

STREAM QUALITY ASSESSMENT WORKSHEET

Bridge - 280410

Provide the following information for the stream reach under assessment:

1. Applicant's name:	NCDOT	2. Evaluator's name:	Chris Dustin, Mulkey, Inc.
3. Date of evaluation:	Dec 3, 2014	4. Time of evaluation:	11:46:00 AM
5. Name of stream:	Leonard Creek (SA)	6. River basin:	Yadkin
7. Approximate drainage area:	19 sq. miles	8. Stream order:	2nd
9. Length of reach evaluated:	226 ft.	10. County:	Davidson
11. Site coordinates (if known):	prefer in decimal degrees.	12. Subdivision name (if any):	
Latitude (ex. 34.872312):	35.841982	Longitude (ex. -77.556611):	-80.222169
Method location determined:	☒ GPS ☐ Topo Sheet ☒ Ortho (Aerial) Photo/GIS ☒ Other GIS Other: _____		

13. Location of reach under evaluation (Note nearby roads and landmarks and attach map identifying stream(s) location):

Leonard Creek running under Bridge 280410 on SR-1844

14. Proposed channel work (if any):	None		
15. Recent weather conditions:	No rain in last 48 hours		
16. Site conditions at time of visit:	Normal, Overcast		
17. Identify any special waterway classifications known:	☐ Section 10 ☐ Tidal Waters ☐ Essential Fisheries Habitat ☐ Trout Waters ☐ Outstanding Resource Waters ☐ Nutrient Sensitive Waters ☐ Water Supply Watershed ☒ (I-IV)		
18. Is there a pond or lake located upstream of the evaluation point?	☒ YES ☐ NO	If yes, estimate the water surface area: 49 ac.	
19. Does channel appear on USGS quad map?	☒ YES ☐ NO	20. Does channel appear on USDA Soil Survey? ☒ YES ☐ NO	
21. Estimated watershed land use:	15 % Residential	55 % Agricultural	
	30 % Forested		
22. Bankfull width:	10-12 ft.	23. Bank height (from bed to top of bank):	4-6 ft.
24. Channel slope down center of stream:	☒ Flat (0 to 2%) ☐ Gentle (2 to 4%) ☐ Moderate (4 to 10%) ☐ Steep (>10%)		
25. Channel sinuosity:	☐ Straight ☐ Occasional bends ☒ Frequent meander ☐ Very sinuous ☐ Braided channel		

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 51 Comments:

Evaluator's Signature: Chris Dustin Date: Dec 3, 2014

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change—version 06/03. To Comment, please call 919-876-8441 x 26.

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	3
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	5
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	2
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	4
	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	1
	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	1
	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	0
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	1
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	3
	10	Sediment input (extensive deposition = 0; little or no sediment = max points)	0-5	0-4	0-4	2
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	N/A *	0-4	0-5	4
STABILITY	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	0
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
	15	Impact by agriculture, livestock, or timber production (substantial impact = 0; no evidence = max points)	0-5	0-4	0-5	4
HABITAT	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	4
	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	4
	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	3
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	N/A *	0-4	0-4	2
BIOLOGY	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	2
Total Points Possible			100	100	100	
TOTAL SCORE (Also enter on first page)						51

*These characteristics are not assessed in coastal streams.