

Stream Assessment Form (Form 1)

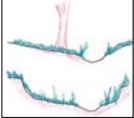
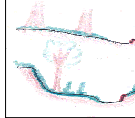
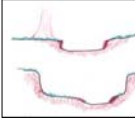
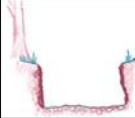
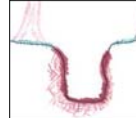
Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor

Name(s) of Evaluator(s)	Stream Name and Information

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

Channel Condition	Conditional Category					CI
	Optimal	Suboptimal	Marginal	Poor	Severe	
 <p>Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.</p>	 <p>Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.</p>	 <p>Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 40-60% of banks. Streambanks may be vertical or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute to stability. Deposition that contribute to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.</p>	 <p>Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection is present on > 40% of the banks and stable sediment deposition is absent.</p>	 <p>Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.</p>	<p>3</p> <p>2.4</p> <p>2</p> <p>1.6</p> <p>1</p>	CI
Score	3	2.4	2	1.6	1	
NOTES>>						

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Riparian Buffers	Conditional Category						NOTES>>	
	Optimal	Suboptimal	Marginal	Poor				
<p>Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover. Wetlands located within the riparian areas.</p>	<p>High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.</p>	<p>Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).</p>	<p>High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.</p>	<p>Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover with maintained understory.</p>	<p>High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.</p>	<p>Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.</p>		
Condition Scores	1.5	High 1.2	Low 1.1	High 0.85	Low 0.75	High 0.6	Low 0.5	
<p>1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.</p> <p>2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.</p> <p>3. Enter the % Riparian Area and Score for each riparian category in the blocks below.</p>						<p>Ensure the sums of % Riparian Blocks equal 100</p>		
Right Bank	% Riparian Area>						0%	
	Score >							
CI= (Sum % RA * Scores*0.01)/2								
Left Bank	% Riparian Area>						0%	CI
	Score >						0.00	0.00

3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddedness; shade; undercut banks; root mats; SAV; riffle poole complexes, stable features.

Instream Habitat/ Available Cover	Conditional Category				NOTES>>
	Optimal	Suboptimal	Marginal	Poor	
Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.		
Score	1.5	1.2	0.9	0.5	CI

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
							500	1

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

NOTES>>

	Conditional Category			
	Negligible	Minor	Moderate	Severe
Channel Alteration	Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.
Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.				
SCORE	1.5	1.3	1.1	0.9

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The Cls and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >> **0.00**

RCI= (Sum of all Cl's)/5

COMPENSATION REQUIREMENT (CR) >> **0**

CR = RCI X LF X IF

INSERT PHOTOS:

DESCRIBE PROPOSED IMPACT:

Compensation Crediting Form (Form 3)

Unified Stream Methodology for use in Virginia

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	Reach #	Reach Length	
Name(s) of Evaluator(s)		Stream Name and Information						
								Project Credits

Restoration: Includes Priority 1, 2, and 3 restoration activities. Does not include buffer width.								Credit per foot	0
List Reaches that will receive full Restoration:						Total length of Full Restoration		1	Credits = Stream Length X 1.0

Enhancement With Instream Structures: Addressing Streambank Stability, Grade Control (Vanes, Weirs, Step-Pools), Constructed Riffles								Credit per foot	
Discuss Length Affected by Instream Structures (justify length):						Length Affected by Instream Structures		0.3	0
								Credits = Stream Length X 0.3	

Enhancement: Addressing Streambank Stability, Entrenchment Ratios, Access to Floodplain										
Mitigation Categories										
Mechanical Bank Work				Biological Bank Work						
Credit Per Structure		Pick One Per Length		May Be Cumulative Per Length						
Activities	Habitat Structures	Create Bankfull Bench	Lay Back Banks	Bio-Remediation Techniques		Stream Bank Plantings ONLY				
Credit per foot per bank	0.1	0.15	0.1	0.1		0.09				
Right Bank	Length							0		
	Credit >									
CREDITS										
Left Bank	Length							0	Rt Bank > 0.00	
	Credit >								Credit	
								Lt Bank > 0.00	SUM of banks	0
<i>Σ (Length X Credit) for all areas (banks done separately)</i>										

Riparian Areas: Assess the proposed 100 foot buffer on both banks based on the activity proposed. Enter the percentage of area and the credit below. (Widths of buffer above 100' will be determined below)

Activities	Buffer Re-establishment (removal of invasives)	Buffer Planting - Heavy	Buffer Planting - Light	Preservation ONLY. No work proposed High Quality	Preservation ONLY. No work proposed Low Quality	Buffer area not within preservation width but within the first 100'
Credit for inner 100'	0.4	0.38	0.29	0.14	0.07	0
Credit for outer 100'	0.2	0.19	0.15	0.07		0
Calculation of "Goal" riparian buffer for each side (SAR length times 100') >>>>						0 square feet
Insert area in square feet for a given activity: <input style="width: 100px;" type="text"/>						#DIV/0!

WITHIN FIRST 100' - Mitigation Categories										
Missing one vegetative community				Subtract 0.03	Ensure the sums of % Riparian Blocks equal 100					
Missing two vegetative communities				Subtract 0.06						
Right Bank	% Area							0%		
	Credit >									
CREDITS										
Left Bank	% Area							0%	Rt Bank > 0.00	
	Credit >								Credit	
								Lt Bank > 0.00	0.00	0
<i>Σ (% Area X Credit) for all areas (banks done separately) AVE of credit for banks X length of project</i>										

WITHIN SECOND 100' - Mitigation Categories										
Missing one vegetative community				Subtract 0.03	Ensure the sums of % Riparian Blocks equal 100					
Missing two vegetative communities				Subtract 0.06						
Right Bank	% Area							0%		
	Credit >									
CREDITS										
Left Bank	% Area							0%	Rt Bank > 0.00	
	Credit >								Credit	
								Lt Bank > 0.00	0.00	0
<i>Σ (% Area X Credit) for all areas (banks done separately) AVE of credit for banks X length of project</i>										

Adjustment Factors: These factors are applied as a multiplier to length of a reach for which they apply									
Adjustment Factor Categories									
Activity	Rare, Threatened, or Endangered Species or Communities		Livestock Exclusion		Watershed Preservation				
Credit	0.1 - 0.3		0.1 - 0.3		0.1 - 0.3				
<i>Credits are cumulative and can apply to more than one reach. Each reach can have more than one Adjustment Factors</i>									
Stream Length Affected									
Credit >									0
<i>Σ (Length X Credit) for all areas</i>									
Total Compensation Credit Provided by Project								0	

