Case No. 22-0774-EL-BLN Part 5 of 14

APPENDIX BWetland Determination Data Forms



WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Millwood-Ohio Central C	ity/County: Knox Co. Sampling Date: 3/31/2022
Applicant/Owner: AEP	State: OH Sampling Point: Wetland 063
Investigator(s): KLV, BLG	Section, Township, Range: Butler Twp.
Landform (hillslope terrace etc.): Depression	Al relief (concave, convex, none): Concave Slope (%): <1 Long: -82.248865 Datum: NAD83
Subregion (LRR or MLRA): LRR-N Lat: 40.345855	Long: -82.248865 Datum: NAD83
Soil Map Unit Name: HwB: Homewood silt loam, 2 to 6 percent slopes	NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year	4
	isturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally prob	elematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	In the Committee Land
Hydric Soil Present? Yes V No No	Is the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present? Yes No	Willing Westerne.
Remarks:	
	within maintained transmission line right-of-way.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Pla High Water Table (A2) Hydrogen Sulfide	
	pheres on Living Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Red	
	uction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface	
Algal Mat or Crust (B4) Other (Explain in	Remarks) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes _ v No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No No
Describe Recorded Data (stream gauge, monitoring well, aerial photos	, previous inspections), if available:
N/A	
Remarks:	
Hydrology indicators are A2, A3, D2, D5.	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Wetland 063

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30' r)		Species?		Number of Dominant Species
1. Absent				That Are OBL, FACW, or FAC: $\frac{4}{}$ (A)
·				(//
2				Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Dercent of Deminant Charles
5				Percent of Dominant Species That Are OBL, FACW, or FAC: [80] [A/B]
6.				(VB)
				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
8				
451-	0	= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' r)				FACW species x 2 =
1. Rubus allegheniensis	20	Yes	FACU	FAC species x 3 =
2				FACU species x 4 =
3.				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				
7				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
10				4 - Morphological Adaptations ¹ (Provide supporting
_	20	= Total Cov	er	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' r)				Problematic Hydrophytic Vegetation ¹ (Explain)
1. Persicaria sagittata	25	Yes	OBL	Problematic Hydrophytic Vegetation (Explain)
2. Juncus effusus	10	No	FACW	
3. Dichanthelium clandestinum	20	Yes	FAC	¹ Indicators of hydric soil and wetland hydrology must
4. Onoclea sensibilis	10	No	FACW	be present, unless disturbed or problematic.
		$\overline{}$		Definitions of Four Vegetation Strata:
5. Agrimonia parviflora	10	No	FACW	
6. Phalaris arundinacea	25	Yes	FACW	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
				110-1911.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12.				or orze, and weedy plante look than orze it tail.
	100	= Total Cov	or	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30' r)			01	height.
Woody Vine Stratum (Plot size: 30' r)			o.	height.
1. Absent				height.
1. Absent 2.				height.
1. Absent				height.
1. Absent 2				
1. Absent 2 3 4				Hydrophytic
1. Absent 2 3 4 5				Hydrophytic Vegetation
1. Absent 2 3 4				Hydrophytic
1. Absent 2	0			Hydrophytic Vegetation
1. Absent 2 3 4 5	0			Hydrophytic Vegetation
1. Absent 2	0			Hydrophytic Vegetation
1. Absent 2	0			Hydrophytic Vegetation
1. Absent 2	o sheet.)	= Total Cov		Hydrophytic Vegetation
1. Absent 2	o sheet.)	= Total Cov		Hydrophytic Vegetation
1. Absent 2	o sheet.)	= Total Cov		Hydrophytic Vegetation
1. Absent 2	o sheet.)	= Total Cov		Hydrophytic Vegetation
1. Absent 2	o sheet.)	= Total Cov		Hydrophytic Vegetation
1. Absent 2	o sheet.)	= Total Cov		Hydrophytic Vegetation
1. Absent 2	o sheet.)	= Total Cov		Hydrophytic Vegetation

SOIL Sampling Point: Wetland 063

	•	to the dep	oth needed to docum			or commi	ii tile abselice of ili	idicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Feature %	rype ¹	Loc²	Texture	Remarks
0-16	10YR 4/2	90	10YR 4/4	10	C	M	SL	
			-					
				-			·	
							·	
					-		· · · · · · · · · · · · · · · · · · ·	_
		-						_
			-		-			
1- 0.0							2	
Hydric Soil		oletion, RM	=Reduced Matrix, MS	S=Maske	d Sand Gr	ains.		re Lining, M=Matrix. for Problematic Hydric Soils ³ :
-			Dork Curfoso	(07)				•
Histosol	pipedon (A2)		Dark Surface Polyvalue Be		nce (S8) (I	ΛΙ D Λ 1/17		Muck (A10) (MLRA 147) Prairie Redox (A16)
	istic (A3)		Thin Dark Su		. , .		• —	.RA 147, 148)
	en Sulfide (A4)		Loamy Gleye			147, 140)		iont Floodplain Soils (F19)
	d Layers (A5)		<u>✓</u> Depleted Mat		(-)			.RA 136, 147)
	uck (A10) (LRR N)		Redox Dark		F6)		•	Shallow Dark Surface (TF12)
Deplete	d Below Dark Surfac	e (A11)	Depleted Dar	k Surface	e (F7)		Other	(Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	/lucky Mineral (S1)	LRR N,	Iron-Mangan		ses (F12) (LRR N,		
	A 147, 148)		MLRA 13				3	
	Sleyed Matrix (S4)		Umbric Surfa					rs of hydrophytic vegetation and
Sandy F			Piedmont Floor Red Parent N					nd hydrology must be present, s disturbed or problematic.
	Matrix (S6) Layer (if observed)	•	Neu Faielit i	nateriai (i	ZI) (WILK	A 121, 14	T) unless	disturbed of problematic.
Type: No		•						
,. <u> </u>							Hydric Soil Pres	sent? Yes V No No
Depth (in	cnes).						nyuric Soil Pres	sent? Yes V No No
Remarks:								
	_							
Meets F	3							

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Millwood-Ohio Central	City/County: Knox Co.		Sampling Date: 3/31/2022
Applicant/Owner: AEP	<u> </u>		Sampling Point: Upland 063
• •	Section, Township, Range: Bi		<u> </u>
Landform (hillslope, terrace, etc.): Flat Lo	ocal relief (concave, convex, no	ne). none	Slope (%). 0
Subregion (LRR or MLRA): LRR-N Lat: 40.346148 Soil Map Unit Name: HwB: Homewood silt loam, 2 to 6 percent slopes	Long.	NWI classifica	ation: N/A
Are climatic / hydrologic conditions on the site typical for this time of y			
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are "Normal	l Circumstances" p	resent? Yes 🗸 No
Are Vegetation, Soil, or Hydrology naturally pr		explain any answer	
SUMMARY OF FINDINGS – Attach site map showing			
Hydrophytic Vegetation Present? Yes No✓	le the Complet Avec		
Hydric Soil Present? Yes No	Is the Sampled Area within a Wetland?	Yes	No 🗸
Wetland Hydrology Present? Yes No	within a wettana.		
Upland data for W063 taken within maintained	d transmission line rig	ht-of-way.	
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicat	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		Surface Soil (
Surface Water (A1) True Aquatic F	Plants (B14)		etated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulf		Drainage Pat	
	ospheres on Living Roots (C3)	Moss Trim Lir	
Water Marks (B1) Presence of R		Dry-Season V	Vater Table (C2)
	eduction in Tilled Soils (C6)	Crayfish Burre	
Drift Deposits (B3) Thin Muck Sui			sible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain	in Remarks)		ressed Plants (D1)
Iron Deposits (B5)		Geomorphic I	
Inundation Visible on Aerial Imagery (B7)		Shallow Aquit	
Water-Stained Leaves (B9) Aquatic Fauna (B13)		FAC-Neutral	phic Relief (D4)
Field Observations:		I AO-Neullai	1631 (D3)
Surface Water Present? Yes No Depth (inches	5).		
Water Table Present? Yes No Depth (inches	3).		
Saturation Present? Yes No Depth (inches		Hydrology Present	t? Yes No
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial phot	os, previous inspections), if ava	ailable:	
N/A			
Remarks:			
Hydrology indicators are not present.			

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Upland 063

20' 5		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30' r)	% Cover	Species?	Status	Number of Dominant Species
1. Absent				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 0 (A/B)
6				
				Prevalence Index worksheet:
7				
8				Total % Cover of: Multiply by:
	0			OBL species x 1 =
0 11 101 1 01 1 15'r		= Total Cov	er	
Sapling/Shrub Stratum (Plot size: 15' r)				FACW species x 2 =
1. Rosa multiflora	20	Yes	FACU	FAC species x 3 =
2. Rubus allegheniensis	20	Yes	FACU	
				FACU species x 4 =
3. Quercus alba	10	Yes	FACU	UPL species x 5 =
4				Column Totals: (A) (B)
4				Column Totals (A) (B)
5				
				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				
				3 - Prevalence Index is ≤3.0 ¹
10	- FO			4 - Morphological Adaptations ¹ (Provide supporting
-	50	= Total Cov	er	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' r)				
1 Dactylis glomerata	20	Yes	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
Andronogon virginious	20	Yes	FACU	
2. Andropogon virginicus		res	FACU	The disease of books and a self-control books and books and books are
3				¹ Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
45				Definitions of Four Vegetation Strata:
5				
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
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Sampling Point: Upland 063

Profile Desc	ription: (Describe	to the depth	needed to docur	nent the i	ndicator	or confirm	n the ab	sence of indicat	ors.)	
Depth	Matrix			x Features		3				
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Text	ture	Remarks	S
0-16	10YR 4/3	100					SL			
				·			-			
										
							-			
				. ——						
				· ——						
	-						-			
				·						
	oncentration, D=Dep	letion, RM=R	educed Matrix, MS	S=Masked	Sand Gra	ains.	² Locati	on: PL=Pore Lin		
Hydric Soil								Indicators for F	roblematic I	Hydric Soils*:
Histosol			Dark Surface					2 cm Muck		
	pipedon (A2)		Polyvalue Be		. , .		, 148)		e Redox (A16	6)
Black Hi			Thin Dark Su			47, 148)		(MLRA 1		J- (540)
	n Sulfide (A4)		Loamy Gleye		F2)				loodplain Soil	ls (F19)
	d Layers (A5)		Depleted Mar		·e)			(MLRA 1	36, 147) w Dark Surfa	00 (TE12)
	ick (A10) (LRR N) d Below Dark Surfac	- (Δ11)	Redox Dark : Depleted Dark :						ain in Remar	, ,
	ark Surface (A12)	C (ATT)	Redox Depre					Other (Expi	alli ili i (Ciliali	N3)
	lucky Mineral (S1) (I	LRR N.	Iron-Mangan			_RR N.				
	\ 147, 148)		MLRA 13		oo (<u>-</u> , (.					
	Gleyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)		³ Indicators of I	nydrophytic v	egetation and
	ledox (S5)		Piedmont Flo				48)		Irology must I	-
-	Matrix (S6)		Red Parent N					-	rbed or probl	
Restrictive I	_ayer (if observed):									
Type: Nor	ne		<u></u>							
Depth (inc	ches): -		<u></u>				Hydr	ic Soil Present?	Yes	No 🗸
Remarks:										
Uvdria o	sila ara nat nr	ooont								
nyanc sa	oils are not pr	esent.								

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Millwood-Ohio Central	City/County: Knox Co. Sampling Date: 3/31/2022
Applicant/Owner: AEP	State: OH Sampling Point: Wetland 064
Investigator(s): KLV, BLG	Section, Township, Range: Butler Twp.
Landform (hillslope terrace etc.): Depression	Long: Concave Slope (%): <1 Datum: NAD83
Subregion (LRR or MLRA): LRR-N	679 Long: -82.249616 Datum: NAD83
Soil Map Unit Name: HwB: Homewood silt loam, 2 to 6 percent	slopes NWI classification: N/A
	ne of year? Yes No (If no, explain in Remarks.)
	ificantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology natu	rally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sh	owing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No _	In the Countried Asses
Hydric Soil Present? Yes ✓ No	
Wetland Hydrology Present? Yes No _	Willing a viction .
Remarks:	
	taken within maintained transmission line right-of-way.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that	
	puatic Plants (B14) Sparsely Vegetated Concave Surface (B8) en Sulfide Odor (C1) Drainage Patterns (B10)
	d Rhizospheres on Living Roots (C3) Moss Trim Lines (B16)
	ce of Reduced Iron (C4) Dry-Season Water Table (C2)
	Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8)
	uck Surface (C7) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (I	Explain in Remarks) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	✓ Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth	, ,
Water Table Present? Yes No Depth	
Saturation Present? Yes No Depth (includes capillary fringe)	(inches): 0 Wetland Hydrology Present? Yes No No
Describe Recorded Data (stream gauge, monitoring well, aeri	al photos, previous inspections), if available:
N/A	
Remarks:	
Hydrology indicators are A2, A3, D2, D5.	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Wetland 064

Tree Stratum (Plot size: 30' r) 1. Absent	Absolute	Dominant	Indicator	Dominance Test worksheet:
•		Species?		Number of Dominant Species
				That Are OBL, FACW, or FAC: $\frac{3}{}$ (A)
2				
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: $\frac{100}{}$ (A/B)
6				
7	· <u></u>			Prevalence Index worksheet:
8				Total % Cover of: Multiply by:
	•	= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' r)			.	FACW species x 2 =
1. Absent				FAC species x 3 =
2.				FACU species x 4 =
				UPL species x 5 =
3				
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
9				2 - Dominance Test is >50%
10.				3 - Prevalence Index is ≤3.0 ¹
10.	0	= Total Cov	or	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5' r)		- Total Cov	CI	data in Remarks or on a separate sheet)
1 Persicaria sagittata	20	Yes	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
Juncus effusus	10	No	FACW	
2 Dichanthelium clandestinum	20	Yes	FAC	¹ Indicators of hydric soil and wetland hydrology must
J	10	No	FACW	be present, unless disturbed or problematic.
·				Definitions of Four Vegetation Strata:
5. Impatiens capensis	10	No	FACW	Tree Mondy plants evaluding vince 2 in (7.6 cm) or
6. Phalaris arundinacea	20	Yes	FACW	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8	·			Continue (Charaba Manda and and and and and and
9				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10.				g. 22.22 2.22 2.22 2.22 2.22 2.22 2.22
11.				Herb – All herbaceous (non-woody) plants, regardless
12.				of size, and woody plants less than 3.28 ft tall.
12	90			Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30' r)		= Total Cov	er	height.
1. Absent				
				
2				
3				
4				Hydrophytic
				Vegetation
				Present? Yes No No
5				
		= Total Cov	er	

SOIL Sampling Point: Wetland 064

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the i	indicator	or confirm	the absence	e of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-16	10YR 4/2	90	10YR 4/4	10	С	M	SL	
					·			
	-			·	· 			
	-							
¹ Type: C=C	oncentration, D=Dep	oletion, RM	=Reduced Matrix, MS	S=Masked	d Sand G	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indic	ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		ce (S8) (I	MLRA 147,		Coast Prairie Redox (A16)
	stic (A3)		Thin Dark Su					(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye				F	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma	trix (F3)				(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark	Surface (F	- 6)		\	Very Shallow Dark Surface (TF12)
Deplete	d Below Dark Surfac	e (A11)	Depleted Dar	k Surface	e (F7)		(Other (Explain in Remarks)
Thick Da	ark Surface (A12)		Redox Depre	essions (F	8)			
Sandy N	Mucky Mineral (S1)	LRR N,	Iron-Mangan	ese Mass	es (F12)	(LRR N,		
MLR	\ 147, 148)		MLRA 13	6)				
Sandy C	Bleyed Matrix (S4)		Umbric Surfa	ce (F13)	(MLRA 1	36, 122)	³ Inc	dicators of hydrophytic vegetation and
Sandy F	Redox (S5)		Piedmont Flo	odplain S	oils (F19	(MLRA 14	18) v	vetland hydrology must be present,
Stripped	Matrix (S6)		Red Parent N	/laterial (F	21) (MLF	A 127, 147	')	unless disturbed or problematic.
Restrictive	Layer (if observed)	:						
Type: No	ne							
Depth (in	ches): -						Hydric Soi	I Present? Yes No
Remarks:								
NA	_							
Meets F	3							
İ								

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Millwood-Ohio Central		City/County: Knox	Co.	5	Sampling Date: 3/31/2022
Applicant/Owner: AEP		, ,		State: OH	Sampling Point: Upland 064
Investigator(s): KLV, BLG		Section, Township			
Landform (hillslope, terrace, etc.): Fla	 at	Local relief (concave	convey none). none	Slope (%): 0
Subregion (LRR or MLRA): LRR-N Soil Map Unit Name: HwB: Homewood	od silt loam, 2 to 6 percent sl	opes	Long.	NWI classificat	tion: N/A
Are climatic / hydrologic conditions or					
Are Vegetation, Soil,	- ·	-			·
Are Vegetation, Soil,				plain any answers	
SUMMARY OF FINDINGS -			int location	s, transects,	important features, etc.
Hydrophytic Vegetation Present?	Yes No	v			
Hydric Soil Present?	Yes No	Is the San within a W	npled Area	Yes	No. 🗸
Wetland Hydrology Present?	Yes No		retiana :	163	
Remarks:					
Upland data for W064 ta					
Wetland Hydrology Indicators:			<u>S</u>	econdary Indicato	ors (minimum of two required)
Primary Indicators (minimum of one	is required; check all that a	ipply)		Surface Soil C	racks (B6)
Surface Water (A1)		atic Plants (B14)	_	Sparsely Vege	etated Concave Surface (B8)
High Water Table (A2)		n Sulfide Odor (C1)	_	Drainage Patte	erns (B10)
Saturation (A3)		Rhizospheres on Living	Roots (C3)	Moss Trim Line	
Water Marks (B1)		e of Reduced Iron (C4)	_		ater Table (C2)
Sediment Deposits (B2)		on Reduction in Tilled S	oils (C6)	Crayfish Burro	
Drift Deposits (B3)		k Surface (C7)	=		ible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Iron Deposits (B5)	Other (E)	rplain in Remarks)	_	Stunted or Street — Geomorphic P	essed Plants (D1)
Inundation Visible on Aerial Ima	agery (B7)		_	Shallow Aquita	
Water-Stained Leaves (B9)	igery (Dr)		_	Microtopograp	
Aquatic Fauna (B13)			_	FAC-Neutral T	
Field Observations:					
Surface Water Present? Yes	No Depth (i	nches):			
	No Depth (i				4
Saturation Present? Yes	No 🔽 Depth (i		Wetland Hy	drology Present	? Yes No
(includes capillary fringe) Describe Recorded Data (stream ga	augo monitoring woll porio	hhotos provious inspor	tions) if availa	phlo:	
N/A	luge, monitoring well, aena	priotos, previous irispet	cions), ii avalia	ibie.	
Remarks:					
Hydrology indicators are	not present				
l Tydrology maleators are	not prosont.				

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Upland 064

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30' r)		Species?		
4 Absent				Number of Dominant Species That Are OBL, FACW, or FAC: (A)
-				That Are OBL, FACW, or FAC: (A)
2	- ——			Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				
				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: $\frac{25}{}$ (A/B)
6				Prevalence Index worksheet:
7				
8				Total % Cover of: Multiply by:
<u> </u>	0	= Total Cov		OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' r)		= Total Cov	ei	FACW species x 2 =
Rosa multiflora	20	Yes	FACU	
				FAC species x 3 =
2. Rubus allegheniensis	20	Yes	FACU	FACU species x 4 =
3				UPL species x 5 =
				Column Totals: (A) (B)
4				(5)
5	- ——			Prevalence Index = B/A =
6				
7				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
10				
	40	= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5' r)		- Total Cov	Ci	data in Remarks or on a separate sheet)
1 Dactylis glomerata	30	Yes	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
- I - <u></u>	· ——			
2. Dichanthelium clandestinum	20	Yes	FAC	¹ Indicators of hydric soil and wetland hydrology must
3. Glechoma hederacea	10	No	FACU	be present, unless disturbed or problematic.
4.				
				Definitions of Four Vegetation Strata:
5				Tree Woody plants evaluding vines 2 in (7.6 cm) or
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
				g
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10				Hort. All borboscous (non woods) plants recording
11				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12.				of size, and woody plants less than 3.20 it tall.
12.	- —			
	60			Woody vine – All woody vines greater than 3.28 ft in
Was da Vina Obstanza (Dlataina 30' I	60	= Total Cov	er	Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: 30' r)	60	= Total Cov	er	woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: 30' r) 1. Absent	60	= Total Cov	er 	, ,
1. Absent			er 	, ,
1. Absent 2.			er 	, ,
1. Absent 2			er 	, ,
1. Absent 2 3 4			er 	height.
1. Absent 2 3 4			er 	height. Hydrophytic
1. Absent 2 3 4 5			er 	height.
1. Absent 2 3 4				height. Hydrophytic Vegetation
1. Absent 2 3 4 5			er	height. Hydrophytic Vegetation
1. Absent 2 3 4 5	0			height. Hydrophytic Vegetation
1. Absent 2	0			height. Hydrophytic Vegetation
1. Absent 2	0			height. Hydrophytic Vegetation
1. Absent 2	0			height. Hydrophytic Vegetation
1. Absent 2	0			height. Hydrophytic Vegetation
1. Absent 2	0			height. Hydrophytic Vegetation

Sampling Point: Upland 064

Depth (inches) Color (moist) % Color (moist) % Type¹ Loc² 0-16 10YR 4/3 100	Texture Remarks SL
	-
0-16	SL
	·
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147	
Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5) Depleted Matrix (F3)	(MLRA 136, 147)
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)	Other (Explain in Remarks)
Thick Dark Surface (A12) Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148) MLRA 136)	
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 14)	wetland hydrology must be present,
Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 14	7) unless disturbed or problematic.
Restrictive Layer (if observed):	
Type: None	
Depth (inches):	Hydric Soil Present? Yes No
Remarks:	
I livelying and line and managed	
Hydric soils are not present.	

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Millwood-Ohio Ce	entral	Citv/C	county: Knox Co.		Sampling Date: 3/31/2022
Applicant/Owner: AEP					Sampling Point: Wetland 065
Investigator(s): KLV, BLG		Section	on, Township, Range: E		
Landform (hillsland torrace of	to 1. Depression	Local roli	ef (concave, convex, no	one): Concave	Slope (%): <1
Subregion (LRR or MLRA): LF	RR-N Lat				Datum: NAD83
Soil Map Unit Name: GnB: Gle	enford silt loam, 2 to 6 pe	rcent slopes			
Are climatic / hydrologic condi					
Are Vegetation, Soil	* *				·
Are Vegetation, Soil _				explain any answe	
					, important features, etc.
Hydrophytic Vegetation Pres Hydric Soil Present? Wetland Hydrology Present? Remarks:	ent? YesYes	No No No	Is the Sampled Area within a Wetland?		No
Wetland data for W	065-PEM-CAT2	taken within m	aintained transr	nission line r	ight-of-way.
HYDROLOGY				0	
Wetland Hydrology Indicat Primary Indicators (minimum		ok all that apply)		•	etors (minimum of two required)
Surface Water (A1)	•	True Aquatic Plants (R14)	Surface Soil	getated Concave Surface (B8)
High Water Table (A2)		Hydrogen Sulfide Od		Drainage Pa	
Saturation (A3)			es on Living Roots (C3)		
Water Marks (B1)		Presence of Reduced	l Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Bur	
Drift Deposits (B3)		Thin Muck Surface (C			isible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Iron Deposits (B5)		Other (Explain in Rer	narks)	Stunted or S Geomorphic	tressed Plants (D1)
Inundation Visible on Ae	rial Imagery (B7)			Shallow Aqu	` '
Water-Stained Leaves (I	• • • •				aphic Relief (D4)
Aquatic Fauna (B13)	,			✓ FAC-Neutral	
Field Observations:					
Surface Water Present?	Yes No	Depth (inches):			
Water Table Present?	Yes No	Depth (inches): 0			
Saturation Present?	Yes No	_ Depth (inches): 0	Wetland	Hydrology Preser	nt? Yes No
(includes capillary fringe) Describe Recorded Data (str	eam gauge, monitoring	well, aerial photos, pre	vious inspections), if av	ailable:	
N/A	3.3.7	, , , , , , , , , , , , , , , , , , , ,			
Remarks:					
Hydrology indicator	s are A2, A3, C3	3, D2, D5.			

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Wetland 065

est worksheet: ninant Species FACW, or FAC: 3 (A)
, , ,
of Dominant
s All Strata: 3 (B)
ninant Species
FACW, or FAC: 100 (A/B)
dex worksheet:
over of: Multiply by:
x 1 =
x 2 =
x 3 =
x 4 =
x 5 =
(A)(B)
ce Index = B/A =
egetation Indicators:
_
Test for Hydrophytic Vegetation
ance Test is >50%
ence Index is ≤3.0 ¹
ological Adaptations ¹ (Provide supporting
Remarks or on a separate sheet)
c Hydrophytic Vegetation ¹ (Explain)
ydric soil and wetland hydrology must
ess disturbed or problematic.
Four Vegetation Strata:
alanta avalualin avia a Oir (7.0 am) a
plants, excluding vines, 3 in. (7.6 cm) or er at breast height (DBH), regardless of
or at breast neight (BBH), regardless of
Woody plants, excluding vines, less and greater than 3.28 ft (1 m) tall.
and greater than 5.26 it (1 iii) tail.
paceous (non-woody) plants, regardless
ody plants less than 3.28 ft tall.
All woody vines greater than 3.28 ft in
All woody viries greater than 5.20 it in
Yes No
165 <u></u> NO <u></u>

SOIL Sampling Point: Wetland 065

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature	es .	-		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 4/1	90	10YR 4/4	10	С	M/PL	SL	
				_		· ——		
					-			
								-
				-				
·	-		-					<u> </u>
		_						
	-		-			· ——	·	
<u> </u>								
		oletion, RM	=Reduced Matrix, M	S=Maske	d Sand G	ains.		=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indica	ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	e (S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	pipedon (A2)		Polyvalue Be				, 148) C	coast Prairie Redox (A16)
Black Hi			Thin Dark S		, .	147, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gley		(F2)		P	riedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma					(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark	,	,			/ery Shallow Dark Surface (TF12)
	Below Dark Surfac	ce (A11)	Depleted Da				_ c	Other (Explain in Remarks)
	ark Surface (A12)		Redox Depr			(1 DD 11		
	fucky Mineral (S1) (LRR N,	Iron-Mangar		ses (F12)	(LRR N,		
	A 147, 148)		MLRA 13		/MI DA 4	00 400\	31	
	Gleyed Matrix (S4)		Umbric Surfa					icators of hydrophytic vegetation and
-	ledox (S5) Matrix (S6)		Red Parent I					retland hydrology must be present,
	_ayer (if observed)		Red Falelit	viateriai (i	ZI) (WILI	M 121, 14	<i>i</i>) u	nless disturbed or problematic.
Type: Nor		•						
Depth (inc	ches): <u>-</u>						Hydric Soil	Present? Yes No
Remarks:								
Meets F3	3							

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Millwood-Ohio Central		City/C	ounty: Knox Co.		Sampling Date: 3/31/2022		
Applicant/Owner: AEP			,		Sampling Point: Upland 065		
Investigator(s): KLV, BLG Section, Township, Range: Butler Twp.							
Landform (hillslope, terrace, etc.): Fla	t	L ocal reli	ef (concave, convex, nor	ne). none	Slone (%): 0		
Subregion (LRR or MLRA): LRR-N							
Sublegion (LRR of MLRA).	Lat		Long	NA 1	N/A		
Soil Map Unit Name:			4	NVVI classific	ation: 1471		
Are climatic / hydrologic conditions on					·		
Are Vegetation, Soil,				Circumstances" p	present? Yes V No No		
Are Vegetation, Soil,	r Hydrology	naturally problema	atic? (If needed, e	explain any answe	rs in Remarks.)		
SUMMARY OF FINDINGS -	Attach site map	showing sam	pling point locatio	ns, transects	, important features, etc.		
					•		
Hydrophytic Vegetation Present?					./		
Hydric Soil Present? Wetland Hydrology Present?	Yes N	NO	within a Wetland?	Yes	No		
Remarks:	165	NO _ •					
Upland data for W065 ta	ken within ma	intained tran	smission line rig	ht-of-way.			
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)		
Primary Indicators (minimum of one	-			Surface Soil Cracks (B6)			
Surface Water (A1)	Tru		Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)	Hyd		Drainage Patterns (B10)				
Saturation (A3) Water Marks (B1)		sence of Reduced	es on Living Roots (C3)	Roots (C3) Moss Trim Lines (B16) Dry-Season Water Table (C2)			
Sediment Deposits (B2)			n in Tilled Soils (C6)	Crayfish Bur			
Sediment Deposits (B2) Drift Deposits (B3)		n Muck Surface (C		-	sible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		er (Explain in Ren		·	tressed Plants (D1)		
Iron Deposits (B5)	<u> </u>	(,		Position (D2)		
Inundation Visible on Aerial Imag	gery (B7)			Shallow Aqui			
Water-Stained Leaves (B9)				Microtopogra	aphic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)		
Field Observations:							
	No 🔽 De						
	No 🖍 De				~		
Saturation Present? Yes (includes capillary fringe)	No 🔽 De	epth (inches):	Wetland H	lydrology Preser	t? Yes No		
Describe Recorded Data (stream ga	uge, monitoring well,	aerial photos, pre	vious inspections), if ava	ilable:			
N/A							
Remarks:							
Hydrology indicators are	not present.						
, 3,	·						

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Upland 065

	Absolute	Dominant	Indicator	Dominance Test worksheet:	_
<u>Tree Stratum</u> (Plot size: 30' r)		Species?			
4 Absent				Number of Dominant Species That Are OBL, FACW, or FAC: (A)	
				That Are OBL, I ACW, OI I AC (A)	
2				Total Number of Dominant	
3				Species Across All Strata: 2 (B)	
4					
5				Percent of Dominant Species That Are ORL FACW or FAC: 0 (A/R	`
				That Are OBL, FACW, or FAC: 0 (A/B))
6				Prevalence Index worksheet:	_
7				Total % Cover of: Multiply by:	
8					
		= Total Cov	er	OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 15' r)	·			FACW species x 2 =	
1. Absent				FAC species x 3 =	
2.				FACU species x 4 =	
				UPL species x 5 =	
3					
4				Column Totals: (A) (B)	
5				5 1 1 50	
6				Prevalence Index = B/A =	
7.				Hydrophytic Vegetation Indicators:	
				1 - Rapid Test for Hydrophytic Vegetation	
8				2 - Dominance Test is >50%	
9				3 - Prevalence Index is ≤3.0 ¹	
10					
	0	= Total Cov	er	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	g
Herb Stratum (Plot size: 5' r)					
1. Dactylis glomerata	30	Yes	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)	
2. Daucus carota	10	No	UPL		
3. Trifolium pratense	20	Yes	FACU	¹ Indicators of hydric soil and wetland hydrology must	
				be present, unless disturbed or problematic.	
4. Cardamine hirsuta	10	No	FACU	Definitions of Four Vegetation Strata:	
5					
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or	
				more in diameter at breast height (DBH), regardless of	i
7				height.	
8				Sapling/Shrub – Woody plants, excluding vines, less	
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
10					
11				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
12.				of size, and woody plants less than 3.20 it tall.	
12.	70	T-4-1 O-1		Woody vine – All woody vines greater than 3.28 ft in	
Woody Vine Stratum (Plot size: 30' r)		= Total Cov	er	height.	
1. Absent		-			
1. Absent 2					
2.					
2		-			
2				Hydrophytic	
2				Vegetation	
2					
2			er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	
2	0		er	Vegetation	

Sampling Point: Upland 065

Depth (inches) Color (moist) % Color (moist) % Type¹ Loc² 0-16 10YR 4/3 100	Texture Remarks SL
	-
0-16	SL
	·
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147	
Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5) Depleted Matrix (F3)	(MLRA 136, 147)
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)	Other (Explain in Remarks)
Thick Dark Surface (A12) Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148) MLRA 136)	
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 14)	wetland hydrology must be present,
Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 14	7) unless disturbed or problematic.
Restrictive Layer (if observed):	
Type: None	
Depth (inches):	Hydric Soil Present? Yes No
Remarks:	
I livelying and line and managed	
Hydric soils are not present.	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Millwood-Ohio Central		City/County	: Knox Co)	Sampling Date: 4/5/2022		
Applicant/Owner: AEP	State: OH	Sampling Point: Wetland 066					
Investigator(s): KLV, BLG	;	Section, To	wnship, Rai	, Range: Butler Twp.			
Landform (hillslope, terrace, etc.): Depression			Local relief	(concave, convex, none):	concave		
Slope (%): 0 Lat: 40.374435	ו	Long: <u>-82</u> .	271227		Datum: NAD83		
Soil Map Unit Name: Or: Orrville silt loam, 0 to 3 perce	nt slopes	, occasio	nally flood	ed NWI classific	ation:		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)							
Are Vegetation, Soil, or Hydrology sig					oresent? Yes X No		
Are Vegetation, Soil, or Hydrology na				eded, explain any answe			
SUMMARY OF FINDINGS – Attach site map s							
Hydrophytic Vegetation Present? Yes No	·						
			e Sampled				
		with	iin a Wetlar	nd? Yes	No		
Remarks: Wetland data for W066-PEM-CAT2 taken within materials.	aintained	tranemie	sion line ri	aht-of-way			
Wetland data for Wood-1 EW-CA12 taken within the	annamed	tiansinis.		giit-oi-way.			
VEGETATION – Use scientific names of plants.							
20' r	Absolute % Cover		Indicator	Dominance Test work			
1. Absent			Status	Number of Dominant Sp That Are OBL, FACW, of	•		
2				Total Number of Domin			
3				Species Across All Stra	ta: <u>3</u> (B)		
4				Percent of Dominant Sp			
5	^	= Total Co	———	That Are OBL, FACW, o	or FAC: 100 (A/B)		
Sapling/Shrub Stratum (Plot size: 15' r)		- Total Co	VCI	Prevalence Index wor	ksheet:		
1. Absent				Total % Cover of:	Multiply by:		
2					x 1 =		
3					x 2 =		
4				· —	x 3 =		
5	_				x 4 =		
Herb Stratum (Plot size: 5' r)	<u> </u>	= Total Co	ver		x 5 = (A) (B)		
1. Acorus calamus	20	Yes	OBL	Column Totals.	(A) (D)		
2. Phalaris arundinacea	60	_Yes	<u>FACW</u>	Prevalence Index	= B/A =		
3. Onoclea sensibilis	20	Yes	<u>FACW</u>	Hydrophytic Vegetation			
4				X 1 - Rapid Test for H			
5				× 2 - Dominance Tes			
6				3 - Prevalence Inde			
7					Adaptations ¹ (Provide supporting s or on a separate sheet)		
8				Problematic Hydror	phytic Vegetation ¹ (Explain)		
9							
10	100	= Total Co	wer		I and wetland hydrology must		
Woody Vine Stratum (Plot size: 30' r)		rotal oo	•0.	be present, unless distu	irbed or problematic.		
1. Absent				Hydrophytic			
2				Vegetation Yes	s_X No		
		= Total Co	ver	Tesent: Tes	<u> </u>		
Remarks: (Include photo numbers here or on a separate si	,	ete					
Wetland veg is present. Passes the rapid and domi	nance les	ວເວ.					

SOIL Sampling Point: Wetland

		to the dep	th needed to docu			or confirm	n the absence o	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Feature %	Type ¹	_Loc²	Texture	Remarks
0-16	10YR 4/2	90	10YR 4/4	10	C	M/PL	Loam	
1- 0.0						 	2,	
Hydric Soil I		pletion, RM=	Reduced Matrix, M	S=Maske	d Sand G	ains.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
•			Sandy	Clayed M	atriv (SA)			·
Histosol	oipedon (A2)			Gleyed M Redox (S			_	Prairie Redox (A16) urface (S7)
Black His				d Matrix (_	nganese Masses (F12)
_	n Sulfide (A4)				neral (F1)		_	nallow Dark Surface (TF12)
	Layers (A5)			-	atrix (F2)			Explain in Remarks)
2 cm Mu	ck (A10)		imes Deplete					
	l Below Dark Surfa	ce (A11)	_	Dark Surf	. ,			
_	rk Surface (A12)				urface (F7)		of hydrophytic vegetation and
	lucky Mineral (S1)		Redox	Depression	ns (F8)			hydrology must be present,
	cky Peat or Peat (S ayer (if observed)	-					unless o	disturbed or problematic.
Type: No).						
							Hydric Soil F	Present? Yes X No
Depth (inc	nes): <u>-</u>							
Remarks: Meets F3.								
HYDROLO	GY							
Wetland Hyd	drology Indicators	:						
Primary India	ators (minimum of	one is requi	red; check all that a	oply)			Secondar	y Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leav	/es (B9)		Surfa	ice Soil Cracks (B6)
	ter Table (A2)		Aquatic Fa	auna (B13	3)		Drain	age Patterns (B10)
Saturatio	on (A3)		True Aqua	atic Plants	(B14)		Dry-S	Season Water Table (C2)
Water M	arks (B1)		Hydrogen	Sulfide C	dor (C1)		Crayf	fish Burrows (C8)
Sedimer	nt Deposits (B2)		X Oxidized I	Rhizosphe	eres on Li	ing Roots		ration Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		Presence	of Reduc	ed Iron (C	4)	Stunt	ed or Stressed Plants (D1)
Algal Ma	t or Crust (B4)		Recent Iro	n Reduct	ion in Tille	ed Soils (C6	6) X Geon	norphic Position (D2)
Iron Dep	osits (B5)		Thin Muck	Surface	(C7)		\times FAC-	Neutral Test (D5)
Inundation	on Visible on Aerial	Imagery (B	7) Gauge or	Well Data	(D9)			
Sparsely	Vegetated Concav	re Surface (l	B8) Other (Ex	plain in R	emarks)			
Field Observ								
Surface Wate			No X Depth (in			_		
Water Table			No X Depth (in					
Saturation Pr		Yes	No X Depth (in	ches):		Wetl	and Hydrology	Present? Yes X No
(includes cap Describe Red		n gauge. mo	onitoring well, aerial	photos. n	revious in	spections).	if available:	
	(0.000	,g	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,		
Remarks:								
Hydrology i	ndicators are C	3, D2, D5.						

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Millwood-Ohio Central	(City/County	y: Knox Co).	Sampling Date: 4/5/2022
Applicant/Owner: AEP		State: OH	Sampling Point: Wetland 067		
Investigator(s): KLV, BLG	ownship, Rar	nge: Butler Twp.			
Landform (hillslope, terrace, etc.): Depression			Local relief ((concave, convex, none):	concave
Slope (%): 0 Lat: 40.374663	1	Long: <u>-82</u>	.271495		Datum: NAD83
Soil Map Unit Name: Se: Sebring silt loam		NWI classifica			
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology si					resent? Yes X No
Are Vegetation, Soil, or Hydrology na	aturally prol	blematic?	(If ne	eded, explain any answer	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site map s	showing	samplir	ng point lo	ocations, transects,	, important features, etc.
Hydrophytic Vegetation Present? Yes X)				
		ls ti	he Sampled		
Wetland Hydrology Present? Yes X No	·	with	hin a Wetlan	id? Yes X	No
Remarks:		<u>.</u>			
Wetland data for W067-PEM-CAT2 taken within m	aintained	transmis	sion line ri	ght-of-way.	
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: 30' r	Absolute		t Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: 30 r 1. Absent	% Cover	_		Number of Dominant Sp That Are OBL, FACW, o	
2				Total Number of Domina	ant
3				Species Across All Strat	
4				Percent of Dominant Sp	pecies
5	^			That Are OBL, FACW, o	
Sapling/Shrub Stratum (Plot size: 15' r)	0 :	= Total Co	ver	Prevalence Index work	ksheet:
1. Absent				Total % Cover of:	
2.					x 1 =
3.				FACW species	x 2 =
4				FAC species	x 3 =
5				FACU species	x 4 =
5' r	0 :	= Total Co	ver	UPL species	x 5 =
Herb Stratum (Plot size: 5' r 1. Acorus calamus	10	No	OBL	Column Totals:	(A) (B)
Dhalaria annudinasa	40	Yes	FACW	Prevalence Index	= B/A =
2. Phalaris arundinacea 3. Onoclea sensibilis	20	Yes	FACW	Hydrophytic Vegetatio	
Juncus effusus	15	No	OBL	, , , ,	lydrophytic Vegetation
Asclepias incarnata	5	No	OBL	2 - Dominance Test	t is >50%
6. Apocynum cannabinum	10	No	FAC	3 - Prevalence Inde	
7					daptations ¹ (Provide supporting
8.					s or on a separate sheet)
9.				Problematic Hydrop	ohytic Vegetation ¹ (Explain)
10				1	
	100 :	= Total Co	ver	be present, unless distu	and wetland hydrology must rbed or problematic.
Woody Vine Stratum (Plot size: 30' r) Absent				, , , , , , , , , , , , , , , , , , , ,	
				Hydrophytic	
2	0			Vegetation Present? Yes	s_X No
Remarks: (Include photo numbers here or on a separate s		= Total Co	ver		
Wetland veg is present. Passes the dominance tes	,				

Soll Sampling Point: Wetland

Profile Desc	ription: (Describe	to the depth	needed to docur	nent the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature				
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
0-16	10YR 4/1	501	0YR 4/4	20	<u> </u>	M/PL	loam	
	10YR 4/2	30						co-matrix color
1- 0.0							2	
	oncentration, D=Dep	pletion, RM=R	educed Matrix, M	S=Maske	d Sand Gr	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil			0 1		(0.1)			for Problematic Hydric Soils ³ :
Histosol	. ,			-	atrix (S4)		_	Prairie Redox (A16)
	oipedon (A2)			Redox (St				Surface (S7)
Black Hi	n Sulfide (A4)			d Matrix (neral (F1)			anganese Masses (F12) Shallow Dark Surface (TF12)
	Layers (A5)				atrix (F2)			(Explain in Remarks)
_	ick (A10)		X Deplete				01101	(Explain in Nemarks)
ı —	d Below Dark Surfac	ce (A11)		Dark Surf	. ,			
	ark Surface (A12)	,			urface (F7)	3Indicators	s of hydrophytic vegetation and
_	lucky Mineral (S1)			Depression		,		d hydrology must be present,
5 cm Mu	icky Peat or Peat (S	3)	_		` ,			disturbed or problematic.
Restrictive I	_ayer (if observed)	:						
Type: No	ne							~
Depth (inc	ches): -		_				Hydric Soil	Present? Yes X No No
Remarks:			_					
Meets F3.								
ivicets i 5.								
HYDROLO	GY							
Wetland Hyd	drology Indicators:	:						
Primary India	cators (minimum of	one is required	d; check all that ap	ply)			Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leav	es (B9)		Sur	face Soil Cracks (B6)
	iter Table (A2)		Aquatic Fa		, ,			inage Patterns (B10)
X Saturation			True Aqua	,	,		_	-Season Water Table (C2)
_	arks (B1)		Hydrogen					yfish Burrows (C8)
l	nt Deposits (B2)		X Oxidized F			ina Roots		uration Visible on Aerial Imagery (C9)
	posits (B3)		Presence	-		-		nted or Stressed Plants (D1)
	at or Crust (B4)		Recent Iro					pmorphic Position (D2)
	oosits (B5)		Thin Muck			u cons (co		C-Neutral Test (D5)
l —	on Visible on Aerial	Imageny (P7)	Gauge or				<u>X</u> 1A0	-Nedital Test (Do)
_	Vegetated Concav	0 , , ,	_ •		` '			
		e Suriace (Bo	Other (EX	Jan III K	emarks)			
Field Obser		N	Y 5					
Surface Water			Depth (in		<u> </u>	-		
Water Table			Depth (in		,	-		V
Saturation P		res X No	Depth (in	ches): <u>0</u>		Wetl	and Hydrolog	y Present? Yes X No
(includes car	oillary fringe) corded Data (strean	n dalide moni	toring well serial	nhotos n	revious ins	nections)	if available	
Describe (Ver	co. aca Data (otreati	. gaage, mom	toring won, acriar	μ. ιστοσ, μ	. O VIOUS III	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	available.	
Daws-sulses								
Remarks:	ndicators ors AC	V3 C3 D3	DE					
i i i yurology l	ndicators are A2	, A3,C3, D2,	, טט.					

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Millwood-Ohio Central City/County: Knox Co. Sampling Date: 4/3						
Applicant/Owner: AEP		State: OH Samp	oling Point: UPL066/067			
Investigator(s): KLV, BLG	ship, Ran	ge: Butler Twp.				
Landform (hillslope, terrace, etc.): Flat			Loca	al relief (concave, convex, none): none	9
Slope (%): 0 Lat: 40.375199 Long: -82.2717					Datur	n: NAD83
Soil Map Unit Name: LvE: Loudonville silt loam, 18 to		NWI classification:				
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrologys					Normal Circumstances" presen	
Are Vegetation, Soil, or Hydrology r					eded, explain any answers in R	
SUMMARY OF FINDINGS – Attach site map	showing	sam	pling p	ooint lo	ocations, transects, imp	ortant features, etc.
Hydrophytic Vegetation Present? Yes N	lo_X					
Hydric Soil Present? Yes N	lo <u>X</u>			ampled		\ <u></u>
Wetland Hydrology Present? Yes N	lo <u>X</u>		within a	a Wetlan	d? Yes	NoX
Remarks:	-1 4	-: 1:				
Upland data for W066/067 taken within maintained	a transmis	sion II	ine rign	it-of-wa	y.	
VEGETATION – Use scientific names of plants.						
7 20 4 70 4 70 T	Absolute		nant Ind		Dominance Test worksheet	:
Tree Stratum (Plot size: 30' r) 1. Absent	% Cover				Number of Dominant Species	
2					That Are OBL, FACW, or FAC	,: <u>U</u> (A)
3					Total Number of Dominant	(B)
4					Species Across All Strata:	(B)
5					Percent of Dominant Species That Are OBL, FACW, or FAC	
	^	= Total	l Cover			(700)
Sapling/Shrub Stratum (Plot size: 15' r)					Prevalence Index workshee	
1. Absent					Total % Cover of:	
2				l	OBL species	
3					FACW species	
4					FAC species	
5	_			—— I	FACU species	
Herb Stratum (Plot size: 5' r)	0	= Tota	l Cover		Column Totals:	
1. Andropogon virginicus	40	Yes	FA	ACU_	Column Totals.	(A)(B)
2. Achillea millefolium	10	No	FA	ACU_	Prevalence Index = B/A	(=
3. Daucus carota	10	No		ACU	Hydrophytic Vegetation Ind	icators:
4. Plantago lanceolata	_ <u>15</u>	No		ACU_	1 - Rapid Test for Hydrop	hytic Vegetation
5. Solidago canadensis	25	Yes	FA	ACU_	2 - Dominance Test is >5	
6					3 - Prevalence Index is ≤	
7					4 - Morphological Adapta data in Remarks or on	tions' (Provide supporting
8			— —		Problematic Hydrophytic	
9				——		(
10	400				¹ Indicators of hydric soil and v	vetland hydrology must
Woody Vine Stratum (Plot size: 30' r)	100	= Fotal	l Cover		be present, unless disturbed of	
1. Absent					Hydrophytic	
2.					Vegetation	~
		= Total	l Cover		Present? Yes	No_X_
Remarks: (Include photo numbers here or on a separate	sheet.)					
Wetland veg is not present.						
I .						

SOIL Sampling Point: UPL066/

Profile Des	cription: (Describe	to the depth	needed to docu	ment the	indicator	or confirn	n the absence of i	ndicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 4/3	100					SL	
l ———								
l								
¹ Type: C=C	oncentration, D=Dep	oletion, RM=Re	educed Matrix, M	S=Masked	d Sand Gra	ains.	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	irie Redox (A16)
ı —	pipedon (A2)			Redox (S			Dark Surfa	. ,
Black H	istic (A3)		Strippe	d Matrix (S	S6)		Iron-Mang	anese Masses (F12)
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)			ow Dark Surface (TF12)
Stratifie	d Layers (A5)		Loamy	Gleyed M	atrix (F2)		Other (Exp	olain in Remarks)
2 cm Mi	uck (A10)		Deplete	d Matrix ((F3)			
Deplete	d Below Dark Surfac	e (A11)	Redox	Dark Surfa	ace (F6)			
Thick D	ark Surface (A12)		Deplete	d Dark Su	urface (F7))	³ Indicators of I	hydrophytic vegetation and
Sandy N	Mucky Mineral (S1)		Redox	Depressio	ns (F8)		wetland hy	drology must be present,
5 cm Mi	ucky Peat or Peat (S	3)					unless dis	turbed or problematic.
Restrictive	Layer (if observed)	:						
Type: No	one		_					~
Depth (in	ches): -						Hydric Soil Pre	esent? Yes No _X_
Remarks:								
	are not present.							
Triyunc 30iis	are not present.							
HYDROLO	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of	one is required	l: check all that a	(vlac			Secondary I	ndicators (minimum of two required)
	Water (A1)		Water-Sta		/es (R9)			Soil Cracks (B6)
I —	ater Table (A2)		Aquatic Fa		, ,			e Patterns (B10)
Saturati	, ,		Aquatic Fa	,	,			ason Water Table (C2)
ı —	, ,						_ ,	(,
1	farks (B1)		Hydrogen					Burrows (C8)
I	nt Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence		,	,		or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduct	ion in Tille	d Soils (C6	6) Geomo	rphic Position (D2)
Iron De	posits (B5)		Thin Muck	Surface	(C7)		FAC-Ne	eutral Test (D5)
Inundati	on Visible on Aerial	Imagery (B7)	Gauge or	Well Data	(D9)			
Sparsel	y Vegetated Concav	e Surface (B8)) Other (Ex	plain in Re	emarks)			
Field Obser	vations:							
Surface Wat	er Present?	es No	X Depth (in	ches):				
Water Table			X Depth (in					
Saturation P	resent? Y pillary fringe)	es No	_X_ Depth (in	cnes):		_ Weti	and Hydrology Pr	resent? Yes No _X
	corded Data (stream	gauge, monit	toring well, aerial	photos, pi	revious ins	pections),	if available:	
	,		•			,		
Remarks:								
	indicators are not	nrecent						
r iyurulugy	mulcators are not	present.						

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Millwood-Ohio Central	(City/County	y: Knox Co	ı <u>.</u>	Sampling Date: <u>4/5/2022</u>	
Applicant/Owner: AEP		State: OH Sampling Point: Wetland				
Investigator(s): KLV, BLG		Section, To	ownship, Ran	nge: Butler Twp.		
Landform (hillslope, terrace, etc.): Depression			Local relief ((concave, convex, none):	concave	
Soil Map Unit Name: LvE: Loudonville silt loam, 18 to 2	25 percen	t slopes		NWI classifica	ation:	
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrology si					oresent? Yes X No	
Are Vegetation, Soil, or Hydrology na	aturally prol	olematic?	(If ne	eded, explain any answer	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map s	showing	samplir	ng point lo	ocations, transects	, important features, etc.	
Hydrophytic Vegetation Present? Yes X No						
		ls th	he Sampled			
		with	hin a Wetlan	id? Yes	No	
Remarks:	L:			in a sink of		
Wetland data for W068-PEM-CATMOD2 taken witl	nin mainta	ainea trar	ismission i	ine right-of-way.		
VEGETATION – Use scientific names of plants.						
Tree Stratum (Plot size: 30' r	Absolute % Cover		t Indicator Status	Dominance Test works		
1. Absent		_	- —— I	Number of Dominant Sp That Are OBL, FACW, o		
2				Total Number of Domina	ant	
3				Species Across All Strat		
4			. ——	Percent of Dominant Sp	pecies	
5	^		. ——	That Are OBL, FACW, o		
Sapling/Shrub Stratum (Plot size: 15' r)	0 :	= Total Co	ver	Prevalence Index work	ksheet:	
1. Absent				Total % Cover of:	Multiply by:	
2.				OBL species	x 1 =	
3				FACW species	x 2 =	
4				FAC species	x 3 =	
5				FACU species	x 4 =	
Herb Stratum (Plot size: 5' r	0 :	= Total Co	ver		x 5 =	
Herb Stratum (Plot size: 5 「) 1. Typha x glauca	20	Yes	OBL	Column Totals:	(A) (B)	
Phalaris arundinacea	40	Yes	FACW	Prevalence Index	= B/A =	
3 Impatiens capensis	30	Yes	FACW	Hydrophytic Vegetatio		
4			. ——	X 1 - Rapid Test for H	lydrophytic Vegetation	
5			. —	X 2 - Dominance Test	t is >50%	
6.				3 - Prevalence Inde		
7					Adaptations ¹ (Provide supporting	
8					s or on a separate sheet)	
9				Problematic Hydrop	phytic Vegetation ¹ (Explain)	
10				Indicators of hydric soil	l and watland hydrology must	
30' r	90	= Total Co	ver	be present, unless distu	I and wetland hydrology must urbed or problematic.	
Woody Vine Stratum (Plot size: 30' r) Absent					-	
2.			·	Hydrophytic Vegetation		
2.		= Total Co	ver	Present? Yes	s_X No	
Remarks: (Include photo numbers here or on a separate s				<u>I</u>		
Wetland veg is present. Passes the rapid and dom	inance tes	sts.				

SOIL Sampling Point: Wetland

	Redo		25			
Depth Matrix (inches) Color (moist) %	Color (moist)	ox Feature	Type ¹	Loc ²	Texture	Remarks
0-16 10YR 4/1 80	10YR 5/6	20	С	M/PL	loam	
¹ Type: C=Concentration, D=Depletion, RM	. ————————————————————————————————————	S=Maske	d Sand G	ains	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	n-reduced matrix, m	O-Waske	u oanu oi	airis.		for Problematic Hydric Soils ³ :
Histosol (A1)	Sandv	Gleved M	atrix (S4)			Prairie Redox (A16)
Histic Epipedon (A2)		Redox (S			_	urface (S7)
Black Histic (A3)	Strippe	d Matrix (S6)		Iron-Ma	inganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy	Mucky M	neral (F1)		Very Sh	nallow Dark Surface (TF12)
Stratified Layers (A5)	~ ~	-	latrix (F2)		Other (Explain in Remarks)
2 cm Muck (A10)		ed Matrix				
Depleted Below Dark Surface (A11)		Dark Surf		`	31	of building building and
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)		Depression	urface (F7)		of hydrophytic vegetation and hydrology must be present,
5 cm Mucky Peat or Peat (S3)	11000	Depressi) (1 O)			disturbed or problematic.
Restrictive Layer (if observed):					1	
_{Type:} None						~
Depth (inches): -					Hydric Soil	Present? Yes X No
Remarks:						
Meets F3.						
HYDROLOGY						
HYDROLOGY Wetland Hydrology Indicators:						
Wetland Hydrology Indicators:	uired: check all that a	nnly)			Saconda	ov Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ			voc (PQ)			ry Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested.) Surface Water (A1)	Water-Sta	ained Lea	, ,		Surfa	ace Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2)	Water-Sta Aquatic F	ained Lea auna (B1	3)		Surfa Drair	ace Soil Cracks (B6) nage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Sta Aquatic F True Aqua	ained Lear auna (B13 atic Plants	B) s (B14)		Surfa Drair Dry-3	ace Soil Cracks (B6) nage Patterns (B10) Geason Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Sta Aquatic F True Aqua Hydrogen	ained Lea auna (B1; atic Plants Sulfide C	B) s (B14) odor (C1)	ving Roots	Surfa Drair Dry-S	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-StateAquatic FTrue Aquatic FHydrogenXOxidized	ained Lea auna (B13 atic Plants Sulfide C Rhizosph	3) s (B14) odor (C1) eres on Liv	-	Surfa Drair Dry-5 Cray (C3) Satu	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Water-StateAquatic FTrue Aquatic FHydrogenOxidizedPresence	ained Lear auna (B13 atic Plants Sulfide C Rhizospho of Reduc	B) s (B14) odor (C1) eres on Liv ed Iron (C	4)	Surfa Drain Cray Cray (C3) Satu Stun	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required in Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Sta Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ira	ained Lear auna (B1) atic Plants Sulfide C Rhizospho of Reducton Reducton	B) B (B14) Ddor (C1) Beres on Lived Iron (C	-	Surfa Drair Dry-3 Cray (C3) Satu Stun 5) X Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required as Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	Water-Sta Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ira Thin Muci	ained Lear auna (B13 atic Plants Sulfide C Rhizosphi of Reduct on Reduct k Surface	B) b (B14) cloor (C1) eres on Liv ed Iron (C cion in Tille (C7)	4)	Surfa Drair Dry-3 Cray (C3) Satu Stun 5) X Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required in Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ira Thin Mucl	ained Lear auna (B13 atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data	B) G (B14) Ddor (C1) Heres on Lived Iron (C) Historian Tille Historian (C7) Historian (D9)	4)	Surfa Drain Dry-3 Cray (C3) Satu Stun 6) X Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (1)	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ira Thin Mucl	ained Lear auna (B13 atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data	B) G (B14) Ddor (C1) Heres on Lived Iron (C) Historian Tille Historian (C7) Historian (D9)	4)	Surfa Drain Dry-3 Cray (C3) Satu Stun 6) X Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Inc.) Sparsely Vegetated Concave Surface Field Observations:	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ira Thin Mucl B7) Gauge or (B8) Other (Ex	ained Lear auna (B1) atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R	B) G (B14) Ddor (C1) Heres on Lived Iron (C) Historian Tille Historian (C7) Historian (D9)	4)	Surfa Drain Dry-3 Cray (C3) Satu Stun 6) X Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Imagery (Imagery Vegetated Concave Surface) Field Observations: Surface Water Present? Yes	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ind Thin Mucl B7) Gauge or (B8) Other (Ex	ained Lear auna (B1) atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R	B) s (B14) odor (C1) eres on Liv ed Iron (C cion in Tille (C7) a (D9) emarks)	4)	Surfa Drain Dry-3 Cray (C3) Satu Stun 6) X Geor	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Imagery (Imagery Vegetated Concave Surface Vegetated Concave Surface Vegetated	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ira Thin Mucl B7) Gauge or (B8) Other (Ex	ained Lear auna (B1; atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R	B) s (B14) odor (C1) eres on Liv ed Iron (C cion in Tille (C7) a (D9) emarks)	4) ed Soils (C6	Surfa Drair Dry-3 Cray (C3) Satu Stun 6) X Geor FAC-	ace Soil Cracks (B6) hage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Imagery (Imagery Vegetated Concave Surface	Water-State Aquatic F True Aquatic F Hydrogen Presence Recent Index Thin Muct Thin Muct Gauge or (B8) Other (Ext No Depth (in No Depth (in) No Depth (in) Depth (in)	ained Lear auna (B1; atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R aches): 1 aches): 0	B) s (B14) clor (C1) eres on Liv ed Iron (C clon in Tille (C7) a (D9) emarks)	4) ed Soils (C6	Surfa Drain Dry-3 Cray (C3) Satu Stun Stun Stun FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Incomplete Surface) Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes X Saturation Present? Yes X	Water-State Aquatic F True Aquatic F Hydrogen Presence Recent Index Thin Muct Thin Muct Gauge or (B8) Other (Ext No Depth (in No Depth (in) No Depth (in) Depth (in)	ained Lear auna (B1; atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R aches): 1 aches): 0	B) s (B14) clor (C1) eres on Liv ed Iron (C clon in Tille (C7) a (D9) emarks)	4) ed Soils (C6	Surfa Drain Dry-3 Cray (C3) Satu Stun Stun Stun FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Imagery (Imag	Water-State Aquatic F True Aquatic F Hydrogen Presence Recent Index Thin Muct Thin Muct Gauge or (B8) Other (Ext No Depth (in No Depth (in) No Depth (in) Depth (in)	ained Lear auna (B1; atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R aches): 1 aches): 0	B) s (B14) clor (C1) eres on Liv ed Iron (C clon in Tille (C7) a (D9) emarks)	4) ed Soils (C6	Surfa Drain Dry-3 Cray (C3) Satu Stun Stun Stun FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Imagery (Imag	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ind Thin Mucl B7) Gauge or (B8) Other (Ext No X Depth (ind No Depth	ained Lear auna (B1; atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R aches): 1 aches): 0	B) s (B14) clor (C1) eres on Liv ed Iron (C clon in Tille (C7) a (D9) emarks)	4) ed Soils (C6	Surfa Drain Dry-3 Cray (C3) Satu Stun Stun Stun FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Imagery (Imag	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ind Thin Mucl B7) Gauge or (B8) Other (Ext No X Depth (ind No Depth	ained Lear auna (B1; atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R aches): 1 aches): 0	B) s (B14) clor (C1) eres on Liv ed Iron (C clon in Tille (C7) a (D9) emarks)	4) ed Soils (C6	Surfa Drain Dry-3 Cray (C3) Satu Stun Stun Stun FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required.) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (Imagery (Imag	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen X Oxidized Presence Recent Ind Thin Mucl B7) Gauge or (B8) Other (Ext No X Depth (ind No Depth	ained Lear auna (B1; atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface Well Data plain in R aches): 1 aches): 0	B) s (B14) clor (C1) eres on Liv ed Iron (C clon in Tille (C7) a (D9) emarks)	4) ed Soils (C6	Surfa Drain Dry-3 Cray (C3) Satu Stun Stun Stun FAC-	ace Soil Cracks (B6) hage Patterns (B10) Geason Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) Neutral Test (D5)

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Millwood-Ohio Central	(City/Count	y: Knox Co	D	Sampling Date: 4/5/2022
Applicant/Owner: AEP				Sampling Point: UPL 068	
Investigator(s): KLV, BLG	:	Section, To	ownship, Ra	nge: Jackson Twp.	
Landform (hillslope, terrace, etc.): Flat			Local relief	(concave, convex, none):	none
					Datum: NAD83
Soil Map Unit Name: LvE: Loudonville silt loam, 18 to	25 percen	t slopes		NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology si					present? Yes X No
Are Vegetation, Soil, or Hydrology no				eeded, explain any answe	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes No	, X				
Hydric Soil Present? Yes No	\propto	ls t	he Sampled		
Wetland Hydrology Present? Yes No		with	hin a Wetlar	nd? Yes	No <u>X</u> _
Remarks:					
Upland data for W068 taken within maintained tran	nsmission	line right	t-of-way.		
VEGETATION – Use scientific names of plants.					
VEGETATION – Ose scientific frames of plants.	Absolute	Dominan	t Indicator	Dominance Test work	shoot.
Tree Stratum (Plot size: 30' r	% Cover			Number of Dominant Si	
1. Absent				That Are OBL, FACW,	
2				Total Number of Domin	ant _
3				Species Across All Stra	ata: <u>3</u> (B)
4				Percent of Dominant Sp	
5	0			That Are OBL, FACW, o	or FAC: 0 (A/B)
Sapling/Shrub Stratum (Plot size: 15' r)	<u> </u>	- 10tal CC	vei	Prevalence Index wor	ksheet:
1. Rosa multiflora	<u>15</u>	Yes	<u>FACU</u>	Total % Cover of:	Multiply by:
2				OBL species	x 1 =
3					x 2 =
4					x 3 =
5					x 4 =
Herb Stratum (Plot size: 5' r)	<u>15</u>	= Total Co	ver		x 5 = (A) (B)
1. Dactylis glomerata	30	Yes	FACU	Column Totals.	(A) (B)
2. Poa pratensis	30	Yes	FACU	Prevalence Index	= B/A =
3. Glechoma hederacea	10	No	FACU_	Hydrophytic Vegetation	
4				1 - Rapid Test for H	, , , ,
5				2 - Dominance Tes	
6				3 - Prevalence Inde	Adaptations ¹ (Provide supporting
7				data in Remarks	s or on a separate sheet)
8				Problematic Hydror	phytic Vegetation ¹ (Explain)
9					
		= Total Co	over		l and wetland hydrology must
Woody Vine Stratum (Plot size: 30' r)		1010100	7401	be present, unless distu	irbed or problematic.
1. Absent				Hydrophytic	
2				Vegetation Present? Yes	s No_X_
		= Total Co	ver	Tesent: Tes	No
Remarks: (Include photo numbers here or on a separate s	neet.)				
Wetland veg is not present.					

US Army Corps of Engineers

SOIL Sampling Point: UPL 068

Profile Des	cription: (Describe	to the depth	needed to docu	ment the i	ndicator	or confirm	n the absence of	findicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks
0-16	10YR 4/3	100						
		- — —						
1 _{Type:} C=C	'ancentration D=Den	lotion DM=Da	duced Metrix M	C=Maakas			² l coation: I	DI = Doro Lining M=Matrix
Hydric Soil	oncentration, D=Dep	netion, Rivi–Re	educed Matrix, M	3-Wasket	i Sanu Gra	aii 15.		PL=Pore Lining, M=Matrix. or Problematic Hydric Soils³:
Histoso			Sandy	Gleyed Ma	triv (SA)			airie Redox (A16)
ı —	pipedon (A2)			Redox (S5			Dark Sur	. ,
ı —	istic (A3)			d Matrix (S				ganese Masses (F12)
ı —	en Sulfide (A4)			Mucky Mir	,			allow Dark Surface (TF12)
	d Layers (A5)			Gleyed Ma	, ,			xplain in Remarks)
2 cm M	uck (A10)		Deplete	ed Matrix (I	F3)			
Deplete	d Below Dark Surfac	e (A11)	Redox	Dark Surfa	ice (F6)			
_	ark Surface (A12)			ed Dark Su)		f hydrophytic vegetation and
	Mucky Mineral (S1)		Redox	Depression	ns (F8)			nydrology must be present,
	ucky Peat or Peat (S	-					unless di	sturbed or problematic.
	Layer (if observed)	:						
Type: No			_				Hydric Soil Pr	resent? Yes No _X_
Depth (in	iches):		_				, u	
Remarks:								
Hydric soils	s are not present.							
HYDROLC	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of c	ne is required	; check all that a	pply)			Secondary	Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leav	es (B9)		Surfac	e Soil Cracks (B6)
_	ater Table (A2)			auna (B13	, ,			age Patterns (B10)
Saturati	ion (A3)		True Aqu	atic Plants	(B14)		Dry-Se	eason Water Table (C2)
ı —	//arks (B1)		Hydrogen		` '		_ ′	sh Burrows (C8)
I —	nt Deposits (B2)			Rhizosphe		ing Roots		ation Visible on Aerial Imagery (C9)
_	posits (B3)		Presence			•	· · —	ed or Stressed Plants (D1)
Algal M	at or Crust (B4)		Recent Ire					orphic Position (D2)
Iron De	posits (B5)		Thin Mucl			•	. —	Neutral Test (D5)
I —	ion Visible on Aerial	Imagery (B7)	Gauge or					,
Sparsel	y Vegetated Concav	e Surface (B8)	Other (Ex	plain in Re	marks)			
Field Obser				-				
Surface Wa	ter Present? Y	es No	X Depth (ir	iches):				
Water Table			X Depth (ir					
Saturation F			X Depth (ir				and Hydrology F	Present? Yes No _X_
	pillary fringe)	cs No	Deput (ii	ici ico)		_ ""	ana myarology i	165 Mo
Describe Re	ecorded Data (stream	gauge, monit	oring well, aerial	photos, pr	evious ins	pections),	if available:	
Remarks:								
Hydrology	indicators are not	present.						
I								

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Millwood-Ohio Central	(City/County	: Knox Co)	Sampling Date: 4/5/2022
Applicant/Owner: AEP			Sampling Point: Wetland 069		
Investigator(s): KLV, BLG	;	Section, To	wnship, Rai	nge: Butler Twp.	
Landform (hillslope, terrace, etc.): Depression		I	Local relief	(concave, convex, none):	concave
Slope (%): 0 Lat: 40.381536	ו	Long: <u>-82.</u>	277072		Datum: NAD83
Soil Map Unit Name: BsF: Brownsville-Westmoreland					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sig					oresent? Yes X No
Are Vegetation, Soil, or Hydrology na				eded, explain any answe	
SUMMARY OF FINDINGS – Attach site map s					
Hydrophytic Vegetation Present? Yes No					
			e Sampled		
		with	in a Wetlan	id? Yes	No
Remarks: Wetland data for W069-PEM-CATMOD2 taken with	nin mainta	ained tran	emiccion I	ing right of way	
Wetland data for W009-FEWI-CATIVIOD2 taken with	IIII IIIaiiile	airieu trari	511115510111	ine rigint-or-way.	
VEGETATION – Use scientific names of plants.					
20' r	Absolute			Dominance Test work	
1. Absent			Status	Number of Dominant Sp That Are OBL, FACW, o	•
2				Total Number of Domin	
3				Species Across All Stra	ta: <u>3</u> (B)
4				Percent of Dominant Sp	
5	^	= Total Cov		That Are OBL, FACW, o	or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 15' r)		- Total Cov	761	Prevalence Index worl	ksheet:
1. Absent				Total % Cover of:	Multiply by:
2				OBL species	x 1 =
3					x 2 =
4					x 3 =
5					x 4 =
Herb Stratum (Plot size: 5' r)	0	= Total Cov	er/er		x 5 = (A) (B)
1. Verbesina alternifolia	20	Yes	FACW	Column Totals.	(A) (B)
2. Phalaris arundinacea	45	Yes	FACW	Prevalence Index	= B/A =
3. Impatiens capensis	20	Yes	FACW_	Hydrophytic Vegetation	
4. Urtica dioica	<u>15</u>	<u>No</u>	FACW_	X 1 - Rapid Test for H	
5				2 - Dominance Tes	
6				3 - Prevalence Inde	Adaptations ¹ (Provide supporting
7					s or on a separate sheet)
8				Problematic Hydror	phytic Vegetation ¹ (Explain)
9					
	100	= Total Cov			I and wetland hydrology must
Woody Vine Stratum (Plot size: 30' r)		Total oov		be present, unless distu	irbed or problematic.
1. Absent				Hydrophytic	
2				Vegetation Present? Yes	s_X No
		= Total Cov	/er	Tes	<u> </u>
Remarks: (Include photo numbers here or on a separate si	,	ete			
Wetland veg is present. Passes the rapid and domi	nance les	ວເວ.			

SOIL Sampling Point: Wetland

Depth	cription: (Describe Matrix			lox Featur				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 4/2	80	10YR 4/4	20	С	M/PL	SL	
						- —		
1- 0.0						· .	2,	
	Concentration, D=De Indicators:	pletion, RIV	=Reduced Matrix, I	viS=Maske	d Sand G	rains.		PL=Pore Lining, M=Matrix. r Problematic Hydric Soils ³ :
•			Cond	Clayed M	atriv (CA)			
Histoso	pipedon (A2)			≀ Gleyed M ≀ Redox (S			Coast Pra	airie Redox (A16)
_	listic (A3)			ed Matrix (ganese Masses (F12)
_	en Sulfide (A4)			y Mucky M		1		llow Dark Surface (TF12)
	d Layers (A5)			y Gleyed N				plain in Remarks)
	uck (A10)			ted Matrix				,
Deplete	d Below Dark Surfa	ce (A11)		Dark Sur				
Thick D	ark Surface (A12)		Deple	ted Dark S	urface (F7	')	³ Indicators of	hydrophytic vegetation and
	Mucky Mineral (S1)		Redox	(Depressi	ons (F8)			ydrology must be present,
	ucky Peat or Peat (unless di	sturbed or problematic.
	Layer (if observed):						
Type: N							Hydric Soil Pr	esent? Yes X No
Depth (ir	nches): <u>-</u>						Tiyunc John Ti	esent: 1es no
HYDROLO	OGY							
Wetland Hy	drology Indicators	:						
Primary Ind	cators (minimum of	one is requ	ired; check all that	apply)			Secondary	Indicators (minimum of two required)
Surface	Water (A1)		Water-S	tained Lea	ves (B9)		Surfac	e Soil Cracks (B6)
High W	ater Table (A2)		Aquatic	Fauna (B1	3)		Draina	ge Patterns (B10)
Saturat	ion (A3)		True Aqu	uatic Plant	s (B14)			eason Water Table (C2)
Water N	Marks (B1)		Hydroge	n Sulfide C	Odor (C1)		Crayfis	h Burrows (C8)
	nt Deposits (B2)		X Oxidized			ving Roots		tion Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presenc	e of Reduc	ed Iron (C	(4)	Stunte	d or Stressed Plants (D1)
Algal M	at or Crust (B4)		Recent I	ron Reduc	tion in Tille	ed Soils (C		orphic Position (D2)
Iron De	posits (B5)		Thin Mu	ck Surface	(C7)		X FAC-N	eutral Test (D5)
Inundat	ion Visible on Aerial	Imagery (E	37) Gauge o	r Well Data	a (D9)			
Sparse	y Vegetated Conca	ve Surface	(B8) Other (E	xplain in R	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes	No X Depth (inches):		_		
Water Table	Present?	Yes	No X Depth (inches):		_		
Saturation F	Present? pillary fringe)	Yes	No X Depth (inches):		Wet	land Hydrology F	resent? Yes X No
	ecorded Data (stream	n gauge, m	onitoring well, aeria	ıl photos, p	revious in	spections),	, if available:	
Remarks:								
Hydrology	indicators are C3	3, D2, D5.						

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Millwood-Ohio Central		City/Count	ty: Knox Co) <u>.</u>	Sampling Date: 4/5/2022		
Applicant/Owner: AEP		State: OH Sampling Point: UF					
Investigator(s): KLV, BLG		Section, T	ownship, Ra	nge: Butler Twp.			
Landform (hillslope, terrace, etc.): Flat			Local relief	(concave, convex, none):	none		
Slope (%): 0 Lat: 40.381771		Long: <u>-82</u>	2.27728		Datum: NAD83		
Soil Map Unit Name: BsF: Brownsville-Westmoreland							
Are climatic / hydrologic conditions on the site typical for this	s time of vea	ar? Yes	X _{No}	(If no. explain in R	emarks.)		
Are Vegetation, Soil, or Hydrology s					oresent? Yes X No		
Are Vegetation, Soil, or Hydrology n				eded, explain any answe			
SUMMARY OF FINDINGS – Attach site map							
Hydrophytic Vegetation Present? Yes N	. X						
Hydric Soil Present? Yes N			the Sampled		\ <u>\</u>		
Wetland Hydrology Present? Yes N	• <u>X</u>	wit	hin a Wetlar	nd? Yes	No <u>X</u> _		
Remarks: Upland data for W069 taken within maintained trai	nsmission	line righ	t-of-way.				
VEGETATION – Use scientific names of plants.							
Tree Stratum (Plot size: 30' r	Absolute		nt Indicator	Dominance Test work	sheet:		
Tree Stratum (Plot size: 30 r 1. Absent		_	? Status	Number of Dominant S That Are OBL, FACW, o	•		
2				Total Number of Domin	ant		
3				Species Across All Stra	ta: <u>2</u> (B)		
4				Percent of Dominant Sp	pecies		
5	0			That Are OBL, FACW,	or FAC: 0 (A/B)		
Sapling/Shrub Stratum (Plot size: 15' r)	<u> </u>	- Total Co	ovei	Prevalence Index wor	ksheet:		
1. Rosa multiflora	<u> 15</u>	Yes	FACU_	Total % Cover of:	Multiply by:		
2				OBL species	x 1 =		
3					x 2 =		
4					x 3 =		
5					x 4 =		
Herb Stratum (Plot size: 5' r)	<u>15</u>	= Total Co	over		x 5 = (A) (B)		
1. Andropogon virginicus	30	Yes	FACU	Column Totals.	(A) (B)		
2. Verbascum thapsus	10	No	FACU	Prevalence Index	= B/A =		
3. Daucus carota	. <u>10</u>	No	FACU_	Hydrophytic Vegetation			
4. Polystichum acrostichoides	10	No	FACU_	1 - Rapid Test for I			
5				2 - Dominance Tes			
6				3 - Prevalence Inde			
7				data in Remarks	Adaptations ¹ (Provide supporting s or on a separate sheet)		
8					phytic Vegetation ¹ (Explain)		
9							
10		= Total Co			I and wetland hydrology must		
Woody Vine Stratum (Plot size: 30' r 1. Absent		- Total Ct	ovei	be present, unless distu	urbed or problematic.		
				Hydrophytic			
2	0			Vegetation Present? Yes	s No_X_		
Remarks: (Include photo numbers here or on a separate s		= Total Co	over				
Wetland veg is not present.							

US Army Corps of Engineers

SOIL Sampling Point: UPL 069

Profile Des	cription: (Describe	to the depth r	needed to docu	ment the i	ndicator	or confirn	n the absence of i	ndicators.)			
Depth	Matrix			ox Feature:			_				
(inches)	Color (moist)		Color (moist)	%	Type ¹	_Loc ² _	Texture	Remarks			
0-16	10YR 4/3										
		. — —									
	oncentration, D=Dep	letion, RM=Re	duced Matrix, M	IS=Masked	Sand Gra	ains.		L=Pore Lining, M=Matrix.			
Hydric Soil								Problematic Hydric Soils ³ :			
Histoso	, ,			Gleyed Ma			_	rie Redox (A16)			
ı —	pipedon (A2)			Redox (S5			Dark Surfa				
ı —	istic (A3)			ed Matrix (S Mucky Mir	,			anese Masses (F12) ow Dark Surface (TF12)			
	en Sulfide (A4) d Layers (A5)			Gleyed Ma				ow Dark Surface (1F12) plain in Remarks)			
ı —	uck (A10)			ed Matrix (I			Other (Exp	orall in Nemarks)			
ı —	d Below Dark Surfac	e (A11)		Dark Surfa							
	ark Surface (A12)	- (,		ed Dark Su)	3Indicators of h	hydrophytic vegetation and			
Sandy I	Mucky Mineral (S1)			Depression				drology must be present,			
5 cm M	ucky Peat or Peat (S	3)					unless dist	turbed or problematic.			
	Layer (if observed):										
Type: N	one		_				Hudria Sail Bra	esent? Yes No _X_			
Depth (ir	ches):		_				nyuric Soil Pre	sent? res No			
Remarks:							•				
Hydric soil:	s are not present.										
HYDROLO	GY										
Wetland Hy	drology Indicators:										
Primary Indi	cators (minimum of c	ne is required;	check all that a	pply)			Secondary In	ndicators (minimum of two required)			
Surface	Water (A1)		Water-St	ained Leave	es (B9)		Surface	Soil Cracks (B6)			
High W	ater Table (A2)		Aquatic F	auna (B13)		Drainage Patterns (B10)				
Saturat	on (A3)		True Aqu	atic Plants	(B14)		Dry-Sea	ason Water Table (C2)			
Water N	/larks (B1)		Hydroger	Sulfide O	dor (C1)		Crayfish	Burrows (C8)			
Sedime	nt Deposits (B2)		Oxidized	Rhizosphe	res on Liv	ing Roots	(C3) Saturation	on Visible on Aerial Imagery (C9)			
Drift De	posits (B3)		Presence	of Reduce	ed Iron (C4	1)	Stunted	or Stressed Plants (D1)			
Algal M	at or Crust (B4)		Recent Ir	on Reducti	on in Tilled	d Soils (Ce	6) Geomor	rphic Position (D2)			
Iron De	posits (B5)		Thin Muc	k Surface ((C7)		FAC-Ne	eutral Test (D5)			
Inundat	ion Visible on Aerial I	magery (B7)	Gauge or	Well Data	(D9)						
Sparse	y Vegetated Concave	e Surface (B8)	Other (Ex	plain in Re	emarks)						
Field Obse	vations:										
Surface Wa	ter Present? Y	es No .	X_ Depth (i	nches):		_					
Water Table	Present? Y	es No	X_ Depth (i	nches):		_					
Saturation F	resent? Y	es No .	X Depth (i	nches):		_ Wetl	and Hydrology Pr	resent? Yes No _X			
	pillary fringe)	aauaa manita	oring well corin	nhataa nr	aulaua ina	naationa\	if available:				
Describe Re	corded Data (stream	gauge, monito	oring well, aeria	priotos, pri	evious ins	pections),	ii avallable.				
Remarks:											
	indicators are not	present.									
, , , , , , ,		• • **									
I											

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Millwood-Ohio Central	(City/County	: Knox Co).	Sampling Date: 4/5/2022
Applicant/Owner: AEP				Sampling Point: Wetland 070	
Investigator(s): KLV, BLG	;	Section, To	wnship, Raı	nge: Butler Twp.	
Landform (hillslope, terrace, etc.): Depression			Local relief	(concave, convex, none):	concave
Slope (%): 0 Lat: 40.397334	1	Long: <u>-82.</u>	290133		Datum: NAD83
Soil Map Unit Name: LvE: Loudonville silt loam, 18 to 2	25 percen	nt slopes		NWI classific	cation:
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology signature.					present? Yes X No
Are Vegetation, Soil, or Hydrology na				eded, explain any answe	
SUMMARY OF FINDINGS – Attach site map s			,		,
Hydrophytic Vegetation Present? Yes No	·				
			e Sampled		
		with	in a Wetlan	id? Yes	No
Remarks: Wetland data for W070-PEM-CAT2 taken within materials.	aintainad	tranemics	cion lino ri	abt of way	
Wetland data for W070-FEWI-CA12 taken within the	airitairieu	lialisiilis	sion line n	giit-oi-way.	
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: 30' r	Absolute	Dominant		Dominance Test work	sheet:
1. Absent			Status	Number of Dominant Sp That Are OBL, FACW, o	
2				Total Number of Domin	ant
3				Species Across All Stra	ata: <u>3</u> (B)
4				Percent of Dominant Sp	
5	^	= Total Cov		That Are OBL, FACW, o	or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 15' r)		- 10tal C0	/61	Prevalence Index wor	ksheet:
1. Absent				Total % Cover of:	Multiply by:
2				OBL species	x 1 =
3					x 2 =
4					x 3 =
5					x 4 =
Herb Stratum (Plot size: 5' r	0	= Total Cov	/er		x 5 =
1. Typha x glauca	10	No	FACW	Column Totals:	(A) (B)
2. Phalaris arundinacea	30	Yes	FACW	Prevalence Index	= B/A =
3. Impatiens capensis	20	Yes	FACW_	Hydrophytic Vegetation	
Persicaria sagittata	20	Yes	FACW_	X 1 - Rapid Test for H	
5. Onoclea sensibilis	10	No	FACW	2 - Dominance Tes	
6. Scirpus cyperinus	10	<u>No</u>	OBL	3 - Prevalence Inde	
7					Adaptations ¹ (Provide supporting s or on a separate sheet)
8				l	phytic Vegetation ¹ (Explain)
9				_	, , ,
10	100	= Total Cov			l and wetland hydrology must
Woody Vine Stratum (Plot size: 30' r)	100	= Total Cov	/er	be present, unless distu	ırbed or problematic.
1. Absent				Hydrophytic	
2				Vegetation	s_X No
		= Total Cov	/er	Present? Yes	S_/\NO
Remarks: (Include photo numbers here or on a separate s	,				
Wetland veg is present. Passes the rapid and domi	inance tes	SIS.			

SOIL Sampling Point: Wetland

Depth	matrix	e to the dep	th needed to docu Red	ment tne ox Feature		or confirm	n the absence of	of indicators.)			
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type ¹	_Loc ²	Texture	Remarks			
0-16	10YR 4/1	- —— 75	10YR 4/4	25	С	M/PL	SL				
					- ——						
		pletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		PL=Pore Lining, M=Matrix.			
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils ³ :			
Histosol	. ,			Gleyed M			_	Prairie Redox (A16)			
	oipedon (A2)			Redox (S				urface (S7)			
Black Hi	, ,			d Matrix (,			anganese Masses (F12)			
	n Sulfide (A4)				neral (F1)			nallow Dark Surface (TF12)			
_	d Layers (A5) ick (A10)		X Deplete		latrix (F2)		Other (Explain in Remarks)			
_	d Below Dark Surfa	ce (A11)		Dark Surf							
	ark Surface (A12)	CC (A11)	_		urface (F7)	3Indicators	of hydrophytic vegetation and			
_	lucky Mineral (S1)			Depression	•	,		hydrology must be present,			
	icky Peat or Peat (S3)	_	·	` ,			disturbed or problematic.			
Restrictive I	ayer (if observed):									
Type: No	ne							~			
Depth (inc	ches):						Hydric Soil	Present? Yes X No			
Remarks:											
Meets F3.											
	CV										
HYDROLO	drology Indicators										
-							0	In dia ataun (animina and taun an anima d)			
		one is requir	ed; check all that a					ry Indicators (minimum of two required)			
	Water (A1)		Water-Sta		, ,		Surface Soil Cracks (B6) Drainage Patterns (B10)				
 	iter Table (A2)		Aquatic F	,	,		_	, ,			
X Saturation	, ,		True Aqua					Season Water Table (C2)			
	arks (B1)		Hydrogen					fish Burrows (C8)			
	nt Deposits (B2)		X Oxidized					ration Visible on Aerial Imagery (C9)			
	posits (B3)		Presence					ted or Stressed Plants (D1)			
	at or Crust (B4)					d Soils (C		morphic Position (D2)			
	oosits (B5)		Thin Muck				X FAC	-Neutral Test (D5)			
_	on Visible on Aerial				' '						
	/ Vegetated Conca	ve Surface (l	38) Other (Ex	plain in R	emarks)						
Field Obser			~								
Surface Wate			No X Depth (in			-					
Water Table			No Depth (in		<u> </u>	—					
Saturation P		Yes X	No Depth (in	iches): <u>0</u>		Wetl	and Hydrology	Present? Yes X No			
(includes cap		m dalide mo	nitoring well, aerial	nhotos n	revious in	nections)	if available				
Describe (Ver	oo.aca Data (siicai	gaage, me	oring well, aeriai	priotos, p	. O VIOUS III	,,	available.				
Remarks:											
Hydrology i	ndicators are A2	, A3, C3, [02, D5.								
1											

Project/Site: Millwood-Ohio Central		City/Cou	inty: Knox Co).	Sampling Date: 4/5/2022	
Applicant/Owner: AEP				State: OH	Sampling Point: UPL 070	
Investigator(s): KLV, BLG	{	Section, Township, Range: Butler Twp.				
Landform (hillslope, terrace, etc.): Flat			_ Local relief	(concave, convex, none):	none	
Slope (%): 0 Lat: 40.397198	I	Long:8	82.290144		Datum: NAD83	
Soil Map Unit Name: LvE: Loudonville silt loam, 18 to 2	25 percen	t slope	es	NWI classific	eation: N/A	
Are climatic / hydrologic conditions on the site typical for this					·	
Are Vegetation, Soil, or Hydrology si					present? Yes X No	
Are Vegetation, Soil, or Hydrology na				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map s						
Hydrophytic Vegetation Present? Yes No	, X_					
Hydric Soil Present? Yes No	, <u>X</u>		s the Sampled		V	
Wetland Hydrology Present? Yes No	, <u>X</u>	w	vithin a Wetlan	nd? Yes	No <u>X</u>	
Remarks:		lina mia				
Upland data for W070 taken within maintained tran	SMISSION	iine ng	Jiii-Oi-way.			
VEGETATION – Use scientific names of plants.						
Tree Stratum (Plot size: 30' r	Absolute		ant Indicator	Dominance Test work	sheet:	
1. Absent			ss? Status	Number of Dominant Sport That Are OBL, FACW, or		
2				Total Number of Domin	ant	
3				Species Across All Stra	ata: <u>2</u> (B)	
4				Percent of Dominant Sp		
5	0 :	- Total (That Are OBL, FACW,	or FAC: 0 (A/B)	
Sapling/Shrub Stratum (Plot size: 15' r)		- Total v	Cover	Prevalence Index wor	ksheet:	
1. Absent				Total % Cover of:	Multiply by:	
2				OBL species	x 1 =	
3					x 2 =	
4				. —	x 3 =	
5					x 4 =	
Herb Stratum (Plot size: 5' r)	0 :	= Total	Cover		x 5 = (A) (B)	
1. Dactylis glomerata	40	Yes	FACU_	Column Totals.	(A) (B)	
2. Taraxacum officinale	20	_Yes_	FACU_	Prevalence Index	= B/A =	
3. Plantago lanceolata	10	No_	FACU_	Hydrophytic Vegetation		
4				1 - Rapid Test for H	, , , ,	
5				2 - Dominance Tes		
6				3 - Prevalence Inde	Adaptations ¹ (Provide supporting	
7				data in Remarks	s or on a separate sheet)	
8				Problematic Hydro	phytic Vegetation ¹ (Explain)	
9						
		= Total	Cover		il and wetland hydrology must	
Woody Vine Stratum (Plot size: 30' r)		Total	00101	be present, unless distu	urbed or problematic.	
1. Absent				Hydrophytic		
2				Vegetation Present? Yes	s No_X_	
		= Total (Cover	riesent: Te	No	
Remarks: (Include photo numbers here or on a separate s	neet.)					
Wetland veg is not present.						

US Army Corps of Engineers

SOIL Sampling Point: UPL 070

Profile Des	cription: (Describe	to the depth	needed to docu	ment the	indicator	or confirn	n the absence of i	ndicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 4/3	100					SL	
l ———								
l								
¹ Type: C=C	oncentration, D=Dep	oletion, RM=Re	educed Matrix, M	S=Masked	d Sand Gra	ains.	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	irie Redox (A16)
ı —	pipedon (A2)			Redox (S			Dark Surfa	. ,
Black H	istic (A3)		Strippe	d Matrix (S	S6)		Iron-Mang	anese Masses (F12)
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)			ow Dark Surface (TF12)
Stratifie	d Layers (A5)		Loamy	Gleyed M	atrix (F2)		Other (Exp	olain in Remarks)
2 cm Mi	uck (A10)		Deplete	d Matrix ((F3)			
Deplete	d Below Dark Surfac	e (A11)	Redox	Dark Surfa	ace (F6)			
Thick D	ark Surface (A12)		Deplete	d Dark Su	urface (F7))	³ Indicators of I	hydrophytic vegetation and
Sandy N	Mucky Mineral (S1)		Redox	Depressio	ns (F8)		wetland hy	drology must be present,
5 cm Mi	ucky Peat or Peat (S	3)					unless dis	turbed or problematic.
Restrictive	Layer (if observed)	:						
Type: No	one		_					~
Depth (in	ches): -						Hydric Soil Pre	esent? Yes No _X_
Remarks:								
	are not present.							
Triyunc 30iis	are not present.							
HYDROLO	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of	one is required	l: check all that a	(vlac			Secondary I	ndicators (minimum of two required)
	Water (A1)		Water-Sta		/es (R9)			Soil Cracks (B6)
I —	ater Table (A2)		Aquatic Fa		, ,			e Patterns (B10)
Saturati	, ,		Aquatic Fa	,	,		_ •	ason Water Table (C2)
ı —	, ,						_ ,	(,
1	farks (B1)		Hydrogen					Burrows (C8)
I	nt Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence		,	,		or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduct	ion in Tille	d Soils (C6	6) Geomo	rphic Position (D2)
Iron De	posits (B5)		Thin Muck	Surface	(C7)		FAC-Ne	eutral Test (D5)
Inundati	on Visible on Aerial	Imagery (B7)	Gauge or	Well Data	(D9)			
Sparsel	y Vegetated Concav	e Surface (B8)) Other (Ex	plain in Re	emarks)			
Field Obser	vations:							
Surface Wat	er Present?	es No	X Depth (in	ches):				
Water Table			X Depth (in					
Saturation P	resent? Y pillary fringe)	es No	_X_ Depth (in	cnes):		_ Weti	and Hydrology Pr	resent? Yes No _X
	corded Data (stream	gauge, monit	toring well, aerial	photos, pi	revious ins	pections),	if available:	
	,		•			,		
Remarks:								
	indicators are not	nrecent						
r iyurulugy	mulcators are not	present.						

Project/Site: Millwood-Ohio Central	(City/County	: Knox Co).	Sampling Date: 4/5/2022
Applicant/Owner: AEP				State: OH	Sampling Point: Wetland 071
Investigator(s): KLV, BLG	;	Section, To	wnship, Raı	nge: Butler Twp.	
Landform (hillslope, terrace, etc.): Depression			Local relief	(concave, convex, none):	concave
Slope (%): 0 Lat: 40.398334	1	Long: <u>-82.</u>	29099		Datum: NAD83
Soil Map Unit Name: JmB: Jimtown silt loam, 2 to 6 pe	rcent slop	oes		NWI classific	eation:
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology signature.					oresent? Yes X No
Are Vegetation, Soil, or Hydrology na				eded, explain any answe	
SUMMARY OF FINDINGS – Attach site map s			,		,
Hydrophytic Vegetation Present? Yes No	·				
			e Sampled		
		with	in a Wetlan	id? Yes	No
Remarks: Wetland data for W071-PEM-CAT1 taken within materials.	aintainad	tranemics	cion lino ri	abt of way	
Wetland data for Wort-FEW-CATT taken within the	airitairieu	lialisiilis	sion line n	giit-oi-way.	
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: 30' r	Absolute			Dominance Test work	sheet:
1. Absent			Status	Number of Dominant Sp That Are OBL, FACW, o	•
2				Total Number of Domin	
3				Species Across All Stra	ta: <u>3</u> (B)
4				Percent of Dominant Sp	
5	^	= Total Cov		That Are OBL, FACW, o	or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 15' r)		- Total Cov	761	Prevalence Index wor	ksheet:
1. Absent				Total % Cover of:	Multiply by:
2					x 1 =
3					x 2 =
4					x 3 =
5	_				x 4 =
Herb Stratum (Plot size: 5' r	<u> </u>	= Total Cov	/er		x 5 = (A) (B)
1. Carex vulpinoidea	10	No	OBL	Coldinii Totals.	(A) (D)
2. Phalaris arundinacea	30	Yes	FACW_	Prevalence Index	= B/A =
3. Impatiens capensis	20	Yes	FACW_	Hydrophytic Vegetation	
4. Persicaria sagittata	20	Yes	OBL	1 - Rapid Test for F	
5. Juncus effusus	10	No	OBL	2 - Dominance Tes	
6. Agrimonia parviflora	10	<u>No</u>	FACW_	3 - Prevalence Inde	Adaptations ¹ (Provide supporting
7					s or on a separate sheet)
8				Problematic Hydror	phytic Vegetation ¹ (Explain)
9					
	100	= Total Cov			I and wetland hydrology must
Woody Vine Stratum (Plot size: 30' r)		- Total oo	101	be present, unless distu	irbed or problematic.
1. Absent				Hydrophytic	
2				Vegetation Present? Yes	s_X No
		= Total Cov	/er	Tesent: Tes	<u></u>
Remarks: (Include photo numbers here or on a separate si	,	ete			
Wetland veg is present. Passes the rapid and domi	mance les	515.			

SOIL Sampling Point: Wetland

Depth	Matrix	e to the depi	th needed to docu Red	ment tne ox Feature		or confirm	n the absence of	of indicators.)
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type ¹	_Loc ²	Texture	Remarks
0-16	10YR 4/1	 75	10YR 4/4	25	С	M/PL	SL	
					- ——			
		pletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils ³ :
Histosol	. ,			Gleyed M			_	Prairie Redox (A16)
	oipedon (A2)			Redox (S				urface (S7)
_	stic (A3)			d Matrix (,			anganese Masses (F12)
	en Sulfide (A4)				neral (F1)			nallow Dark Surface (TF12)
_	d Layers (A5) ick (A10)		X Deplete		latrix (F2)		Other (Explain in Remarks)
_	d Below Dark Surfa	ce (A11)		Dark Surf				
	ark Surface (A12)	CC (A11)	_		urface (F7)	3Indicators	of hydrophytic vegetation and
_	fucky Mineral (S1)			Depression	•	,		hydrology must be present,
	icky Peat or Peat (S3)	_	·	` ,			disturbed or problematic.
Restrictive I	Layer (if observed):						
Type: No	ne							~
Depth (inc	ches):						Hydric Soil	Present? Yes X No
Remarks:								
Meets F3.								
	CY							
HYDROLO	drology Indicators							
-							0	In dia ataun (animina and taun an anima d)
		one is requir	ed; check all that a					ry Indicators (minimum of two required)
	Water (A1)		Water-Sta		, ,			ace Soil Cracks (B6)
 	ater Table (A2)		Aquatic F	,	,		_	nage Patterns (B10)
X Saturation	, ,		True Aqua					Season Water Table (C2)
	larks (B1)		Hydrogen					fish Burrows (C8)
	nt Deposits (B2)		X Oxidized					ration Visible on Aerial Imagery (C9)
	posits (B3)		Presence					ted or Stressed Plants (D1)
	at or Crust (B4)					d Soils (C		morphic Position (D2)
	posits (B5)		Thin Muck				X FAC	-Neutral Test (D5)
_	on Visible on Aerial				' '			
	/ Vegetated Conca	ve Surface (E	38) Other (Ex	plain in R	emarks)			
Field Obser			~					
Surface Wate			No X Depth (in			—		
Water Table			No Depth (in		<u> </u>	_		
Saturation P		Yes <u>X</u> 1	No Depth (in	iches): <u>0</u>		Wetl	and Hydrology	Present? Yes X No
	oillary fringe)	m gallae mo	nitoring well, aerial	nhotoe n	revious in	enections)	if available:	
Describe Re	corded Data (Sirear	ii gauge, ino	miloring well, aerial	priotos, p	ievious in	speciforis),	ıı avallable.	
Remarks:								
	indicators are A2	. A3. С3. Г	02. D5.					
,		.,,,	_, _,,					

Project/Site: Millwood-Ohio Central	(City/Cou	ınty: Knox Co).	Sampling Date: 4/5/2022		
Applicant/Owner: AEP				State: OH	Sampling Point: UPL 071		
Investigator(s): KLV, BLG				ownship, Range: Butler Twp.			
□ 1-4				(concave, convex, none):	none		
			_	, , , , , , , , , , ,			
Soil Map Unit Name: JmB: Jimtown silt loam, 2 to 6 pe				NWI classific			
Are climatic / hydrologic conditions on the site typical for this							
					present? Yes X No		
Are Vegetation, Soil, or Hydrology si							
Are Vegetation, Soil, or Hydrology na				eded, explain any answe			
SUMMARY OF FINDINGS – Attach site map s	showing	samp	ling point l	ocations, transects	, important features, etc.		
Hydrophytic Vegetation Present? Yes No		١.		•			
Hydric Soil Present? Yes No			s the Sampled		No X		
Wetland Hydrology Present? Yes No	,		vithin a Wetlan	id? Tes	NO		
Remarks: Upland data for W071 taken within maintained tran	nemiceion	lina ria	nht-of-way				
Opiana data for Wor Ltaken within maintained trai	131111331011	iiiie iig	giit-Oi-way.				
VEGETATION – Use scientific names of plants.							
Tree Stratum (Plot size: 30' r	Absolute % Cover		ant Indicator es? Status	Dominance Test work			
Abcent		_		Number of Dominant Sp That Are OBL, FACW, of			
2				I THAT ATE OBE, FACW, C) FAO (A)		
3				Total Number of Domini Species Across All Stra	2		
4				Opecies Across Air Otra	ta (b)		
5				Percent of Dominant Sp That Are OBL, FACW, of			
	^	= Total (Cover		(775)		
Sapling/Shrub Stratum (Plot size: 15' r)				Prevalence Index worl			
1. Absent				Total % Cover of:			
2					x 1 =		
3					x 2 =		
4					x 3 =		
5				1	x 4 =		
Herb Stratum (Plot size: 5' r)	0 :	= Total	Cover	1	x 5 =		
1. Poa pratensis	40	Yes	FACU	Column Totals:	(A) (B)		
Taraxacum officinale	20	Yes	FACU	Prevalence Index	= B/A =		
3. Daucus carota	10	No	FACU	Hydrophytic Vegetation	on Indicators:		
Glechoma hederacea	20	Yes	FACU	1 - Rapid Test for H	Hydrophytic Vegetation		
5. Cardamine hirsuta	10	No	FACU_	2 - Dominance Tes			
6				3 - Prevalence Inde	ex is ≤3.0 ¹		
7				4 - Morphological A	Adaptations ¹ (Provide supporting		
8				1	s or on a separate sheet) phytic Vegetation ¹ (Explain)		
9				Problematic Hydrop	onytic vegetation (Explain)		
10				¹ Indicators of hydric soil	I and wetland hydrology must		
Woody Vine Stratum (Plot size: 30' r)	100	= Total	Cover	be present, unless distu			
Noody vine Stratum (Plot size:)							
				Hydrophytic Vegetation			
2	0	= Total (Cover	Present? Yes	s No_X_		
Remarks: (Include photo numbers here or on a separate s		, otal		I			
Wetland veg is not present.	,						

SOIL Sampling Point: UPL 071

Profile Des	cription: (Describe	to the depth r	needed to docu	ment the i	ndicator	or confirn	n the absence of i	ndicators.)
Depth	Matrix			ox Feature:			_	
(inches)	Color (moist)		Color (moist)	%	Type ¹	_Loc ² _	Texture	Remarks
0-16	10YR 4/3							
		. — —						
	oncentration, D=Dep	letion, RM=Re	duced Matrix, M	IS=Masked	Sand Gra	ains.		L=Pore Lining, M=Matrix.
Hydric Soil								Problematic Hydric Soils ³ :
Histoso	, ,			Gleyed Ma			_	rie Redox (A16)
ı —	pipedon (A2)			Redox (S5			Dark Surfa	
ı —	istic (A3)			ed Matrix (S Mucky Mir	,			anese Masses (F12) ow Dark Surface (TF12)
	en Sulfide (A4) d Layers (A5)			Gleyed Ma				ow Dark Surface (1712) plain in Remarks)
ı —	uck (A10)			ed Matrix (I			Other (Exp	main in Nemarks)
ı —	d Below Dark Surfac	e (A11)		Dark Surfa				
	ark Surface (A12)	- ()		ed Dark Su)	3Indicators of h	nydrophytic vegetation and
Sandy I	Mucky Mineral (S1)			Depression				drology must be present,
5 cm M	ucky Peat or Peat (S	3)					unless dist	turbed or problematic.
	Layer (if observed):							
Type: N	one		_				Hudria Sail Bra	sent? Yes No _X_
Depth (ir	ches):		_				nyuric Soil Pre	sent? fes No
Remarks:							•	
Hydric soil:	s are not present.							
HYDROLO	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of c	ne is required;	check all that a	pply)			Secondary In	ndicators (minimum of two required)
Surface	Water (A1)		Water-St	ained Leave	es (B9)		Surface	Soil Cracks (B6)
High W	ater Table (A2)		Aquatic F	auna (B13)		Drainag	e Patterns (B10)
Saturat	on (A3)		True Aqu	atic Plants	(B14)		Dry-Sea	ison Water Table (C2)
Water N	/larks (B1)		Hydroger	Sulfide O	dor (C1)		Crayfish	Burrows (C8)
Sedime	nt Deposits (B2)		Oxidized	Rhizosphe	res on Liv	ing Roots	(C3) Saturation	on Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduce	ed Iron (C4	1)	Stunted	or Stressed Plants (D1)
Algal M	at or Crust (B4)		Recent Ir	on Reducti	on in Tilled	d Soils (Ce	6) Geomor	phic Position (D2)
Iron De	posits (B5)		Thin Muc	k Surface ((C7)		FAC-Ne	utral Test (D5)
Inundat	ion Visible on Aerial I	magery (B7)	Gauge or	Well Data	(D9)			
Sparse	y Vegetated Concave	e Surface (B8)	Other (Ex	plain in Re	emarks)			
Field Obse	vations:							
Surface Wa	ter Present? Y	es No .	X_ Depth (i	nches):		_		
Water Table	Present? Y	es No	X_ Depth (i	nches):		_		
Saturation F	resent? Y	es No .	X Depth (i	nches):		_ Wetl	and Hydrology Pr	resent? Yes No _X
	pillary fringe)	aauaa manita	oring well corin	nhataa nr	aulaua ina	naationa\	if available:	
Describe Re	corded Data (stream	gauge, monito	oring well, aeria	priotos, pri	evious ins	pections),	ii avallable.	
Remarks:								
	indicators are not	present.						
, , , , , , ,		*-						
I								

Project/Site: Millwood-Ohio Central	(City/County	y: Knox Co).	Sampling Date: <u>4/7/2022</u>
Applicant/Owner: AEP				State: OH	Sampling Point: Wetland 072
Investigator(s): KLV, BLG	;	Section, To	ownship, Rar	nge: Howard Twp.	
Landform (hillslope, terrace, etc.): Depression			Local relief ((concave, convex, none):	concave
Soil Map Unit Name: CnD: Chili-Homewood silt loams,					ation:
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology si					resent? Yes X No
Are Vegetation, Soil, or Hydrology na				eded, explain any answer	
SUMMARY OF FINDINGS – Attach site map s				ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No	·				
		ls th	he Sampled		
Wetland Hydrology Present? Yes X No		with	hin a Wetlan	id? Yes _X	No
Remarks:	Li	-: 1 t		the end what a former.	
Wetland data for W072-PEM-CATMOD2 taken with	nin mainta	ained trar	nsmission i	ine right-of-way.	
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: 30' r	Absolute % Cover		t Indicator	Dominance Test works	
1. Absent		_		Number of Dominant Sp That Are OBL, FACW, o	
2.					, ,,
3				Total Number of Domina Species Across All Strat	
4				Percent of Dominant Sp	
5				That Are OBL, FACW, o	
Sapling/Shrub Stratum (Plot size: 15' r)	0	= Total Co	ver	Prevalence Index work	reheet:
1. Absent				Total % Cover of:	
2.					x 1 =
3.					x 2 =
4				FAC species	x 3 =
5				FACU species	x 4 =
5' r	0	= Total Co	ver	UPL species	x 5 =
Herb Stratum (Plot size: 5' r 1. Carex Iurida	10	No	OBL	Column Totals:	(A) (B)
Phalaris arundinacea	50	Yes	FACW	Prevalence Index	= B/A =
3 Impatiens capensis	20	Yes	FACW	Hydrophytic Vegetatio	
Juncus effusus	20	Yes	OBL	X 1 - Rapid Test for H	
5				2 - Dominance Test	t is >50%
6.				3 - Prevalence Inde	ex is ≤3.0 ¹
7					daptations ¹ (Provide supporting
8				l	s or on a separate sheet)
9				Problematic Hydrop	ohytic Vegetation ¹ (Explain)
10				¹ Indicators of hydric soil	and wetland hydrology must
West-Miss Charles (Blatains 30' r	100	= Total Co	ver	be present, unless distu	
Woody Vine Stratum (Plot size: 30' r) Absent					
2.			- —	Hydrophytic Vegetation	
		= Total Co	ver	Present? Yes	s_X No
Remarks: (Include photo numbers here or on a separate s					
Wetland veg is present. Passes the rapid and domi	inance tes	sts.			

SOIL Sampling Point: Wetland

Depth	mption: (Describ)	e to the dept		ox Feature		or commi	i tile absence	of mulcators.)
(inches)	Color (moist)	%	Color (moist)	<u> </u>	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/1	 80	10YR 4/4	20	С	M/PL	SL	
	oncentration, D=De	epletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil								for Problematic Hydric Soils ³ :
Histosol	. ,			Gleyed Ma			_	Prairie Redox (A16)
. —	oipedon (A2)			Redox (St				urface (S7)
ı —	stic (A3) en Sulfide (A4)			d Matrix (Mucky Mi	,		_	anganese Masses (F12) hallow Dark Surface (TF12)
	d Layers (A5)			Gleyed M				Explain in Remarks)
_	ick (A10)		X Deplete	ed Matrix ((F3)			
_	d Below Dark Surfa	ice (A11)		Dark Surfa				
Thick Da	ark Surface (A12)		Deplete	ed Dark Su	urface (F7)	³ Indicators	of hydrophytic vegetation and
. —	lucky Mineral (S1)		Redox	Depression	ons (F8)		wetland	I hydrology must be present,
	icky Peat or Peat (unless	disturbed or problematic.
	Layer (if observed	l):						
Type: No	one						Hydric Soil	Present? Yes X No
Depth (in	ches): <u>-</u>						Tiyane con	resent: res No
Remarks:							•	
Meets F3.								
HYDROLO	GY							
Wetland Hy	drology Indicators	s:						
Primary India	cators (minimum of	one is require	ed; check all that a	pply)			Seconda	ry Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ained Leav	/es (B9)		Surfa	ace Soil Cracks (B6)
1 😾	ater Table (A2)		Aquatic F		, ,			nage Patterns (B10)
X Saturation	, ,		True Aqu					Season Water Table (C2)
Water M	larks (B1)			Sulfide O				rfish Burrows (C8)
Sedimer	nt Deposits (B2)					ing Roots		ration Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduce	ed Iron (C	4)	Stun	ted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Ire	on Reduct	ion in Tille	d Soils (C6	S) X Geor	morphic Position (D2)
Iron Dep	oosits (B5)		Thin Mucl	k Surface	(C7)		X FAC	-Neutral Test (D5)
Inundati	on Visible on Aeria	I Imagery (B7) Gauge or	Well Data	a (D9)			
Sparsely	Vegetated Conca	ve Surface (B	8) Other (Ex	plain in Re	emarks)			
Field Obser	vations:							
Surface Wat			lo 🗶 Depth (ir			_		
Water Table	Present?	Yes X N	lo Depth (ir	nches): 6		_		
Saturation P	resent?	Yes X N	lo Depth (ir	nches): 0		Wetl	and Hydrology	Present? Yes X No
(includes cap								
Describe Re	corded Data (strea	m gauge, mor	nitoring well, aerial	photos, p	revious ins	spections),	ıt available:	
Remarks:	indicaters === ^.		2 DE					
Hydrology	indicators are A2	∠, A3, U3, D	∠, IJō.					

Project/Site: Millwood-Ohio Central	c	City/Count	y: Knox Co).	Sampling Date: 4/7/2022
Applicant/Owner: AEP			Sampling Point: UPL 072		
Investigator(s): KLV, BLG		Section, To	ownship, Rar	nge: Howard Twp.	
Landform (hillslope, terrace, etc.): Flat			Local relief ((concave, convex, none): _	none
Slope (%): 0 Lat: 40.404662	ι	_ong:82	2.296287		Datum: NAD83
Soil Map Unit Name: CnD: Chili-Homewood silt loams	, 12 to 18	percent	slopes	NWI classifica	ation: N/A
Are climatic / hydrologic conditions on the site typical for this					'
Are Vegetation, Soil, or Hydrology si					resent? Yes X No
Are Vegetation, Soil, or Hydrology no				eded, explain any answers	
SUMMARY OF FINDINGS – Attach site map s					
Hydrophytic Vegetation Present? Yes No	, X				
Hydric Soil Present? Yes No	\mathbf{X}	ls t	he Sampled		
Wetland Hydrology Present? Yes No		wit	hin a Wetlan	id? Yes	No <u>X</u>
Remarks:					
Upland data for W072 taken within maintained tran	nsmission	line right	t-of-way.		
$\label{eq:VEGETATION} \textbf{-} \ Use \ scientific \ names \ of \ plants.$					
Tree Stratum (Plot size: 30' r	Absolute % Cover		nt Indicator	Dominance Test works	
1. Absent				Number of Dominant Sports That Are OBL, FACW, or	
2.				Total Number of Domina	
3				Species Across All Strata	
4				Percent of Dominant Spe	eries
5	^			That Are OBL, FACW, or	
Sapling/Shrub Stratum (Plot size: 15' r)	0 :	= Total Co	over	Prevalence Index work	sheet:
1. Rosa multiflora	20	Yes	FACU	Total % Cover of:	
	20	Yes	FACU	OBL species	x 1 =
3				FACW species	x 2 =
4				FAC species	x 3 =
5					x 4 =
Herb Stratum (Plot size: 5' r)	40	= Total Co	over		x 5 =
1. Poa pratensis	40	Yes	FACU	Column Totals:	(A) (B)
2. Glechoma hederacea	20	Yes	FACU	Prevalence Index	= B/A =
3. Verbesina alternifolia	20	Yes	FACW	Hydrophytic Vegetation	n Indicators:
4				1 - Rapid Test for H	ydrophytic Vegetation
5				2 - Dominance Test	
6				3 - Prevalence Index	
7				4 - Morphological Ac	daptations ¹ (Provide supporting or on a separate sheet)
8				l .	hytic Vegetation ¹ (Explain)
9					
10		= Total Co	- ——		and wetland hydrology must
Woody Vine Stratum (Plot size: 30' r		- Total Cc	ovei .	be present, unless distur	bed or problematic.
1. Absent				Hydrophytic	
2				Vegetation Present? Yes	No_X_
Demonstra (Include abote purchase bases and		= Total Co	over	165	
Remarks: (Include photo numbers here or on a separate s Wetland veg is not present.	sneet.)				
Troducing veg is not present.					

SOIL Sampling Point: UPL 072

Profile Desc	cription: (Describe	to the depth	needed to docu	ment the	indicator	or confirm	n the absence of indic	ators.)
Depth	Matrix		Redo	x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ² _	Texture	Remarks
0-2	10YR 3/3	_ 100 _					SL	
2-16	10YR 4/3	100					SL	
l								
¹ Type: C=C	oncentration, D=Dep	oletion RM=R	educed Matrix M	S=Maske	d Sand Gra	ains	2l ocation: PI =Po	ore Lining, M=Matrix.
Hydric Soil		ololon, raw ra	ioddodd iriddin, iri	o maono	a oana ore	an 10.		blematic Hydric Soils ³ :
Histosol			Sandy	Gleved M	atrix (S4)		Coast Prairie F	-
ı —	pipedon (A2)			Redox (S			Dark Surface (, ,
Black H	istic (A3)		Strippe	d Matrix (S6)		Iron-Manganes	se Masses (F12)
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	ineral (F1)		Very Shallow [Dark Surface (TF12)
	d Layers (A5)				latrix (F2)		Other (Explain	in Remarks)
ı —	uck (A10)			d Matrix	. ,			
ı —	d Below Dark Surfac	e (A11)		Dark Surf			31	
ı —	ark Surface (A12)			ed Dark S Depressio	urface (F7)		•	ophytic vegetation and
ı — ·	Mucky Mineral (S1) ucky Peat or Peat (S	3)	Redox	Depression	ons (Fo)		-	ogy must be present, ed or problematic.
	Layer (if observed)						dilicos distarba	a or problemate.
Type: No		•						
Depth (in			_				Hydric Soil Presen	t? Yes No_X_
Remarks:	Ciles). <u>-</u>							
	are not present.							
Triyunc 30iis	are not present.							
HYDROLO								
Wetland Hy	drology Indicators							
Primary Indi	cators (minimum of	one is required	d; check all that a	oply)			Secondary Indic	ators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leav	ves (B9)		Surface Soil	Cracks (B6)
High Wa	ater Table (A2)		Aquatic Fa	auna (B13	3)		Drainage Pa	atterns (B10)
Saturati	on (A3)		True Aqua	atic Plants	s (B14)		Dry-Season	Water Table (C2)
Water M	1arks (B1)		Hydrogen	Sulfide C	dor (C1)		Crayfish Bui	rrows (C8)
Sedime	nt Deposits (B2)		Oxidized I	Rhizosph	eres on Livi	ing Roots	(C3) Saturation V	isible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduc	ed Iron (C4	ł)	Stunted or S	Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduct	tion in Tilled	d Soils (C6	Geomorphic	Position (D2)
Iron Dep	posits (B5)		Thin Muck	Surface	(C7)		FAC-Neutra	I Test (D5)
_	on Visible on Aerial	. , ,	_ •	Well Data	a (D9)			
	y Vegetated Concav	e Surface (B8	Other (Ex	plain in R	emarks)			
Field Obser								
Surface Wat	er Present?	′es No	X Depth (in	ches):		_		
Water Table	Present?	es No	X_ Depth (in	ches):		_		
Saturation P	resent?	es No	X_ Depth (in	ches):		_ Wetl	and Hydrology Prese	nt? Yes No _X
	pillary fringe)							
Describe Re	corded Data (strean	n gauge, moni	toring well, aerial	pnotos, p	revious ins	pections),	ıt avallable:	
Remarks:								
Hydrology	indicators are not	present.						

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Millwood-Ohio Central	City	/County: Knox Co.	Sampling Date: 4/7/2022
Applicant/Owner: AEP		State: OH	Sampling Point: Wetland 073
Investigator(s): KLV, BLG	Sei	ction, Township, Range: HowardTwp.	<u> </u>
Landform (hillslope terrace etc.): D	epression Local L	relief (concave convex none). Concave	Slone (%): <1
Subregion (LRR or MLRA): LRR-N	Lat. 40.419674	relief (concave, convex, none): Concave Long: -82.309911	Datum: NAD83
Soil Map Unit Name: JmA: Jimtown s	silt loam, 0 to 2 percent slopes	NWI classif	ication: N/A
		Yes No (If no, explain in	
		rurbed? Are "Normal Circumstances"	
	or Hydrologynaturally proble		
SUMMARY OF FINDINGS –	Attach site map showing sa	impling point locations, transect	s, important features, etc.
Hydrophytic Vegetation Present?	Yes No	1	
Hydric Soil Present?	Yes No	Is the Sampled Area within a Wetland? Yes	No
Wetland Hydrology Present?	Yes No	Willing Welland.	
Remarks:			
	PSS-CATMOD2 taken w	ithin maintained transmission	line right-of-way.
HYDROLOGY			
Wetland Hydrology Indicators:	s is required, shook all that apply)		cators (minimum of two required)
Primary Indicators (minimum of one		Surface So	
Surface Water (A1) High Water Table (A2)	True Aquatic Plant Hydrogen Sulfide (egetated Concave Surface (B8) atterns (B10)
Saturation (A3)		eres on Living Roots (C3) Moss Trim	
Water Marks (B1)	Presence of Reduce		n Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduc		
Drift Deposits (B3)	Thin Muck Surface	(C7) Saturation `	Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in R		Stressed Plants (D1)
Iron Deposits (B5)			c Position (D2)
Inundation Visible on Aerial Im	agery (B7)	Shallow Aq	
Water-Stained Leaves (B9)			raphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutra	al Test (D5)
Field Observations:			
	S No Depth (inches):		
	S $\stackrel{\checkmark}{\sim}$ No ${\sim}$ Depth (inches): $\frac{6}{3}$ $\stackrel{\checkmark}{\sim}$ No ${\sim}$ Depth (inches): $\frac{0}{3}$	Wetland Hydrology Prese	ent? Yes No
(includes capillary fringe)			ent? res No
, , ,	auge, monitoring well, aerial photos, p	revious inspections), if available:	
N/A			
Remarks:			
Hydrology indicators are	e A2, A3, C3, D2, D5.		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Wetland 073

- 30'r		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30' r)	% Cover	Species?	Status	Number of Dominant Species
1. Absent				That Are OBL, FACW, or FAC: $\frac{7}{}$ (A)
2				
				Total Number of Dominant
3				Species Across All Strata: ⁷ (B)
4				
				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: $\frac{100}{}$ (A/B)
6				
7				Prevalence Index worksheet:
				Total % Cover of: Multiply by:
8				
	0	= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' r)				FACW species x 2 =
1. Salix nigra	20	Yes	OBL	FAC species x 3 =
		V	EAC	
2. Acer negundo	20	Yes	FAC	FACU species x 4 =
3. Fraxinus pennsylvanica	20	Yes	FACW	UPL species x 5 =
4. Sambucus nigra	20	Yes	FAC	
4. <u></u>				Column Totals: (A) (B)
5				
				Prevalence Index = B/A =
6		-		Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
10.				
	80	= Total Cov	or	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5' r)		- Total Cov	EI	data in Remarks or on a separate sheet)
	40	V	EA C) 4/	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Phalaris arundinacea	40	Yes	FACW	<u> </u>
2. Symplocarpus foetidus	20	Yes	OBL	
3. Scirpus cyperinus	20	Yes	FACW	¹ Indicators of hydric soil and wetland hydrology must
3. <u></u>				be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
				Definitions of Four Vegetation Strata.
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7				height.
				neight.
8				Sapling/Shrub – Woody plants, excluding vines, less
				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
9				and o m. Berrand groater than e.20 it (1 m) tail.
				. ,
9				Herb – All herbaceous (non-woody) plants, regardless
9	- <u></u>			. ,
9				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
9		= Total Cov		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in
9				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
9				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation
9	80 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation

SOIL Sampling Point: Wetland 073

Profile Desc	ription: (Describe	to the de	pth needed to docu	ment the	indicator	or confirm	n the absence	of indicators.)		
Depth	Matrix			ox Feature	1		_			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-16	10YR 4/1	80	10YR 4/4	20	С	M/PL	SL			
	-							-		
	-					·				
				_						
							-			
			-	-	-	. ———	-			
					_					
¹ Type: C=Ce	oncentration, D=Dep	letion, RM	I=Reduced Matrix, M	S=Maske	d Sand Gr	ains.	² Location: PL	=Pore Lining, M=Matrix.		
Hydric Soil		•	,					tors for Problematic Hydric Soils ³ :		
Histosol	(A1)		Dark Surfac	e (S7)			2	cm Muck (A10) (MLRA 147)		
Histic Ep	pipedon (A2)		Polyvalue B	elow Surfa	ace (S8) (I	MLRA 147	, 148) C	oast Prairie Redox (A16)		
Black Hi	stic (A3)		Thin Dark S			147, 148)		(MLRA 147, 148)		
	en Sulfide (A4)		Loamy Gley		(F2)		Pi	iedmont Floodplain Soils (F19)		
	d Layers (A5)		Pepleted Ma					(MLRA 136, 147)		
	ick (A10) (LRR N)	(8.4.4)	Redox Dark					(ery Shallow Dark Surface (TF12)		
	d Below Dark Surfac ark Surface (A12)	e (A11)	Depleted Da Redox Depr				0	Other (Explain in Remarks)		
	fik Sunace (A12) lucky Mineral (S1) (I	RR N	Iron-Mangar			(I RR N				
	147, 148)	LIXIX IV,	MLRA 1		563 (1 12) ((LIXIX IV,				
	Gleyed Matrix (S4)		Umbric Surf		(MLRA 1	36, 122)	³ Indi	cators of hydrophytic vegetation and		
	Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be presen							
-	Matrix (S6)		Red Parent					nless disturbed or problematic.		
Restrictive I	Layer (if observed)	:						-		
Type: Nor	ne									
Depth (in	ches):						Hydric Soil	Present? Yes No		
Remarks:	· · · · · · · · · · · · · · · · · · ·									
Meets F3	2									
INICCIS I)									

Project/Site: Millwood-Ohio Central	(City/County: Knox Co Sampling Date: 4/7						
Applicant/Owner: AEP			Sampling Point: UPL 073					
Investigator(s): KLV, BLG	;	Section, Township, Range: Howard Twp.						
Landform (hillslope, terrace, etc.): Flat		Local relief (concave, convex, none): none						
Soil Map Unit Name: Ho: Holly silt loam, frequently floor				NWI classific				
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology si					present? Yes X No			
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)								
SUMMARY OF FINDINGS – Attach site map s	showing	sampli	ng point l	ocations, transects	, important features, etc.			
Hydrophytic Vegetation Present? Yes No	, X							
Hydric Soil Present? Yes No	× ×		the Sampled		🗸			
Wetland Hydrology Present? Yes No	<u> </u>	wit	thin a Wetlar	nd? Yes	No <u>X</u> _			
Remarks:	amiaaiaa	lina riah	t of way					
Upland data for W073 taken within maintained tran	ismission	line righ	it-oi-way.					
$\label{eq:VEGETATION} \textbf{-} \ Use \ scientific \ names \ of \ plants.$								
- 30'r	Absolute		nt Indicator	Dominance Test work	sheet:			
Abcent			? Status	Number of Dominant S				
"				That Are OBL, FACW,	or FAC: 1 (A)			
2				Total Number of Domin	4			
3				Species Across All Stra	ata: 4 (B)			
4 5				Percent of Dominant Sp				
0	^	= Total C	over	That Are OBL, FACW,	or FAC: <u>25</u> (A/B)			
Sapling/Shrub Stratum (Plot size: 15' r)		- Total O	0401	Prevalence Index wor	ksheet:			
Rosa multiflora	10	Yes	_ FACU_	Total % Cover of:	Multiply by:			
2. Lonicera maackii	20	Yes	_ FACU_	OBL species	x 1 =			
3				FACW species	x 2 =			
4					x 3 =			
5					x 4 =			
Herb Stratum (Plot size: 5' r)	30	= Total C	over		x 5 =			
1. Phalaris arundinacea	30	Yes	FACW	Column Totals:	(A) (B)			
2. Lamium purpureum	10	No	FACU	Prevalence Index	= B/A =			
Claytonia virginica	10	No	FAC	Hydrophytic Vegetation				
Allium canadense	15	Yes	FACU	1 - Rapid Test for H	Hydrophytic Vegetation			
5				2 - Dominance Tes	st is >50%			
6				3 - Prevalence Inde	ex is ≤3.0 ¹			
7				4 - Morphological A	Adaptations ¹ (Provide supporting			
8					s or on a separate sheet)			
9				Problematic Hydrol	phytic Vegetation ¹ (Explain)			
10				10.00.00.00.00.00.00.00.00.00.00.00.00.0				
30' r	65	= Total C	over	be present, unless distu	il and wetland hydrology must urbed or problematic.			
Woody Vine Stratum (Plot size: 30' r) Absent				,				
`` 				Hydrophytic				
2	0			Vegetation Present? Yes	s No_X_			
Remarks: (Include photo numbers here or on a separate s		= Total C	over					
Wetland veg is not present.								
The state of the processing								

US Army Corps of Engineers

SOIL Sampling Point: UPL 073

Profile Des	cription: (Describe	to the depth	needed to docu	ment the i	ndicator	or confirm	n the absence of ir	ndicators.)			
Depth (in all as)	Matrix			ox Feature		12	Tandona	Damada			
(inches) 0-2	Color (moist) 10YR 3/3		Color (moist)	%	Type ¹	_Loc ² _	Texture SL	Remarks			
l -											
2-16	10YR 4/4	_ 100 _									
								_			
l ———											
				_							
¹ Type: C=C	concentration, D=Dep	oletion, RM=R	Reduced Matrix, M	IS=Masked	Sand Gra	ains.	² Location: PL	=Pore Lining, M=Matrix.			
	Indicators:		•					Problematic Hydric Soils³:			
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prair	ie Redox (A16)			
Histic E	pipedon (A2)		Sandy	Redox (S5	i)		Dark Surface	ce (S7)			
ı —	listic (A3)		Strippe	ed Matrix (S	86)			nese Masses (F12)			
	en Sulfide (A4)			Mucky Mir				ow Dark Surface (TF12)			
ı —	d Layers (A5)			Gleyed Ma			Other (Expl	lain in Remarks)			
ı —	uck (A10)	- (Δ14)		ed Matrix (
ı —	ed Below Dark Surfac ark Surface (A12)	e (ATT)		Dark Surfa ed Dark Su			3Indicators of h	ydrophytic vegetation and			
ı —	Mucky Mineral (S1)			Depressio	, ,			drology must be present,			
	ucky Peat or Peat (S	3)		Doprocoio	110 (1 0)		•	urbed or problematic.			
	Layer (if observed)	-									
Type: N	one							~			
	nches):		_				Hydric Soil Pres	sent? Yes No _X_			
Remarks:											
	s are not present.										
,											
HYDROLO	OGY										
Wetland Hy	drology Indicators										
Primary Ind	cators (minimum of	one is require	d; check all that a	pply)			Secondary In	dicators (minimum of two required)			
Surface	Water (A1)		Water-St	ained Leav	es (B9)		Surface	Soil Cracks (B6)			
I —	ater Table (A2)			auna (B13	, ,			e Patterns (B10)			
ı —	ion (A3)			atic Plants	,		Dry-Season Water Table (C2)				
Water N	Marks (B1)		Hydroger	Sulfide O	dor (C1)		Crayfish	Burrows (C8)			
I —	ent Deposits (B2)		_ , ,	Rhizosphe	, ,	ing Roots		on Visible on Aerial Imagery (C9)			
_	posits (B3)		Presence			-		or Stressed Plants (D1)			
Algal M	at or Crust (B4)		Recent Ir	on Reducti	on in Tilled	d Soils (C6		ohic Position (D2)			
Iron De	posits (B5)		Thin Muc	k Surface ((C7)		FAC-Net	utral Test (D5)			
Inundat	ion Visible on Aerial	Imagery (B7)	Gauge or	Well Data	(D9)		_				
Sparse	y Vegetated Concav	e Surface (B8	3) Other (Ex	plain in Re	marks)						
Field Obse											
Surface Wa	ter Present?	'es No	Depth (in	nches):		_					
Water Table			Depth (in								
Saturation F			Depth (in				and Hydrology Pre	esent? Yes No _X_			
(includes ca	pillary fringe)										
Describe Re	ecorded Data (stream	n gauge, mon	itoring well, aerial	photos, pr	evious ins	pections),	if available:				
D											
Remarks:	indicators are not	nrecent									
i iyarology	mulcators are 110t	ρισσειί.									

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Millwood-Ohio Central		City/County: Kno	ox Co.		Sampling Date: 4/7/2022
Applicant/Owner: AEP				State: OH	Sampling Point: Wetland 074
Investigator(s): KLV, BLG		in Range. Ho		<u> </u>	
Landform (hillslope, terrace, etc.): Depre	ession	Local relief (concav	e convex nor	ne). Concave	Slone (%): <1
Subregion (LRR or MLRA): LRR-N	Lat. 40.4213	337	Long82.3	311406	Olope (70)
Soil Map Unit Name: Ho: Holly silt loam, f	requently flooded		_ Long	NWI classific	cation: N/A
Are climatic / hydrologic conditions on the	site typical for this tim	ne of year? Yes	No	(If no, explain in R	Remarks.)
Are Vegetation, Soil, or H	ydrologysigni	ficantly disturbed?	Are "Normal	Circumstances"	present? Yes 🖊 No
Are Vegetation, Soil, or H				explain any answe	
SUMMARY OF FINDINGS – Att	ach site map sho	owing sampling po	oint location	ons, transects	s, important features, etc.
Hydrophytic Vegetation Present?	Yes No				
Hydric Soil Present?	Yes No	is the Sa	mpled Area Wetland?	Yes 🗸	No
Wetland Hydrology Present?			rvetiana:	163	
Remarks:		1			
Wetland data for W074-PE HYDROLOGY	IVI-OATIVIOD2	aren willim mai	ntamed ti	ansmission	iiile fight-of-way.
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is re	equired: check all that	apply)		Surface Soil	
Surface Water (A1)		uatic Plants (B14)			getated Concave Surface (B8)
✓ High Water Table (A2)		en Sulfide Odor (C1)		Drainage Pa	
Saturation (A3)		d Rhizospheres on Living	g Roots (C3)	Moss Trim L	
Water Marks (B1)		e of Reduced Iron (C4)	, ,		Water Table (C2)
Sediment Deposits (B2)	Recent	ron Reduction in Tilled	Soils (C6)	Crayfish Bur	rows (C8)
Drift Deposits (B3)	Thin Mu	ck Surface (C7)		Saturation V	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (E	explain in Remarks)			stressed Plants (D1)
Iron Deposits (B5)					Position (D2)
Inundation Visible on Aerial Imager	y (B7)			Shallow Aqu	
Water-Stained Leaves (B9)				✓ FAC-Neutral	aphic Relief (D4)
Aquatic Fauna (B13) Field Observations:			T	FAC-INEUTIA	r rest (D5)
	No 🔽 Depth (inches):			
	No Depth		•		
	No Depth (Wetland H	lydrology Preser	nt? Yes V No
(includes capillary fringe)					100
Describe Recorded Data (stream gauge N/A	, monitoring well, aeria	al photos, previous inspe	ections), if ava	ilable:	
Remarks:					
Hydrology indicators are A	2. A3. C3. D2.	D5.			
, , , , , , , , , , , , , , , , , , , ,	, -,, ,				

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: Wetland 074

Status Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 3 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence Index worksheet: 100 (A/B) DBL species Index Worksheet:
Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: 100
Species Across All Strata: 3 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence Index worksheet:
Species Across All Strata: 3 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence Index worksheet:
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species x 1 = FACW species x 2 = FACW species x 3 = FACW species x 4 = FACW species x 5 = FACW UPL species x 5 = FACW U
That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of:
Prevalence Index worksheet: Total % Cover of: Multiply by:
Total % Cover of: Multiply by: OBL species x 1 = FACW species x 3 = FACU species x 4 = UPL species x 5 = Column Totals: (A) (B) Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation 1 (Explain) ACCW PACW TACW TACW TOTAL TOTA
OBL species
OBL species
FACW species x 2 =
FAC species x 3 =
FACU species x 4 =
UPL species x 5 =
Column Totals:
Prevalence Index = B/A =
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) FACW FACW 1
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) FACW FACW 1
1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ACW ACW BBL Definitions of Four Vegetation Strata:
2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) FACW ACW DBL Definitions of Four Vegetation Strata:
3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) FACW FACW DBL 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) ——————————————————————————————————
data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation¹ (Explain) ACW ACW DBL 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
Problematic Hydrophytic Vegetation¹ (Explain) FACW ACW DBL Definitions of Four Vegetation Strata:
FACW PACW DBL 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
DBL 1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Description of Four Vegetation Strata:
DBL 1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Description of Four Vegetation Strata:
be present, unless disturbed or problematic. Del Definitions of Four Vegetation Strata:
Definitions of Four Vegetation Strata:
Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
height.
Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless
of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in
height.
Hydrophytic
Vegetation
Present? Yes No
•

SOIL Sampling Point: Wetland 074

Profile Desc	cription: (Describe	to the dep	th needed to docur	nent the i	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix (assist)	0/		x Feature		1 2	T 4	Demonto
(inches) 0-16	Color (moist) 10YR 4/1	<u> %</u> 80	Color (moist) 10YR 4/6	<u>%</u> 20	Type ¹ C	Loc ² M/PL	Texture SL	Remarks
0-10	10110 4/1		1011 4/0	- 20		IVI/FL	<u> </u>	
					·			
1- 0.0						· .	2, ,, ,,	<u> </u>
Hydric Soil		oletion, RIVI	=Reduced Matrix, M	S=Masked	Sand Gi	ains.		_=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(97)				cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		re (S8) (I	MI RΔ 147		Coast Prairie Redox (A16)
	istic (A3)		Thin Dark Su				0	(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			, -,	P	Piedmont Floodplain Soils (F19)
Stratified	d Layers (A5)		Depleted Ma	trix (F3)				(MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark		•			/ery Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Da				<u> </u>	Other (Explain in Remarks)
	ark Surface (A12) /lucky Mineral (S1) (I DD N	Redox Depre Iron-Mangan			(I DD N		
	A 147, 148)	LKK N,	MLRA 13		es (F12)	LKK N,		
	Gleyed Matrix (S4)		Umbric Surfa		(MLRA 1	36. 122)	³ Ind	licators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					vetland hydrology must be present,
-	Matrix (S6)		Red Parent N					nless disturbed or problematic.
	Layer (if observed)	:						
Type: No	ne							
Depth (in	ches): <u>-</u>		<u></u>				Hydric Soil	Present? Yes No
Remarks:							•	
Meets F	3							

Project/Site: Millwood-Ohio Central	City/County: Knox Co. Sampling Date: 4/7						
Applicant/Owner: AEP					Sampling Point: UPL 074		
Investigator(s): KLV, BLG	:	Section, Township, Range: Howard Twp.					
Landform (hillslope, terrace, etc.): Flat		Local relief (concave, convex, none): none					
Slope (%): 0 Lat: 40.421865		Long: _	-82.3	311842		Datum: NAD83	
Soil Map Unit Name: BsF: Brownsville-Westmoreland	complex,	25 to	40 p	ercent slo	opes NWI classific	ation: N/A	
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Ye	es_X	No_	(If no, explain in Re	emarks.)	
Are Vegetation, Soil, or Hydrology si	gnificantly	disturb	ed?	Are "	Normal Circumstances" p	resent? Yes X No	
Are Vegetation, Soil, or Hydrology na					eded, explain any answei	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map s				g point le	ocations, transects	, important features, etc.	
Hydrophytic Vegetation Present? Yes No	, X						
Hydric Soil Present? Yes No	X			Sampled		~	
Wetland Hydrology Present? Yes No	<u> X</u>		withi	n a Wetlan	nd? Yes	No <u>X</u> _	
Remarks: Upland data for W074 taken within maintained trar	emission	lina ri	iaht-a	of-way			
Opiana data for Wor4 taken within maintained trai	131111331011	III IC I	igi it-c	Ji-way.			
VEGETATION – Use scientific names of plants.							
	Absolute	Domi	inant	Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size: 30' r 1. Absent	% Cover			Status	Number of Dominant Sp That Are OBL, FACW, o		
2					Total Number of Domina	ant	
3					Species Across All Stra	0	
4					Percent of Dominant Sp	pecies	
5					That Are OBL, FACW, o	or FAC: 0 (A/B)	
Sapling/Shrub Stratum (Plot size: 15' r)	0	= rota	II Cov	er	Prevalence Index work	ksheet:	
1. Absent					Total % Cover of:	Multiply by:	
2					OBL species	x 1 =	
3						x 2 =	
4						x 3 =	
5						x 4 =	
Herb Stratum (Plot size: 5' r)	0	= Tota	I Cov	er		x 5 = (A) (B)	
1. Cardamine hirsuta	10	Yes		FACU	Coldilli Totals.	(A) (B)	
2. Lamium purpureum	20	_Yes		FACU_	Prevalence Index	= B/A =	
3					Hydrophytic Vegetation		
4					1 - Rapid Test for H		
5					2 - Dominance Tes		
6					3 - Prevalence Inde	ex is ≤3.0° Adaptations¹ (Provide supporting	
7					data in Remarks	s or on a separate sheet)	
8					Problematic Hydror	ohytic Vegetation¹ (Explain)	
9							
	30	= Tota	l Cov	er	¹ Indicators of hydric soil be present, unless distu	l and wetland hydrology must	
Woody Vine Stratum (Plot size: 30' r)					be present, unless distu	ribed or problematic.	
1. Absent					Hydrophytic		
2	0				Vegetation Present? Yes	s No_X_	
Remarks: (Include photo numbers here or on a separate s		= Tota	I Cov	er			
Wetland veg is not present.	nieet.)						

US Army Corps of Engineers

SOIL Sampling Point: UPL 074

Profile Des	cription: (Describe	to the depth	needed to docu	ment the	indicator	or confirn	n the absence of i	ndicators.)			
Depth	Matrix		Redo	x Feature	es						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-16	10YR 4/3	100					SL				
l ———											
l											
¹ Type: C=C	oncentration, D=Dep	oletion, RM=Re	educed Matrix, M	S=Masked	d Sand Gra	ains.	² Location: P	L=Pore Lining, M=Matrix.			
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :			
Histosol	(A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	irie Redox (A16)			
ı —	pipedon (A2)			Redox (S			Dark Surfa	. ,			
Black H	istic (A3)		Strippe	d Matrix (S	S6)		Iron-Mang	anese Masses (F12)			
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)			ow Dark Surface (TF12)			
Stratifie	d Layers (A5)		Loamy	Gleyed M	atrix (F2)		Other (Exp	olain in Remarks)			
2 cm Mi	uck (A10)		Deplete	d Matrix ((F3)						
Deplete	d Below Dark Surfac	e (A11)	Redox	Dark Surfa	ace (F6)						
Thick D	ark Surface (A12)		Deplete	d Dark Su	urface (F7))	³ Indicators of I	hydrophytic vegetation and			
Sandy N	Mucky Mineral (S1)		Redox	Depressio	ns (F8)		wetland hy	drology must be present,			
5 cm Mi	ucky Peat or Peat (S	3)					unless dis	turbed or problematic.			
Restrictive	Layer (if observed)	:									
Type: No	one		_					~			
Depth (in	ches): -						Hydric Soil Pre	esent? Yes No _X_			
Remarks:											
	are not present.										
Triyunc 30iis	are not present.										
HYDROLO	GY										
Wetland Hy	drology Indicators:										
Primary Indi	cators (minimum of	one is required	l: check all that a	(vlac			Secondary I	ndicators (minimum of two required)			
	Water (A1)		Water-Sta		/es (R9)			Soil Cracks (B6)			
I —	ater Table (A2)		Aquatic Fa		, ,			, ,			
Saturati	, ,		Aquatic Fa	,	,		Drainage Patterns (B10) Dry-Season Water Table (C2)				
ı —	, ,						_ ,	(,			
1	farks (B1)		Hydrogen					Burrows (C8)			
I	nt Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)			
I	posits (B3)		Presence		,	,		or Stressed Plants (D1)			
Algal Ma	at or Crust (B4)		Recent Iro	n Reduct	ion in Tille	d Soils (C6	6) Geomo	rphic Position (D2)			
Iron De	posits (B5)		Thin Muck	Surface	(C7)		FAC-Ne	eutral Test (D5)			
Inundati	on Visible on Aerial	Imagery (B7)	Gauge or	Well Data	(D9)						
Sparsel	y Vegetated Concav	e Surface (B8)) Other (Ex	plain in Re	emarks)						
Field Obser	vations:										
Surface Wat	er Present?	es No	X Depth (in	ches):							
Water Table			X Depth (in								
Saturation P	resent? Y pillary fringe)	es No	_X_ Depth (in	cnes):		_ Weti	and Hydrology Pr	resent? Yes No _X			
	corded Data (stream	gauge, monit	toring well, aerial	photos, pi	revious ins	pections),	if available:				
	,		•			,					
Remarks:											
	indicators are not	nrecent									
r iyurulugy	mulcators are not	present.									

APPENDIX C Ohio Rapid Assessment Method for Wetlands Data Forms



Background Information

Name: Kristen Vonderwish		
Date: 3/31/2022		
Affiliation:		
GAI Consultants, Inc. Address:		
	0, North Canton, OH 44720	
Phone Number: 234.203.0772		
e-mail address:		
k.vonderwish@gaiconsultar		
Name of Wetland:	W063	
Vegetation Communit(ies): PEM		
HGM Class(es): Depressional		
1 -	de map, address, north arrow, landmarks, distances, roads, etc.	
	attached project location map.	
Lat/Long or UTM Coordinate	40.345855, -82.248865	
USGS Quad Name	Walhonding, OH	
County	Knox	
Township	Butler Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	3/31/2022	
National Wetland Inventory M	^{1ap} X	
Ohio Wetland Inventory Map	X	
Soil Survey	HwB: Homewood silt loam, 2 to 6 percent slopes	
Delineation report/map	X	

Name of Wetland:

W063

Wetland Size (acres, hectares):

0.305215 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.







Comments, Narrative Discussion, Justification of Category Changes:

Final score: 35

Category:

Modified 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Mi	llwood-Ohio	Central •	Rater(s): Kristen Vonderwish		Date: 3/31/2022
1	1	Metric 1. Wetland Ar	ea (size).		
max 6 pts.	subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20. 10 to <25 acres (4 to <10.1ha) 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.2h X 0.1 to <0.3 acres (0.04 to <0. <0.1 acres (0.04ha) (0 pts)	2ha) (5 pts) a) (4 pts) 3 pts) na) (2pts)		
13	14	Metric 2. Upland buf	fers and surround	ing land use.	
max 14 pts.	subtotal	MEDIUM. Buffers average 29 NARROW. Buffers average 29 VERY NARROW. Buffers average 30 VERY NARROW. Buffers average 30 VERY LOW. 2nd growth or compared to 30 X LOW. Old field (>10 years), so 30 MODERATELY HIGH. Resident	(164ft) or more around wetland per 5m to <50m (82 to <164ft) around 10m to <25m (32ft to <82ft) arour erage <10m (<32ft) around wetlar	erimeter (7) wetland perimeter (4) ad wetland perimeter (1) ad perimeter (0) verage. dlife area, etc. (7) forest. (5) ervation tillage, new fallo	w field. (3)
12	26	Metric 3. Hydrology.			
max 30 pts.	subtotal	3a. Sources of Water. Score all that ap High pH groundwater (5) Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface Perennial surface water (lake 3c. Maximum water depth. Select only	water (3) or stream) (5) 3d.	Part of wetland/up Part of riparian or Duration inundation/satu	• • •
		>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2 X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic	2) regime. Score one or double che	Regularly inundat X Seasonally inund Seasonally satura ck and average.	ed/saturated (3)
		None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturbances observed ditch tile dike weir stormwater input	point source (non filling/grading road bed/RR trac dredging other	-
10	36	Metric 4. Habitat Alte	eration and Develo	pment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	or double check and average.		
		4b. Habitat development. Select only of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	one and assign score.		
		X Poor (1) 4c. Habitat alteration. Score one or do			
s	36	None or none apparent (9) X Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed wowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal
	•	<u>ц</u> ary 2001 jjm			

Site: Mil	lwood-Ohio	Central	Rater	(s): Kristen Vo	nderwish	Date: 3/31/2022
SU	36 ubtotal first pa	age				
0	36	Ť	ric 5. Special Wetlan	ıds.		
max 10 pts.	subtotal		Il 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 three Significant migratory songbird/water Category 1 Wetland. See Question	restricted hydronings) (10) eatened or end fowl habitat or 1 Qualitative F	angered species (10) r usage (10) Rating (-10)	
-1	35	Metr	ric 6. Plant commun	ities, int	erspersion, microto	opography.
max 20 pts.	subtotal	6a. Wet	land Vegetation Communities.	<u>Vegetation</u>	Community Cover Scale	
		Score al	present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	471 acres) contiguous area
		0	Aquatic bed	1	Present and either comprises sm	
		2	Emergent		vegetation and is of moderate	
		0	Shrub		significant part but is of low qua	•
		0	Forest	2	Present and either comprises sig	
		0	Mudflats		vegetation and is of moderate of	quality or comprises a small
		0	Open water Other	3	part and is of high quality Present and comprises significan	at part, or more, of wetland's
		6h hori	zontal (plan view) Interspersion.	3	vegetation and is of high quality	
		Select o			vegetation and is or high quality	y
		00.000.0	∏High (5)	Narrative D	Description of Vegetation Quality	
			Moderately high(4)	low	Low spp diversity and/or predom	inance of nonnative or
			Moderate (3)		disturbance tolerant native spe	
			Moderately low (2)	mod	Native spp are dominant compor	
			Low (1)		although nonnative and/or distu	urbance tolerant native spp
		Х	None (0)		can also be present, and speci-	es diversity moderate to
		6c. Cov	erage of invasive plants. Refer		moderately high, but generally	w/o presence of rare
			1 ORAM long form for list. Add		threatened or endangered spp	
		or deduc	ct points for coverage	high	A predominance of native specie	
			Extensive >75% cover (-5)		and/or disturbance tolerant nat	
		X	Moderate 25-75% cover (-3)		absent, and high spp diversity	•
			Sparse 5-25% cover (-1)		the presence of rare, threatene	d, or endangered spp
			Nearly absent <5% cover (0)	NA 161 4	d O Water Olars On allton	
			Absent (1)		d Open Water Class Quality	
			rotopography.	0	Absent <0.1ha (0.247 acres)	
		Score ai	I present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 a	
		<u>U</u>	Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	3	Moderate 1 to <4ha (2.47 to 9.88	s acres)
		<u>V</u>	Standing dead >25cm (10in) dbh		High 4ha (9.88 acres) or more	
		0	Amphibian breeding pools	Microtopoo	graphy Cover Scale	
		U	Transminian preeding pools	0	Absent	
				1	Present very small amounts or if	more common
				•	of marginal quality	
				2	Present in moderate amounts, bu	ut not of highest
				_	quality or in small amounts of h	<u> </u>
				3	Present in moderate or greater a	
]			-	and of highest quality	
35				-	<u> </u>	
i i						

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
Ü	Metric 2. Buffers and surrounding land use	13	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-1	
	TOTAL SCORE	35	Category based on score breakpoints Mod 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category				
Choose one	Category 1	(Category 2)	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish		
Date: 3/31/2022		
Affiliation:		
GAI Consultants, Inc. Address:		
5399 Lauby Road, Suite 12	20, North Canton, OH 44720	
Phone Number: 234.203.0772		
e-mail address: k.vonderwish@gaiconsulta	nto com	
Name of Wetland:		
Vegetation Communit(ies):		
PEM		
HGM Class(es): Depressional		
	de map, address, north arrow, landmarks, distances, roads, etc.	
Please refer to the	attached project location map.	
Lat/Long or UTM Coordinate	40.346679, -82.249616	
USGS Quad Name	Walhonding, OH	
County		
Township	Knox	
•	Butler Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	3/31/2022	
National Wetland Inventory N	^{Лар} X	
Ohio Wetland Inventory Map	X	
Soil Survey	HwB: Homewood silt loam, 2 to 6 percent slopes	
Delineation report/map	Y	

Name of Wetland:

W064

Wetland Size (acres, hectares):

0.072913 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 41

Category:

Modified 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible	Go to Question 9c
		Category 3 status	
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an	Go to Question 9d	Go to Question 10
	"estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth		
	wetlands, or those dominated by submersed aquatic vegetation.		
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant native species can also be present?	Wetland is a Category	Go to Question 9e
		3 wetland	
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES	NO
	l l l l l l l l l l l l l l l l l l l	Wetland should be	Go to Question 10
		evaluated for possible Category 3 status	
		Category 5 status	
		Go to Question 10	\sim
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be	YES	(NO)
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within	Wetland is a Category 3 wetland.	Go to Question 11
	several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union	Wetland should be	Complete
	Counties), Sandusky Plains (Wyandot, Crawford, and Marion	evaluated for possible	Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,	Category 3 status	Rating
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Mi	llwood-Ohio	Central Rater(s): Kristen Vonderwish	Date: 3/31/2022
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score. 50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) X	
13	14	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check. X WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. X VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
15	29	Metric 3. Hydrology.	
max 30 pts.	subtotal	X Precipitation (1) X Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3d. Duration inundation/sate stream) (5) 3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X Seasonally inundation/sate stream) (5) X Seasonally inundation/sate stream) (5) X Seasonally inundation/sate stream) (7) X Seasonally inundation/sate stream) (8) X Seasonally inundation/sate stream) (9) X Seasonally inundation/sate stream) (12) X Seasonally inundation/sate stream (12) X Recovered (7) X Rec	in (1) lake and other human use (1) pland (e.g. forest), complex (1) pland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1)
10	39	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) X 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) X Poor (1) 4c. Habitat alteration. Score one or double check and average. None or none apparent (9) X Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Recent or no recovery (1) An every debt is removal. None or none apparent (9) Selective cutting Woody debt is removal.	
Si	39 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichme	nt

last revised 1 February 2001 jjm

Citorrai		Deterdeland		Deterries
Site: Millwood-	Ohio Central	Rater(s): Kristen Vond	derwish	Date: 3/31/2022
39 subtotal fil				
0 39	Metric 5. Special V	Vetlands.		
max 10 pts. subto	Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (Lake Erie coastal/tributary	5) / wetland-unrestricted hydr / wetland-restricted hydrolo		
	Known occurrence state/f	ederal threatened or endar		
0 44		Question 1 Qualitative Ra	iting (-10)	opography.
2 41 subto			Community Cover Scale	ppog.apriyi
·	Score all present using 0 to 3 scale.		Absent or comprises <0.1ha (0.24	471 acres) contiguous area
	Aquatic bed Emergent	1	Present and either comprises small vegetation and is of moderate of	all part of wetland's juality, or comprises a
	O Shrub Forest O Mudflats	2	significant part but is of low qua Present and either comprises sign vegetation and is of moderate q	nificant part of wetland's
	Open water Other 6b. horizontal (plan view) Interspers	3 sion.	part and is of high quality Present and comprises significan vegetation and is of high quality	
	Select only one. High (5)	Narrative De	scription of Vegetation Quality	
	Moderately high(4) Moderate (3)	low	Low spp diversity and/or predomi disturbance tolerant native spec	
	Moderately low (2)	mod	Native spp are dominant component	ent of the vegetation,
	Low (1) None (0)		although nonnative and/or distuction can also be present, and species	es diversity moderate to
	6c. Coverage of invasive plants. Reto Table 1 ORAM long form for list.		moderately high, but generally was threatened or endangered spp	
	or deduct points for coverage	high	A predominance of native species	s, with nonnative spp
	Extensive >75% cover (-5	,	and/or disturbance tolerant native	• • • • • • • • • • • • • • • • • • • •
	Moderate 25-75% cover (-1)	-3) 	absent, and high spp diversity a the presence of rare, threatened	-
	Nearly absent <5% cover Absent (1)		Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.		Low 0.1 to <1ha (0.247 to 2.47 ac	cres)
	Vegetated hummucks/tus		Moderate 1 to <4ha (2.47 to 9.88	
	O Coarse woody debris >15		High 4ha (9.88 acres) or more	<u> </u>
	Standing dead >25cm (10Amphibian breeding pools		aphy Cover Scale	
		0	Absent	
		1	Present very small amounts or if r	
		2	Present in moderate amounts, bu quality or in small amounts of hi	
44		3	Present in moderate or greater ar and of highest quality	-

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
J	Metric 2. Buffers and surrounding land use	13	
	Metric 3. Hydrology	15	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	2	
	TOTAL SCORE	41	Category based on score breakpoints Mod 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category					
Choose one	Category 1	(Category 2)	Category 3		

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish		
Date: 3/31/2022		
Affiliation:		
GAI Consultants, Inc. Address:		
=	20, North Canton, OH 44720	
Phone Number: 234.203.0772		
e-mail address:		
k.vonderwish@gaiconsulta Name of Wetland:		
Vegetation Communit(ies):		
PEM		
HGM Class(es): Depressional		
-	de map, address, north arrow, landmarks, distances, roads, etc.	
Please refer to the	attached project location map.	
Lat/Long or UTM Coordinate	40.350478, -82.252527	
USGS Quad Name	Martinsburg, OH	
County	Knox	
Township	Butler Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	3/31/2022	
National Wetland Inventory N	^{Лар} X	
Ohio Wetland Inventory Map	X	
Soil Survey	GnB: Glenford silt loam, 2 to 6 percent slopes	
Delineation report/map	Υ '	

W065

Wetland Size (acres, hectares):

0.137739 acres

 ${\bf Sketch: Include\ north\ arrow,\ relationship\ with\ other\ surface\ waters,\ vegetation\ zones,\ etc.}$

North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 31 Category: 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Millwood-Ohio Central			Rater(s): Kristen Vonderwish	Date: 3/31/2022	
1	1	Metric 1. Wetland A	rea (size).		
max 6 pts.	subtotal	Select one size class and assign score >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20 10 to <25 acres (4 to <10.1h 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.2 X 0.1 to <0.3 acres (0.04 to <0 <0.1 acres (0.04ha) (0 pts)	2.2ha) (5 pts) (a) (4 pts) (3 pts) (ha) (2pts)		
8	9	Metric 2. Upland but	fers and surroundi	ng land use.	
max 14 pts.	subtotal	X MEDIUM. Buffers average 2 NARROW. Buffers average 2 VERY NARROW. Buffers a 2b. Intensity of surrounding land use. VERY LOW. 2nd growth or X LOW. Old field (>10 years), X MODERATELY HIGH. Resi	n (164ft) or more around wetland per 25m to <50m (82 to <164ft) around v 10m to <25m (32ft to <82ft) around verage <10m (<32ft) around wetland	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) verage. life area, etc. (7) orest. (5) ervation tillage, new fallo	ow field. (3)
13	22	Metric 3. Hydrology.		, ,	
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surfac Perennial surface water (lak 3c. Maximum water depth. Select onl >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (1) 3e. Modifications to natural hydrologic None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1)	e water (3) e or stream) (5) 3d. If y one and assign score. (2) regime. Score one or double check Check all disturbances observed ditch tile dike weir	Part of wetland/up X Part of riparian or Duration inundation/satu Semi- to permane X Regularly inundat Seasonally inundat Seasonally satura k and average. point source (non- filling/grading road bed/RR track dredging	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) red/saturated (3) ated (2) ated in upper 30cm (12in) (1) stormwater)
10	32	Metric 4. Habitat Alt	eration and Develo	pment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) X Poor (1) 4c. Habitat alteration. Score one or development. Select only Recovered (6) Recovering (3) Recent or no recovery (1)	one and assign score. Duble check and average. Check all disturbances observed mowing grazing clearcutting	shrub/sapling rem herbaceous/aqua sedimentation	
SU	32 ubtotal this pa	ae	vody debris removal toxic pollutants	dredging farming nutrient enrichme	nt

last revised 1 February 2001 jjm

Site: Mi	llwood-Ohio	Central	Rater	(S): Kristen Voi	nderwish	Date: 3/31/2022
SI	32 ubtotal first pa	age				
0	32	Metr	ic 5. Special Wetlar	nds.		
max 10 pts.	subtotal		lthat 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 Ope Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/wate Category 1 Wetland. See Question	restricted hydronings) (10) eatened or ender fowl habitat or 1 Qualitative R	angered species (10) r usage (10) Rating (-10)	
-1	31	Metr	ic 6. Plant commun	ities, int	erspersion, microt	opography.
max 20 pts.	subtotal	6a. Wet	land Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all	present using 0 to 3 scale. Aquatic bed Emergent	0 1	Absent or comprises <0.1ha (0.2 Present and either comprises sn vegetation and is of moderate	nall part of wetland's
		0	Shrub		significant part but is of low qu	
		Ŏ	Forest	2	Present and either comprises sig	gnificant part of wetland's
		Ō	Mudflats		vegetation and is of moderate	quality or comprises a small
		0	Open water		part and is of high quality	
		0	Other	3	Present and comprises significal	nt part, or more, of wetland's
			zontal (plan view) Interspersion.		vegetation and is of high qualit	ту
		Select or	<u>n</u> ly one.			
			High (5)		Description of Vegetation Quality	
			Moderately high(4)	low	Low spp diversity and/or predom	
		-	Moderate (3) Moderately low (2)	mod	Mative spp are dominant compo	
			Low (1)	mou	Native spp are dominant compo- although nonnative and/or dist	
		· ·	None (0)		can also be present, and spec	
		6c Cov	erage of invasive plants. Refer		moderately high, but generally	•
			1 ORAM long form for list. Add		threatened or endangered spp	
			et points for coverage	high	A predominance of native specie	
			Extensive >75% cover (-5)	-	and/or disturbance tolerant na	
		Х	Moderate 25-75% cover (-3)		absent, and high spp diversity	
			Sparse 5-25% cover (-1)		the presence of rare, threatene	ed, or endangered spp
			Nearly absent <5% cover (0)			
			Absent (1)	Mudflat and	d Open Water Class Quality	
			otopography.	0	Absent <0.1ha (0.247 acres)	
		Score al	present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 a	
		0	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.8	8 acres)
		0	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		0	Standing dead >25cm (10in) dbh			
		0	Amphibian breeding pools		graphy Cover Scale	
				0	Absent	
				1	Present very small amounts or if of marginal quality	more common
				2	Present in moderate amounts, b quality or in small amounts of l	
	1			3	Present in moderate or greater a and of highest quality	
31					1 0 1 7	

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
Ü	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-1	
	TOTAL SCORE	31	Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category				
Choose one	Category 1	(Category 2)	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish		
Date: 4/5/2022		
Affiliation:		
GAI Consultants, Inc. Address:		
5399 Lauby Road, Suite 12 Phone Number:	20, North Canton, OH 44720	
234.203.0772		
e-mail address: k.vonderwish@gaiconsulta	ints.com	
Name of Wetland:		
Vegetation Communit(ies): PEM		
HGM Class(es):		
Depressional Location of Wetland: inclu	de map, address, north arrow, landmarks, distances, roads, etc.	
	attached project location map.	
Lat/Long or UTM Coordinate	40.374435, -82.271227	
USGS Quad Name	Martinsburg, OH	
County	Knox	
Township	Butler Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	4/5/2022	
National Wetland Inventory	Map X	
Ohio Wetland Inventory Map	X	
Soil Survey	Or: Orrville silt loam, 0 to 3 percent slopes	
Delineation report/map	Y	

W066

Wetland Size (acres, hectares):

0.186546 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 31 Category: 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Mil	lwood-Ohio	Central	Rater(s): Kristen Vonderwish Date: 4/5/202		
2	2	Metric 1. Wetland Ar	ea (size).		
max 6 pts.	subtotal	Select one size class and assign score	.2ha) (5 pts) a) (4 pts) (3 pts) ha) (2pts)		
8	10	Metric 2. Upland but	fers and surroundi	ng land use.	
max 14 pts.	subtotal	X MEDIUM. Buffers average 2 NARROW. Buffers average 2 VERY NARROW. Buffers average 2 2b. Intensity of surrounding land use. VERY LOW. 2nd growth or LOW. Old field (>10 years), X MODERATELY HIGH. Resi	i (164ft) or more around wetland pe 25m to <50m (82 to <164ft) around v 10m to <25m (32ft to <82ft) around verage <10m (<32ft) around wetland	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) verage. ife area, etc. (7) perst. (5) ervation tillage, new fallo	ow field. (3)
12	22	Metric 3. Hydrology.		` '	
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surfac Perennial surface water (lak 3c. Maximum water depth. Select onl >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (X < 0.4m (<15.7in) (1)	e water (3) e or stream) (5) 3d. y one and assign score.	Part of wetland/up X Part of riparian or Duration inundation/satu Semi- to permane Regularly inundat X Seasonally inundat Seasonally satura	in (1) lake and other human use (1) pland (e.g. forest), complex (1) pupland corridor (1) puration. Score one or dbl check ently inundated/saturated (4) led/saturated (3)
		3e. Modifications to natural hydrologic 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 (non- filling/grading road bed/RR track dredging other	,
10	32	Metric 4. Habitat Alt	eration and Develo	pment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	or double check and average.		
		4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) X Poor (1) 4c. Habitat alteration. Score one or development.	"		
sı	32 ubtotal this pa	None or none apparent (9) X Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed w mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal

last revised 1 February 2001 jjm

Site: Mi	llwood-Ohio	Central	Rater(s): Kristen Vo	nderwish	Date: 4/5/2022
s	32 ubtotal first pa	1			
0	32	Metric 5. Special V	Vetlands.		
max 10 pts.	subtotal	Check all that apply and score as in Bog (10) Fen (10) Old growth forest (10) Mature forested wetland Lake Erie coastal/tributar Lake Plain Sand Prairies Relict Wet Prairies (10) Known occurrence state/ Significant migratory sone Category 1 Wetland. Sec	(5) y wetland-unrestricted hydro y wetland-restricted hydro (Oak Openings) (10) federal threatened or end gbird/water fowl habitat or	angered species (10)	
-1	31	Metric 6. Plant cor	nmunities, int	erspersion, microt	opography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communit	es. Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale		Absent or comprises <0.1ha (0.2	
		O Aquatic bed	1	Present and either comprises sm	•
		2 Emergent O Shrub		vegetation and is of moderate significant part but is of low qua	· · ·
		0 Forest	2	Present and either comprises sig	-
		0 Mudflats		vegetation and is of moderate	
		Open water	<u></u>	part and is of high quality	
		Other	3	Present and comprises significan	
		6b. horizontal (plan view) Intersper	sion.	vegetation and is of high qualit	У
		Select only one. High (5)	Narrative D	Description of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predom	inance of nonnative or
		Moderate (3)		disturbance tolerant native spe	
		Moderately low (2)	mod	Native spp are dominant compor	
		Low (1) None (0)		although nonnative and/or dist	
		6c. Coverage of invasive plants. R	efer	moderately high, but generally	•
		to Table 1 ORAM long form for list.		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native specie	• • • • • • • • • • • • • • • • • • • •
		Extensive >75% cover (-5		and/or disturbance tolerant nat absent, and high spp diversity	
		Moderate 25-75% cover (-1)	(-3)	the presence of rare, threatene	
		Nearly absent <5% cover	(0)		, от отнативаться орр
		Absent (1)	Mudflat and	d Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale O Vegetated hummucks/tus		Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8	
		O Coarse woody debris >15		High 4ha (9.88 acres) or more	<u> </u>
		Standing dead >25cm (10		,	
		O Amphibian breeding pool		graphy Cover Scale	
			0	Absent	more commen
			1	Present very small amounts or if of marginal quality	more common
			2	Present in moderate amounts, b quality or in small amounts of h	
	7		3	Present in moderate or greater a and of highest quality	
31					

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
•	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-1	
	TOTAL SCORE	31	Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

	Fin	al Category	
Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish		
Date: 4/5/2022		
Affiliation:		
GAI Consultants, Inc. Address:		
5399 Lauby Road, Suite 12 Phone Number:	20, North Canton, OH 44720	
234.203.0772		
e-mail address: k.vonderwish@gaiconsulta	nts.com	
Name of Wetland:		
Vegetation Communit(ies): PEM		
HGM Class(es):		
Depressional Location of Wetland: inclu	de map, address, north arrow, landmarks, distances, roads, etc.	
	attached project location map.	
Lat/Long or UTM Coordinate	40.374663, -82.271495	
USGS Quad Name	Martinsburg, OH	
County	Knox	
Township	Butler Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	4/5/2022	
National Wetland Inventory	^{Map} X	
Ohio Wetland Inventory Map	X	
Soil Survey	Se: Sebring silt loam	
Delineation report/map		

W067

Wetland Size (acres, hectares):

0.538112 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 34

Category:

2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Mills	wood-Ohio	Central	Rater(s): Kristen Vonderwish		Date: 4/5/2022
1	1	Metric 1. Wetland Ar	rea (size).		
max 6 pts.	subtotal	Select one size class and assign score >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20 10 to <25 acres (4 to <10.1h 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.2 X 0.1 to <0.3 acres (0.04 to <0 <0.1 acres (0.04ha) (0 pts)	.2ha) (5 pts) a) (4 pts) (3 pts) ha) (2pts)		
8	9	Metric 2. Upland but	fers and surroundi	ng land use.	
max 14 pts.	subtotal	X MEDIUM. Buffers average 2 NARROW. Buffers average 2 VERY NARROW. Buffers a 2b. Intensity of surrounding land use. VERY LOW. 2nd growth or X LOW. Old field (>10 years), X MODERATELY HIGH. Resi	n (164ft) or more around wetland pe 25m to <50m (82 to <164ft) around v 10m to <25m (32ft to <82ft) around verage <10m (<32ft) around wetland	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) verage. life area, etc. (7) orest. (5) ervation tillage, new fallo	ow field. (3)
15	24	Metric 3. Hydrology.			
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surfactor Perennial surface water (lake 3c. Maximum water depth. Select online 50.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in)	e water (3) e or stream) (5) 3d. y one and assign score.	Part of wetland/up X Part of riparian or Duration inundation/satu Semi- to permane Regularly inundat X Seasonally inundat	in (1) lake and other human use (1) pland (e.g. forest), complex (1) rupland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) ated (2)
		X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	regime. Score one or double chec Check all disturbances observed ditch tile dike weir stormwater input		,
10	34	Metric 4. Habitat Alt	eration and Develo	pment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	or double check and average.		
		4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) X Poor (1) 4c. Habitat alteration. Score one or development.	"		
L	34 btotal this pa	None or none apparent (9) X Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed w mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal

last revised 1 February 2001 jjm

Site: Mil	lwood-Ohio	Central	Rater(s): Kristen Von	nderwish	Date: 4/5/2022
O max 10 pts.	34 subtotal first pa	Metric 5. Special V Check all that apply and score as ir Bog (10) Fen (10) Old growth forest (10) Mature forested wetland Lake Erie coastal/tributar Lake Erie coastal/tributar Lake Plain Sand Prairies Relict Wet Prairies (10) Known occurrence state/	ndicated. (5) y wetland-unrestricted hydro y wetland-restricted hydro	angered species (10)	
	34	Category 1 Wetland. Ser	e Question 1 Qualitative R nmunities, int		opography.
		On Waller diverselation Occurrent		0	
max 20 pts.	subtotal	6a. Wetland Vegetation Communit		Community Cover Scale	1474 cores) contiguous cros
		Score all present using 0 to 3 scale	. <u>0</u> 1	Absent or comprises <0.1ha (0.2 Present and either comprises sm	
		O Aquatic bed	Į.	-	
		2 Emergent		vegetation and is of moderate	•
		0 Shrub		significant part but is of low qua	•
		Forest	2	Present and either comprises sig	
		0 Mudflats		vegetation and is of moderate	quality or comprises a small
		Open water		part and is of high quality	
		0Other	3	Present and comprises significar	
		6b. horizontal (plan view) Intersper	sion.	vegetation and is of high qualit	у
		Select only one.			
		High (5)		escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predom	
		Moderate (3)		disturbance tolerant native spe	
		Moderately low (2)	mod	Native spp are dominant compor	nent of the vegetation,
		Low (1)		although nonnative and/or dist	urbance tolerant native spp
		X None (0)		can also be present, and speci	es diversity moderate to
		6c. Coverage of invasive plants. R		moderately high, but generally	w/o presence of rare
		to Table 1 ORAM long form for list.	Add	threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native specie	s, with nonnative spp
		Extensive >75% cover (-9	5)	and/or disturbance tolerant nat	ive spp absent or virtually
		X Moderate 25-75% cover	(-3)	absent, and high spp diversity	and often, but not always,
		Sparse 5-25% cover (-1)		the presence of rare, threatene	ed, or endangered spp
		Nearly absent <5% cover	(0)		
		Absent (1)		I 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 a	cres)
		Vegetated hummucks/tus		Moderate 1 to <4ha (2.47 to 9.8	
		Coarse woody debris >15		High 4ha (9.88 acres) or more	
		O Standing dead >25cm (1)	· · ·	<u> </u>	
		1 Amphibian breeding pool	,	raphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if of marginal quality	more common
			2	Present in moderate amounts, be quality or in small amounts of h	
			3	Present in moderate or greater a	
	1		J	and of highest quality	oanto
^ 4				and or mignost quality	

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
•	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	15	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	0	
	TOTAL SCORE	34	Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

	Fin	al Category	
Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish		
Date: 4/5/2022		
Affiliation:		
GAI Consultants, Inc. Address:		
5399 Lauby Road, Suite 120, North Canton, OH 44720		
Phone Number: 234.203.0772		
e-mail address: k.vonderwish@gaiconsultar	nte com	
Name of Wetland: W068		
Vegetation Communit(ies): PEM		
HGM Class(es):		
Depressional		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Please refer to the attached project location map.		
l lease lelel to the a	attached project location map.	
Lat/Long or UTM Coordinate	40.375489, -82.272149	
USGS Quad Name	·	
	Danville, OH	
County	Knox	
Township	Butler Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	4/5/2022	
National Wetland Inventory N	^{Лар} X	
Ohio Wetland Inventory Map	X	
Soil Survey	LvE: Loudonville silt loam, 18 to 25 percent slopes	
Delineation report/map	X	

WOSS

Wetland Size (acres, hectares):

0.030872 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 36 Category: Modified 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Mil	llwood-Ohio	Central	Rater(s): Kristen Vonderwish		Date: 4/5/2022
0	0	Metric 1. Wetland A	rea (size).		
max 6 pts.	subtotal	Select one size class and assign score >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20 10 to <25 acres (4 to <10.1t 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.2 0.1 to <0.3 acres (0.04 to <0 X < < -	0.2ha) (5 pts) na) (4 pts) (3 pts) 2ha) (2pts)		
8	8	Metric 2. Upland but	ffers and surroundi	ng land use.	
max 14 pts.	subtotal	X MEDIUM. Buffers average 2 NARROW. Buffers average 2 VERY NARROW. Buffers a 2b. Intensity of surrounding land use. VERY LOW. 2nd growth or X LOW. Old field (>10 years), X MODERATELY HIGH. Resi	n (164ft) or more around wetland pe 25m to <50m (82 to <164ft) around 10m to <25m (32ft to <82ft) around verage <10m (<32ft) around wetland	erimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) verage. life area, etc. (7) orest. (5) ervation tillage, new fallo	ow field. (3)
18	26	Metric 3. Hydrology	•		
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) X Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface Perennial surface water (lak) 3c. Maximum water depth. Select onlessed in Select on Select onlessed in Select on Select onlessed in Select on	re water (3) e or stream) (5) 3d. y one and assign score. (2) regime. Score one or double chec Check all disturbances observed ditch tile dike	Part of wetland/up X Part of riparian or Duration inundation/satu Semi- to permane Regularly inundat X Seasonally inundat Seasonally satura k and average. point source (non filling/grading road bed/RR track	in (1) ake and other human use (1) bland (e.g. forest), complex (1) cupland corridor (1) curation. Score one or dbl check ently inundated/saturated (4) ced/saturated (3) ated (2) ated in upper 30cm (12in) (1) stormwater)
		Motrio 4 Habitat Alt	stormwater input	dredging other	
10	36	Metric 4. Habitat Alt		pment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) X Poor (1) 4c. Habitat alteration. Score one or d Recovered (6) Recovered (6)	ouble check and average. Check all disturbances observed mowing	shrub/sapling rem	
si	36 ubtotal this pa	Recovering (3) Recent or no recovery (1)	grazing clearcutting selective cutting woody debris removal toxic pollutants	herbaceous/aqua sedimentation dredging farming nutrient enrichme	

last revised 1 February 2001 jjm

Site: Mil	llwood-Ohic	Central	Rater	(s): Kristen Vo	nderwish	Date: 4/5/2022
SI	36 ubtotal first pa	Ť	io F. Crossial Wetler	l-		
0	36	wetr	ic 5. Special Wetlar	ias.		
max 10 pts.	subtotal		Il 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 Ope Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/wate Category 1 Wetland. See Question	restricted hydronings) (10) eatened or ender fowl habitat or a Qualitative F	angered species (10) r usage (10) Rating (-10)	
0	36	Metr	ic 6. Plant commun	ities, int	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wet	land Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all	I present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	471 acres) contiguous area
		0	Aquatic bed	1	Present and either comprises sm	all part of wetland's
		2	Emergent		vegetation and is of moderate of	
		0	Shrub		significant part but is of low qua	-
		0	Forest	2	Present and either comprises sig	
		0	Mudflats		vegetation and is of moderate of	quality or comprises a small
		0	Open water		part and is of high quality	t want an warm of water die
		Ch hori	Other	3	Present and comprises significan	
		Select or	zontal (plan view) Interspersion.		vegetation and is of high quality	
		Select of	High (5)	Narrative D	Description of Vegetation Quality	
			Moderately high(4)	low	Low spp diversity and/or predom	nance of nonnative or
			Moderate (3)		disturbance tolerant native spe	
			Moderately low (2)	mod	Native spp are dominant compon	
			Low (1)		although nonnative and/or distu	_
		Х	None (0)		can also be present, and specie	es diversity moderate to
		6c. Cove	erage of invasive plants. Refer		moderately high, but generally	
			1 ORAM long form for list. Add	·	threatened or endangered spp	
		or deduc	et points for coverage	high	A predominance of native specie	
			Extensive >75% cover (-5)		and/or disturbance tolerant nati	
		X	Moderate 25-75% cover (-3)		absent, and high spp diversity a	•
			Sparse 5-25% cover (-1)		the presence of rare, threatene	a, or endangered spp
			Nearly absent <5% cover (0) Absent (1)	Mudflat and	d Open Water Class Quality	
		6d Micr	otopography.	0	Absent <0.1ha (0.247 acres)	
			I present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 acres)	cres)
		0	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
		0	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	<u>· · · · · · · · · · · · · · · · · · · </u>
		Ŏ	Standing dead >25cm (10in) dbh	-	,	
		1	Amphibian breeding pools	Microtopog	graphy Cover Scale	
			_	0	Absent	
				1	Present very small amounts or if of marginal quality	more common
				2	Present in moderate amounts, but quality or in small amounts of h	<u> </u>
	7			3	Present in moderate or greater a	
36					and of highest quality	
36	1					

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
•	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	18	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	0	
	TOTAL SCORE	36	Category based on score breakpoints Mod 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category					
Choose one	Category 1	(Category 2)	Category 3		

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish		
Date: 4/5/2022		
Affiliation: GAI Consultants, Inc.		
Address:		
5399 Lauby Road, Suite 12 Phone Number:	0, North Canton, OH 44720	
234.203.0772		
e-mail address: k.vonderwish@gaiconsultar	nts com	
Name of Wetland:		
Vegetation Communit(ies): PEM		
HGM Class(es):		
Depressional Location of Wetland: include	de map, address, north arrow, landmarks, distances, roads, etc.	
	attached project location map.	
Lat/Long or UTM Coordinate	40.381536, -82.277072	
USGS Quad Name	Danville, OH	
County	Knox	
Township	Butler Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	4/5/2022	
National Wetland Inventory N		
Ohio Wetland Inventory Map	X	
Soil Survey	BsF: Brownsville-Westmoreland complex, 25 to 40	
Delineation report/map	Υ	

W069

Wetland Size (acres, hectares):

0.092156 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 38

Category:

Modified 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: M	illwood-Ohio	Central Rater(s): Kriste	en Vonderwish	Date: 4/5/2022
0	0	Metric 1. Wetland Area (size).		
max 6 pts.	subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) x <0.1 acres (0.04ha) (0 pts)		
13	13	Metric 2. Upland buffers and s	surrounding land use) <u>.</u>
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and X WIDE. Buffers average 50m (164ft) or more ar MEDIUM. Buffers average 25m to <50m (82 to NARROW. Buffers average 10m to <25m (32ft) VERY NARROW. Buffers average <10m (<32ft) 2b. Intensity of surrounding land use. Select one or dou X VERY LOW. 2nd growth or older forest, prairie X LOW. Old field (>10 years), shrub land, young MODERATELY HIGH. Residential, fenced pas HIGH. Urban, industrial, open pasture, row cro	ound wetland perimeter (7) o <164ft) around wetland perimeter (4) it to <82ft) around wetland perimeter (* t) around wetland perimeter (0) ble check and average. o, savannah, wildlife area, etc. (7) second growth forest. (5) sture, park, conservation tillage, new fa	
15	28	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign s >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime. Score on	Part of wetland X Part of riparian 3d. Duration inundation/s core. Semi- to perma Regularly inund X Seasonally inun Seasonally sat	plain (1) n/lake and other human use (1) /upland (e.g. forest), complex (1) or upland corridor (1) aturation. Score one or dbl check nently inundated/saturated (4) lated/saturated (3)
		None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1) Check all disturbation ditch tile dike weir stormwater	point source (n	,
10	38	Metric 4. Habitat Alteration an	d Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check a None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign science (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 av	verane	
	38 ubtotal this pa	None or none apparent (9) X Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Age Check all disturbation mowing grazing clearcutting selective curvoody debitoxic polluta	ances observed shrub/sapling r herbaceous/aq sedimentation dredging ris removal shrub/sapling r herbaceous/aq sedimentation	uatic bed removal
iast revised	o i ⊢ebrua	ary 2001 jjm		

7

Site: Mil	llwood-Ohic	Central	Rater(s): Kristen Vor	nderwish	Date: 4/5/2022
SI	38 ubtotal first pa	i i			
0	38	Metric 5. Special W	etianas.		
max 10 pts.	subtotal	Check all that apply and score as ind Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (! Lake Erie coastal/tributary Lake Erie coastal/tributary Lake Plain Sand Prairies (Relict Wet Prairies (10) Known occurrence state/fe Significant migratory song Category 1 Wetland. See	wetland-unrestricted hyd wetland-restricted hydro Oak Openings) (10) deral threatened or enda bird/water fowl habitat or Question 1 Qualitative R	angered species (10) usage (10) ating (-10)	
0	38	Metric 6. Plant con	nmunities, int	erspersion, microto	pography.
max 20 pts.	subtotal	 6a. Wetland Vegetation Communitie 	s. Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.24	171 acres) contiguous area
		Aquatic bed	1	Present and either comprises small	, <u> </u>
		2 Emergent		vegetation and is of moderate of	uality, or comprises a
		0 Shrub		significant part but is of low qua	•
		0 Forest	2	Present and either comprises sign	
		Mudflats		vegetation and is of moderate of	uality or comprises a small
		Open water		part and is of high quality	to anti-more and or the alle
		Other	3	Present and comprises significan	
		6b. horizontal (plan view) Interspers	ion.	vegetation and is of high quality	
		Select only one. High (5)	Narrative D	escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predomi	nance of nonnative or
		Moderate (3)		disturbance tolerant native spec	
		Moderately low (2)	mod	Native spp are dominant compon	ent of the vegetation,
		Low (1)		although nonnative and/or distu	
		X None (0)		can also be present, and specie	es diversity moderate to
		6c. Coverage of invasive plants. Re		moderately high, but generally	
		to Table 1 ORAM long form for list.		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species	• •
		Extensive >75% cover (-5)		and/or disturbance tolerant nati absent, and high spp diversity a	
		Moderate 25-75% cover (-Sparse 5-25% cover (-1)	3)	the presence of rare, threatened	
		Nearly absent <5% cover	(0)	the presence of fare, threateness	a, or oridarigored opp
		Absent (1)	Mudflat 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 ac	
		Vegetated hummucks/tuss	-	Moderate 1 to <4ha (2.47 to 9.88	acres)
		O Coarse woody debris >150		High 4ha (9.88 acres) or more	
		O Standing dead >25cm (10 Amphibian breeding pools		raphy Cover Scale	
		I Trinklingali preeding boots	0	Absent	
			1	Present very small amounts or if	more common
			·	of marginal quality	
			2	Present in moderate amounts, bu	t not of highest
				quality or in small amounts of h	ghest quality
	-		3	Present in moderate or greater ar	mounts
20				and of highest quality	
38					

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
Ü	Metric 2. Buffers and surrounding land use	13	
	Metric 3. Hydrology	15	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	0	
	TOTAL SCORE	38	Category based on score breakpoints Mod 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category						
Choose one Category 1 (Category 2) Category 3						

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish		
Date: 4/5/2022		
Affiliation:		
GAI Consultants, Inc. Address:		
-	0, North Canton, OH 44720	
Phone Number: 234.203.0772		
e-mail address: k.vonderwish@gaiconsultar	nte com	
Name of Wetland:		
Vegetation Communit(ies):		
PEM HGM Class(es):		
Depressional		
	de map, address, north arrow, landmarks, distances, roads, etc.	
	attached project location map.	
Lat/Long or UTM Coordinate	40.397334, -82.290133	
LISCS Quad Nama	·	
USGS Quad Name	Danville, OH	
County	Knox	
Township	Howard Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	4/5/2022	
National Wetland Inventory M	^{Nap} X	
Ohio Wetland Inventory Map	X	
Soil Survey	LvE: Loudonville silt loam, 18 to 25 percent slopes	
Delineation report/map	X	

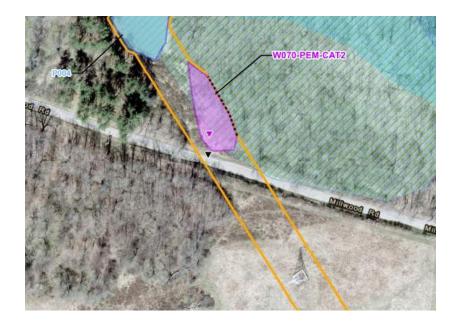
W070

Wetland Size (acres, hectares):

0.313102 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 32

Category: 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Mi	llwood-Ohio	Central	Rater(s): Kristen Vonderwish		Date: 4/5/2022
1	1	Metric 1. Wetland Ar	ea (size).		
max 6 pts.	subtotal	Select one size class and assign score >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20 10 to <25 acres (4 to <10.1h: 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.2 X 0.1 to <0.3 acres (0.04 to <0 <0.1 acres (0.04ha) (0 pts)	.2ha) (5 pts) a) (4 pts) (3 pts) ha) (2pts)		
9	10	Metric 2. Upland buf	fers and surround	ing land use.	
max 14 pts.	subtotal	X MEDIUM. Buffers average 2 NARROW. Buffers average VERY NARROW. Buffers average 2b. Intensity of surrounding land use. X VERY LOW. 2nd growth or of LOW. Old field (>10 years), X MODERATELY HIGH. Resident	(164ft) or more around wetland p 25m to <50m (82 to <164ft) around 10m to <25m (32ft to <82ft) around verage <10m (<32ft) around wetla	erimeter (7) I wetland perimeter (4) nd wetland perimeter (1) nd perimeter (0) average. dlife area, etc. (7) forest. (5) servation tillage, new fallo	ow field. (3)
12	22	Metric 3. Hydrology.			
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface Perennial surface water (lake	e water (3)	Part of wetland/u	
		3c. Maximum water depth. Select only >0.7 (27.6in) (3)	2)	Regularly inundation X Seasonally inundation Seasonally satura	* *
		None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturbances observed ditch tile dike weir stormwater input	point source (non ightharpoonup filling/grading ightharpoonup road bed/RR trace ightharpoonup dredging ightharpoonup other	·
11	33	Metric 4. Habitat Alt	eration and Develo	opment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) X Recovered (3) Recovering (2)	or double check and average.		
		Ab. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	one and assign score.		
		4c. Habitat alteration. Score one or do		1	
s	33 ubtotal this p	None or none apparent (9) X Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling ren herbaceous/aqua sedimentation dredging farming nutrient enrichme	ttic bed removal
last revised	d 1 Februa	ary 2001 jjm			

Site: Millwood-Ohio Central			ter(s): Kristen Vor	nderwish Date: 4/5/2022	
sı	33 ubtotal first pa	ge			
0	33	Metric 5. Special Wetl	ands.		
max 10 pts.	subtotal	Check all that apply and score as indicated Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetla Lake Erie coastal/tributary wetla Lake Plain Sand Prairies (Oak C Relict Wet Prairies (10) Known occurrence state/federal Significant migratory songbird/w Category 1 Wetland. See Ques	and-unrestricted hydro and-restricted hydro Openings) (10) threatened or enda ater fowl habitat or	angered species (10) usage (10)	
-1	32	Metric 6. Plant commu	unities, int	erspersion, microtopography.	
max 20 pts.	subtotal] 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area	ì
		O Aquatic bed	1	Present and either comprises small part of wetland's	
		2 Emergent		vegetation and is of moderate quality, or comprises a	
		O Shrub Forest	2	significant part but is of low quality Present and either comprises significant part of wetland's	
		0 Mudflats	2	vegetation and is of moderate quality or comprises a small	il
		Open water		part and is of high quality	
		0 Other	3	Present and comprises significant part, or more, of wetland	s
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
		Select only one. High (5)	Narrativo D	escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or	
		Moderate (3)		disturbance tolerant native species	
		Moderately low (2)	mod	Native spp are dominant component of the vegetation,	
		Low (1)		although nonnative and/or disturbance tolerant native spp	
		None (0) 6c. Coverage of invasive plants. Refer		can also be present, and species diversity moderate to	
		to Table 1 ORAM long form for list. Add		moderately high, but generally w/o presence of rare threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species, with nonnative spp	_
		Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or virtually	
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,	
		Sparse 5-25% cover (-1) Nearly absent <5% cover (0)	-	the presence of rare, threatened, or endangered spp	
		Absent (1)	Mudflat and	d 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)	
		O Vegetated hummucks/tussucks Coarse woody debris >15cm (6i	n) 2 3	Moderate 1 to <4ha (2.47 to 9.88 acres) High 4ha (9.88 acres) or more	
		O Coarse woody debris >15cm (6i O Standing dead >25cm (10in) dbl	, <u> </u>	riigii 4ila (9.00 acres) di filore	
		O 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	
	_		3	Present in moderate or greater amounts	
20]			and of highest quality	
32					

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
Ü	Metric 2. Buffers and surrounding land use	9	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	11	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-1	
	TOTAL SCORE	32	Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category					
Choose one	Category 1	(Category 2)	Category 3		

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish Date: 4/5/2022 Affiliation: GAI Consultants, Inc. Address: 5399 Lauby Road, Suite 120, North Canton, OH 44720 Phone Number: 234,203,0772 e-mail address: k, vonderwish@gaiconsultants.com Name of Wetland: W071 Vegetation Communit(ies): PEM HGM Class(es): Depressional Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Please refer to the attached project location map. Lat/Long or UTM Coordinate 40.398334, -82.29099 USGS Quad Name Danville, OH County Knox Township Howard Township Section and Subsection X Hydrologic Unit Code 050400030403 Site Visit 4/5/2022			
Affiliation: GAI Consultants, Inc. Address: S399 Lauby Road, Suite 120, North Canton, OH 44720 Phone Number: 234.203.0772 e-mail address: k.vonderwish@gaiconsultants.com Name of Wetland: W071 Vegetation Communit(ies): PEM HGM Class(es): Depressional Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Please refer to the attached project location map. Lat/Long or UTM Coordinate 40.398334, -82.29099 USGS Quad Name Danville, OH County Knox Township Howard Township Section and Subsection X Hydrologic Unit Code 050400030403			
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PEM HGM Class(es): Depressional Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Please refer to the attached project location map. Lat/Long or UTM Coordinate 40.398334, -82.29099 USGS Quad Name Danville, OH County Knox Township Howard Township Section and Subsection X Hydrologic Unit Code 050400030403			
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USGS Quad Name Danville, OH County Knox Township Howard Township Section and Subsection X Hydrologic Unit Code 050400030403	Please refer to the	attached project location map.	
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County Knox Township Howard Township Section and Subsection X Hydrologic Unit Code 050400030403	LISGS Quad Nama		
Township Howard Township Section and Subsection X Hydrologic Unit Code 050400030403		Danville, OH	
Section and Subsection Hydrologic Unit Code 050400030403	-	Knox	
Hydrologic Unit Code 050400030403		Howard Township	
U5U4UUU3U4U3		X	
Site Visit 4/5/2022	Hydrologic Unit Code	050400030403	
	Site Visit	4/5/2022	
National Wetland Inventory Map X	National Wetland Inventory N	^{Лар} X	
Ohio Wetland Inventory Map	Ohio Wetland Inventory Map	X	
Soil Survey JmB: Jimtown silt loam, 2 to 6 percent slopes	Soil Survey	JmB: Jimtown silt loam, 2 to 6 percent slopes	
Delineation report/map X	Delineation report/map		

Name of Wetland:

W071

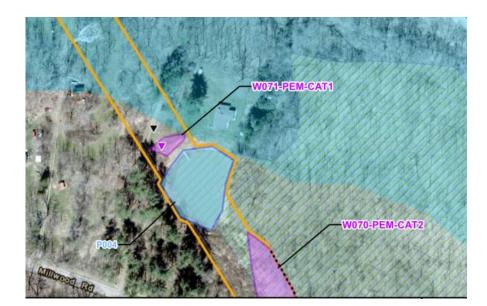
Wetland Size (acres, hectares):

0.043241 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.







Comments, Narrative Discussion, Justification of Category Changes:

Final score : 26 Category: 1

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category o status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
ou.	vegetation communities, although non-native or disturbance tolerant	120	110
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Co to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	Matlemateles de la contra	Commission
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,	Occupation Occupation	
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Millwood-Ohio Central			Rater(s): Kristen Vonderwish	Date: 4/5/2022	
0	0	Metric 1. Wetland	Area (size).		
max 6 pts.	subtotal	Select one size class and assign so >50 acres (>20.2ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10 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 X <0.1 acres (0.04ha) (0 pts	as) <20.2ha) (5 pts) .1ha) (4 pts) ha) (3 pts) 1.2ha) (2pts) <0.12ha) (1 pt)		
8	8	Metric 2. Upland b	uffers and surrounding land use		
max 14 pts.	subtotal	WIDE. Buffers average 5 X MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth X LOW. Old field (>10 year X MODERATELY HIGH. R	Select only one and assign score. Do not double check. 60m (164ft) or more around wetland perimeter (7) ge 25m to <50m (82 to <164ft) around wetland perimeter (4) ge 10m to <25m (32ft to <82ft) around wetland perimeter (1) so average <10m (<32ft) around wetland perimeter (0) ge. Select one or double check and average. or older forest, prairie, savannah, wildlife area, etc. (7) s), shrub land, young second growth forest. (5) esidential, fenced pasture, park, conservation tillage, new fall open pasture, row cropping, mining, construction. (1)	,	
12	20	Metric 3. Hydrolog			
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surimate Perennial surface water (1) 3c. Maximum water depth. Select Sol. 7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) X < 0.4m (<15.7in) (1)	face water (3) lake or stream) (5) only one and assign score. n) (2) 100 year floodp Between stream Part of wetland/ X Part of riparian of sign score. Semi- to permain Regularly inund X Seasonally inund Seasonally satu	lain (1) n/lake and other human use (1) upland (e.g. forest), complex (1) or upland corridor (1) aturation. Score one or dbl check nently inundated/saturated (4) ated/saturated (3)	
		None or none apparent (1 X Recovered (7) Recovering (3) Recent or no recovery (1)	ditch tile dike weir stormwater input ditch point source (no filling/grading road bed/RR trader dredging other	,	
7	27	Metric 4. Habitat A	Iteration and Development.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score of None or none apparent (4 X 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) X Poor (1)	4) nly one and assign score.		
s	27	4c. Habitat alteration. Score one o None or none apparent (Score one of the second of	Check all disturbances observed mowing grazing shrub/sapling re herbaceous/aqu	uatic bed removal	

last revised 1 February 2001 jjm

Site: Mil	lwood-Ohio	Central	Rater	(s): Kristen Vor	nderwish	Date: 4/5/2022
sı.	27 ubtotal first pa] Metric 5. Spe	cial Wetlan	ds.		
max 10 pts.	subtotal	Check all that apply and some Bog (10)	core as indicated.			
		Fen (10) Old growth fores Mature forested Lake Erie coasts Lake Erie coasts Lake Plain Sand Relict Wet Prairi Known occurrer Significant migra	wetland (5) al/tributary wetland-ual/tributary wetland-rd Prairies (Oak Openies (10)	estricted hydro ings) (10) atened or enda fowl habitat or	angered species (10) usage (10)	
-1	26	Metric 6. Plar	nt communi	ities, int	erspersion, microto	pography.
max 20 pts.	subtotal	┛ 6a. Wetland Vegetation C	Communities.	Vegetation	Community Cover Scale	
		Score all present using 0 t		0	Absent or comprises <0.1ha (0.24	471 acres) contiguous area
		O Aquatic bed		1	Present and either comprises sm	
		2 Emergent			vegetation and is of moderate of	juality, or comprises a
		0 Shrub			significant part but is of low qua	•
		O Forest		2	Present and either comprises sign	nificant part of wetland's
		Mudflats			vegetation and is of moderate of	quality or comprises a small
		Open water		ī	part and is of high quality	
		0 Other		3	Present and comprises significan	t part, or more, of wetland's
		6b. horizontal (plan view)	Interspersion.	-	vegetation and is of high quality	1
		Select only one.				
		High (5)		Narrative D	escription of Vegetation Quality	
		Moderately high	(4)	low	Low spp diversity and/or predomi	
		Moderate (3)	(0)		disturbance tolerant native spec	
		Moderately low	(2)	mod	Native spp are dominant compon	
		Low (1)			although nonnative and/or distu	
		X None (0)	ulanta Dafan		can also be present, and specie	•
		6c. Coverage of invasive to Table 1 ORAM long for			moderately high, but generally	
				high	threatened or endangered spp	
		or deduct points for covera	•	high	A predominance of native species	
		── ─	` '		and/or disturbance tolerant nati absent, and high spp diversity a	
		Moderate 25-75 Sparse 5-25% of	, ,		the presence of rare, threatene	
		Nearly absent <	` '		the presence of fare, threatener	u, or endangered spp
		Absent (1)	370 COVET (0)	Mudflat and	d Open Water Class Quality	
		6d. Microtopography.		0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 t	o 3 scale	1	Low 0.1 to <1ha (0.247 to 2.47 ac	cres)
		O Vegetated humr		2	Moderate 1 to <4ha (2.47 to 9.88	
			lebris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		<u> </u>	>25cm (10in) dbh			
		O Amphibian bree		Microtopoo	raphy Cover Scale	
		<u>U</u> p2.3 5100	. Jr	0	Absent	-
				1	Present very small amounts or if	more common
				•	of marginal quality	
				2	Present in moderate amounts, but	t not of highest
				_	quality or in small amounts of h	_
				3	Present in moderate or greater ar	
	1			-	and of highest quality	
26					1 0 1100 9	
-						

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
Ü	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-1	
	TOTAL SCORE	26	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

	Fin	al Category	
Choose one	(Category 1)	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish		
Date: 4/7/2022		
Affiliation: GAI Consultants, Inc.		
Address: 5399 Lauby Road, Suite 12	0 North Canton, OH 44720	
Phone Number:	o, Notifi Canton, Off 44720	
234.203.0772		
e-mail address: k.vonderwish@gaiconsultar	nts.com	
Name of Wetland:	W072	
Vegetation Communit(ies): PEM		
HGM Class(es): Depressional		
	le map, address, north arrow, landmarks, distances, roads, etc.	
Please refer to the a	attached project location map.	
Lat/Long or UTM Coordinate	40.404379, -82.29592	
USGS Quad Name	Danville, OH	
County	Knox	
Township	Howard Township	
Section and Subsection	X	
Hydrologic Unit Code	050400030403	
Site Visit	4/7/2022	
National Wetland Inventory N	^{1ap} X	
Ohio Wetland Inventory Map	Х	
Soil Survey	CnD: Chili-Homewood silt loams, 12 to 18 percent	
Delineation report/map	X	

Name of Wetland:

Wetland Size (acres, hectares):

0.076401 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 37

Category: Modified 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Millwood-Ohi	io Central Ra	Iter(s): Kristen Vonderwish		Date: 4/7/2022
0 0	Metric 1. Wetland Area	a (size).		
Max 6 pts. subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2h 10 to <25 acres (4 to <10.1ha) (3 to <10 acres (1.2 to <4ha) (3 p 0.3 to <3 acres (0.12 to <1.2ha) 0.1 to <0.3 acres (0.04 to <0.12 x <0.1 acres (0.04ha) (0 pts)	a) (5 pts) 4 pts) ots) (2pts)		
12 12	Metric 2. Upland buffe	ers and surroundi	ng land use.	
max 14 pts. subtotal	2a. Calculate average buffer width. Select X WIDE. Buffers average 50m (1) MEDIUM. Buffers average 25m NARROW. Buffers average 10m VERY NARROW. Buffers average 2b. Intensity of surrounding land use. Selection X VERY LOW. 2nd growth or oldown LOW. Old field (>10 years), shirt X MODERATELY HIGH. Resider HIGH. Urban, industrial, open process.	64ft) or more around wetland pent to <50m (82 to <164ft) around to <50m (82 to <164ft) around to <25m (32ft to <82ft) around wetlan age <10m (<32ft) around wetlan elect one or double check and ager forest, prairie, savannah, wild tub land, young second growth fotial, fenced pasture, park, conse	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) verage. life area, etc. (7) orest. (5) ervation tillage, new fallo	w field. (3)
15 27	Metric 3. Hydrology.			
max 30 pts. subtotal	3a. Sources of Water. Score all that appl High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface w Perennial surface water (lake or 3c. Maximum water depth. Select only or >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic reg	ater (3) stream) (5) 3d. ne and assign score.	Part of wetland/up X Part of riparian or Duration inundation/satu Semi- to permane Regularly inundat X Seasonally inundat Seasonally satura	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3)
	None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1)	heck all disturbances observed ditch tile dike weir stormwater input	point source (non- filling/grading road bed/RR track dredging other	·
10 37	Metric 4. Habitat Alter	ation and Develo	pment.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one or None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)			
	X Poor (1) 4c. Habitat alteration. Score one or doub			
37 subtotal this plast revised 1 February	Recovered (6) Recovering (3) Recent or no recovery (1)	heck all disturbances observed w mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal

7

Site: Millwood	d-Ohio Central R	ater(s): Kristen Vor	nderwish	Date: 4/7/2022
	first page Motric 5 Special Wes	tlands.		
0 37	тошно от ороснатите			
max 10 pts. sub	Check all that apply and score as indicated Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetlake Erie coastal/tributary wetlake Plain Sand Prairies (Oak Relict Wet Prairies (10) Known occurrence state/feder Significant migratory songbird Category 1 Wetland. See Quitable Control of the Category 1 Wetland.	tland-unrestricted hydro tland-restricted hydro t Openings) (10) al threatened or enda water fowl habitat or estion 1 Qualitative R	angered species (10) usage (10) Rating (-10)	
0 37	Metric 6. Plant comm	nunities, int	erspersion, micro	topography.
max 20 pts. sub	ototal 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.	.2471 acres) contiguous area
	O Aquatic bed	1	Present and either comprises s	
	2 Emergent		vegetation and is of moderate	
	O Shrub O Forest	2	significant part but is of low q Present and either comprises s	
	O Forest Mudflats	2	vegetation and is of moderate	-
	Open water		part and is of high quality	y quanty or comprised a cinan
	Other	3	Present and comprises significa	ant part, or more, of wetland's
	6b. horizontal (plan view) Interspersion.		vegetation and is of high qual	lity
	Select only one.	Norrotivo D	Accoring to a Vagatation Quality	
	High (5) Moderately high(4)	low	Low spp diversity and/or predor	
	Moderate (3)		disturbance tolerant native sp	
	Moderately low (2)	mod	Native spp are dominant compo	
	Low (1)		although nonnative and/or dis	• •
	X None (0) 6c. Coverage of invasive plants. Refer		can also be present, and spe- moderately high, but generall	•
	to Table 1 ORAM long form for list. Add		threatened or endangered sp	
	or deduct points for coverage	high	A predominance of native spec	
	Extensive >75% cover (-5)		and/or disturbance tolerant na	
	Moderate 25-75% cover (-3)		absent, and high spp diversity	· · · · · · · · · · · · · · · · · · ·
	Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threater	led, or endangered spp
	Absent (1)	Mudflat and	d 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	
	Vegetated hummucks/tussuck Coarse woody debris >15cm (Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more	oo acres)
	O Standing dead >25cm (10in) of		Trigit ind (e.ee deree) of mere	
	1 Amphibian breeding pools		graphy Cover Scale	
		0	Absent	
		1	Present very small amounts or of marginal quality	it more common
		2	Present in moderate amounts, quality or in small amounts of	
		3	Present in moderate or greater	
0.7			and of highest quality	
37				

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
•	Metric 2. Buffers and surrounding land use	12	
	Metric 3. Hydrology	15	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	0	
	TOTAL SCORE	37	Category based on score breakpoints Mod 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category				
Choose one	Category 1	(Category 2)	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Kristen Vonderwish					
Date: 4/7/2022					
Affiliation:					
GAI Consultants, Inc. Address:					
-	20, North Canton, OH 44720				
Phone Number: 234.203.0772					
e-mail address: k.vonderwish@gaiconsulta	nts.com				
Name of Wetland:					
Vegetation Communit(ies):					
PSS HGM Class(es):					
Depressional					
	de map, address, north arrow, landmarks, distances, roads, etc.				
Please refer to the	attached project location map.				
Lat/Long or UTM Coordinate	40.419674, -82.309911				
USGS Quad Name	Danville, OH				
County	Knox				
Township					
Section and Subsection	Howard Township				
	X				
Hydrologic Unit Code	050400030402				
Site Visit	4/7/2022				
National Wetland Inventory Map X					
Ohio Wetland Inventory Map	Х				
Soil Survey	Ho: Holly silt loam, frequently flooded				
Delineation report/map	Υ				

W073

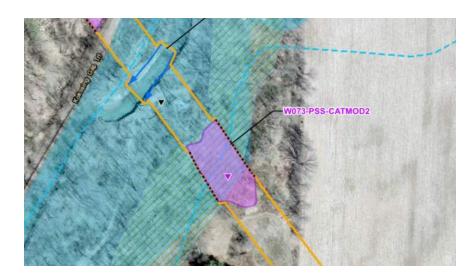
Wetland Size (acres, hectares):

0.516864 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.







Comments, Narrative Discussion, Justification of Category Changes:

Final score: 38

Category: Modified 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Millwood	Ohio Central	Rater(s): Kristen Vonderwish		Date: 4/7/2022
1 1	Metric 1. Wetland A	rea (size).		
max 6 pts. sub	Select one size class and assign scc >50 acres (>20.2ha) (6 pts 25 to <50 acres (10.1 to 10 to <25 acres (4 to <10.' 3 to <10 acres (1.2 to <4ha 0.3 to <3 acres (0.12 to <1 X 0.1 to <0.3 acres (0.04 to < <0.1 acres (0.04ha) (0 pts)</th <th>s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) .2ha) (2pts) <0.12ha) (1 pt)</th> <th></th> <th></th>	s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) .2ha) (2pts) <0.12ha) (1 pt)		
7 8	Metric 2. Upland bu	ıffers and surroundi	ng land use.	
max 14 pts. sub	WIDE. Buffers average 50 X MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land use VERY LOW. 2nd growth of X LOW. Old field (>10 years MODERATELY HIGH. Re	Select only one and assign score. Dom (164ft) or more around wetland persection (25m to <50m (82 to <164ft) around vige 10m to <25m (32ft to <82ft) around average <10m (<32ft) around wetland average <10m (respectively) around wetland average such as persection or double check and average of older forest, prairie, savannah, wildless, shrub land, young second growth for sidential, fenced pasture, park, consequent pasture, row cropping, mining, consequent states.	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) verage. life area, etc. (7) orest. (5) ervation tillage, new fallo	w field. (3)
16 24	Metric 3. Hydrology	/.		
max 30 pts. sub	High pH groundwater (5) X Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surfa Perennial surface water (la 3c. Maximum water depth. Select o >0.7 (27.6in) (3)	ace water (3) ake or stream) (5) also one and assign score.	Part of wetland/up X Part of riparian or Duration inundation/satu Semi- to permane Regularly inundati	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3)
		gic regime. Score one or double check Check all disturbances observed ditch tile dike weir stormwater input		stormwater)
11 35	Metric 4. Habitat A	Iteration and Develo	pment.	
max 20 pts. sub	4a. Substrate disturbance. Score of None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1)			
	4b. Habitat development. Select on Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) X Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or			
35 subtotal	None or none apparent (9) X Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing clearcutting v selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aquat sedimentation dredging farming nutrient enrichmen	tic bed removal

last revised 1 February 2001 jjm

Site: Mi	illwood-Ohio	Central	Rater	(s): Kristen Vo	nderwish	Date: 4/7/2022
s	35 ubtotal first pa	-ĭ				
0	35	Metr	ic 5. Special Wetlar	nds.		
max 10 pts.	subtotal	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 Significant migratory songbird/water Category 1 Wetland. See Question	restricted hydronings) (10) eatened or ender fowl habitat or	angered species (10)	
3	38	Metr	ic 6. Plant commun	ities, int	erspersion, microto	opography.
max 20 pts.	subtotal	6a. Wetl	and Vegetation Communities.	Vegetation	Community Cover Scale	
		0	present using 0 to 3 scale. Aquatic bed Emergent	1	Absent or comprises <0.1ha (0.2 Present and either comprises sm vegetation and is of moderate	nall part of wetland's
		<u>2</u> 2	Shrub	-	significant part but is of low qua	•
		0	Forest Mudflats	2	Present and either comprises significant vegetation and is of moderate	
		0	Open water		part and is of high quality	quality of compliacs a small
		Ö	Other	3	Present and comprises significar	nt part, or more, of wetland's
			ontal (plan view) Interspersion.		vegetation and is of high qualit	у
		Select on	1			
			High (5) Moderately high(4)	Narrative D	Description of Vegetation Quality Low spp diversity and/or predom	inance of nonnative or
			Moderate (3)	1011	disturbance tolerant native spe	
			Moderately low (2)	mod	Native spp are dominant compor	_
		Х	Low (1)		although nonnative and/or dist	• • • • • • • • • • • • • • • • • • • •
		6c Cove	None (0) Prage of invasive plants. Refer		can also be present, and speci moderately high, but generally	•
			1 ORAM long form for list. Add		threatened or endangered spp	
			points for coverage	high	A predominance of native specie	
			Extensive >75% cover (-5)		and/or disturbance tolerant nat	
		X	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)		absent, and high spp diversity the presence of rare, threatene	
			Nearly absent <5% cover (0)	-	the presence of fare, threatene	a, or endangered spp
			Absent (1)	Mudflat and	d Open Water Class Quality	
		6d. Micro	otopography.	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 a	
		0	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.8	8 acres)
		0	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		0	Standing dead >25cm (10in) dbh	Microtopoo	graphy Cover Scale	
		<u> </u>	Amphibian breeding pools	0	Absent	
				1	Present very small amounts or if	more common
				2	of marginal quality Present in moderate amounts, by quality or in small amounts of h	ě .
	1			3	Present in moderate or greater a and of highest quality	
38					1	

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
Ü	Metric 2. Buffers and surrounding land use	7	
	Metric 3. Hydrology	16	
	Metric 4. Habitat	11	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE	38	Category based on score breakpoints Mod 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category				
Choose one	Category 1	(Category 2)	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:				
Kristen Vonderwish				
Date:				
4/7/2022				
Affiliation: GAI Consultants, Inc.				
Address:				
	20, North Canton, OH 44720			
Phone Number:				
234.203.0772				
e-mail address: k.vonderwish@gaiconsulta	nts com			
Name of Wetland:				
Vegetation Communit(ies): PEM				
HGM Class(es):				
Depressional	de map, address, north arrow, landmarks, distances, roads, etc.			
	attached project location map.			
i lease refer to the	attached project location map.			
Lat/Long or UTM Coordinate	40.421337, -82.311406			
USGS Quad Name	Danville, OH			
County	Knox			
Township	Howard Township			
Section and Subsection	X			
Hydrologic Unit Code	050400030402			
Site Visit	4/7/2022			
National Wetland Inventory Map X				
Ohio Wetland Inventory Map	Х			
Soil Survey	Ho: Holly silt loam, frequently flooded			
Delineation report/map	Υ			

W074

Wetland Size (acres, hectares):

0.875073 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

North





Comments, Narrative Discussion, Justification of Category Changes:

Final score: 39

Category: Modified 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Category 3 status.	
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at	YES	(NO)
	an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO
	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland	YES	NO
	border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant		
	native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be	Go to Question 10
		evaluated for possible	Oo to Question to
		Category 3 status	
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be		
	characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be	Go to Question 11	
	present). The Ohio Department of Natural Resources Division of		
	Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	dominated by some or all of the species in Table 1. Extensive prairies	N/ 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion	Wetland should be evaluated for possible	Complete Quantitative
	Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties),	Category 3 status	Rating
	and portions of western Ohio Counties (e.g. Darke, Mercer, Miami,		
	Montgomery, Van Wert etc.).	Complete Quantitative Rating	

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Mi	illwood-Ohio	Central R	ater(s): Kristen Vonderwish		Date: 4/7/2022
2	2	Metric 1. Wetland Are	ea (size).		
max 6 pts.	subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2 10 to <25 acres (4 to <10.1ha) 3 to <10 acres (1.2 to <4ha) (3 X 0.3 to <3 acres (0.12 to <1.2ha) 0.1 to <0.3 acres (0.04 to <0.1 <0.1 acres (0.04ha) (0 pts)	(4 pts) 3 pts) a) (2pts)		
7	9	Metric 2. Upland buff	ers and surroundi	ng land use.	
max 14 pts.	subtotal	X MEDIUM. Buffers average 25 NARROW. Buffers average 1 VERY NARROW. Buffers average 25 Intensity of surrounding land use. S VERY LOW. 2nd growth or ol X LOW. Old field (>10 years), si	164ft) or more around wetland per m to <50m (82 to <164ft) around women to <25m (32ft to <82ft) around women to <25m (32ft to <82ft) around wetland Select one or double check and avider forest, prairie, savannah, wildlight land, young second growth for ential, fenced pasture, park, conse	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) erage. ife area, etc. (7) prest. (5) revation tillage, new fallo	w field. (3)
14	23	Metric 3. Hydrology.			
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply the programmer of the process of Water. Score all that apply the process of Water. Score all that apply the precipitation (1) Seasonal/Intermittent surface Perennial surface water (lake of Perennial surface water (lake of Perennial surface water (lake of Perennial surface water) 3c. Maximum water depth. Select only of the process of t	water (3) or stream) (5) 3d. I one and assign score.	Part of wetland/up X Part of riparian or Duration inundation/satu X Semi- to permane Regularly inundat Seasonally inundat Seasonally satura	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3)
		X Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturbances observed ditch tile dike weir stormwater input	point source (non filling/grading road bed/RR track dredging other	·
13	36	Metric 4. Habitat Alte	eration and Develo	pment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one of None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1)	r double check and average.		
		4b. Habitat development. Select only of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	ne and assign score.		
		4c. Habitat alteration. Score one or dou None or none apparent (9) Recovered (6)	Check all disturbances observed mowing	shrub/sapling rem	
	36	Recovering (3) Recent or no recovery (1)	grazing clearcutting selective cutting woody debris removal	herbaceous/aqua sedimentation dredging farming	
	subtotal this p	<u> </u>	toxic pollutants	nutrient enrichme	nt
iasi revised	ı reprua	ary 2001 jjm			

Site: Mil	lwood-Ohio	Central	Rater	(s): Kristen Vo	nderwish	Date: 4/7/2022
	36 ubtotal first pa					
0	36	Ť	ric 5. Special Wetlan	ıds.		
max 10 pts.	subtotal	Check a	Il 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 three Significant migratory songbird/water Category 1 Wetland. See Question	restricted hydronings) (10) eatened or end fowl habitat or	angered species (10)	
3	39	Metr	ic 6. Plant commun	ities, int	erspersion, microto	opography.
max 20 pts.	subtotal	⊒ 6a. Wet	land Vegetation Communities.	Vegetation	Community Cover Scale	
			I present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	471 acres) contiguous area
		0	Aquatic bed	1	Present and either comprises sm	
		2	Emergent		vegetation and is of moderate of	quality, or comprises a
		1	Shrub		significant part but is of low qua	•
		0	Forest	2	Present and either comprises sig	
		0	Mudflats		vegetation and is of moderate of	quality or comprises a small
		0	Open water		part and is of high quality	
		[0]	Other	3	Present and comprises significan	
			zontal (plan view) Interspersion.		vegetation and is of high quality	/
		Select o	¬[Norretive F	acceptation of Variation Quality	
			High (5) Moderately high(4)	low	Low spp diversity and/or predomi	inance of poppative or
			Moderate (3)	IOW	disturbance tolerant native spe	
			Moderately low (2)	mod	Native spp are dominant compon	
		X	Low (1)	mod	although nonnative and/or distu	_
			None (0)		can also be present, and specie	
		6c. Cov	erage of invasive plants. Refer		moderately high, but generally	w/o presence of rare
		to Table	1 ORAM long form for list. Add		threatened or endangered spp	
		or deduc	ct points for coverage	high	A predominance of native specie	s, with nonnative spp
			Extensive >75% cover (-5)		and/or disturbance tolerant nati	
		Х	Moderate 25-75% cover (-3)		absent, and high spp diversity a	•
			Sparse 5-25% cover (-1)		the presence of rare, threatene	d, or endangered spp
			Nearly absent <5% cover (0)			
			Absent (1)		d Open Water Class Quality	
			rotopography.	0	Absent <0.1ha (0.247 acres)	
		Score ai	I present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 a)	
		<u>V</u>	Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	3	Moderate 1 to <4ha (2.47 to 9.88 High 4ha (9.88 acres) or more	s acres)
		V O	Standing dead >25cm (10in) dbh		Tilgit 411a (9.86 acres) of filore	
		2	Amphibian breeding pools	Microtopoo	graphy Cover Scale	
				0	Absent	
				1	Present very small amounts or if of marginal quality	more common
				2	Present in moderate amounts, but quality or in small amounts of h	•
	1			3	Present in moderate or greater at and of highest quality	
39					1 0 1111 9	

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
g	Metric 2. Buffers and surrounding land use	7	
	Metric 3. Hydrology	14	
	Metric 4. Habitat	13	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE	39	Category based on score breakpoints Mod 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

	Fin	al Category	
Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

APPENDIX D Primary Headwater Habitat Evaluation Data Forms



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Headwater Habitat Evaluation Index Field Form

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Protection Agency HHEI Score (sum of metrics 1+2+3)		
SITE NAME/LOCATION Millwood-Wakatomika		
SITE NUMBER S080 RIVER BASIN 050400030403 RIVER CODE DRAINAGE AREA (mi²)	<1	
LENGTH OF STREAM REACH (ft) 51.00 LAT 40.33753 LONG -82.242481 RIVER MILE		
DATE 03/30/2022 SCORER KLV COMMENTS SOH-KLV-080		
NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Inst.	ructions	
·		
STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	RECOVERY	
 SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B 	HHEI	
TYPE PERCENT TYPE PERCENT	Metric	
BLDR SLABS [16 pts]	Points	
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 10 BEDROCK [16 pts] FINE DETRITUS [3 pts]	Substrate	
COBBLE (65-256 mm) [12 pts] 20 CLAY or HARDPAN [0 pt]	Max = 40	
GRAVEL (2-64 mm) [9 pts] MUCK [0 pts]	16	
SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]		
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock 20 (A) (B)	A + B	
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4		
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the	Pool Depth	
time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 30	
> 30 centimeters [20 pts] 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] 5 cm - 5 cm [5pts]		
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0pts]	0	
COMMENTS MAXIMUM POOL DEPTH (centimeters): 0		
BANK FULL WIDTH (Measuredas the average of 3 - 4 measurements) (Check ONLY one box):	Bankfull	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30	
> 3.0 m - 4.0 m (> 9' 7°-13') [25 pts]	IVIAX-30	
	5	
COMMENTS AVERAGE BANKFULL WIDTH (meters) 3'		
This information must also be completed		
RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream*		
RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank)		
Wide >10m		
Narrow <5m Residential, Park, New Field Dpen Pasture, Row Cro	р	
None Fenced Pasture Mining or Construction		
COMMENTS		
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):		
Stream Flowing Moist Channel, isolated pools, no flow (intermitted Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephemeral)	it)	
COMMENTS	_	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	-	
□ None □ 1.0 □ 2.0 □ 3.0		
□ 0.5 □ 1.5 □ 2.5 □ >3		
□ 0.5		

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _	(If Yes, Attach Completed QHEI form)	
DOWNSTREAM DESIGNATED USE(S)		
WWH Name: Dry Run	Distance from Evaluated Stream <1 mile	
CWH Name:	Distance from Evaluated Stream	
EWH Name:	Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING TH	E ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.	
USGS Quadrangle Name: Walhonding	NRCS Soil Map Page: NRCS Soil Map Stream Order:	
County: Knox	Fownship/City: BUTLER TWP	
MISCELLANEOUS		
Base Flow Conditions? (Y/N):_Y Date of last precipitati	on:03/30/2022	
Photo-documentation Notes:		
Elevated Turbidity?(Y/N): N Canopy (% open):	50	
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):		
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)		
Is the sampling reach representative of the stream (Y/N) Y f not, explain:		
Additional comments/description of pollution impacts:		
BIOLOGICAL OBSERVATIONS (Record all observations below)		
Fish Observed? (Y/N) N Species observed (if known):		
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):		
Salamanders Observed? (Y/N) N Species observed (if k	nown) <u>:</u>	
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):		
Comments Regarding Biology:		

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Ohio	Environmental ection Agency

Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+

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SITE NAME/LOCATION Millwood-Wakatomika		
	30403 RIVER CODE DRAINAGE AREA (mi²)	<1
LENGTH OF STREAM REACH (ft) 159.00 LAT	40.338143 LONG -82.242961 RIVER MILE	
DATE 03/30/2022 SCORERKLV CO	DMMENTS SOH-KLV-081	
NOTE: Complete All Items On This Form - Refer to	o "Headwater Habitat Evaluation Index Field Manual" for Ins	tructions
STDEAM CHANNEL MODIFICATIONS:		
STREAM CHANNEL MODIFICATIONS.	NATURAL CHANNEL RECOVERED RECOVERING RECENT OR I	NO RECOVERY
(Max of 32). Add total number of significant substants TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pts] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] 30	present). Check ONLY two predominant substrate TYPE boxes. trate types found (Max of 8). Final metric score is sum of boxes A & B TYPE SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] FINE DETRITUS [3 pts] CLAY or HARDPAN [0 pt] MUCK [0 pts]	HHEI Metric Points Substrate Max = 40
SAND (<2 mm) [6 pts] 15	ARTIFICIAL [3 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock15	(A) (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE T	YPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
	a pool depth within the 61 meter (200 feet) evaluation reach at the culverts or storm water pipes) (Check ONLY one box): 5 cm - 10 cm [15 pts] < 5 cm [5pts]	Pool Depth Max = 30
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [Opts]	0
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 0	
	MAXIMUM POOL DEPTH (centimeters): 0 e of 3 - 4 measurements) (Check ONLY one box):	Bankfull
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts]	e of 3 - 4 measurements) (Check ONL Y one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the average	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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	e of 3 - 4 measurements) (Check <i>ONL</i> Y one box):	Width
3. BANK FULL WIDTH (Measured as the average > 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 This	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] \leq 1.0 m (\leq 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 4' information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QU	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 4' information must also be completed JALITY * NOTE: River Left (L) and Right (R) as looking downstreams	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTY RIPARIAN WIDTH L R (Per Bank) L R	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 4' sinformation must also be completed JALITY * NOTE: River Left (L) and Right (R) as looking downstreams FLOODPLAIN QUALITY (Most Predominant per Bank) L R	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUEE RIPARIAN WIDTH L R (Per Bank) L R	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 4' sinformation must also be completed JALITY * NOTE: River Left (L) and Right (R) as looking downstreams FLOODPLAIN QUALITY (Most Predominant per Bank)	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QU RIPARIAN WIDTH L R (Per Bank) L R Wide >10m Moderate 5-10m Narrow <5m None	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters) 4' sinformation must also be completed JALITY * NOTE: River Left (L) and Right (R) as looking downstreams FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Urban or Industrial Residential, Park, New Field Open Pasture, Row C Fenced Pasture Mining or Construction Mining or C	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTE (Per Bank) L R Wide > 10m L R Moderate 5-10m Moderate 5-10m Narrow < 5m None COMMENTS	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters) 4' sinformation must also be completed JALITY * NOTE: River Left (L) and Right (R) as looking downstreams FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Urban or Industrial Residential, Park, New Field Open Pasture, Row C Fenced Pasture Mining or Construction (Check ONLY one box): Moist Channel, isolated pools, no flow (intermitted) Moist Channel, isolated pools, no flow (intermitted) Check ONLY one box): Moist Channel, isolated pools, no flow (intermitted) Moist Channel, isolated pools, no flow (intermitted) Mature Forest, Wetland Open Pasture, Row C Moist Channel, isolated pools, no flow (intermitted) Moist Channel, isolated pools, no flow (intermitted) Moist Channel, isolated pools, no flow (intermitted) Moist Channel, isolated Mining Or Construction Moist Channel, isolated Mining Or Construction Mining Or Construction	Width Max=30 15
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTED AND FLOODPLAIN QUENT	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30 15
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUE RIPARIAN WIDTH L R (Per Bank) L R Wide >10 m L R Moderate 5-10 m RIPARIAN WIDTH Narrow <5 m RIPARIAN WIDTH COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (interst COMMENTS COMMENTS SINUOSITY (Number of bends per 61 m (None L 1.0)	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30 15
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUE RIPARIAN WIDTH L R (Per Bank) L R Wide >10 m	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30 15

QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
₩WH Name: Dry Run Distance from Evaluated Stream <1 mile
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page:NRCS Soil Map Stream Order:
County: Knox Township/City: BUTLER TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:03/30/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): _N Canopy (% open):50
Were samples collected for waterchemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS (Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





	hio
Ohio	Environmental ection Agency

Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+3

2	
	2

SITE NAME/LOCATION Millwood-Wakatomika		
	03 RIVER CODE DRAINAGE AREA (mi²)	<1
LENGTH OF STREAM REACH (ft) 159.00 LAT 40.	.343449 LONG -82.247119 RIVER MILE	
DATE 03/30/2022 SCORER KLV COMME	NTS SOH-KLV-083	
NOTE: Complete All Items On This Form - Refer to "H	eadwater Habitat Evaluation Index Field Manual" for Inst	ructions
STREAM CHANNEL MODIFICATIONS: NONE/NATUR	RAL CHANNEL RECOVERED RECOVERING RECENT OR N	O RECOVERY
(Max of 32). Add total number of significant substrate	types found (Max of 8). Final metric score is sum of boxes A & B TYPE SILT [3 pt] SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] FINE DETRITUS [3 pts] CLAY or HARDPAN [0 pt] MUCK [0 pts] ARTIFICIAL [3 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	(B) TOTAL NUMBER OF SUBSTRATE TYPES: 5	A + B
 Maximum Pool Depth (Measure the maximum pool time of evaluation. Avoid plunge pools from road culve 	I depth within the 61 meter (200 feet) evaluation reach at the	Pool Depth Max = 30
> 30 centimeters [20 pts]	5 cm - 10 cm [15 pts]	IVIAX = 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5pts] NO WATER OR MOIST CHANNEL [0pts]	15
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 10	
	mrouniouri ooz bzi iii (continiotoro).	
2 DANK FILL WIDTH (Managered on the growing of 2	Amazauramenta) (Chaek ONI Vanahari)	Dankfull
3. BANK FULL WIDTH (Measured as the average of 3 > 4.0 meters (> 13') [30 pts]		Bankfull Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts]	-4 measurements) (Check <i>ONL</i> Y one box): > 1.0 m - 1.5 m (> 3' 3" - 4" 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts]	
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30
> 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	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts]	Width Max=30
> 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 This info	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 8'	Width Max=30
> 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 This info RIPARIAN ZONE AND FLOODPLAIN QUALIT	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) Windows and the second sec	Width Max=30
> 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 This info RIPARIAN ZONE AND FLOODPLAIN QUALIT RIPARIAN WIDTH L R (Per Bank) L R	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) **mation mustalso be completed TY * NOTE: River Left (L) and Right (R) as looking downstream* **DODPLAIN QUALITY* (Most Predominant per Bank) L R	Width Max=30
> 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 This info RIPARIAN ZONE AND FLOODPLAIN QUALIT RIPARIAN WIDTH L R (Per Bank) L R W W Wide > 10m Ma'	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) Windows and the second sec	Width Max=30
> 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 This info RIPARIAN ZONE AND FLOODPLAIN QUALIT RIPARIAN WIDTH L R (Per Bank) L R W W Wide >10m Moderate 5-10m Million	> 1.0 m - 1.5 m (> 3' 3" - 4" 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) ### AVERAGE BANKFUL	Width Max=30 20
> 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 This info RIPARIAN ZONE AND FLOODPLAIN QUALIT RIPARIAN WIDTH L R (Per Bank) L R W Wide >10m Moderate 5-10m Narrow <5m Res	> 1.0 m - 1.5 m (> 3' 3" - 4" 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) ### AVOITE: River Left (L) and Right (R) as looking downstream to DODPLAIN QUALITY (Most Predominant per Bank) L R ture Forest, Wetland mature Forest, Shrub or Old Field Urban or Industrial	Width Max=30 20
> 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 This info RIPARIAN ZONE AND FLOODPLAIN QUALIT RIPARIAN WIDTH L R (Per Bank) L R Wide >10m Moderate 5-10m Moderate 5-10m Narrow <5m Res COMMENTS COMMENTS	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) Matternation must also be completed Y * NOTE: River Left (L) and Right (R) as looking downstream* DODPLAIN QUALITY (Most Predominant per Bank) L R ture Forest, Wetland mature Forest, Shrub or Old Field mature Forest, Shrub or Old Field Wirban or Industrial sidential, Park, New Field Open Pasture, Row Cr mining or Construction	Width Max=30 20
> 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 This info RIPARIAN ZONE AND FLOODPLAIN QUALIT RIPARIAN WIDTH L R (Per Bank) L R Wide >10m	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) Matternation must also be completed Y * NOTE: River Left (L) and Right (R) as looking downstream* DODPLAIN QUALITY (Most Predominant per Bank) L R ture Forest, Wetland mature Forest, Shrub or Old Field mature Forest, Shrub or Old Field Wirban or Industrial sidential, Park, New Field Open Pasture, Row Cr mining or Construction	Width Max=30 20
> 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	> 1.0 m - 1.5 m (> 3' 3" - 4" 8")[15 pts]	Width Max=30 20
> 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	> 1.0 m - 1.5 m (> 3' 3" - 4" 8")[15 pts]	Width Max=30 20
> 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	> 1.0 m - 1.5 m (> 3' 3" - 4" 8")[15 pts]	Width Max=30 20

QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
₩WH Name: Dry Run Distance from Evaluated Stream <1 mile
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page:NRCS Soil Map Stream Order:
County: Knox Township/City: BUTLER TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:03/30/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): _N Canopy (% open):50
Were samples collected for waterchemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS (Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Ohio	Environmental

Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+

26

SITE NAME/LOCATION Millwood-Wakatomika		
	30403 RIVER CODE DRAINAGE AREA (mi²)	<1
LENGTH OF STREAM REACH (ft) 153.00 LAT	40.346689 LONG -82.249568 RIVER MILE	
DATE 03/31/2022 SCORER KLV CO	DMMENTS SOH-KLV-084	
NOTE: Complete All Items On This Form - Refer to	o "Headwater Habitat Evaluation Index Field Manual" for Ins	tructions
STDEAM CHANNEL MODIFICATIONS:		
STREAM CHANNEL MODIFICATIONS.	NATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	NO RECOVERY
(Max of 32). Add total number of significant substants TYPE PERCENT BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pts]	present). Check ONLYtwo predominant substrate TYPE boxes. trate types found (Max of 8). Final metric score is sum of boxes A & B TYPE SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] FINE DETRITUS [3 pts]	HHEI Metric Points Substrate Max = 40
COBBLE (65-256 mm) [12 pts] 20 GRAVEL (2-64 mm) [9 pts] 30 SAND (<2 mm) [6 pts]	CLAY or HARDPAN [0 pt] MUCK [0 pts] ARTIFICIAL [3 pts]	16
Total of Percentages of		
Bldr Slabs, Boulder, Cobble, Bedrock 20 SCORE OF TWO MOST PREDOMINATE SUBSTRATE T	(A) 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4	A + B
	a pool depthwithin the 61 meter (200 feet) evaluation reach at the	Pool Depth
time of evaluation. Avoid plunge pools from road	culverts or storm water pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	5 cm - 10 cm [15 pts] < 5 cm [5pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0pts]	5
COMMENTS	MAXIMUM POOL DEPTH (centimeters): <5	
	e of 3 - 4 measurements) (Check ONLY one box): <5	Bankfull
3. BANK FULL WIDTH (Measuredas the average > 4.0 meters (> 13') [30 pts]	e of 3 - 4 measurements) (Check ONL Yone box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Bankfull Width Max=30
3. BANK FULL WIDTH (Measuredas the average	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measuredas the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts]	e of 3 - 4 measurements) (Check ONL Yone box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
3. BANK FULL WIDTH (Measuredas the average > 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 This	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 3' s information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QU	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 3' sinformation must also be completed JALITY * NOTE: River Left (L) and Right (R) as looking downstream*	Width Max=30
3. BANK FULL WIDTH (Measuredas the average > 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 This	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 3' s information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUE RIPARIAN WIDTH L R (Per Bank) L R Wide >10m	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 3' sinformation must also be completed JALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank)	Width Max=30
3. BANK FULL WIDTH (Measuredas the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTE (Per Bank) L R Wide > 10m L R Moderate 5-10m Moderate 5-10m Narrow < 5m None COMMENTS	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUE RIPARIAN WIDTH L R (Per Bank) L R Wide >10m	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTED AND FLOODPLAIN QUENT	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUE RIPARIAN WIDTH L R (Per Bank) L R Wide >10 m L R Moderate 5-10 m RIPARIAN WIDTH Narrow <5 m RIPARIAN WIDTH COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (intersection) Stream Flowing Subsurface flow with isolated pools (intersection) None 1.0	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUE RIPARIAN WIDTH L R (Per Bank) L R Wide >10 m	e of 3 - 4 measurements) (Check ONLY one box):	Width Max=30

QHEI PERFORMED? ☐Yes ☑ No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Dry Run Distance from Evaluated Stream <1 mile
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page: NRCS Soil Map Stream Order:
County: Knox Township/City: BUTLER TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:03/31/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): _N Canopy (% open):50
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS (Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+

55	
55	

SITE NAME/LOCATION Millwood-Wakatomika		
	030403 RIVER CODE DRAINAGE AREA (mi²)	<1
LENGTH OF STREAM REACH (ft) 144.00 LAT	40.350629 LONG82.252575 RIVER MILE	
DATE 03/31/2022 SCORER KLV CO	OMMENTS SOH-KLV-085	
NOTE: Complete All Items On This Form - Refer t	to "Headwater Habitat Evaluation Index Field Manual" for Ins	tructions
•	_	
STREAM CHANNEL MODIFICATIONS: NONE/	NATURAL CHANNEL ☑RECOVERED ☐RECOVERING ☐RECENT OR I	NO RECOVERY
	epresent). Check ONLY two predominant substrate TYPE boxes. strate types found (Max of 8). Final metric score is sum of boxes A & B	HHEI
TYPE PERCENT	TYPE PERCENT	Metric
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]	SILT [3 pt] 10 LEAF PACK/WOODY DEBRIS [3 pts] 10	Points
BEDROCK [16 pts]	FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts]20	CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts] 30 SAND (<2 mm) [6 pts] 30	MUCK [0 pts]	20
	ARTIFICIAL [3 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock20	(A)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE T	TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum	n pool depth within the 61 meter (200 feet) evaluation reach at the	Pool Depth
	I culverts or storm water pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	≤ 5 cm - 10 cm [15 pts] < 5 cm [5pts]	45
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0pts]	15
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 10	
	MAXIMUM POOL DEPTH (centimeters): 10 ge of 3 - 4 measurements) (Check ONLY one box):	Bankfull
3. BANK FULL WIDTH (Measuredas the averag > 4.0 meters (> 13') [30 pts]	pe of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
3. BANK FULL WIDTH (Measuredas the averag	pe of 3 - 4 measurements) (Check ONLY one box):	
3. BANK FULL WIDTH (Measured as the averag > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts]	pe of 3 - 4 measurements) (Check <i>ONLY</i> one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts]	Width
3. BANK FULL WIDTH (Measured as the averag > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts]	pe of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30
3. BANK FULL WIDTH (Measuredas the averag > 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 This	e of 3 - 4 measurements) (Check <i>ONL</i> Y one box):	Width Max=30
3. BANK FULL WIDTH (Measuredas the averag > 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 This	September Comparison Check ONLY one box :	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTY PROPERTY OF THE PROPERTY OF TH	Peof 3 - 4 measurements (Check ONLY one box): Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTY RIPARIAN WIDTH L R (Per Bank) L R	September Comparison Check ONLY one box :	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTY RIPARIAN WIDTH L R (Per Bank) L R	Peof 3 - 4 measurements (Check ONLY one box): Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution	Width Max=30
3. BANK FULL WIDTH (Measuredas the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTE (Per Bank) L R Wide > 10 m	Sinformation MALITY Most Predominant per Bank AVERAGE BANKFULL WIDTH (meters) 8' 8' 15 pts 8' 15 pts 1.0 m (≤ 3' 3") [5 pts] 1.0 m	Width Max=30 20
3. BANK FULL WIDTH (Measuredas the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTE RIPARIAN WIDTH L R (Per Bank) L R W Wide >10m	Sinformation MALITY Most Predominant per Bank	Width Max=30 20
3. BANK FULL WIDTH (Measuredas the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTE (Per Bank) L R Wide > 10m L R Moderate 5-10m DATE (Per Bank) L R Narrow < 5m None COMMENTS	Peof 3 - 4 measurements (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30 20
3. BANK FULL WIDTH (Measuredas the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTE (Per Bank) L R Wide > 10m L R Moderate 5-10m Moderate 5-10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Evaluation)	S information mustalso be completed AVERAGE BANKFULL WIDTH (meters) 8'	Width Max=30 20
3. BANK FULL WIDTH (Measuredas the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTE (Per Bank) L R Wide > 10m L R Moderate 5-10m DATE (Per Bank) L R Narrow < 5m None COMMENTS	Peof 3 - 4 measurements (Check ONLY one box):	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTE RIPARIAN WIDTH L R (Per Bank) L R Wide > 10m	S information mustalso be completed AVERAGE BANKFULL WIDTH (meters) 8'	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTED AND FLOODPLAIN QUE	Second Second Check ONLY one box :	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTED AND FLOODPLAIN QUE	Solution Color C	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This RIPARIAN ZONE AND FLOODPLAIN QUENTED AND FLOODPLAIN QUE	Second Second Check ONLY one box :	Width Max=30 20

QHEI PERFORMED? ☐Yes ☑ No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
₩WH Name: Jug Run Distance from Evaluated Stream 0
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page: NRCS Soil Map Stream Order:
County: Knox Township/City: BUTLER TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:03/31/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): _N Canopy (% open):60
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS (Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N)_N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+3)

50	

	HHEI Score (sum of metrics 1+2+3)	
SITE NAME/LOCATION Millwood-Wakatomika		
SITE NUMBER S087 RIVER BASIN 050400030	403 RIVER CODE DRAINAGE AREA (mi²)	<1
	40.351302 LONG -82.252855 RIVER MILE	
DATE 03/31/2022 SCORER KLV COM	MENTS SOH-KLV-087	
NOTE: Complete All Items On This Form - Refer to '	"Headwater Habitat Evaluation Index Field Manual" for Inst	uctions
STREAM CHANNEL MODIFICATIONS: NONE/NAT	TURAL CHANNEL RECOVERED RECOVERING RECENT OR N	RECOVERY
	resent). Check ONLY two predominant substrate TYPE boxes. Ite types found (Max of 8). Final metric score is sum of boxes A & B TYPE SILT [3 pt] BILT	HHEI Metric Points Substrate Max = 40
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPE	PES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the <u>maximum position</u> pools from road cut is 30 centimeters [20 pts] > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] COMMENTS	MAXIMUM POOL DEPTH (centimeters):	Pool Depth Max = 30
	of 3 - 4 measurements) (Check ONLY one box):	Bankfull Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts]	of 3 - 4 measurements) (Check <i>ONL</i> Y one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts]	Bankfull Width Max=30
> 4.0 meters (> 13") [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
> 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	> 1.0 m -1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters) 5'	Width Max=30
> 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 This in	> 1.0 m -1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts]	Width Max=30
> 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 This in RIPARIAN ZONE AND FLOODPLAIN QUAI RIPARIAN WIDTH L R (Per Bank) L R Wide >10m Moderate 5-10m Narrow <5m RIPARION STATE OF THE PROPERTY	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30
> 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 This in RIPARIAN ZONE AND FLOODPLAIN QUAI RIPARIAN WIDTH L R (Per Bank) L R Wide >10m Moderate 5-10m Narrow <5m None	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30
> 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 This in RIPARIAN ZONE AND FLOODPLAIN QUAI RIPARIAN WIDTH L R (Per Bank) L R Wide >10m Moderate 5-10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) (C) Stream Flowing Subsurface flow with isolated pools (interstitic	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30

QHEI PERFORMED? ☐Yes ☑ No QHEI Score (If Yes, Attach Completed QHEI form)	
DOWNSTREAM DESIGNATED USE(S)	
✓ WWH Name: Jug Run Distance from Evaluated Stream 0	
CWH Name: Distance from Evaluated Stream	
EWH Name: Distance from Evaluated Stream	_
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.	
USGS Quadrangle Name: Walhonding NRCS Soil Map Page: NRCS Soil Map Stream Order:	_
County: Knox Township/City: BUTLER TWP	_
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:03/31/2022 Quantity:<0.25"	
Photo-documentation Notes:	
Elevated Turbidity?(Y/N): _N Canopy (% open):60	
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):	
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)	
Is the sampling reach representative of the stream (Y/N) Y f not, explain:	
Additional comments/description of pollution impacts:	
BIOLOGICAL OBSERVATIONS (Record all observations below)	
Fish Observed? (Y/N) N Species observed (if known);	
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):	
Salamanders Observed? (Y/N) N Species observed (if known):	
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):	
Comments Regarding Biology:	

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form

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Protection Agency HHEI Score (sum of metrics 1+2+3)	
SITE NAME/LOCATION Millwood-Wakatomika	
SITE NUMBER S088 RIVER BASIN 050400030403 RIVER CODE DRAINAGE AREA (mi²)	 <1
LENGTH OF STREAM REACH (ft) 230.00 LAT 40.356068 LONG -82.256611 RIVER MILE	
DATE 03/31/2022 SCORER KLV COMMENTS SOH-KLV-088	
NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Inst	ructions
STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	O RECOVERY
SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B TYPE PERCENT PERCENT	HHEI Metric
BLDR SLABS [16 pts] SILT [3 pt] 30	Points
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 10	Substrate
BEDROCK [16 pts] FINE DETRITUS [3 pts]	Max = 40
COBBLE (65-256 mm) [12 pts] 15 CLAY or HARDPAN [0 pt]	
SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]	15
Total of Percentages of 15	
Bidr Slabs, Boulder, Cobble, Bedrock (A) (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the <u>maximum</u> pool depth within the 61 meter (200 feet) evaluation reach at the	Pool Depth
time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] 5 cm - 10 cm [15 pts]	Max = 30
> 30 centimeters [20 pts]	15
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0pts]	15
COMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7"-13') [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	Max=30
	20
COMMENTS AVERAGE BANKFULL WIDTH (meters) 5'	
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream*	
RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank)	
LR (Per Bank) LR LR	
Wide >10m	
│	
Narrow <5m Residential, Park, New Field Deen Pasture, Row Cr	υþ
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	-
Stream Flowing Moist Channel, isolated pools, no flow (intermitte	nt)
Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephemeral)	
COMMENTS	-
SINUO SITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
□ None □ 1.0 □ 2.0 □ 3.0 □ 3.0 □ 0.5 □ 1.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE	
STREAM GRADIENT ESTIMATE	

QHEI PERFORMED? ☐Yes ☑No QHEI Score	(If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Jug Run	Distance from Evaluated Stream 0
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING T	HE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding	NRCS Soil Map Page:NRCS Soil Map Stream Order:
County: Knox	Township/City: BUTLER TWP
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipita	tion:03/31/2022 Quantity:<0.25"
Photo-documentation Notes:	
Elevated Turbidity?(Y/N): _N Canopy (% open): _	60
Were samples collected for water chemistry? (Y/N): N	Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/	l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) \underline{Y}	f not, explain:
Additional comments/description of pollution impacts:	
	L OBSERVATIONS observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observ	ed (if known):
Salamanders Observed? (Y/N) N Species observed (if	known):
Aquatic Macroinvertebrates Observed? (Y/N). N Specie	s observed (if known):
Comments Regarding Biology:	

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+

SITE NAME/LOCATION Millwood-Wakatomika	
SITE NUMBER S089 RIVER BASIN 050400030403	
LENGTH OF STREAM REACH (ft) 181.00 LAT 40.36567	
DATE 04/04/2022 SCORER KLV COMMENTS S	SOH-KLV-089
NOTE: Complete All Items On This Form - Refer to "Headwa	ter Habitat Evaluation Index Field Manual" for Instructions
STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHA	NNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
1. SUBSTRATE (Estimate percent of every type present). Ch (Max of 32). Add total number of significant substrate types fo TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pts] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 30	
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock 10 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:	TOTAL NUMBER OF SUBSTRATE TYPES: 5
 Maximum Pool Depth (Measure the maximum pool depth time of evaluation. Avoid plunge pools from road culverts or si 	, , , , , , , , , , , , , , , , , , ,
> 30 centimeters [20 pts]	5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5pts] NO WATER OR MOIST CHANNEL [0pts]
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 10
BANK FULL WIDTH (Measured as the average of 3 - 4 measured as the 3 - 4 measured as	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7°-13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] Width ≤ 1.0 m (≤ 3' 3")[5 pts] Max=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7")[20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters) 6'
	n <u>must</u> also be completed NOTE: River Left (L) and Right (R) as looking downstream*
	IN_QUALITY (Most Predominant per Bank)
LR (PerBank) LR	L R
✓ ✓ Wide >10m Mature For ☐ Moderate 5-10m Immature For ☐ Narrow <5m	rest, Wetland Conservation Tillage Forest, Shrub or Old Field Urban or Industrial I, Park, New Field Open Pasture, Row Crop
✓ ✓ Wide >10m	rest, Wetland Conservation Tillage Forest, Shrub or Old Field Urban or Industrial I, Park, New Field Open Pasture, Row Crop Sture Mining or Construction
Wide >10m	rest, Wetland Conservation Tillage Forest, Shrub or Old Field Urban or Industrial I, Park, New Field Open Pasture, Row Crop Sture Mining or Construction
Wide >10m	rest, Wetland Conservation Tillage Forest, Shrub or Old Field Urban or Industrial I, Park, New Field Open Pasture, Row Crop Sture Mining or Construction Procedure Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Procedure Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Procedure Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Procedure Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Procedure Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Procedure Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Procedure Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
Wide >10m	rest, Wetland Conservation Tillage Forest, Shrub or Old Field Urban or Industrial I, Park, New Field Open Pasture, Row Crop Sture Mining or Construction .Yone box): Moist Channel, isolated pools, no flow (intermittent) Dry channel, no water (ephemeral)
Wide >10m	rest, Wetland Forest, Shrub or Old Field Urban or Industrial Upan or I

QHEI PERFORMED? ☐Yes ☑No QHEI Score _	(If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Brush Run	Distance from Evaluated Stream <1 mile
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING TH	HE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding	NRCS Soil Map Page: NRCS Soil Map Stream Order:
County: Knox	Fownship/City: BUTLER TWP
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitati	on:04/04/2022
Photo-documentation Notes:	
Elevated Turbidity?(Y/N): N Canopy (% open):	60
Were samples collected for water chemistry? (Y/N): N	Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y	f not, explain:
Additional comments/description of pollution impacts:	
	OBSERVATIONS bservations below)
Fish Observed? (Y/N) N Species observed (if known)	
Frogs or Tadpoles Observed? (Y/N) N Species observe	d (if known):
Salamanders Observed? (Y/N) N Species observed (if k	nown):
Aquatic Macroinvertebrates Observed? (Y/N) N Species	observed (if known):
Comments Regarding Biology:	

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form

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	HHEI Score (sum of metrics 1+2+3)	
SITE NAME/LOCATION Millwood-Waka	atomika	
	05040000400	
LENGTH OF STREAM REACH (ft) 39.0		
	CLV COMMENTS SOH-KLV-090	
NOTE: Complete All Items On This Fo	orm - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instru	ictions
STREAM CHANNEL MODIFICATIONS:	NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO	RECOVERY
1. SUBSTRATE (Estimate percent	of every type present). Check ONLY two predominant substrate TYPE boxes.	HHEI
(Max of 32). Add total number of si TYPE	ignificant substrate types found (Max of 8). Final metric score is sum of boxes A & B PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]		Points
BOULDER (>256 mm) [16 pts]	LEAF PACK/WOODY DEBRIS [3 pts] 10	
BEDROCK [16 pts]	FINE DETRITUS [3 pts]	Substrate Max = 40
COBBLE (65-256 mm) [12 pts]		
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]	30 MUCK [0 pts] ARTIFICIAL [3 pts]	20
	ARTIFICIAL [3 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedroc	k 10 (A)	A + B
SCORE OF TWO MOST PREDOMINATE S	··· ······	
Maximum Pool Depth (Measure	the maximum pool depth within the 61 meter (200 feet) evaluation reach at the	Pool Depth
	The state of the s	Max = 30
> 30 centimeters [20 pts]	5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5pts] NO WATER OR MOIST CHANNEL [0pts]	5
COMMENTS	MAXIMOM FOOL BLFTII (cellullieleis).	
	as the average of 3 - 4 measurements) (Check ONLY one box):	Bankfull Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] s] ≤ 1.0 m (< 3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7")[20 p		
_	AVERACE PANKELLI MIDTH (motors) 3'	5
COMMENTS	AVERAGE BANKFULL WIDTH (meters)	
	This information must also be completed	
RIPARIAN ZONE AND FLO	OODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream*	
RIPARIAN WIDTH	FLOODPLAIN QUALITY (Most Predominant per Bank)	
RIPARIAN WIDTH L R (Per Bank)	FLOODPLAIN QUALITY (Most Predominant per Bank) L R L R	
RIPARIAN WIDTH L R (Per Bank) Wide >10m	FLOODPLAIN QUALITY (Most Predominant per Bank) L R L R Mature Forest, Wetland Conservation Tillage	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Urban or Industrial	
RIPARIAN WIDTH L R (Per Bank) ✓ ✓ Wide >10m Moderate 5-10m Narrow <5m	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Open Pasture, Row Crop)
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Urban or Industrial)
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Mining or Construction)
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Penced Pasture Mining or Construction of Evaluation) (Check ONLY one box):	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Penced Pasture Mining or Construction of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (intermittent)	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Stream Flowing	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Penced Pasture Mining or Construction of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (intermittent)	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Stream Flowing) Subsurface flow with isolate COMMENTS	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Penced Pasture Mining or Construction of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (intermittent)	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Stream Flowing Subsurface flow with isolate COMMENTS SINUOSITY (Number of be None	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Immature Forest, Wetland Imma	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Stream Flowing) Subsurface flow with isolate COMMENTS SINUOSITY (Number of bed) None 0.5	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Immature Forest, Wetland Immature Forest, W	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Stream Flowing Subsurface flow with isolate COMMENTS SINUOSITY (Number of be None	FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Open Pasture, Row Crop Mining or Construction Fenced Pasture Moist Channel, isolated pools, no flow (intermittent Dry channel, no water (ephemeral) and per 61 m (200 ft) of channel) (Check ONLY one box): 1.0 2.0 3.0 1.5 3.0 3.0 3.1)

QHEI PERFORMED? ☐Yes ☑ No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
₩WH Name: Brush Run Distance from Evaluated Stream <1 mile
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page: NRCS Soil Map Stream Order:
County: Knox Township/City: BUTLER TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation:04/04/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): _N Canopy (% open):60
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS (Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form

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Protection Agency HHEI Score (sum of metrics 1+2+3)	
SITE NAME/LOCATION Millwood-Wakatomika	
SITE NUMBER S091 RIVER BASIN 050400030403 RIVER CODE DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 158.00 LAT 40.367414 LONG -82.265483 RIVER MILE	
DATE 04/04/2022 SCORER KLV COMMENTS SOH-KLV-091	
NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Inst	ructions
STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	O RECOVERY
SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B TYPE PERCENT PERCENT	HHEI Metric
BLDR SLABS [16 pts] SILT [3 pt] 20	Points
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 10	Substrate
BEDROCK [16 pts] FINE DETRITUS [3 pts]	Max = 40
COBBLE (65-256 mm) [12 pts] 10 CLAY or HARDPAN [0 pt]	
SAND (<2 mm) [6 pts] 30 ARTIFICIAL [3 pts]	20
Total of Percentages of	
Bidr Slabs, Boulder, Cobble, Bedrock (A)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the	Pool Depth
time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] 5 cm - 10 cm [15 pts]	Max = 30
> 30 Centimeters [20 pts]	15
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0pts]	15
COMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7"- 13") [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	Max=30
· i.e.m d.e.m (i.e. o i //people)	15
COMMENTS AVERAGE BANKFULL WIDTH (meters) 4'	
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream*	
RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank)	
LR (Per Bank) LR LR	
Wide >10m	
☐ Moderate 5-10m	
Narrow <5m	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	_
Stream Flowing Moist Channel, isolated pools, no flow (intermitte	nt)
Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephemeral)	
COMMENTS	_
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
□ None □ 1.0 □ 2.0 □ 3.0 □ 3.0 □ 0.5 □ 1.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE	
_	00 ft)

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
₩WH Name: Brush Run Distance from Evaluated Stream <1 mile
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page: - NRCS Soil Map Stream Order: -
County: Knox Township/City: BUTLER TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:04/04/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): _N Canopy (% open):60
Were samples collected for waterchemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS (Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+3

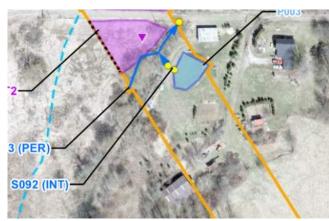
SITE NAME/LOCATION Millwood-Wakatomika	
SITE NUMBER S092 RIVER BASIN 050400030403 RIVER CODE DRAINAGE AREA (mi²)	<1
LENGTH OF STREAM REACH (ft) 45.00 LAT 40.374308 LONG -82.271066 RIVER MILE	
DATE 04/05/2022 SCORER KLV COMMENTS SOH-KLV-092	
	tructions
NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Ins	liucuons
STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL PRECOVERED ☐ RECOVERING ☐ RECENT OR N	O RECOVERY
1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.	HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B TYPE PERCENT TYPE PERCENT	Metric
	Points
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 10	Substrate
BEDROCK [16 pts] FINE DETRITUS [3 pts] COBBLE (65-256 mm) [12 pts] 10	Max = 40
COBBLE (65-256 mm) [12 pts] 10 CLAY or HARDPAN [0 pt] 25 GRAVEL (2-64 mm) [9 pts] 25 MUCK [0 pts]	
SAND (<2 mm) [6 pts] 10 ARTIFICIAL [3 pts]	15
Total of Percentages of	
Bldr Slabs, Boulder, Cobble, Bedrock (A)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 5 TOTAL NUMBER OF SUBSTRATE TYPES: 6	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the	Pool Depth
time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] 5 cm - 10 cm [15 pts]	Max = 30
> > 22.5 - 30 cm [30 pts]	15
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0pts]	15
COMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
2 PANK FILL WIDTH (Managed of the supermont) of the supermont of the super	
 BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONL Yone box): 	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts] ✓ ≤ 1.0 m (≤ 3' 3")[5 pts]	
> 4.0 meters (> 13') [30 pts] > 1.0 m − 1.5 m (> 3' 3" − 4' 8")[15 pts] > 3.0 m − 4.0 m (> 9' 7" − 13') [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] > 1.5 m − 3.0 m (> 4' 8" − 9' 7") [20 pts]	Width
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts] ✓ ≤ 1.0 m (≤ 3' 3")[5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	Width Max=30
> 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	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7*- 13') [25 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 AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] ≤ 1.0 m	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30 5
> 4.0 meters (> 13') [30 pts]	Width Max=30 5
> 4.0 meters (> 13') [30 pts]	Width Max=30 5
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 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 AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstreams RIPARIAN WIDTH L R (Per Bank) L R Wide >10m	Width Max=30
> 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 AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstreams RIPARIAN WIDTH L R (Per Bank) L R Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Completed COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 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] This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstreams RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) L R (Per Bank) L R L R Wide > 10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Mature Forest, Shrub or Old Field Urban or Industrial Narrow <5m Residential, Park, New Field Open Pasture, Row Completed None Residential, Park, New Field Open Pasture, Row Completed Stream Flowing Moist Channel, isolated pools, no flow (intermitted Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephemeral) COMMENTS COME	Width Max=30

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _	(If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Honey Run Distance from Evaluated Stream <1 mile	
CWH Name: Distance from Evaluated Stream	
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING TH	E ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding	NRCS Soil Map Page: NRCS Soil Map Stream Order:
County: Knox	Fownship/City: BUTLER TWP
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitati	on:04/04/2022 Quantity:<0.25"
Photo-documentation Notes:	
Elevated Turbidity?(Y/N): N Canopy (% open):	40
Were samples collected for water chemistry? (Y/N): N	Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) \underline{Y}	f not, explain:
Additional comments/description of pollution impacts:	
	OBSERVATIONS bservations below)
Fish Observed? (Y/N) N Species observed (if known)	
Frogs or Tadpoles Observed? (Y/N) N Species observe	d (if known):
Salamanders Observed? (Y/N) N Species observed (if k	nown):
Aquatic Macroinvertebrates Observed? (Y/N) N Species	observed (if known):
Comments Regarding Biology:	

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+3)

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Protection Agency	
SITE NAME/LOCATION Millwood-Wakatomika	
SITE NUMBER S094 RIVER BASIN 050400030403 RIVER CODE DRAINAGE AREA (mi²)	<1
LENGTH OF STREAM REACH (ft) 507.00 LAT 40.375127 LONG -82.271799 RIVER MILE _	
DATE 04/05/2022 SCORER KLV COMMENTS SOH-KLV-094	
NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for In	structions
STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL PRECOVERED ☐ RECOVERING ☐ RECENT OF	NO RECOVERY
1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B TYPE PERCENT TYPE BLDR SLABS [16 pts] SILT [3 pt] 25 BOULDER (>256 mm) [16 pts] SILT [3 pt] 10 BEDROCK [16 pts] SILT [3 pts] 10 GRAVEL (2-64 mm) [12 pts] 20 GRAVEL (2-64 mm) [9 pts] 25 SAND (<2 mm) [6 pts] 20 Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock 20 BIGR Slabs, Boulder, Cobble, Bedrock 20 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	HHEI Metric Points Substrate Max = 40
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TIPES:	
 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 	Pool Depth Max = 30
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0pts]	15
COMMENTS MAXIMUM POOL DEPTH (centimeters): 105	
BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7"-13") [25 pts] ≤1.0 m (≤ 3' 3") [5 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	Max=30
- Holm Stom (* 1 5 ° 5 °)[copie]	15
COMMENTS AVERAGE BANKFULL WIDTH (meters) 4'	
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream	l*
RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank)	
LR (Per Bank) LR LR	
✓ ✓ Wide >10m	
Narrow <5m Residential, Park, New Field Open Pasture, Row	Crop
None Fenced Pasture Mining or Construction	-
COMMENTS	_
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
 Stream Flowing Moist Channel, isolated pools, no flow (intermit Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephemeral) 	tent)
Subsurface flow with isolated pools (interstitial) COMMENTS Dry channel, no water (ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
☐ None ☐ 1.0 ☐ 2.0 ☐ 3.0	
□ 0.5 □ 1.5 □ 2.5 □ >3 □ 3.5	
STREAM GRADIENT ESTIMATE	

QHEI PERFORMED? ☐Yes ☑No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
₩WH Name: Honey Run Distance from Evaluated Stream <1 mile
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page: - NRCS Soil Map Stream Order: -
County: Knox Township/City: BUTLER TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:04/04/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): _N Canopy (% open):60
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS
(Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+3)

47	

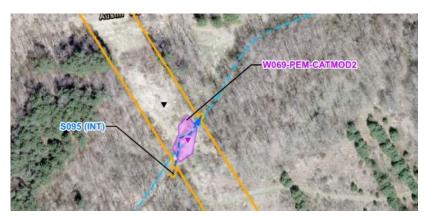
Protection Agency	
SITE NAME/LOCATION Millwood-Wakatomika	
SITE NUMBER S095 RIVER BASIN 050400030403 RIVER CODE DRAINAGE AREA (mi²) _	<1
LENGTH OF STREAM REACH (ft) 173.00 LAT 40.381552 LONG -82.277146 RIVER MILE _	
DATE 04/05/2022 SCORER KLV COMMENTS SOH-KLV-095	
NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Ins	tructions
NOTE. Complete All Items on This Form - Neter to Treadwater nabital Evaluation index Field Manual Torms	uucuons
STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR	NO RECOVERY
	_
SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes.	HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B TYPE PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts] SILT [3 pt] 25	Points
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] BEDROCK [16 pts] FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 20 CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts] 25 MUCK [0 pts]	
SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]	17
Total of Percentages of 20	
Bidr Slabs, Boulder, Cobble, Bedrock (A) (B) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	A+B
 Maximum Pool Depth (Measure the <u>maximum</u> pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONL Yone box): 	Pool Depth Max = 30
> 30 centimeters [20 pts]	IVIAX - 30
> 22.5 - 30 cm [30 pts]	15
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters): 5	
 BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box): 	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts] ≤ 1.0 m (< 3' 3")[5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7")[20 pts]	
	15
COMMENTS AVERAGE BANKFULL WIDTH (meters) 4	
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream	•
RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank)	
L R L R L R L R L R ✓ ✓ Wide >10m ☐ Mature Forest, Wetland ☐ Conservation Tillage	
Moderate 5-10m Mature Forest, Shrub or Old Field Urban or Industrial	
Narrow <5m Residential, Park, New Field Deen Pasture, Row C	rop
None Fenced Pasture Mining or Construction	1
COMMENTS	_
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (intermit	ent)
Subsurface flow with isolated pools (interstitial) COMMENTS Dry channel, no water (ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	_
□ None □ 1.0 □ 2.0 □ 3.0	
☐ 0.5	
-	
STREAM GRADIENT ESTIMATE	

QHEI PERFORMED? ☐Yes ☑ No QHEI Score (If Yes, Attack	Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)	
* *	stance from Evaluated Stream <1 mile
CWH Name:Dis	
EWH Name: Dis	stance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA	. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page: -	NRCS Soil Map Stream Order:
County: Knox Township/City: BUTLER T	WP
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:04/04/2022	Quantity:<0.25"
Photo-documentation Notes:	
Elevated Turbidity?(Y/N): _N Canopy (% open):60	
Were samples collected for waterchemistry? (Y/N): N Lab Sample # or ID (at	tach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:	
Additional comments/description of pollution impacts:	
BIOLOGICAL OBSERVATIONS (Record all observations below)	
Fish Observed? (Y/N) N Species observed (if known):	
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):	
Salamanders Observed? (Y/N) N Species observed (if known):	
Aquatic Macroinvertebrates Observed? (Y/N). N Species observed (if known):	
Comments Regarding Biology:	

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Ohio	Environmental ection Agency

Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+

62	

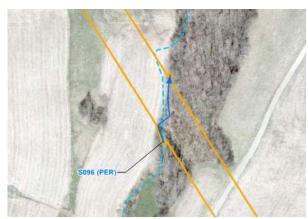
Protection Agency	Title Score (Suil of Metrics 1.2.0)	
SITE NAME/LOCATION Millwood-Wakatomika		
	0403 RIVER CODE DRAINAGE AREA (mi²)	<1
LENGTH OF STREAM REACH (ft) 231.00 LAT	40.392896 LONG -82.286472 RIVER MILE	
DATE 04/05/2022 SCORER KLV COI	MMENTS SOH-KLV-096	
NOTE: Complete All Items On This Form - Refer to	"Headwater Habitat Evaluation Index Field Manual" for Inst	tructions
STREAM CHANNEL MODIFICATIONS: NONE/NA	ATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	IO RECOVERY
(Max of 32). Add total number of significant substr TYPE PERCENT BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] COBBLE (65-256 mm) [12 pts] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 20	oresent). Check ONLY two predominant substrate TYPE boxes. rate types found (Max of 8). Final metric score is sum of boxes A & B TYPE SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] FINE DETRITUS [3 pts] CLAY or HARDPAN [0 pt] MUCK [0 pts] ARTIFICIAL [3 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 20 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TY	(A) 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	A + B
	pool depth within the 61 meter (200 feet) evaluation reach at the culverts or storm water pipes) (Check ONLY one box):	Pool Depth
> 30 centimeters [20 pts]	5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5pts] NO WATER OR MOIST CHANNEL [0pts]	25
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 20	
 BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] 	of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Bankfull Width
> 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts]	≤1.0 m (≤3'3")[5 pts]	Max=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7")[20 pts]		20
COMMENTS	AVERAGE BANKFULL WIDTH (meters) 9'	
This i	information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUA	ALITY * NOTE: River Left (L) and Right (R) as looking downstream*	
(D - D - L)	FLOODPLAIN QUALITY (Most Predominant per Bank)	
	L R Mature Forest, Wetland Conservation Tillage	
Wide >10m	Immature Forest, Wetland Conservation I mage	
	==	
Narrow <5m	Residential, Park, New Field	op
Narrow <5m	Residential, Park, New Field	-
None COMMENTS	Fenced Pasture	-
None	Fenced Pasture	_
None COMMENTS FLOW REGIME (At Time of Evaluation) (Stream Flowing Subsurface flow with isolated pools (interstit	Fenced Pasture	_
None COMMENTS FLOW REGIME (At Time of Evaluation) (Stream Flowing Subsurface flow with isolated pools (interstite COMMENTS SINUOSITY (Number of bends per 61 m (2) None 1.0	Check ONLYone box): Moist Channel, isolated pools, no flow (intermitted tial) Dry channel, no water (ephemeral) 200 ft) of channel) (Check ONLY one box): 2.0	_
None COMMENTS FLOW REGIME (At Time of Evaluation) (Stream Flowing Subsurface flow with isolated pools (interstite COMMENTS SINUOSITY (Number of bends per 61 m (2))	Fenced Pasture	_

QHEI PERFORMED? ☐Yes ☑ No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
₩WH Name: Kokosing River Distance from Evaluated Stream <1 mile
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page: - NRCS Soil Map Stream Order: -
County: Knox Township/City: BUTLER TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:04/04/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): _N Canopy (% open):70
Were samples collected for waterchemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS (Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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Ohio	Environmental ection Agency

Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+3)

30	

SITE NAMER_COCATION Millwood-Wakatomika SITE NUMBER SO98 RIVER BASIN 5050400030403 RIVER CODE DRAINAGE AREA (mF) <1 LENGTH OF STREAM REACH (m 72.00 LAT 40.404352 LONG 82.29604 RIVER MLE DATE 04/07/2022 SCORER KLV COMMENTS SOH-KLV-098 NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for instructions STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECOVERING RECOVERY 1. SUBSTRATE (Estimate percent of every type present). Check ONLY type predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & 8 PERCENT TYPE SUBSTRATE (Estimate percent of every type present). Check ONLY type predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & 8 PERCENT TYPE BLDR SLABS 146 pts]		ics 1+2+3)
STE NUMBER SO98	SITE NAME/LOCATION Millwood-Wakatomika	
LENGTH OF STREAM REACH (#) 72.00		E AREA (mi²) <1
DATE 04/07/2022 SCORER KLV COMMENTS SOH-KLV-098 NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY 1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A 8 B Metric Points SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A 8 B Metric Points SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE DOWNERS (Max of 8). Final metric score is sum of boxes A 8 B Metric Points SUBSTRATE (Estimate percent of every type present). Check ONLY one box; 10 ptg 1 ptg 20 ptg 20 ptg 1 ptg 20 ptg 2		
NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERING RECOVERING RECENT OR NO RECOVERY 1. SUBSTRATE (Estimate percent of every type present), Check ONLY two predominant substrate TYPE boxes. (Illax of 32), Add total number of significant substrate types found (Max of 3). Final metric score is sum of boxes A & B PERCENT PYPE BOULDER (2256 mm) (16 pts) PERCENT PYPE BOULDER (2256 mm) (16 pts) PERCENT PYPE BOULDER (2256 mm) (16 pts) PERCENT PYPE POINTS PROCESS AND (<2 mm) (19 pts) PERCENT PYPE SUBSTRATE (19 pts) PERCENT PYPE PACKWOODY DEBRIS (3 pts) 10. PERCENT POINTS Substrate Max = 40 Warrend (19 pts) PERCENT PYPE PACKWOODY DEBRIS (3 pts) 10. PERCENT POINTS Substrate PACKWOODY DEBRIS (3 pts) 10. PERCENT PRINCIPLE PACKWOODY DEBRIS (3 pts) 10. PERCENT PRINCIPLE PACKWOODY DEBRIS (3 pts) 10. PERCENT PACKWOODY DEBRIS (3 pts)	DATE 04/07/2022 SCORER KLV COMMENTS SOH-KLV-098	TOTALIS INCL
1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B PERCENT PERC		Manual" for Instructions
1. SUBSTRATE (Estimate percent of every type present). Check ONL Y two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B PERCENT TYPE BURS SLABS [16 pts]	NOTE: Complete All items on This Form - Refer to "Headwater Habitat Evaluation Index Field I	wanuar for instructions
Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B HELE TYPE PRECENT PPECENT PPOINTS SLT [3 pt] DOULDER (>256 mm) [16 pts] 25 DOUBLER (>256 mm) [17 pts] 20 DOUBLER (>256 mm) [17 pts] 25 DOUBLER (>256 mm) [17 pt	STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING	RECENT OR NO RECOVERY
Max of 32), Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B HHEL TYPE PERCENT PPERCENT PPOINTS SLT [5 pt] PRECENT Points PPERCENT PPOINTS PPERCENT PPOINTS PPOI		
BLDR SLABS [16 pts] PERCENT YPE SLT [3 pt] 20 DEBRIS [3 pts] 10 SLD	· · · · · · · · · · · · · · · · · · ·	I HHEI
BLDR SLABS [16 pts]	• • • • • • • • • • • • • • • • • • • •	UI DUXES A & D
BOULDER (~256 mm) [16 pts]		
DEURIOUR (19 pts) 20		10
Commeters Comm		
SAND (<2 mm) [6 pts] 25		
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock 20 (A) 15 TOTAL NUMBER OF SUBSTRATE TYPES: 5 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 5 2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts]		20
Bidr Slabs, Boulder, Cobble, Bedrock	Total of Decompanies of	
2.	Bidr Slabs, Boulder, Cobble, Bedrock 20 (A)	
time of evaluation. Ávoid plunge pools from road culverts or storm water pipes) 30 centimeters [20 pts] 22.5 - 30 cm [30 pts] 10 - 22.5 cm [30 pts] 20.5 - 30 cm [30 pts] 20.6 - 30 cm [40 pts] 20.6 - 40 cm [40 pts] 20.7 - 4	SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE	TYPES: 5
> 30 centimeters [20 pts] 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts]		
> 22.5 - 30 cm [30 pts]		00X): Max = 30
NO WATER OR MOIST CHANNEL [0pts] S		
3. BANK FULL WIDTH (Measuredas the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts] > 3.0 m - 4.0 m (> 9' 7"-13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ** NOTE: River Left (L) and Right (R) as looking downstream* RIPARIAN WIDTH L R (Per Bank) L R (Per Bank) Wide > 10m Mature Forest, Wetland Mature Forest, Shrub or Old Field Urban or Industrial Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row Crop None Residential, Park, New Field Open Pasture, Row Crop Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (interstitial) Ory channel, no water (ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 >3 None 1.5 2.5 3.0 >3		pts] 5
> 4.0 meters (>13') [30 pts]	COMMENTS MAXIMUM POOL DEPTH (cent	imeters): <5
> 3.0 m -4.0 m (> 9' 7'-13') [25 pts] \(\leq \) 1.5 m -3.0 m (> 4' 8" - 9' 7") [20 pts] \(\leq \) 1.5 m -3.0 m (> 4' 8" - 9' 7") [20 pts] \(\leq \) 1.5 m -3.0 m (> 4' 8" - 9' 7") [20 pts] \(\leq \) 1.5 m -3.0 m (> 4' 8" - 9' 7") [20 pts] \(\leq \) 1.5 m -3.0 m (> 4' 8" - 9' 7") [20 pts] \(\leq \) 1.5 m -3.0 m (> 4' 8" - 9' 7") [20 pts] \(\leq \) 1.5 m -3.0 m (> 4' 8" - 9' 7") [20 pts] \(\leq \) 1.5 m -3.0 m (> 3' 3") [5 pts] \(\leq \) 1.5 m -3.0 m (> 3.0 mode) \(\leq \) 1.5 m -3.0 m (> 3.0 mode) \(\leq \) 1.5 m -3.0 m (> 3.0 mode) \(\leq \) 1.5 m -3.0 m (> 3.0 mode) \(\leq \) 1.5 m -3.0 m (> 3.0 mode) \(\leq \) 1.5 m -3.0 m (> 3.0 mode) \(\leq \) 2.5 m -3.0 m -	BANK FULL WIDTH (Measuredas the average of 3 - 4 measurements) (Check ONLY one box):	Bankfull
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream* RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) L R (Per Bank) L R Wide >10m Mature Forest, Wetland Urban or Industrial Moderate 5-10m Mature Forest, Shrub or Old Field Urban or Industrial Narrow <5m Residential, Park, New Field Open Pasture, Row Crop None Residential, Park, New Field Open Pasture, Row Crop Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (intermittent) Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 O.5 3.0 O.5 3.0 O.5 3.0 O.5 3.0 O.5 3.0	> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts	1
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream* RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) L R (Per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Urban or Industrial Narrow <5m Mesidential, Park, New Field Open Pasture, Row Crop None Residential, Park, New Field Open Pasture, Row Crop This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) L R Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (intermittent) Dry channel, no water (ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 O.5 3.0 O.5 3.0 O.5 3.0 O.5 3.0		Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream* RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) L R (Per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Urban or Industrial Open Pasture, Row Crop None Residential, Park, New Field Open Pasture, Row Crop Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (intermittent) Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 O.5 1.5 2.5 3	- 1.5 m - 5.5 m (2 4 5 - 5 7 /[25 pts]	5
RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream* RIPARIAN WIDTH		
RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream* RIPARIAN WIDTH	COMMENTS AVERAGE BANKFULL WIDTH (meters) 2'
L R (Per Bank) L R Wide >10m		(meters) 2'
Wide >10m	This information <u>must</u> also be completed	meters)
Wide >10m	This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look	ing downstream*
Narrow <5m Residential, Park, New Field	This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R	ing downstream*
None	This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R L R	ing downstream*
COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R Wide >10m Mature Forest, Wetland Cons Moderate 5-10m Moderate S-10m UV Moderate S-10m Urba	ing downstream* k) servation Tillage in or Industrial
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R Wide >10m Mature Forest, Wetland Cons Moderate 5-10m Mature Forest, Shrub or Old Field Urba Narrow <5m Residential, Park, New Field Open	ing downstream* k) servation Tillage an or Industrial n Pasture, Row Crop
Stream Flowing	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R Wide >10m Mature Forest, Wetland Cons Moderate 5-10m Mature Forest, Shrub or Old Field Urba Narrow <5m Residential, Park, New Field Oper None Fenced Pasture Mining	ing downstream* k) servation Tillage an or Industrial n Pasture, Row Crop
Subsurface flow with isolated pools (interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 1.5 2.5 >3	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH L R (Per Bank) L R Wide > 10m Moderate 5-10m Narrow < 5m None Residential, Park, New Field COMMENTS	ing downstream* k) servation Tillage an or Industrial n Pasture, Row Crop
COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R Wide >10m Mature Forest, Wetland Cons Moderate 5-10m Moderate 5-10m Immature Forest, Shrub or Old Field Urba Narrow <5m Residential, Park, New Field Open None Fenced Pasture Mining COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	ing downstream* k) servation Tillage in or Industrial in Pasture, Row Crop ing or Construction
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☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R Wide >10m Mature Forest, Wetland Cons Moderate 5-10m Mature Forest, Shrub or Old Field Urba Narrow <5m Residential, Park, New Field Open None Fenced Pasture Mining COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephem	ing downstream* k) servation Tillage in or Industrial in Pasture, Row Crop ing or Construction no flow (intermittent)
	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R Wide >10m Mature Forest, Wetland Cons Moderate 5-10m Mature Forest, Shrub or Old Field Urba Narrow <5m Residential, Park, New Field Open None Fenced Pasture Mining COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephem	ing downstream* k) servation Tillage in or Industrial in Pasture, Row Crop ing or Construction no flow (intermittent)
STREAM GRADIENT ESTIMATE	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R Wide >10m Mature Forest, Wetland Cons Moderate 5-10m Mature Forest, Shrub or Old Field Urba Narrow <5m Residential, Park, New Field Oper None Fenced Pasture Mining COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephem COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.	ing downstream* k) servation Tillage in or Industrial in Pasture, Row Crop ing or Construction no flow (intermittent) eral)
Flat (0.5 %/100 %) Flat to Moderate Moderate (2 %/100 %) Moderate to Severe Severe Severe (10 %/100 %)	This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as look RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Ban L R (Per Bank) L R Wide >10m Mature Forest, Wetland Cons Moderate 5-10m Mature Forest, Shrub or Old Field Urba Narrow <5m Residential, Park, New Field Open None Fenced Pasture Minin COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, Subsurface flow with isolated pools (interstitial) Dry channel, no water (ephem COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3. 1.5 2.5	ing downstream* k) servation Tillage in or Industrial in Pasture, Row Crop ing or Construction no flow (intermittent) eral)

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Kokosing River Distance from Evaluated Stream _<1 mile
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Walhonding NRCS Soil Map Page:NRCS Soil Map Stream Order:
County: Knox Township/City: Howard TWP
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:04/06/2022 Quantity:<0.25"
Photo-documentation Notes:
Elevated Turbidity?(Y/N): N Canopy (% open): 70
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
Is the sampling reach representative of the stream (Y/N) Y f not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS
(Record all observations below)
Fish Observed? (Y/N) N Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):
Salamanders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N)_N Species observed (if known):
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





	hio
Ohio	Environmental ection Agency

Headwater Habitat Evaluation Index Field Form HHEI Score (sum of metrics 1+2+3)

2	
	2

	HHEI Score (sum of metrics 1+2+3)	
SITE NAME/LOCATION Millwood-Wakatomika		
	30403 RIVER CODE DRAINAGE AREA (mi²)	<1
	40.407593 LONG <u>-82.298628</u> RIVER MILE	
0.4/0=/0.000	MMENTS SOH-KLV-099	
NOTE: Complete All Items On This Form - Refer to	"Headwater Habitat Evaluation Index Field Manual" for Inst	tructions
STREAM CHANNEL MODIFICATIONS: NONE/NA	ATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	NO RECOVERY
	present). Check ONLY two predominant substrate TYPE boxes. rate types found (Max of 8). Final metric score is sum of boxes A & B	HHEI
TYPE PERCENT	TYPE PERCENT	Metric
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]	SILT [3 pt] 25 LEAF PACK/WOODY DEBRIS [3 pts] 10	Points
BEDROCK [16 pts]	FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 20	CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts] 25 SAND (<2 mm) [6 pts] 20	MUCK [0 pts]	17
	ARTIFICIAL [3 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock20	(A) (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TY	YPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum)	pool depthwithin the 61 meter (200 feet) evaluation reach at the	Pool Depth
	culverts or storm water pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	5 cm - 10 cm [15 pts] < 5 cm [5pts]	4.5
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [Opts]	15
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 10	
	MAXIMUM POOL DEPTH (centimeters): 10 e of 3 - 4 measurements) (Check ONLY one box):	Bankfull
3. BANK FULL WIDTH (Measuredas the average > 4.0 meters (> 13') [30 pts]	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts]	e of 3 - 4 measurements) (Check ONLY one box):	
3. BANK FULL WIDTH (Measuredas the average > 4.0 meters (> 13') [30 pts]	eof 3 - 4 measurements) (Check <i>ONLY</i> one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] \leq 1.0 m (\leq 3' 3")[5 pts]	Width
3. BANK FULL WIDTH (Measured as the average > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts]	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This	e of 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] \leq 1.0 m (\leq 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 6'	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This	eof 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 6'	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUARANTE WIDTH	cof3-4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] < 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 6' information must also be completed ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank)	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUARTER AND FLOODPLAIN QUARTER BETTER AND FLOODPLAIN QUARTER BETTER BET	AVERAGE BANKFULL WIDTH (meters) ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank) L R	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUA RIPARIAN WIDTH L R (Per Bank) L R Wide >10m	average bankfull width (meters) Average bankfull width (meters)	Width Max=30
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUARTER AND FLOODPLAIN QUARTER BETTER AND FLOODPLAIN QUARTER BETTER BET	AVERAGE BANKFULL WIDTH (meters) ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank) L R	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUARTER (Per Bank) L R (Per Bank) Wide >10m Moderate 5-10m	cof3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 6' information must also be completed ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUARTED AND FLOODPLAIN QU	eof 3 - 4 measurements) (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (< 3' 3")[5 pts] AVERAGE BANKFULL WIDTH (meters) 6' information must also be completed ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Urban or Industrial Residential, Park, New Field Q Open Pasture, Row Cr	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUARTED AND FLOODPLAIN QU	AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) information must also be completed ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland Immature Forest, Shrub or Old Field Immature Forest, Shrub or Old Field Residential, Park, New Field Perced Pasture (Check ONLY one box):	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUA RIPARIAN WIDTH L R (Per Bank) L R Wide >10m Moderate 5-10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) (Stream Flowing	AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) information must also be completed ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUARTED AND FLOODPLAIN QU	AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) information must also be completed ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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 This is RIPARIAN ZONE AND FLOODPLAIN QUA RIPARIAN WIDTH L R (Per Bank) L R Wide > 10m Moderate 5-10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (interstite COMMENTS)	AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) information must also be completed ALITY * NOTE: River Left (L) and Right (R) as looking downstream* FLOODPLAIN QUALITY (Most Predominant per Bank) L R Mature Forest, Wetland	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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	Check ONLY one box Check ONLY one box	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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	Check ONLY one box):	Width Max=30 20
3. BANK FULL WIDTH (Measured as the average > 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	Check ONLY one box Check ONLY one box	Width Max=30 20 20 ent)

QHEI PERFORMED? ☐Yes ☑No QHEI Score _	(If Yes, Attach Completed QHEI form)	
DOWNSTREAM DESIGNATED USE(S)		
WWH Name: Kokosing River	Distance from Evaluated Stream <1 mile	
CWH Name:	Distance from Evaluated Stream	
EWH Name:	Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING TH	E ENTIRE WATER SHED AREA. CLEARLY MARK THE SITE LOCATION.	
USGS Quadrangle Name: Walhonding	NRCS Soil Map Page: NRCS Soil Map Stream Order:	
County: Knox	ownship/City: Howard TWP	
MISCELLANEOUS		
Base Flow Conditions? (Y/N):_Y Date of last precipitation	on:04/06/2022 Quantity:<0.25"	
Photo-documentation Notes:		
Elevated Turbidity?(Y/N): _N Canopy (% open):	50	
Were samples collected for waterchemistry? (Y/N): N	Lab Sample # or ID (attach results):	
Field Measures:Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (umhos/cm)	
Is the sampling reach representative of the stream (Y/N) \underline{Y}	f not, explain:	
Additional comments/description of pollution impacts:		
	OBSERVATIONS servations below)	
Fish Observed? (Y/N) N Species observed (if known):		
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):		
Salamanders Observed? (Y/N) N Species observed (if kn	nown):	
Aquatic Macroinvertebrates Observed? (Y/N)_N Species	observed (if known):	
Comments Regarding Biology:		

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





APPENDIX E ODNR and USFWS Correspondence





Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

June 21, 2022

Joshua Noble GAI Consultants, Inc. 5399 Lauby Road, Suite 120 North Canton, OH 44720

Re: 22-0520; AEP Millwood-Wakatomika Switch 138kV

Project: The proposed project involves rebuilding approximately 7.5-mile portion of the Philo-Howard 138kV transmission line along the current transmission right-of-way and removal of the existing steel lattice tower structures.

Location: The proposed project is located in Butler, Howard, and Union Townships, Knox 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 data at or within one mile of the project area:

Small-flowered Scorpion-weed (*Phacelia dubia*), E Eastern Hellbender (*Cryptobranchus alleganiensis*), E Mountain Brook Lamprey (*Ichthyomyzon greeleyi*), E Shoal chub (*Macrhybopsis hyostoma*), E Barn Owl (*Tyto alba*), T

The review was performed on the specified project area as well as an additional one-mile radius. Records searched date from 1980.

Conservation status abbreviations are as follows: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; U = state status under review; X = presumed extirpated in Ohio; FE = federally endangered, and FT = federally threatened.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for an area is not a statement that rare species or unique features are absent from that area.

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 entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (Myotis septentrionalis), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen. Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "Range-wide Indiana Bat Survey Guidelines." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species. Federally Endangered northern riffleshell (*Epioblasma torulosa rangiana*) rabbitsfoot (*Quadrula cylindrica cylindrica*)

State Endangered State Threatened

long solid (Fusconaia maculata maculata) black sandshell (Ligumia recta)

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 (2020), 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 5 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 2022 Ohio Mussel Survey Protocol.

The project is within the range of the following listed fish species.

State Endangered Shoal chub (Macrhybopsis hyostoma) Spotted darter (Etheostoma maculatum)

mountain brook lamprey (Ichthyomyzon greeleyi)

speckled chub (Macrhybopsis aestivalis)

Tippecanoe darter (Etheostoma tippecanoe)

speckled chub (Macrhybopsis aestivalis)

The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. In-water work in hellbender streams can reduce availability of large cover rocks and can destroy hellbender nests and/or kill adults and juveniles. The contribution of additional sediment to hellbender streams can smother large cover rocks and gravel/cobble substrate (used by juveniles), making them unsuitable for refuge and nesting. Projects that contribute to altered flow regimes (e.g., by increasing areas of impervious surfaces or modifying the floodplain) can also adversely affect hellbender habitat. If any in-water work is proposed in the Kokosing River or Jelloway Creek, the DOW recommends that an approved herpetologist conducts a habitat suitability survey to determine if suitable habitat is present within the project area. If suitable habitat is determined to be present, the DOW recommends that 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 sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 through August 31. If this habitat will not be impacted, this project is not likely to have an impact on this species.

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

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

The Ohio Scenic Rivers Program staff have reviewed the proposed AEP Millwood-Wakatomika Switch Project (Project), which will rebuild a 7.5-mile portion of Philo-Howard 138kV transmission line in Knox County. The line rebuild will cross the Kokosing State Scenic River. Though the Scenic Rivers Program does not have approval authority over privately funded projects, we have provided recommendations to limit potential impacts to the Kokosing State River:

- Every attempt should be made to "overbuild" the wires vertically on existing towers at the river crossing location to span the river valley. This will reduce the amount of riparian vegetation to be cleared to install and maintain the transmission lines long term. Once the lines are beyond the stream channel and any existing riparian forest buffer on either side, the lines could then be installed on poles or structures running parallel to existing structures.
- AEP should avoid clearing trees from within 120 feet of the Kokosing State River to avoid destabilizing stream banks and maintain the ecological integrity of riparian corridor and river. If clearing must be done in this area, stumps should be left in place to help maintain bank stability. All vegetative waste, such as tree limbs and trunks generated during construction, should be wind-rowed or chipped and disposed of appropriately. However, no wind-rowed or chipped vegetation, or other project-related material, should be left in wetlands, riparian areas or floodways of the Kokosing State Scenic River or any of its tributaries. Doing so can degrade water quality or leave material vulnerable to washing down stream during a flood event and causing a log jam.
- For long term maintenance in riparian areas, the Scenic Rivers Program requests that AEP plant low growing native shrubs and trees (underneath transmission lines) to provide a riparian buffer at the river crossing location. Potential species include the following:
 - o Spicebush Lindera benzoin
 - O Black Chokeberry Aronia melanocarpa
 - O Common Winterberry *Ilex verticillata*
 - o American Elderberry Sambucus canadensis
 - o Witherod Viburnum Viburnum cassinoides
 - O American Hornbeam Carpinus caroliniana
 - o Eastern Hophornbeam Ostrya virginiana
 - o Prairie Rose Rosa setigera
 - o Limber Honeysuckle Lonicera dioica
 - o American Hazelnut Corvlus americana
 - O Dwarf Bush Honeysuckle Diervilla lonicera
 - Smooth Hydrangea *Hydrangea arborescens*
 - O Carolina Rose Rosa carolina
 - o Fragrant Thimbleberry Rubus odoratus
 - o Common Deerberry Vaccinium stamineum
 - Leatherwood *Dirca palustris*
 - o Fragrant Sumac Rhus aromatica
 - O Staghorn Sumac Rhus typhina
 - Scarlet Elder Sambucus pubens
 - O Common Buttonbush Cephalanthus occidentalis

- o Common Ninebark Physocarpus opulifolius
- O Common Arrowwood Viburnum dentatum
- o American Plum Prunus Americana
- O Blackhaw Viburnum prunifolium
- O Witchhazel Hamamelis Virginiana
- Hawthorn *Crataegus mollis*
- Wahoo Euonymus atropurpureus
- o Bladdernut Staphylea trifolia
- A sediment and erosion control plan should be developed for the site and implemented before earthwork commences to prevent sediment-laden runoff from damaging stream habitat and aquatic life. Once the site is cleared and grubbed, temporary sediment and erosion controls should be implemented and maintained until final site stabilization is achieved. Particular attention should be given to any drainage ways, ditches and streams that could convey sediment laden water directly to the Kokosing State Scenic River. Properly installed (framed and entrenched) sediment fence should be utilized around the work site perimeter. Appropriately designed rock-check dams and other erosion controls should be utilized in ditches and drainage ways. All temporary sediment and erosion controls should be removed upon completion of site stabilization. At any area where the utility line has been completely installed, stabilization should be required within seven days. All denuded areas, including ditches, culverts and river/stream banks, should be permanently seeded and mulched (or fiber mat) immediately upon completion of earthwork or temporarily seeded and mulched (or fiber mat). For the disturbed areas within 120 feet of the stream, temporary and/or permanent erosion control cover should be required within two days following the installation of the utility line. Straw bales should not be permitted as a form of erosion control. Access roads constructed on slopes should be graveled or lined with wood matting to prevent erosion from surface runoff.

Heather Doherty, Central Regional Scenic River Manager, can assist with any questions that AEP may have regarding the Kokosing State Scenic River. Ms. Doherty may be reached at heather.doherty@dnr.ohio.gov or 740 258-0567.

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

The <u>local floodplain administrator</u> should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew Environmental Services Administrator From: Ohio, FW3 <ohio@fws.gov>
Sent: Tuesday, June 14, 2022 1:09 PM

To: Joshua Noble

Cc: nathan.reardon@dnr.state.oh.us

Subject: AEP Millwood-Wakatomika Switch 138 kV Transmission Line

Rebuild, Knox County, Ohio

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



Project Code # 2022-0045136

Dear Mr. Noble,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (Myotis sodalis) and threatened northern long-eared bat (Myotis septentrionalis) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found 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 breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet 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, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥ 3 inches dbh, we recommend avoiding tree removal 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 removal of any trees ≥ 3

inches dbh only occur between October 1 and March 31. Seasonal clearing is 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, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then 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 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. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army 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. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or 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, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@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,

Patrice M. Ashfield Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW

This foregoing document was electronically filed with the Public Utilities Commission of Ohio Docketing Information System on

8/17/2022 5:01:48 PM

in

Case No(s). 22-0774-EL-BLN

Summary: Correspondence Letter of Notification, Philo-Howard Part 5 of 14 electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc.