

Basic Information Sheet: Slope Wetlands

Assessment Area Name:	
Project Name:	
Assessment Area ID#:	
Project ID#:	Date
Assessment Team Members for This AA:	
Assessment Area Size:	
Surface water present during the assessment? <input type="checkbox"/> Yes <input type="checkbox"/> No Flowing? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Briefly describe the hydrology of the AA (e.g., water sources, channels, swales, etc.)	
AA Category: <input type="checkbox"/> Pre-Restoration <input type="checkbox"/> Post-Restoration <input type="checkbox"/> Pre-Mitigation <input type="checkbox"/> Post-Mitigation <input type="checkbox"/> Pre-Impact <input type="checkbox"/> Post-Impact <input type="checkbox"/> Ambient <input type="checkbox"/> Reference <input type="checkbox"/> Training <input type="checkbox"/> Other:	
Which best describes the type of wetland? <input type="checkbox"/> Channeled Wet Meadow (assoc. with a fluvial channel) <input type="checkbox"/> Non-Channeled Wet Meadow <input type="checkbox"/> Channeled Forested Slope <input type="checkbox"/> Non-Channeled Forested Slope <input type="checkbox"/> Seep or Spring	
Are peat soils present in the AA? <input type="checkbox"/> Yes <input type="checkbox"/> No	
AA Encompasses: <input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland	
Which best describes the dominant hydrologic state of the AA at the time of assessment? <input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input type="checkbox"/> moist <input type="checkbox"/> dry	
What is the apparent hydrologic regime of the wetland? <i>Perennial</i> slope wetlands contain surface water year-round, <i>seasonal</i> slope wetlands support surface water for 4-11 months of the year (in > 5 out of 10 years.) <i>Temporarily flooded</i> slope wetlands possess surface water between 2 weeks and 4 months of the year. <input type="checkbox"/> perennial <input type="checkbox"/> seasonal <input type="checkbox"/> temporarily flooded	

Photo Identification Numbers and Description:

	Photo ID No.	Description
1		Looking North into the AA
2		Looking South into the AA
3		Looking East into the AA
4		Looking West into the AA
5		
6		
7		
8		
9		
10		

Site Location Description (including County and USGS Topographic Quadrangle if known):

Comments:

Scoring Sheet: Slope Wetlands

AA Name:				Date				
Attribute 1: Buffer and Landscape Context						Comments		
Aquatic Area Abundance (D)			Alpha		Numeric			
Buffer								
<i>Buffer submetric A: Percent of AA with Buffer</i>		Alpha				Numeric		
<i>Buffer submetric B: Average Buffer Width</i>								
<i>Buffer submetric C: Buffer Condition</i>								
Raw Attribute Score = $D + [C \times (A \times B)^{1/2}]^{1/2}$ (do not round)							Final Attribute Score =	
						(Raw Score/24) x 100		
Attribute 2: Hydrology								
Water Source			Alpha		Numeric			
Hydroperiod								
Hydrologic Connectivity (all but Channeled)								
<i>Hydro Connectivity submetric A: Bank Height Ratio</i>		Alpha	Numeric					
<i>Hydro Connectivity submetric B: Percent Dewatered</i>								
Hydrologic Connectivity for Channeled (<i>avg. of submetrics A-B</i>)								
Raw Attribute Score = sum of numeric scores							Final Attribute Score =	
						(Raw Score/36) x 100		
Attribute 3: Physical Structure								
Structural Patch Richness			Alpha		Numeric			
Topographic Complexity								
Raw Attribute Score = sum of numeric scores							Final Attribute Score =	
						(Raw Score/24) x 100		
Attribute 4: Biotic Structure								
Plant Community Composition (submetric A is not applicable for Non-Channeled meadows)								
<i>Plant Community submetric A: Number of plant layers</i>		Alpha	Numeric					
<i>Plant Community submetric B: Number of Co-dominant species</i>								
<i>Plant Community submetric C: Percent Invasive species</i>								
Plant Comm. Composition (<i>avg. of submetrics A-C or B-C</i>)								
Horizontal Interspersion			Alpha		Numeric			
Plant Life Forms								
Raw Attribute Score = sum of numeric scores							Final Attribute Score =	
						(Raw Score/36) x 100		
Overall AA Score (average of four final Attribute Scores)								

Aquatic Area Abundance Worksheet

Percentage of Transect Lines that Contains Wetland or Aquatic Habitat of Any Kind	
Segment Direction	Percentage of Transect Length That is an Aquatic Feature
North	
South	
East	
West	
Average Percentage of Transect Length That Is an Aquatic Feature	

Percent of AA with Buffer Worksheet

In the space provided on the datasheet, make a quick sketch of the AA, or perform the assessment directly on the aerial imagery; indicate where buffer is present, estimate the percentage of the AA perimeter providing buffer functions, and record the estimate amount in the space provided.

Worksheet for calculating Average Buffer Width of AA

Line	Buffer Width (m)
A	
B	
C	
D	
E	
F	
G	
H	
Average Buffer Width	

Channeled Wet Meadow and Channeled Forested Slope Wetland Bank Height Calculation Worksheet

<p>The following 4 steps should be conducted for each of 3 cross-sections located in the AA at the approximate midpoints along straight riffles or glides, away from deep pools or meander bends. An attempt should be made to place them at the top, middle, and bottom of the AA.</p>				
Steps	Replicate Cross-sections →	TOP	MID	BOT
1 Estimate bankfull width.	This is a critical step requiring familiarity with field indicators of the bankfull contour. Measure the distance between the right and left bankfull contours.			
2: Estimate max. bankfull depth.	Imagine a level line between the right and left bankfull contours; measure the height of the line above the thalweg (the deepest part of the channel).			
3: Estimate max. bank height	Identify the location of the top of bank. Measure the height between the thalweg and the top of bank location.			
4: Calculate bank height ratio.	Divide the bank height (Step 3) by the bankfull depth (Step 2). Keep two significant figures.			
5: Calculate average bank height ratio.	Calculate the average results for Step 4 for all 3 replicate cross-sections. Enter the average result here and use it in Table 14. Keep two significant figures (hundredths).			

Worksheet for Assessing Hydrologic Connectivity: Percent Dewatered for Slope Wetlands

Condition	Field Indicators (check all existing conditions)
Indicators of Intact Hydrologic Connectivity	<ul style="list-style-type: none"> <input type="checkbox"/> No channel incision <input type="checkbox"/> Vigor of plant species, especially hydrophytes <input type="checkbox"/> Low or no cover of upland plant species <input type="checkbox"/> No rill or gully development <input type="checkbox"/> No areas of bare soil <input type="checkbox"/> No soil cracking <input type="checkbox"/> No changes in soil structure or moisture content <input type="checkbox"/> Surface water present on the wetland plain late into the summer season <input type="checkbox"/> Groundwater emerging <input type="checkbox"/> Moist peat soil <input type="checkbox"/> Floating fens <input type="checkbox"/> Evidence of regular inundation on floodplain slope wetlands (wrack etc.)
Indicators of Degraded Hydrologic Connectivity (dewatering)	<ul style="list-style-type: none"> <input type="checkbox"/> Evidence of channel incision, including low entrenchment ratios, undercut banks, block bank failures, sloughing banks, hanging or exposed roots, channel scoured to bedrock or dense clay, active knickpoints, active gully erosion, active headcutting <input type="checkbox"/> Stress or mortality of plants <input type="checkbox"/> Presence of xeric plant species <input type="checkbox"/> Development of rills or gullies on the wetland surface <input type="checkbox"/> Areas of bare soil <input type="checkbox"/> Areas of soil cracking <input type="checkbox"/> Drying of peat <input type="checkbox"/> Decrease in vigor of hydrophytes <input type="checkbox"/> Changes in plant or animal species or communities <input type="checkbox"/> Changes in soil structure or moisture content <input type="checkbox"/> More than 5% cover in the AA of upland conifer species (e.g. Douglas fir (<i>Pseudotsuga menziesii</i>), Lodgepole Pine (<i>Pinus contorta</i>), see special note) <input type="checkbox"/> More than 5% cover in the AA of upland broadleaf tree species (e.g. tanoak (<i>Notholithocarpus densiflorus</i>), coast live oak (<i>Quercus agrifolia</i>)) <input type="checkbox"/> More than 5% cover in the AA of upland shrub species (e.g. sagebrush (<i>Artemisia tridentate</i>), rabbitbrush (<i>Ericameria nauseosa</i>), French broom (<i>Genista monspessulana</i>)) <input type="checkbox"/> More than 5% cover in the AA of upland vines (e.g. English ivy (<i>Hedera helix</i>), Himalayan blackberry (<i>Rubus armeniacus</i>), field bindweed (<i>Convolvulus arvensis</i>)) <input type="checkbox"/> More than 5% cover in the AA of upland grasses (e.g. ripgut brome (<i>Bromus diandrus</i>), cheatgrass (<i>Bromus tectorum</i>), needlegrass (<i>Stipa pulchra</i>)) <input type="checkbox"/> More than 5% cover in the AA of upland herbs and forbs (e.g. ragweed (<i>Ambrosia artemisiifolia</i>), mustard (<i>Brassica rapa</i>), yellow star thistle (<i>Centaurea solstitialis</i>))
Overall area of the wetland showing evidence of dewatering	<ul style="list-style-type: none"> <li style="width: 45%;"><input type="checkbox"/> No dewatering <li style="width: 45%;"><input type="checkbox"/> <25% dewatered <li style="width: 45%;"><input type="checkbox"/> 25-50% dewatered <li style="width: 45%;"><input type="checkbox"/> >50% dewatered

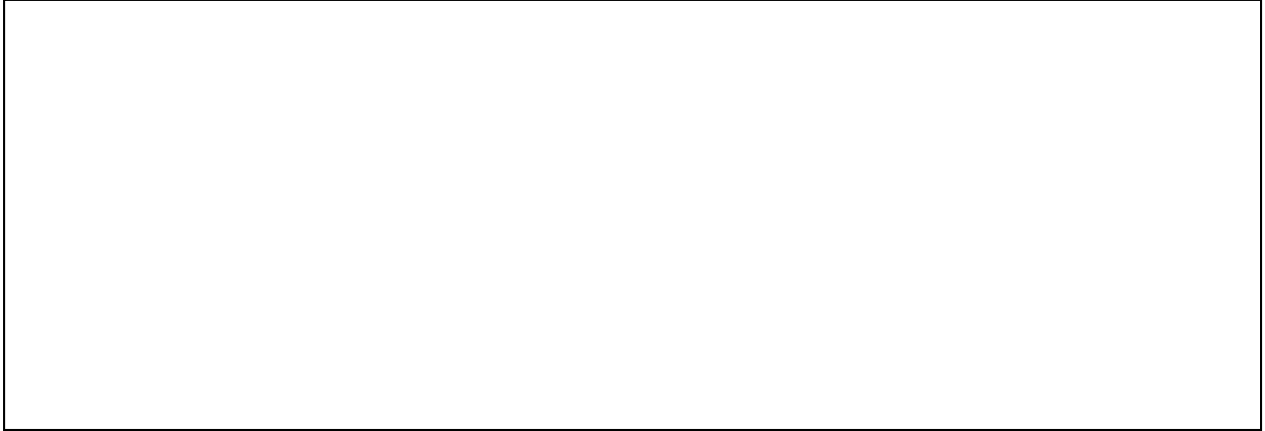
Structural Patch Type Worksheet for Slope Wetlands

Check each type of patch that is observed in the AA and use the total number of observed patches in Table 17 below.

STRUCTURAL PATCH TYPE (circle for presence)	Slope Wetland
Minimum Patch Size	3 m²
Abundant wrack or organic debris in channel, or across wetland plain	
Active fluvial channel(s)	
Animal mounds and burrows, sediment disturbance, or vole trails	
Bank slumps or undercut banks in channels	
Beaver dams or lodges	
Boulders or bedrock outcrop	
Cutoff channels or oxbows	
Filamentous macroalgae or algal mats	
Gravel, cobble, or sand	
Large woody debris	
Moss	
Non-vegetated flats or bare ground	
Pannes or pools on wetland surface	
Plant hummocks and/or tussocks	
Sediment mounds around the bases of shrubs or trees	
Sediment splays	
Soil cracks	
Springs or upwelling groundwater	
Standing snags (at least 3 m tall)	
Submerged vegetation (in channels or open water)	
Swales	
Thatch	
Variegated, convoluted, or crenulated upland edge (not broadly arcuate or mostly straight)	
Total Possible	23
No. Observed Patch Types (enter here and use in Table 17 below)	

Worksheet for AA Topographic Complexity

Complete a sketch of the topographic profile of the AA along a cross section perpendicular to the overall slope of wetland within the AA. Draw the section to include both AA boundaries. Include both the ground surface and the vegetation roughness. Indicate the letter grade for each component in the space below the sketch. Note the AA boundaries and important topographic features.



Physical topographic complexity score _____ Vegetation roughness score _____

Plant Community Metric Worksheet: Co-dominant species richness for Channeled Wet Meadow, Channeled Forested Slope Wetlands, Non-channeled Forested Slope Wetlands, and Seeps and Springs
(A dominant species represents $\geq 10\%$ relative cover)

Special Note:

** Combine the counts of co-dominant species from all layers to identify the total species count. Each plant species is only counted once when calculating the Number of Co-dominant Species and Percent Invasion submetric scores, regardless of the numbers of layers in which it occurs.*

Floating or Canopy-forming	Invasive?	Short (<0.3 m)	Invasive?
Medium (0.3-1.0 m)	Invasive?	Tall (1.0-3.0 m)	Invasive?
Very Tall (>3.0 m)	Invasive?	Total number of co-dominant species for all layers combined (enter here and see Table 21)	
		Percent Invasion (enter here and see Table 21)	

Horizontal Interspersion Worksheet

Use the spaces below to make a quick sketch of the AA in plan view, outlining the major plant zones (this should take no longer than 10 minutes). Assign the zones names and record them on the right. Based on the sketch, choose a single profile from Figure 17 that best represents the AA overall.

	<p>Assigned zones:</p> <p>1)</p> <p>2)</p> <p>3)</p> <p>4)</p> <p>5)</p> <p>6)</p>
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Plant Life Forms Worksheet

Life Form	Present in > 5% of AA?
Bryophytes (mosses, liverworts, hornworts)	
Coniferous Trees	
Deciduous Broadleaf Trees	
Evergreen Broadleaf Trees	
Ferns	
Grasses	
Herbs/Forbs	
Lichens or Fungi	
Sedges/Rushes	
Shrubs	
Vines	
Total Number of life forms	

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	seasonal estuarine	
	perennial saline estuarine	perennial non-saline estuarine	wet meadow	
	lacustrine	seep or spring	playa	

Worksheet: 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., <i>Virginia opossum</i> 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		