Basic Information: Individual Vernal Pool

Assessment Area Name:	
Project Name:	
Assessment Area ID #:	
Project ID #:	**Date:**
Assessment Team Members for This AA	
AA Location: **Latitude:** **Longitude:** **Datum:**	
Wetland Category: □ Natural □ Constructed □ Restoration (Rehabilitation OR Enhancement)	
If Created or Restored, does the action encompass: □ entire wetland □ portion of the wetland	
What best describes the hydrologic state of the wetland at the time of assessment? □ ponded/inundated □ saturated soil, but no surface water □ dry	
Does the vernal pool connect with the floodplain of a nearby stream? □ yes □ no	

Photo Identification Numbers and Description:

	Photo ID No.	Description	Latitude	Longitude	Datum
1		North			
2		South			
3		East			
4		West			
5					
6					

Comments:

Scoring Sheet: Individual Vernal Pools

AA Name:				**Date:**
Attributes and Metrics		Alpha.	Numeric	**Comments**
Attribute 1: Buffer and Landscape Context (pg. 8-14)				
(A) Aquatic Area Abundance				
	Alpha.	Numeric		
(B): Percent of AA with Buffer				
(C): Average Buffer Width				
(D): Buffer Condition				
Initial Attribute Score= A + [D x (B x C)^{½}] ^{½}				**Final Attribute Score = (Initial Score/24) x 100**
Attribute 2: Hydrology (pg. 15-17)				
Water Source				
Hydroperiod				
Hydrologic Connectivity				
Initial Attribute Score= sum of metric scores				**Final Attribute Score = (Initial Score/36) x 100**
Attribute 3: Physical Structure (pg. 18-22)				
Structural Patch Richness				
Topographic Complexity				
Initial Attribute Score= sum of metric scores				**Final Attribute Score = (Initial Score/24) x 100**
Attribute 4: Biotic Structure (pg. 23-27)				
Horizontal Interspersion and Zonation				
	Alpha.	Numeric		
Plant Community submetric A: Number of Co-dominants				
Plant Community submetric B: Percent Non-native				
Plant Community submetric C: Endemic Species Richness				
Plant Community Composition Metric (*numeric average of submetrics A-C*)				
Initial Attribute Score= sum of metric scores				**Final Attribute Score = (Initial Score/24) x 100**
Overall AA Score (Average of four Final Attribute Scores)				

Worksheet 1: Aquatic Area Abundance Metric for Individual Vernal Pools.

Percentage of Each Transect Line Crossing Wetland or Other Aquatic Habitat	
Transect	Percent Crossing Aquatic Area
North	
South	
East	
West	
Average Percent Crossing Aquatic Area for all Four Transects ***Round to nearest integer***	

Worksheet 2: Percent of AA with Buffer

In the space provided below make a quick sketch of the AA, or on aerial the imagery, indicate where buffer is present, and record the total amount in the space provided.

Percent of AA with Buffer: _____ %

Worksheet 3: Calculating average buffer width of AA.

Transect	Buffer Width (m)
A	
B	
C	
D	
E	
F	
G	
H	
Average Buffer Width ***Round to nearest integer***	

Worksheet 4: Structural Patch Type for Individual Vernal Pools.

Identify each type of patch that is observed in the AA and use the total number of observed patch types in Table 15. Patch type definitions are provided on the next page.

Structural Patch Type	Check for Presence
Adjacent shrub or tree cover	
Animal mounds and burrows	
Bare soil (minimum 3 m^2)	
Cobble and boulders	
Islands	
Mima mounds	
Patches of dense vegetation	
Soil cracks	
Within Pool Mounds	
Total Possible	**9**
No. Observed Patch Types (use in Table 15)	

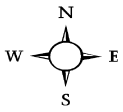
Worksheet 5: Sketches of Vernal Pool Profiles

Along the long axis of the pool and perpendicular to the long axis across the middle, make a sketch of the profile of the pool from its outside edge (1-3m landward or away from the saturated zone of the pool) to its deepest areas and back out to the opposite edge. Try to capture the major breaks in slope and the intervening micro-topographic relief.

Profile 1
Profile 2

Worksheet 6: Sketches of Vernal Pool Plant Zones

Make a sketch-map of the vernal pool boundary plus the approximate locations of obvious plant zones. Compare the sketch-map to Figure 5 to score the pool with regard to horizontal interspersion and zonation. Make special note of the amount of shared edge.



Worksheet 7a: Plant Community Composition Metric –
Co-dominant Plant Species in Individual Vernal Pool

Note: A dominant species represents ≥10% *relative cover*. Use Appendix I to determine if a species is non-native and/or endemic.

Co-dominant Species	Check if Endemic	Check if non-native
Total Number of Co-dominants		

Worksheet 7b: Plant Community Composition Metric –
List of Unique Co-dominant Vernal Pool Endemic Plant Species

(A) Total number of co-dominant species (from worksheet 7a) (enter here and use in Table 19)	
(B) Total number of co-dominant species that are non-native (from worksheet 7a)	
Percent Non-native [(B)/(A) x 100] *Round to nearest integer* (enter here and use in Table 20)	
Total number of co-dominant vernal pool endemic species based on Appendix I (enter here and use in Table 21)	

Table 22: Wetland disturbances and conversions.

Has a major disturbance occurred at this wetland?	Yes	No		
If yes, was it a flood, fire, landslide, or other?	flood	fire	landslide	other
If yes, then how severe is the disturbance?	likely to affect site next 5 or more years	likely to affect site next 3-5 years	likely to affect site next 1-2 years	
Has this wetland been converted from another type? If yes, then what was the previous type?	depressional	vernal pool	vernal pool system	
	non-confined riverine	confined riverine	bar-built estuarine	
	perennial saline estuarine	perennial non-saline estuarine	wet meadow	
	lacustrine	seep or spring	playa	

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils **(N/A for restoration areas)**		
Grading/ compaction **(N/A for restoration areas)**		
Plowing/Discing **(N/A for restoration areas)**		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., *Virginia opossum* and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		