	

Total Points / 4 + IV = R

Circle adjacent habitat types: Rangeland Pasture Impoundment
Cropland Wetland Odd Area Stream

Trees

Osage-orange, hackberry, eastern red cedar, American elm, eastern black walnut, black willow, white mulberry, Eastern cottonwood, post oak, honey locus

Shrubs

Osage-orange, hackberry, eastern red cedar, honeysuckle, eastern black walnut, black willow, coral berry, rough dogwood

Vines

Grass

Smooth brome

Forbs

Stickseed, poison ivy, poison hemlock, multiflora rose, catchweed bedstraw, common dandelion, red clover, white clover, ragweed, field penny-cress, fleabane, compass plant

Species Groups

Nut Trees = Hickories, pecan, black walnut

Mast Trees = Oaks

Fruit Trees = Hackberry, mulberry, Osage-orange, paw paw, wild crab, hawthorn, red haw, black cherry, chokecherry, western soapberry, flowering dogwood, wooly buckthorn, persimmon, Smooth black haw

Seed Trees = All other deciduous trees

Evergreen = Eastern red cedar

RANGELAND EVALUATION

Rangeland is an area of native grasses, grass-like plants, forbs and shrubs. The grasses may be either naturally occurring or seeded by man. Rangeland may be used for either grazing or hay.

Grasslands ecosystems have historically undergone frequent periods of disturbance. Grazing mammals (domestic or wild) provide diverse effects on plant community composition and structure that are natural to the ecosystem; however, mismanagement by humans (i.e. overgrazing) will often degrade the grassland by altering plant composition. In addition, community disturbance has historically been provided by fire; however, poorly managed burning regimes influenced by humans and/or suppression of fire has also degraded grasslands from their historic community composition. Low-quality grasslands will generally be those having the greatest amounts of woody plants, increasers, and/or invaders. Woody plants, especially trees, are a deterrent to ground-nesting birds, and overdeveloped woody shrub invasion can act as corridors for mammalian species such as skunks and raccoons that will prey upon nests. Professional judgement should be used when evaluating a rangeland that contains woody vegetation. Sparsely scattered mature trees and shrub corridors along breaks and valleys within grasslands may not be a deterrent to wildlife adapted to open the prairie. The evaluator should consider the landscape and reference grasslands in the area when determining whether a tract is degraded by woody vegetation. Examples of rangelands that would provide low-quality habitat include tracts invaded by mature trees (especially Honey locust, Osage orange and Eastern Red Cedar), those that would require high economic costs to restore (chemical, physical restoration methods), and rangeland that has been over-utilized to the point where invasive and/or exotic plants are established (i.e. undesirable forbs, Sericea Lespedeza, etc.).

The evaluator should keep in mind that the quality rating should reflect the grassland's ability to support wildlife rather than its ability to produce forage for livestock. Smaller patchy tracts where poor management has allowed fragmentation by windbreaks, cropfields, roads, etc also typify lower ratings. The highest ratings are intended to describe functioning native rangeland which is maintained in the historic successional stage. The size and management of the grassland supports the maintenance of key/barometer wildlife species. Large continuous tracts of native rangeland are generally higher in quality and are more beneficial to grassland-evolved species rather than rangeland fragmented by other habitat types (Horak, 1985). When evaluating native rangeland occurring in a minimum continuous tract of one (1) square mile or greater the evaluator should provide the appropriate amount of additional points to the score. Generally, higher rated rangeland will be at least 1-3 square miles in size. An exception to this would be where a site has rare or unique plant life.

Horak, G.J. 1985. Kansas prairie chickens. Kansas Fish and Game Commission, Pratt, KS.

Procedure

1. Review the species group and plant form components of the rangeland key. Transect the tract sufficiently to reasonably assure that an overall (average) evaluation can be made.

2. Using the rangeland key as a guide, determine the proper set of components for the tract in question and assign a quality rating indicative of existing habitat conditions. If a different combination of components exists, document them on the field report.

3. Add or subtract appropriate points based on the size of the rangeland. Identify adjacent habitat types and add interspersion value.

RANGELAND KEY

	Component Points
A. Decreasers reproducing stand **B.** Plants in healthy condition **C.** Herbaceous increasers not conspicuous **D.** Woody increasers are not conspicuous	9.0- 10.0
A. Decreasers conspicuous, can recover **B.** Woody invaders may be established, others reproducing markedly **C.** Woody increasers may be conspicuous	6.0– 8.9
A. Decreasers not conspicuous **B.** Annuals/invaders conspicuous **C.** Increasers established **D.** Broadcast herbicide use evident	3.0– 5.9
A. Decreasers absent **B.** Invaders established – Trees mature and extensive **C.** Desirable wildlife food/cover nearly absent	0 – 2.9

Tract is continuous for >1 square mile _____ + 1.5
Tract is continuous for > 2 square mile _____ + 2.5
Tract is fragmented by woody invasion, windbreaks, roads, crop fields, etc._____ - 1.5 to - 2.5
Rare or unique plant life (list and provide appropriate points)_____

Points + IV = R

Circle adjacent habitat types: Woodland Pasture Impoundment
Cropland Wetland Odd Area Stream

PASTURE EVALUATION

Pasture is an area seeded by man to any cool or warm season domestic perennial grass. In general, stands of the domestic perennial grasses common in Kansas are of low-value to terrestrial wildlife. Their growth form and recommended use essentially eliminates any potential for providing dependable protective cover. Monocultures of native plants generally have lower wildlife habitat value than diverse mixtures of plant species. Quality of the grass (i.e. amount of exposed bare ground, grazing pressure, etc.) will also dictate the quality of the pasture along with the presence and/or absence of desirable and undesirable forbs. Desirable forbs consist of a mix of native perennials, bi-annuals, and annuals. In general, legumes and other flowering plants can have high wildlife habitat value for direct use as food or indirectly as habitat for insects, or as a benefit to improving soil quality. Aggressive and/or invasive native or exotic species are generally considered undesirable due to their tendency to develop monocultures. Consideration should be given to the soil type, nutrition, past management practices, and climate when determining the quality of the vegetation. The location of the vegetation in the landscape and the year-round support of resident wildlife and/or temporal use by migratory wildlife are factors that will add/detract from the quality rating.

Invasion of woody plants into pastures will improve the quality of a pasture. Any area seeded to annual grasses, regardless of their use or purpose, shall be designated cropland, not pasture.

Procedure

1. Review the components of the pasture key. View the tract being rated sufficiently to assure that an overall (average) evaluation can be made.

2. Using the pasture key, assign the appropriate habitat rating (R) for the components present and add interspersion value (IV) for the appropriate number of adjacent habitat types.

PASTURE KEY

	Component Points
Grass in good-excellent condition with desirable forbs present:	
A. Warm season pasture	9
B. Cool season pasture	8
Grass in poor-fair condition with desirable forbs present:	
A. Warm season	7
B. Cool season	6
Grass in good-excellent condition with undesirable forbs abundant:	
A. Warm season	5
B. Cool season	4
Grass in poor condition with undesirable forbs present:	
All pastures	3
Grass in fair-good condition with no forbs present (herbicide use evident)	
All pastures	2
Grass in poor condition with no forbs	
All pastures	1
Any of the above with some established woody:	+ 1

Total Points + IV = R

Circle adjacent habitat types: Rangeland Woodland Impoundment
Cropland Wetland Odd Area Stream

CROPLAND EVALUATION

Cropland is an area used for production of row crops, small grain, legumes, or domestic annual forage crops. Cropland can provide dependable cover for a short time and abundant food seasonally; however, regardless of the type of crop grown, cropland is subjected to an annual major disturbance that results in poor wildlife habitat during some part of the year. In general, crop fields of milo, feed grains and corn provide cover and food for longer periods of time, especially during the winter months when these resources are in shortage. For this reason they are considered of higher habitat value to wildlife. Various management strategies can also influence the quality of habitat a crop field will provide. Parcels of abandoned cropland may be common where soils are poor. Such lands will be in various stages of succession and it may be more appropriate to evaluate these areas as 'odd' areas, rather than crop field. Use professional judgement if this circumstance arises.

Field size may influence the quality of the crop field's benefit to wildlife. Small field sizes are beneficial to wildlife species that are well adapted to disturbed plant communities having high amounts of "edge" and typically border riparian woodlands. Large field sizes are beneficial to wildlife species that are more intolerant of small fields (i.e. migratory waterfowl such as geese and some species of ducks and shorebirds). Evaluators should determine which criteria, if any, are applicable to the local conditions and score the site appropriately.

Crop rotation can have profound effects on wildlife. Double-cropping results in more frequent soil disturbance and potentially, higher mortality of resident wildlife and wildlife population recruitment. Annual cropping provides less soil disturbance than double-cropping and wildlife habitat is provided on a temporary basis. The significant influence on wildlife habitat quality with annual cropping is timing and spatial distribution of other suitable habitats. Landscape features such as corridors, predator traps and suitable cover are characteristics that affect wildlife habitat quality. Crop rotations that include alternate years of fallow and cropping reduce the disturbance to wildlife and provide quality cover and food supplies for extended periods of time resulting in higher wildlife productivity.

Unharvested crop can be important to wildlife habitat quality. Migratory birds often utilize these resources along with other wildlife whose food supplies are seasonally limited. Spatial and temporal distribution, palatability, and accessibility are characteristics that affect the value of unharvested crops. Unharvested crops located in or near winter cover are valued for resident wildlife that prefer disturbed "edge" habitat. Standing unharvested is more valuable than unharvested crop residue/waste.

Procedure

1. Review the components of the cropland key. View the tract being rated sufficiently to assure that an overall (average) evaluation can be made

2. Using the key, tabulate the applicable component points (20 points maximum). Determine quality rating by dividing total component points by two (2) and add the appropriate interspersion value (IV).

CROPLAND KEY

		Component Points
Crop type:		
	A. Milo, feed grain, corn	7
	B. Alfalfa, small grain	4
	C. Soy beans, sunflowers	2
	D. Cotton	1
	E. Clean till	0
	F. Other (describe)	evaluator assign point value
Management:		
	A. Organic w/green manure, crop rotation	10
	B. Mechanical tillage only (no pesticides)	7
	C. Conservation tillage	5
	D. Spring tillage	3
	E. Fall tillage	2
	F. Fall plowing	0
Other Factors:		
	A. Field size	-1 to +1
	B. Crop rotation	-1 to +1
	C. Unharvested crop left	0 to +1

$$\frac{\text{Total Points}}{2} + \text{IV} = \text{R}$$

Circle adjacent habitat types: Rangeland Pasture Impoundment
Woodland Wetland Odd Area Stream

WETLAND EVALUATION

Wetlands are areas saturated by surface or ground water, with vegetation adapted for life under those conditions. These areas include swamps, bogs, fens, marshes and estuaries. Wetlands are among the most biologically productive natural ecosystems in the world, providing shelter and food to diverse species. For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." [taken from the EPA Regulations listed at 40 CFR 230.3(t)] The evaluator should identify in the key whether a wetland delineation should be performed pursuant to the Corps of Engineers 1987 Wetland Delineation Manual. This responsibility does not lie with KDWP.

Management considerations

Management can influence the subjective scoring for wildlife habitat value of various types of wetlands in Kansas. For example, whether a hay meadow wetland is considered lower-quality habitat than a natural, native, or non-manipulated wetland may depend on the management of the habitat. Haying can maintain an herbaceous wetland plant community where the hazard of woody invasion exists; however, if properly maintained and/or subject to periodic burning, herbaceous wetlands will have wildlife habitat values that are higher than those that become rank with plant residue and create conditions favorable for tree establishment. Grazing mammals are a historic component of wetlands and can provide increased plant diversity and wildlife habitat value. The intensity and duration of use also affect wildlife habitat quality and should be a consideration for scoring.

Wetlands of various types are geographically distributed throughout the state of Kansas. Glacial hill seeps and playa depressions are unique geographic wetland types. The relative regional scarcity of a specific type of wetland should be a consideration in weighting scores.

Types of Wetlands

Isolated and Natural

Even most isolated and natural wetlands in Kansas have some hydrology manipulation. The influence of roadways and other alterations to the watershed affects the amount of surface runoff. The construction of flood control structures (reservoirs and lakes) also influences wetland hydrology. Generally small closed depressions may be less effected because of their smaller watersheds or subsurface hydrology. These communities have potential for supporting isolated populations of plants and animals (some that may be very rare) because of the low intensity of disturbance. Since most of the historic wetlands of Kansas have been destroyed or highly modified, these isolated and natural wetland sites have high value. At this time, isolated wetlands are considered non-jurisdictional by the USCOE.

Riverine and adjacent wetlands subject to USCOE jurisdiction
These wetlands have a reduced value that is based on their eligibility for regulatory protections. As long as the Clean Waters Act and USCOE regulatory protection exists, the future of this more common type of wetlands is better insured as compared to those having no regulatory protections. Examples include floodplain scours, oxbows, braided channels and streamside seeps, to name several. Many of these wetlands too, have been greatly altered by man's activities. Some native fish & wildlife have been extirpated and others have become rare because of these alterations.

Restored wetland with native plants and enhanced hydrology
These wetlands are located in sites that were previously wet and were converted to non-wetland for one reason or another. The most common conversion includes de-watering the wetland site through surface ditching, installing drainage tile, runoff diversions or filling by natural sedimentation or artificial filling. While wetland plants re-colonize restored wetland sites, not all potential species may be represented that are found in natural undisturbed sites. Often, where these sites are not protected by easement, regulatory protections do not exist, especially if they are isolated and are used for agricultural purposes as well (haying or grazing).

Naturally farmed wetland with native plant community disturbed
Naturally farmed wetlands are those found in the agricultural landscape in which the hydrology has not been altered at the site. Farm production, when dry enough, may be allowed periodically. Often those crops may then be seasonally flooded and unharvested, or harvested after hard freezing conditions exists. Native vegetation is dominated by annual wetland plants. The species composition is influenced by the frequency of saturation, inundation or timing of soil disturbance. When weather conditions allow, these types of wetlands are very beneficial to migratory birds. These wetlands are protected by USCOE regulations when adjacent to "Other Waters (OW)" or "waters of the U.S. (WUSA)". If isolated, Food Security Act protection is in effect if the farm producer participates in the federal farm program (i.e. Swampbuster).

Hydrology manipulated for farming ("PC", "FW" or "FWP")
These agricultural wetland sites may or may not support the criteria to be a wetland (hydrophytes, hydrology and hydric soils). The common characteristic of these sites is that their hydrology has been manipulated before December 23, 1985. Therefore, each type of site has political protections for maintenance of production agriculture. These sites may be incompletely drained. "**PC**" is prior converted which has inundation in most years (i.e. >50% chance) that is less than 15 consecutive days during the growing season or 10% of the growing season, whichever is less, AND has a crop history before 12/23/1985. "FW" is farmed wetland (this is not the same as a naturally farmed wetland). In fact, a "FW" may be wetter than many natural wetlands. A "**FW**" is defined as a site with hydrology inundation during most years (i.e. >50% chance) of 15 consecutive or more days during the growing season or 10% of the growing season, whichever is less, AND has a crop history before 12/23/1985. "**FWP**" is farmed wetland pasture that is inundated for 7 consecutive or more days OR saturated for 14 consecutive or more days during the growing season most years (i.e. > 50% chance) with no cropping history before 12/23/1985, but managed for hay or pasture. These sites have less wildlife benefit as habitat because of the level of disturbance, lack of hydrology or other habitat components. When weather conditions permit, these agriculturally impaired wetland sites may provide season wildlife habitat benefits to resident and migratory wildlife.

Wetland with invasive & exotic plant life
Wetlands with invasive and exotic plant life have the lowest value as wildlife habitat when compared to other wetland types in Kansas. The most significant plant species in Kansas include: Reed Canarygrass, Purple Loosestrife, Tall Fescue, Salt Cedar, Common Reed and Cocklebur. The invasive nature generally suppresses native wetland plant diversity and wildlife use. The level of infestation is generally total because of the aggressive nature of these plants. Often, these plants also have other detrimental effects on wetland ecology. They may not be desirable source of food for wildlife. Some species may evapotranspire soil moisture to the extent of causing dry conditions. This is significant in drier climates.

Procedure

STEP 1: View the wetland sufficiently to determine the wetland classification.

STEP 2: Using wetland key, classify the wetland and provide the appropriate component points and add interspersion value.

WETLAND KEY _____ Delineation necessary? (1987 COE Manual)

	Component Points
Isolated & natural: native plants & no hydrology manipulation. Emergent vegetation present	8.0 - 10.0
Riverine and adjacent wetlands subject to US Army COE jurisdiction	7.0 – 7.9
Restored wetland: native plants, enhanced hydrology possible.	5.0 – 6.9
Naturally farmed: native plant community disturbance.	3.0 – 4.9
Hydrology manipulated for farming ("PC", "FW" or "FWP")	2.0 – 2.9
Wetland with invasive & exotic plant life.	0.0 – 1.9

Total Points + IV = R

Circle adjacent habitat types: Rangeland Pasture Impoundment
Cropland Woodland Odd Area Stream

ODD AREA EVALUATION

Odd areas include small tracts of land which generally do not meet the criteria of other habitat communities. Some examples include: farmsteads, field corners, small abandoned crop fields, vegetated gullies, permanently vegetated fencerows or field borders, waterways, or any other such area which provides wildlife food and/or cover and adds vegetative diversity to the landscape. The area should be evaluated for both woody and/or herbaceous vegetation that may exist along with 'other' habitat features.

Procedure

1. View the entire area sufficiently to enable evaluation of all components of the habitat.

2. Using the odd area key, tabulate the component points, determine quality rating (R), and add interspersion value.

ODD AREA KEY

	Component Points
Woody Vegetation	
Abundant trees, shrubs, vines; all age; excellent food/cover	5
Woody spp. abundant; even-all age; food/cover good/excellent	4
Woody spp. common; even-all age; food/ cover good	3
Woody spp. sparse; even-all age; food/cover fair	2
Woody spp. sparse; cover poor	1
Herbaceous Vegetation	
Abundant perennial native grass & forbs; food/cover excellent	5
Abundant native veg.; food/cover good	4
Native veg. common; annuals/increasers established; food/cover fair	3
Native veg. sparse; introduced grasses may be estab.; food/cover fair-poor	2
Introduced veg. abundant; food/cover poor	1
Other	
Large brush piles, quarries, farm equipment/outbuildings, junk piles, silos, etc.	+1

Total Points + IV = R

Circle adjacent habitat types: Rangeland Pasture Impoundment
Cropland Wetland Woodland Stream

Kansas Department of Wildlife and Parks
Terrestrial Habitat Summary

File No: D1.0402 Track No.:

Watershed District: Site No.:

Date: 5/14/2026

County: Leavenworth

/4 Sec: 20, 21, 22, 27 28 Twp: 11S Rge: 21E

Evaluator (s): Parker Evans, Ford Kern, Theo Robinson, Lexi Daniels

Habitat Types Impacted	R-Value	Acres:	Habitat Units = (R value * Acres)
Riparian Woodland	6.25	151	1,117.5
Upland Woodland	5.5	20	105
Rangeland	7	936	6,552
Pasture	-	-	-
Cropland	-	-	-
Wetland	6	22	132
Odd Area	5	19	95

Riparian Woodland (List species of trees, shrubs, vines, grasses, forbs) Poison Ivy, Common Hackberry, American Elm, Honeysuckle, Eastern Black Walnut, Coral Berry, Black Willow, Poison Hemlock, Rough Dogwood, White Mulberry, Eastern Cottonwood, Post Oak, Multiflora Rose, Osage Orange, Honey Locust, Eastern Red Cedar, Smooth Brome, Stickseed

Upland Woodland (List species of trees, shrubs, vines, grasses, forbs) Smooth brome, American Elm, Poison Ivy, Poison Hemlock, Catchweed Bedstraw, Eastern Black Walnut, Honey Locust, Field Penny-Cress, Ragweed, Common Dandelion, Red Clover, White Clover, Compassplant, Fleabane, Osage Orange, Eastern Red Cedar

Rangeland (List plant species observed having importance to wildlife) Smooth Brome, Smooth Meadow Grass, Prairie Milkweed, Common Milkweed, Green Antelopehorn, Ragweed, Western Ironweed, Bush's Sedge, Coralberry, Osage Orange, Sideoats Grama, Little Barley, Eastern Red Cedar, Honey Locust, Broomsedge Bluestem, Winged Loosestrife, Queen Ann's Lace, Creeping Thistle, Rough Dogwood

Pasture (List plant species observed having importance to wildlife) _____

Cropland (List crop type & any information relevant to wildlife)_____

Wetlands (Describe important wildlife features) Minimal amounts of Tall Fescue and Cocklebur seen, mostly in the northern sections of the study area. Fringe wetlands near ponds provide high quality habitat. Several wetlands within the area will potentially fall under USACE jurisdiction. Crayfish burrows observed, frogs heard in several wetlands, snake seen in fringe wetland. Wetlands are typically good quality, containing several types of vegetation, including cattails, rushes, true aquatic plants like lily pads, and nearby trees including hackberry, black willow, and honey locust. One potential wetland in the northeast is entirely covered in poison hemlock, decreasing the quality. No forested wetlands were observed.

Odd Area (List plant species/habitat observed) Silver Maple, Red Cedar, Dogwood, Black Walnut, Red Oak, Crab Grass, Kentucky Bluegrass

Wildlife Information: List species and sign observed during assessment: Red headed woodpecker seen, great blue heron seen, unidentified rabbit species seen, bumble bee, spring peeper, white tailed deer seen, American bullfrog seen, Monarch butterfly seen, killdeer seen. Red-tailed hawk heard, raccoon and possum tracks seen, several unidentified raptors seen.

Discuss T/E/SINC species and their habitats occurring at the project area:

Comments, recommendation, mitigation needs, enhancement potential, etc.:

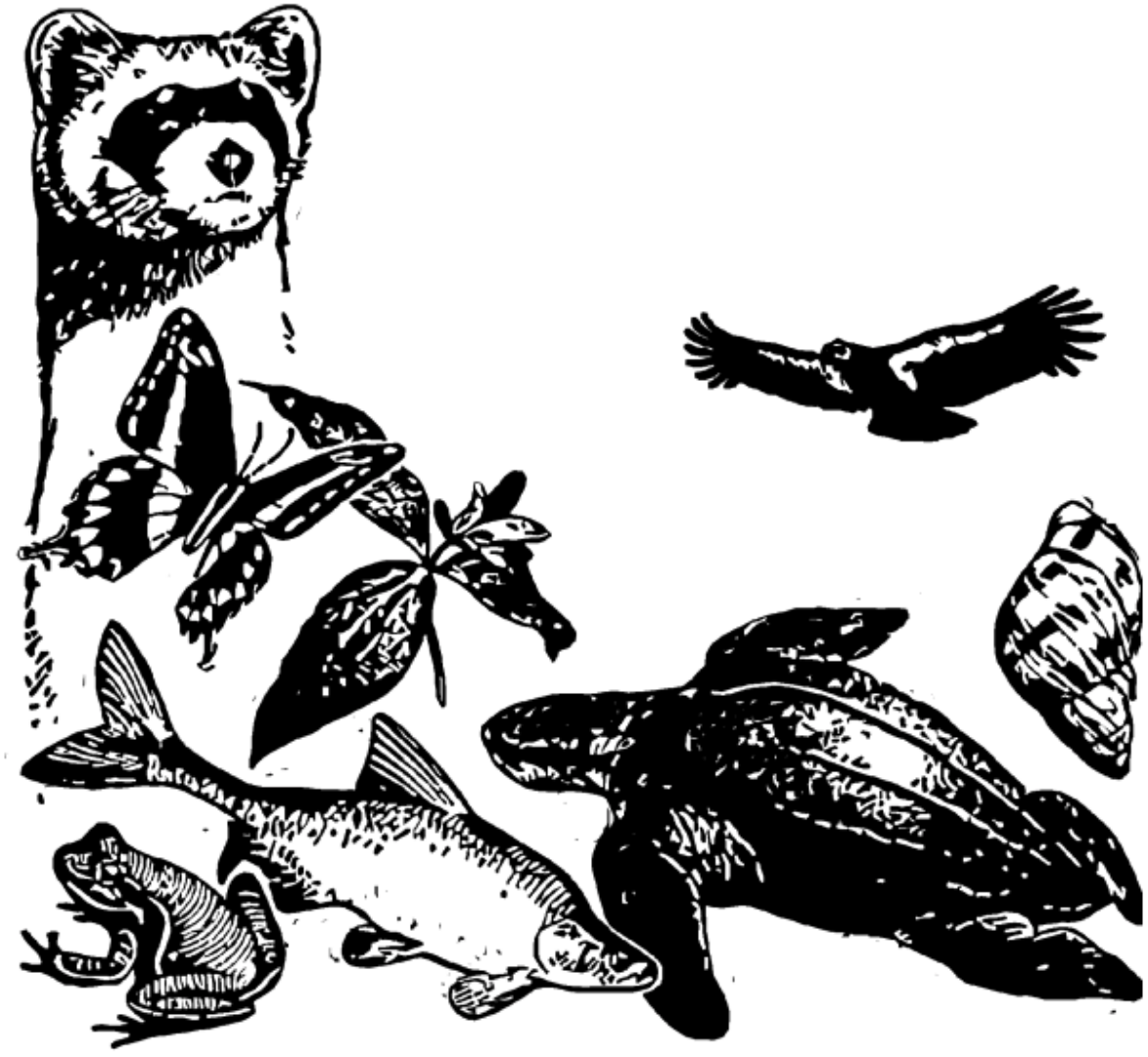
ATTACHMENT C

Species Survey Guidelines

U.S. Fish & Wildlife Service

Species Survey Guidelines (1 Species)

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IPaC - Information for Planning and Consultation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish and Wildlife Service environmental review process.

Table of Contents

Species Document Availability 1
Eastern Prairie Fringed Orchid - Chicago Ecological Service Field Office 2

Species Document Availability

Species with survey guidelines

- Eastern Prairie Fringed Orchid *Platanthera leucophaea*

Species without survey guidelines available

- Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*
- Hine's Emerald Dragonfly *Somatochlora hineana*
- Indiana Bat *Myotis sodalis*
- Lakeside Daisy *Hymenoxys herbacea*
- Leafy Prairie-clover *Dalea foliosa*
- Mead's Milkweed *Asclepias meadii*
- Northern Long-eared Bat *Myotis septentrionalis*
- Piping Plover *Charadrius melodus*
- Prairie Bush-clover *Lespedeza leptostachya*
- Rattlesnake-master Borer Moth *Papaipema eryngii*
- Red Knot *Calidris canutus rufa*
- Rusty Patched Bumble Bee *Bombus affinis*
- Sheepnose Mussel *Plethobasus cyphyus*

Eastern Prairie Fringed Orchid Habitat Characteristics

Habitat: The eastern prairie fringed orchid (orchid) occurs in a wide variety of habitats, from wet to mesic prairie or wetland communities, including, but not limited to sedge meadow, fen, marsh, or marsh edge. It can occupy a very wide moisture gradient of prairie and wetland vegetation. It requires full sun for optimal growth and flowering, which ideally would restrict it to grass and sedge dominated plant communities. However, in some plant communities where there are encroaching species such as cattail and/or dogwood, the orchid may be interspersed or within the edge zones of these communities and thus can sometimes occur in partially shaded areas. The substrate of the sites where this orchid occurs include glacial soils, lake plain deposits, muck, or peat which could range from more or less neutral to mildly calcareous. In some cases, the species may also occur along ditches or roadways where this type of habitat is present.

Processes that maintain habitats in early or mid-successional phases may be important in providing the sunny, open conditions required by the orchid. Sedge meadow and marsh habitats that support this orchid are usually early- or mid- successional because of past grazing, drainage, or soil disturbance. Patch disturbances that expose the soil to this orchid's seeds, and reduce competition from established plants, may be needed for seedling establishment.

Hawkmoths are the pollinators of this orchid species. In Illinois the hawkmoth, *Sphinx eremitus* is a confirmed pollinator although there may be others. *Eumorpha pandorus* and *Eumorpha achemon* have been confirmed as pollinators in other states. Host plants for the caterpillars of *Sphinx eremitus* include various species of beebalm (*Monarda spp*.), mints (*Mentha spp*.), bugleweed (*Lycopus spp*.) and sage (*Salvia spp*.).

How to Determine Whether the Eastern Prairie Fringed Orchid may be Present in the Action Area of your Proposed Project.

Guidance
Follow the steps below to determine whether the eastern prairie fringed orchid may be present in the action area of your proposed project. This guidance is specific to Cook, Lake, McHenry, DuPage, Kane, and Will counties in northeastern Illinois.

1) Define the action area – all areas to be affected directly or indirectly by the Federal action and not just in the immediate area involved in the action. (For example: downstream areas, adjacent off-site wetlands, etc.)

2) Does the action area support any wet to mesic prairie or wetland communities including, but not limited to sedge meadow, fen, or marsh edges?

If the answer is yes, go to number 3 (below). If the answer is no, conclude that "the eastern prairie fringed orchid is not present," document your finding for your records or provide this information to the federal action agency. No further consultation is required.

3) Conduct a floristic quality assessment (guidance below) for the proposed project site during the growing season or use a previous assessment that is not more than three years old and was conducted during the growing season.

4) If any wetland in the action area is determined to be high quality, (a Native Floristic Quality Index of 20 or greater or a Native Mean C of 3.5 or greater) proceed to number 5 (below) or contact the Chicago Field Office for further consultation.

For wetlands that are not high quality, conclude that the "eastern prairie fringed orchid is not present," document your finding in your records or provide this information to the federal action agency.

5) Compare the plant species list generated for each high quality wetland with the “Associate Plant Species List for the Eastern Prairie Fringed Orchid” (below). If four or more associates are listed, then proceed to number 6. If not, high quality wetlands that support three or less eastern prairie fringed orchid associate plant species are unlikely to support eastern prairie fringed orchids. Conclude that “the eastern prairie fringed orchid is not present” and document your finding for your records or provide this information to the federal action agency. No further consultation is necessary for those wetlands.

6) The eastern prairie fringed orchid may be present in your action area. You may either assume that the eastern prairie fringed orchid is present or conduct a field search during the bloom date of the orchid; June 28 through July 11. Because northeastern Illinois orchid populations bloom sporadically rather than all plants blooming at the same time, searches should be conducted on a minimum of three non-consecutive days within this time period. Please notify the Chicago Field Office before conducting your survey.

Please contact the U.S. Fish and Wildlife Service’s Chicago Illinois Field Office if you require additional information or if you have any questions.

Chicago Illinois Field Office
230 S. Dearborn, Suite 2938
Chicago, Illinois 60604
Phone: 312-485-9337

Floristic Quality Assessment

During the growing season, conduct a Floristic Quality Assessment (FQA) as defined by Swink and Wilhelm and published in *Plants of the Chicago Region*, 1994.

Generate a list of observed plant species in the wetland areas. This FQA method assigns to plant species a rating that reflects the fundamental conservatism that the species exhibits for natural habitats. A native species that exhibits specific adaptations to a narrow spectrum of the environment is given a high rating. Conversely, an introduced, ubiquitous species that exhibits adaptation to a broad spectrum of environmental variables is given a low rating. Utilizing this method, a Floristic Quality Index (FQI) and Native Mean C are derived for a given area. The FQI is an indication of native vegetative quality for an area: generally 1-19 indicates low vegetative quality; 20-35 indicates high vegetative quality and above 35 indicates "Natural Area" quality. Wetlands with a FQI of 20 or greater are considered high quality aquatic resources. The Native Mean C is also an indication of native vegetative quality. Wetlands with Native Mean C values over 3.5 are considered high quality aquatic resources. To ensure accuracy using this method, it is important that this list of plant species be generated within the growing season.

Citations:

Swink, F. and G. Wilhelm. 1994. Plants of the Chicago Region, 4th ed. Indiana Academy of Science, Indianapolis. 921pp

Wilhelm, G. and L. Masters. 1999. Floristic Quality Assessment and Computer Applications Version 1.0. Conservation Research Institute, Conservation Design Forum. Elmhurst, Illinois. December.

Associate Plant Species List for the Eastern Prairie Fringed Orchid in Northeastern Illinois

After conducting a Floristic Quality Assessment, if a site has already been determined to be high quality (Native FQI > or = 20, or Native Mean C > or = 3.5) then compare the plant species list from the site to the list below. If 4 or more species from this list are present at the site, then we recommend conducting a search for the eastern prairie fringed orchid (*Platanthera leucophaea*, orchid hereafter) during its bloom period, approximately June 28 to July 11.

We have noticed that in northeastern Illinois orchid populations bloom sporadically rather than all plants blooming at the same time. Because of this pattern, and small population numbers, it is possible to conduct an orchid search and not detect orchids even when they are present. For this reason we recommend conducting the orchid search on at least 3 non-consecutive days during its bloom period. Using this approach, we could be more confident of negative survey results.

Andropogon gerardii – big bluestem
Apocynum sibiricum – prairie Indian hemp
Aster ericoides – heath aster
Aster (Symphyotrichum) novae-angliae – New England aster
Aster (Symphyotrichum) simplex – panicled aster
Calamagrostis canadensis – blue joint grass
Carex stricta - tussock sedge
Carex sp.
Cassia fasciculata – partridge pea
Eupatorium perfoliatum – common boneset
Galium obtusum – wild madder
Gentiana puberulenta – prairie gentian
Helianthus grosseserratus – sawtooth sunflower
Iris virginica shrevei – blueflag iris
Liatris aspera – rough blazing star
Liatris spicata – marsh blazing star / gayfeather
Lycopus americanus – common water horehound
Mentha arvensis villosa – wild mint
Pycnanthemum virginiana – common mountain mint
Solidago gigantea – late goldenrod
Solidago graminifolia - common grass-leaved goldenrod or *Solidago graminifolia nuttallii* – hairy grass-leaved goldenrod
Sorghastrum nutans – Indian grass
Tradescantia ohiensis – common spiderwort

Citations:

Dufrene, M. & P. Legendre. 1997. Species assemblages and indicator species: the need for a flexible asymmetrical approach. Ecological Monographs 67:345-366.

Swink, F. and G. Wilhelm. 1994. Plants of the Chicago Region, 4th ed. Indiana Academy of Science, Indianapolis. 921pp

USFWS 2009. Unpublished data from MS thesis. Restoration of the Eastern Prairie Fringed Orchid (*Platanthera leucophaea*): Natural Pollinators and the Abundance of Larval Host Plants by Cathy Pollack.