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Chairman Asim Z. Haque
Ohio Power Siting Board
180 East Broad Street
Columbus, Ohio 43215-3793

May 9, 2017

**RE: PUCO Case No. 17-0632-EL-BLN
Lemaster-West Lancaster 138-kV Transmission Line Relocation Project**

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Dear Chairman Haque:

On April 4, 2017, AEP Ohio Transmission Company, Inc. inadvertently filed the wrong Ecological Resources Inventory Report with the Letter of Notification in the above-referenced case. Please replace the report originally filed with the appropriate Lemaster-West Lancaster Ecological Resources Inventory Report attached.

Respectfully submitted,

/s/ Hector Garcia
Hector Garcia
Counsel for AEP Ohio Transmission Company, Inc.

**Lemaster-West Lancaster 138 kV
Transmission Line Relocation Project,
Athens County, Ohio**

**Ecological Resources Inventory
Report**



Prepared for:
AEP Ohio Transmission Company, Inc.
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Gahanna, Ohio 43230

Prepared by:

Stantec Consulting Services Inc.
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March 15, 2017

LEMASTER-WEST LANCASTER 138 KV TRANSMISSION LINE RELOCATION PROJECT, ATHENS COUNTY, OHIO

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1.0 Introduction

AEP Ohio Transmission Company, Inc. (AEP) is proposing to relocate a portion of the Lemaster-Ross 138 kV electric transmission line in Athens County, Ohio (Figure 1, Appendix A). The Project includes removing approximately 0.46 miles of existing 138 kV transmission line which terminates at AEP's existing Poston Station and constructing approximately 0.50 miles of new 138 kV transmission line which will terminate at AEP's proposed Lemaster Station (Figure 1, Appendix A). The proposed Lemaster Station is separate AEP project. The Project area (as depicted on Figures 1, 2, and 3 in Appendix A) was surveyed for wetlands, waterbodies, and potential threatened, endangered and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on November 7-8, 2016. The approximate locations of features adjacent to the Project area were also recorded during field surveys. These features are shown on the Figure 2 maps in Appendix A as "approximate" wetlands, streams, open waters, and upland drainage features.

2.0 Methods

2.1 WETLAND DELINEATION

Prior to completing the field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys, and aerial imagery mapping. Stantec completed a wetland delineation study in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (USACE 2012). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE's Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05) (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (USACE 2002). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency's (OEPA) Headwater Habitat Evaluation Index (HHEI) and/or Qualitative Habitat Evaluation Index (QHEI). The centerline of each waterway was identified and surveyed using a handheld sub-meter accuracy GPS unit and mapped with GIS software. Additionally, the locations of ponds/open water features and upland drainage features (which lacked a continuously defined bed and bank/OHWM)

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identified within the Project area were also recorded with a sub-meter accuracy GPS unit during the field surveys.

2.3 RARE SPECIES

Prior to conducting the field surveys, Stantec contacted the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats of concern within the vicinity of the Project area (Appendix B – Agency Correspondence). To assess potential impacts to rare, threatened, or endangered species, Stantec scientists conducted a pedestrian reconnaissance of the proposed Project area, collected information on existing habitats within the Project area, and assessed the potential for these habitats to be used by these species.

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3.0 Results

3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project area on November 7-8, 2016, for threatened and endangered species or their habitats. Figure 3 (Appendix A) shows the vegetation communities/habitats and locations of any identified rare, threatened or endangered species habitat observed within the Project area. Representative photographs of the vegetation communities/habitats identified within the Project area are included in Appendix C of this report (photo locations are shown on Figures 2 and 3, Appendix A). Information regarding the vegetation communities/habitats identified within the Project area is provided in Table 1.

Table 1. Vegetation Communities and Land Cover Found within the Lemaster-West Lancaster 138 kV Transmission Line Relocation Project Area, Athens County, Ohio

Vegetation Communities and Land Cover Types within the Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
Old Field	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders or native highly tolerant taxa). Dominant species include tall fescue (<i>Schedonorus arundinaceus</i>), broomsedge bluestem (<i>Andropogon virginicus</i>), goldenrod (<i>Solidago</i> sp.), and aster (<i>Symphyotrichum</i> sp.).	No	8.54
Mixed Early Successional/ Second Growth Deciduous Forest	Some past disturbance but trending to naturalized. Dominated by sugar maple (<i>Acer saccharum</i>), beech (<i>Fagus grandifolia</i>), and American elm (<i>Ulmus americana</i>).	No	1.31
Industrial	Extreme Disturbance/existing gravel pad. Dominated by dandelion (<i>Taraxacum officinale</i>) and white clover (<i>Trifolium repens</i>).	No	0.27
Total			10.12

3.2 WETLANDS

Stantec completed field surveys within the Project area on November 7-8, 2016, for wetlands and waterbodies. Figure 2 (Appendix A) shows the wetlands identified by Stantec within the Project area. Representative photographs of the wetlands identified within the Project area are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A).

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Completed wetland determination and ORAM data forms are included in Appendix D. Information regarding the Cowardin classification and ORAM categories of wetlands identified within the Project is provided in Table 2.

Table 2. Summary of Wetland Resources Found within the Lemaster-West Lancaster 138 kV Transmission Line Relocation Project Area, Athens County, Ohio

Wetland Name	Figure 2 Photo Location ¹	Isolated?	Wetland Classification ²	ORAM Score ⁵	ORAM Category ⁵	Delineated Area (acres) within Project Area
Wetland 1	1, 2	No	PEM ³	35.5	2	0.57
Wetland 2	3	Yes	PEM ³	12	1	0.02
Wetland 3	5-7	No	PSS ⁴	35	2	0.46
Wetland 4	4	Yes	PSS ⁴	15	1	0.04
TOTAL						1.09
¹ Figure 2 and Appendix C – Representative Photographs						
² Wetland classification is based on Cowardin et al. (1979).						
³ PEM = Palustrine Emergent Wetland						
⁴ PSS = Palustrine Scrub Shrub Wetland						
⁵ ORAM Score and Category are based on the Ohio Rapid Assessment Method for Wetlands v. 5.0 (Mack 2001).						

3.3 STREAMS

Stantec completed field surveys within the Project area on November 7-8, 2016, for wetlands and waterbodies. No streams were identified within the Project area. However, Figure 2 (Appendix A) shows the locations of non-jurisdictional upland drainage features identified within the Project area. Representative photographs of upland drainage features identified within the Project area are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A).

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3.4 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 3. Summary of Potential Ohio State-Listed Species within the Lemaster-West Lancaster 138 kV Transmission Line Relocation Project Area, Athens County, Ohio

Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Insects								
Regal Frillary	<i>Speyeria idalia</i>	E	Yes	No	Occurs in tall grass prairie remnants (Butterflies and Moths of North America 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Grizzled Skipper	<i>Pyrgus centaureae wyandot</i>	E	Yes	No	This species is associated with openings in mature oak forests that support stands of Canada cinquefoil. Most of these areas are highly disturbed, and are characterized by fair amounts of exposed soil and rock (ODNR 2016b).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
American Burying Beetle	<i>Nicrophorus americanus</i>	E	Yes	No	Current information suggests this species is a habitat generalist, or one that lives in many types of habitat, but with a slight preference for grasslands and the open understory of oak-hickory forests (ODNR 2016b).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Caddisfly	<i>Brachycentrus numerosus</i>	E	Yes	Yes	Habitat preference has not been assessed at this time (NatureServe 2016), though caddisflies normally occur in streams, rivers, and ponds.	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Marsh Fern Moth	<i>Fagiana litorea</i>	T	Yes	No	This species typically occurs in unforested wetlands such as bogs, shrub swamps, and marshes. This species also occurs along wet powerlines and wet open pinelands (New York Natural Heritage Program 2015).	Yes	Some potentially suitable habitat was observed within the Project area. However, this species is not known to occur within the vicinity of the Project area. Therefore, no impacts are anticipated.	No comments received.
Fishes								
Channel Darter	<i>Etheostoma tippecanoe</i>	T	Yes	No	This fish prefers medium to large streams in the Ohio River drainage system and are found in riffles of moderate current with substrate of gravel or cobble sized rocks (ODNR 2016b).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	ODNR recommends no in-water work in perennial streams from April 15 to 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 or other aquatic species.

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Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
River Darter	<i>Percina shumardi</i>	T	Yes	No	Large rivers and lower portions of tributaries; deep chutes and riffles where current is swift and substrates are coarse gravel or rock (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	ODNR recommends no in-water work in perennial streams from April 15 to 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 or other aquatic species.
Amphibians								
Midland Mud Salamander	<i>Pseudotriton montanus diastictus</i>	T	Yes	No	Muddy springs, slow floodplain streams, and swamps along slow streams; backwater ponds and marshes created by beaver activity (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and type of work proposed, the Project is not likely to impact this species.
Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	E	Yes	No	Eastern spadefoots occur in areas of sandy, gravelly, or soft, light soils in wooded or unwooded terrain. On land, they range up to at least several hundred meters from breeding sites. When inactive, they remain burrowed in the ground. Eggs and larvae develop in temporary pools formed by heavy rains. Breeding sites include temporary pools and areas flooded by heavy rains (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and type of work proposed, the Project is not likely to impact this species.
Eastern Hellbender	<i>Cryptobranchus alleganiensis alleganiensis</i>	E	Yes	No	Rocky, clear creeks and rivers, usually where there are large shelter rocks. The species prefers cool waters with temperatures usually lower than 20 degrees Celsius. High amounts of instream cover are needed for shelter/reproduction, including large flat rocks or submerged logs (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Mussels								
Clubshell	<i>Pleurobema clava</i>	E	Yes	No	The clubshell is found in small to medium rivers, but occasionally found in large rivers, especially those having large shoal areas. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle and cannot tolerate mud or slackwater conditions (USFWS 1994). Badra and Goforth (2001) found the clubshell in gravel/sand substrate, in runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.
Snuffbox	<i>Epioblasma triquetra</i>	E	Yes	No	Occurs in medium-sized streams to large rivers generally on mud, rocky, gravel, or sand substrates in flowing water. Often deeply buried in substrate and overlooked by collectors (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.
Fanshell	<i>Cyprogenia stegaria</i>	E	Yes	No	Medium to large streams and rivers with moderate to strong current in coarse sand and gravel and depth ranging from shallow to deep (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.

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Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County ²	Known Within One Mile of Project Area ²³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Pink Mucket	<i>Lampsilis orbiculata</i>	E	Yes	No	Large rivers in habitats ranging from silt to boulders, but apparently more commonly from gravel and cobble. Collected from shallow and deep water with current velocity ranging from zero to swift, but never standing pools of water (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.
Sheepnose	<i>Plethobasus cyphus</i>	E	Yes	No	Although it does inhabit medium-sized rivers, this mussel generally has been considered a large-river species. It may be associated with riffles and gravel/cobble substrates but usually has been reported from deep water with slight to swift currents and mud, sand, or gravel bottoms. It also appears capable of surviving in reservoirs. Specimens in larger rivers may occur in deep runs (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.
Black Sandshell	<i>Ligumia recta</i>	T	Yes	No	Typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.
Threshorn Wartyback	<i>Obliguaria reflexa</i>	T	Yes	No	This species is typical of the large rivers where there is moderately strong current and a stable substrate composed of gravel, sand, and mud (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.
Fawnsfoot	<i>Truncilla donaciformis</i>	T	Yes	No	This species occurs in both large and medium-sized rivers at normal depths varying from less than three feet up to 15 to 18 feet in big rivers such as the Tennessee. Substrates of either sand or mud are suitable and although it is typically found in moderate current, it can adapt to a lake or embayment environment lacking current (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact this species.
Mammals								
Indiana Bat	<i>Myotis sodalis</i>	E	Yes	No	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas. Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2015b). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	No	No hibernacula or suitable roost trees were observed within the Project area. If AEP determines trees >3" dbh must be removed for this project, AEP anticipates clearing the trees between October 1 and March 31. Therefore, no adverse effects are anticipated.	The project is within the vicinity of records for the Indiana bat. Presence of the Indiana bat has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. If suitable habitat occurs within the project area, ODNR recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, ODNR recommends cutting occur between October 1 and March 31. If no tree removal is proposed, this project is not likely to impact this species.
Allegheny Woodrat	<i>Neotoma magister</i>	E	Yes	No	Typical habitat is rocky cliffs and slopes (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.

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Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County ²	Known Within One Mile of Project Area ³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Black Bear	Ursus americanus	E	Yes	No	Black bears inhabit forests and nearby openings, including forested wetlands. When inactive, they occupy dens under fallen trees, ground-level or above-ground tree cavities or hollow logs, underground cave-like sites, or the ground surface in dense cover (NatureServe 2016)	Yes	Habitat was observed within the Project area, but due to the mobility of this species no impacts are anticipated.	Due to the mobility of this species, the Project is not likely to impact this species.
Northern Long-eared Bat	Myotis septentrionalis	SOC	Yes	No	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	No	No hibernacula or suitable roost trees were observed within the Project area. If AEP determines trees >3" dbh must be removed for this project, AEP anticipates clearing the trees between October 1 and March 31. Therefore, no adverse effects are anticipated.	No comments received.
Reptiles								
Timber Rattlesnake	Crotalus horridus horridus	E	Yes	No	In the central Midwest, optimum habitat is a high, dry ridge with oak-hickory forest interspersed with open areas. Hibernacula are typically located in a rocky area where underground crevices provide retreats for overwintering, such as a fissure in a ledge, a crevice between ledge and ground, and fallen rock associated or unassociated with cliffs (NatureServe 2016).	Yes	Potential habitat (open areas adjacent to hilly forested areas) was observed within the Project area, but typical habitat was not observed and due to the mobility of this species, no impacts are anticipated.	Due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.
Spotted Turtle	Clemmys guttata	T	Yes	No	Spotted turtles inhabit mostly unpolluted, shallow bodies of water with a soft bottom and aquatic vegetation, such as small marshes, marshy pastures, bogs, fens, woodland streams, swamps, small ponds, vernal pools, and lake margins; in some areas they occur in brackish tidal streams (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Eastern Box Turtle	Terrapene carolina	SOC	Yes	Yes	This species prefers forests, fields, and scrub shrub habitats. Eastern box turtles use loose soil, debris, and leaf litter for cover. Areas with loose, loamy soils are preferred for egg laying sites (NatureServe 2016).	Yes	This species typically prefers moist forest and scrub shrub habitat as opposed to the open, old field habitat observed in the majority of the Project area. Small amounts of forested habitat are present within the Project area. Due to this and the mobility of this species, no impacts are anticipated.	No comments received.

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Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Plants								
Rough Boneset	Eupatorium pilosum	Status Not Determined	Yes	Yes	This species prefers wet meadows and open, swampy woods dominated by native species (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
¹ E=Endangered; T=Threatened; SOC=Species of Concern ² According to Ohio Department of Natural Resources, State Listed Wildlife Species by County (ODNR 2016a). ³ According to Ohio Natural Heritage Program (Appendix B).								

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Table 4. Summary of Potential Federally-Listed Species within the Lemaster-West Lancaster 138 kV Transmission Line Relocation Project Area, Athens County, Ohio

Common Name	Scientific Name	Federal Listing ¹	Known to Occur in Athens County? ²	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/ Recommendations
Mammals							
Indiana bat	Myotis sodalis	E	Yes	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2015b). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	No	No hibernacula or suitable roost trees were observed within the Project area. If AEP determines trees >3" dbh must be removed for this project, AEP anticipates clearing the trees between October 1 and March 31. Therefore, no adverse effects are anticipated.	The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, USFWS recommends that trees >3 inches dbh be saved wherever possible. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees >3 inches dbh during the summer roosting season may result in direct take of individuals. If any caves or abandoned mines may be disturbed, further coordination with USFWS is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, USFWS recommends that removal of any trees >3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable
Northern Long-eared Bat	Myotis septentrionalis	T	Yes	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	No	No hibernacula or suitable roost trees were observed within the Project area. If AEP determines trees >3" dbh must be removed for this project, AEP anticipates clearing the trees between October 1 and March 31. Therefore, no adverse effects are anticipated.	No specific comments received (other than discussion of suitable habitat).
Birds							
Bald Eagle	Haliaeetus leucocephalus	SOC	Yes	Breeding habitat most commonly includes areas close to (within 4 km) coastal areas, bays, rivers, lakes, reservoirs, or other bodies of water that reflect the general availability of primary food sources including fish, waterfowl, or seabirds. This species typically nests in large trees or on cliffs (NatureServe 2016).	No	No nests or suitable nesting habitat was observed in the Project area. Therefore, no impacts are anticipated.	No comments received.
Mussels							
Snuffbox	Epioblasma triquetra	E	Yes	Occurs in medium-sized streams to large rivers generally on mud, rocky, gravel, or sand substrates in flowing water. Often deeply buried in substrate and overlooked by collectors (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Fanshell	Cyprogenia stegaria	E	Yes	Medium to large streams and rivers with moderate to strong current in coarse sand and gravel and depth ranging from shallow to deep (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.

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Common Name	Scientific Name	Federal Listing ¹	Known to Occur in Athens County? ²	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/ Recommendations
Pink Mucket	<i>Lampsilis orbiculata</i>	E	Yes	Large rivers in habitats ranging from silt to boulders, but apparently more commonly from gravel and cobble. Collected from shallow and deep water with current velocity ranging from zero to swift, but never standing pools of water (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Sheepnose	<i>Plethobasus cyphus</i>	E	Yes	Although it does inhabit medium-sized rivers, this mussel generally has been considered a large-river species. It may be associated with riffles and gravel/cobble substrates but usually has been reported from deep water with slight to swift currents and mud, sand, or gravel bottoms. It also appears capable of surviving in reservoirs. Specimens in larger rivers may occur in deep runs (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Insects							
American Burying Beetle	<i>Nicrophorus americanus</i>	E	Yes	Current information suggests this species is a habitat generalist, or one that lives in many types of habitat, but with a slight preference for grasslands and the open understory of oak-hickory forests (ODNR 2016b).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments received.
Reptiles							
Timber Rattlesnake	<i>Crotalus horridus horridus</i>	SOC	Yes	In the central Midwest, optimum habitat is a high, dry ridge with oak-hickory forest interspersed with open areas. Hibernacula are typically located in a rocky area where underground crevices provide retreats for overwintering, such as a fissure in a ledge, a crevice between a ledge and ground, and fallen rock associated or unassociated with cliffs (NatureServe 2016).	Yes	Potential habitat (open areas adjacent to hilly forested areas) was observed within the Project area, but typical habitat was not observed and due to the mobility of this species, no impacts are anticipated.	No comments received.
¹ E=Endangered; T=Threatened; SOC=Species of Concern ² According to USFWS (2015a).							

4.0 Conclusions and Recommendations

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species or their habitats within the Project area on November 7-8, 2016. During the field surveys, two palustrine emergent wetlands totaling approximately 0.59 acres and two palustrine scrub shrub wetlands totaling 0.50 acres were identified within the Project area. See Table 2 for more information regarding the wetland classifications and ORAM categories for wetlands identified within the Project area. No streams or open waters were identified within the Project area.

The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project area at the time of the fieldwork. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

Three state-listed species are known to occur within a one-mile radius of the Project area, according to correspondence received from the ODNR Natural Heritage Program (NHP), including rough boneset, a caddisfly, and eastern box turtle (Appendix B). None of these known locations are within or in the immediate vicinity of the Project area. Some small amounts of habitat for eastern box turtle is present in the Project area, though this species typically prefers moist forest and scrub shrub habitats. No box turtles were observed in the Project area and due to the mobility of this species and dominant habitat observed in the Project area (open, non-forested), the proposed Project is not expected to impact this species. No habitat for rough boneset or caddisfly occurs in the Project area and no impacts to these species are anticipated. Potential habitat for two other state-listed species, black bear, and timber rattlesnake, were also observed in the Project area. However, neither of species is known to occur within a mile of the Project area, and due to their mobility, no impacts to these species are anticipated. The ODNR NHP also responded that they are unaware of any unique geological features or scenic rivers within a mile of the Project area, but did state that the Wayne National Forest, the Hamley Run Floodplain Forest Conservation Site, a Breeding Amphibian Site, a Floodplain Forest Plant Community, and a Mixed Mesophytic Forest Plant Community exist within a mile of the Project area (Appendix B). However, none of these known locations occur within or immediately adjacent to the Project area and no impacts are anticipated.

According to the ODNR - Office of Real Estate, the project is within the vicinity of records for the Indiana bat and presence of the Indiana bat has been established in the area. If suitable habitat occurs within the project area, ODNR recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, ODNR recommends cutting occur between October 1 and March 31. If no tree removal is proposed, this Project is not likely to impact this species. No hibernacula or suitable summer roost habitat for Indiana bat (or northern long-eared bat) was identified in the project area during field surveys. If AEP determines that trees >3" dbh must be removed for this project, AEP anticipates clearing the trees between October 1 and March 31.

LEMASTER-WEST LANCASTER 138 KV TRANSMISSION LINE RELOCATION PROJECT, ATHENS COUNTY, OHIO

The ODNR - Office of Real Estate also indicated that due to the Project location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact federal and state-listed mussel species. The project is also within the range of the channel darter, a state threatened fish, and the river darter, a state threatened fish. The ODNR - Office of Real Estate recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this Project is not likely to impact these or other aquatic species. No streams were identified in the Project area during field surveys and therefore no suitable mussel habitat or fish habitat is located in the Project area. The project is also within the range of the timber rattlesnake, a state endangered species and a federal species of concern, the eastern spadefoot toad, a state endangered species, mud salamander, a state threatened species, and black bear, a state endangered species. The ODNR - Office of Real Estate indicated that due to the location, the type of habitat present at the project site, and the type of work proposed, this Project is not likely to impact these species.

A technical assistance letter was submitted to the USFWS for this Project. The USFWS response letter (Appendix B) indicates the proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, USFWS recommends that trees >3 inches dbh be saved wherever possible. Because the project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to these species. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees >3 inches dbh during the summer roosting season may result in direct take of individuals. If any caves or abandoned mines may be disturbed, further coordination with USFWS is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, USFWS recommends that removal of any trees >3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. No hibernacula or suitable summer roost habitat for Indiana bat (or northern long-eared bat) was identified in the project area during field surveys. If AEP determines trees >3" dbh must be removed for this project, AEP anticipates clearing the trees between October 1 and March 31.

The USFWS also stated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat in the Project area, but recommended that impacts to wetlands and other water resources be avoided or minimized to the maximum extent possible, and that best management practices be utilized to minimize erosion and sedimentation and prevention of non-native, invasive plant establishment.

LEMASTER-WEST LANCASTER 138 KV TRANSMISSION LINE RELOCATION PROJECT, ATHENS COUNTY, OHIO

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Appendix A Figures

A.1 FIGURE 1 – PROJECT LOCATION MAP

Figure No.

1

Title

Project Location Map

Client/Project

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138kV
Transmission Line Relocation Project

Project Location

Adams County, Ohio

19704785

Prepared by: JG on 12/10/13

Technical Review by: JG on 2/13/14

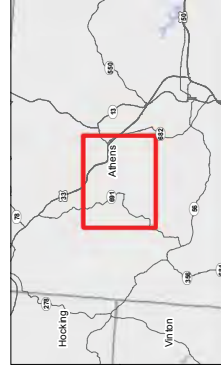
Independent Review by: JG on 2/13/14



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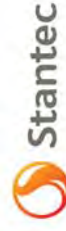
Legend

- Existing Lemaster-West Lancaster Transmission Line to be Relocated
- Proposed Lemaster-West Lancaster Transmission Line Relocation
- Project Area (100' ROW)
- Proposed Lemaster Substation



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources Include: Stantec, AEP, NADS
- Base ground: USGS 7.5 Topographic Quadrangles - Nelsonville, OH, 1985 and The Plains, OH, 1975



LEMASTER-WEST LANCASTER 138 KV TRANSMISSION LINE RELOCATION PROJECT, ATHENS
COUNTY, OHIO

A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP

Figure No.

2

Title

Wetland and Waterbody Delineation Map

Client/Project

AEP Ohio Transmission Company, Inc.
Lancaster-West Lancaster 138kV
Transmission Line Relocation Project

Project Location

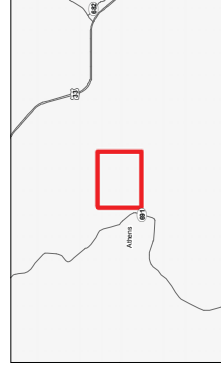
Adams County, Ohio

19704785
Prepared by: 06-11-2017 09:00
Technical Review by: 01-06-2017 09:00
Independent Review by: 03-06-2017 09:00



Legend

- Existing Structure
- Existing Lancaster-West
Lancaster Transmission
Line to be Relocated
- Proposed Lancaster-West
Lancaster Transmission
Line Relocation
- Project Area (100' ROW)
- Welland Determination
Sample Point
- Existing Culvert
- Photo Location
- FEMA Flood Hazard Areas
 - 100-year Flood Zone
 - 100-year Floodway
- Upland Drainage Feature
- Approximate Upland
Drainage Feature
- Approximate Waterway
- Field Delineated
- Emergent Wetland
- Field Delineated Scrub-
Shrub Wetland
- Approximate Wetland

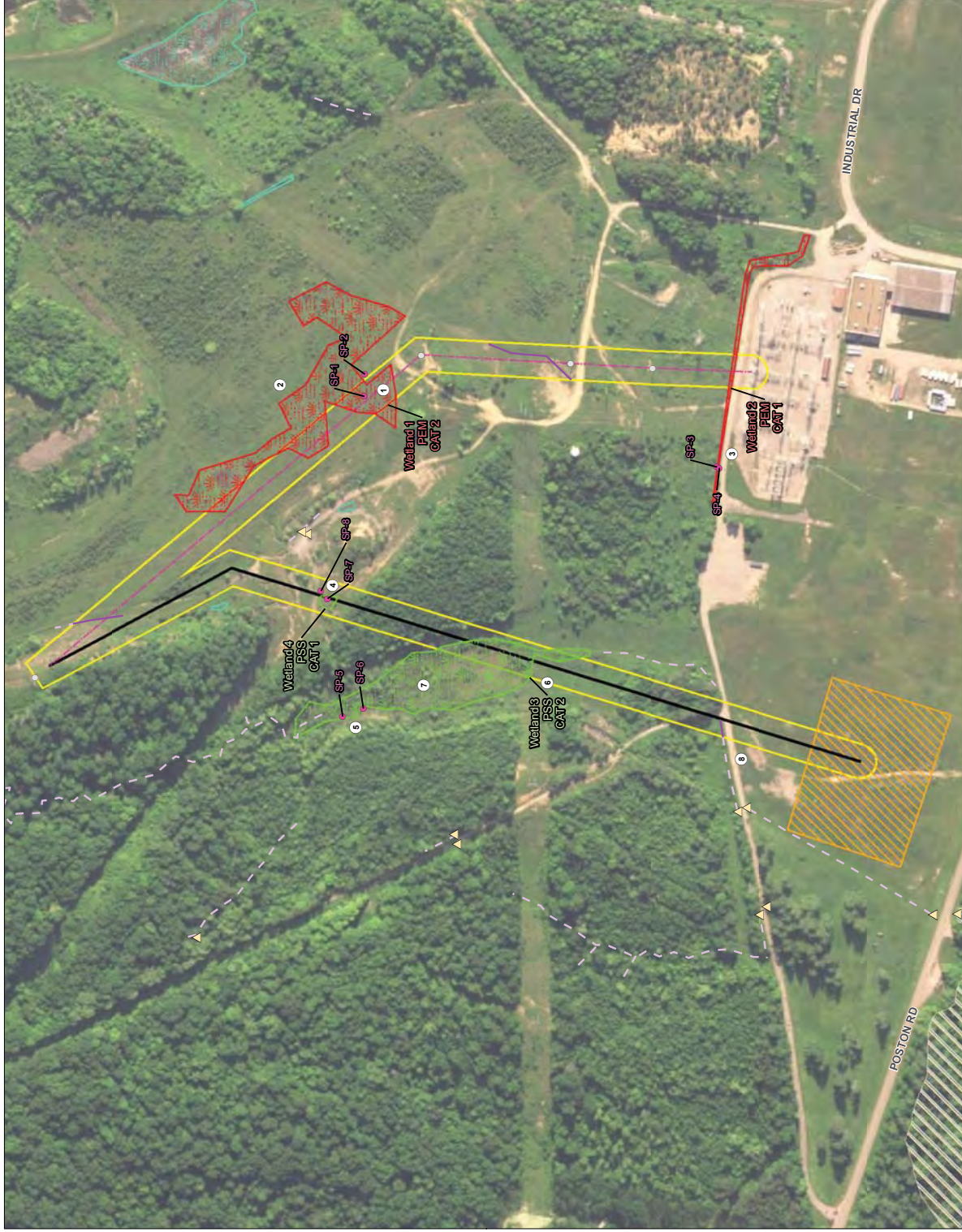


Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP, MADS, FEMA, USGS, OGRIP
3. Orthophotography: 2015 Map



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LEMASTER-WEST LANCASTER 138 KV TRANSMISSION LINE RELOCATION PROJECT, ATHENS
COUNTY, OHIO

A.3 FIGURE 3 – HABITAT ASSESSMENT MAP

Figure No.

3

Habitat Assessment Map

Client/Project

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138kV
Transmission Line Relocation Project

Project Location

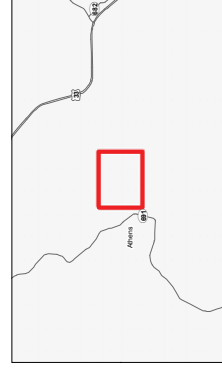
Adams County, Ohio

19704785
Prepared by: 09-20-2013
Technical Review by: 01-06-2013
Independent Review by: 02-05-2013



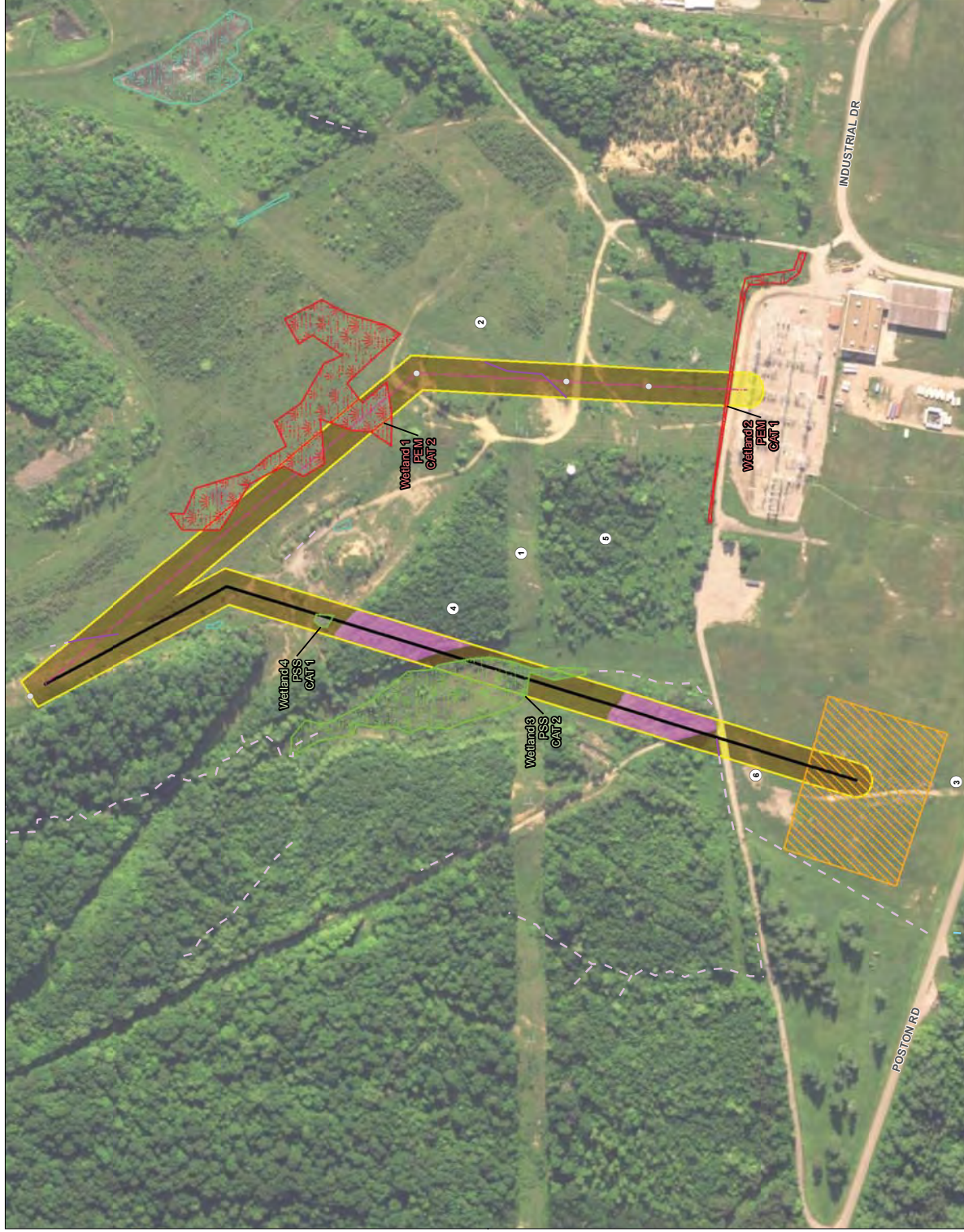
Legend

- Existing Structure
- Existing Lemaster-West Lancaster Transmission Line to be Removed
- Proposed Lemaster-West Lancaster Transmission Line Relocation
- Project Area (100' ROW)
- Photo Location
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Approximate Waterway
- Field Delineated Emergent Wetland
- Field Delineated Scrub Wetland
- Approximate Wetland
- Habitat Area
- Industrial
- Mixed Early Successional/Second Growth Deciduous Forest
- Old Field



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources Include: Stantec, AEP, MADS, USGS, OGRIP
- Aerial Photography: 2015 NADP



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Appendix B Agency Correspondence



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

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

December 30, 2016

Dan Godec
Stantec Consulting Services Inc.
11687 Lebanon Road
Cincinnati, Ohio 45241

Re: 16-865; Request for Technical Assistance, AEP Lemaster Station Project

Project: The proposed project involves the construction of the Lemaster Station.

Location: The proposed project is located in York, Dover, and Waterloo Townships, Athens County, 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 data request response is included on pages 3-4 of the project documentation.

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 vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Presence of the Indiana bat has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. The following species of trees have relatively high value as potential Indiana bat roost trees: 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 no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the club shell (*Pleurobema clava*), a state endangered and federally endangered mussel, 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 threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, and the black sandshell (*Ligumia recta*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the channel darter (*Percina copelandi*), a state threatened fish, and the river darter (*Percina shumardi*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact these or other aquatic 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 at the project site, 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 mud salamander (*Pseudotriton montanus*), a state threatened species. Due to the location, the type of habitat present at the project site, and the type of work proposed, 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.

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 U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

<http://water.ohiodnr.gov/water-use-planning/floodplain-management#PUB>

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



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife

Raymond W. Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

November 17, 2016

Dan Godec
Stantec Consulting Services, Inc.
11687 Lebanon Rd.
Cincinnati, OH 45241

Dear Mr. Godec,

I have reviewed the Natural Heritage Database for the Lemaster Station project area, including a one mile radius, in York, Dover and Waterloo Townships, Athens County, Ohio. The numbers/letters on the list below correspond to the areas marked on the accompanying map. Common name, scientific name and status are given for each species.

- A. Wayne National Forest – US Forest Service
- B. Hamley Run Floodplain Forest Conservation Site
- 1. *Eupatorium pilosum* – Rough Boneset, recently added to inventory, status not determined
- 2. Breeding Amphibian Site
- 3. *Brachycentrus numerosus* – caddisfly, endangered
- 4. Floodplain Forest Plant Community
- 5. *Terrapene carolina* – Eastern Box Turtle, species of concern
- 6. Mixed Mesophytic Forest Plant Community

A Conservation Site is an area deemed by the Natural Heritage Program to be a high quality natural area not currently under formal protection. It may, for example, harbor one or more rare species, be an outstanding example of a plant community or have geologically significant features, etc. These sites may be in private ownership and our listing of them does not imply permission for access.

We are unaware of any geologic features, scenic rivers, state wildlife areas, nature preserves, parks or forests or national wildlife refuges or parks within a one mile radius of the project area.

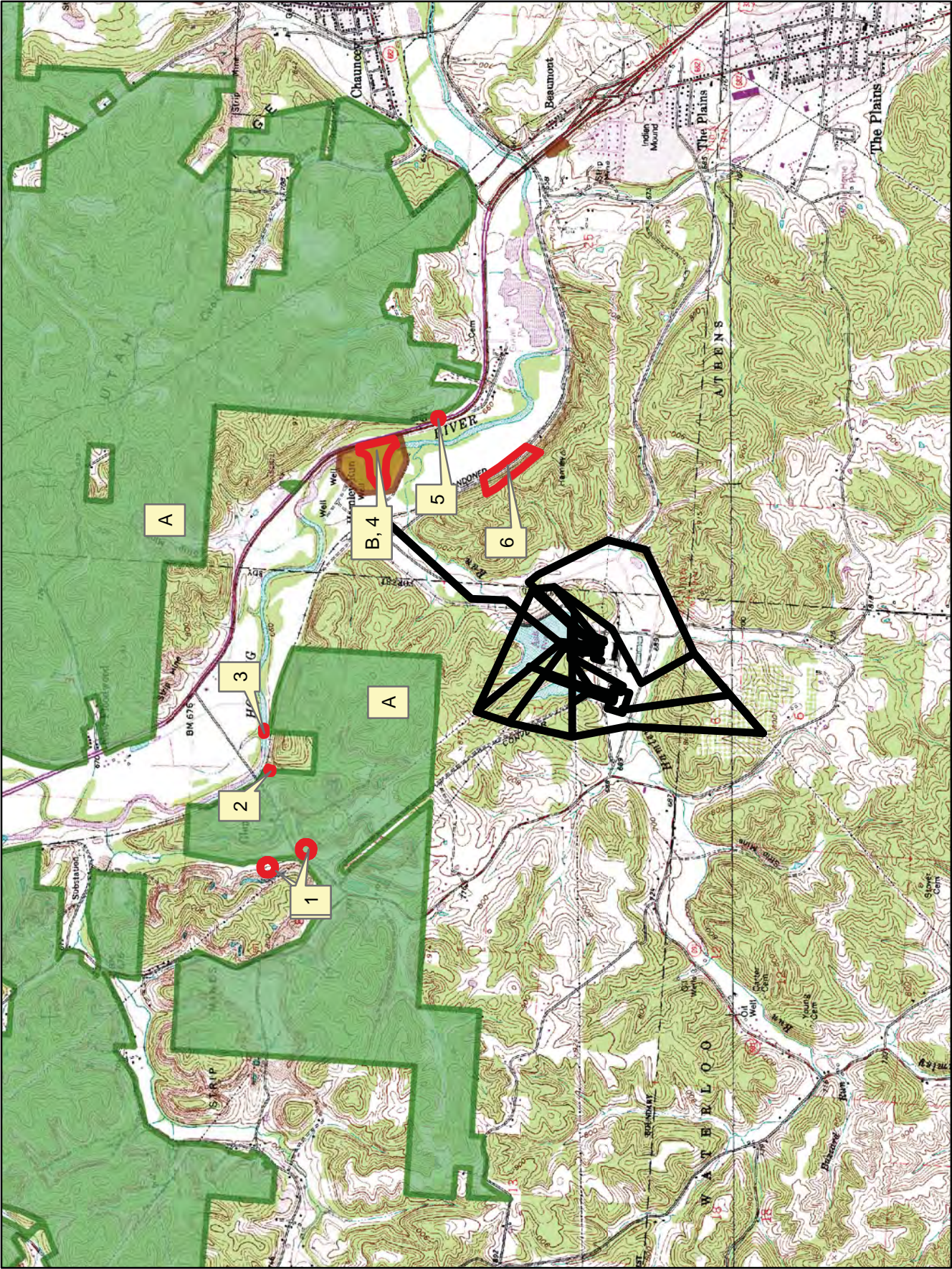
Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does 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.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

Debbie Woischke
Ohio Natural Heritage Program

Lemaster Station Project



Godec, Daniel

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Monday, November 28, 2016 11:29 AM
To: Godec, Daniel
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: Lemaster Electric Transmission Substation Project, Athens Co.



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS: 03E15000-2017-TA-0252

Dear Mr. Godec,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, we recommend that trees ≥ 3 inches dbh be saved wherever possible. Because the project will result in a small amount of forest clearing

relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to these species. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees ≥ 3 inches dbh during the summer roosting season may result in direct take of individuals. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, we recommend that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. **Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species.**

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

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 ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,



Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

Appendix C Representative Photographs

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 1. View of Wetland 1. Photograph taken facing east.



Photo Location 1. View of Wetland 1. Photograph taken facing north.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 2. View of Wetland 1. Photograph taken facing southeast.



Photo Location 2. View of Wetland 1. Photograph taken facing northwest.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 3. View of Wetland 2. Photograph taken facing northeast.



Photo Location 3. View of Wetland 2. Photograph taken facing east.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 4. View of Wetland 4. Photograph taken facing southwest.



Photo Location 4. View of Wetland 4. Photograph taken facing west.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 4. View of Wetland 4. Photograph taken facing northwest.



Photo Location 5. View of Wetland 3. Photograph taken facing east.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 5. View of Wetland 3. Photograph taken facing southeast.



Photo Location 6. View of Wetland 3. Photograph taken facing south.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 7. View of Wetland 3. Photograph taken facing east.



Photo Location 8. Representative view of upland drainage feature along existing roadway.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 1. Representative view of old field habitat. Photograph taken facing west.



Photo Location 2. Representative view of old field habitat. Photograph taken facing north.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 3. Representative view of old field habitat. Photograph taken facing north.

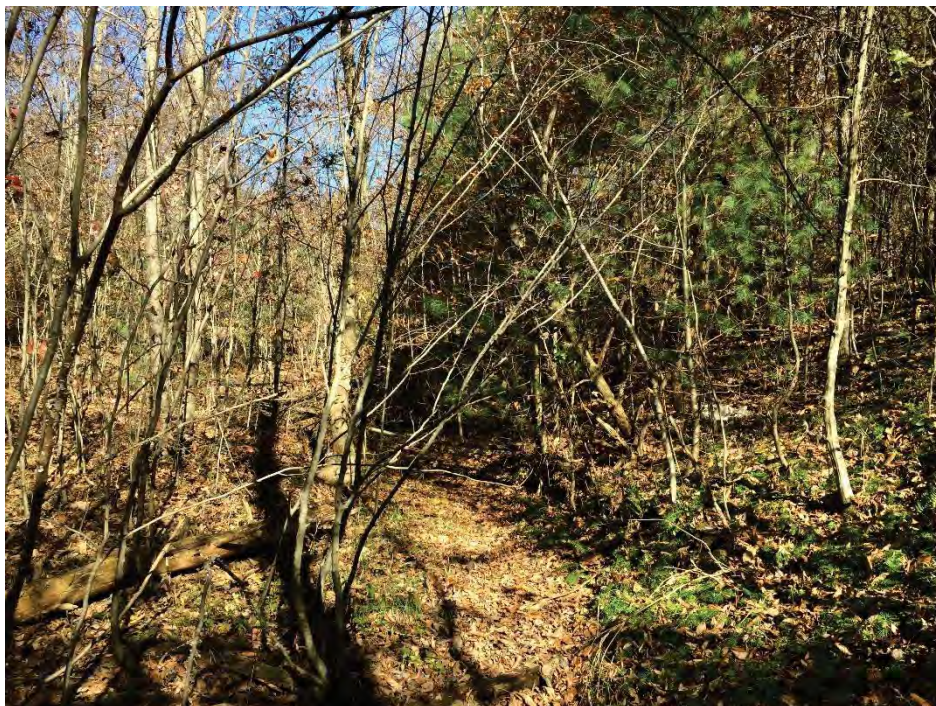


Photo Location 4. Representative view of mixed early successional/second growth forest habitat. Photograph taken facing north.

AEP Ohio Transmission Company, Inc.
Lemaster-West Lancaster 138 kV Transmission Line Relocation Project
Athens County, Ohio



Photo Location 5. Representative view of mixed early successional/second growth forest habitat. Photograph taken facing south.



Photo Location 6. Representative view of industrial habitat. Photograph taken facing southwest.

Appendix D Data Forms

D.1 WETLAND DETERMINATION DATA FORMS

Project/Site: Lemaster-West Lancaster 138 kV Transmission Line Relocation		Stantec Project #: 193704783	Date: 11/08/16
Applicant: American Electric Power			County: Athens
Investigator #1: Aaron Kwolek		Investigator #2: Jody Nicholson	State: Ohio
Soil Unit: Water	NWI/WWI Classification: PEM1C		Wetland ID: Wetland 1
Landform: Depression	Local Relief: Concave		Sample Point: SP-1
Slope (%): 4%	Latitude: 39.38609642280	Longitude: -82.17949063	Datum: NAD83
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?			
Are normal circumstances present?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Section: 1			Township: 12N
Range: 15W			Dir: --

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present): ☐

Primary: <input checked="" type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks)	Secondary: <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> B16 - Moss Trim Lines <input type="checkbox"/> C2 - Dry Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input checked="" type="checkbox"/> D3 - Shallow Aquitard <input checked="" type="checkbox"/> D4 - Microtopographic Relief <input checked="" type="checkbox"/> D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Depth: 3 (in.) Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.) Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)	Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks: **No saturation or water table. Water sitting on top of impermeable clay.**

SOILS

Map Unit Name: **Water** Series Drainage Class:

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Mottles					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	12	1	10YR	5/1	90	10YR	6/8	5	C	M	clay
--	--	--	--	--	--	5YR	5/4	5	C	M	clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present): <input type="checkbox"/>		Indicators for Problematic Soils ¹
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck (LRR N) <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> S4 - Sandy Gleyed Matrix	<input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> F12 - Iron-Manganese Masses (LRR N, MLRA 136) <input type="checkbox"/> F13 - Umbric Surface (MLRA 122, 136) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 148) <input type="checkbox"/> F21 - Red Parent Material (MLRA 127, 147) <input type="checkbox"/> A10 - 2cm Muck (MLRA 147) <input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147) <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Rock	Depth: 12"	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
---	-------------------	---

Remarks: **Fill material used to cap fly ash landfill**

Project/Site: **Lemaster-West Lancaster 138 kV Transmission Line Relocation Project** Wetland ID: Wetland 1 Sample Point: **SP-1**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Typha latifolia</i>	20	Y	OBL
2.	<i>Juncus effusus</i>	30	Y	FACW
3.	<i>Verbena urticifolia</i>	10	N	FAC
4.	<i>Carex frankii</i>	5	Y	FACW
5.	<i>Carex lacustris</i>	15	Y	OBL
6.	<i>Eupatorium perfoliatum</i>	15	N	FACW
7.	<i>Ageratina altissima</i>	5	Y	FACU
8.	<i>Carex vulpinoidea</i>	5	N	OBL
9.	<i>Symphyotrichum lateriflorum</i>	5	N	FACW
10.	<i>Eupatorium serotinum</i>	15	N	FAC
11.	<i>Scirpus atrovirens</i>	25	Y	OBL
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		150		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **5** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **83.3%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	65	x 1 =	65
FACW spp.	55	x 2 =	110
FAC spp.	25	x 3 =	75
FACU spp.	5	x 4 =	20
UPL spp.	0	x 5 =	0

Total **150** (A) **270** (B)

Prevalence Index = B/A = **1.800**

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| Yes | No | Rapid Test for Hydrophytic Vegetation |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Dominance Test is > 50% |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |
- * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present Yes No

☒ ☐

Additional Remarks:

Project/Site: Lemaster-West Lancaster 138 kV Transmission Line Relocation Project		Stantec Project #: 193704783	Date: 11/08/16
Applicant: American Electric Power			County: Athens
Investigator #1: Aaron Kwolek		Investigator #2: Jody Nicholson	State: Ohio
Soil Unit: Water	NWI/WWI Classification: PEM1C		Wetland ID: Wetland 1
Landform: Terrace	Local Relief: Concave		Sample Point: SP-2
Slope (%): 4%	Latitude: 39.38608843230	Longitude: -82.17925777	Datum: NAD83
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			Community ID: PEM
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			Section: 1
Are normal circumstances present?			Township: 12N
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?			Range: 15W Dir: --

SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:	

HYDROLOGY	
Wetland Hydrology Indicators (Check here if indicators are not present): <input type="checkbox"/>	
<u>Primary:</u> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> B16 - Moss Trim Lines <input type="checkbox"/> C2 - Dry Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D3 - Shallow Aquitard <input type="checkbox"/> D4 - Microtopographic Relief <input type="checkbox"/> D5 - FAC-Neutral Test

Field Observations:	
Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)
Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)
Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A	
Remarks: No saturation or water table. Water sitting on top of impermeable clay.	

SOILS											
Map Unit Name: Water						Series Drainage Class:					
Taxonomy (Subgroup):											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Mottles			Type	Location	Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)	%				
0	16	1	10YR	4/4	35	10YR	6/8	10	C	M	clay loam
0	16	1	10YR	5/1	35	5Y	7/4	10	C	M	clay loam
--	--	--	--	--	--	5YR	5/4	10	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present): <input type="checkbox"/>		Indicators for Problematic Soils ¹	
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck (LRR N) <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> S4 - Sandy Gleyed Matrix	<input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> F12 - Iron-Manganese Masses (LRR N, MLRA 136) <input type="checkbox"/> F13 - Umbric Surface (MLRA 122, 136) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 148) <input type="checkbox"/> F21 - Red Parent Material (MLRA 127, 147)	<input type="checkbox"/> A10 - 2cm Muck (MLRA 147) <input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147) <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type:	Depth:	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Fill material sourced from outside areas to cap fly ash pond.			

Project/Site: **Lemaster-West Lancaster 138 kV Transmission Line Relocation Project** Wetland ID: Wetland 1 Sample Point: **SP-2**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Trifolium pratense</i>	15	Y	FACU
2.	<i>Medicago lupulina</i>	15	Y	FACU
3.	<i>Schedonorus arundinaceus</i>	30	Y	FACU
4.	<i>Vernonia gigantea</i>	2	N	FACW
5.	<i>Lactuca canadensis</i>	3	N	FACU
6.	<i>Daucus carota</i>	10	N	UPL
7.	<i>Desmodium canadense</i>	10	N	FAC
8.	<i>Euthamia graminifolia</i>	10	N	FAC
9.	<i>Quercus imbricaria</i>	5	N	FAC
10.	<i>Trifolium repens</i>	5	N	FACU
11.	<i>Solidago altissima</i>	15	N	FACU
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		120		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Additional Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>2</u>	x 2 =	<u>4</u>
FAC spp.	<u>25</u>	x 3 =	<u>75</u>
FACU spp.	<u>83</u>	x 4 =	<u>332</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 110 (A) 411 (B)

Prevalence Index = B/A = 3.736

Hydrophytic Vegetation Indicators:

Yes	No	Rapid Test for Hydrophytic Vegetation
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Dominance Test is > 50%
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Prevalence Index is ≤ 3.0 *
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Morphological Adaptations (Explain) *
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present Yes No

☐

☒

Project/Site: Lemaster-West Lancaster 138 kV Transmission Line Relocation Project		Stantec Project #: 193704783	Date: 11/07/16
Applicant: American Electric Power			County: Athens
Investigator #1: Aaron Kwolek		Investigator #2: Jody Nicholson	State: Ohio
Soil Unit: Fitchvill silt loam, 0 to 3 percent slopes		NWI/WWI Classification: None	Wetland ID: Wetland 2
Landform: --	Local Relief: Concave		Sample Point: SP-3
Slope (%): 4%	Latitude: 39.38321744510	Longitude: -82.18024529	Community ID: PEM
Datum: NAD83			Section: 1
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Township: 12N
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			Range: 15W
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?			Dir: --
Are normal circumstances present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present): ☐

<p><u>Primary:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery 	<ul style="list-style-type: none"> <input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 	<p><u>Secondary:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> B16 - Moss Trim Lines <input type="checkbox"/> C2 - Dry Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input checked="" type="checkbox"/> D3 - Shallow Aquitard <input checked="" type="checkbox"/> D4 - Microtopographic Relief <input checked="" type="checkbox"/> D5 - FAC-Neutral Test
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<p>Field Observations:</p> <p>Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p> <p>Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p> <p>Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p>	<p>Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: **Fitchvill silt loam, 0 to 3 percent slopes** Series Drainage Class: **Somewhat poorly drained**

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)												
Top Depth	Bottom Depth	Horizon	Matrix		%	Mottles				Texture (e.g. clay, sand, loam)		
			Color (Moist)			Color (Moist)		%	Type		Location	
0	10	1	10YR	4/2	90	10YR	6/8		10	C	M	silt loam
--	--	--	--	--	--	--	--		--	--	--	--
--	--	--	--	--	--	--	--		--	--	--	--
--	--	--	--	--	--	--	--		--	--	--	--
--	--	--	--	--	--	--	--		--	--	--	--
--	--	--	--	--	--	--	--		--	--	--	--
--	--	--	--	--	--	--	--		--	--	--	--
--	--	--	--	--	--	--	--		--	--	--	--

<p>NRCS Hydric Soil Field Indicators (check here if indicators are not present): <input type="checkbox"/></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck (LRR N) <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions <input type="checkbox"/> F12 - Iron-Manganese Masses (LRR N, MLRA 136) <input type="checkbox"/> F13 - Umbric Surface (MLRA 122, 136) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 148) <input type="checkbox"/> F21 - Red Parent Material (MLRA 127, 147) 		<p>Indicators for Problematic Soils¹</p> <ul style="list-style-type: none"> <input type="checkbox"/> A10 - 2cm Muck (MLRA 147) <input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147) <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)
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¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (If Observed)</p> <p>Type: Rock</p>	<p>Depth: 10"</p>	<p>Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
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Remarks:

Project/Site: **Lemaster-West Lancaster 138 kV Transmission Line Relocation Project** Wetland ID: Wetland 2 Sample Point: **SP-3**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = 0

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = 0

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Typha X glauca</i>	70	Y	OBL
2.	<i>Phalaris arundinacea</i>	20	N	FACW
3.	<i>Angelica atropurpurea</i>	5	N	OBL
4.	<i>Rosa palustris</i>	5	N	FACW
5.	<i>Solidago gigantea</i>	5	N	FACW
6.	<i>Scirpus atrovirens</i>	5	N	OBL
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--

Total Cover = 110

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

Total Cover = 0

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>80</u>	x 1 =	<u>80</u>
FACW spp.	<u>30</u>	x 2 =	<u>60</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 110 (A) 140 (B)

Prevalence Index = B/A = 1.273

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| Yes | No | Rapid Test for Hydrophytic Vegetation |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Dominance Test is > 50% |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |
- * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present Yes No



Additional Remarks:

Project/Site: Lemaster-West Lancaster 138 kV Transmission Line Relocation Project		Stantec Project #: 193704783	Date: 11/07/16
Applicant: American Electric Power			County: Athens
Investigator #1: Aaron Kwolek		Investigator #2: Jody Nicholson	State: Ohio
Soil Unit: Fitchville silt loam, 0 to 3 percent slopes		NWI/WWI Classification: None	Wetland ID: Wetland 2
Landform: --	Local Relief: Convex		Sample Point: SP-4
Slope (%): 4%	Latitude: 39.38319645410	Longitude: -82.18026061	Datum: NAD83
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			Community ID: Upland
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			Section: 1
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?			Township: 12N
			Range: 15W Dir: --
			Are normal circumstances present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present): ☒

<p><u>Primary:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery 	<ul style="list-style-type: none"> <input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 	<p><u>Secondary:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> B16 - Moss Trim Lines <input type="checkbox"/> C2 - Dry Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D3 - Shallow Aquitard <input type="checkbox"/> D4 - Microtopographic Relief <input type="checkbox"/> D5 - FAC-Neutral Test
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<p>Field Observations:</p> <p>Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p> <p>Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p> <p>Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p>	<p>Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: **Fitchville silt loam, 0 to 3 percent slopes** Series Drainage Class: **Somewhat poorly drained**

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix		%	Mottles		Type	Location	Texture (e.g. clay, sand, loam)
			Color (Moist)			Color (Moist)	%			
0	6	1	10YR	4/4	100	--	--	--	--	silt loam
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

<p>NRCS Hydric Soil Field Indicators (check here if indicators are not present): <input type="checkbox"/></p> <div style="display: flex; justify-content: space-between;"> <div> <ul style="list-style-type: none"> <input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck (LRR N) <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> S4 - Sandy Gleyed Matrix </div> <div> <ul style="list-style-type: none"> <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions </div> <div> <ul style="list-style-type: none"> <input type="checkbox"/> F12 - Iron-Manganese Masses (LRR N, MLRA 136) <input type="checkbox"/> F13 - Umbric Surface (MLRA 122, 136) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 148) <input type="checkbox"/> F21 - Red Parent Material (MLRA 127, 147) </div> </div>		<p>Indicators for Problematic Soils ¹</p> <ul style="list-style-type: none"> <input type="checkbox"/> A10 - 2cm Muck (MLRA 147) <input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147) <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)
--	--	--

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (If Observed)</p> <p>Type: Rock</p>	<p>Depth: 6"</p>	<p>Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
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Remarks:

Project/Site: **Lemaster-West Lancaster 138 kV Transmission Line Relocation Project** Wetland ID: Wetland 2 Sample Point: **SP-4**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Schedonorus arundinaceus</i>	25	Y	FACU
2.	<i>Lonicera japonica</i>	10	N	FAC
3.	<i>Solidago altissima</i>	25	Y	FACU
4.	<i>Plantago lanceolata</i>	5	N	FACW
5.	<i>Melilotus officinalis</i>	2	N	FACU
6.	<i>Daucus carota</i>	5	N	UPL
7.	<i>Achillea millefolium</i>	5	N	FACU
8.	<i>Trifolium repens</i>	10	N	FACU
9.	<i>Apocynum cannabinum</i>	10	N	FACU
10.	<i>Dipsacus fullonum</i>	5	N	FACU
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		102		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>5</u>	x 2 =	<u>10</u>
FAC spp.	<u>10</u>	x 3 =	<u>30</u>
FACU spp.	<u>82</u>	x 4 =	<u>328</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 97 (A) 368 (B)

Prevalence Index = B/A = 3.794

Hydrophytic Vegetation Indicators:

- | | | |
|--|--|--|
| Yes | No | Rapid Test for Hydrophytic Vegetation |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Dominance Test is > 50% |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |
| <input type="checkbox"/> * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | |

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present Yes No

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Additional Remarks:

Project/Site: Lemaster-West Lancaster 138 kV Transmission Line Relocation Project		Stantec Project #: 193704783	Date: 11/08/16
Applicant: American Electric Power			County: Athens
Investigator #1: Aaron Kwolek		Investigator #2: Jody Nicholson	State: Ohio
Soil Unit: Omurga silt loam, 6-12 percent slopes	NW/WWI Classification: None		Wetland ID: Wetland 4
Landform: Depression	Local Relief: Concave		Sample Point: SP-5
Slope (%): 4%	Latitude:	Longitude:	Community ID: PSS
Datum: NAD83			Section: 1
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			Township: 12N
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Range: 15W Dir: --
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?			

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Wetland			

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present): <input type="checkbox"/>		Secondary:
Primary:		
<input type="checkbox"/> A1 - Surface Water	<input type="checkbox"/> B9 - Water-Stained Leaves	<input type="checkbox"/> B6 - Surface Soil Cracks
<input type="checkbox"/> A2 - High Water Table	<input type="checkbox"/> B13 - Aquatic Fauna	<input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface
<input type="checkbox"/> A3 - Saturation	<input type="checkbox"/> B14 - True Aquatic Plants	<input type="checkbox"/> B10 - Drainage Patterns
<input type="checkbox"/> B1 - Water Marks	<input type="checkbox"/> C1 - Hydrogen Sulfide Odor	<input type="checkbox"/> B16 - Moss Trim Lines
<input type="checkbox"/> B2 - Sediment Deposits	<input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots	<input type="checkbox"/> C2 - Dry Season Water Table
<input type="checkbox"/> B3 - Drift Deposits	<input type="checkbox"/> C4 - Presence of Reduced Iron	<input type="checkbox"/> C8 - Crayfish Burrows
<input type="checkbox"/> B4 - Algal Mat or Crust	<input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils	<input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery
<input type="checkbox"/> B5 - Iron Deposits	<input type="checkbox"/> C7 - Thin Muck Surface	<input type="checkbox"/> D1 - Stunted or Stressed Plants
<input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> D2 - Geomorphic Position
		<input type="checkbox"/> D3 - Shallow Aquitard
		<input type="checkbox"/> D4 - Microtopographic Relief
		<input checked="" type="checkbox"/> D5 - FAC-Neutral Test

Field Observations:		Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)	
Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)	
Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Omurga silt loam, 6-12 percent slopes** Series Drainage Class: **Moderately Well Drained**

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Mottles					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	4	1	10YR	5/1	70	10YR	6/8	15	C	M	clay
--	--	--	--	--	--	10YR	2/1	15	C	M	clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present): <input type="checkbox"/>		Indicators for Problematic Soils ¹
<input type="checkbox"/> A1 - Histosol	<input type="checkbox"/> S5 - Sandy Redox	<input type="checkbox"/> A10 - 2cm Muck (MLRA 147)
<input type="checkbox"/> A2 - Histic Epipedon	<input type="checkbox"/> S6 - Stripped Matrix	<input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148)
<input type="checkbox"/> A3 - Black Histic	<input type="checkbox"/> S7 - Dark Surface	<input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147)
<input type="checkbox"/> A4 - Hydrogen Sulfide	<input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148)	<input type="checkbox"/> TF12 - Very Shallow Dark Surface
<input type="checkbox"/> A5 - Stratified Layers	<input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> A10 - 2 cm Muck (LRR N)	<input type="checkbox"/> F2 - Loamy Gleyed Matrix	
<input type="checkbox"/> A11 - Depleted Below Dark Surface	<input checked="" type="checkbox"/> F3 - Depleted Matrix	
<input type="checkbox"/> A12 - Thick Dark Surface	<input type="checkbox"/> F6 - Redox Dark Surface	
<input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148)	<input type="checkbox"/> F7 - Depleted Dark Surface	
<input type="checkbox"/> S4 - Sandy Gleyed Matrix	<input type="checkbox"/> F8 - Redox Depressions	
		¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Remarks:

Project/Site: **Lemaster-West Lancaster 138 kV Transmission Line Relocation Project** Wetland ID: Wetland 4 Sample Point: **SP-5**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	<i>Salix interior</i>	60	Y	FACW
2.	<i>Platanus occidentalis</i>	10	N	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		70		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Eupatorium perfoliatum</i>	15	Y	FACW
2.	<i>Scirpus atrovirens</i>	10	N	OBL
3.	<i>Carex frankii</i>	5	N	OBL
4.	<i>Carex torreyi</i>	20	Y	FACW
5.	<i>Juncus effusus</i>	15	Y	FACW
6.	<i>Carex lacustris</i>	5	N	OBL
7.	<i>Schedonorus arundinaceus</i>	15	Y	FACU
8.	<i>Eupatorium serotinum</i>	5	N	FAC
9.	<i>Symphotrichum lateriflorum</i>	5	N	FACW
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		95		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>20</u>	x 1 =	<u>20</u>
FACW spp.	<u>125</u>	x 2 =	<u>250</u>
FAC spp.	<u>5</u>	x 3 =	<u>15</u>
FACU spp.	<u>15</u>	x 4 =	<u>60</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 165 (A) 345 (B)

Prevalence Index = B/A = 2.091

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| Yes | No | Rapid Test for Hydrophytic Vegetation |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Dominance Test is > 50% |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |
- * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present Yes No

☒ ☐

Additional Remarks:

Project/Site: Lemaster-West Lancaster 138 kV Transmission Line Relocation Project		Stantec Project #: 193704783	Date: 11/08/16
Applicant: American Electric Power			County: Athens
Investigator #1: Aaron Kwolek		Investigator #2: Jody Nicholson	State: Ohio
Soil Unit: Omurga silt loam, 6-12 percent slopes	NW/WWI Classification: None		Wetland ID: Wetland 4
Landform: Depression	Local Relief: Concave		Sample Point: SP-6
Slope (%): 4%	Latitude: 39.38645312210	Longitude: -82.18153786	Datum: NAD83
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			Community ID: Upland
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			Section: 1
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?			Township: 12N
Are normal circumstances present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Range: 15W Dir: --

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Wetland	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present): ☐

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)
Saturation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: (in.)

Wetland Hydrology Present? ☐ Yes ☒ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

SOILS

Map Unit Name: **Omurga silt loam, 6-12 percent slopes** Series Drainage Class: **Moderately Well Drained**

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix		%	Mottles		Type	Location	Texture (e.g. clay, sand, loam)
			Color (Moist)			Color (Moist)	%			
0	16	1	10YR	5/3	100	--	--	--	--	fill Material
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present): ☐

- | | |
|---|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck (LRR N) <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> S4 - Sandy Gleyed Matrix | <ul style="list-style-type: none"> <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions |
|---|--|

- ☐ F12 - Iron-Manganese Masses (LRR N, MLRA 136)
- ☐ F13 - Umbric Surface (MLRA 122, 136)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 148)
- ☐ F21 - Red Parent Material (MLRA 127, 147)

Indicators for Problematic Soils ¹

- ☐ A10 - 2cm Muck (MLRA 147)
- ☐ A16 - Coast Prairie Redox (MLRA 147, 148)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 136, 147)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Remarks:

Project/Site: **Lemaster-West Lancaster 138 kV Transmission Line Relocation Project** Wetland ID: Wetland 4 Sample Point: **SP-6**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Schedonorus arundinaceus</i>	30	Y	FACU
2.	<i>Andropogon virginicus</i>	10	N	FACU
3.	<i>Daucus carota</i>	5	N	UPL
4.	<i>Solidago altissima</i>	5	N	FACW
5.	<i>Melilotus officinalis</i>	10	N	FACU
6.	<i>Setaria glauca</i>	30	Y	#N/A
7.	<i>Prunella vulgaris</i>	5	N	FACU
8.	<i>Pycnanthemum tenuifolium</i>	5	N	FACW
9.	<i>Plantago lanceolata</i>	10	N	UPL
10.	<i>Ludwigia alternifolia</i>	5	N	FACW
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		115		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>15</u>	x 2 =	<u>30</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>55</u>	x 4 =	<u>220</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 70 (A) 250 (B)

Prevalence Index = B/A = 3.571

Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| Yes | No | Rapid Test for Hydrophytic Vegetation |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Dominance Test is > 50% |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |
- * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present Yes No

☐ ☒

Additional Remarks:

WETLAND DETERMINATION DATA FORM

Eastern Mountains and Piedmont Region

Project/Site: Lemaster-West Lancaster 138 kV Transmission Line Relocation Project	Stantec Project #: 193704783	Date: 11/07/16
Applicant: American Electric Power		County: Athens
Investigator #1: Aaron Kwolek	Investigator #2: Jody Nicholson	State: Ohio
Soil Unit: Water	NWI/WWI Classification: PEM1C	Wetland ID: Wetland 3
Landform: Terrace	Local Relief: Concave	Sample Point: SP-7
Slope (%): 4%	Latitude: 39.38628155920	Community ID: PSS
	Longitude: -82.1828612	Datum: NAD83
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are normal circumstances present?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		
		Section: 1
		Township: 12N
		Range: 15W Dir: --

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Remnant bed of fly ash pond.			

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present): ☐

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☒ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present? ☐ Yes ☒ No Depth: (in.)

Water Table Present? ☐ Yes ☒ No Depth: (in.)

Saturation Present? ☐ Yes ☒ No Depth: (in.)

Wetland Hydrology Present? ☒ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

SOILS

Map Unit Name: **Water** Series Drainage Class: **Moderately Well Drained**

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Mottles					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	4	1	10YR	4/2	70	5YR	6/8	30	C	PL	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
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--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present): ☐

- ☐ A1 - Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck (LRR N)
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148)
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface
- ☐ S8 - Polyvalue Below Dark Surface (MLRA 147, 148)
- ☐ S9 - Thin Dark Surface (MLRA 147, 148)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☒ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

- ☐ F12 - Iron-Manganese Masses (LRR N, MLRA 136)
- ☐ F13 - Umbric Surface (MLRA 122, 136)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 148)
- ☐ F21 - Red Parent Material (MLRA 127, 147)

Indicators for Problematic Soils ¹

- ☐ A10 - 2cm Muck (MLRA 147)
- ☐ A16 - Coast Prairie Redox (MLRA 147, 148)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 136, 147)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Remarks:

Project/Site: **Lemaster-West Lancaster 138 kV Transmission Line Relocation Project** Wetland ID: Wetland 3 Sample Point: **SP-7**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	<i>Salix interior</i>	70	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		70		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Juncus effusus</i>	85	Y	FACW
2.	<i>Carex frankii</i>	5	N	OBL
3.	<i>Agrimonia parviflora</i>	20	N	FACW
4.	<i>Scirpus atrovirens</i>	5	N	FACW
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		115		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>5</u>	x 1 =	<u>5</u>
FACW spp.	<u>180</u>	x 2 =	<u>360</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 185 (A) 365 (B)

Prevalence Index = B/A = 1.973

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| Yes | No | Rapid Test for Hydrophytic Vegetation |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Dominance Test is > 50% |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |
- * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present Yes No



Additional Remarks:

Project/Site: Lemaster-West Lancaster 138 kV Transmission Line Relocation Project		Stantec Project #: 193704783	Date: 11/07/16
Applicant: American Electric Power			County: Athens
Investigator #1: Aaron Kwolek		Investigator #2: Jody Nicholson	State: Ohio
Soil Unit: Omurga silt loam, 6 to 12 percent slopes	NW/WWI Classification: PEM1C		Wetland ID: Wetland 3
Landform: Terrace	Local Relief: Concave		Sample Point: SP-8
Slope (%): 4%	Latitude: 39.38610991870	Longitude: -82.1827750721	Datum: NAD83
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			Community ID: Upland
Are Vegetation <input type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			Section: 1
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?			Township: 12N
Are normal circumstances present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Range: 15W Dir: --

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present): ☒

<p><u>Primary:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery 	<p><u>Secondary:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 	<ul style="list-style-type: none"> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> B16 - Moss Trim Lines <input type="checkbox"/> C2 - Dry Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D3 - Shallow Aquitard <input type="checkbox"/> D4 - Microtopographic Relief <input type="checkbox"/> D5 - FAC-Neutral Test
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<p>Field Observations:</p> <p>Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p> <p>Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p> <p>Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)</p>	<p>Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: **Omurga silt loam, 6 to 12 percent slopes** Series Drainage Class:

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix		%	Mottles		Type	Location	Texture (e.g. clay, sand, loam)
			Color (Moist)			Color (Moist)	%			
0	16	1	10YR	4/4	100	--	--	--	--	silt loam
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present): <input type="checkbox"/>		Indicators for Problematic Soils ¹
<ul style="list-style-type: none"> <input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck (LRR N) <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> S4 - Sandy Gleyed Matrix 	<ul style="list-style-type: none"> <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions 	<ul style="list-style-type: none"> <input type="checkbox"/> F12 - Iron-Manganese Masses (LRR N, MLRA 136) <input type="checkbox"/> F13 - Umbric Surface (MLRA 122, 136) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 148) <input type="checkbox"/> F21 - Red Parent Material (MLRA 127, 147) <input type="checkbox"/> A10 - 2cm Muck (MLRA 147) <input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147) <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: N/A	Depth: N/A	<p>Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
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Remarks:

Project/Site: **Lemaster-West Lancaster 138 kV Transmission Line Relocation Project** Wetland ID: Wetland 3 Sample Point: **SP-8**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	<i>Pinus strobus</i>	10	Y	FACU
2.	<i>Lonicera morrowii</i>	3	N	FACU
3.	<i>Salix interior</i>	5	Y	FACW
4.	<i>Platanus occidentalis</i>	2	N	FACW
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		20		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Rumex crispus</i>	5	N	FAC
2.	<i>Andropogon virginicus</i>	25	Y	FACU
3.	<i>Solidago altissima</i>	10	N	FACU
4.	<i>Agrimonia parviflora</i>	25	Y	FACW
5.	<i>Daucus carota</i>	5	N	UPL
6.	<i>Symphytotrichum lateriflorum</i>	2	N	FACW
7.	<i>Juncus torreyi</i>	2	N	FACW
8.	<i>Juncus effusus</i>	3	N	FACW
9.	<i>Poa palustris</i>	10	N	FACW
10.	<i>Viola sororia</i>	2	N	FAC
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		89		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>49</u>	x 2 =	<u>98</u>
FAC spp.	<u>7</u>	x 3 =	<u>21</u>
FACU spp.	<u>48</u>	x 4 =	<u>192</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 104 (A) 311 (B)

Prevalence Index = B/A = 2.990

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| Yes | No | Rapid Test for Hydrophytic Vegetation |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Dominance Test is > 50% |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |
- * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present Yes No



Additional Remarks:

LEMASTER-WEST LANCASTER 138 KV TRANSMISSION LINE RELOCATION PROJECT, ATHENS
COUNTY, OHIO

D.2 ORAM DATA FORMS

wetland 1

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

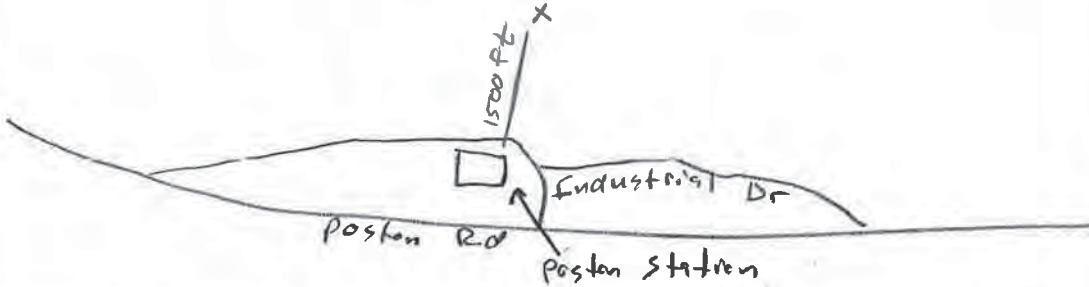
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.


The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Aaron Kwalek		
Date:	11/14/16		
Affiliation:	Stantec		
Address:	11687 Lebanon Rd, Cincinnati, OH 45241		
Phone Number:	513 842 8200		
e-mail address:	Aaron.Kwalek@stantec.com		
Name of Wetland:	Wetland 1		
Vegetation Community(ies):	PEM		
HGM Class(es):	Depressions 1		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	39.386638, -82.179210		
USGS Quad Name	Nelsonville		
County	Athens		
Township	The Plains		
Section and Subsection	Sec 1 T12N R15W		
Hydrologic Unit Code	050302040801		
Site Visit	11/7/16		
National Wetland Inventory Map	None		
Ohio Wetland Inventory Map	None		
Soil Survey	Omaly 1C1 Omaly silt loam 6-12% slopes		
Delineation report/map	See Jurisdictional Waters Delineation Report		

Name of Wetland: <u>wetland 1</u>	
Wetland Size (acres, hectares): <u>2.73 acres</u>	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	
Comments, Narrative Discussion, Justification of Category Changes:	
<div>Final score : <u>35.5</u></div> <div>Category: <u>2</u></div>	

Wetland 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	✓	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

wetland 1

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

wetland 1

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: <u>wetland 1</u>	Rater(s): <u>ASK</u>	Date: <u>11/7/2010</u>
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

9	11
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7	8
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☒ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☒ road bed/RR track
- ☐ dredging
- ☐ other

7.5	25.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☒ None or none apparent (4)
- ☒ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☒ clearcutting
- ☒ selective cutting
- ☒ woody debris removal
- ☐ toxic pollutants

- ☒ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

25.5
subtotal this page

Site: <u>wetland 1</u>	Rater(s): <u>ATK</u>	Date: <u>11/7/2016</u>
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25.5	
subtotal first page	
0	25.5
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

10	35.5
max 20 pts	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☒ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

35.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

wetland 1

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	9	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	7.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	10	
	TOTAL SCORE	35.5	Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet Wetland 1

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category			
Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

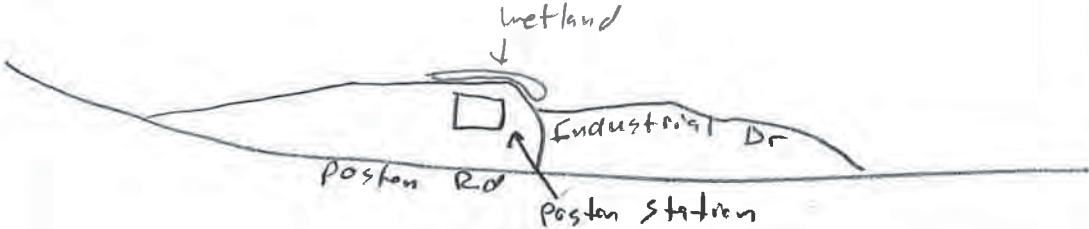
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

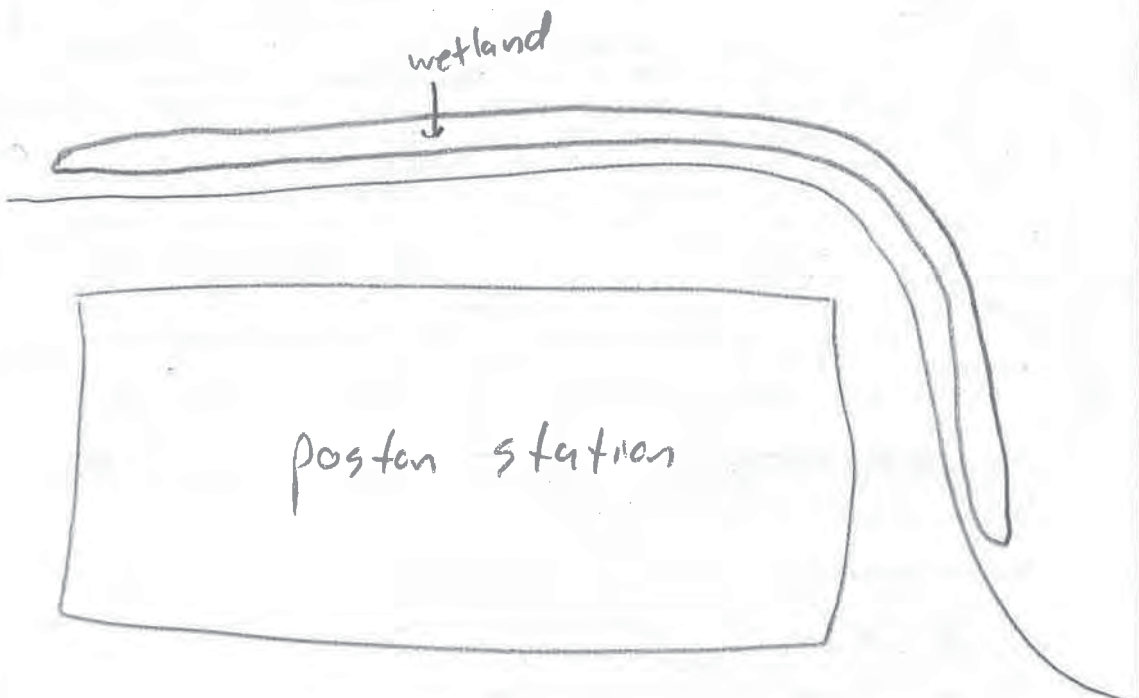
The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Aaron Kwalek		
Date:	11/14/16		
Affiliation:	Stantec		
Address:	11687 Lebanon Rd, Cincinnati, OH 45241		
Phone Number:	513 842 8200		
e-mail address:	Aaron.Kwalek@stantec.com		
Name of Wetland:	wetland 2		
Vegetation Community(ies):	PEM		
HGM Class(es):	Depressional		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	39.383058, -82.178780		
USGS Quad Name	Nelsonville		
County	Athens		
Township	The Plains		
Section and Subsection	Sec 1 T12N R15W		
Hydrologic Unit Code	050302040801		
Site Visit	11/7/16		
National Wetland Inventory Map			
Ohio Wetland Inventory Map	None		
Soil Survey	FAA - Fitchville silt loam, 0-3% slopes		
Delineation report/map	See Jurisdictional Waters Delineation Report		

Name of Wetland: <u>wetland 2</u>	
Wetland Size (acres, hectares): <u>0.06 ac</u>	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : <u>12</u>	Category: <u>1</u>

Scoring Boundary Worksheet

Wetland 2

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	✓	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

wetland 2

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

wetland 2

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

wetland 2

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: <u>Wetland 2</u>	Rater(s): <u>ASJ</u>	Date: <u>11/7/16</u>
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0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

3	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4	7
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input checked="" type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other

4	11
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input checked="" type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input checked="" type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

11
subtotal this page

Site: <u>wetland 2</u>	Rater(s): <u>ATK</u>	Date: <u>11/7/16</u>
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11

subtotal first page

0	11
max 10 pts	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1	12
max 20 pts	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☒ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☒ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

12

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

wetland 2

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Quantitative Rating	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Metric 1. Size	6	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	4	
	Metric 4. Habitat	21	
	Metric 5. Special Wetland Communities	6	
Metric 6. Plant communities, interspersed, microtopography	1		
	TOTAL SCORE	12	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

wetland 2

Choices	Circle one	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/>	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	<input checked="" type="radio"/>	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall within the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/>	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/>	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Choose one ☒ Category 1 ☐ Category 2 ☐ Category 3

End of Ohio Rapid Assessment Method for Wetlands.

wetland 3

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

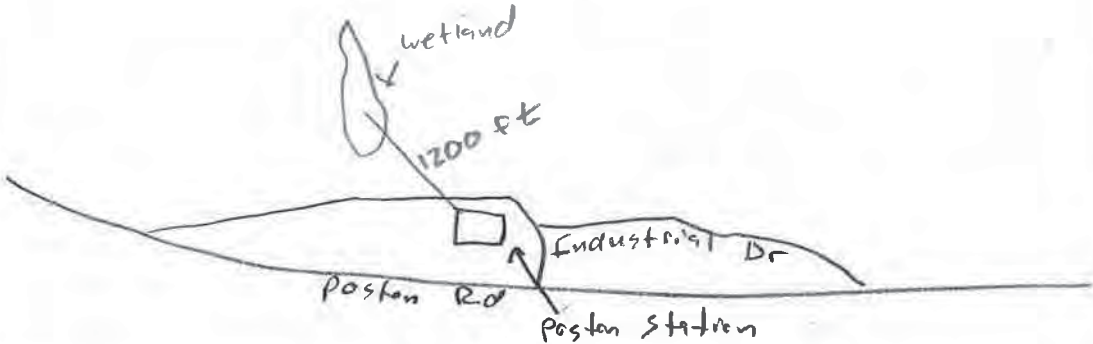
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

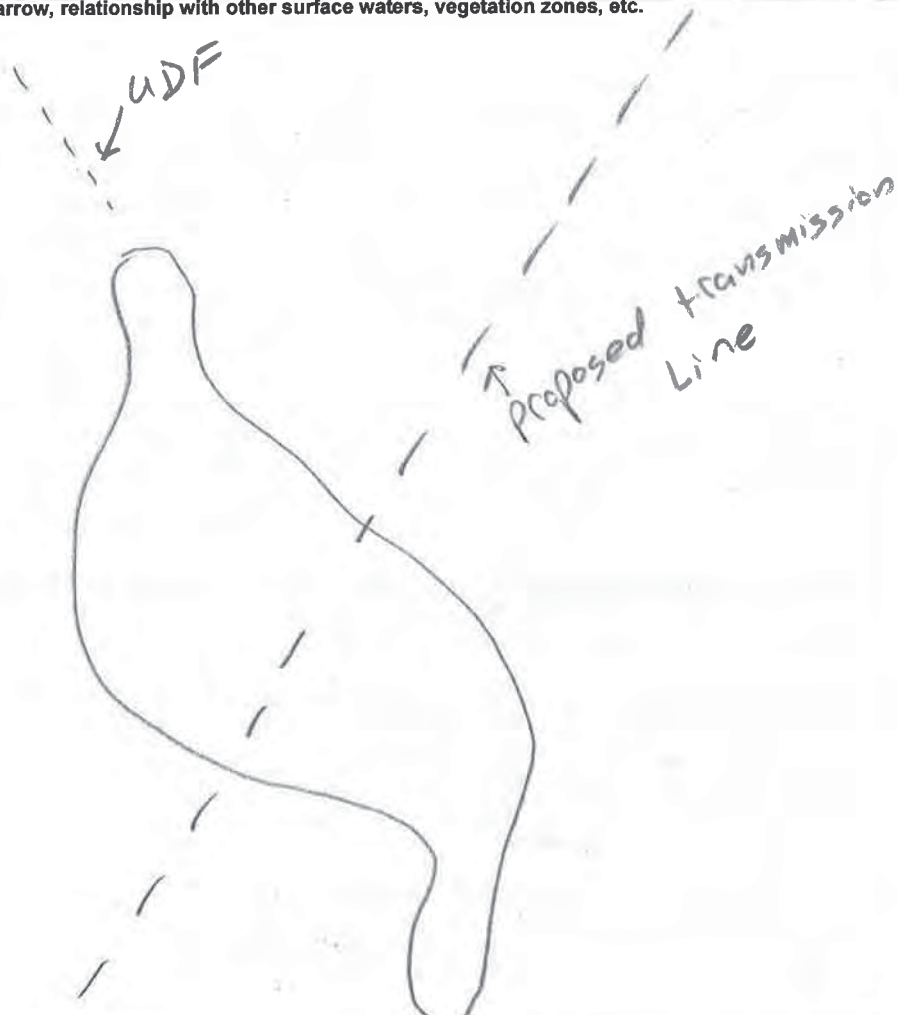
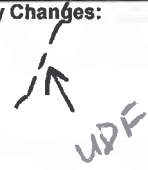
The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Aaron Kwalek		
Date:	11/14/16		
Affiliation:	Stantec		
Address:	11687 Lebanon Rd, Cincinnati, OH 45241		
Phone Number:	513 842 8200		
e-mail address:	Aaron.Kwalek@stantec.com		
Name of Wetland:	wetland 3		
Vegetation Community(ies):	PSS		
HGM Class(es):	Depressions I		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	39.385364, -82.182403		
USGS Quad Name	Nelsonville		
County	Athens		
Township	The Plains		
Section and Subsection	Sec 1 T12N R15W		
Hydrologic Unit Code	050302040801		
Site Visit	11/7/16		
National Wetland Inventory Map	PSS 1C		
Ohio Wetland Inventory Map	None		
Soil Survey	wHE, westmoreland - Guernsey silt loams 25-40% slopes		
Delineation report/map	See Jurisdictional Waters Delineation Report		

Name of Wetland: <u>Wetland 3</u>	
Wetland Size (acres, hectares):	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	
Comments, Narrative Discussion, Justification of Category Changes:	
	
Final score : <u>35</u>	Category: <u>2</u>

Scoring Boundary Worksheet

Wetland 3

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	<input checked="" type="checkbox"/>	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	<input checked="" type="checkbox"/>	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	<input checked="" type="checkbox"/>	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	<input checked="" type="checkbox"/>	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	<input checked="" type="checkbox"/>	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	<input checked="" type="checkbox"/>	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

wetland 3

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: wetland3

Rater(s): ASJ

Date: 11/7/16

<u>2</u>	<u>2</u>
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

<u>13</u>	<u>15</u>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☒ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☒ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<u>16</u>	<u>25</u>
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☒ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

<u>6</u>	<u>31</u>
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☒ grazing
- ☒ clearcutting
- ☒ selective cutting
- ☒ woody debris removal
- ☐ toxic pollutants

- ☒ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ dredging/Damming
- ☐ farming
- ☐ nutrient enrichment

<u>31</u>
subtotal this page

Site: <u>Wetland 3</u>	Rater(s): <u>AJK</u>	Date: <u>11/7/16</u>
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31

subtotal first page

0	31
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

4	35
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☒ 3 Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ X None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ X Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

35

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

wetland 3

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Quantitative Rating	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	13	
	Metric 3. Hydrology	10	
	Metric 4. Habitat	6	
	Metric 5. Special Wetland Communities	0	
Metric 6. Plant communities, interspersions, microtopography	4		
	TOTAL SCORE	35	Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

wetland 3

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate</i> OR <i>superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

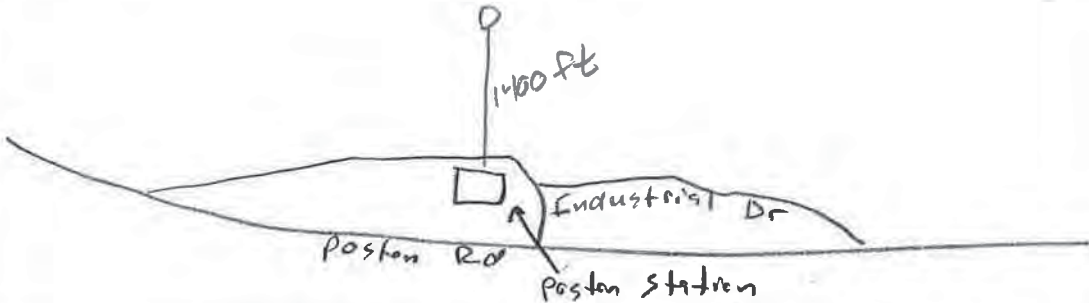
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

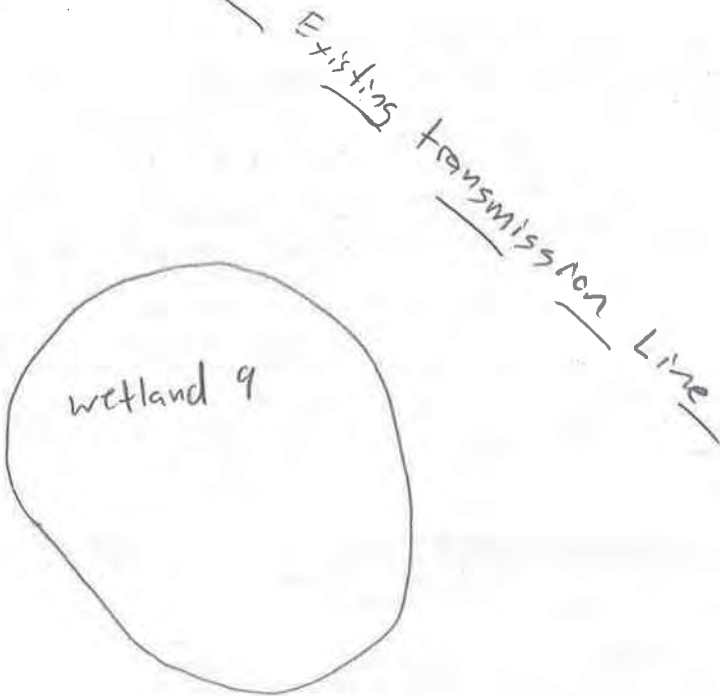
The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Aaron Kwalek		
Date:	11/14/16		
Affiliation:	Stantec		
Address:	11687 Lebanon Rd, Cincinnati, OH 45241		
Phone Number:	513 842 8200		
e-mail address:	Aaron.Kwalek@stantec.com		
Name of Wetland:	Wetland 4		
Vegetation Community(ies):	PSS		
HGM Class(es):	Depressional		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	39.386354, -82.181696		
USGS Quad Name	Nelsonville		
County	Athens		
Township	The Plains		
Section and Subsection	Sec 1 T12N R15W		
Hydrologic Unit Code	050302040801		
Site Visit	11/7/16		
National Wetland Inventory Map	None		
Ohio Wetland Inventory Map	None		
Soil Survey	DEF Dekalb-westmoreland complex 40-70% slopes		
Delineation report/map	See Jurisdictional Waters Delineation Report		

Name of Wetland: <u>wetland 4</u>	
Wetland Size (acres, hectares): <u>0.02 ac</u>	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	
Comments, Narrative Discussion, Justification of Category Changes:	
<div>Final score : <u>15</u></div> <div>Category: <u>1</u></div>	

Scoring Boundary Worksheet

wetland 4

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	✓	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

wetland 4

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

wetland 4

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.)	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: <u>wetland</u> 4	Rater(s): <u>ASK</u>	Date: <u>11/7/16</u>
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0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

7	7
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☒ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4	11
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

3	14
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> mowing <input type="checkbox"/> grazing <input checked="" type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input checked="" type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input checked="" type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |
|---|--|

14
subtotal this page

Site: <u>Wetland 4</u>	Rater(s): <u>ATK</u>	Date: <u>11/7/16</u>
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14	
subtotal first page	
0	14
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

15	
1	15
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☒ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

15

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

wetland 4

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	7	
	Metric 3 Hydrology	4	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersed, microtopography	1	
	TOTAL SCORE	15	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

wetland 4

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc. and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

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5/9/2017 3:23:58 PM

in

Case No(s). 17-0632-EL-BLN

Summary: Correspondence electronically filed by Mr. Hector Garcia on behalf of AEP Ohio Transmission Company