Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

г		1
ı	01	
ı	30	
L	0 -	

LENGTH OF STREAM REACH (ft) 129 DATE 8 23 17 SCORER KLV	RIVER BASIN SCIOLO RIVER DRAINAGE AREA (mi²) 0.003 m LAT. 39.09143 LONG 82.64175 RIVER CODE RIVER MILE COMMENTS SOH KLV 021 The - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL MONE/NAT	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
(Max of 40). Add total number of significations	ry type of substrate present. Check ONLY two predominant substrate TYPE boxes ant substrate types found (Max of 8). Final metric score is sum of boxes A & B. ERCENT
evaluation. Avoid plunge pools from road > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	aximum pool depth within the 61 meter (200 ft) evaluation reach at the time of discoverts or storm water pipes) (Check ONLY one box): Som - 10 cm [15 pts]
3. BANK FULL WIDTH (Measured as the a > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9'.7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4'.8" - 9'.7") [20 pts] COMMENTS	MAXIMUM POOL DEPTH (centimeters): average of 3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3' - 4' 8') [15 pts] AVERAGE BANKFULL WIDTH (meters) MAXIMUM POOL DEPTH (centimeters): Bankfull Width Max=30
RIPARIAN ZONE AND FLOODPI RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS	This Information must also be completed LAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R Mature Forest, Wetland
FLOW REGIME (At Time of Evaluation Stream Flowing Subsurface flow with isolated pools COMMENTS SINUOSITY (Number of bends per None	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) er 61 m (200 ft) of channel) (Check ONLY one box): 1.0
STREAM GRADIENT ESTIMATE Flat (0.5 h/100 ft) Flat to Moderate	1.5

QREI PE	RFORMED? - Tyes No QH	HEI Score(If Y	es, Attach Completed QHEI	Form)	
WWH Name: CWH Name:	REAM DESIGNATED USE(S)		Distance from Eva	aluated Stream 1, 22 luated Stream	miles
MAPPING	: ATTACH COPIES OF MAPS, INCI	LUDING THE ENTIRE WATE	RSHED AREA. CLEARLY M.	ARK THE SITE LOCATION	
ISGS Quadrangle	Imme: Jackson,	OH NRCS So	il Map Page: NRCS	S Soll Map Stream Order	
ounty:d(kson Co.	Township / City:	(oa) -	Township	
MISCELL	ANEOUS	1			
ase Flow Condition	s? (Y/N): Date of last pro	recipitation: 8 22 2	OIT Quantity:	5"_	
hotograph Informa	ion:			- Landau - La	_
levated Turbidity?	Y/N): N Canopy (% o	open): 157.			
fere samples colle	ted for water chemistry? (Y/N):		or id. and attach results) La	b Number:	
leld Measures:	Temp (°C) Dissolved Oxy	ygen (mg/l) pH (S.U.) Conductivity	(µmhos/cm)	_
the sampling read	n representative of the stream (Y/A)	N) If not, please exp	ain:		
вопс в	VALUATION		у Р		_
erformed? (Y/N): _ ish Observed? (Y/I rogs or Tadpoles C	(If Yes, Record all obser	ropriate field data sheets from	n the Primary Headwater Hab	W 1.	the site
erformed? (Y/N): _ ish Observed? (Y/I rogs or Tadpoles C	(If Yes, Record all obsertion in the property of the property	ropriate field data sheets from	n the Primary Headwater Hab	tat Assessment Manual)	the site
erformed? (Y/N): _ ish Observed? (Y/I rogs or Tadpoles C	(If Yes, Record all obsertion in the property of the property	ropriate field data sheets from	n the Primary Headwater Hab	tat Assessment Manual)	the site
erformed? (Y/N): _ ish Observed? (Y/I rogs or Tadpoles C omments Regardir	(If Yes, Record all obsertion in the Individual obsertion in the Individual obsertion in the Individual observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Biology:	ropriate field data sheets from Salamanders Observed? (Y/N) \(\) Aquatic Macroinv	n the Primary Headwater Hab (/N) \(\sum_{\text{V}} \) Voucher? (Y/N) ertebrates Observed? (Y/N)	tat Assessment Manual) Voucher? (Y/N)	the site
erformed? (Y/N): _ ish Observed? (Y/N rogs or Tadpoles C omments Regardin	(If Yes, Record all observed? (Y/N) \(\begin{array}{c}\) Voucher? (Y/N) \(\begin{array}{c}\) Voucher? (Y/N) \(\delta\)	Salamanders Observed? (Y/N) Aquatic Macroin ESCRIPTION OF STR	n the Primary Headwater Hab (/N) \(\sum_{\text{V}} \) Voucher? (Y/N) entebrates Observed? (Y/N) EAM REACH (This m	Voucher? (Y/N) \(\) Ust be completed):	=
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sh Observed? (Y/N): _ sh Observed? (Y/I rogs or Tadpoles C omments Regardin DRAV Include Impo	(If Yes, Record all obsertion in Indian in Ind	Salamanders Observed? (Y/N) Aquatic Macroin ESCRIPTION OF STR es of Interest for site evalu	The Primary Headwater Habitini	Voucher? (Y/N) \(\) Ust be completed):	

Chieff Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):



		"Field Evaluation Manual for	Ohio's PHW	H Streams" for Instruct
REAM CHANNEL NONE / NON	IATURAL CHANI	NEL RECOVERED REC	COVERING [RECENT OR NO RECOVE
MAN HARMAN CONTRACTOR OF STATE	BURNINE		OD DOM	
SUBSTRATE (Estimate percent of e (Max of 40). Add total number of signi	ficant substrate ty	pes found (Max of 8). Final metric		of boxes A & B.
BLDR SLABS [16 pts]	PERCENT	TYPE SILT [3 pt]	anonal in	PERCENT
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt]		LEAF PACKWOOD	THE RESERVE AND ADDRESS.	5] <u>20</u> s
BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts]		FINE DETRITUS [3]		N N
GRAVEL (2-64 mm) [9 pts]	25	☐ ☐ MUCK [0 pts]	AT PROPERTY.	
SAND (<2 mm) [6 pts]		ARTIFICIAL [3 pts]	J. J. Die	
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock	0	A) 12		(B) 2
PRE OF TWO MOST PREDOMINATE SUE		S: TOTAL NUMBE	R OF SUBSTR	ATE TYPES:
Maximum Pool Depth (Measure the	maximum pool	depth within the 61 meter (200 f	t) evaluation rea	ach at the time of
evaluation. Avoid plunge pools from ro > 30 centimeters [20 pts]	ed culverts or st	orm water pipes) (Check ONLY >5 cm - 10 cm [15		Management N
> 22.5 - 30 cm [30 pts]	Carlotte Contract	<5 cm [5 pts]		
> 10 - 22.5 cm [25 pts]		NO WATER OR MO	DIST CHANNE	[0 pts]
COMMENTS		MAXIMUM P	OOL DEPTH (entimeters):
BANK FULL WIDTH (Measured as the	ne average of 3-		k ONLY one b	
> 4.0 meters (> 13') [30 pts] > 3.0 m + 4.0 m (> 9' 7" - 13') [25 pts]	k . A west	> 1.0 m - 1.5 m (> 3 ≤ 1.0 m (≤ 3° 3°) [5]		te]
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	40300	No.		21
The transfer of the transfer o		AVERAGE B	ANKFULL WID	TH (meters)
COMMENTS		7,4510,101		
	This lef		nd.	
		ormation <u>must</u> also be complete		oking downstream മ
COMMENTSRIPARIAN ZONE AND FLOOR	DPLAIN QUALIT	ormation <u>must</u> also be complete Y ☆NOTE: River Left (L) and AIN QUALITY	Right (R) as lo	oking downstream&
COMMENTSRIPARIAN ZONE AND FLOOR	DPLAIN QUALIT FLOODPLA L R (I	ormation <u>must</u> also be complete Y ☆NOTE: River Left (L) and AIN QUALITY Most Predominant per Bank) fature Forest, Wetland		oking downstream☆ Conservation Tillage
RIPARIAN ZONE AND FLOOR RIPARIAN WIDTH L R (Per Bank)	DPLAIN QUALIT FLOODPLA L R (I	ormation must also be complete Y ☆NOTE: River Left (L) and AIN QUALITY Most Predominant per Bank) fature Forest, Wetland mature Forest, Shrub or Old	Right (R) as lo	
RIPARIAN ZONE AND FLOOR RIPARIAN WIDTH (Per Bank) Wide >10m	PLAIN QUALIT	ormation <u>must</u> also be complete Y ☆NOTE: River Left (L) and AIN QUALITY Most Predominant per Bank) fature Forest, Wetland	Right (R) as lo	Conservation Tillage Urban or Industrial Open Pasture, Row
RIPARIAN ZONE AND FLOOR RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m	DPLAIN QUALIT FLOODPLA L R (1) D D H	ormation must also be complete Y	Right (R) as lo	Conservation Tillage Urban or Industrial
RIPARIAN ZONE AND FLOOR RIPARIAN WIDTH (Per Bank) Wide > 10m Moderate 5-10m Narrow < 5m None COMMENTS	DPLAIN QUALIT FLOODPLA L R (1) M D D H FLOODPLA FL	ormation must also be complete Y ANOTE: River Left (L) and AIN QUALITY Most Predominant per Bank) Mature Forest, Wetland minature Forest, Shrub or Old field Residential, Park, New Field fenced Pasture	Right (R) as lo	Conservation Tillage Urban or Industrial Open Pasture, Row Crop
RIPARIAN ZONE AND FLOOR RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None	DPLAIN QUALIT FLOODPLA L R (I D N FLOODPLA FROM FROM FROM Valuation) (Check	ormation must also be complete Y ANOTE: River Left (L) and AIN QUALITY Most Predominant per Bank) Mature Forest, Wetland minature Forest, Shrub or Old field Residential, Park, New Field renced Pasture Ck ONLY one box): Moist Chang	Right (R) as lo	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction

QHEI PERFORMED? - Yes KNO QHEI Score	(If Ves. Attach Completed OHEL Form)
and the same	
DOWNSTREAM DESIGNATED USE(S) XWWH Name: HOTSE (1995)	Distance from Evaluated Stream 0,92 m
OWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE V	NATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Jackson, OH NRC	S Soil Map Page: NRCS Soil Map Stream Order
county: Jackson Co. Township/o	av. Coal Township
MISCELLANEOUS	117 quantily: , 25"
Base Flow Conditions? (Y/N): \ Date of last precipitation: 8 22	Quantity: 1015
Photograph Information:	
Elevated Turbidity? (Y/N): Canopy (% open): 351.	
Were samples collected for water chemistry? (Y/N): (Note lab samp	le no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
s the sampling reach representative of the stream (Y/N) If not, please	expisin:
+	
BIOTIC EVALUATION	
BIOTIC EVALUATION Performed? (Y/N):	ctions optional. NOTE: all voucher samples must be labeled with the site is from the Primary Headwater Habitat Assessment Manual) ad? (Y/N)
BIOTIC EVALUATION Verformed? (Y/N): (If Yes, Record all observations. Voucher collection in the collection of the coll	is from the Primary Headwater Habitat Assessment Manual)
BIOTIC EVALUATION Performed? (Y/N):	is from the Primary Headwater Habitat Assessment Manual)
BIOTIC EVALUATION (if Yes, Record all observations. Voucher collection in number. Include appropriate field data sheet ish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Maccomments Regarding Biology:	is from the Primary Headwater Habitat Assessment Manual) ad? (Y/N) N Voucher? (Y/N) N Vouc
BIOTIC EVALUATION Performed? (Y/N):	s from the Primary Headwater Habitat Assessment Manual) ad? (Y/N)
BIOTIC EVALUATION Performed? (Y/N):	s from the Primary Headwater Habitat Assessment Manual) ad? (Y/N)
BIOTIC EVALUATION Performed? (Y/N):	s from the Primary Headwater Habitat Assessment Manual) ad? (Y/N)
BIOTIC EVALUATION Performed? (Y/N):	s from the Primary Headwater Habitat Assessment Manual) ad? (Y/N)
BIOTIC EVALUATION Cerformed? (Y/N):	s from the Primary Headwater Habitat Assessment Manual) ad? (Y/N)
Performed? (Y/N): (If Yes, Record all observations. Voucher collect ID number. Include appropriate field data sheet Voucher? (Y/N). Salamanders Observed Progs or Tadpoles Observed? (Y/N). Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF Sinclude Important landmarks and other features of Interest for site of the Programment of Interest for Site	s from the Primary Headwater Habitat Assessment Manual) ad? (Y/N)
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Performed? (Y/N): (If Yes, Record all observations. Voucher colled ID number. Include appropriate field data sheel ID number. Include appropriate field data sheel Yougher? (Y/N). Salamanders Observed? (Y/N). Yougher? (Y/N). Aquatic Mac Comments Regarding Biology. DRAWING AND NARRATIVE DESCRIPTION OF Include Important landmarks and other features of Interest for site of the Property of Interest for site of Interest for si	STREAM REACH (This must be completed): evaluation and a narrative description of the stream's location
BIOTIC EVALUATION Performed? (Y/N):	STREAM REACH (This must be completed): evaluation and a narrative description of the stream's location
BIOTIC EVALUATION (If Yes, Record all observations. Voucher colled ID number. Include appropriate field data sheel ish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macromments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF Include Important landmarks and other features of Interest for site of the Police of Interest for site of Interest f	STREAM REACH (This must be completed): evaluation and a narrative description of the stream's location
BIOTIC EVALUATION erformed? (Y/N): (If Yes, Record all observations. Voucher colled ID number. Include appropriate field data sheet ish Observed? (Y/N). Voucher? (Y/N). Salamanders Observed orgs or Tadpoles Observed? (Y/N). Voucher? (Y/N). Aquatic Maccomments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF Include Important landmarks and other features of Interest for site of the property of the	STREAM REACH (This must be completed): evaluation and a narrative description of the stream's location

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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ĸ	110
W	LHO

SITE NAMELOCATION AFP MOR KIRGY, HOPPING SCOOL SITE NUMBER RIVER BASIN 5(10 to R'IVEY DRAINAGE AREA (mi ²) 0.00 LENGTH OF STREAM REACH (ft) 613 LAT. 39,08777 LONG. 82.63283 RIVER CODE RIVER MILE DATE 8/23/2017 SCORER KIV COMMENTS 50H-KLV-024	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction STREAM CHANNEL STREAM CHANNEL RECOVERED RECOVERING	
TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK (16 pt] BEDROCK (16 pt] BEDROCK (16 pt] BEDROCK (16 pt]	HHEI Metric Points Substrate Max = 40
	ool Depth Max = 30
> 4.0 meters (> 13') [30 pts] 2. > 1.0 m - 1.5 m (> 3'3"- 4'8') [16 pts]	Bankfull Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A	
RIPARIAN WIDTH L R (Per Bank) UNIDER > 10m Moderate 5-10m RIPARIAN WIDTH L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Conservation Tillage Immature Forest, Shrub or Old Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop None Fenced Pasture Mining or Construction	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None	
STREAM GRADIENT ESTIMATE Flat [0.5 ft/100 ft] Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe	ħ)

QHEI PERFORMI	ED? - Yes No QHEI Score(If Yes, Attach Completed QHEI Form)	
DOWNSTREAM I	DESIGNATED USE(S)		
	Horse Creek	Distance from Evaluated Stream 0.65	Miles
CWH Name:		Distance from Evaluated Stream	-
EWH Name:		Distance from Evaluated Stream	-
MAPPING: ATTAC	CH COPIES OF MAPS, INCLUDING THE ENTIRE WA	ATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name:	Jackson, OH NRCS	Soil Map Page: NRCS Soil Map Stream Order _	
county: Jackson	Township / City	coal Township	
MISCELLANEOU		15 75"	
Base Flow Conditions? (Y/N	Date of last precipitation: 8 22	Quantity: 420	
Photograph Information:			200
Elevated Turbidity? (Y/N):	Canopy (% open): 40/		
		no. or id. and attach results) Lab Number;	
Nere samples collected for v	water chemistry? (Y/N): (Note lab sample	no. or id. and attach results) Lab Number:	
Field Measures: Temp (°	C) Dissolved Oxygen (mg/l) p	H (S.U.) Conductivity (µmhos/cm)	
s the sampling reach repres	centative of the stream (Y/N) If not, please e	oxplain:	
BIOTIC EVALUA		ons optional. NOTE: all voucher samples must be labeled wit	th the site
BIOTIC EVALUATION OF THE PROPERTY OF THE PROPE	TION (If Yes, Record all observations. Voucher collection in the collection of the	ons optional. NOTE: all voucher samples must be labeled with from the Primary Headwater Habitat Assessment Manual) (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)	h the site
BIOTIC EVALUATION Performed? (Y/N): ish Observed? (Y/N) rogs or Tadpoles Observed	TION (If Yes, Record all observations. Voucher collection in the collection of the	from the Primary Headwater Habitat Assessment Manual) 7 (Y/N) Voucher? (Y/N) N	h the site
BIOTIC EVALUATION Performed? (Y/N): ish Observed? (Y/N) rogs or Tadpoles Observed	TION (If Yes, Record all observations. Voucher collection in the collection of the	from the Primary Headwater Habitat Assessment Manual) 7 (Y/N) Voucher? (Y/N) N	h the site
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BIOTIC EVALUATION Performed? (Y/N): N ish Observed? (Y/N) N rogs or Tadpoles Observed comments Regarding Biolog	TION (If Yes, Record all observations. Voucher collection of the property of	from the Primary Headwater Habitat Assessment Manual) 7 (Y/N) Voucher? (Y/N) N	h the site
BIOTIC EVALUATION Performed? (Y/N): Sish Observed? (Y/N): Performed? (Y/N): Sish Observed? (Y/N): Sish Observe	(If Yes, Record all observations. Voucher collection in number. Include appropriate field data sheets to voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macro IV. AND MARRATIVE DESCRIPTION OF Statements and other features of interest for site events.	from the Primary Headwater Habitat Assessment Manual) ? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)	
BIOTIC EVALUATION Performed? (Y/N): Sish Observed? (Y/N): Performed? (Y/N): Sish Observed? (Y/N): Sish Observe	(If Yes, Record all observations. Voucher collection in number. Include appropriate field data sheets to voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macro IV. AND MARRATIVE DESCRIPTION OF Statements and other features of interest for site events.	TREAM REACH (This must be completed): raluation and a narrative description of the stream's foci	
BIOTIC EVALUATION Performed? (Y/N): Sish Observed? (Y/N): Performed? (Y/N): Sish Observed? (Y/N): Sish Observe	(If Yes, Record all observations. Voucher collection in number. Include appropriate field data sheets to voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macro IV. AND MARRATIVE DESCRIPTION OF Statements and other features of interest for site events.	TREAM REACH (This must be completed): raluation and a narrative description of the stream's foci	
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BIOTIC EVALUATION Performed? (Y/N): Sish Observed? (Y/N): Performed? (Y/N): Sish Observed? (Y/N): Sish Observe	(If Yes, Record all observations. Voucher collection in number. Include appropriate field data sheets to voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macro IV. AND MARRATIVE DESCRIPTION OF Statements and other features of interest for site events.	TREAM REACH (This must be completed): raluation and a narrative description of the stream's foci	
BIOTIC EVALUATION Performed? (Y/N): Sish Observed? (Y/N): Performed? (Y/N): Sish Observed? (Y/N): Sish Observe	(If Yes, Record all observations. Voucher collectic ID number. Include appropriate field data sheets of Voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macro IV. AND NARRATIVE DESCRIPTION OF Statements and other features of interest for site events.	TREAM REACH (This must be completed): raluation and a narrative description of the stream's foci	
BIOTIC EVALUATION OF THE PROPERTY OF THE PROPE	(If Yes, Record all observations. Voucher collectic ID number. Include appropriate field data sheets of Voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macro IV. AND NARRATIVE DESCRIPTION OF Statements and other features of interest for site events.	Tream range of the stream's local completed and a narrative description of the stream's local complete.	
BIOTIC EVALUATION OF THE PROPERTY OF THE PROPE	(If Yes, Record all observations. Voucher collectic ID number. Include appropriate field data sheets of Voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macro IV. AND NARRATIVE DESCRIPTION OF Statements and other features of interest for site events.	Tream range of the stream's local completed and a narrative description of the stream's local complete.	
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BIOTIC EVALUATION OF THE PROPERTY OF THE PROPE	(If Yes, Record all observations. Voucher collectic ID number. Include appropriate field data sheets of Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macro IV. AND NARRATIVE DESCRIPTION OF Salamanders and other features of interest for site events.	TREAM REACH (This must be completed): raluation and a narrative description of the stream's foci	

APPENDIX D Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms



Metric 1. Wetland Area (size). Metric 2. Wetland Area (size). Metric 3. Wetland Area (size).	Site: Pine	12 dge - He Donor Rater(s): BTM NGP Date: 8/7/17
Sol parces (2-02 Chan) (6 pts) 25 to 50 dares (10 to 4-02 Chan) (5 pts) 10 to 425 acres (4 to 10 tha) (4 pts) 10 to 425 acres (4 to 10 tha) (4 pts) 10 to 425 acres (4 to 10 tha) (4 pts) 10 to 425 acres (4 to 10 tha) (4 pts) 10 to 40 acres (10 to 4 to 4.0 than) (1 pts) 10 to 40 acres (10 to 4 to 4.0 than) (1 pts) 10 to 40 acres (10 to 4 to 4.0 than) (1 pts) 10 to 40 acres (10 to 4 to 4.0 than) (1 pts) 10 to 40 acres (10 to 4 to 4.0 than) (1 pts) 10 to 40 acres (10 to 4 to 4.0 than) (1 pts) 10 to 4.0 acres (10 to 4 to 4.0 than) (1 pts) 10 to 4.0 acres (10 to 4 to 4.0 than) (1 pts) 10 to 4.0 acres (10 to 4 to 4.0 than) (1 pts) 10 to 4.0 acres (10 to 4.0 than) (1 pts) 10 to 4.0 than (10 to 4.0 than) (1 pts) 10 to 4.0 than (1 pts)	00	Metric 1. Wetland Area (size). NOOI- PEM-CAT
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3 to <10 acres (1.2 to <1-bits) (2 to 1.2 his) (3 pits) 0.3 to <3 acres (0.1 to 1.2 his) (1 pits) 0.1 to <3.3 acres (0.1 to 1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.1 to <3.3 acres (0.0 to <1.2 his) (1 pits) 0.2 to <1.4 his (1 pits) 0.3 to <1.4 his (1 pits) 0.4 to <1.4 his (1 pits) 0.5 to <1.4 his (1 pits) 0.5 to <1.4 his (1 pits) 0.6 to <1.4 his (1 pits) 0.7 to <1.4 his (1 pits) 0.8 acres (0.0 to <1.2 his (1 pits) 0.9 to <1.4 h		
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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) Recent or no recovery (1) Subtotal this page Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Check all disturbances observed Mowing Grazing Grading Grading Graming Gram		
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) Recent or no recovery (1) Subtotal this page Fair (3) Poor to fair (2) Poor (1) Check all disturbances observed Mowing Grazing Grazing Grazing Grazing Grading Grading Graming Gramin		Good (5)
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) Recent or no recovery (1) Subtotal this page Poor to fair (2) Poor (1) Check all disturbances observed Mowing Grazing Grazing Grazing Grazing Grazing Grading Grading Graming		
Ac. Habitat alteration. Score one or double check and average. None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Subtotal this page None or none apparent (9) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1) None or none apparent (9) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1) None or none apparent (9) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1) None or none apparent (9) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1) None or none apparent (9) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1) None or none apparent (9) Recovered (6) Rec		
4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Subtotal this page None or none apparent (9) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1) None or none apparent (9) Recovered (6) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1) Subtotal this page None or none apparent (9) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovering (3) Recovering (3		
None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Subtotal this page None or none apparent (9) Recovered (6)		
Recovered (6) Recovering (3) Recent or no recovery (1) Subtotal this page Recovered (6) Recovering (3) Recent or no recovery (1) Recovering (3) Recent or no recovery (1) Recovered (6) Recovered (6) Recovered (6) Recovered (6) Recovering (3) Recovered (6) Recovering (3) Recovered (6) Recovered (6) Recovering (3) Recovered (6) Recovering (3) Recovered (6) Recovering (3) Recovered (6) Recovering (3) Recovering (4) Recovering (3) Recovering (4) Recovering (5) Recovering (5) Recovering (5) Recovering (6) Recovering (6) Recovering (7) Recover		
Recent or no recovery (1) Subtotal this page Recent or no recovery (1) Recent or no recovery (1) Selective cutting selective cutting woody debris removal toxic pollutants Selimentation dredging farming nutrient enrichment		Recovered (6) Mowing shrub/sapling removal
subtotal this page subtotal this page selective cutting woody debris removal toxic pollutants dredging farming nutrient enrichment		
woody debris removal toxic pollutants farming nutrient enrichment		
subtotal this page toxic pollutants nutrient enrichment	17	
	17	toxic pollutants nutrient enrichment

Site: P.ne	Ricgo - Heppiver Rater	(s): 37	minge	Date: 8/7/17
13			W001-1	PEM-CATI
subtotal fire	Metric 5. Special Wetlar	nds.		
nax 10 pts. subtol	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-Lake Erie coastal/tributary wetland-Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10) Known occurrence state/federal thre	restricted hydronings) (10) eatened or end	ology (5) angered species (10)	
7 12	Category 1 Wetland. See Question	1 Qualitative F	Rating (-10)	rotopography.
2 15 nax 20 pts. subtot			Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1h Present and either comprise	a (0.2471 acres) contiguous area
	Aquatic bed Emergent Shrub			erate quality, or comprises a
	Forest Mudflats Open water	2	Present and either compris	es significant part of wetland's erate quality or comprises a small
	Other6b. horizontal (plan view) Interspersion.	3	Present and comprises sig vegetation and is of high	nificant part, or more, of wetland's quality
	Select only one.	Normative F	tongglotion of Vocatation Ou	alley
	High (5) Moderately high(4)	low	lescription of Vegetation Qu Low spp diversity and/or pr	redominance of nonnative or
	Moderate (3)		disturbance tolerant nativ	
	Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer	mod	although nonnative and/o can also be present, and moderately high, but gen	omponent of the vegetation, or disturbance tolerant native spp species diversity moderate to erally w/o presence of rare
	to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangere	o spp species, with nonnative spp
	Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)		and/or disturbance tolera absent, and high spp dive	nt native spp absent or virtually ersity and often, but not always, eatened, or endangered spp
	Nearly absent <5% cover (0)	Mudfleten	d Open Water Class Quality	
	L. Absent (1) 6d. Microtopography.	0	Absent <0.1ha (0.247 acre	98)
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2	
	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47	to 9.88 acres)
	Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	3	High 4ha (9.88 acres) or m	ore
	Amphibian breeding pools	Microtopog	Absent	
		1	Present very small amount of marginal quality	s or if more common
		2	Present in moderate amou quality or in small amoun	
V C	at 1	3	Present in moderate or gre and of highest quality	ater amounts

Site: Pin	e Ric	lapHeopingr	Rater(s): BJ	MINGP	Date: 81717
- 1					
0	0 1	letric 1. Wetland	Area (size).	woo	02-PEM-CATI
max 6 pts. su	ubtotal S	elect one size class and assign s	core.		
		>50 acres (>20.2ha) (6 p			
		25 to <50 acres (10.1 to 10 to <25 acres (4 to <16			
		3 to <10 acres (1.2 to <4	ha) (3 pts)		
		0.3 to <3 acres (0.12 to < 0.1 to < 0.3 acres (0.04 to	<1.2ha) (2pts) > <0.12ha) (1.pt)		
		<0.1 acres (0.04ha) (0 p	ts)		
0 1	N	letric 2. Upland b	uffers and sur	rounding land	use.
0	0			•	
max 14 pts. su	btotal 2a	a. Calculate average buffer width			eck.
		MEDIUM. Buffers average	50m (164ft) or more around ae 25m to <50m (82 to <16		er (4)
		NARROW. Buffers aver	age 10m to <25m (32ft to <	82ft) around wetland perim	
	21	VERY NARROW. Buffe Intensity of surrounding land u	rs average <10m (<32ft) ard		
	2.		or older forest, prairie, sav)
		LOW. Old field (>10 year			
		MODERATELY HIGH. F	residential, tenced pasture, open pasture, row cropping		new fallow field. (3)
7	- N	letric 3. Hydrolog		,,	
+ 10	5 1	iotilo oi Tiyarolog	99.		
max 30 pts. sui	btotal 3a	. Sources of Water. Score all th	at apply.	3b. Connectivity. S	core all that apply.
		High pH groundwater (5)			floodplain (1)
		Other groundwater (3) Precipitation (1)			stream/lake and other human use (1 etland/upland (e.g. forest), complex (
		Seasonal/Intermittent su		Part of rip	parian or upland corridor (1)
	30	Perennial surface water . Maximum water depth. Select			tion/saturation. Score one or dbl che permanently inundated/saturated (4)
	00	>0.7 (27.6in) (3)		X Regularly	inundated/saturated (3)
		0.4 to 0.7m (15.7 to 27.6	in) (2)		ly inundated (2)
	3е	X <0.4m (<15.7in) (1) Modifications to natural hydrole	ogic regime. Score one or o		ly saturated in upper 30cm (12in) (1)
			12) Check all disturbances		
		Recovered (7)	ditch		rce (nonstormwater)
		Recovering (3) Recent or no recovery (1	tile dike	filling/grad	
			weir	dredging	
			stormwater input	other	
7. 10	N	letric 4. Habitat A	Alteration and I	Development.	
+ 12	2				
nax 20 pls. sub	ototal 4a	. Substrate disturbance. Score		erage.	
		None or none apparent (Recovered (3)	4)		
		Recovering (2)			
	4h	Recent or no recovery (1 Habitat development. Select of			
	70	Excellent (7)	and assign score.		
		Very good (6) Good (5)			
		Moderately good (4)			
		Fair (3)			
		Poor to fair (2) Poor (1)			
	4c	. Habitat alteration. Score one of	or double check and average	9.	
		None or none apparent (P	observed	
		Recovered (6)	mowing	shrub/sap	oling removal
		Recovering (3) Recent or no recovery (1	grazing clearcutting	nerbaceo sediment	us/aquatic bed removal
	15		selective cutting	dredging	
12	2		woody debris rer toxic pollutants		nrichment
subtotal	this page		Toxic politicalits	LIndulent e	THIS INTO IT
st revised 1 Fe	ebruary 2	001 jjm			4.

Site: Pine Ridge - HODONEUT	Rater(s):	BIN	1 INGIP	Date: 877
subtotal first page Metric 5. Spe	cial Wetlands.		W	DO 2- DEM-CAT 1
max 10 pts. subtotal Check all that apply and s Bog (10) Fen (10) Old growth fores Mature forested Lake Erie coasts Lake Plain Sand Relict Wet Prain	st (10) I wetland (5) al/tributary wetland-unrest al/tributary wetland-restrict d Prairies (Oak Openings)	ricted hydrol ted hydrolog (10)	y (5)	
Significant migra Category 1 Wet Metric 6. Plan	atory songbird/water fowl hand. See Question 1 Quant Communitie	nabitat or usa alitative Ratir	age (10) ng (-10)	crotopography.
max 20 pts. subtotal 6a. Wetland Vegetation C	Manage Co.		mmunity Cover Scale	
Score all present using 0 t Aquatic bed Emergent Shrub	to 3 scale.		Present and either compr	ha (0.2471 acres) contiguous area ises small part of wetland's derate quality, or comprises a low quality.
Forest Mudflats Open water			Present and either comprise vegetation and is of more part and is of high quality	ises significant part of wetland's derate quality or comprises a small by
6b. horizontal (plan view)	Interspersion.	3 F	Present and comprises si vegetation and is of high	gnificant part, or more, of wetland's n quality
Select only one. High (5)	Na	rrative Desc	ription of Vegetation Q	uality
Moderately high Moderate (3)				predominance of nonnative or
Moderately low (Low (1) None (0) 6c. Coverage of invasive to Table 1 ORAM long form	plants. Refer	mod	although nonnative and can also be present, an	component of the vegetation, /or disturbance tolerant native spp d species diversity moderate to nerally w/o presence of rare ed spp
or deduct points for covera Extensive >75% Moderate 25-75' Sparse 5-25% c	age cover (-5) % cover (-3) cover (-1)	high A	and/or disturbance toler absent, and high spp di	species, with nonnative spp ant native spp absent or virtually versity and often, but not always, reatened, or endangered spp
X Nearly absent < Absent (1)		dflat and O	pen Water Class Quality	
6d. Microtopography	Wild		Absent <0.1ha (0.247 ac	
Score all present using 0 to	o 3 scale.		ow 0.1 to <1ha (0.247 to	
Vegetated humn			Moderate 1 to <4ha (2.47	
	lebris >15cm (6in)		ligh 4ha (9.88 acres) or r	
Standing dead > Amphibian breed	25cm (10in) dbh ding pools Mic		hy Cover Scale	
			Absent	
			Present very small amour of marginal quality	
			resent in moderate amo quality or in small amou	nts of highest quality
Cot		3 F	resent in moderate or gr and of highest quality	eater amounts

Site: AEP P	The Didge-Hopping	Rater(s): BTM	NGP Date: 8/7/14	
	Metric 1. Wetland A	rea (size).	W003-PEM-CAT2	
max 6 pts. subtotal	Select one size class and assign scor >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <2 10 to <25 acres (4 to <10.1 3 to <10 acres (1.2 to <4ha 0.3 to <3 acres (0.12 to <1. V 0.1 to <0.3 acres (0.04 to < <1.1 ct <0.1 acres (0.04ha) (0 pts)	0.2ha) (5 pts) ha) (4 pts)) (3 pts) 2ha) (2pts)		
9 10	Metric 2. Upland bu	ffers and surroun	ding land use.	
max 14 pts. subtotal	MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth of LOW. Old field (>10 years) MODERATELY HIGH. Res	m (164ft) or more around wetland 25m to <50m (82 to <164ft) around a 10m to <25m (32ft to <82ft) around average <10m (<32ft) around wetl Select one or double check and older forest, prairie, savannah, w , shrub land, young second growth	perimeter (7) nd wetland perimeter (4) bund wetland perimeter (1) land perimeter (0) d average. vildlife area, etc. (7) th forest. (5) nservation tillage, new fallow field. (3)	
16.5 26.5	Metric 3. Hydrology		, 00.100.00111 (1)	
max 30 pts. subtotal	3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) Y Precipitation (1) X Seasonal/Intermittent surfar Perennial surface water (Ial 3c. Maximum water depth. Select on >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologi	ce water (3) se or stream) (5) 3 ly one and assign score. (2)	b. 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) d. Duration inundation/saturation. Score one or dbl che Semi- to permanently inundated/saturated (4) Regularly inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1) neck and average.	(1) ieck.)
	None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturbances observed ditch tile dike weir stormwater input	point source (nonstormwater) filling/grading road bed/RR track dredging other	
16 42.5	Metric 4. Habitat Al	teration and Deve	lopment.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one X None or none apparent (4) Recovered (3) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) X Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or content of the conten	one and assign score.		
	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing clearcutting selective cutting	shrub/sapling removal herbaceous/aquatic bed removal sedimentation dredging	
42.5 subtotal this pa	ge	woody debris removal toxic pollutants	farming nutrient enrichment	

Site: Pive	Ride	e - He ppner	Rater(s): [37n	n MGP	Date: 8 7 7
42.5	5 t page				WOO	3-PEM-CAT2
		etric 5. Special We	etlands.			
eax 10 pls. subtota	D Choo	k all that apply and capro as indic	natad			
ax to pis.	Cited	k all that apply and score as indic Bog (10)	cated.			
		Fen (10)				
	- 1	Old growth forest (10) Mature forested wetland (5)				
	1	Lake Erie coastal/tributary w		d hydro	ology (10)	
	1	Lake Erie coastal/tributary w	vetland-restricted h	ydrolo		
	1	Lake Plain Sand Prairies (O	ak Openings) (10)			
	-	Relict Wet Prairies (10) Known occurrence state/fed	leral threatened or	endan	gered species (10)	
	1	Significant migratory songbi				
	22.18	Category 1 Wetland. See Q				
- 1 -	Me	tric 6. Plant com	munities. i	inte	rspersion, mi	crotopography.
5 47.5	355		,		,	
nax 20 pts. subtota	6a. V	Vetland Vegetation Communities	Vegetal	tion C	ommunity Cover Scale	
	-	all present using 0 to 3 scale.	0			.1ha (0.2471 acres) contiguous area
	-	Aquatic bed	1		32.4 36.7 2.0 4	orises small part of wetland's
	1	Emergent Shrub			significant part but is o	oderate quality, or comprises a
	7	Forest	2			prises significant part of wetland's
	2	Mudflats				oderate quality or comprises a small
		Open water			part and is of high qua	
	OF F	Other	3		The second secon	significant part, or more, of wetland:
		orizontal (plan view) Interspersio et only one.	n.	_	vegetation and is of hi	gri quality
	Г	High (5)	Narrativ	ve De	scription of Vegetation	Quality
		Moderately high(4)	lov	_		predominance of nonnative or
		Moderate (3)	-		disturbance tolerant na	
		Moderately low (2)	mo	od		t component of the vegetation,
	1	Low (1) None (0)				d/or disturbance tolerant native spp and species diversity moderate to
	6c. C	Coverage of invasive plants. Refe	er			penerally w/o presence of rare
	to Tal	ble 1 ORAM long form for list. Ac	dd		threatened or endange	
	or de	duct points for coverage	hig	h	Elizabeth and the state of the	ve species, with nonnative spp
	-	Extensive >75% cover (-5) Moderate 25-75% cover (-3)				erant native spp absent or virtually diversity and often, but not always,
	-	Sparse 5-25% cover (-1)				hreatened, or endangered spp
		X Nearly absent <5% cover (0)		presented	
		Absent (1)	Mudflat	t and	Open Water Class Qual	
		ficrotopography.	0	_	Absent <0.1ha (0.247 a	
	Score	e all present using 0 to 3 scale. Vegetated hummucks/tussu	cks 1	_	Low 0.1 to <1ha (0.247	
		Coarse woody debris >15cm			Moderate 1 to <4ha (2.4 High 4ha (9.88 acres) or	
		Standing dead >25cm (10in)			1 (2000)	
	2.0	2 Amphibian breeding pools			aphy Cover Scale	
			0		Absent	unto as Wanness and
			1		Present very small amore of marginal quality	unts of it more common
			2			ounts, but not of highest
			172			ounts of highest quality
000	+2		3		Present in moderate or	greater amounts
J. Coc.	1				and of highest quality	

Site:AEP P	ne Ridge Hoppner Rater(s): KLV	Date: 8 22 20
00	Metric 1. Wetland Area (size).	
		WOOY-PEM-CATZ
max 6 pts subtota	Color one oleo diass and assign soore.	WWY- FEITI-CHIZ
	>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	Metric 2. Upland buffers and surrou	inding land use.
6 T		3
max 14 pts. subtotal	2a. Calculate average buffer width. Select only one and assign sco	ore. Do not double check.
	WIDE. Buffers average 50m (164ft) or more around wetla	
	MEDIUM. Buffers average 25m to <50m (82 to <164ft) at NARROW. Buffers average 10m to <25m (32ft to <82ft)	
	VERY NARROW. Buffers average <10m (<32ft) around v	wetland perimeter (1)
	2b. Intensity of surrounding land use. Select one or double check	and average.
	VERY LOW. 2nd growth or older forest, prairie, savannal	
	LOW. Old field (>10 years), shrub land, young second grammoderately HIGH. Residential, fenced pasture, park,	conservation tillage new fallow field (3)
	HIGH. Urban, industrial, open pasture, row cropping, min	ing, construction. (1)
100	Metric 3. Hydrology.	
15 21	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
nax 30 pts. subtotal	3a. Sources of Water. Score all that apply.	3b. Connectivity. Score all that apply,
	High pH groundwater (5)	100 year floodplain (1)
	Other groundwater (3) Precipitation (1)	Between stream/lake and other human use (
	Seasonal/Intermittent surface water (3)	Part of wetland/upland (e.g. forest), complex Part of riparian or upland corridor (1)
	Perennial surface water (lake or stream) (5)	3d. Duration inundation/saturation. Score one or dbl ch
	3c. Maximum water depth. Select only one and assign score.	Semi- to permanently inundated/saturated (4)
	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2)	Regularly inundated/saturated (3) Seasonally inundated (2)
	<0.4m (<15.7in) (1)	Seasonally saturated in upper 30cm (12in) (1
- 9-	3e. Modifications to natural hydrologic regime. Score one or double	check and average.
	None or none apparent (12) Check all disturbances obse	
	Recovered (7) Recovering (3) ditch	point source (nonstormwater) filling/grading
	Recent or no recovery (1)	road bed/RR track
	weir	dredging
	stormwater input	other
-	Metric 4. Habitat Alteration and Dev	relonment
1 228	motilo 4. Habitat Altoration and Bov	cropment.
sax 20 pts. subtotal	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) Check all disturbances obse	shrub/sapling removal
	Recovering (3) mowing grazing	herbaceous/aquatic bed removal
	Recent or no recovery (1) clearcutting	sedimentation
- 0	selective cutting	dredging
12-6	woody debris removal toxic pollutants	farming nutrient enrichment
sublotal this pa		
120/2027-3464	ry 2001 jjm	



2

3

of marginal quality

and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

	Briefing Hoppier Raters	s): KLV	Date: 8	122 201
	Metric 1. Wetland Area (si	ze). ux	05-908-CAT	2
1 1		,-		
nex 6 pls. subtole	General disconsister and addigit addict.			
	>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pt	s)		
	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	ot)		
	<0.1 acres (0.04ha) (0 pts)			
3 4	Metric 2. Upland buffers a	nd surrounding	g land use.	
ax 14 pts. subtola	20 Colorilate average buffer width Colort and	nan and assists area. Do n	nt double abook	
ax 14 pts. Sublicts	2a. Calculate average buffer width. Select only WIDE. Buffers average 50m (164ft) or			
	MEDIUM. Buffers average 25m to <50	m (82 to <164ft) around wet	land perimeter (4)	
	NARROW. Buffers average 10m to <: VERY NARROW. Buffers average <10			
	2b. Intensity of surrounding land use. Select on			
	VERY LOW. 2nd growth or older fores			
	LOW. Old field (>10 years), shrub land MODERATELY HIGH. Residential, fer			
	HIGH. Urban, industrial, open pasture			
20 011	Metric 3. Hydrology.			
20 24				
x 30 pls. sublate	3a. Sources of Water. Score all that apply.	3b. <u>Co</u>	inectivity. Score all that apply.	
	High pH groundwater (5) Other groundwater (3)	-	100 year floodplain (1) Between stream/lake and oth	er human use (
	Precipitation (1)		Part of wetland/upland (e.g. f	
	Seasonal/Intermittent surface water (3)		Part of riparian or upland con	
	Perennial surface water (lake or stream 3c. Maximum water depth. Select only one and	7 1 7	ation inundation/saturation. Sco Semi- to permanently inundation	
	>0.7 (27.6in) (3)		Regularly inundated/saturate	d (3)
	0.4 to 0.7m (15.7 to 27.6in) (2) <0.4m (<15.7in) (1)	-	Seasonally inundated (2) Seasonally saturated in uppe	r 30cm /12in) (1
	3e. Modifications to natural hydrologic regime. 5	core one or double check a		
	None or none apparent (12) Check al	disturbances observed		
	Recovered (7) dito	h	point source (nonstormwater) filling/grading	
	Recent or no recovery (1)		road bed/RR track	
	wei		dredging	
	sto	mwater input	other	
		n and Davalani	4	
1. 20	Metric 4. Habitat Alteratio	n and Developi	ment.	
6 30	The state of the same		ment.	
0	4a. Substrate disturbance. Score one or double		ment.	
0	4a. Substrate disturbance. Score one or double None or none apparent (4) Recovered (3)		nent.	
0	4a. Substrate disturbance. Score one or double None or none apparent (4) Recovered (3) Recovering (2)		nent.	
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Site: A	PI	ine Ridge Happner Rate	r(s): KL	Date: 8/22 2017
sub	30 total first pa	Metric 5. Special Wetlar	nds.	WOOS- PUB-CATZ
mex 10 pts.	subjoint	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- Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Opel Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question	restricted hydro nings) (10) eatened or enda r fowl habitat or	angered species (10) usage (10)
4	34	Metric 6. Plant commun	ities, int	erspersion, microtopography.
max 20 pts.	subtolal	6a. Wetland Vegetation Communities.	-	Community Cover Scale
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
		Aquatic bed Emergent Shrub	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
		Forest Mudflats Open water	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
		6b. horizontal (plan view) Interspersion.	3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality
		Select only one.	Namedles D	
		High (5) Moderately high(4)	low	Escription of Vegetation Quality Low spp diversity and/or predominance of nonnative or
		Moderate (3)	IOW	disturbance tolerant native species
		Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	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
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	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
		Nearly absent <5% cover (0) Absent (1)	Mudflet and	Open Water Class Quality
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
		Standing dead >25cm (10in) dbh Amphibian breeding pools		raphy 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
	Cat	2	3	Present in moderate or greater amounts and of highest quality

Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average.

None or none apparent (9) Check all disturbances observed Recovered (6) mowing

Recovering (3) Recent or no recovery (1)

grazing clearcutting selective cutting woody debris removal toxic pollutants

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

subtotal this page

last revised 1 February 2001 jjm

1 Lat 2

End of Quantitative Rating. Complete Categorization Worksheets.

3

quality or in small amounts of highest quality

Present in moderate or greater amounts

and of highest quality

Site: A	PPI	ne Ridge Heppher	Rater(s): KLV		Date: 8 23 2017
		, .,			
0.	0	Metric 1. Wetland			
max 6 pls.	subtotal	Select one size class and assign s >50 acres (>20.2ha) (6 p 25 to <50 acres (10.1 to 10 to <25 acres (4 to <10	<20.2ha) (5 pts) 0.1ha) (4 pts)	DOOT-PEM-C	ATI
		3 to <10 acres (1.2 to <4 0.3 to <3 acres (0.12 to 0.1 to <0.3 acres (0.04 to <0.1 acres (0.04ha) (0 p	<1.2ha) (2pts) o <0.12ha) (1 pt) ts)	ding land upon	
3	3	Metric 2. Upland b	umers and surrou	inding land use	•
max 14 pts.		MEDIUM. Buffers avera NARROW. Buffers avera VERY NARROW, Buffers avera VERY NARROW, Buffers avera VERY LOW. 2nd growth LOW. Old field (>10 year MODERATELY HIGH. Is	50m (164ft) or more around wetl ge 25m to <50m (82 to <164ft) a age 10m to <25m (32ft to <82ft) rs average <10m (<32ft) around	and perimeter (7) round wetland perimeter (4) around wetland perimeter (1 wetland perimeter (0) and average. h, wildlife area, etc. (7) rowth forest. (5) , conservation tillage, new fa	
15	18	Metric 3. Hydrolog			
max 30 pts.		3a. Sources of Water. Score all the High pH groundwater (5) Other groundwater (3) Seasonal/Intermittent su	жер	Part of wetland	lain (1) n/lake and other human use (1) /upland (e.g. forest), complex (1) or upland corridor (1)
		Perennial surface water 3c. Maximum water depth. Select >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6 <0.4m (<15.7in) (1) 3e. Modifications to natural hydrole	only one and assign score. in) (2)	Semi- to perma Regularly inund Seasonally inund Seasonally sati	aturation. Score one or dbl check nently inundated/saturated (4) lated/saturated (3) ndated (2) urated in upper 30cm (12in) (1)
		None or none apparent (Recovered (7) Recovering (3) Recent or no recovery (1	ditch	point source (no filling/grading road bed/RR traderedging other	
	1-	Metric 4. Habitat A		/elopment.	
	ublotal	4a. Substrate disturbance. Score None or none apparent (Recovered (3) Recovering (2) Recent or no recovery (1 4b. Habitat development. Select of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	one or double check and averaged)) only one and assign score.		
	4	Ac. Habitat alteration. Score one of None or none apparent (erved	
7	5	Recovered (6) Recovering (3) Recent or no recovery (1	mowing grazing	shrub/sapling r herbaceous/aq sedimentation dredging farming	uatic bed removal
subtot	al this page		toxic pollutants	nutrient enricht	nent
st revised 1 l					

Site: A	Pine	Ridge Heppher	Rater(s):	W		Date: 8 23 2017
2	5					
	5	Metric 5. Special \	Wetlands.		w007-	PEM-CATI
		neck all that apply and score as i	ndicated.			
		Bog (10) Fen (10)				
		Old growth forest (10)				
		Mature forested wetland Lake Erie coastal/tributa	• •	d hydrolo	av (10)	
		Lake Erie coastal/tributa				
		Lake Plain Sand Prairies Relict Wet Prairies (10)	(Oak Openings) (10)			
		Known occurrence state				
		Significant migratory son	•			
		Category 1 Wetland. Se				topography
2 2	7	letric 6. Plant co	nmuniues, i	mer	spersion, inicit	nopograpny.
max 20 pts. sul	blotal 6a	. Wetland Vegetation Communit	ies. Vegetal	tion Con	nmunity Cover Scale	
		ore all present using 0 to 3 scale	. 0			0.2471 acres) contiguous area
		Aquatic bed	1	100	resent and either comprises	
		Ernergent O Shrub			vegetation and is of modera significant part but is of low	
		O Forest	- 2			significant part of wetland's
		Mudflats			34-1	ite quality or comprises a small
		Open water	- 3		part and is of high quality	and and as more of walls and
	6b.	O Other horizontal (plan view) Interspet			vegetation and is of high qu	cant part, or more, of wetland's ality
		lect only one.		- 40		
		High (5)	-		iption of Vegetation Quali ow spp diversity and/or pred	
		Moderately high(4) Moderate (3)	lov		disturbance tolerant native	
		Moderately low (2)	mo	d N	ative spp are dominant com	ponent of the vegetation,
		Low (1)			_	disturbance tolerant native spp
	60	None (0) Coverage of invasive plants. R	lofor		can also be present, and sp moderately high, but genera	ecies diversity moderate to
		Table 1 ORAM long form for list.			threatened or endangered s	Spp
		deduct points for coverage	hig	h A	predominance of native spe	ecies, with nonnative spp
		Extensive >75% cover (-	•			native spp absent or virtually
		Moderate 25-75% cover (-1)	(-3)		absent, and high spp divers the presence of rare, threat	ity and often, but not always,
		Nearly absent <5% cover	(0)	-	the presence of fare, threat	oned, or endangered app
		Absent (1)			en Water Class Quality	
		Microtopography.	0		bsent <0.1ha (0.247 acres)	
	Sco	ore all present using 0 to 3 scale Vegetated hummucks/tus			ow 0.1 to <1ha (0,247 to 2.4 oderate 1 to <4ha (2.47 to	
		Coarse woody debris >1			igh 4ha (9.88 acres) or more	
		Standing dead >25cm (10	Din) dbh			
		Amphibian breeding pool			y Cover Scale	
			0	_	bsent resent very small amounts of	or if more common
					of marginal quality	
			2	P	resent in moderate amounts	
A -	1 4				quality or in small amounts	
(0	74 /		3		resent in moderate or greate and of highest quality	er amounts

APPENDIX E ODNR and USFWS Correspondence



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

August 22, 2017

Allison Wheaton GAI Consultants 3720 Dressler Road NW Canton, Ohio 44718

Re: 17-400; AEP - Heppner-Pine Ridge 138 kV Line Rebuild Project

Project: The proposed project involves the rebuild of approximately 3.6 miles of the existing Heppner – Pine Ridge transmission line, upgrading from a 69kV line to a 138kV line.

Location: The proposed project is located in Liberty and Coal Townships, Jackson 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 Database has the following records at or within a one-mile radius of the project area:

Bartley's reed grass (*Calamagrostis porter* ssp. *insperata*), T, FSC Flattened sedge (*Carex complanata*), T Reznicek's sedge (*Carex reznicekii*), T Spotted panic grass (*Dichanthelium yadkinense*), P Cumberland grain o' wheat moss (*Diphyscium mucronifolium*), E Short's hedge-hyssop (*Gratiola viscidula*), P One-sided rush (*Juncus secundus*), P Bigleaf magnolia (*Magnolia macrophylla*), E Umbrella magnolia (*Magnolia tripetala*), P Feather-bells (*Stenanthium gramineum*), P Running buffalo clover (*Trifolium stoloniferum*), E, FE Hemlock hardwood forest plant community Mixed mesophytic forest plant community Non-calcareous cliff plant community

Oak hickory forest plant community

Timber rattlesnake (*Crotalus horridus*), E, FSC Natural bridge or arch (geologic feature)

Ophir Hollow Conservation Site
Weaver Hollow Conservation Site
Coalton Wildlife Area – ODNR Division of Wildlife
Lake Katharine State Nature Preserve – ODNR Division of Natural Areas & Preserves

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

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 route crosses the southwestern corner of Coalton Wildlife Area, owned and managed by the Division of Wildlife. If access to the wildlife area outside of the existing easement is necessary, please contact John Sambuco, Federal Lands Coordinator at john.sambuco@dnr.state.oh.us or 614-265-6613. Please coordinate any access to the wildlife area with the Wildlife Area Manager, John Jenkins at 740-682-7524.

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

The project is within the range of the little spectaclecase (Villosa lienosa), a state endangered mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2016), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2016) can be found at:

 $\underline{http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses\%20\&\%20permits/OH\%20Mussel\%20Survey\%20Protocol.pdf}$

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

The Natural Heritage Database has a record within one mile of the project route for the timber rattlesnake (*Crotalus 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. The DOW recommends that a habitat suitability survey be conducted by a DOW approved herpetologist along the project route to determine if suitable habitat exists for the timber rattlesnake. If suitable habitat is determined to be present, the DOW recommends a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat along the project route and within the vicinity of the project route, this project is not likely to impact this species.

The Natural Heritage Database has multiple records within one mile of the project route for the mud salamander (*Pseudotriton montanus*), a state threatened species. The DOW recommends that a habitat suitability survey be conducted by a DOW approved herpetologist along the project route to determine if suitable habitat exists for the mud salamander. If suitable habitat is determined to be present, the DOW recommends a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

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.

Natural Areas: The Division of Natural Areas and Preserves has the following comment.

One rare plant species, Bartley's reed grass (*Calamagrostis porteri spp. Insperata*), has been documented in the Ohio Natural Heritage Database in and around the proposed project area. The Division of Natural Areas and Preserve's Chief Botanist, Rick Gardner, was previously contacted to do a rare plant survey on the property before receiving the project review and is scheduled to be on site within the next several weeks. Mr. Gardner will be able to provide AEP with a more complete plant list at that time and can work with AEP on avoidance measures if necessary. If AEP has any questions regarding the information above, including Mr. Gardner's survey, please contact him at rick.gardner@dnr.state.oh.us or (614) 265-6419.

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.

 $\frac{http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community\\ \%20Contact%20List_8_16.pdf$

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



May 16, 2017 Project C170352.12

Environmental Review Staff
Ohio Department of Natural Resources
Division of Wildlife - Ohio Natural Heritage Program
2045 Morse Road, Building G-3
Columbus, Ohio 43229-6693

American Electric Power
Heppner – Pine Ridge 138kV Line Rebuild Project
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Jackson County, Ohio

Dear Staff:

GAI Consultants, Inc. (GAI), on behalf of American Electric Power (AEP), is requesting information regarding state- and federally-listed threatened and endangered species in the vicinity of the Heppner – Pine Ridge 138kV Line Rebuild Project (Project) in Jackson County, Ohio. As part of this request, please provide information specific to any threatened and endangered bats. GAI is also requesting the locations of any known golden or bald eagle nests in the area.

The proposed Project involves the rebuild of approximately 3.6 miles of the existing Heppner – Pine Ridge transmission line, upgrading from a 69kV line to a 138kV line.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists of maintained right-of-way with bordering agricultural land, mixed deciduous forests, and residential properties. Project shapefiles have been included to aid in your review.

GAI and AEP thank you in advance for your assistance. Please contact me at 330.324.9148 or via email at a.wheaton@gaiconsultants.com if you have any guestions or require further information.

Sincerely,

GAI Consultants, Inc.

Allison R. Wheaton, WPIT

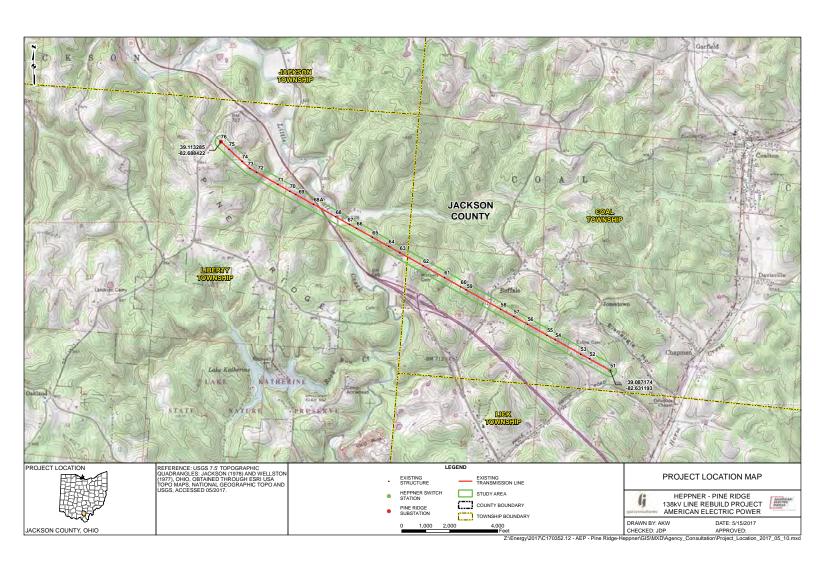
Senior Project Environmental Specialist

ARW/kea

Attachments: Attachment 1 (Project Location Map)

Project Shapefiles

ATTACHMENT 1 PROJECT LOCATION MAP



From: Korfel, Lindsey
To: Allison Wheaton

Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us

Subject: 03E15000-2017-TA-1311 GAI AEP Heppner-Pine Ridge 138kV Line Rebuild Project, Jackson County, OH

Date: Wednesday, May 31, 2017 10:03:10 AM

TAILS # 03E15000-2017-TA-1311

Dear Ms. Wheaton,

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.

Should the proposed site contain trees =3 inches dbh, we recommend that trees be saved wherever possible. 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 trees =3 inches dbh cannot be avoided, we recommend that removal of any trees =3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

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.

The proposed project lies within the range of **running buffalo clover** (*Trifolium stoloniferum*), a federally listed endangered species. From the information provided it appears that the site does receive filtered sunlight and limited disturbance occurs

due to the presence of the utility right of way. The disturbance of the existing right-of-ways may damage or destroy any existing plants. Since the existing utility easements provides suitable sunlight as well as some limited disturbance indicating suitable habitat the Service recommends completing the work between August 1 and March 30 after the perennial plant has died back for the season and foliage will not be damaged or destroyed. If work is to be completed outside if that time window, the service requests a survey for running buffalo clover be completed in the section of line running through Liberty Township, Jackson County. Based on the results of the survey the Service will evaluate potential impacts to running buffalo clover from the proposed project. The survey must be coordinated with this office, and may only be completed between May and June when the plant is in flower.

The project lies within the range of the **timber rattlesnake** (*Crotalus horridus horridus*), a federal species of concern and Ohio endangered species. Your proactive efforts to conserve this species now may help avoid the need to list the species under the Endangered Species Act in the future. Due to their rarity and reclusive nature, we encourage early project coordination to avoid potential impacts to timber rattlesnakes and their habitat.

In Ohio, the timber rattlesnake is restricted to the un-glaciated Allegheny Plateau and utilizes the specific habitat types, depending upon season. Winters are spent in dens usually associated with high, dry ridges. These dens may face any direction, but southeast to southwest are most common. Such dens usually consist of narrow crevices in the bedrock. Rocks may or may not be present on the surface. From these dens, timber rattlesnakes radiate throughout the surrounding hills and move distances as great as 4.5 miles. In the fall, timber rattlesnakes return to the same den. Intensive efforts to transplant timber rattlesnakes have not been successful. Thus protection of the winter dens is critical to the survival of this species. Some project management ideas include the following:

- 1. At a minimum, project evaluations should contain delineations of timber rattlesnake habitat within project boundaries. Descriptions should indicate the quality and quantity of timber rattlesnake habitat (den sites, basking sites, and foraging area, etc.) that may be affected by the project.
- 2. In cases where timber rattlesnakes are known to occur or where potential habitat is rated moderate to high, timber rattlesnake surveys may be necessary. If surveys are to be conducted, it may be helpful to inquire about timber rattlesnake sightings with local resource agency personnel or reliable local residents. In addition, local herpetologists may have knowledge of historical populations as well as precise knowledge of the habits, and especially the specific, local types of habitats that may contain timber rattlesnakes. Surveys should be performed during the periods of spring emergence from dens (usually a narrow window in April or May) and throughout the active season until October. The species is often easiest to locate during the summer months when pregnant females seek open areas in early morning, especially after cool evenings.
- 3. In portions of projects where timber rattlesnakes will be affected, clearing and construction activities should occur at distances greater than 100 feet from known dens. Most importantly, tops of ridges and areas of exposed rock should be avoided.
- 4. In areas where timber rattlesnake dens are known or likely to exist, maintenance activities (mowing, cutting, burning, etc.) should be conducted from November 1 to March 1, when timber rattlesnakes are hibernating.

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,

Lindsey M. Korfel

Wildlife Biologist U.S. Fish and Wildlife Service Ohio Field Office 4625 Morse Road, Suite 104 Columbus, OH 43230 614.416.8993 x. 29



May 16, 2017 Project C170352.12

Mr. Dan Everson United States Fish and Wildlife Service Ohio Ecological Services Field Office 4625 Morse Road, Suite 104 Columbus, Ohio 43230

American Electric Power
Heppner – Pine Ridge 138kV Line Rebuild Project
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Jackson County, Ohio

Dear Mr. Everson:

GAI Consultants, Inc. (GAI), on behalf of American Electric Power (AEP), is requesting information regarding state- and federally-listed threatened and endangered species in the vicinity of the Heppner – Pine Ridge 138kV Line Rebuild Project (Project) in Jackson County, Ohio. As part of this request, please provide information specific to any threatened and endangered bats. GAI is also requesting the locations of any known golden or bald eagle nests in the area.

The proposed Project involves the rebuild of approximately 3.6 miles of the existing Heppner – Pine Ridge transmission line, upgrading from a 69kV line to a 138kV line.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists of maintained right-of-way with bordering agricultural land, mixed deciduous forests, and residential properties. Project shapefiles have been included to aid in your review.

GAI and AEP thank you in advance for your assistance. Please contact me at 330.324.9148 or via email at a.wheaton@gaiconsultants.com if you have any questions or require further information.

Sincerely,

GAI Consultants, Inc.

Allison R. Wheaton, WPIT

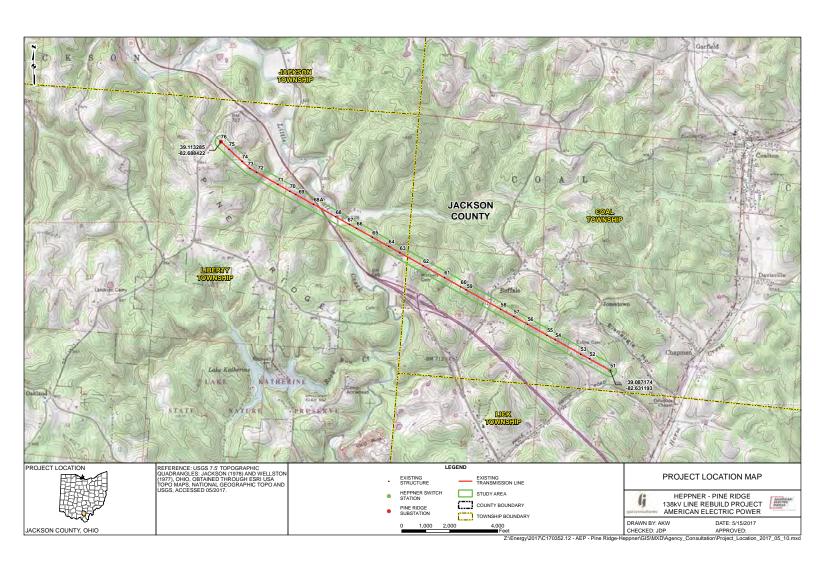
Senior Project Environmental Specialist

ARW/kea

Attachments: Attachment 1 (Project Location Map)

Project Shapefiles

ATTACHMENT 1 PROJECT LOCATION MAP



APPENDIX 8-2



In reply refer to 2017-JAC-39987

November 16, 2017

Mr. Ryan J. Weller Weller & Associates, Inc. 1395 West Fifth Avenue Columbus, Ohio 43212

RE: Pine Ridge-Heppner 69kV/138kV Rebuild Project, Liberty and Coal Townships, Jackson County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received September 12, 2017, October 12, 2017, and November 13, 2017 regarding the proposed Pine Ridge-Heppner 69kV/139kV Rebuild Project, Liberty and Coal Townships, Jackson County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C.470 [36 CFR 800]).

The following comments pertain to the *Phase I Archaeological Investigations for the Proposed 6.0 km* (3.73 mi) Pine Ridge-Heppner 69kV/138kV Rebuild Project in Liberty and Coal Townships, Jackson County, Ohio by Weller & Associates, Inc. (2017).

A literature review, visual inspection, shovel probe, and shovel test unit excavation was completed as part of the investigations. One (1) previously identified archaeological sites is located immediately adjacent to the project area. Ohio Department of Transportation (ODOT) staff identified OAI #33JA0153, the Burgess Rockshelter, in 1990. Only limit investigations took place on this rock shelter when it was identified, as the scope of the proposed transportation project was not impacting the site. It is unknown if OAI#33JA0153 is eligible for listing in the National Register of Historic Places (NRHP) but the proposed project will not impact the site. One (1) archaeological site was identified during this survey. OAI#33JA0411 is also a rockshelter site, where prehistoric period cultural material (flake, chert debitage, and possibly fire-cracked rock) was observed on the ground surface. No artifact collection took place and no excavation was completed on the site. Two (2) additional rockshelter overhangs were also identified in the area; however, it is our understanding that no cultural material was identified on the surface of these areas. One overhang is located directly adjacent the project area and one is located within the project area. The overhangs were not subsurface tested for archaeological resources.

OAI#33JA0411 is recommended potentially eligible for listing in the NRHP. Our office agrees with this recommendation and we request additional information before a determination can be made if the site is being adversely affected or being avoided by the proposed project. Detailed information on the proposed structure location (Structure#67) is needed (engineering plans showing the structure location in relation to OAI#33JA0411 would be ideal) and detailed mapping of the proposed access roads. We also recommend the two overhangs, which did not contain artifacts on the surface during visual inspection, also be avoided by the proposed project. If the overhangs cannot be avoided, we recommend archaeological investigation take place to confirm if the overhangs contain any evidence of prehistoric habitation.

RPR Serial No: 1070479, 1071243

Mr. Ryan Weller Page 2 November 16, 2017

Please complete your associated site inventory as soon as possible. Project associated inventory should be completed and submitted concurrent with submission of your survey documentation for our comments. Following IForm submission procedure, please send a notification to the survey manager (archsurvey@ohiohistory.org, or directly at beberhard@ohiohistory.org) so that the manager is aware your inventory is prepared, complete, and ready for review.

The following comments pertain to the History/Architecture Investigations for the Proposed 6.0 km (3.73 mi) Pine Ridge-Heppner 69kV/138kV Rebuild Project in Liberty and Coal Townships, Jackson County, Ohio by Weller & Associates, Inc. (2017).

The investigations consisted of a systematic survey of all properties fifty years of age of older that are situated within 1,000' on either side of the proposed project site. In total, five individual properties of fifty years or age or older were identified within the survey APE that may have a direct line-of-sight to the project. Out of the five properties identified, two were advanced to detailed study. Two newly identified Ohio Historic Inventory (OHI) properties were recorded as part of this survey: JAC0023304 and JAC0023404.

It is Weller's recommendation that JAC0023304 and JAC0023404 are not eligible for inclusion in the NRHP due to relocation from their original setting and loss of material integrity. Our office agrees with Weller's recommendations regarding eligibility.

The results of the architectural investigation identified no historic properties located within the APE that exhibit potential significance for inclusion in the National Register of Historic Places. Therefore, we agree that the project as proposed will have no indirect effects on historic properties.

We look forward to the continued coordination of this project regarding OAI#33JA0411 and the two rockshelter overhangs. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager

Resource Protection and Review

cc: Ron Howard, AEP (rmhoward@aep.com)

RPR Serial No: 1070479, 1071243

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

August 22, 2017

Allison Wheaton GAI Consultants 3720 Dressler Road NW Canton, Ohio 44718

Re: 17-400; AEP - Heppner-Pine Ridge 138 kV Line Rebuild Project

Project: The proposed project involves the rebuild of approximately 3.6 miles of the existing Heppner – Pine Ridge transmission line, upgrading from a 69kV line to a 138kV line.

Location: The proposed project is located in Liberty and Coal Townships, Jackson 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 Database has the following records at or within a one-mile radius of the project area:

Bartley's reed grass (*Calamagrostis porter* ssp. *insperata*), T, FSC Flattened sedge (*Carex complanata*), T Reznicek's sedge (*Carex reznicekii*), T

Spotted panic grass (Dichanthelium yadkinense), P

Cumberland grain o' wheat moss (Diphyscium mucronifolium), E

Short's hedge-hyssop (*Gratiola viscidula*), P

One-sided rush (Juncus secundus), P

Bigleaf magnolia (Magnolia macrophylla), E

Umbrella magnolia (Magnolia tripetala), P

Feather-bells (Stenanthium gramineum), P

Running buffalo clover (Trifolium stoloniferum), E, FE

Hemlock hardwood forest plant community

Mixed mesophytic forest plant community

Non-calcareous cliff plant community

Oak hickory forest plant community

Timber rattlesnake (Crotalus horridus), E, FSC

Natural bridge or arch (geologic feature)

Ophir Hollow Conservation Site
Weaver Hollow Conservation Site
Coalton Wildlife Area – ODNR Division of Wildlife
Lake Katharine State Nature Preserve – ODNR Division of Natural Areas & Preserves

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

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 route crosses the southwestern corner of Coalton Wildlife Area, owned and managed by the Division of Wildlife. If access to the wildlife area outside of the existing easement is necessary, please contact John Sambuco, Federal Lands Coordinator at john.sambuco@dnr.state.oh.us or 614-265-6613. Please coordinate any access to the wildlife area with the Wildlife Area Manager, John Jenkins at 740-682-7524.

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

The project is within the range of the little spectaclecase (Villosa lienosa), a state endangered mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2016), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2016) can be found at:

 $\underline{http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses\%20\&\%20permits/OH\%20Mussel\%20Survey\%20Protocol.pdf}$

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

The Natural Heritage Database has a record within one mile of the project route for the timber rattlesnake (*Crotalus 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. The DOW recommends that a habitat suitability survey be conducted by a DOW approved herpetologist along the project route to determine if suitable habitat exists for the timber rattlesnake. If suitable habitat is determined to be present, the DOW recommends a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat along the project route and within the vicinity of the project route, this project is not likely to impact this species.

The Natural Heritage Database has multiple records within one mile of the project route for the mud salamander (*Pseudotriton montanus*), a state threatened species. The DOW recommends that a habitat suitability survey be conducted by a DOW approved herpetologist along the project route to determine if suitable habitat exists for the mud salamander. If suitable habitat is determined to be present, the DOW recommends a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

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.

Natural Areas: The Division of Natural Areas and Preserves has the following comment.

One rare plant species, Bartley's reed grass (*Calamagrostis porteri spp. Insperata*), has been documented in the Ohio Natural Heritage Database in and around the proposed project area. The Division of Natural Areas and Preserve's Chief Botanist, Rick Gardner, was previously contacted to do a rare plant survey on the property before receiving the project review and is scheduled to be on site within the next several weeks. Mr. Gardner will be able to provide AEP with a more complete plant list at that time and can work with AEP on avoidance measures if necessary. If AEP has any questions regarding the information above, including Mr. Gardner's survey, please contact him at rick.gardner@dnr.state.oh.us or (614) 265-6419.

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.

 $\frac{http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf$

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



May 16, 2017 Project C170352.12

Environmental Review Staff
Ohio Department of Natural Resources
Division of Wildlife - Ohio Natural Heritage Program
2045 Morse Road, Building G-3
Columbus, Ohio 43229-6693

American Electric Power
Heppner – Pine Ridge 138kV Line Rebuild Project
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Jackson County, Ohio

Dear Staff:

GAI Consultants, Inc. (GAI), on behalf of American Electric Power (AEP), is requesting information regarding state- and federally-listed threatened and endangered species in the vicinity of the Heppner – Pine Ridge 138kV Line Rebuild Project (Project) in Jackson County, Ohio. As part of this request, please provide information specific to any threatened and endangered bats. GAI is also requesting the locations of any known golden or bald eagle nests in the area.

The proposed Project involves the rebuild of approximately 3.6 miles of the existing Heppner – Pine Ridge transmission line, upgrading from a 69kV line to a 138kV line.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists of maintained right-of-way with bordering agricultural land, mixed deciduous forests, and residential properties. Project shapefiles have been included to aid in your review.

GAI and AEP thank you in advance for your assistance. Please contact me at 330.324.9148 or via email at a.wheaton@gaiconsultants.com if you have any questions or require further information.

Sincerely,

GAI Consultants, Inc.

Allison R. Wheaton, WPIT

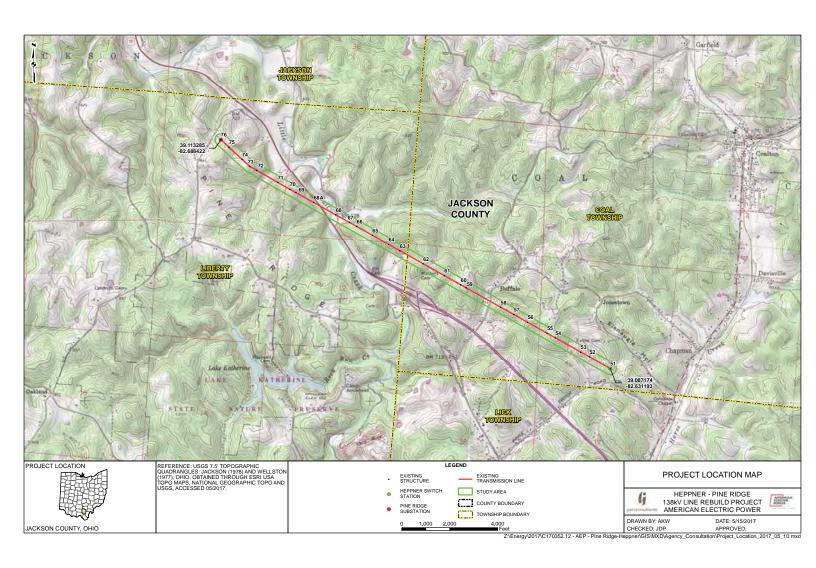
Senior Project Environmental Specialist

ARW/kea

Attachments: Attachment 1 (Project Location Map)

Project Shapefiles

ATTACHMENT 1 PROJECT LOCATION MAP



From: Korfel, Lindsey
To: Allison Wheaton

Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us

Subject: 03E15000-2017-TA-1311 GAI AEP Heppner-Pine Ridge 138kV Line Rebuild Project, Jackson County, OH

Date: Wednesday, May 31, 2017 10:03:10 AM

TAILS # 03E15000-2017-TA-1311

Dear Ms. Wheaton.

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.

Should the proposed site contain trees =3 inches dbh, we recommend that trees be saved wherever possible. 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 trees =3 inches dbh cannot be avoided, we recommend that removal of any trees =3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

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.

The proposed project lies within the range of **running buffalo clover** (*Trifolium stoloniferum*), a federally listed endangered species. From the information provided it appears that the site does receive filtered sunlight and limited disturbance occurs

due to the presence of the utility right of way. The disturbance of the existing right-of-ways may damage or destroy any existing plants. Since the existing utility easements provides suitable sunlight as well as some limited disturbance indicating suitable habitat the Service recommends completing the work between August 1 and March 30 after the perennial plant has died back for the season and foliage will not be damaged or destroyed. If work is to be completed outside if that time window, the service requests a survey for running buffalo clover be completed in the section of line running through Liberty Township, Jackson County. Based on the results of the survey the Service will evaluate potential impacts to running buffalo clover from the proposed project. The survey must be coordinated with this office, and may only be completed between May and June when the plant is in flower.

The project lies within the range of the **timber rattlesnake** (*Crotalus horridus horridus*), a federal species of concern and Ohio endangered species. Your proactive efforts to conserve this species now may help avoid the need to list the species under the Endangered Species Act in the future. Due to their rarity and reclusive nature, we encourage early project coordination to avoid potential impacts to timber rattlesnakes and their habitat.

In Ohio, the timber rattlesnake is restricted to the un-glaciated Allegheny Plateau and utilizes the specific habitat types, depending upon season. Winters are spent in dens usually associated with high, dry ridges. These dens may face any direction, but southeast to southwest are most common. Such dens usually consist of narrow crevices in the bedrock. Rocks may or may not be present on the surface. From these dens, timber rattlesnakes radiate throughout the surrounding hills and move distances as great as 4.5 miles. In the fall, timber rattlesnakes return to the same den. Intensive efforts to transplant timber rattlesnakes have not been successful. Thus protection of the winter dens is critical to the survival of this species. Some project management ideas include the following:

- 1. At a minimum, project evaluations should contain delineations of timber rattlesnake habitat within project boundaries. Descriptions should indicate the quality and quantity of timber rattlesnake habitat (den sites, basking sites, and foraging area, etc.) that may be affected by the project.
- 2. In cases where timber rattlesnakes are known to occur or where potential habitat is rated moderate to high, timber rattlesnake surveys may be necessary. If surveys are to be conducted, it may be helpful to inquire about timber rattlesnake sightings with local resource agency personnel or reliable local residents. In addition, local herpetologists may have knowledge of historical populations as well as precise knowledge of the habits, and especially the specific, local types of habitats that may contain timber rattlesnakes. Surveys should be performed during the periods of spring emergence from dens (usually a narrow window in April or May) and throughout the active season until October. The species is often easiest to locate during the summer months when pregnant females seek open areas in early morning, especially after cool evenings.
- 3. In portions of projects where timber rattlesnakes will be affected, clearing and construction activities should occur at distances greater than 100 feet from known dens. Most importantly, tops of ridges and areas of exposed rock should be avoided.
- 4. In areas where timber rattlesnake dens are known or likely to exist, maintenance activities (mowing, cutting, burning, etc.) should be conducted from November 1 to March 1, when timber rattlesnakes are hibernating.

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,

Lindsey M. Korfel

Wildlife Biologist U.S. Fish and Wildlife Service Ohio Field Office 4625 Morse Road, Suite 104 Columbus, OH 43230 614.416.8993 x. 29



May 16, 2017 Project C170352.12

Mr. Dan Everson United States Fish and Wildlife Service Ohio Ecological Services Field Office 4625 Morse Road, Suite 104 Columbus, Ohio 43230

American Electric Power
Heppner – Pine Ridge 138kV Line Rebuild Project
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Jackson County, Ohio

Dear Mr. Everson:

GAI Consultants, Inc. (GAI), on behalf of American Electric Power (AEP), is requesting information regarding state- and federally-listed threatened and endangered species in the vicinity of the Heppner – Pine Ridge 138kV Line Rebuild Project (Project) in Jackson County, Ohio. As part of this request, please provide information specific to any threatened and endangered bats. GAI is also requesting the locations of any known golden or bald eagle nests in the area.

The proposed Project involves the rebuild of approximately 3.6 miles of the existing Heppner – Pine Ridge transmission line, upgrading from a 69kV line to a 138kV line.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists of maintained right-of-way with bordering agricultural land, mixed deciduous forests, and residential properties. Project shapefiles have been included to aid in your review.

GAI and AEP thank you in advance for your assistance. Please contact me at 330.324.9148 or via email at a.wheaton@gaiconsultants.com if you have any questions or require further information.

Sincerely,

GAI Consultants, Inc.

Allison R. Wheaton, WPIT

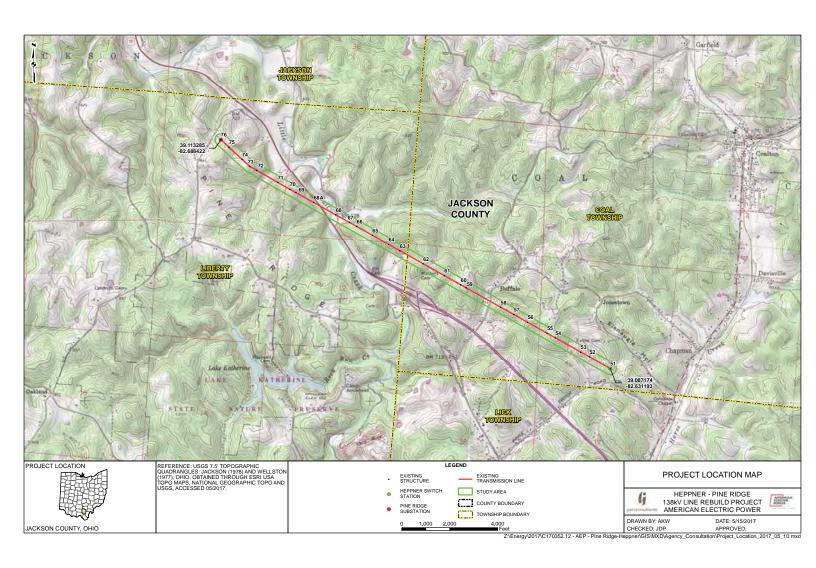
Senior Project Environmental Specialist

ARW/kea

Attachments: Attachment 1 (Project Location Map)

Project Shapefiles

ATTACHMENT 1 PROJECT LOCATION MAP



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in

Case No(s). 18-0031-EL-BTX

Summary: Application (5 Parts) electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Power Company, Inc.