TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:		W001 & W002	Rater(s):	Brandon Whitley Date: 5/8/2023		
1 max 6 pts.	1 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquati	Blue Ridge and Cumberland Mountains. If an ic beds and seasonal mudflats) is >20 acres ia) of it to the wetland size for Metric 1.	
·		Select one size class and assign >50 acres (>20.2 ha) (6 p 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 (0.1 to <1 0.1 to <0.3 acre (0.04 to <0.1 acre (0.04 ha) (0)	ts) :20.2 ha) (5) [BR/CM (6 .1 ha) (4) [BR/CM (6)] ha) (3) [BR/CM (5)] .2 ha) (2) [BR/CM (3)]		size estimate (list):	
3.0	4 subtotal	Metric 2. Upland B	Buffers and S	Surrounding Land	Use	
max 14 pts.	Subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	O m (164 ft) or more arc e 25 m to <50 m (82 to ge 10 m to <25 m (32 ft average <10 m (<32 ft use. Select one or dou or older forest, prairie, s s), shrubland, young 2n esidential, fenced pastu	savannah, wildlife area, etc. (7)	r (4) er (1)	
6	10	Metric 3. Hydrolog	gy			
max 30 pts.	subtotal	3a. Sources of water. Score all the High pH groundwater (5) Other groundwater (3) [Blean Precipitation (1) [unless Beseasonal/intermittent surform Perennial surface water (1) 3c. Maximum water depth. Selection >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 ir.) <0.4 m (<16 ir.) (1) [BR/C] 3e. Modifications to natural hydrom None or none apparent (1) Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] R/CM primary source (face water (3)) ake or stream) (5) at only one and assign source (1) M 0.15 to 0.4 m (6 to < 1) Check all disturb ditch ditch dike weir stormwater in	Part of wetland/up Part of riparian or Part of riparian or Semi- to permane Regularly inundat Seasonally inundat Seasonally inundat Seasonally saturate or double check and average. Point source (non culvert) filling/grading road bed/RR trace dredging put other	in (1) ake and other human use (1) pland (e.g., forest), complex (1) upland corridor (1) saturation. Score one or dbl. check & avg. ently inundated/saturated (4) ted/saturated (3) [BR/CM (4)] ated (2) [BR/CM (4)] ated in upper 30 cm (12 in.) (1) [BR/CM (2)]	
3.0	13	Metric 4. Habitat A	Alteration an	d Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (2) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	only one and assign so or double check and a	Check all disturbances of mowing grazing clearcutting	observed Shrub/sapling removal herbaceous/aquatic bed removal woody debris removal sedimentation dredging nutrient enrichment	

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W001 & W002 Rater(s): Date: 5/8/2023 Brandon Whitley 13 subtotal previous page Metric 5. Special Wetlands 13 0.00max 10 nts subtotal 0 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score* Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph, adapt, in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 14 Metric 6. Plant Communities, Interspersion, Microtopography max 20 pts. subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. 0 = Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. High (5) native species Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance None (0) tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools None Low High Moderate Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small

- 2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 = Present in moderate or greater amounts and of highest quality

14 GRAND TOTAL (max 100 pts)

0-29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Rater(s) Date: WINDS Brandon Whitley 5/8/2023

Site.		VVUU3	Kater(S).	brandon whitey	Date. 5/6/2023
0.00 max 6 pts.	0 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquat	r Blue Ridge and Cumberland Mountains. If an tic beds and seasonal mudflats) is >20 acres ha) of it to the wetland size for Metric 1.
max o pie.	Sastoral	Select one size class and assign >50 acres (>20.2 ha) (6 p 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 (0.1 to <1 0.1 to <0.3 acre (0.04 to <0.1 acre (0.04 ha) (0)	ots) <20.2 ha) (5) [BR/CM (6 .1 ha) (4) [BR/CM (6)] ha) (3) [BR/CM (5)] .2 ha) (2) [BR/CM (3)]	Sources/assumptions for	
5.0	5	Metric 2. Upland I	Buffers and S	Surrounding Land	Use
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	0 m (164 ft) or more aro e 25 m to <50 m (82 to ge 10 m to <25 m (32 ft s average <10 m (<32 ft) use. Select one or douk or older forest, prairie, s s), shrubland, young 2nd esidential, fenced pastul	avannah, wildlife area, etc. (7)	r (4) ter (1)
6	11	Metric 3. Hydrolog	gy		
max 30 pts.	subtotal	3a. Sources of water. Score all the High pH groundwater (5) Other groundwater (3) [B] Precipitation (1) [unless E Seasonal/intermittent surformide water (1) Perennial surface water (1) 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) √<0.4 m (<16 in.) (1) [BR/C] 3e. Modifications to natural hydromide None or none apparent (1)	R/CM (5)] BR/CM primary source (9) face water (3) lake or stream) (5) ot only one and assign s and (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to <7) cologic regime. Score one	5)] Part of wetland/u Part of riparian of 3d. Duration inundation/core. Semi- to permand Regularly inunda Seasonally inunda 16 in.) (2)] Seasonally satura	
		Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturba	□ point source (nor culvert) □ filling/grading □ road bed/RR trac □ dredging	·
7.0	18 subtotal	Metric 4. Habitat	Alteration an	d Development	
		4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	4))	ore. Check all disturbances ☑ mowing	☐ shrub/sapling removal
		Poor (1) 4c. Habitat alteration. Score one None or none apparent (9)			☐ herbaceous/aquatic bed removal ☐ woody debris removal ☐ sedimentation

18

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 \checkmark farming

□ toxic pollutants

 \square dredging

nutrient enrichment

Recovered (6)

Recovering (3)

Recent or no recovery (1)

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W003 Rater(s): Date: 5/8/2023 Brandon Whitley 18 subtotal previous page Metric 5. Special Wetlands 18 0.00max 10 nts subtotal 0 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score* Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 19 Metric 6. Plant Communities, Interspersion, Microtopography max 20 pts. subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. 0 = Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. High (5) native species Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, ✓ Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance None (0) tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools None Low High Moderate Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts and of highest quality

19 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:	I ILLD I O	W004	Rater(s):	Brandon Whitley	Date:	5/8/2023
1.00 max 6 pts.	1 subtotal	Metric 1. Wetland	Area (size)	Notes: BR/CM = adjusted points for open water body (excluding aquati (8 ha), then add only 0.5 acre (0.2 h	c beds and seaso	nal mudflats) is >20 acres
·		Select one size class and assign >50 acres (>20.2 ha) (6 pi 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 h 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 ha) (0)	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (lis	t):
9	10	Metric 2. Upland E	Buffers and S	Surrounding Land	Use	
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more are 25 m to <50 m (82 to ge 10 m to <25 m (32 ft average <10 m (<32 ft use. Select one or dou or older forest, prairie, so), shrubland, young 2r sidential, fenced pastu	savannah, wildlife area, etc. (7)	(4) er (1)	
6	16	Metric 3. Hydrolog	ЭУ			
max 30 pts.	subtotal	3a. Sources of water. Score all the High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surform Perennial surface water (I Sc. Maximum water depth. Selectory > 0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (3) 4 < 0.4 m (<16 in.) (1) [BR/CI None or none apparent (1) Recovered (7) Recent or no recovery (1)	R/CM (5)] R/CM primary source (ace water (3) ake or stream) (5) t only one and assign s .) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to <	Part of riparian or 3d. Duration inundation/s Score. Semi- to permane Regularly inundat Seasonally inundat Seasonally inundat or double check and average. ances observed point source (non culvert) filling/grading road bed/RR track	in (1) ake and other hubland (e.g., fores upland corridor saturation. Score ently inundated/s ed/saturated (3) ated (2) [BR/CM ited in upper 30 stormwater)	t), complex (1) (1) one or dbl. check & avg. aturated (4) [BR/CM (4)]
8	24	Metric 4. Habitat A	Alteration an	d Development		_
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)) only one and assign so or double check and a	Check all disturbances of mowing grazing clearcutting	☐ shrub/sapli	s/aquatic bed removal ris removal

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TVARAM Site:			Rater(s):	Brandon Whitley	Date:	5/8/2023			
Jile.		VVUU4	ivatei (5).	Brandon Whitley	Date.	3/0/2023			
24									
subtotal previ	ous page								
0.00 max 10 pts.	24 subtotal	Metric 5. Special	Wetlands	5					
0		*If the documented raw score for	Metric 5 is 30 p	oints or higher, the site is automatically	considered a C	category 3 wetland.			
raw score*		Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)							
3	27	Metric 6. Plant Co	mmuniti	es, Interspersion, Mic	crotopog	graphy			
max 20 pts.	subtotal	6a. Wetland vegetation commun Score all present using 0 to 3 sc. Aquatic bed Emergent Shrub Forest Mudflats Open water <20 acres (8	ale.	Vegetation Community Cover Scale 0 = Absent or <0.1 ha (0.25 acre) con [For BR/CM <0.04 ha (0.1 acre)] 1 = Present and either comprises a sr moderate quality, or comprises a si is of moderate quality, or comprises 3 = Present and comprises a signification and is of high quality	nall part of wetl significant part gnificant part of es a small part	out is of low quality wetland's vegetation and and is of high quality			
		6b. Horizontal (plan view) intersponders Select only one. High (5) Moderately high (4) [BR/C] Moderate (3)[BR/CM (5)] Moderately low (2) [BR/C] Low (1) [BR/CM (2)] None (0)	CM (5)]	Narrative Description of Vegetation (low = Low species diversity &/or dominative species mod = Native species are dominant cononnative &/or disturbance toler and species diversity moderate w/o presence of rare, threateners high = A predominance of native specitolerant native sp absent or virture tolerant native sp absent or virture construction constr	mance of nonna mponent of the rant native spec to moderately he dor endangere es with nonnati	vegetation, although iles can also be present, ligh, but generally d species ve sp &/or disturbance			
		6c. Coverage of invasive plants. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Sparse 5-25% cover (-1) Nearly absent <5% cover Absent (1)	5) (-3) (0)	but not always, the presence of Mudflat and Open Water Class Quali 0 = Absent <0.1 ha (0.25 acres) [For I 1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) (0.1 to 0.5 acre)] 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) 3 = High 4 ha (9.9 acres) or more [BR	ty BR/CM <0.04 h s) [BR/CM 0.04	d, or endangered species a (0.1 acre)] to <0.2 ha 2 to <0.2 ha (0.5 to 5 acre)]			
		6d. Microtopography. Score all present using 0 to 3 so Vegetated hummocks/tus Coarse woody debris >15 Standing dead >25 cm (1 Amphibian breeding pool	eale. socks c cm (6 in.) 0 in.) dbh	None Low Low Microtopography Cover Scale 0 = Absent 1 = Present in very small amounts or 2 = Present in moderate amounts, but amounts of highest quality 3 = Present in moderate or greater and	Moderate if more common to not of highest	Moderate High			
	27	GRAND (max 100	ΓΟΤΑL	0- 29 = Category 1, low wetland fur 30- 59 = Category 2, good/moderate 60-100 = Category 3, superior wetlan	nction, conditior wetland functio	ı, quality** ın, condition, quality**			

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

(max 100 pts)

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality

Site:	FIELD FO		Pator(e):	Brandon Whitley	Date: 5/8/2023
Site:		W005	Rater(s):	Brandon Whitley	Date: 5/8/2023
1.00 max 6 pts.	1 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquation	Blue Ridge and Cumberland Mountains. If an ic beds and seasonal mudflats) is >20 acres na) of it to the wetland size for Metric 1.
,		Select one size class and assign >50 acres (>20.2 ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10. 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <0.1 acres (0.04 t	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (list):
9	10	Metric 2. Upland E	Buffers and	Surrounding Land	Use
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	0 m (164 ft) or more and 25 m to <50 m (82 to ge 10 m to <25 m (32 fo average <10 m (<32 four section of the control of the co	savannah, wildlife area, etc. (7)	r (4) er (1)
7.0	17	Metric 3. Hydrolog	ЭУ		
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surfa Perennial surface water (Ia 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) 3e. Modifications to natural hydro None or none apparent (1 Recovered (7) Recent or no recovery (1)	R/CM (5)] R/CM primary source (ace water (3)) ake or stream) (5) t only one and assign (3). (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to < 6). Plogic regime. Score or (2) Check all disturb ditch tile (including dike weir stormwater in	(5)] Part of wetland/up Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundat Seasonally inundat of Seasonally satura ne or double check and average. pances observed point source (non culvert) filling/grading road bed/RR track dredging put other	ain (1) lake and other human use (1) pland (e.g., forest), complex (1) r upland corridor (1) saturation. Score one or dbl. check & avgently inundated/saturated (4) ted/saturated (3) [BR/CM (4)] ated (2) [BR/CM (4)] ated in upper 30 cm (12 in.) (1) [BR/CM (4)]
10	27	Metric 4. Habitat A	Alteration an	d Development	
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one of None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)) only one and assign so or double check and a	Check all disturbances of	observed

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W005 Rater(s): Date: 5/8/2023 Brandon Whitley 27 subtotal previous page Metric 5. Special Wetlands 27 0.00max 10 nts subtotal 0 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score* Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 32 Metric 6. Plant Communities, Interspersion, Microtopography 5 max 20 pts subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. 0 = Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. High (5) native species Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance None (0) tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools None Low High Moderate Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts and of highest quality

32 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

	FIELD FO		Deter/e):	Drondon M/la:41 co	Doto: 5/0/000	72
Site:		W006	Rater(s):	Brandon Whitley	Date : 5/8/202	23
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	Area (size)	Notes: BR/CM = adjusted points for open water body (excluding aquati (8 ha), then add only 0.5 acre (0.2 h	c beds and seasonal mudflats)	is >20 acres
·		Select one size class and assign >50 acres (>20.2 ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10. 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <0.1 acres (0.04 t	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (list):	
12	14	Metric 2. Upland E	Buffers and	Surrounding Land	Use	
max 14 pts.	subtotal	✓ WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	0 m (164 ft) or more and 25 m to <50 m (82 to ge 10 m to <25 m (32 fo average <10 m (<32 four section of the control of the co	<164 ft) around wetland perimeter t to <82 ft) around wetland perimete t) around wetland perimeter (0) uble check and average. savannah, wildlife area, etc. (7)	(4) er (1)	
11	25	Metric 3. Hydrolog	ЭУ			
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surface water (lame) Perennial surface water (lame) O.7 m (27.6 in.) (3) O.4 to 0.7 m (16 to 27.6 in.) 40.4 m (<16 in.) (1) [BR/CI 3e. Modifications to natural hydrous properties of the covered (7) Recovered (7) Recent or no recovery (1) 	R/CM (5)] R/CM primary source (ace water (3)) ake or stream) (5) t only one and assign (3). (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to < 6). Plogic regime. Score or (2) Check all disturb ditch tile (including dike weir stormwater in	(5)] Part of wetland/up Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundat V Seasonally inundat of in.) (2)] Seasonally satura ne or double check and average. pances observed point source (non culvert) filling/grading road bed/RR track dredging nput other	in (1) ake and other human use (1) bland (e.g., forest), complex upland corridor (1) inturation. Score one or dbl. ently inundated/saturated (4) ed/saturated (3) [BR/CM (4)] ated (2) [BR/CM (4)] ted in upper 30 cm (12 in.) ((1) check & avg.
13	38	Metric 4. Habitat A	Alteration an	nd Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select (2) Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one (1) Recovered (6) Recovering (3) Recent or no recovery (1)) only one and assign so or double check and a	Check all disturbances of mowing grazing clearcutting	observed shrub/sapling removal herbaceous/aquatic be woody debris removal sedimentation dredging nutrient enrichment	ed removal

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TVARAM									
Site:		W006	Rater(s):	Bra	andon Whitle	У	Date:	5/8/202	3
38 subtotal previo	ous page	1							
0.00 max 10 pts.	38 subtotal	Metric 5. Special	Wetlands						
0	Subiolai	*If the documented raw score fo	r Metric 5 is 30 pc	oints or high	er, the site is aut	omatically co	nsidered a Ca	ategory 3 wetlar	nd.
raw score*		Select all that apply. Where muldocumentation for each selectic Bog, fen, wet prairie (10); ac Assoc. forest (wetl. &/or adj. Sensitive geologic feature s Vernal pool (5); isolated, pe Island wetland >0.1 acre (0. Braided channel or floodplai Gross morph. adapt. in >5 tr Ecological community with g Known occurrence state/fed [*use higher rank where mi Superior/enhanced habitat/t Cat. 1 (very low quality) : <1	on (photos, checkli cidophilic veg., mossi upland) incl. >0.25 a uch as spring/seep, s rched, or slope wetla 04 ha) in reservoir, ri n/terrace depression ees >10 in. (25 cm) global rank (NatureSe eral threatened/enda xed rank or qualifier) use: migratory songbi	ists, maps, y substrate > acre (0.1 ha) sink, losing/u ind (4); head iver, or perer is (floodplain dbh: buttress erve): G1*(10 angered spec I [exclude rec ird/waterfowl	resource specialis 10 sq.m, sphagnum old growth (10); ma nderground stream, water wetland [1st o nial water >6 ft (2 m pool, slough, oxbov ,, multitrunk/stool, st), G2*(5), G3*(3) [*t ies (10); other rare rords which are only (5); in-reservoir but	st concurrence or other moss ature >18 in. (4 cave, waterfal rder perennial n) deep (5) v, meander scalitted, shallow ruse higher rank species with gle "historic"] tonbush (4); ot	ie, data source (5); muck, orga (5 cm) dbh (5) [6], rock outcrop/c or above] (3) ar, etc.) (3) coots/tip-up, or p c where mixed robal rank G1*(1) her fish/wildlife	es, references, anic soil layer (3) exclude pine plan cliff (5) neumatophores (ank or qualifier] 0), G2*(5), G3*(3) management/des	tation] 3) signation (3)
3.	41	Metric 6. Plant Co	ommunitie	es, Int	erspersio	n, Micr	otopog	raphy	
max 20 pts.	subtotal	6a. Wetland vegetation communiscore all present using 0 to 3 so Aquatic bed Emergent Shrub 1 Forest Mudflats Open water <20 acres (8 Moss/lichen. Other 6b. Horizontal (plan view) inters Select only one. High (5) Moderately high (4) [BR/V Moderate (3)[BR/CM (5)] Moderately low (2) [BR/V Low (1) [BR/CM (2)] None (0)	2 ha) 3 ha) 5 ha) 5 ha) 6 ha) 7 hair file for a file fo	D = Absen [For B] 1 = Preser moder 2 = Preser is of m 3 = Preser and is Narrative E ow = Low nativ mod = Nativ nonr and w/o nigh = A pr toler	Community Cover to Co. 1 ha (0.25 R/CM < 0.04 ha (0.05 R/CM < 0.05 R/CM < 0	acre) contiguents a significant acre) a significant acre) a significant acre acre acre acre acre acre acre acre	I part of wetla nificant part by ficant part of was a small part at part or more contained and the waste of nonnation onent of the waste of the wast	ut is of low qual wetland's veget nd is of high qu of wetland's veg ive or disturban regetation, althor es can also be ligh, but general species e sp &/or distur- high sp diversi	lity ation and ality getation ace tolerant bugh present, ly bance ty and ofter
		6c. Coverage of invasive plants Add or deduct points for covera Extensive >75% cover (- Moderate 25-75% cover Sparse 5-25% cover (-1) Nearly absent <5% cover Absent (1)	ge. 1 (-3) (-3) (1) (-3) (2)	Mudflat and 0 = Absen 1 = Low 0 (0.1 to 2 = Moder	d Open Water Cl t <0.1 ha (0.25 ac 1 to <1 ha (0.25 t 0.5 acre)] ate 1 to <4 ha (2.3 ha (9.9 acres) or	ass Quality res) [For BR o 2.5 acres)	/CM <0.04 ha [BR/CM 0.04 has) [BR/CM 0.2	(0.1 acre)] to <0.2 ha	
		6d. Microtopography. Score all present using 0 to 3 s Vegetated hummocks/tu Coarse woody debris >1 Standing dead >25 cm (Amphibian breeding poo	cale. ssocks 5 cm (6 in.) 10 in.) dbh Is	None Microtopog 0 = Absen		Low	Moderate	Moderate	High
			2	2 = Preser amour	nt in very small and the in moderate amount in moderate amount in moderate or the interval interval in moderate or the interval interva	ounts, but no	ot of highest q	uality or in sma	

GRAND TOTAL (max 100 pts)

41

0-29 = Category 1, low wetland function, condition, quality** 30-59 = Category 2, good/moderate wetland function, condition, quality** 60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:	FIELD FO	W007	Rater(s):	Brandon Whitley	Date:	5/8/2023
			(-)-	<u> </u>		
0.00 max 6 pts.	0 subtotal	Metric 1. Wetland	Area (size)	Notes: BR/CM = adjusted points for open water body (excluding aquati (8 ha), then add only 0.5 acre (0.2 h	c beds and season	nal mudflats) is >20 acres
		Select one size class and assign >50 acres (>20.2 ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10. 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <10.)	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (list):
12	12	Metric 2. Upland E	Buffers and	Surrounding Land	Use	
max 14 pts.	subtotal	✓ WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more and 25 m to <50 m (82 to ge 10 m to <25 m (32 for average <10 m (<32 for average <10 m (<32 for average <10 m (<32 for average) or older forest, prairie, shrubland, young 2 residential, fenced pastu	<164 ft) around wetland perimeter it to <82 ft) around wetland perimeter t) around wetland perimeter (0) uble check and average. savannah, wildlife area, etc. (7)	(4) er (1)	
7.0	19	Metric 3. Hydrolog	ЭУ			
max 30 pts.	subtotal	3a. Sources of water. Score all th	R/CM (5)] R/CM primary source ace water (3) ake or stream) (5) t only one and assign assign and as	Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundat ✓ Seasonally inundat 16 in.) (2)] Seasonally saturate or double check and average. Deances observed point source (non filling/grading road bed/RR track dredging other other point source in point source (non filling/grading or odd bed/RR track dredging other other in point source in point source (non filling/grading or odd bed/RR track dredging other in point source in point source (non in point source in point source (non in point source in point s	in (1) ake and other hubland (e.g., forest upland corridor (saturation. Score ently inundated/sated/saturated (3) [ated (2) [BR/CM (ated in upper 30 control of the control), complex (1) 1) one or dbl. check & avg. aturated (4) [BR/CM (4)]
13	32	Metric 4. Habitat A	Alteration an	nd Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one of None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)) only one and assign so or double check and a	Check all disturbances of	☐ shrub/saplin	/aquatic bed removal is removal

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Site:		W007	Rater(s):	Brandon Whitley	Date:	5/8/2023				
32										
subtotal previ	ous page									
0.00	32	Metric 5. Spe	cial Wetlands							
max 10 pts.	subtotal	•								
0 raw score*			•	nts or higher, the site is automaticated in row, score row as single feature	•	• •				
Idw Scole		documentation for each s Bog, fen, wet prairie Assoc. forest (wett. 6 Sensitive geologic fe Vernal pool (5); isola Island wetland >0.1 Braided channel or f Gross morph. adapt Ecological communi Known occurrence s [*use higher rank w Superior/enhanced l	Documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)							
3.	35	Metric 6. Plan	nt Communitie	s, Interspersion, N	/licrotopog	raphy				
max 20 pts.	subtotal	6a. Wetland vegetation o		egetation Community Cover Sc		, - 1- 3				
		Score all present using 0		= Absent or <0.1 ha (0.25 acre) ([For BR/CM <0.04 ha (0.1 acre	contiguous acre					
		1 Emergent	1	= Present and either comprises a	a small part of wetl		d is of			
		Shrub Forest	2	moderate quality, or comprisesPresent and either comprises			n and			
		Mudflats Open water <20 a	ucres (8 ha) 3	is of moderate quality, or comp = Present and comprises a signi						
		Moss/lichen. Other		and is of high quality						
		6b. Horizontal (plan view Select only one. ☐ High (5)) interspersion. Note that the least of the	arrative Description of Vegetation w = Low species diversity &/or do native species	on Quality ominance of nonna	tive or disturbance to	olerant			
		Moderately high (Moderate (3)[BR/ Moderately low (2) Low (1) [BR/CM (CM (5)]) [BR/CM (3)]	nod = Native species are dominant nonnative &/or disturbance to and species diversity moders w/o presence of rare, threate	olerant native spec ate to moderately h	ies can also be pres igh, but generally				
		None (0)	h	igh = A predominance of native sp tolerant native sp absent or v but not always, the presence	ecies with nonnativirtually absent, and	ve sp &/or disturband d high sp diversity ar	nd often			
		6c. Coverage of invasive Add or deduct points for	coverage. <u>N</u>	ludflat and Open Water Class Qu						
		Extensive >75% of Moderate 25-75%		= Absent < 0.1 ha (0.25 acres) [F = Low 0.1 to <1 ha (0.25 to 2.5 a						
		✓ Sparse 5-25% co Nearly absent <5	ver (-1)	(0.1 to 0.5 acre)] = Moderate 1 to <4 ha (2.5 to 9.9)	, -		acre)]			
		Absent (1)		= High 4 ha (9.9 acres) or more			/ dorejj			
		6d. Microtopography. Score all present using (Vegetated humme	to 3 scale.	ypothetical Wetland for Estimat	ing Degree of Inte	erspersion				
			bris >15 cm (6 in.) 5 cm (10 in.) dbh	None Low Low	Moderate	Moderate	High			
			<u>N</u>	licrotopography Cover Scale	v iviouerate	Moderate	ingii			
			<u>1</u>	AbsentPresent in very small amounts						
			2	 Present in moderate amounts, amounts of highest quality 	but not of highest	quality or in small				
			3	= Present in moderate or greater	r amounts and of h	inheet quality				

(max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality** 30- 59 = Category 2, good/moderate wetland function, condition, quality** 60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:	FIELD FO	W008	Rater(s):	Brandon Whitley	Date:	5/8/2023
0.00	0			Notes: BR/CM = adjusted points for		nberland Mountains. If an
max 6 pts.	subtotal	Metric 1. Wetland Select one size class and assign >50 acres (>20.2 ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10. 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <1.	score. (s) 20.2 ha) (5) [BR/CM (0) 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		a) of it to the wetland	d size for Metric 1.
12	12	Metric 2. Upland E	Buffers and	Surrounding Land	Use	
max 14 pts.	subtotal	✓ WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	m (164 ft) or more and 25 m to <50 m (82 to ge 10 m to <50 m (82 to ge 10 m to <25 m (32 for average <10 m (<32 for average <10 m (<32 for average <10 m (since the content of the content	<164 ft) around wetland perimeter t to <82 ft) around wetland perimete t) around wetland perimeter (0) uble check and average. savannah, wildlife area, etc. (7)	(4) er (1)	
7.0	19	Metric 3. Hydrolog	ЗУ			
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surfa Perennial surface water (Ia 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) 3e. Modifications to natural hydro None or none apparent (1 Recovered (7) Recent or no recovery (1)	R/CM (5)] R/CM primary source ace water (3) ake or stream) (5) t only one and assign assign and assign assign and assign assign and assign and assign and assign and assign and assign and	Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundat Seasonally inundat Seasonally inundated Seasonally saturate or double check and average. Deances observed point source (non culvert) filling/grading road bed/RR track dredging other other	in (1) ake and other hur bland (e.g., forest) upland corridor (* saturation. Score of ently inundated/sa ed/saturated (3) [i ated (2) [BR/CM (* ated in upper 30 co	, complex (1) I) one or dbl. check & avg. turated (4) BR/CM (4)]
13	32	Metric 4. Habitat A	Alteration an	d Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	only one and assign so	Check all disturbances of	☐ shrub/saplin	aquatic bed removal s removal

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W008 Rater(s): Date: 5/8/2023 Brandon Whitley 32 subtotal previous page Metric 5. Special Wetlands 32 0.00max 10 nts subtotal 0 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score* Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 35 Metric 6. Plant Communities, Interspersion, Microtopography 3. max 20 pts subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. 0 = Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. High (5) native species Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance None (0) tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools None Low High Moderate Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts and of highest quality

> **GRAND TOTAL** 35 (max 100 pts)

0-29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality*

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W009 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) Metric 3. Hydrology 10 24 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 19 43 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. ✓ None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) ✓ Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed

43

Poor to fair (2)

Recovered (6)

Recovering (3)

✓ None or none apparent (9)

Recent or no recovery (1)

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

Poor (1)

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☐ mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

☐ herbaceous/aquatic bed removal

(max 100 pts)

0-29 = Category 1, low wetland function, condition, quality**

30-59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality*

*Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W010 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 1.00 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use 12 13 max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 9 Metric 3. Hydrology 22 max 30 pts. 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 18 40 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. ✓ None or none apparent (4)

Recovering (2)

Recent or no recovery (1)

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

Excellent (7)
Very good (6)
Good (5)

Moderately good (4)

Fair (3)

Poor to fair (2)

Poor (1)

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

None or none apparent (9)
Recovered (6)

Recovering (3)
Recent or no recovery (1)

Check all disturbanc	es observed
☐ mowing	☐ shrub/sapling removal
☐ grazing	☐ herbaceous/aquatic bed removal
☐ clearcutting	woody debris removal

☐ selective cutting ☐ sedimentation ☐ farming ☐ dredging

☐ toxic pollutants ☐ nutrient enrichment

40

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53 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W011 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 1.00 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) 9.5 Metric 2. Upland Buffers and Surrounding Land Use 10.5 max 14 pts. WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)

MEDIUM. Buffers average 25 m to <50 m (92 to 404 ft) 2a. Calculate average buffer width. Select only one and assign score. Do not double check. MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 19.5 Metric 3. Hydrology max 30 pts. 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ weir dredging dredging stormwater input ✓ other pine plantation Metric 4. Habitat Alteration and Development 13 32.5 max 20 pts. 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3)

Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed Poor to fair (2) ☐ mowing ☐ shrub/sapling removal ☐ herbaceous/aquatic bed removal Poor (1) ☐ grazing 4c. Habitat alteration. Score one or double check and average. clearcutting woody debris removal None or none apparent (9) selective cutting sedimentation ✓ Recovered (6) ☐ farming ☐ dredging

☐ toxic pollutants

nutrient enrichment

32.5

Recovering (3)

Recent or no recovery (1)

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W011 Rater(s): ZB Date: 05/08/2023 32.5 subtotal previous page Metric 5. Special Wetlands 0.0032.5 0.00 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 37.5 Metric 6. Plant Communities, Interspersion, Microtopography 5.0 subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] 1 Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. native species High (5) Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, ✓ Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species None (0) high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 0000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools High Moderate Low Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small

- amounts of highest quality
- Present in moderate or greater amounts and of highest quality

37.5

GRAND TOTAL (max 100 pts)

0-29 = Category 1, low wetland function, condition, quality**

30-59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality*

Last Edited 2010 Page 2 of 6 TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W012 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 1.00 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) Metric 3. Hydrology 11 22 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ∫ filling/grading ✓ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 14 36 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average.

> None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed Poor to fair (2) ☐ mowing ☐ shrub/sapling removal Poor (1) ☐ herbaceous/aquatic bed removal ☐ grazing 4c. Habitat alteration. Score one or double check and average. clearcutting woody debris removal None or none apparent (9) selective cutting sedimentation ✓ Recovered (6) ☐ farming ☐ dredging Recovering (3) ☐ toxic pollutants nutrient enrichment

36

Recent or no recovery (1)

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40 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W013 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use 10 12 max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 10 Metric 3. Hydrology 22 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]</p> Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 15 37 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) ✓ Very good (6)

37

Good (5)

Fair (3)

Poor (1)

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

Moderately good (4)

None or none apparent (9)

Recent or no recovery (1)

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

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Check all disturbances observed

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

☐ herbaceous/aquatic bed removal

☐ mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

44 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30-59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W014 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 3.0 3 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use 10 13 max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 9 Metric 3. Hydrology 22 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 18 40 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. ✓ None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed

40

Poor to fair (2)

Recovered (6)

Recovering (3)

✓ None or none apparent (9)

Recent or no recovery (1)

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

Poor (1)

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☐ mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

☐ herbaceous/aquatic bed removal

TVARAM Site:	FIELD FC	W014		Rater(s):		ZB		Date:	05/08/20:	23
40	ous page			. (-7-					2 2. 3 3, 40	-
5.0 max 10 pts.	45	Metric 5	5. Special \	Wetland	s					
5.0 raw score*	Subtotal	Select all that documentation Bog, fer Assoc. f Sensitiv Vernal p Island w Braided Gross m Ecologic Known o [*use h	Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)							
5.0 max 20 pts.	50	Metric 6	6. Plant Co	mmunit	ies, Int	terspersio	n, Micı	rotopog	graphy	
		6a. Wetland vegetation communities. Score all present using 0 to 3 scale. Aquatic bed Emergent Shrub Forest Mudflats Open water <20 acres (8 ha) Moss/lichen. Other 6b. Horizontal (plan view) interspersion. Select only one. High (5) Moderately high (4) [BR/CM (5)] Moderate (3)[BR/CM (5)] Moderately low (2) [BR/CM (3)] Low (1) [BR/CM (2)] None (0)			Vegetation Community Cover Scale 0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)] 1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality 2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality 3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality					
					Narrative Description of Vegetation Quality low = Low species diversity &/or dominance of nonnative or disturbance toleranative species mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and or					ough present, ly bance ty and often
		Add or deduct Extens Modera Sparse	of invasive plants. points for coveragive >75% cover (-5 ate 25-75% cover (-1) absent <5% cover (1)	5) -3)	Mudflat ar 0 = Abse 1 = Low (not always, the p nd Open Water C nt <0.1 ha (0.25 a 0.1 to <1 ha (0.25 0 0.5 acre)] rate 1 to <4 ha (2 4 ha (9.9 acres) o	lass Quality cres) [For BR to 2.5 acres)	R/CM <0.04 h [BR/CM 0.04 s) [BR/CM 0	a (0.1 acre)] to <0.2 ha 2 to <02 ha (0.5	
		6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) Standing dead >25 cm (10 in.) dbh Amphibian breeding pools Microtopography Cove 0 = Absent 1 = Present in very sm. 2 = Present in moderat						Moderate more common	Moderate mof marginal qua	
	 50)	GRAND 1		3 = Prese 0- 29 = 30- 59 =	ent in moderate and ints of highest quarent in moderate or Category 1, low Category 2, good Category 3, super	ality greater amo wetland funct l/moderate w	unts and of h	ighest quality i, quality** on, condition, qua	

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

(max 100 pts)

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W015 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use 10 max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 10 Metric 3. Hydrology 20 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 34 14 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4)

34

Fair (3)

Poor (1)

Poor to fair (2)

Recovered (6)

Recovering (3)

✓ None or none apparent (9)

Recent or no recovery (1)

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

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Check all disturbances observed

✓ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

☐ herbaceous/aquatic bed removal

✓ mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

30-59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality*

(max 100 pts)

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W016 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use 9.5 11.5 max 14 pts. WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)

MEDIUM. Buffers average 25 m to <50 m (92 to 404 ft) 2a. Calculate average buffer width. Select only one and assign score. Do not double check. MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 10 21.5 Metric 3. Hydrology max 30 pts. 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 14 35.5 max 20 pts. 4a. Substrate disturbance. Score one or double check and average. ✓ None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed

35.5

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

None or none apparent (9)

Recent or no recovery (1)

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

Poor (1)

Last Edited 2010 Page 1 of 6

☐ mowing

☐ grazing

☐ farming

selective cutting

☐ toxic pollutants

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

☐ herbaceous/aquatic bed removal

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W016 Rater(s): ZB Date: 05/08/2023 35.5 subtotal previous page Metric 5. Special Wetlands 0.0035.5 0.00 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 41.5 Metric 6. Plant Communities, Interspersion, Microtopography 6 max 20 pts 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] 1 Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. native species High (5) Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species None (0) high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 0000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools High Moderate Low Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts and of highest quality

41.5

GRAND TOTAL (max 100 pts)

0-29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W017 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 0.000 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0)</p> Metric 2. Upland Buffers and Surrounding Land Use 8 max 14 pts. 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 13 Metric 3. Hydrology 21 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) ✓ Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 14 35 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed

35

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

None or none apparent (9)

Recent or no recovery (1)

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

Poor (1)

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☐ mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

☐ herbaceous/aquatic bed removal

42 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:	V	V0018 & W0019	Rater(s):	Brandon Whitley	Date:	5/8/2023
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	Area (size)	Notes: BR/CM = adjusted points for open water body (excluding aquati (8 ha), then add only 0.5 acre (0.2 h	c beds and seaso	onal mudflats) is >20 acres
mex o pro-	Subtotal	Select one size class and assign >50 acres (>20.2 ha) (6 p 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 (0.1 to <1 0.1 to <0.3 acre (0.04 to <0.1 acre (0.04 ha) (0)	ts) <20.2 ha) (5) [BR/CM (.1 ha) (4) [BR/CM (6)] ha) (3) [BR/CM (5)] .2 ha) (2) [BR/CM (3)]		size estimate (li	st):
12 max 14 pts.	14 subtotal	Metric 2. Upland I	Buffers and	Surrounding Land	Use	
шал тә різ.	Subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	0 m (164 ft) or more are 25 m to <50 m (82 to ge 10 m to <25 m (32 to average <10 m (<32 to use. Select one or down or older forest, prairie, s), shrubland, young 2 esidential, fenced past	savannah, wildlife area, etc. (7)	r (4) er (1)	
12	26	Metric 3. Hydrolog	gy			
max 30 pts.	subtotal	3a. Sources of water. Score all the High pH groundwater (5) Other groundwater (3) [Black Precipitation (1) [unless Easasonal/intermittent surless Perennial surface water (1) 3c. Maximum water depth. Select Po.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (4) [BR/C] 3e. Modifications to natural hydromaphology None or none apparent (1) Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] BR/CM primary source face water (3) lake or stream) (5) st only one and assign a.) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to < colongic regime. Score or colongic regime. Score or colongic regime. Score or colongic regime.	Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundation/s Seasonally inundation/s Seasonally inundation/s Seasonally inundation Seasonally saturation or double check and average. Deances observed point source (non groulvert) filling/grading road bed/RR traced dredging	in (1) lake and other holand (e.g., forest upland corridor saturation. Scorently inundated/sted/saturated (3) lated (2) [BR/CN ated in upper 30 lastormwater)	st), complex (1) (1) e one or dbl. check & avg. saturated (4)) [BR/CM (4)]
14	40	Metric 4. Habitat	Alteration ar	nd Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	(i) only one and assign s or double check and a	Check all disturbances of mowing grazing clearcutting	☐ shrub/sapl	us/aquatic bed removal oris removal

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W0018 & W0019 Rater(s): Date: 5/8/2023 Brandon Whitley 40 subtotal previous page Metric 5. Special Wetlands 40 0.00max 10 nts subtotal 0 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score* Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) Metric 6. Plant Communities, Interspersion, Microtopography 7.0 max 20 pts. subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. 0 = Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. High (5) native species Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance None (0) tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) ✓ Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools None Low High Moderate Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small

- 2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 = Present in moderate or greater amounts and of highest quality

47 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

	VARAW FIELD FORM							
Site:		W020	Rater(s):	Brandon Whitley	Date: 5/9/2023			
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquati	Blue Ridge and Cumberland Mountains. If an ic beds and seasonal mudflats) is >20 acres ia) of it to the wetland size for Metric 1.			
		Select one size class and assign >50 acres (>20.2 ha) (6 p 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 l 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 ha) (0)	ts) :20.2 ha) (5) [BR/CM (6 .1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] .2 ha) (2) [BR/CM (3)]		size estimate (list):			
8	10	Metric 2. Upland E	Buffers and	Surrounding Land	Use			
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more and 25 m to <50 m (82 to ge 10 m to <50 m (82 to ge 10 m to <25 m (32 for average <10 m (<32 for use. Select one or double or older forest, prairie, s), shrubland, young 2 residential, fenced pastu	savannah, wildlife area, etc. (7)	r (4) er (1)			
18	28	Metric 3. Hydrolog	ЭУ					
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surf Perennial surface water (I 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) 3e. Modifications to natural hydromators of None or none apparent (1) Recovered (7) Recent or no recovery (1)	R/CM (5)] R/CM primary source ace water (3) ake or stream) (5) t only one and assign : .) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to < 0) ologic regime. Score or 2) Check all disturb	(5)] Part of wetland/up Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundat Seasonally inundat Seasonally satura ne or double check and average. pances observed point source (non culvert) filling/grading road bed/RR trac dredging	in (1) lake and other human use (1) lake and other human use (1) land (e.g., forest), complex (1) lupland corridor (1) saturation. Score one or dbl. check & avg. ently inundated/saturated (4) led/saturated (3) [BR/CM (4)] lated (2) [BR/CM (4)] lated in upper 30 cm (12 in.) (1) [BR/CM (2) lated inupper 30 cm (12 in.) (1) [BR/CM (2)			
19	47	Metric 4. Habitat	Alteration an	nd Development				
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) Recent or no recovery (1) Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1)	only one and assign so or double check and a	Check all disturbances of mowing grazing clearcutting	observed			

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W020 Rater(s): Date: 5/9/2023 Brandon Whitley 47 subtotal previous page Metric 5. Special Wetlands 0.0047 max 10 nts subtotal 0 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score* Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 54 Metric 6. Plant Communities, Interspersion, Microtopography 7.0 max 20 pts. subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. 0 = Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. High (5) native species Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance None (0) tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) ✓ Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools None Low High Moderate Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts and of highest quality

54 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:		W021	Rater(s):	Brandon Whitley	Date:	5/9/2023
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	, ,	Notes: BR/CM = adjusted points for open water body (excluding aquation (8 ha), then add only 0.5 acre (0.2 h	c beds and seaso	nal mudflats) is >20 acres
		Select one size class and assign >50 acres (>20.2 ha) (6 p 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 h 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 ha) (0)	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (lis	t):
7.0	9	Metric 2. Upland E	Buffers and S	Surrounding Land	Use	
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more are 25 m to <50 m (82 to ge 10 m to <25 m (32 ft average <10 m (<32 ft use. Select one or dou or older forest, prairie, so, shrubland, young 2residential, fenced pastures.	savannah, wildlife area, etc. (7)	(4) er (1)	
13	22	Metric 3. Hydrolog	ЭУ			
max 30 pts.	subtotal	3a. Sources of water. Score all the High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surf Perennial surface water (I 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (-20.4 m (-16 in.) (1) [BR/Cl 3e. Modifications to natural hydrowater None or none apparent (1 Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] R/CM primary source (ace water (3)) ake or stream) (5) t only one and assign s .) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to <	Part of riparian or 3d. Duration inundation/s Score. Semi- to permane Regularly inundat Seasonally inundat Seasonally inundat Seasonally saturate or double check and average. ances observed point source (non culvert) filling/grading road bed/RR track dredging	in (1) ake and other hubland (e.g., fores upland corridor saturation. Score ently inundated/sed/saturated (3) ated (2) [BR/CM ited in upper 30 of stormwater)	t), complex (1) (1) one or dbl. check & avg. aturated (4) [BR/CM (4)]
15	37	Metric 4. Habitat A	Alteration an	d Development		=
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)) only one and assign so or double check and a	Check all disturbances of mowing grazing clearcutting	☐ shrub/sapli	s/aquatic bed removal ris removal

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W021 Rater(s): Date: 5/9/2023 Brandon Whitley 37 subtotal previous page Metric 5. Special Wetlands 37 0.00max 10 nts subtotal 0 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score* Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 48 Metric 6. Plant Communities, Interspersion, Microtopography 7.0 max 20 pts. subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. 0 = Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. High (5) native species Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance None (0) tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) ✓ Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools None Low High Moderate Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts and of highest quality

48 GRAND TOTAL (max 100 pts)

0-29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

I A VIZVIAI	FIELD FO	KIVI			
Site:		W022	Rater(s):	Brandon Whitley	Date: 5/9/2023
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquation	Blue Ridge and Cumberland Mountains. If an c beds and seasonal mudflats) is >20 acres a) of it to the wetland size for Metric 1.
,		Select one size class and assign >50 acres (>20.2 ha) (6 pt 25 to <50 acres (10.1 to <) 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 h 0.3 to <3 acres (0.1 to <1.2 0.1 to <0.3 acre (0.04 to < < < < < < < < < < < < < < < < <	s) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] aa) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (list):
8	10	Metric 2. Upland E	Buffers and S	Surrounding Land	Use
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land uverage VERY LOW. 2nd growth overage LOW. Old field (>10 years MODERATELY HIGH. Res	m (164 ft) or more arc 25 m to <50 m (82 to e 10 m to <25 m (32 ft average <10 m (<32 ft use. Select one or dou r older forest, prairie, s), shrubland, young 2n sidential, fenced pastu	<164 ft) around wetland perimeter to <82 ft) around wetland perimeter) around wetland perimeter (0) ble check and average. savannah, wildlife area, etc. (7)	(4) er (1)
19	29	Metric 3. Hydrolog	ју		
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BR Precipitation (1) [unless BI Seasonal/intermittent surfa Perennial surface water (la 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in. V<0.4 m (<16 in.) (1) [BR/CN 3e. Modifications to natural hydro None or none apparent (12 Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] R/CM primary source (ace water (3) ake or stream) (5) only one and assign source (by the control of t	Part of wetland/up Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundat Seasonally inundat Seasonally satura the or double check and average. ances observed point source (none of the course) filling/grading road bed/RR track dredging put other	in (1) ake and other human use (1) bland (e.g., forest), complex (1) upland corridor (1) auturation. Score one or dbl. check & avg. ently inundated/saturated (4) ed/saturated (3) [BR/CM (4)] ated (2) [BR/CM (4)] ted in upper 30 cm (12 in.) (1) [BR/CM (2) stormwater)
19	48	Metric 4. Habitat A	Alteration an	d Development	
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one of Recovered (6) Recovering (3) Recent or no recovery (1)	only one and assign so or double check and a	Check all disturbances of mowing grazing clearcutting	observed shrub/sapling removal herbaceous/aquatic bed removal woody debris removal sedimentation dredging nutrient enrichment

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TVARAM FI		EY AUTHOROITY RAPID ASSES RM	SWENT WENTOL): Assessing v	wetiand Condi	ition, Fund	tional Capac	ity, Quality	
Site:		W022	Rater(s):	Brand	on Whitley		Date:	5/9/2023	3
48 subtotal previous	s page								
0.00	48 subtotal	Metric 5. Special	Wetlands						
max 10 pts.	Subtotal	*If the documented raw score for	r Metric 5 is 30 po	ints or higher, t	he site is auton	natically co	nsidered a Ca	itegory 3 wetlan	ıd.
raw score*		Select all that apply. Where mult documentation for each selectio Bog, fen, wet prairie (10); ac Assoc. forest (wetl. &/or adj. Sensitive geologic feature st. Vernal pool (5); isolated, per Island wetland >0.1 acre (0.0 Braided channel or floodplain Gross morph. adapt. in >5 tr. Ecological community with g Known occurrence state/fede [*use higher rank where mix Superior/enhanced habitat/u Cat. 1 (very low quality) : <1	n (photos, checklis idophilic veg., mossy upland) incl. >0.25 a uch as spring/seep, s ched, or slope wetlan 04 ha) in reservoir, rin/terrace depressions ees >10 in. (25 cm) collobal rank (NatureSeeral threatened/endaked rank or qualifier] se: migratory songbi	sts, maps, reso v substrate >10 so core (0.1 ha); old gink, losing/undergnd (4); headwater ver, or perennial v strong (100 dplain pool, dbh: buttress, multive); G1*(10), G2 ngered species (7 [exclude records rd/waterfowl (5); i	urce specialist q.m, sphagnum o growth (10); matu ground stream, car wetland [1st ord water >6 ft (2 m), slough, oxbow, ittitrunk/stool, stilket*(5), G3*(3) [*user 10); other rare specialist which are only "tin-reservoir button	concurrence or other moss ure >18 in. (4 ave, waterfal er perennial deep (5) meander scaed, shallow re higher rank ecies with glinistoric"]	e, data source (5); muck, orga (5 cm) dbh (5) [e I, rock outcrop/c or above] (3) ar, etc.) (3) oots/tip-up, or p c where mixed ra obal rank G1*(1) her fish/wildlife	es, references, inic soil layer (3) exclude pine plant liff (5) neumatophores (3 ank or qualifier] 0), G2*(5), G3*(3) management/desi	ation] 3) gnation (3)
7.0	51	Metric 6. Plant Co	ommunitie	s, Inters	spersion	, Micr	otopog	raphy	
max 20 pts.	subtotal	6a. Wetland vegetation commun Score all present using 0 to 3 so Aquatic bed Emergent Shrub 3 Forest Mudflats Open water <20 acres (8 Moss/lichen. Other 6b. Horizontal (plan view) inters Select only one. High (5) Moderately high (4) [BR/O Moderately low (2) [BR/O Low (1) [BR/CM (2)] None (0)	ha) 3 persion. M(5)] n CM (3)]	= Present an moderate of selection is of moder and is of moder and is of hit selection is expensed and is expensed and specific processing and specifi	<0.1 ha (0.25 a M < 0.04 ha (0.1 d either compriquality, or comprise the comprise of a comprises and quality or comprises and quality or comprises and quality or comprises and quality or comprise of comprises and quality or comprise of compris	cre) contiguacre) contiguacre) contiguacre) contiguacre) comprises a significant comprises compr	I part of wetla nificant part by ficant part of was a small part and part or more of a lity onent of the was a small part or more of the was a small part or more of the was a small part or monation onent of the was a small part or moderately high rendangered with nonnative y absent, and	nd's vegetation ut is of low quali vetland's vegeta nd is of high qua f wetland's vege ve or disturbanc egetation, altho es can also be p gh, but generali species e sp &/or disturb high sp diversit or endangered	ation and ality etation ce tolerant uugh oresent, y oance y and ofter
		6c. Coverage of invasive plants. Add or deduct points for coverage Extensive >75% cover (-1) Moderate 25-75% cover (-1) Nearly absent <5% cover Absent (1) 6d. Microtopography. Score all present using 0 to 3 so	ge. <u>N</u> <u>0</u> (-3) 1 (0) <u>2</u> <u>3</u> Eale.	Mudflat and Op = Absent <0. = Low 0.1 to (0.1 to 0.5 a	the Mater Class 1 ha (0.25 acre <1 ha (0.25 to acre)] 1 to <4 ha (2.5 to 9.9 acres) or m	es Quality es) [For BR 2.5 acres) to 9.9 acres nore [BR/Cl	/CM <0.04 ha [BR/CM 0.04 the s) [BR/CM 0.2 M 2 ha (5 acre	(0.1 acre)] to <0.2 ha to <02 ha (0.5 es) or more]	
		Coarse woody debris >1: Standing dead >25 cm (1 Amphibian breeding pool	5 cm (6 in.) 10 in.) dbh s	! = Present in amounts of	very small amo	ounts or if munts, but no	ot of highest q	Moderate of marginal quauality or in smal	

0-29 = Category 1, low wetland function, condition, quality** 30-59 = Category 2, good/moderate wetland function, condition, quality** 60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site:		W023	Rater(s):	Brandon Whitley	Date:	5/9/2023
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland Select one size class and assign	, ,	Notes: BR/CM = adjusted points for open water body (excluding aqua (8 ha), then add only 0.5 acre (0.2	tic beds and season ha) of it to the wetlar	nal mudflats) is >20 acres and size for Metric 1.
		>50 acres (>20.2 ha) (6 p 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 (0.1 to <1 0.1 to <0.3 acre (0.04 to <0.1 acre (0.04 ha) (0)	(20.2 ha) (5) [BR/CM (6)] (1 ha) (4) [BR/CM (6)] (ha) (3) [BR/CM (5)] (2 ha) (2) [BR/CM (3)]		Size estimate (iisi	.).
7.0	9	Metric 2. Upland I	Buffers and	Surrounding Land	Use	
max 14 pts.	subtotal	WIDE. Buffers average 5 MEDIUM. Buffers averag NARROW. Buffers averag VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth LOW. Old field (>10 years MODERATELY HIGH. Re	O m (164 ft) or more and e 25 m to <50 m (82 to ge 10 m to <25 m (32 for average <10 m (<32 for use. Select one or douor older forest, prairie, s), shrubland, young 20 esidential, fenced pastu	savannah, wildlife area, etc. (7)	er (4) ter (1)	
19	28	Metric 3. Hydrolo	gy			
max 30 pts.	subtotal	3a. Sources of water. Score all the light physical process of water and sources of water and sources of water and sources of water (3). By Precipitation (1) [unless Easasonal/intermittent sure Perennial surface water (3c. Maximum water depth. Selection 20.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) 4 to 0.7 m (16 in.) (1) [BR/C] 3e. Modifications to natural hydromath process of the process of the surface of the process of the proce	R/CM (5)] BR/CM primary source face water (3) lake or stream) (5) et only one and assign (a.) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to < cologic regime. Score or [2]) Check all disturb ditch tile (including dike) weir stormwater in	(5)] Part of wetland/u Part of riparian of ad. Duration inundation, score. Semi- to perman Regularly inundation Seasonally inundation Seasonally inundation of the control	ain (1) //ake and other hu upland (e.g., forest or upland corridor (/saturation. Score uently inundated/sa ated/saturated (3) dated (2) [BR/CM rated in upper 30 of	c), complex (1) 1) one or dbl. check & avg. aturated (4) [BR/CM (4)]
10	38	Metric 4. Habitat	Alteration an	nd Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (5) Recovered (6) Recovering (3) Recent or no recovery (1)	(i) only one and assign so or double check and a	Check all disturbances ☑ mowing ☐ grazing Iverage. ☐ clearcutting	☐ shrub/saplir	s/aquatic bed removal ris removal

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38 subtotal previous page 0.00 38 max 10 pts. subtotal	W023	Rater(s):	Brandon Whitley	Date:	5/9/2023
subtotal previous page 0.00 38					
	Metric 5. Special	Wetlands			
0	*If the documented raw score for	r Metric 5 is 30 poir	nts or higher, the site is automatica	ally considered a C	ategory 3 wetland.
raw score*	documentation for each selection Bog, fen, wet prairie (10); aci Assoc. forest (wetl. &/or adj. Sensitive geologic feature su Vernal pool (5); isolated, per Island wetland >0.1 acre (0.0 Braided channel or floodplair Gross morph. adapt. in >5 tre Ecological community with gi Known occurrence state/fede [*use higher rank where mix Superior/enhanced habitat/us	n (photos, checklist idophilic veg., mossy upland) incl. >0.25 actich as spring/seep, sirched, or slope wetland the included has in reservoir, riven/terrace depressions ees >10 in. (25 cm) de lobal rank (NatureSereral threatened/endanked rank or qualifier] [ise: migratory songbird	n row, score row as single feature of the test of the	urrence, data sourd r moss (5); muck, org 8 in. (45 cm) dbh (5) aterfall, rock outcrop/ ennial or above] (3) (5) der scar, etc.) (3) allow roots/tip-up, or per rank where mixed with global rank G1*([27] (4); other fish/wildlife	ces, references, etc). anic soil layer (3) exclude pine plantation] cliff (5) cneumatophores (3) rank or qualifier] 10), G2*(5), G3*(3) management/designation (3)
5.0 43	Metric 6. Plant Co	mmunitie	s, Interspersion, M	licrotopog	raphy
max 20 pts. subtotal	6a. Wetland vegetation commun Score all present using 0 to 3 s	ale. 0: 1	egetation Community Cover Sca Absent or <0.1 ha (0.25 acre) or [For BR/CM <0.04 ha (0.1 acre) ergon and either comprises a moderate quality, or comprises are is of moderate quality and is of high quality arrative Description of Vegetation of Vegetation and is of high quality arrative Description of Vegetation of Vegetation of Vegetation and is of high quality arrative Description of Vegetation of Vegetati	contiguous acre)] a small part of wetla a significant part of a significant part of rises a small part a icant part or more in Quality minance of nonna component of the olerant native speciate to moderately h ned or endangered ecies with nonnative iritually absent, and of rate, threatened allity or BR/CM <0.04 ha cres) [BR/CM 0.04 acres) [BR/CM 0.5 BR/CM 2 ha (5 acr	wetland's vegetation and is of high quality of wetland's vegetation and is of high quality of wetland's vegetation wegetation, although less can also be present, igh, but generally is species of high sp diversity and of it, or endangered species a (0.1 acre)] to <0.2 ha

0-29 = Category 1, low wetland function, condition, quality** 30-59 = Category 2, good/moderate wetland function, condition, quality** 60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site:	FIELD FO	W024	Rater(s):	Brandon Whitley	Date: 5	5/9/2023
		1104	(-/-	<u> </u>		
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	Area (size)	Notes: BR/CM = adjusted points for open water body (excluding aquati (8 ha), then add only 0.5 acre (0.2 h	c beds and seasonal	mudflats) is >20 acres
		Select one size class and assign >50 acres (>20.2 ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10. 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <10.) <p><0.1 acre (0.04 ha) (0)</p>	ts) 20.2 ha) (5) [BR/CM (0 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (list):	
7.0	9	Metric 2. Upland E	Buffers and	Surrounding Land	Use	
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more and 25 m to <50 m (82 to ge 10 m to <25 m (32 for average <10 m (<32 for average <10 m (<32 for average <10 m (<32 for average) or older forest, prairie, shrubland, young 2 residential, fenced pastu	savannah, wildlife area, etc. (7)	(4) er (1)	
24	33	Metric 3. Hydrolog	ЭУ			
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surface water (Ia) Perennial surface water (Ia) 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) 3e. Modifications to natural hydro None or none apparent (1) Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] R/CM primary source ace water (3) ake or stream) (5) t only one and assign assign and as	(5)] Part of wetland/up Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundat Seasonally inundat Seasonally satura ne or double check and average. point source (non culvert) filling/grading road bed/RR track dredging nput other	in (1) ake and other huma bland (e.g., forest), o upland corridor (1) saturation. Score on ently inundated/satu ed/saturated (3) [BF ated (2) [BR/CM (4) sted in upper 30 cm	complex (1) ne or dbl. check & avg. rrated (4) R/CM (4)]
14	47	Metric 4. Habitat A	Alteration an	d Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one of None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)) only one and assign so or double check and a	Check all disturbances of	☐ shrub/sapling	quatic bed removal removal

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W024 Rater(s): Date: 5/9/2023 Brandon Whitley 47 subtotal previous page Metric 5. Special Wetlands 0.0047 max 10 nts subtotal 0 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score* Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 53 Metric 6. Plant Communities, Interspersion, Microtopography 6.0 max 20 pts. subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. 0 = Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. High (5) native species Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance None (0) tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) ✓ Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 000 Standing dead >25 cm (10 in.) dbh Amphibian breeding pools None Low High Moderate Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts and of highest quality

53 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:	FIELD FO	W025	Rater(s):	Brandon Whitley	Date : 5/9	/2023
Site.		VVU23	ivater(5).	Brandon Williey	Date. 5/9	72023
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	Area (size)	Notes: BR/CM = adjusted points for open water body (excluding aquati (8 ha), then add only 0.5 acre (0.2 h	c beds and seasonal mud	dflats) is >20 acres
		Select one size class and assign >50 acres (>20.2 ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10.) 0.3 to <3 acres (0.1 to <1.) 0.1 to <0.3 acre (0.04 to <1.) <p><0.1 acre (0.04 ha) (0)</p>	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (list):	
8.0	10	Metric 2. Upland E	Buffers and	Surrounding Land	Use	
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average ✓ NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land ✓ VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more and 25 m to <50 m (82 to ge 10 m to <25 m (32 for average <10 m (<32 for average <10 m (<32 for average <10 m (<32 for average) or older forest, prairie, shrubland, young 2 residential, fenced pastu	savannah, wildlife area, etc. (7)	(4) er (1)	
22	32	Metric 3. Hydrolog	ЭУ			
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surf. Perennial surface water (I 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) 40.4 m (<16 in.) (1) [BR/CI 40.4 m (<16 in.)	R/CM (5)] R/CM primary source ace water (3) ake or stream) (5) t only one and assign assign and as	(5)]	in (1) ake and other human upland (e.g., forest), comupland corridor (1) saturation. Score one of ently inundated/saturate ed/saturated (3) [BR/Clated (2) [BR/CM (4)] ated in upper 30 cm (12) stormwater)	nplex (1) r dbl. check & avg. ed (4) M (4)]
19	51	Metric 4. Habitat A	Alteration an	nd Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)) only one and assign so or double check and a	Check all disturbances of mowing	observed	tic bed removal noval

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0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W026 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 1.00 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 13 Metric 3. Hydrology 20 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) ✓ Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]</p> Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ✓ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 9 29 max 20 pts. 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4)

Recovered (3)

Recovering (2) Recent or no recovery (1)

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

Excellent (7) Very good (6) Good (5)

Moderately good (4)

Fair (3)

Poor to fair (2)

Poor (1)

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

None or none apparent (9) Recovered (6)

Recent or no recovery (1)

Recovering (3)

Check all disturbances observed mowing ☐ shrub/sapling removal herbaceous/aquatic bed removal ☐ grazing clearcutting woody debris removal

selective cutting sedimentation ∫ farming ☐ dredging

 ☐ toxic pollutants nutrient enrichment

29

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0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W027 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 0.000 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0)</p> Metric 2. Upland Buffers and Surrounding Land Use 6 max 14 pts. 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 14 Metric 3. Hydrology 20 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) ✓ Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]</p> Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ✓ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 34 14 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed Poor to fair (2) mowing ☐ shrub/sapling removal

34

Poor (1)

✓ Recovered (6)

Recovering (3)

None or none apparent (9)

Recent or no recovery (1)

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

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☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

herbaceous/aquatic bed removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

TVARAM FIELD			-	· ·	-	
Site:	W027	Rater(s):	ZB	Date:	05/08/2023	
34	1					
subtotal previous page]					
0.00 34	Metric 5. Spec	cial Wetlands				
max 10 pts. subtota	al					
0.00		•	s or higher, the site is automa row, score row as single feat	•	0 ,	
raw score*	documentation for each s Bog, fen, wet prairie Assoc. forest (wetl. & Sensitive geologic fe Vernal pool (5); isola Island wetland >0.1 a Braided channel or fl Gross morph. adapt. Ecological communit Known occurrence st [*use higher rank wl Superior/enhanced h	election (photos, checklists (10); acidophilic veg., mossy sulor adj. upland) incl. >0.25 acreature such as spring/seep, sink ted, perched, or slope wetland acre (0.04 ha) in reservoir, river oodplain/terrace depressions (fin >5 trees >10 in. (25 cm) dby with global rank (NatureServetate/federal threatened/endangthere mixed rank or qualifier] [e) abitat/use: migratory songbird/	nmaps, resource specialist cubstrate >10 sq.m, sphagnum or to (0.1 ha); old growth (10); mature, losing/underground stream, cave (4); headwater wetland [1st order, or perennial water >6 ft (2 m) do loodplain pool, slough, oxbow, mix buttress, multitrunk/stool, stilted; (2): G1*(10), G2*(5), G3*(3) [*use pered species (10); other rare specied use to (5); in-reservoir buttons (4ER >80% cover of invasives OF	oncurrence, data sour other moss (5); muck, one >18 in. (45 cm) dbh (5) ve, waterfall, rock outcrop r perennial or above] (3) eep (5) leander scar, etc.) (3) d, shallow roots/tip-up, or higher rank where mixed cies with global rank G1* storic"]	rces, references, etc). ganic soil layer (3) [exclude pine plantation] o/cliff (5) pneumatophores (3) rank or qualifier] (10), G2*(5), G3*(3) e management/designation (3)	
7.0 41	_		, Interspersion,	-		
max 20 pts. subtota	al		•	• •	grapity	
	6a. Wetland vegetation co Sco <u>re</u> all present using 0		getation Community Cover Absent or <0.1 ha (0.25 ac	re) contiguous acre		
	Aquatic bed 2 Emergent	1 =	[For BR/CM < 0.04 ha (0.1 a Present and either compris		land's vegetation and is of	
	1 Shrub		moderate quality, or compr	<u>ises a significant part</u>	but is of low quality	
	Forest Mudflats	2 =	Present and either compris is of moderate quality, or co			
	Open water <20 a Moss/lichen. Othe		Present and comprises a si and is of high quality			
	6b. Horizontal (plan view)	interspersion. <u>Nar</u>	rative Description of Veget	ation Quality		
	Select only one. ☐ High (5)	low	 Low species diversity &/c native species 	or dominance of nonna	ative or disturbance toleran	
	✓ Moderately high (4		d = Native species are domin	•	-	
	Moderate (3)[BR/0		nonnative &/or disturband and species diversity mod	•	•	
	Low (1) [BR/CM (2	2)]	w/o presence of rare, thre	eatened or endangere	d species	
	None (0)	higl	n = A predominance of native		ve sp &/or disturbance d high sp diversity and ofte	
		<u> </u>			d, or endangered species	
	6c. Coverage of invasive Add or deduct points for o		dflat and Open Water Class	S Quality		
	Extensive >75% c Moderate 25-75%	over (-5) 0 =	Absent <0.1 ha (0.25 acres Low 0.1 to <1 ha (0.25 to 2	(a) [For BR/CM < 0.04 h	a (0.1 acre)]	
	Sparse 5-25% cov		(0.1 to 0.5 acre)]	.5 acres) [BR/CW 0.04	∓ to <0.2 na	
	Nearly absent <5% Absent (1)		2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acres) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]			
	6d. Microtopography.		oothetical Wetland for Estir	nating Degree of Into	erspersion	
	Score all present using 0 Vegetated hummo Coarse woody det Standing dead >20 Amphibian breedir	ocks/tussocks oris >15 cm (6 in.) 5 cm (10 in.) dbh	one Low	Low Moderate	Moderate High	
		<u>Mic</u>	rotopography Cover Scale			
			Absent Present in very small amou	ints or if more commo	n of marginal quality	
			Present in moderate amoun			
		3 =	amounts of highest quality Present in moderate or gre	ater amounts and of h	ighest quality	
	1	<u>3 -</u>	r resent in moderate or gre	ator amounts and ULT	ngnost quality	
	GRA		0- 29 = Category 1, low wetlands			
4	1 11 -	- 30)- 59 = Category 2, good/mo)-100 = Category 3, superior			

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

(max 100 pts)

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W028 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 1.00 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) Metric 3. Hydrology 10 17 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]</p> Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other

12 29

Metric 4. Habitat Alteration and Development

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

max 20 pts. subtotal

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)

Poor to fair (2) mowing ☐ shrub/sapling removal herbaceous/aquatic bed removal Poor (1) ☐ grazing 4c. Habitat alteration. Score one or double check and average. clearcutting woody debris removal None or none apparent (9) selective cutting sedimentation ✓ Recovered (6) ☐ farming ☐ dredging Recovering (3) ☐ toxic pollutants nutrient enrichment

Check all disturbances observed

Recent or no recovery (1)

None or none apparent (4)

Recovered (3)

✓ Fair (3)

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Last Edited 2010 Page 1 of 6

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W029 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an Metric 1. Wetland Area (size) 1.00 open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use 12 max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 9 Metric 3. Hydrology 21 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch

14 35

Metric 4. Habitat Alteration and Development

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

☐ dike

☐ weir

Recent or no recovery (1)

None or none apparent (4)

Recovered (3) Recovering (2)

max 20 pts. subtotal

Recent or no recovery (1)

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

Excellent (7)

Very good (6)

Good (5)

☐ tile (including culvert)

stormwater input

Moderately good (4) Fair (3) Check all disturbances observed Poor to fair (2) mowing ☐ shrub/sapling removal Poor (1) herbaceous/aquatic bed removal ☐ grazing 4c. Habitat alteration. Score one or double check and average. clearcutting woody debris removal None or none apparent (9) selective cutting sedimentation ✓ Recovered (6) ☐ farming ☐ dredging Recovering (3) ☐ toxic pollutants nutrient enrichment Recent or no recovery (1)

☐ filling/grading

other

☐ road bed/RR track☐ dredging

35

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0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W030 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) Metric 3. Hydrology 10 24 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 13 37 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4)

37

Fair (3)

Poor (1)

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

None or none apparent (9)

Recent or no recovery (1)

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

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Check all disturbances observed

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

herbaceous/aquatic bed removal

mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W031 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 12 Metric 3. Hydrology 26 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 39 13 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2)

Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed Poor to fair (2) mowing ☐ shrub/sapling removal herbaceous/aquatic bed removal Poor (1) ☐ grazing 4c. Habitat alteration. Score one or double check and average. clearcutting woody debris removal None or none apparent (9) selective cutting sedimentation ✓ Recovered (6) ☐ farming ☐ dredging

☐ toxic pollutants

nutrient enrichment

39

Recovering (3)

Recent or no recovery (1)

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0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W032 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 13 Metric 3. Hydrology 27 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]</p> Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 14 41 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4)

41

Fair (3)

Poor (1)

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

None or none apparent (9)

Recent or no recovery (1)

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

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Check all disturbances observed

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

herbaceous/aquatic bed removal

mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

(max 100 pts) *Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

30-59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality*

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W033 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 12 Metric 3. Hydrology 26 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 14 40 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed

40

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

None or none apparent (9)

Recent or no recovery (1)

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

Poor (1)

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mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

herbaceous/aquatic bed removal

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W034 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 12 Metric 3. Hydrology 26 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 39 13 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7)

39

Very good (6) Good (5)

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

Fair (3)

Poor (1)

Moderately good (4)

None or none apparent (9)

Recent or no recovery (1)

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

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Check all disturbances observed

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

herbaceous/aquatic bed removal

mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W035 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) 2.00 Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 7.0 Metric 3. Hydrology 11 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 3.0 14 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) √ Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed Poor to fair (2) mowing ☐ shrub/sapling removal √ Poor (1) herbaceous/aquatic bed removal

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

None or none apparent (9)

Recent or no recovery (1)

Recovered (6)

Recovering (3)

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

(max 100 pts) 60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

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30-59 = Category 2, good/moderate wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W036 Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. ✓ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) 9 Metric 3. Hydrology 23 max 30 pts. 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 13 36 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score.

Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed Poor to fair (2) mowing ☐ shrub/sapling removal ☐ herbaceous/aquatic bed removal Poor (1) ☐ grazing 4c. Habitat alteration. Score one or double check and average. clearcutting woody debris removal None or none apparent (9) selective cutting sedimentation ✓ Recovered (6) ☐ farming ☐ dredging Recovering (3) ☐ toxic pollutants nutrient enrichment Recent or no recovery (1)

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(max 100 pts) 60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

30-59 = Category 2, good/moderate wetland function, condition, quality**

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W037 PEM/PFO Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use 4.0 6 max 14 pts. subtota 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) Metric 3. Hydrology 6 12 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 12 24 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed

24

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

None or none apparent (9)

Recent or no recovery (1)

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

Poor (1)

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mowing

☐ grazing

☐ farming

clearcutting

selective cutting

☐ toxic pollutants

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

☐ herbaceous/aquatic bed removal

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W037 PEM/PFO Rater(s): ZB Date: 05/08/2023 24 subtotal previous page Metric 5. Special Wetlands 0.0024.5 0.00 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 29 Metric 6. Plant Communities, Interspersion, Microtopography 5.0 subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] 1 Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. native species High (5) Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, ✓ Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species None (0) high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 0000 Standing dead >25 cm (10 in.) dbh 1 Amphibian breeding pools High Moderate Low Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small

- 2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 = Present in moderate or greater amounts and of highest quality

29 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W038 PEM/PFO Rater(s): ZB Date: 05/08/2023 Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an 2.00 Metric 1. Wetland Area (size) open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1. max 6 pts. subtotal Select one size class and assign score. Sources/assumptions for size estimate (list): >50 acres (>20.2 ha) (6 pts) 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)] <0.1 acre (0.04 ha) (0) Metric 2. Upland Buffers and Surrounding Land Use 4.006 max 14 pts. 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4) NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1) VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) 2b. Intensity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young 2nd growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3) High. Urban, industrial, open pasture, row cropping, mining, construction (1) Metric 3. Hydrology 10 16 max 30 pts. subtotal 3b. Connectivity. Score all that apply. 3a. Sources of water. Score all that apply. High pH groundwater (5) 100-year floodplain (1) Other groundwater (3) [BR/CM (5)] Between stream/lake and other human use (1) Precipitation (1) [unless BR/CM primary source (5)] Part of wetland/upland (e.g., forest), complex (1) Seasonal/intermittent surface water (3) Part of riparian or upland corridor (1) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl. check & avg. Semi- to permanently inundated/saturated (4) 3c. Maximum water depth. Select only one and assign score. Regularly inundated/saturated (3) [BR/CM (4)] >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)] Seasonally inundated (2) [BR/CM (4)] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)] 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Check all disturbances observed Recovering (3) point source (nonstormwater) ☐ ditch Recent or no recovery (1) ☐ tile (including culvert) ☐ filling/grading ☐ dike ☐ road bed/RR track ☐ dredging ☐ weir stormwater input other Metric 4. Habitat Alteration and Development 14 30 max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Check all disturbances observed

30

Poor to fair (2)

✓ Recovered (6)

Recovering (3)

None or none apparent (9)

Recent or no recovery (1)

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

Poor (1)

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mowing

☐ grazing

☐ farming

selective cutting

☐ toxic pollutants

☐ shrub/sapling removal

woody debris removal

nutrient enrichment

sedimentation

☐ dredging

☐ herbaceous/aquatic bed removal

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM Site: W038 PEM/PFO Rater(s): ZB Date: 05/08/2023 30 subtotal previous page Metric 5. Special Wetlands 0.0030 0.00 *If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland. raw score Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc). Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3) Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5) Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3) Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3) Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10) 34 Metric 6. Plant Communities, Interspersion, Microtopography 6 max 20 pts. subtotal 6a. Wetland vegetation communities. **Vegetation Community Cover Scale** Score all present using 0 to 3 scale. Absent or <0.1 ha (0.25 acre) contiguous acre Aquatic bed [For BR/CM < 0.04 ha (0.1 acre)] 1 Emergent Present and either comprises a small part of wetland's vegetation and is of Shrub moderate quality, or comprises a significant part but is of low quality Forest Present and either comprises a significant part of wetland's vegetation and Mudflats is of moderate quality, or comprises a small part and is of high quality Open water <20 acres (8 ha) 3 = Present and comprises a significant part or more of wetland's vegetation Moss/lichen. Other and is of high quality 6b. Horizontal (plan view) interspersion. **Narrative Description of Vegetation Quality** low = Low species diversity &/or dominance of nonnative or disturbance tolerant Select only one. native species High (5) Moderately high (4) [BR/CM (5)] mod = Native species are dominant component of the vegetation, although Moderate (3)[BR/CM (5)] nonnative &/or disturbance tolerant native species can also be present, Moderately low (2) [BR/CM (3)] and species diversity moderate to moderately high, but generally Low (1) [BR/CM (2)] w/o presence of rare, threatened or endangered species None (0) high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species 6c. Coverage of invasive plants. Add or deduct points for coverage. Mudflat and Open Water Class Quality Extensive >75% cover (-5) 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] Moderate 25-75% cover (-3) Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)] Sparse 5-25% cover (-1) 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] Nearly absent <5% cover (0) Absent (1) 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more] 6d. Microtopography. Hypothetical Wetland for Estimating Degree of Interspersion Score all present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15 cm (6 in.) 0000 Standing dead >25 cm (10 in.) dbh 1 Amphibian breeding pools High Moderate Low Moderate Microtopography Cover Scale Present in very small amounts or if more common of marginal quality

- 2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 = Present in moderate or greater amounts and of highest quality

34 GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:		W039	Rater(s):	Brandon Whitley	Date: 5/9/2023
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquati	Blue Ridge and Cumberland Mountains. If an c beds and seasonal mudflats) is >20 acres a) of it to the wetland size for Metric 1.
max o pis.	Subtotal	Select one size class and assign >50 acres (>20.2 ha) (6 pi 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10. 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <1.) <p><0.1 acre (0.04 ha) (0)</p>	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]	Sources/assumptions for s	
14	16	Metric 2. Upland E	Buffers and S	Surrounding Land	Use
max 14 pts.	subtotal	✓ WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more are 25 m to <50 m (82 to ge 10 m to <25 m (32 ft average <10 m (<32 ft use. Select one or dou or older forest, prairie, so), shrubland, young 2r sidential, fenced pastu	savannah, wildlife area, etc. (7)	(4) er (1)
19	35	Metric 3. Hydrolog	ЭУ		
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surfices water (I) 3c. Maximum water depth. Selection (27.6 in.) (3) 0.4 to 0.7 m (27.6 in.) (1) [BR/CI] 3e. Modifications to natural hydrowater (I) Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] R/CM primary source (ace water (3) ake or stream) (5) t only one and assign s .) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to <	(5)] Part of wetland/up Part of riparian or 3d. Duration inundation/s score. Semi- to permane Regularly inundat Seasonally inundat Seasonally satura ne or double check and average. Pances observed point source (non culvert) filling/grading road bed/RR track	in (1) ake and other human use (1) bland (e.g., forest), complex (1) upland corridor (1) saturation. Score one or dbl. check & avg. ently inundated/saturated (4) sed/saturated (3) [BR/CM (4)] ated (2) [BR/CM (4)] ated in upper 30 cm (12 in.) (1) [BR/CM (2)] stormwater)
18	53	Metric 4. Habitat A	Alteration an	d Development	
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) b. Habitat development. Select (2) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)) only one and assign so or double check and a	Check all disturbances of mowing grazing clearcutting	observed

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	SEE VALLI FIELD FO		SMENT MEHTO	DD: Assessing Wetland Condition, Fu	nctional Capad	city, Quality	
Site:		W039	Rater(s):	Brandon Whitley	Date:	5/9/2023	3
53 subtotal previ	ous page						
may 10 mts	53	Metric 5. Special	Wetlands	5			
max 10 pts.	subtotal	*If the documented raw score for	Metric 5 is 30 p	oints or higher, the site is automatically	considered a C	ategory 3 wetlar	nd.
raw score*		documentation for each selection Bog, fen, wet prairie (10); aci Assoc. forest (wetl. &/or adj. I Sensitive geologic feature su Vernal pool (5); isolated, perc Island wetland >0.1 acre (0.0 Braided channel or floodplain Gross morph. adapt. in >5 tre Ecological community with gli Known occurrence state/fede [*use higher rank where mix Superior/enhanced habitat/us	n (photos, check dophilic veg., mos upland) incl. >0.25 ch as spring/seep, ched, or slope wet 4 ha) in reservoir, /terrace depressic ses >10 in. (25 cm obal rank (Natures ral threatened/enc ed rank or qualifie se: migratory song	y in row, score row as single feature with dists, maps, resource specialist concurres sy substrate >10 sq.m, sphagnum or other most acre (0.1 ha); old growth (10); mature >18 in. sink, losing/underground stream, cave, water land (4); headwater wetland [1st order perenn river, or perennial water >6 ft (2 m) deep (5) ons (floodplain pool, slough, oxbow, meander strong of the both suttress, multitrunk/stool, stilted, shallow serve): G1*(10), G2*(5), G3*(3) [*use higher rate agreed species (10); other rare species with gliezclude records which are only "historic"] bird/waterfowl (5); in-reservoir buttonbush (4); EITHER >80% cover of invasives OR nonvegor.	ence, data sourcess (5); muck, org. (45 cm) dbh (5) fall, rock outcrop/ial or above] (3) scar, etc.) (3) w roots/tip-up, or pank where mixed a global rank G1*(ces, references, anic soil layer (3) (exclude pine plant cliff (5) (coneumatophores (3) (coneumatophores (4) (coneumatophores (4) (coneumatophores (5) (coneumatophores (5) (coneumatophores (6) (cone	tation] 3) j gnation (3)
6.0	59	Metric 6. Plant Co	mmuniti	es, Interspersion, Mic	rotopog	raphy	
max 20 pts.	subtotal	6a. Wetland vegetation commun Score all present using 0 to 3 sca Aquatic bed Emergent Shrub 2 Forest Mudflats Open water <20 acres (8 Moss/lichen. Other 6b. Horizontal (plan view) intersp	ha)	Vegetation Community Cover Scale 0 = Absent or <0.1 ha (0.25 acre) conf [For BR/CM <0.04 ha (0.1 acre)] 1 = Present and either comprises a sm moderate quality, or comprises as significant of moderate quality, or comprises as significant of moderate quality, or comprises as significant of high quality Narrative Description of Vegetation Community	nall part of wetla significant part b gnificant part of es a small part a nt part or more	out is of low qual wetland's vegeta and is of high qua of wetland's veg	ation and ality etation
		Select only one. High (5) Moderately high (4) [BR/C] Moderate (3)[BR/CM (5)] Moderately low (2) [BR/C] Low (1) [BR/CM (2)] None (0)		low = Low species diversity &/or dominative species mod = Native species are dominant cornonnative &/or disturbance tolerand species diversity moderate to w/o presence of rare, threatened high = A predominance of native species tolerant native sp absent or virtue.	mponent of the ant native speci to moderately had or endangered as with nonnativally absent, and	vegetation, altho es can also be p igh, but generall d species re sp &/or disturb d high sp diversit	bugh present, ly bance ty and often
		6c. Coverage of invasive plants. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Sparse 5-25% cover (-1) Nearly absent <5% cover Absent (1)	5) -3)	Mudflat and Open Water Class Qualit 0 = Absent <0.1 ha (0.25 acres) [For E 1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) (0.1 to 0.5 acre)] 2 = Moderate 1 to <4 ha (2.5 to 9.9 ac 3 = High 4 ha (9.9 acres) or more [BRA	ty BR/CM <0.04 has) [BR/CM 0.04 res) [BR/CM 0.3	a (0.1 acre)] to <0.2 ha 2 to <02 ha (0.5	
		6d. Microtopography. Score all present using 0 to 3 sc Vegetated hummocks/tus Coarse woody debris >15 Standing dead >25 cm (1 Amphibian breeding pools	socks cm (6 in.) 0 in.) dbh	Hypothetical Wetland for Estimating None Low Low	Degree of Inte	rspersion	High
				Microtopography Cover Scale 0 = Absent 1 = Present in very small amounts or i 2 = Present in moderate amounts, but amounts of highest quality 3 = Present in moderate or greater amounts.	f more common	of marginal qua	ality

0-29 = Category 1, low wetland function, condition, quality** 30-59 = Category 2, good/moderate wetland function, condition, quality** 60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:		W040	Rater(s):	Brandon Whitley	Date: 5/9/2023	
3.0 max 6 pts.	3 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquati	Blue Ridge and Cumberland Mountains. If ic beds and seasonal mudflats) is >20 acr ia) of it to the wetland size for Metric 1.	
max o pis.	Subotal	Select one size class and assign >50 acres (>20.2 ha) (6 p) 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10. 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <1. <	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]	Sources/assumptions for s	·	
14	17	Metric 2. Upland E	Buffers and S	Surrounding Land	Use	
max 14 pts.	Subotal	✓ WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more are 25 m to <50 m (82 to ge 10 m to <25 m (32 ft average <10 m (<32 ft use. Select one or dou or older forest, prairie, so, shrubland, young 2residential, fenced pastuses.	savannah, wildlife area, etc. (7)	r (4) er (1)	
25	42	Metric 3. Hydrolog	Э У			
max 30 pts.	subtotal	3a. Sources of water. Score all the High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surf Perennial surface water (I 3c. Maximum water depth. Selection > 0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) <0.4 m (<16 in.) (1) [BR/Cl None or none apparent (1 Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] R/CM primary source (ace water (3)) ake or stream) (5) t only one and assign s .) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to <	(5)] Part of wetland/up Part of riparian or 3d. Duration inundation/s Score. Semi- to permane Regularly inundat Seasonally inundat 16 in.) (2)] Seasonally satura ne or double check and average. Pances observed point source (non culvert) filling/grading road bed/RR track	in (1) ake and other human use (1) pland (e.g., forest), complex (1) upland corridor (1) saturation. Score one or dbl. check & a ently inundated/saturated (4) ted/saturated (3) [BR/CM (4)] ated (2) [BR/CM (4)] ated in upper 30 cm (12 in.) (1) [BR/CM	Ü
20	62	Metric 4. Habitat A	Alteration an	d Development		
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	only one and assign so	Check all disturbances of mowing grazing clearcutting	observed shrub/sapling removal herbaceous/aquatic bed remova woody debris removal sedimentation dredging nutrient enrichment	ıl

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0- 29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

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60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:	FIELD FO	W041	Rater(s):	Brandon Whitley	Date: 5/9/2023
Jite.		VVU 1 I	itater(s).	Brandon Whitley	Date. 0/9/2020
0.00 max 6 pts.	0 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquation	Blue Ridge and Cumberland Mountains. If a ic beds and seasonal mudflats) is >20 acre a) of it to the wetland size for Metric 1.
		Select one size class and assign >50 acres (>20.2 ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 t 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to < 0.1 acre (0.04 ha) (0)	:s) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]		size estimate (list):
9	9	Metric 2. Upland E	Buffers and	Surrounding Land	Use
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	m (164 ft) or more are 25 m to <50 m (82 to 10 m to <25 m (32 for average <10 m (<32 for average), select one or down older forest, prairie, so the state of the select one or down of state of a select one or down of select one or down of a select one of a select one of a select one of a select one of a select of a select one of	savannah, wildlife area, etc. (7)	r (4) er (1)
19	28	Metric 3. Hydrolog	ЗУ		
max 30 pts.		3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surfa Perennial surface water (Ia 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in V<0.4 m (<16 in.) (1) [BR/CI 3e. Modifications to natural hydro None or none apparent (1 Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] R/CM primary source (ace water (3)) ake or stream) (5) t only one and assign (3) A) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to < 6) logic regime. Score or (2) Check all disturb ditch tile (including dike weir stormwater in	(5)]	inin (1) lake and other human use (1) pland (e.g., forest), complex (1) upland corridor (1) saturation. Score one or dbl. check & a ently inundated/saturated (4) ted/saturated (3) [BR/CM (4)] ated (2) [BR/CM (4)] ated in upper 30 cm (12 in.) (1) [BR/CM
10	38	Metric 4. Habitat A	Alteration an	d Development	
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select (2) Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one (3) Recovered (6) Recovering (3) Recent or no recovery (1)	only one and assign so	Check all disturbances of mowing grazing clearcutting	observed

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0-29 = Category 1, low wetland function, condition, quality**

30- 59 = Category 2, good/moderate wetland function, condition, quality**

60-100 = Category 3, superior wetland function, condition, quality**

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:		W042	Rater(s):	Brandon Whitley	Date : 5/9/2023
3.0 max 6 pts.	3 subtotal	Metric 1. Wetland		open water body (excluding aquat	r Blue Ridge and Cumberland Mountains. If an tic beds and seasonal mudflats) is >20 acres ha) of it to the wetland size for Metric 1.
		Select one size class and assign >50 acres (>20.2 ha) (6 p 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 l 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 to <0.1 acres (0.04 ha) (0)	ts) :20.2 ha) (5) [BR/CM (6 .1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] .2 ha) (2) [BR/CM (3)]		size estimate (list):
10	13	Metric 2. Upland E	Buffers and	Surrounding Land	Use
max 14 pts.	subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more and a 25 m to <50 m (82 to ge 10 m to <25 m (32 for average <10 m (<32 for average <10 m (<32 for average <10 m (<32 for average) and or older forest, prairie, so so, shrubland, young 2 residential, fenced pastures.	savannah, wildlife area, etc. (7)	r (4) ter (1)
15	28	Metric 3. Hydrolog	ЭУ		
max 30 pts.	subtotal	3a. Sources of water. Score all the High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surform Perennial surface water (1) 3c. Maximum water depth. Select >0.7 m (27.6 in.) (3) 0.4 to 0.7 m (16 to 27.6 in.) <0.4 m (<16 in.) (1) [BR/Cl 3e. Modifications to natural hydrowy None or none apparent (1) Recovered (7) Recovering (3) Recent or no recovery (1)	R/CM (5)] R/CM primary source (ace water (3)) ake or stream) (5) t only one and assign (3) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to < 0) ologic regime. Score or (2) Check all disturbed ditch	(5)] Part of wetland/u Part of riparian o 3d. Duration inundation/score. Semi- to perman Regularly inunda Seasonally inunda Seasonally saturate or double check and average. pances observed point source (nor culvert) filling/grading road bed/RR traced dredging	ain (1) l'ake and other human use (1) pland (e.g., forest), complex (1) r upland corridor (1) saturation. Score one or dbl. check & avg. ently inundated/saturated (4) ted/saturated (3) [BR/CM (4)] lated (2) [BR/CM (4)] ated in upper 30 cm (12 in.) (1) [BR/CM (2) nstormwater)
18	46	Metric 4. Habitat A	Alteration an	d Development	
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	only one and assign so or double check and a	Check all disturbances mowing grazing clearcutting	observed

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM								
Site:	W042	Rater(s):	Bra	ndon Whitle	еу	Date:	5/9/2023	3
subtotal previous page 46 max 10 pts. subto	Metric 5. Special	r Metric 5 is 30 poi tiple values apply i n (photos, checklis	n row, scor ts, maps, r	e row as single esource specia	feature with h	nighest point va	alue. Provide es, references,	
	Assoc. forest (wetl. &/or adj. Sensitive geologic feature su Vernal pool (5); isolated, per Island wetland >0.1 acre (0.0 Braided channel or floodplai Gross morph. adapt. in >5 tr Ecological community with g Known occurrence state/fed [*use higher rank where mi Superior/enhanced habitat/u Cat. 1 (very low quality): <1	upland) incl. >0.25 ac uch as spring/seep, si ched, or slope wetlan 04 ha) in reservoir, riv n/terrace depressions ees >10 in. (25 cm) d lobal rank (NatureSer eral threatened/endar xed rank or qualifier] I se: migratory songbir	cre (0.1 ha); nk, losing/un id (4); headw er, or perenr i (floodplain p bh: buttress, rve): G1*(10) ngered speci [exclude recod/waterfowl (old growth (10); n derground stream rater wetland [1st hial water >6 ft (2 loool, slough, oxbo multitrunk/stool, s , G2*(5), G3*(3) [les (10); other rare ords which are on 5); in-reservoir bu	nature >18 in. (ann, cave, waterfa order perennial m) deep (5) ow, meander so stilted, shallow the stilted, shallow the species with g by "historic"] uttonbush (4); o	45 cm) dbh (5) [e ill, rock outcrop/c l or above] (3) ar, etc.) (3) roots/tip-up, or prik where mixed rallobal rank G1*(1) ther fish/wildlife r	xclude pine plani liff (5) neumatophores (ank or qualifier] 0), G2*(5), G3*(3 management/des	3) i) ignation (3)
8 54		ommunitie	s, Inte	rspersio	on, Micı	rotopog	raphy	
max 20 pts. subto	6a. Wetland vegetation commur Score all present using 0 to 3 so Aquatic bed Emergent Shrub Forest Mudflats Open water <20 acres (8	2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	= Absent [For BR] = Present moderal = Present is of moderal	Community Co or <0.1 ha (0.2 //CM <0.04 ha (and either con te quality, or co and either con derate quality, and comprises of high quality	5 acre) contig (0.1 acre)] nprises a sma omprises a sig nprises a sign or comprises	all part of wetlar unificant part buificant part of v a small part ar	<u>it is of low qual</u> vetland's veget nd is of high qu	lity ation and ality
	6b. Horizontal (plan view) inters Select only one. High (5) Moderately high (4) [BR/ Moderate (3)[BR/CM (5)] Moderately low (2) [BR/C Low (1) [BR/CM (2)] None (0)	CM (5)] m	w = Lows native nod = Native nonna and s w/o p gh = A pre tolera	escription of V species diversity e species e species are d ative &/or distur pecies diversity resence of rare dominance of n nt native sp ab- ot always, the p	ominant comproduce to learn of moderate to extended to extended the continue of the continue o	ponent of the vont native species moderately high rendangered with nonnative ly absent, and	egetation, althous can also be put to the general species as & /or disturbing the general bight sp & /or disturbingh sp diversi	bugh present, ly bance ty and often
	6c. Coverage of invasive plants. Add or deduct points for coverage. Extensive >75% cover (- Moderate 25-75% cover Sparse 5-25% cover (-1) Nearly absent <5% cove Absent (1)	ge. <u>M</u> 5) <u>0</u> (-3) 1 r (0) <u>2</u>	udflat and = Absent = Low 0.1 (0.1 to 0	Open Water C <0.1 ha (0.25 a to <1 ha (0.25 0.5 acre)] te 1 to <4 ha (2 na (9.9 acres) c	Class Quality acres) [For BR to 2.5 acres)	R/CM <0.04 ha [BR/CM 0.04 t	(0.1 acre)] o <0.2 ha to <02 ha (0.5	
	6d. Microtopography. Score all present using 0 to 3 sr Vegetated hummocks/tus Coarse woody debris >1: Standing dead >25 cm (7) Amphibian breeding poo	cale. ssocks 5 cm (6 in.) 10 in.) dbh	None licrotopog = Absent = Present	Low raphy Cover S	Low cale	Moderate more common of	Moderate of marginal qua	
		2	Present amount	in moderate and soft highest qualities in moderate on	mounts, but n ality	ot of highest qu	uality or in sma	

0-29 = Category 1, low wetland function, condition, quality** 30-59 = Category 2, good/moderate wetland function, condition, quality** 60-100 = Category 3, superior wetland function, condition, quality**

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM

Site:		W043	Rater(s):	Brandon Whitley	Date : 5/9/2023
2.00 max 6 pts.	2 subtotal	Metric 1. Wetland	Area (size)	open water body (excluding aquation	Blue Ridge and Cumberland Mountains. If an ic beds and seasonal mudflats) is >20 acres ia) of it to the wetland size for Metric 1.
max o pis.	Sublotal	Select one size class and assign >50 acres (>20.2 ha) (6 pi 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4 to <10. 0.3 to <3 acres (0.1 to <1. 0.1 to <0.3 acre (0.04 to <1.) <p><0.1 acre (0.04 ha) (0)</p>	ts) 20.2 ha) (5) [BR/CM (6 1 ha) (4) [BR/CM (6)] na) (3) [BR/CM (5)] 2 ha) (2) [BR/CM (3)]	Sources/assumptions for s	
14	16	Metric 2. Upland E	Buffers and	Surrounding Land	Use
max 14 pts.	subtotal	✓ WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	o m (164 ft) or more are 25 m to <50 m (82 to ge 10 m to <25 m (32 ft average <10 m (<32 ft use. Select one or dou or older forest, prairie, so, shrubland, young 2residential, fenced pastuses.	savannah, wildlife area, etc. (7)	r (4) er (1)
28	44	Metric 3. Hydrolog	ду		
max 30 pts.	subtotal	3a. Sources of water. Score all th High pH groundwater (5) Other groundwater (3) [BF Precipitation (1) [unless B Seasonal/intermittent surface water (I) Comparison of the precipitation of the p	R/CM (5)] R/CM primary source (ace water (3)) ake or stream) (5) t only one and assign s .) (2) [BR/CM (3)] M 0.15 to 0.4 m (6 to <	(5)] Part of wetland/up Part of riparian or 3d. Duration inundation/s Score. Semi- to permane Regularly inundat Seasonally inundat Seasonally satura ne or double check and average. Pances observed Dipoint source (non culvert) filling/grading Culvert dredging Fraction Part of wetland/up Part of viparian or Semi- to permane Pagularly inundat Seasonally satura Seasonally inundat Seasonally	in (1) ake and other human use (1) pland (e.g., forest), complex (1) upland corridor (1) saturation. Score one or dbl. check & avg. ently inundated/saturated (4) ted/saturated (3) [BR/CM (4)] ated (2) [BR/CM (4)] ated in upper 30 cm (12 in.) (1) [BR/CM (2)
18	62	Metric 4. Habitat A	Alteration an	d Development	
max 20 pts.	subtotal	4a. Substrate disturbance. Score None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	only one and assign so	Check all disturbances of mowing grazing clearcutting	observed

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TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality TVARAM FIELD FORM						
Site:		W043	Rater(s):	Brandon Whitley Date: 5/9/2023		
62 subtotal previ						
max 10 pts.	62 subtotal	Metric 5. Special	Wetland	s		
max 10 pts.	Subtotal	*If the documented raw score for	Metric 5 is 30	points or higher, the site is automatically considered a Category 3 wetland.		
raw score*		documentation for each selection Bog, fen, wet prairie (10); aci Assoc. forest (wetl. &/or adj. Sensitive geologic feature su Vernal pool (5); isolated, peru Island wetland >0.1 acre (0.0 Braided channel or floodplair Gross morph. adapt. in >5 tre Ecological community with gl Known occurrence state/fede [*use higher rank where mix Superior/enhanced habitat/us	n (photos, check dophilic veg., mos upland) incl. >0.2 ch as spring/seep ched, or slope we let ha) in reservoir literrace depressi ees >10 in. (25 cm obal rank (Nature eral threatened/en ted rank or qualificate: migratory song	obly in row, score row as single feature with highest point value. Provide cklists, maps, resource specialist concurrence, data sources, references, etc). Sessy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3) (25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation] p, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5) (5) (61); headwater wetland [1st order perennial or above] (3) (7); river, or perennial water >6 ft (2 m) deep (5) (7) (10); ions (floodplain pool, slough, oxbow, meander scar, etc.) (3) (10); m) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3) (10); eServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] (10); inder rare species with global rank G1*(10), G2*(5), G3*(3) (10); ier] [exclude records which are only "historic"] (10); other fish/wildlife management/designation (3) D EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)		
8	57	Metric 6. Plant Co	mmunit	ties, Interspersion, Microtopography		
max 20 pts.	subtotal	6a. Wetland vegetation commun Score all present using 0 to 3 score Aquatic bed Emergent Shrub 3 Forest Mudflats Open water <20 acres (8 Moss/lichen. Other	ale.	Vegetation Community Cover Scale 0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)] 1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality 2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality 3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality		
		6b. Horizontal (plan view) intersp	persion.	Narrative Description of Vegetation Quality		
		Select only one. High (5) Moderately high (4) [BR/C] Moderate (3)[BR/CM (5)] Moderately low (2) [BR/C] Low (1) [BR/CM (2)] None (0)		low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often		
		6c. Coverage of invasive plants. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-5)	5)	but not always, the presence of rate, threatened, or endangered species Mudflat and Open Water Class Quality 0 = Absent < 0.1 ha (0.25 acres) [For BR/CM < 0.04 ha (0.1 acre)] 1 = Low 0.1 to < 1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to < 0.2 ha		
		Sparse 5-25% cover (-1) Nearly absent <5% cover ✓ Absent (1)	,	(0.1 to 0.5 acre)] 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)] 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]		
		6d. Microtopography. Score all present using 0 to 3 sc Vegetated hummocks/tus Coarse woody debris >15 Standing dead >25 cm (1 Amphibian breeding pools	ssocks 5 cm (6 in.) 0 in.) dbh	Hypothetical Wetland for Estimating Degree of Interspersion None Low Low Moderate Moderate High Microtopography Cover Scale		
				0 = Absent in very small amounts or if more common of marginal quality 2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 = Present in moderate or greater amounts and of highest quality		

0-29 = Category 1, low wetland function, condition, quality** 30-59 = Category 2, good/moderate wetland function, condition, quality** 60-100 = Category 3, superior wetland function, condition, quality**