

ITEM 4C-2

OHIO DEPARTMENT OF NATURAL RESOURCES –
OFFICE OF REAL ESTATE
THREATENED AND ENDANGERED SPECIES
COORDINATION



April 1, 2015

John Kessler
Ohio Department of Natural Resources
Office of Real Estate
2045 Morse Road, Building E-2
Columbus, OH 43229-6693

Re: Project Overview
Texas Eastern Transmission, LP – Spectra Access South, Adair Southwest and Lebanon Expansion Projects (Project).
Greene County, Pennsylvania; **Athens, Meigs, Monroe, Noble, Pickaway, Perry, and Warren Counties, Ohio**; Bath, Lincoln, and Monroe Counties, Kentucky; Wilson County, Tennessee; Colbert County, Alabama; Monroe and Attala Counties, Mississippi.

Dear Mr. Kessler:

Texas Eastern Transmission, LP (Texas Eastern) markets retail natural gas and is active in Marcellus mid-stream operations, focusing on natural gas pipeline construction and storage. Texas Eastern proposes to modify existing facilities along its existing pipeline system in Pennsylvania, Ohio, Kentucky, Tennessee, Alabama, and Mississippi. The project purpose is to provide incremental pipeline transportation service from the Appalachian area natural gas supply basin to markets in the Midwest and Southeast. The project will firm up additional pipeline capacity to deliver natural gas on a long-term basis. Texas Eastern will incorporate pipeline looping by adding 36-inch diameter pipeline looping segments totaling 19.4 miles in Ohio. The proposed pipeline looping segments will follow Texas Eastern's current right-of-way. Additionally, aboveground facilities in multiple states will have modifications to allow for bidirectional flow, increased horsepower requirements, and meter replacement. The facility modifications required for the project are expected to be located primarily within Texas Eastern's current footprint. These projects are known as the Spectra Access South, Adair Southwest and Lebanon Expansion Projects (collectively, the "Project").

Texas Eastern intends to file its certificate application for the Projects with the Federal Energy Regulatory Commission (FERC) in early 2015, and anticipates receiving authorization and starting construction in mid-2016 to meet the November 2017 in-service date. Permit applications with other federal, state, and local agencies will be submitted within similar timeframes as the certificate application. The permit proceedings conducted by these agencies will provide additional opportunities for public input and involvement. The FERC's determination of public convenience and necessity includes a thorough, comprehensive environmental review of proposed projects, working closely with federal, state, and local



agencies and in accordance with the National Environmental Policy Act (NEPA). Supplemental information outlining the FERC regulatory process is enclosed.

The Project will consist of the construction of 3 segments totaling approximately 19.4 miles of new 36-inch diameter pipeline looping in Monroe, Noble, Athens, and Meigs Counties, OH and modifications to five existing facilities in Warren, Pickaway, Perry, Monroe, and Athens Counties, OH. On behalf of Texas Eastern, URS is providing this project overview for the consideration of the Ohio Department of Natural Resources (OHDNR).

We will be setting up joint interagency meetings in the near future to review the proposed Project and would greatly appreciate your participation.

The following are enclosed to facilitate your review:

- Project Overview map with project alignment;
- USGS 7.5-minute quadrangle maps with project areas;
- Project Facility and Location Table; and
- FERC Regulatory Process supplemental information.

If you have any questions or require additional information regarding this request, please contact me at 717.635.7943 or Kelly.Thompson@aecom.com.

Sincerely,

Kelly Thompson
Project Manager
Senior Biologist
Enclosures (4)

cc: Mr. Bernie Holcomb (AECOM)
Matt Kindred (Spectra)



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldrige, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

May 19, 2015

Kelly Thompson
URS
4507 North Front Street, Suite 200
Harrisburg, Pennsylvania 17110

Re: 15-306; URS - Texas Eastern - Spectra Access South, Adair Southwest & Lebanon Expansion

Project: The proposed project involves the addition of 19.4 miles of 36-inch diameter pipeline looping segments in Texas Eastern's current Right-of-Way.

Location: The proposed project is located in Athens, Meigs, Monroe, Noble, Pickaway, Perry, and Warren Counties, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has the following data at or within a one mile radius of the project area:

Oak-maple-Tuliptree forest plant community
Clouse Lake Wildlife Area – ODNR Division of Wildlife

A review of the Ohio Natural Heritage Database indicates there are no records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. We are unaware of any geologic features, animal assemblages, scenic rivers, state nature preserves, state or national parks, state or national forests or national wildlife refuges within the project area. The review was performed on the project area you specified in your request as well as an additional one mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that

rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the sheepnose (*Plethobasus cyphus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the pink mucket (*Lampsilis orbiculata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the washboard (*Megaloniais nervosa*), a state endangered mussel, the butterfly (*Ellipsaria lineolata*), a state endangered mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, and the monkeyface (*Quadrula metanevra*), a state endangered mussel and the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel. This project must not have an impact on freshwater native mussels along the project route. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2014), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10² miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. Please submit

any mussel assessment/survey to Nathan Reardon, Compliance Coordinator, at nathan.reardon@dnr.state.oh.us.

The Ohio Mussel Survey Protocol (2014) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol%20-%20April%202014.pdf>.

The project is within the range of the Ohio lamprey (*Ichthyomyzon bdellium*) a state endangered fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this species.

The project is within the range of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat along the project route, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federal candidate snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but is also known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet fields and meadows. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a

nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the black bear (*Ursus americanus*), a state endangered species. Due to the mobility of this species, this project is not likely to impact this species.

The project is within the range of the American burying beetle (*Nicrophorus americanus*) a state and federal endangered beetle. Due to the habitat requirements of this species, the project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us



October 26, 2015

Mr. John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693

**Re: Project Review #15-306
Access South, Adair Southwest, and Lebanon Extension Projects
Texas Eastern Transmission, LP
Athens, Meigs, Monroe, Noble, Perry, and Warren Counties, Ohio**

Dear Mr. Kessler:

The Texas Eastern Transmission, LP (Texas Eastern) Access South Project, Adair Southwest Project, and Lebanon Extension Project, known collectively as the Projects, consist of three pipeline looping segments totaling approximately 15.8 miles, three contractor yards to serve as laydown areas, and four existing compressor stations along the pipeline routes in the southeastern region of Ohio. A project review request for rare, candidate, threatened, endangered, and species or communities of concern under the jurisdiction of Ohio Department of Natural Resources (ODNR) was initially requested by URS on April 1, 2015. Since this initial consultation, Texas Eastern has reduced the length of the Berne to Holbrook Loop to approximately 2.1 miles and incorporated two minor route deviations, both of which lie within 0.2 mile of the previous route and have been assessed for potential protected species habitat. URS requests that the Division of Wildlife (DOW) review the enclosed shapefiles to confirm that the route changes are unlikely to adversely affect protected species.

Correspondence from ODNR dated May 19, 2015 indicated that several species of concern are known within the vicinity of the Projects. The Natural Heritage Database identified one plant community, oak-maple-tuliptree forest plant community within a one mile radius of the Projects' areas. No sensitive plant communities were identified within the Projects' areas. The DOW commented that the following species could potentially be impacted as a result of the Projects:

Indiana Bat (*Myotis sodalis*)

The DOW indicates that the Projects are within the range of the Indiana bat, a state endangered and federally endangered species. The Indiana bat is protected by both the federal Endangered Species Act and Ohio Division of Wildlife Code. Texas Eastern is consulting with USFWS to determine the best course of action to reduce potential impacts to the Indiana bat, as well as the northern long-eared bat (*Myotis septentrionalis*), a federally listed threatened species, and their habitat within the Projects' area. The USFWS has recommended that Texas Eastern minimize impacts to forested areas wherever possible and remove any trees between October 1 and March 31 to avoid direct impacts to these protected bat species. Texas Eastern will implement this construction timing restriction and will continue to coordinate with the USFWS to ensure that any effects to the protected bat species are insignificant or discountable.

Freshwater Mussels

The DOW indicates that the Projects are within the range of nine mussel species of concern. These include the sheepsnose (*Plethobasus cyphus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the pink mucket (*Lampsilis orbiculata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the washboard (*Megaloniais nervosa*), a state endangered mussel, the butterfly (*Ellipsaria lineolate*), a state endangered mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the monkeyface (*Quadrula metanevra*), a state endangered mussel, and the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel. These mussels inhabit freshwater streams and are vulnerable to physical and chemical changes to their aquatic environment.

URS and Texas Eastern have evaluated streams in accordance with the 2015 Ohio Mussel Survey Protocol, and two streams that will be crossed by the Projects are considered Group 1 streams. On behalf of Texas Eastern, URS contracted Environmental Solutions & Innovations, Inc. malacologists to conduct freshwater mussel surveys at the proposed Projects crossing locations on Leading Creek and Clear Fork Little Muskingum River. No federally listed species were encountered during the mussel surveys at either location. Live mussels collected during the survey efforts were relocated from the salvage zone to suitable habitat upstream. Construction activities associated with the proposed Projects pipeline crossings are unlikely to impact unionid mussels. A report that documents mussel survey results is enclosed for

your review. URS and Texas Eastern request your comments or concurrence with the conclusion of the report.

Ohio Lamprey (*Ichthyomyzon bdellium*)

The DOW indicates that the Projects are within the range of the Ohio lamprey, a state endangered fish. The Ohio lamprey is a parasitic fish with a long eel-like body and no scales. The species requires three distinct habitat types that are connected by free flowing stretches of stream. Spawning adults are found in clear brooks with free flowing water and either sand or gravel bottoms; juveniles are found in slow moving water buried in soft substrate of medium to large streams. Non-spawning parasitic adults are found in large bodies of water with abundant populations of large fish. According to the DOW website (<http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/fish/ohio-lamprey>), Ohio lampreys are only found in the Ohio River and the lower portion of its tributary streams.

The proposed Projects do not cross any streams that are direct tributaries to the Ohio River. Therefore, it is unlikely that Ohio lamprey habitat is present within the Projects' areas. Based on this assessment, Texas Eastern does not intend to restrict in-water work in perennial streams from April 15 through June 30.

Northern Harrier (*Circus cyaneus*)

The DOW indicates that the Projects are within the range of the northern harrier, a state endangered bird. The northern harrier is a common migrant and winter species, but nesting birds are much rarer. However, they occasionally breed in large marshes and grasslands. URS biologists conducted a northern harrier habitat assessment within the proposed Projects' areas, and they did not observe any habitat within the Projects' workspace that is likely to serve as nesting habitat. Therefore, Texas Eastern does not intend to restrict construction during the species' nesting period of May 15 through August 1. A report that documents the habitat assessment results is enclosed for your review. URS and Texas Eastern request your comments or concurrence with the conclusion of the report.

The following materials are enclosed to facilitate your review:

- Northern Harrier Habitat Assessment Report
- Freshwater Mussel Surveys Report

- CD containing the Projects' updated limit of disturbance shapefiles

Feel free to contact me with any questions at Sarah.Binckley@acem.com or 610-832-2713.

Sincerely,

A handwritten signature in black ink that reads "Sarah H. Binckley". The signature is written in a cursive style with a large initial 'S' and a distinct 'H'.

Sarah Binckley
Assistant Project Manager (URS)

Cc: Matt Kindred (Spectra Energy)
Auggie Ruggiero (URS)

Enclosures (3)



**Access South, Adair Southwest, and Lebanon Extension Projects
Texas Eastern Transmission, LP
Endangered Species Act Section 7 Consultation
Northern Harrier Habitat Assessment
Meigs, Athens, Noble, and Monroe Counties, Ohio**

OBJECTIVES

This habitat assessment has been prepared in response to correspondence with the Ohio Department of Natural Resources regarding the effects the Texas Eastern Transmission, LP (Texas Eastern) Access South Project, Adair Southwest Project, and Lebanon Extension Project, known collectively as the Projects, may have on state listed rare, threatened, and endangered species in Ohio. The Ohio Division of Wildlife (DOW) identified the Projects as being within the range of the Ohio State-endangered northern harrier (*Circus cyaneus*). An assessment was conducted to identify any existing/potential nesting habitat within the Projects' areas. A summary of the habitat assessment is provided below.

PROJECTS DESCRIPTION

The Projects consist of three pipeline looping segments totaling approximately 15.8 miles, three contractor yards to serve as laydown areas, and four existing compressor stations along the pipeline routes in the southeastern region of Ohio (OH). Approximately 13.8 miles (87 percent) of the proposed Projects will be adjacent to existing pipeline right-of-way (ROW). Portions of the pipeline, where co-location was not geographically feasible, deviate from existing ROWs generally to avoid specific construction constraints such as steep side slopes, address feedback from landowners, and/or avoid or reduce impacts to waterbodies and wetlands. There are two locations where the proposed looping pipeline will deviate from Texas Eastern's existing ROW. These minor deviations are sited within 0.2 miles of the existing ROW. The contractor yards consist of a stone quarry, a remnant strip mine area, and an open field previously utilized as a laydown area for construction materials. Proposed modifications at compressor stations will only entail work within the existing boundaries of the facilities.

Modifications at existing compressor facilities in Pennsylvania, Kentucky, Tennessee, Alabama, and Mississippi are also proposed as part of the Projects; consultation with the respective agencies for each facility outside of Ohio has been initiated.

BACKGROUND

The study areas are located within the range of the northern harrier, an Ohio State-endangered species. Northern harriers are common to the state of Ohio as a migratory and over-wintering species; however, northern harrier



nesting activity is much rarer within the state. The northern harrier is a slim, long-tailed, diurnal raptor identified in the field by its white rump, low coursing flight, and owl-like facial disc. Typically northern harriers are found in relatively open areas including wetlands, wet meadows, lightly grazed pastures and old fields; freshwater and brackish marshes, dry uplands, including upland prairies, mesic grasslands, drained marshlands, croplands, scrub-shrub, and riparian areas. The northern harrier tends to breed and nest in freshwater and brackish marshes, meadows, and grasslands with a preference for undisturbed wetlands and grasslands with low, thick vegetation. Nests are built on the ground in high or thick vegetation; often in areas surrounded by water for protection from predators. Oftentimes nests are found upon mounds in marshes, and are made with thick-stalked plants and sticks and lined with grasses. Nest site fidelity in northern harriers is low and therefore breeding harriers may return to a previously used territory but will not necessarily nest in the specific locations used in the previous year (Smith et al 2011). Northern harrier hunting and breeding territories have been reported to be large with males reported hunting as far as 10 kilometers away from their nest locations (Smith et al 2011). Their prey, which they locate by hearing, is primarily focused on small rodents, especially voles (*Mycrotis* spp.) and thus, their wintering and breeding ecology is closely aligned with robust populations of voles and other rodents. Other prey species commonly taken by northern harriers include birds (passerines and small waterbirds), reptiles, and amphibians. Historic threats to northern harriers included shooting/trapping, pesticides (DDT and DDE), collisions with human-made objects (e.g., guy wires, airplanes, cars), and habitat loss/destruction (Smith et al 2011). The nesting season for northern harriers is generally between May 15 and August 1.

DESKTOP ANALYSIS

In June 2015, URS biologists performed a desktop analysis of the proposed Projects to identify potential habitat suitable for northern harrier nesting. Harriers typically nest in undisturbed, large, open wetland areas with dense vegetation, or dry grasslands with shrubby cover. Utilizing Google's satellite imagery from 2013 aerials, open fields and large wetlands were identified as potential suitable habitat for nesting harriers. Areas identified during the desktop analysis as unsuitable habitat were not included in the field effort. Examples of unsuitable habitat included forested areas, residential properties, industrial facilities, and the land immediately surrounding these areas. Additionally, areas documented as pasture or areas subject to other human-induced disturbances were deemed as unsuitable habitat and were excluded from the field effort. No large wetland complexes were located within the Projects' limit-of-disturbance and only one wetland equal to or greater than one acre in size will be impacted by the project (Figure 2, MP 612.5). This wetland was located within an existing pipeline right-of-way which is subject to routine mowing activities and surrounded by forest, and therefore was deemed unsuitable northern harrier nesting habitat. Following the desktop identification of potential suitable habitat, field assessments were conducted.



HABITAT ASSESSMENT

The field habitat assessment was conducted in June 2015 and nineteen (19) open fields were evaluated for potential northern harrier nesting habitat. No existing nesting sites or harriers were observed during the field assessment. Photographs were taken at each assessment point and are contained in Appendix A. A summary of the habitat assessment sites are presented in Table 1 below.

Table 1: Northern Harrier Habitat Assessment Sites

Site ID	Mile Post	County	Latitude/ Longitude	Field Assessment Visit Date	Weather at Time of Assessment	Land Use	Map Sheet
NH-001	611.8	Meigs	39.154649°, -82.239330°	6/15/2015	86°F and mostly sunny with scattered storms	Mowed hayfield	2 of 19
NH-002	612.5	Meigs	39.160709°, -82.229272°	6/15/2015	86°F and mostly sunny with scattered storms	Conifer tree farm	4 of 19
NH-003	612.1	Meigs	39.156985°, -82.236127°	6/15/2015	86°F and mostly sunny with scattered storms	Cornfield	3 of 19
NH-004	614.0	Meigs	39.175437°, -82.211098°	6/15/2015	86°F and mostly sunny with scattered storms	Hayfield	6 of 19
NH-005	613.8	Meigs	39.172214°, -82.214171°	6/15/2015	86°F and mostly sunny with scattered storms	Mowed hayfield	6 of 19
NH-006	614.4	Meigs	39.179376°, -82.206628°	6/16/2015	83°F and mostly sunny with scattered storms	Hayfield	7 of 19
NH-007	617.6	Athens	39.208904°, -82.163678°	6/16/2015	83°F and mostly sunny with scattered storms	Hayfield	13 of 19
NH-008	617.8	Athens	39.211769°, -82.159586°	6/16/2015	83°F and mostly sunny with scattered storms	Fallow field	14 of 19
NH-009	619.7	Athens	39.229897°, -82.135378°	6/16/2015	83°F and mostly sunny with scattered storms	Hayfield	17 of 19



Table 1: Northern Harrier Habitat Assessment Sites

Site ID	Mile Post	County	Latitude/ Longitude	Field Assessment Visit Date	Weather at Time of Assessment	Land Use	Map Sheet
NH-010	619.8	Athens	39.231285°, -82.133872°	6/16/2015	83°F and mostly sunny with scattered storms	Hayfield	17 of 19
NH-011	613.7	Meigs	39.171048°, -82.213851°	6/16/2015	83°F and mostly sunny with scattered storms	Mowed hayfield	6 of 19
NH-012	614.8	Meigs	39.182219°, -82.200975°	6/17/2015	69°F and cloudy with scattered storms	Hayfield	8 of 19
NH-013	614.9	Meigs	39.183214°, -82.199373°	6/17/2015	69°F and cloudy with scattered storms	Fallow field/Pasture	8 of 19
NH-014	615.0	Meigs	39.184454°, -82.197672°	6/17/2015	69°F and cloudy with scattered storms	Fallow field/Pasture	8 of 19
NH-015	700.0	Monroe	39.820635°, -80.973975°	6/23/2015	87°F and mostly cloudy	Hayfield	6 of 6
NH-016	680.5	Noble	39.771292°, -81.317349°	6/23/2015	87°F and mostly cloudy	Mowed hayfield	8 of 12
NH-017	678.7	Noble	39.764997°, -81.347331°	6/23/2015	87°F and mostly cloudy	Hayfield	5 of 12
NH-019	679.0	Noble	39.766832°, -81.343428°	6/23/2015	87°F and mostly cloudy	Fallow field/Pasture	5 of 12
NH-020	679.1	Noble	39.767652°, -81.340802°	6/23/2015	87°F and mostly cloudy	Hayfield	6 of 12



RESULTS

Nineteen (19) open fields were evaluated for potential northern harrier nesting habitat. The land uses observed were hayfields, agricultural fields, fallow fields, pastures, and one conifer tree farm. No existing nesting sites or harriers were observed during the field assessment.

As depicted in the photographs, some of the hayfields had recently been mowed. Hayfields and agricultural fields are unlikely habitat due to frequent disturbances during the nesting season. As a ground nesting species, northern harrier nests, eggs, and fledglings are at risk of these human disturbances. Pastures also pose the significant risk of grazing animals trampling nests and eggs or young, and therefore are unlikely habitat. Fallow fields may provide suitable nesting habitat, but given the fragmented open field habitat surrounding the only solely designated fallow field (NH-008), it is unlikely that harriers would utilize this area for nesting. The last land cover type observed, a conifer tree farm, appeared to be seasonally mowed and maintained, therefore it is unlikely to be utilized for by harriers for nesting.

CONCLUSION

The Projects consist of three pipeline looping segments totaling approximately 15.8 miles, three contractor yards to serve as laydown areas, and four existing compressor stations along the pipeline routes in the southeastern region of Ohio (OH). Approximately 13.1 miles (83 percent) of the proposed Projects will be located adjacent to existing pipeline ROW. It is URS' professional opinion that the Projects' areas provide unlikely nesting habitat due to land use and frequent disturbance. Disturbances such as mowing, cultivation, grazing, and routine maintenance make the observed areas unlikely nesting habitat, and a lack of unfragmented open fields surrounding the observed fallow fields make nesting unlikely. URS requests comments or concurrence with the conclusion of this report at your earliest convenience. Please contact Sarah Binckley at Sarah.Binckley@aecom.com or 610-832-2713 for additional information or concerns.



REFERENCES

Smith, Kimberly G., Sara Ress Wittenberg, R. Bruce Macwhirter and Keith L. Bildstein. 2011. Northern Harrier (*Circus cyaneus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:
<http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/210doi:10.2173/bna.210>