

July 19, 2024 – MDWAM WETLAND SCORING FORM

Project/Site ID: _____ Assessment Dates: _____

Delineation Dates: _____ Project Type: Testing Linear Non-Linear Mitigation (Creation Restoration Enhancement)

Evaluators: _____ Wetland ID/Name: _____ NWI: _____

WAA #: _____ Size: _____ (acres) Wetland Type (HGM Class): _____ Regional Subclass: _____

Ecoregion: CP EMP Aerial Photo Date and Source: _____ Photos: _____

Notes:

LANDSCAPE CORE ELEMENT

Aquatic Context metric – Confirm in office review. See figures in section 2.3.1.1 for examples.

Describe barriers or alterations that prevent connection: _____ No barriers.
 Total aquatic resources within 1,000 feet of WAA to which wetland connects (minimum size ≥ 0.02 acres): _____ streams _____ wetlands _____ ponds
 Score: _____

Buffer – Evaluate to 500 feet from WAA boundary. Confirm in office review and field check. See figures in Section 2.3.1.2 for examples

Buffer Type/Description	Score (See Narratives)	Percentage	Subtotal
1.			
2.			
3.			
4.			
5.			
6.			
(Rounded) Score:			_____

HYDROLOGY CORE ELEMENT

Water source metric – Identify the **dominant** water source and degree of natural or unnatural/artificial influence (Confirm in office review for watershed).

Natural Source: Precipitation Groundwater Overland flow Overbank flow/stream discharge Beaver activity Other: _____
 Unnatural/Manipulated Source/Controls: Impoundment Outfall Irrigation/pumping Fill Ditching/Channelization Other Artificial influence or control.
 Watershed/Drainage Area controls: Development Irrigated agriculture Wastewater treatment plant Impoundment Stormwater retention Change to flow/circulation from roads/ditching Other: _____
 Degree of artificial influence/control: Complete High Low None. Wetland created/restored/enhanced: Sustainable/replicates natural Controlled
 Comments: _____ Score: _____

Hydroperiod metric – Determine the natural variability and/or recent alteration of the duration, frequency, and magnitude of inundation/saturation.

Evaluate the hydroperiod including natural variation: Precipitation: typical atypical (deficit surplus) Source: _____
 High variation Low variation Evidence: _____
 Direct evidence of alteration: Natural: Logjam Channel migration Other: _____
 Human: Diversions Ditches/swales Levees Impoundments Other: _____
 Riverine (active floodplain only): Recent channel in-stability/dis-equilibrium (Degradation or Aggradation) Stable Channel _____
 Indirect evidence of alteration: Wetland plant stress Plant morphology Upland species encroachment Plant Community Soil morphology None
 Change/Alteration of hydroperiod: Due to natural events Human influences (None Slight or High) _____
 Degree hydroperiod of wetland created/restored/enhanced replicates natural patterns: _____
 Lacustrine fringe on human impoundment: High variability Low variability Recent changes to hydroperiod
 Comments: _____ Score: _____

Hydrologic flow metric – Movement of water to or from surrounding area and openness to water moving through the WAA (flow and circulation).

Flow: Inlets: # _____ Outlets: # _____ Signs of water movement to or from WAA: _____
 Restrictions: None Levee Berm/dam Diversion Ditch-Side Cast Road w/culverts Other: _____
 High flow through: Floodplain Drift deposits Drainage patterns Sediment deposits Partially buried debris/trunks Scour Other: _____
 Low flow through: High landscape position Stagnant water Closed contours Debris dams Constricted Outlet Surface Roughness Other: _____
 Comments: _____ Score: _____

Surface drainage feature metric: Identify and describe all natural and man-made or man-altered surface drainage features (SDF) present within the WAA which potentially impact wetland hydrology and or wetland function and circle impact potential to the WAA (High-Moderate-Low). SDFs are defined as confined features with OHWM and or bed and banks. Indiscrete flow patterns are not considered (e.g., wetland drainage patterns). Provide rationale below or on separate report.

SDF Types present: None Stream channel # _____ Ditch/swale # _____ Diversion # _____ Other _____

SDF(s) exhibits (circle degree High-Moderate-Low): channel instability/migration(H-M-L) active incision/downcutting(H-M-L) bank instability(H-M-L) raw unvegetated or vertical banks(H-M-L) highly erodible materials(H-M-L) lacks vertical controls(H-M-L) excessive deposition/bar development(H-M-L) historic channel alteration(H-M-L) proximity to WAA that presents potential impact to hydrology(H-M-L)

Restrictions associated with SDF cause backwater flooding within WAA: Type: levee fill/side cast culvert/bridge Other _____

Timing: Recent (≤ 5 years) Historic

Negative effect to: flow and circulation within WAA redirects or confines flows into/through WAA reduced water table level of inundation No Impact

Rationale: _____

Score: _____

SOILS CORE ELEMENT

Soil organic carbon storage metric (average multiple sample scores, round to one decimal). See Section 2.2.5.2, for additional guidance regarding multiple samples.	Sample Score #		
	#1	#2	#3
Organic Layer(s) ≥2 (combined textures)	5	5	5
Organic Layer(s) <2" thick (combined textures) in the upper 16" OR, Dark* mineral surface horizon ≥10" thick	4	4	4
Dark* mineral surface horizon only, ≥4 and <10" thick	3	3	3
Dark* mineral surface horizon only, ≥1 and <4" thick	2	2	2
Mineral surface layer(s) only (any thickness) with matrix value >3 and ≤4 or chroma >2 and ≤3	1	1	1
Mineral surface layer(s) only (any thickness) with matrix chroma >3 or situations where the surface layer(s) have been removed	0	0	0
Sample represents % of the WAA	%	%	%
Sample score x % of the WAA/community =			
*Dark mineral surface-horizons have matrix value ≤3 and chroma ≤2			Score: _____

Biogeochemical cycling metric: See Section 2.2.5.2, for additional guidance regarding multiple samples.

Sample #	% Of WAA	Sub-Metric Scores				[0.75 x (_____ + _____ + _____ + _____)] - 2 = _____ Total Score Redox MT SOM HC (round to one decimal) Use this formula for each sample and average the number of samples
		Redox concentrations	Microtopography	Soil organic matter	Herbaceous cover	
1						
2						
3						
Score: _____						

Sedimentation metric – Deposition of excess sediment due to human actions (in the WAA). Confirm in office review for landscape.

Landscape with stress that could lead to excess sedimentation: Yes No Landscape position: High Low

Magnitude of recent runoff/flooding events: High Low None Percent of WAA with excess sediment deposition: _____

Sand deposits: ___% of area _____ average thickness Silt/clay deposits: ___% of area _____ average thickness

Observation of deposits: Frequent Common Occasional Infrequent Rare None

*Lacustrine fringe only: Upper end of impoundment Degrades wetland Contributes to wetland processes

Score: _____

Soil modification metric – Physical changes by human activities. Confirm in office review for past.

Low level of modification or high level of recovery High level of modification and low level of recovery No detectable modifications

Type: Agricultural use (Plowing Discing Harrowing) Logging Mining Filling Grading Dredging Off-road vehicles

Other: _____

Percent of WAA with soil modification: Recent _____% Historic _____% Describe: _____

Indicators of past modification: None Low organic matter Lack of soil structure Removal of horizons Compaction (platy structure) Ap horizon

Dramatic change in texture/color Heterogeneous mixture Recent Alluvium (e.g., legacy sediments) Stratified layers Soil subsidence Fill

Other _____

Comments: _____

Score: _____

PHYSICAL STRUCTURE CORE ELEMENT

Topographic complexity metric – See figures in Section 2.3.4.1 Record % micro-topography and % of WAA for each elevation gradient.	
# Of Elevation gradients present: _____ Evidence of gradients: <input type="checkbox"/> Plant assemblages <input type="checkbox"/> Level of saturation/inundation <input type="checkbox"/> Path of water flow <input type="checkbox"/> Slope Micro-topography (surface roughness) of WAA: <input type="checkbox"/> >50% <input type="checkbox"/> 30-49% <input type="checkbox"/> 10-29% <input type="checkbox"/> <10% Types: <input type="checkbox"/> Depression <input type="checkbox"/> Pools <input type="checkbox"/> Burrows <input type="checkbox"/> Swales <input type="checkbox"/> Wind-thrown tree holes <input type="checkbox"/> Mounds <input type="checkbox"/> Islands <input type="checkbox"/> Variable shorelines <input type="checkbox"/> Partially buried debris <input type="checkbox"/> Debris jams <input type="checkbox"/> Plant hummocks/roots <input type="checkbox"/> Other: _____	Score: _____
Edge complexity metric – Confirm in office review. See example figures in Section 2.3.4.2 to evaluate irregularity of wetland boundary and variability in vertical structure.	
WAA is: <input type="checkbox"/> Surrounded by uplands <input type="checkbox"/> In seasonal floodplain <input type="checkbox"/> Abutting other wetland types <input type="checkbox"/> Has edge vertical structure variation (H-M-L) Horizontal variability: <input type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low <input type="checkbox"/> None _____	Score: _____
Physical habitat richness metric – See definitions and table in Section 2.3.4.3 for habitat types applicable to each wetland type. Located in the WAA or within 25 feet of the WAA boundary.	
<input type="checkbox"/> Concentric high water marks <input type="checkbox"/> Secondary channels <input type="checkbox"/> Seasonally inundated swales <input type="checkbox"/> Un-vegetated pools <input type="checkbox"/> Un-vegetated flats <input type="checkbox"/> Vegetated islands <input type="checkbox"/> Slope with undercut, slump, or overhang <input type="checkbox"/> Rock piles with voids <input type="checkbox"/> Plant hummocks/vegetated mounds <input type="checkbox"/> Submerged/floating vegetation <input type="checkbox"/> Dense herbaceous cover <input type="checkbox"/> Brambles/thickets <input type="checkbox"/> Mature/late-successional stage of plant community (>24" DBH) <input type="checkbox"/> Drift deposits/organic debris <input type="checkbox"/> Brush piles <input type="checkbox"/> Fallen logs <input type="checkbox"/> Stumps/ Standing snags <input type="checkbox"/> Wind-thrown trees <input type="checkbox"/> Tree root cavities <input type="checkbox"/> Nesting cavities/dens <input type="checkbox"/> Other _____ # of Physical habitat types present (wetland type sensitive - see narrative table): % _____	Score: _____

BIOTIC STRUCTURE CORE ELEMENT

Plant strata metric – Use applicable wetland delineation regional supplement and wetland determination data form(s) 4 strata approach.	
Number of plant strata: <input type="checkbox"/> ≥ 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 0	Score: _____
Species richness metric – Use data from determination data form(s) to count species with 5% or more relative cover in a stratum. Species should be counted only once for all observations within the WAA.	
Number of species across all strata and determination data forms (count species once) plus additional significant species (provide rationale for additional species outside plots). Plot Species _____ + Additional species (outside sample plots) _____ = Total species richness _____ Rationale for additional species: _____	Score: _____
Non-native/Invasive Infestation metric – Use data from determination data form(s) and additional observations. See tables in section 2.3.5.3.2 for examples.	
Average total relative cover of non-native/invasive species across all strata and determination data forms: _____ % 4 = <1% 3 = 1-10% 2 = 11-25% 1 = 26-50% 0 = 51-100% <input type="checkbox"/> Additional species outside plots are included Rationale: _____	Score: _____
Interspersion metric – Confirm in office review. Use figure in section 2.3.5.4.2 to determine the degree of interspersion of plant zones (≥ 5% of WAA).	
Degree of horizontal/plan view interspersion: <input type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low <input type="checkbox"/> None	Score: _____
Herbaceous cover metric – Estimate only herbaceous plant cover for entire WAA.	
Total cover of herbaceous, emergent and submergent plants: <input type="checkbox"/> > 75% <input type="checkbox"/> 51–75% <input type="checkbox"/> 26–50% <input type="checkbox"/> ≤ 25%	Score: _____
Vegetation alterations metric – Unnatural (human-caused) stressors. Confirm in office review for past.	
Type (Check those applicable and circle R for recent or P for past): <input type="checkbox"/> Disking/plowing R/P <input type="checkbox"/> Land clearing/leveling R/P <input type="checkbox"/> Mowing/shredding R/P <input type="checkbox"/> Silviculture R/P <input type="checkbox"/> Logging R/P <input type="checkbox"/> Cutting R/P <input type="checkbox"/> Trampling R/P <input type="checkbox"/> Herbicide treatment R/P <input type="checkbox"/> Herbivory R/P <input type="checkbox"/> Disease R/P <input type="checkbox"/> Chemical spill R/P <input type="checkbox"/> Pollution R/P <input type="checkbox"/> Grazing R/P <input type="checkbox"/> Woody debris removal R/P <input type="checkbox"/> Fire R/P <input type="checkbox"/> Other R/P: _____ Percent of WAA with recent vegetation alteration: _____ % Severity of alteration: <input type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low Percent of WAA with past vegetation alteration: _____ % Degree of recovery: <input type="checkbox"/> Complete <input type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low <input type="checkbox"/> Alteration to improve wetland (degree of natural community recovery): _____ Rationale: _____	Score: _____
Plant life forms metric - Life forms represent ≥ 5% of WAA.	
<input type="checkbox"/> Bryophytes (mosses, liverworts, hornworts) <input type="checkbox"/> Coniferous Trees <input type="checkbox"/> Deciduous Broadleaf Trees <input type="checkbox"/> Evergreen Broadleaf Trees <input type="checkbox"/> Ferns <input type="checkbox"/> Grasses <input type="checkbox"/> Herbs <input type="checkbox"/> Lichens or Fungi <input type="checkbox"/> Sedges/Rushes <input type="checkbox"/> Shrubs <input type="checkbox"/> Woody Vines <input type="checkbox"/> Floating/SAV	
Total Number of Plant Life Forms: <input type="checkbox"/> ≥ 6 = 4 <input type="checkbox"/> 4 or 5 = 3 <input type="checkbox"/> 3 = 2 <input type="checkbox"/> 1 or 2 = 1 <input type="checkbox"/> 0=0	Score _____

July 19, 2024 – MDWAM WETLAND FINAL SCORING FORM

Project/Site ID: _____ Assessment /Delineation Date: _____

Project Type: Testing Linear Non-Linear Mitigation (Creation Restoration Enhancement) Other _____

Evaluators: _____ Wetland ID/Name: _____ NWI: _____

WAA #: _____ Size: _____ (acres) Wetland Class (HGM): _____ Regional Subclass: _____

Ecoregion: CP EMP Aerial Photo Date and Source: _____ Photos: _____

Notes: Where multiple vegetative communities occur ($\geq 25\%$ of the WAA), perform an assessment for each community. Metric total scores should then be weighted as below.

Core Element	Metric	Metric score (each community or data point)			Core Element Score	Core Element Score (each community)		
		1	2	3		1	2	3
Landscape	Aquatic context				Sum of metric scores 1 = ___ 2=___ 3=___ / 8 x 15			
	Buffer							
Hydrology	Water source				Sum of metric scores 1 = ___ 2=___ 3=___ / 16 x 30			
	Hydroperiod							
	Hydrologic flow							
	Surface drainage features							
Soils	Organic carbon storage				Sum of metric scores 1 = ___ 2=___ 3=___ / 23 x 15			
	Biogeochemical cycling							
	Sedimentation							
	Soil modification							
Physical Structure	Topographic complexity				Sum of metric scores 1 = ___ 2=___ 3=___ / 12 x 20			
	Edge complexity							
	Physical habitat richness							
Biotic Structure	Plant strata				Sum of metric scores 1 = ___ 2=___ 3=___ / 28 x 20			
	Species richness							
	Non-native/invasive infestation							
	Interspersion							
	Herbaceous cover							
	Vegetation alterations							
Plant life forms								
Sum of individual community core element scores = overall MDWAM wetland score:								
Community % of WAA:								
Partial Core Element Score:								
Weighted Sum of core element scores = overall MDWAM wetland score:								
Additional points for unique resources = overall MDWAM wetland score x 0.10 if:								
<input type="checkbox"/> Non-tidal wetlands of special state concern <input type="checkbox"/> Areas with populations (>20%) of the following species: Bald cypress, Atlantic white cedar, red spruce, balsam fir, or American larch <input type="checkbox"/> Delmarva Bay wetlands <input type="checkbox"/> Peatlands (histic epipedon or histosol present)								
Additional points for limited habitats = overall MDWAM wetland score x 0.05 if:								
<input type="checkbox"/> Dominated (>50%) by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> Dominated (>50%) by hard mast (i.e., acorns and nuts) producing native species in the tree strata <input type="checkbox"/> Large unfragmented wetland tracts and continuous riparian wetland corridors > 20 acres								
FINAL MDWAM SCORE: _____								

Attach representative site photographs:

MDWAM WETLAND FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site ID: _____ Assessment /Delineation Date: _____ Project Type: <input type="checkbox"/> Linear <input type="checkbox"/> Non-Linear <input type="checkbox"/> Mitigation (<input type="checkbox"/> Creation <input type="checkbox"/> Restoration <input type="checkbox"/> Enhancement) <input type="checkbox"/> Other _____ Evaluators: _____ Wetland ID/Name: _____ WAA #: _____ Size: _____ Wetland Class (HGM): _____ Regional Subclass: _____ Ecoregion: <input type="checkbox"/> CP <input type="checkbox"/> EMP Aerial Photo Date and Source: _____ Photos: _____ Notes: _____				Wetland ID/Name: WAA No.: _____ Notes: _____ Date _____		Wetland ID/Name: WAA No.: _____ Notes: _____ Date _____		Wetland ID/Name: WAA No.: _____ Notes: _____ Date _____		
Core Element	Metric	Existing Metric Score	Core Element Score Calculation	Existing Core Element Score	Proposed Metric Score	Proposed Core Element Score	Proposed Metric Score	Proposed Core Element Score	Proposed Metric Score	Proposed Core Element Score
Landscape	Aquatic context		Sum of metric scores 1 = ___ 2= ___ 3= ___ / 8 x 15							
	Buffer									
Hydrology	Water source		Sum of metric scores 1 = ___ 2= ___ 3= ___ / 16 x 30							
	Hydroperiod									
	Hydrologic flow									
	Surface drainage features									
Soils	Organic carbon storage		Sum of metric scores 1 = ___ 2= ___ 3= ___ / 23 x 15							
	Biogeochemical cycling									
	Sedimentation									
	Soil modification									
Physical Structure	Topographic complexity		Sum of metric scores 1 = ___ 2= ___ 3= ___ / 12 x 20							
	Edge complexity									
	Physical habitat richness									
Biotic Structure	Plant strata		Sum of metric scores 1 = ___ 2= ___ 3= ___ / 28 x 20							
	Species richness									
	Non-native/invasive infestation									
	Interspersion									
	Herbaceous cover									
	Vegetation alterations									
	Plant life forms									
Sum of core element scores = overall MDWAM wetland score:										
Additional points for unique resources = overall MDWAM wetland score x 0.10 if: <input type="checkbox"/> Non-tidal Wetlands of Special State Concern <input type="checkbox"/> Areas with populations (>20%) of the following species: Bald cypress, Atlantic white cedar, red spruce, balsam fir, or American larch <input type="checkbox"/> Delmarva Bay <input type="checkbox"/> Peatlands (histic epipedon or histosol present)										
Additional points for limited habitats = overall MDWAM wetland score x 0.05 if: <input type="checkbox"/> Dominated by native trees greater than 24-inch diameter at breast height <input type="checkbox"/> Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata <input type="checkbox"/> Large wetland tracts or corridors > 20 acres										
Sum of overall wetland score + additional points = total overall MDWAM wetland score										

Attach Representative Site Photographs / Plans / Figures / Notes on Proposed Mitigation/Impact Activities Other Information: