NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form	Version 4.11		SKMEC	7O1
Date: 1/7/1/2010	Project/Site:	+()	Latitude: 35	227393
Evaluator: Colm Court	County:	Sperland	1	78.625808
Total Points: Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$		ination (circle one) ermittent Perennial	Other e.g. Quad Name:	
A. Geomorphology (Subtotal = 17,5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	(3)
Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool,	0	(1)	2	3
ripple-pool sequence		V.		
Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	0	0	2	3
9. Grade control	O _{months}	0.5	1	1.5
10. Natural valley	(0)	0.5	1	1.5
11. Second or greater order channel	N	0 = 0	Yes:	= 3)
^a artificial ditches are not rated; see discussions in manual			The same of the sa	er.
B. Hydrology (Subtotal = $\frac{8}{2}$)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	N	o = 0	≻Yes :	= 3
C. Biology (Subtotal =)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	6	1	2	3
21. Aquatic Mollusks	(6)	1	2	3
22. Fish	0	0.5	(1)	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed		FACW = 0.75; OB	L = 1.5 (Other = 0	<u> </u>
*perennial streams may also be identified using other methods	. See p. 35 of manua		The same of the sa	
Notes:	•	· · · · · · · · · · · · · · · · · · ·		
Sketch:				

Щ	4 CHADACTEDICTICS		ECOREGION POINT RANGE		
#	CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0 – 5	4
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	2
3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0-4	0 – 5)
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0 – 4	0 – 4	2
5 SF	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	1
5 6 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	(
E 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	2
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	2.
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)	NA*	0-4	0-5	NA
12 ح	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	0-4	0-5	3
	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0 – 5	2
13 14 14 14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0 – 3	0-4	0 – 5	1.
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0 – 5	1.
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0 – 5	0-6	1 .
17 17 18 18	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
18 18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0-5	0 – 5	0
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	1
$\begin{vmatrix} 21 \\ 3 \end{vmatrix}$	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0 – 4	0
21 22 22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2.
<u> </u>	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 fi	rst page)			33

^{*} These characteristics are not assessed in coastal streams.

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USACE AID#	DWQ #	Site #	(indicate on attached map





Construction (
Provide the following information for the stream reach und	
1. Applicant's name: ACP	2. Evaluator's name: Colin Centy
3. Date of evaluation: 1212010	4. Time of evaluation:
5. Name of stream: UNT to Mingo Swamp	6. River basin: Cape Flar 030300
7. Approximate drainage area:	8. Stream order:
9. Length of reach evaluated:	10. County: (umberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35. 227C36	_ Longitude (ex77.556611): - 78°6006310
Method location determined (circle): GPS Topo Sheet Ortho (A. Location of reach under evaluation (note nearby roads and	
14. Proposed channel work (if any):	
15. Recent weather conditions: Clean and cool	7
16. Site conditions at time of visit: Clean and Co.	of
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	point? YES NO If yes, estimate the water surface area:
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:% Residential	% Commercial% Industrial% Agricultural
% Forested	% Cleared / Logged% Other (
22. Bankfull width:	23. Bank height (from bed to top of bank):
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightXOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the econ characteristics identified in the worksheet. Scores should refine characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be evaluated due to site or weather concomment section.	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a aditions, enter 0 in the scoring box and provide an explanation in the aracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each to between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 5 Commer Own agricultimal fields, Corectest netain water year round, but	nts: I mpacted greatly from roads ditches, it is halfy mpacted by lard use,
Evaluator's Signature	Date //21/2016
	as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream
quality. The total score resulting from the completion of	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.



Waterbody SCME001 facing northeast upstream



Waterbody SCME001 facing south downstream

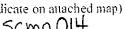


Waterbody SCME001 facing southeast across

SA:
1

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1 1 1 1 1 1	

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Provide the following information for the stream reach und 1. Applicant's name: Dominion	2. Evaluator's name: K. Murphrey, K. Markham
3. Date of evaluation: October 6, 2014	4. Time of evaluation: (610
5. Name of stream: UNT to Mingo Swamp	6. River basin: Cape Fear
7. Approximate drainage area: 1600 acres	8. Stream order:
9. Length of reach evaluated: 50 ft.	10. County: Cumberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
	Longitude (ex77.556611): -78.62789
Method location determined (circle): GPS Topo Sheet Ortho (landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: SUNAY	
16. Site conditions at time of visit: undisturbed	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? (YES) NO	20. Does channel appear on USDA Soil Survey? (YES) NO
	% Commercial% Industrial% Agricultural
2/2	% Cleared / Logged% Other ()
TO ELOUAT KANTILL LA AL	23. Bank height (from bed to top of bank): 10 Ft
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eccharacteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather co-comment section. Where there are obvious changes in the cinto a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must ranghighest quality.	ge 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points pregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a nditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 24 Common Man-made Canal.	ents: This reature was considered a
Evaluator's Signature Kell elland	Date 10/6/14
This channel evaluation form is intended to be used only gathering the data required by the United States Arm quality. The total score resulting from the completion	s as a guide to assist landowners and environmental professionals in y Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a to change – version 06 03. To Comment, please call 919-876-8441 x 26.

	#*	CHARACTERISTICS	of Fixed and Art of the state of the	ION:POINT Piedmont	RANGE: Mountains	SCORE
	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	0
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 - 5	1
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	0
\$ IV	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	. (
PHYSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	
PH	² 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	3
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	\bigcirc
(A)	. 9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3-6	2
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	7
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
X	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
ILIT	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	2
STABILITY	14	Root depth and density on banks (no visible roots = 0, dense roots throughout = max points)	0-3	0-4	0-5	
ě.	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	\mathcal{O}
BITAT	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0 – 6	\bigcirc
ITA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	
HAB	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0 – 5	
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
Z. Z.	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0-5	0-5	\
067	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
RIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
	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	
	表之。 · 海道 1	TOTAL SCORE (also enter on	first page)			124

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

scm0014

Date: October 6,2014		Latitude: 35, 22878
Evaluator: K. Murphrey, K. Markham	County: Cumberland	Longitude: -78, 62789
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other Wade e.g. Quad Name:

A. Geomorphology (Subtotal = 11.5)	Absent	Weak	Moderate	Strong
1ª Continuity of channel bed and bank	0	1	2	(3)
Sinuosity of channel along thalweg	0	1	(2)	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	<u> </u>	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0_	1	(2)	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	. 1	1.5
10. Natural valley	0	(0.5)	1 1	1.5
11. Second or greater order channel	No € 0) Yes = 3		3 = 3	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal =)				
12. Presence of Baseflow	0	1_	2	(3)
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	(1.5)	11	0.5	0
15. Sediment on plants or debris	0	0.5	1	(1.5)
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 7, 5)				1
18. Fibrous roots in streambed	3 1	(2)	1	<u> </u>
19. Rooted upland plants in streambed	(3)	2	1	<u> </u>
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3 -
22. Fish	0	(0.5)	1	1.5
23. Crayfish	0_	0.5	(1)	1.5
24. Amphibians		0.5	1	1.5
25. Algae	(ò)	0.5	11	1.5
26. Wetland plants in streambed		FACW = 0.75; (DBL = 1.5 Other =	

*perennial streams may also be identified using other methods. See p. 35 of manual.

Scmo014

Notes: ACCESS ROOM 149

Sketch:

Access Road 149

OHWM width: 10

Top of Bank width: 12



Waterbody scmo014 facing north upstream.



Waterbody scmo014 facing south downstream.



Waterbody scmo014 facing east across channel.

$\cap WC$		

Site #	(indicate on	attached	map)

scmo 016



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under assessment: 2. Evaluator's name: K. Murphrey, K. Markham 1. Applicant's name: Dominion 3. Date of evaluation: October 6, 2014 4. Time of evaluation: 1530 6. River basin: Cape Fear 5. Name of stream: Un+ to Mingo Swamp 7. Approximate drainage area: > 5() acre 5 8. Stream order: 10. County: Cumberland 9. Length of reach evaluated: 12. Subdivision name (if any): 11. Site coordinates (if known): prefer in decimal degrees. Latitude (ex. 34.872312); 35, 22561 Longitude (ex. -77.556611); - 78. 62551 Method location determined (circle): 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): Rhodes pond Rd. Locosted <XXHUEBSH CE 14. Proposed channel work (if any): 15. Recent weather conditions: 54004 16. Site conditions at time of visit: Undisturbed 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:______ 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: 30 % Residential ____% Commercial 50 % Agricultural % Industrial 20% Forested ____% Cleared / Logged _____% Other (____ * (Top of Bank)
22. Bankfull width: 22. Bank full width: S ft.

23. Bank height (from bed to top of bank): 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 VOccasional 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): Evaluator's Signature Held LOGIUM 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.

	#:	CHARACTERISTICS	ECOREG Coastal	ION POINT Piedmont	RANGE:	SCORE
	I	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0 – 5	4
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0-5	1
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	5
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	5
IV	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
PHYSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	
PH	் 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	5
	8	Presence of adjacent wetlands (no wetlands = 0, large adjacent wetlands = max points)	0 – 6	0-4	0-2	6
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	2
Green.	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	3
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
X	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	5
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0 – 5	5
IAB	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	<u> </u>
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	2
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	1
ITA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	5
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	
I Will	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
1	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	2_
(50	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
1	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	3
		Total Points Possible	100	100	100-	
		TOTAL SCORE (also enter on	first page)			62

^{*} These characteristics are not assessed in coastal streams.

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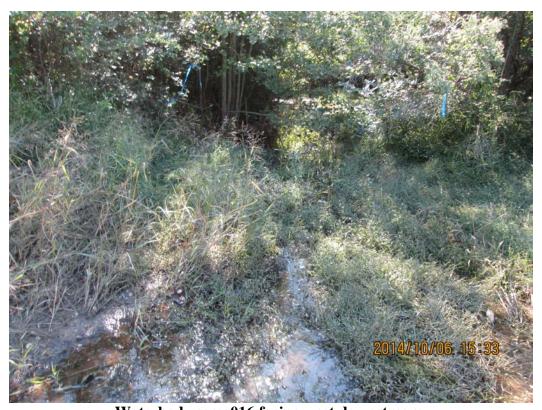
3cm0016

al e. [Project/Site: 🔨	CP	Latitude: 35, 2256 1		
ate: 10/6/14 valuator:ESI-1K.MUVPMEG, K.Marknon	n County: Can	iberland	Longitude:_7	8.62551	
otal Points: tream is at least intermittent ≥ 19 or perennial if ≥ 30*	Stream Determin	nation (c <u>ircle one)</u> rmittent (Perennial)	Other Wood e.g. Quad Name:	2	
2 19 of percinnary 200					
A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong	
a. Continuity of channel bed and bank	0	1_	(2)	3	
2. Sinuosity of channel along thalweg	0	(1)	2	3	
3. In-channel structure: ex. riffle-pool, step-pool,	0	(1)	2	3	
ripple-pool sequence					
Particle size of stream substrate	0	1 1	(2)	3	
5. Active/relict floodplain	0	1 .	<u>(2)</u>	3	
6. Depositional bars or benches	0	12	2	3	
7. Recent alluvial deposits	0	(1)		3	
8. Headcuts	(0)	1	2	3	
9. Grade control		(0.5)	1	1.5	
10. Natural valley	0	(0.5)	<u> </u>	1.5	
11. Second or greater order channel		10(= 0)	Yes	= 3	
artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal = 10)		 			
12. Presence of Baseflow	0	1 1	2	(3)	
13. Iron oxidizing bacteria	0	1	(2)	3	
14. Leaf litter	1.5	(1)	0.5	0	
15. Sediment on plants or debris	0	(0.5)	1	1.5	
16. Organic debris lines or piles	0	0.5	11	1.5	
17. Soil-based evidence of high water table?		No = 0	Ye	s € 3)	
C. Biology (Subtotal = 1)					
18. Fibrous roots in streambed	3	(2)	1	0	
19. Rooted upland plants in streambed	(3)	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	1	(2)	3	
	(0)	1	2	3	
21. Aquatic Mollusks	0	(0.5)	1	1.5	
22. Fish	0	0.5	(1)	1.5	
23. Crayfish	(0)	0.5	1_	1.5	
24. Amphibians	0	0.5	(1)	1.5	
25. Algae		FACW = 0.75;	OBL = (1.5) Other	= 0	
Wetland plants in streambed *perennial streams may also be identified using other relations.	methods. See p. 35 of m				
	modiodo, oo o p. t-				
Notes: ACCESS RODA 199					
(i (Womo OIS upline					
Sketch: scmo 015					
	•				
1 1 Xx compalle					
\$ scmoolle	,				
Scmoolle scmoolle	u (A				
scmo Olle Access Road	149				

OHWM width: 7 ft Top of Bank width: 8ft.



Waterbody scmo016 facing east upstream.



Waterbody scmo016 facing west downstream.



Waterbody scmo016 facing south across channel.

USACE	F ATD#
OBLICE	1 1 KALDIT

DMO	-44
1700	++

Site #

(indicate on attached map)



SCMCOOH STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under assessment: 2. Evaluator's name: Natural Resource 1. Applicant's name: Dominion 3. Date of evaluation: 2/11/2015 4. Time of evaluation: 9:30 AM 5. Name of stream: UT to Black River 6. River basin: Cape Fear 8. Stream order:_ 1 7. Approximate drainage area: ~ 25 acces 9. Length of reach evaluated: ~ 100 Fee+ 10. County: Competland 12. Subdivision name (if any): 11. Site coordinates (if known): prefer in decimal degrees. Latitude (ex. 34.872312): 35° 12' 52. 789" N Longitude (ex. -77.556611): 78° 39) 29 . 817" W Method location determined (circle): 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):_ 14. Proposed channel work (if any): None Dithin 15. Recent weather conditions: Vac 16. Site conditions at time of visit: Normal 17. Identify any special waterway classifications known: NA Section 10 MA Tidal Waters **₩**Essential Fisheries Habitat Trout Waters Mh Outstanding Resource Waters Nh Nutrient Sensitive Waters Whater Supply Watershed Nh (I-IV) 18. Is there a pond or lake located upstream of the evaluation point? YES (VD) If yes, estimate the water surface area: 19. Does channel appear on USGS quad map? YES NO 20. Does channel appear on USDA Soil Survey? YES % Residential 21. Estimated watershed land use: % Commercial % Industrial 70 % Agricultural ____% Cleared / Logged ____% Other (22. Bankfull width: 23. Bank height (from bed to top of bank): 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 Verv 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): 2-11-15

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.

# ,	CHARACTERISTICS	ECOREG Coastal	ION POIN	Processor and the second secon	SCORE
	Presence of flow / persistent pools in stream		Piedmont	Mountain	<i>i /</i>
1	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	4
2	Evidence of past human alteration	0-6	0 – 5	0-5	3
	(extensive alteration = 0; no alteration = max points) Riparian zone				
3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	4
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	4
[A] 5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
PHYSICAI 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	3
E	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	3
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0 – 4	0-2	0
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	ス
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	4
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	Ì
<u>ا ج</u> ا	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3
13 14 14 14 14 14 14 14 14 14 14 14 14 14	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
14 BV	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0 – 3	0-4	0-5	à
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	2
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2
17 17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
HABIT 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)	NA*	0-4	0-4	3
20 A	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
21 21 S	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0 – 4	0
21 22 22 EXECUTE 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 fin	rst page)			53

^{*} These characteristics are not assessed in coastal streams.

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

SCMCOON NC DWQ Stream Identification Form Version 4.11

Date: 2/11/7015	Project/Site: ACP	Latitude:35°12' 52.79"N
Evaluator: Natural Resource Group	County: Comberland	Longitude: 78°39' 29, 82"W
Total Points: Stream is at least intermittent 20,75 if≥ 19 or perennial if≥ 30*	Stream Determination (circle one) Ephemeral (intermittent) Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 10)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	(1)	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	0	2	3
4. Particle size of stream substrate	0	①	2	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	6)	0,5	1	1.5
10. Natural valley	6	0.5	1	1.5
11. Second or greater order channel	(No	<u>=0></u>	Yes :	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal =)		*		
12. Presence of Baseflow	0	1_	(2)	3
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(6)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?		<u>ده = </u>	Yes	= 3

C. Biology (Subtotal = <u>6,75</u>)	, , , , , , , , , , , , , , , , , , , ,			
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	D	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	(b)	0.5	1	1.5
24. Amphibians	<u> </u>	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed		€ACW = 0.75, O	BL = 1.5 Other =	Ó

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Herbaceous
Agricultin
Fields

Flow
777

Flow
777

Flow
777



Waterbody SCMC004 facing west upstream



Waterbody SCMC004 facing north across



Waterbody SCMC004 facing east downstream

USACE AID#	DWQ #		S	Site #	(indicate on attacl	ned map)
					•	p007e
ST	REAM QUALITY A	SSESSME	NT WORI	KSHEI	ET M	
Provide the following informa		der assessment:				
1. Applicant's name: Domi		2. Evaluator'	s name: EST	<u>-1<, M</u>	arphrey	
3. Date of evaluation: 5/26	9/16		valuation: 11!		<u> </u>	
5. Name of stream: UNT to	o South River	6. River basii	n: Cape 1	-ear		
7. Approximate drainage area:_	30 acres	8. Stream ord	ler: O			
9. Length of reach evaluated:	5084	10. County:_	Cumbe	rlan	9	
11. Site coordinates (if known):	prefer in decimal degrees.	12. Subdivisi	on name (if any	/): NA		
Latitude (ex. 34.872312): 35.2	(1137	Longitude (ex	c. –77.556611):	78.6	6574	
Method location determined (circle 13. Location of reach under eva South of Dume	aluation (note nearby roads and				ream(s) location):	
14. Proposed channel work (if a	iny): TBD					
15. Recent weather conditions:	Sunay	·				
16. Site conditions at time of vi	sit: Undistubed					
17. Identify any special waterw	ay classifications known:	Section 10	Tidal W	aters	Essential Fishe	ries Habitat
Trout WatersOutstar	nding Resource Waters	_Nutrient Sensi	tive Waters	Water	Supply Watershed	$\overline{\underline{\mathcal{I}}}_{(I-IV)}$
18. Is there a pond or lake locat	ed upstream of the evaluation	point? YES	OIf yes, estin	nate the w	ater surface area:	
19. Does channel appear on US	GS quad map? YES NO	20. Does cha	nnel appear on	USDA So	il Survey? YES (NO)
21. Estimated watershed land us	se: 10 % Residential	% Comme	rcial	_% Indust	rial <u>20</u> % Ag	ricultural
	70 % Forested	% Cleared	/Logged	_% Other	(
22. Bankfull width: 12 4	÷,	23. Bank hei	ght (from bed to	o top of ba	ınk): 5 H	
24. Channel slope down center	of stream:Flat (0 to 2%)	Gentle (2 t	to 4%)N	Aoderate (4 to 10%)Stee	ер (>10%)
25. Channel sinuosity:Str	raight VOccasional bends	Frequent n	neander	_Very sint	iousBraid	ed channel
Instructions for completion of location, terrain, vegetation, str to each characteristic within characteristics identified in the characteristic cannot be evalua comment section. Where there into a forest), the stream may be reach. The total score assigne highest quality.	ream classification, etc. Every the range shown for the ecc e worksheet. Scores should re- ated due to site or weather co e are obvious changes in the close divided into smaller reaches de to a stream reach must rang	characteristic roregion. Page effect an overall inditions, enter haracter of a stress that display more between 0 and	nust be scored to 3 provides a 1 assessment of 0 in the scoring earn under reviewer continuity, a d 100, with a second	using the brief description the stream g box and ew (e.g., the stream of 10 core of 10 c	same ecoregion. A ription of how to n reach under eval provide an explanthe stream flows from the form used to e to representing a significant stream.	ssign points review the uation. If a nation in the om a pasture valuate each tream of the
Total Score (from reverse):_	39 Comme	ents: This	Stream	dida	+ seove	as
intermittent, ba	t has OHWM	· ·	·	• •	'	,

Evaluator's Signature Well will 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.

40

extension

due

Re- rout-e

	#		ECOREG			SCORE
	1	Presence of flow / persistent pools in stream	0 – 5	0 – 4	0 – 5	*EDE-MARIN MORCH ATVICTOR 17
		(no flow or saturation = 0; strong flow = max points)		V-4	0-5	
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0-5	2
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0 – 4	0 – 5	4
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	5
A.C.	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
SIG	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	0
PHYS	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	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	0
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	4.
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA.	0-4	0-5	
N.	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0-5	4
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0 – 5	4
[AB]	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	ď
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0 – 5	0 – 4	0 – 5	2
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0-6	0
TAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0-5	0 – 5	5
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	I NA	0-4	0 – 4	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0-5	0 – 5	ş 1 ·
063	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0 – 4	0
BIOLOGY	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	3
		Total Points Possible	100	100	100	
	uerages	TOTAL SCORE: (also enter on f	irst page)	induction of	Tanish garage	39

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

	·			•	
Date: 5/26/15	Project/Site: A C P Latitude: 35.21			.21137	
Evaluator: ESI-14, MUrph 129	County: Cun	nberland	Longitude: -	18.66574	
Total Points: Stream is at least intermittent if \geq 19 or perennial if \geq 30*		ination (circle one) ermittent Perennial	Other Wode, NC e.g. Quad Name:		
A. Geomorphology (Subtotal = 3.5)	Absent	Weak	Moderate	Strong	
1ª. Continuity of channel bed and bank	0				
Sinuosity of channel along thalweg	16	1	2	3	
Sindostry of charmer along thatweg In-channel structure; ex. riffle-pool, step-pool,	- 0	1	2	3	
ripple-pool sequence	0	(1)	2	3	
Particle size of stream substrate	0_	1	(2)	3	
5. Active/relict floodplain		1 .	2	3	
6. Depositional bars or benches		1	2	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	2	3	
9. Grade control	6)	0.5	1	1.5	
10. Natural valley	0	(0.5)	1	1.5	
11. Second or greater order channel	N	lo =(0)	Yes		
artificial ditches are not rated; see discussions in manual	'	1		,	
B. Hydrology (Subtotal = 5.5)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	(0)	1	2	3	
14. Leaf litter	1,5	1	(0.5)	0	
15. Sediment on plants or debris		0.5	1	1.5	
16. Organic debris lines or piles	0	0.5	(1)	1.5	
17. Soil-based evidence of high water table?	N	1o = 0		₹3\	
C. Biology (Subtotal = 5.5)	<u> </u>			<u> </u>	
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	(0)	1 1	2	3	
21. Aquatic Mollusks	0	1 1	2	3	
22. Fish	(i)	0.5	 1	1.5	
23. Crayfish	0	(0.5)	<u> </u>	1.5	
24. Amphibians	Q	0.5	<u> </u>	1.5	
25. Algae	(A)	0.5	1	1.5	
26. Wetland plants in streambed		FACW = 0.75; O	 		
*perennial streams may also be identified using other method	ls See n 35 of man		BE - 1.0 Olifor	<u></u>	
		tent, but is	O WAGIN FINA	ade ditch	
	his is a	a extension	dist to	co-soute.	
Sketch: Scmf		2.1	1		

OHWM Width: 8ft. BONK Width: 12ft.



Waterbody scmp007e facing west upstream.



Waterbody scmp007e facing east downstream.



Waterbody scmp007e facing south across bank.

DWO	_	
ひぃひ		

Site =___ scmp007i

(indicate on attached map)





Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: EST (LRoper)
3. Date of evaluation: 9/9/14	4. Time of evaluation: 8:45 cm
5. Name of stream: UNT to South River	6. River basin: Cape Fear
7. Approximate drainage area: <u>30 & c</u>	8. Stream order:
9. Length of reach evaluated: 50 ++	10. County: Comberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NOWL
l.atitude (ex. 34.872312): 35, 2113 9	Longitude (ex77.556611): -78.666 68
Method location determined (circle): GPS Topo Sheet Ontho (A) 13. Location of reach under evaluation (note nearby roads and South of Dumpster boad	
14. Proposed channel work (if any): pn Dosed pi	seline
15. Recent weather conditions: Newy rain in	
16. Site conditions at time of visit: uoma flat	maintained ditch
α	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	
19. Does channel appear on USGS quad map? YES	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: 10% Residential	% Commercial% Industrial% Agricultural
70% Forested	% Cleared / Logged% Other ()
* (Top of Bank) 22. Bankfull width: 15 ft	23. Bank height (from bed to top of bank): 5 ft
24. Channel slope down center of stream:Flat (0 to 2%)	
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather co-comment section. Where there are obvious changes in the clinto a forest), the stream may be divided into smaller reaches	ge 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points oregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a anditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture a that display more continuity, and a separate form used to evaluate each ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 47 Commo	ents:
- Marian - M	
gathering the data required by the United States Army quality. The total score resulting from the completion	Date Q 19 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

44-1 134-1	(#2	CHARACTERISTICS	ECOREG Coastal	ION ROINT Piedmont		SCORE
	I	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0 – 5	5
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0-5	0 – 5	2
	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	3
V	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
SIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	Z:
PHY	² 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	1
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	1
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	3
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
S	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0 – 4	0-5	4
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	5
[AB]	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0 – 4	0-5	3
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
100 mg	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2.
I.V.	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	5
は	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	A STATE OF THE STA
· · · · · · · · · · · · · · · · · · ·	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	6
700	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
PIOTOCV	22	Presence of fish	0-4	0-4	0-4	0
₽ 3	23	Evidence of wildlife use	0-6	0-5	0-5	3
STEWS		Total Points Possible	100	100	100	
in the	* (\$\frac{1}{2}\)	TOTAL SCORE (also enter or	first page)			47

^{*} These characteristics are not assessed in coastal streams.

NC DWO Stream Identification Form Version 4.11 Project/Site: ACP Latitude: 35,21139 Date: Longitude: -78, 6666 County: Cumberland Rope Evaluator: EST Stream Determination (circle one) Ephemeral Intermittent Perennial Other **Total Points:** Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* Moderate Strong Absent Weak A. Geomorphology (Subtotal = 1,5 Nh 3 0 12. Continuity of channel bed and bank 3 2 0 (1) 2. Sinuosity of channel along thalweg (2) 3. In-channel structure: ex. riffle-pool, step-pool, 3 1 0 ripple-pool sequence 3 2 0 1 4. Particle size of stream substrate 3 (1)2 0 5. Active/relict floodplain 3 2 0 (1)6. Depositional bars or benches 3 2 O 0 7. Recent alluvial deposits 2 3 \odot 8. Headcuts 1.5 1 0.5 Ō, 9. Grade control 1.5 Ó:5, 1 10. Natural valley $\sqrt{N_0} = 0$ Yes = 311. Second or greater order channel artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = _ 2 0 12. Presence of Baseflow 2 <u>(0)</u> 1 13. Iron oxidizing bacteria ۵ 0.5 1.5 14. Leaf litter 1.5 0.5 1 Ő 15. Sediment on plants or debris (1.5.) 1 0 0.5 16. Organic debris lines or piles Yes = 3) No = 017. Soil-based evidence of high water table? C. Biology (Subtotal = 0 3/ 2 1 18. Fibrous roots in streambed 0 2 **(3**) 19. Rooted upland plants in streambed 3 2 20. Macrobenthos (note diversity and abundance) 3 2 Q. 1 21. Aquatic Mollusks 1.5 0 1 0.5 22. Fish 1.5 1 Ô′ 0.5 23. Crayfish 1.5 0.5 1 24. Amphibians 1.5 0.5 0 25. Algae FACW = 0.75; OBL = 1.5 Other = 0) 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. with OHWM present ditch Notes: man-made Sketch: - study corridor OHWM width: 15 4. Top of Bank width:



Waterbody scmp007i facing east upstream.



Waterbody scmp007i facing west downstream.



Waterbody scmp007i facing southwest across channel

USACE AID#	DWQ #		S	Site #	(indicate on attacl	ned map)
					•	p007e
ST	REAM QUALITY A	SSESSME	NT WORI	KSHEI	ET M	
Provide the following informa		der assessment:				
1. Applicant's name: Domi		2. Evaluator'	s name: EST	<u>-1<, M</u>	arphrey	
3. Date of evaluation: 5/26	9/16		valuation: 11!		<u> </u>	
5. Name of stream: UNT to	o South River	6. River basii	n: Cape 1	-ear		
7. Approximate drainage area:_	30 acres	8. Stream ord	ler: O			
9. Length of reach evaluated:	5084	10. County:_	Cumbe	rlan	9	
11. Site coordinates (if known):	prefer in decimal degrees.	12. Subdivisi	on name (if any	/): NA		
Latitude (ex. 34.872312): 35.2	(1137	Longitude (ex	c. –77.556611):	78.6	6574	
Method location determined (circle 13. Location of reach under eva South of Dume	aluation (note nearby roads and				ream(s) location):	
14. Proposed channel work (if a	iny): TBD					
15. Recent weather conditions:	Sunay	·				
16. Site conditions at time of vi	sit: Undistubed					
17. Identify any special waterw	ay classifications known:	Section 10	Tidal W	aters	Essential Fishe	ries Habitat
Trout WatersOutstar	nding Resource Waters	_Nutrient Sensi	tive Waters	Water	Supply Watershed	$\overline{\underline{\mathcal{I}}}_{(I-IV)}$
18. Is there a pond or lake locat	ed upstream of the evaluation	point? YES	OIf yes, estin	nate the w	ater surface area:	
19. Does channel appear on US	GS quad map? YES NO	20. Does cha	nnel appear on	USDA So	il Survey? YES (NO)
21. Estimated watershed land us	se: 10 % Residential	% Comme	rcial	_% Indust	rial <u>20</u> % Ag	ricultural
	70 % Forested	% Cleared	/Logged	_% Other	(
22. Bankfull width: 12 4	÷,	23. Bank hei	ght (from bed to	o top of ba	ınk): 5 H	
24. Channel slope down center	of stream:Flat (0 to 2%)	Gentle (2 t	to 4%)N	Aoderate (4 to 10%)Stee	ер (>10%)
25. Channel sinuosity:Str	raight VOccasional bends	Frequent n	neander	_Very sint	iousBraid	ed channel
Instructions for completion of location, terrain, vegetation, str to each characteristic within characteristics identified in the characteristic cannot be evalua comment section. Where there into a forest), the stream may be reach. The total score assigne highest quality.	ream classification, etc. Every the range shown for the ecc e worksheet. Scores should re- ated due to site or weather co e are obvious changes in the close divided into smaller reaches de to a stream reach must rang	characteristic roregion. Page effect an overall inditions, enter haracter of a stress that display more between 0 and	nust be scored to 3 provides a 1 assessment of 0 in the scoring earn under reviewer continuity, a d 100, with a second	using the brief description the stream g box and ew (e.g., the stream of 10 core of 10 c	same ecoregion. A ription of how to n reach under eval provide an explanthe stream flows from the form used to e to representing a significant stream.	ssign points review the uation. If a nation in the om a pasture valuate each tream of the
Total Score (from reverse):_	39 Comme	ents: This	Stream	dida	+ seove	as
intermittent, ba	t has OHWM	· ·	·	• •	'	,

Evaluator's Signature Well will 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.

40

extension

due

Re- rout-e

	#		ECOREG			SCORE
	1	Presence of flow / persistent pools in stream	0 – 5	0-4	0 – 5	*EDE-MARIN MORCH ATVICTOR 17
		(no flow or saturation = 0; strong flow = max points)		V-4	0-5	
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0-5	2
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0 – 4	0 – 5	4
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	5
A.C.	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
SIG	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	0
PHYS	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	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	0
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	4.
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA.	0-4	0-5	
N.	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0-5	4
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0 – 5	4
[AB]	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	ď
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0 – 5	0 – 4	0 – 5	2
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0-6	0
TAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0-5	0 – 5	5
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	I NA	0-4	0 – 4	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0-5	0 – 5	ş 1 ·
063	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0 – 4	0
BIOLOGY	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	3
		Total Points Possible	100	100	100	
	uerages	TOTAL SCORE: (also enter on f	irst page)	induction of	Tanish garage	39

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

	·			•	
Date: 5/26/15	Project/Site: A C P Latitude: 35.21			.21137	
Evaluator: ESI-14, MUrph 129	County: Cun	nberland	Longitude: -	18.66574	
Total Points: Stream is at least intermittent if \geq 19 or perennial if \geq 30*		ination (circle one) ermittent Perennial	Other Wode, NC e.g. Quad Name:		
A. Geomorphology (Subtotal = 3.5)	Absent	Weak	Moderate	Strong	
1ª. Continuity of channel bed and bank	0				
Sinuosity of channel along thalweg	16	1	2	3	
Sindostry of charmer along thatweg In-channel structure; ex. riffle-pool, step-pool,	- 0	1	2	3	
ripple-pool sequence	0	(1)	2	3	
Particle size of stream substrate	0_	1	(2)	3	
5. Active/relict floodplain		1 .	2	3	
6. Depositional bars or benches		1	2	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	2	3	
9. Grade control	6)	0.5	1	1.5	
10. Natural valley	0	(0.5)	1	1.5	
11. Second or greater order channel	N	lo =(0)	Yes		
artificial ditches are not rated; see discussions in manual	'	1		,	
B. Hydrology (Subtotal = 5.5)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	(0)	1	2	3	
14. Leaf litter	1,5	1	(0.5)	0	
15. Sediment on plants or debris		0.5	1	1.5	
16. Organic debris lines or piles	0	0.5	(1)	1.5	
17. Soil-based evidence of high water table?	N	1o = 0		₹3\	
C. Biology (Subtotal = 5.5)	<u> </u>			<u> </u>	
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	(0)	1 1	2	3	
21. Aquatic Mollusks	0	1 1	2	3	
22. Fish	(i)	0.5	 1	1.5	
23. Crayfish	0	(0.5)	<u> </u>	1.5	
24. Amphibians	Q	0.5	<u> </u>	1.5	
25. Algae	(A)	0.5	1	1.5	
26. Wetland plants in streambed		FACW = 0.75; O	 		
*perennial streams may also be identified using other method	ds See n. 35 of man		BE - 1.0 Olifor	<u></u>	
		tent, but is	O WAGIN FINA	ade ditch	
	his is a	a extension	dist to	co-soute.	
Sketch: Scmf		2.1	1		

OHWM Width: 8ft. BONK Width: 12ft.



Waterbody scmp007e facing west upstream.



Waterbody scmp007e facing east downstream.



Waterbody scmp007e facing south across bank.

DWO	_	
ひぃひ		

Site =___ scmp007i

(indicate on attached map)





Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: EST (LRoper)
3. Date of evaluation: 9/9/14	4. Time of evaluation: 8:45 cm
5. Name of stream: UNT to South River	6. River basin: <u>Cape Fear</u>
7. Approximate drainage area: <u>30 & c</u>	8. Stream order:
9. Length of reach evaluated: 50 ++	10. County: Comberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NOWL
l.atitude (ex. 34.872312): 35, 2113 9	Longitude (ex77.556611): -78.666 68
Method location determined (circle): GPS Topo Sheet Ontho (A) 13. Location of reach under evaluation (note nearby roads and South of Dumpster boad	
14. Proposed channel work (if any): pn Dosed pi	seline
15. Recent weather conditions: Newy rain in	
16. Site conditions at time of visit: uoma flat	maintained ditch
α	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	
19. Does channel appear on USGS quad map? YES	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: 10% Residential	% Commercial% Industrial% Agricultural
70% Forested	% Cleared / Logged% Other ()
* (Top of Bank) 22. Bankfull width: 15 ft	23. Bank height (from bed to top of bank): 5 ft
24. Channel slope down center of stream:Flat (0 to 2%)	
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather co-comment section. Where there are obvious changes in the clinto a forest), the stream may be divided into smaller reaches	ge 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points oregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a anditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture a that display more continuity, and a separate form used to evaluate each ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 47 Commo	ents:
- Marian - M	
gathering the data required by the United States Army quality. The total score resulting from the completion	Date Q 19 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

44-1 134-1	(#2	CHARACTERISTICS	ECOREG Coastal	ION ROINT Piedmont		SCORE
	I	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0 – 5	5
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0-5	0 – 5	2
	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	3
V	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
SIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	Z:
PHY	² 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	1
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	1
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	3
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
Z	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	4
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	5
[AB]	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	3
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
200	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2.
IA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	5
1 機	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	A STATE OF THE STA
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	6
700	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
PIOTOCV	22	Presence of fish	0-4	0-4	0-4	0
Ů.	23	Evidence of wildlife use	0-6	0-5	0-5	3
S TSA		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter or	first page)			47

^{*} These characteristics are not assessed in coastal streams.

NC DWO Stream Identification Form Version 4.11 Project/Site: ACP Latitude: 35,21139 Date: Longitude: -78, 6666 County: Cumberland Rope Evaluator: EST Stream Determination (circle one) Ephemeral Intermittent Perennial Other **Total Points:** Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* Moderate Strong Absent Weak A. Geomorphology (Subtotal = 1,5 Nh 3 0 12. Continuity of channel bed and bank 3 2 0 (1) 2. Sinuosity of channel along thalweg (2) 3. In-channel structure: ex. riffle-pool, step-pool, 3 1 0 ripple-pool sequence 3 2 0 1 4. Particle size of stream substrate 3 (1)2 0 5. Active/relict floodplain 3 2 0 (1)6. Depositional bars or benches 3 2 O 0 7. Recent alluvial deposits 2 3 \odot 8. Headcuts 1.5 1 0.5 Ō, 9. Grade control 1.5 Ó:5, 1 10. Natural valley $\sqrt{N_0} = 0$ Yes = 311. Second or greater order channel artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = _ 2 0 12. Presence of Baseflow 2 <u>(0)</u> 1 13. Iron oxidizing bacteria ۵ 0.5 1.5 14. Leaf litter 1.5 0.5 1 Ő 15. Sediment on plants or debris (1.5.) 1 0 0.5 16. Organic debris lines or piles Yes = 3) No = 017. Soil-based evidence of high water table? C. Biology (Subtotal = 0 3/ 2 1 18. Fibrous roots in streambed 0 2 **(3**) 19. Rooted upland plants in streambed 3 2 20. Macrobenthos (note diversity and abundance) 3 2 Q. 1 21. Aquatic Mollusks 1.5 0 1 0.5 22. Fish 1.5 1 Ô′ 0.5 23. Crayfish 1.5 0.5 1 24. Amphibians 1.5 0.5 0 25. Algae FACW = 0.75; OBL = 1.5 Other = 0) 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. with OHWM present ditch Notes: man-made Sketch: - study corridor OHWM width: 15 4. Top of Bank width:



Waterbody scmp007i facing east upstream.



Waterbody scmp007i facing west downstream.



Waterbody scmp007i facing southwest across channel



SCMP 008 STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach undo	r assessment:
1. Applicant's name: DominibM	2. Evaluator's name: ESI (L Poper)
3. Date of evaluation: 9 9 4	4. Time of evaluation: 2 pm
5. Name of stream: UNT to Cape Fear River	6. River basin: Cape Few
7. Approximate drainage area: 50 acres	8. Stream order: O
9. Length of reach evaluated: 55 ft	10. County: Cumberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35,20256	Longitude (ex77.556611): -78, 67 659
Method location determined (circle): GPS Topo Sheet Onho (A 13. Location of reach under evaluation (note nearby roads and I	andmarks and attach map identifying stream(s) location):
in agricultural field at end o	f Moses Rd new Godwin Falcon Rd
14. Proposed channel work (if any): proposed Pip	seline.
15. Recent weather conditions: heavy rain wi	thin 24 hrs.
16. Site conditions at time of visit: ditch in acti	ve tobacco field.
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive Waters <u>N</u> Water Supply Watershed <u>(I-IV)</u>
18. Is there a pond or lake located upstream of the evaluation p	oint? YES Olf yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES (10)
21. Estimated watershed land use: 10% Residential	% Commercial% Industrial% Agricultural
* (Too of Bank)	% Cleared / Logged % Other () 23. Bank height (from bed to top of bank): 4 Ft.
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eco characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather con comment section. Where there are obvious changes in the chinto a forest), the stream may be divided into smaller reaches	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a additions, enter 0 in the scoring box and provide an explanation in the paracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 23 Comme	nts: veg. filled ditch in active
gathering the data required by the United States Army quality. The total score resulting from the completion	as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a o change – version 06 03. To Comment, please call 919-876-8441 x 26.

1 #3	CHARACTERISTICS:	ECOREG Coastal	ION POINT Piedmont	5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	SCORE
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5]
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0-5	0-5	0
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	0
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
33 1	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	1
6 E 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	1
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0-4	0-2	0
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	0
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	4
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	/
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	닉
12 13 14 14	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	3
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	0
16	Presence of riffle-nool/rinnle-nool complexes	0-3	0-5	0-6	1
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	
17 18 18 18 18 18 18 18 18 18 18 18 18 18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0_5	0-5	0-5	1
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
X5 21	Presence of amphibians	0-4	0-4	0-4	0
X507018	Presence of fish	0-4	0-4	0-4	0
2	Evidence of wildlife use	0-6	0-5	0-5	0
28. A	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter or	n first page) 🤌			23

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

50mp008

otal Points: tream is at least intermittent ≥ 19 or perennial if ≥ 30*	am Determina	weak 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Other e.g. Quad Name: Moderate 2 2 2 2 2 2 2 2	Strong 3 3 3 3 3
otal Points: ream is at least intermittent ≥ 19 or perennial if ≥ 30* . Geomorphology (Subtotal = Z) . Continuity of channel bed and bank . Sinuosity of channel along thalweg . In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence . Particle size of stream substrate . Active/relict floodplain . Depositional bars or benches / Recent alluvial deposits 3. Headcuts	Absent 0 0 0 0 0 0 0 0 0 0 0 0 0	Weak 1 1 (1) (1) 1	Moderate 2 2 2 2 2 2	Strong 3 3 3 3 3
Continuity of channel bed and bank Sinuosity of channel along thalweg In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence Particle size of stream substrate Active/relict floodplain Depositional bars or benches Recent alluvial deposits Headcuts	0 0 0 0 0 0 0 0	1 1 (1) (1) 1 1	2 2 2 2 2 2	3 3 3 3 3
Continuity of channel bed and bank Sinuosity of channel along thalweg In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence Particle size of stream substrate Active/relict floodplain Depositional bars or benches Recent alluvial deposits Headcuts	0 0 0 0 0 0 0	1 1 (1) (1) 1 1	2 2 2 2 2 2	3 3 3 3 3
a. Continuity of channel bed and bank NA Sinuosity of channel along thalweg In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence Particle size of stream substrate Active/relict floodplain Depositional bars or benches Recent alluvial deposits Headcuts	© 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(1) (1) 1	2 2 2 2 2	3 3 3 3
. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence . Particle size of stream substrate 5. Active/relict floodplain 6. Depositional bars or benches 7. Recent alluvial deposits 8. Headcuts	0 0 0 0 0 0	(1) (1) 1	2 2 2	3 3 3
ripple-pool sequence . Particle size of stream substrate . Active/relict floodplain . Depositional bars or benches '. Recent alluvial deposits 3. Headcuts	0 (0) (0) (0)	1 1	2 2	3 3
. Particle size of stream substrate . Active/relict floodplain . Depositional bars or benches / Recent alluvial deposits 3. Headcuts	(o)	1 .	2	3
. Active/relict floodplain i. Depositional bars or benches '. Recent alluvial deposits 3. Headcuts	(o)	1 .	2	
. Depositional bars or benches . Recent alluvial deposits . Headcuts	(O)			
. Recent alluvial deposits B. Headcuts	(6)			3
3. Headcuts		1 1	2	3
	(0)	1	2	3
), Grade control	(0,	0.5	1	1.5
	(0)	0.5	1	1.5
0. Natural valley		0.0	Yes	
11. Second or greater order channel	7 140			
artificial ditches are not rated; see discussions in manual		,		
B. Hydrology (Subtotal =)	0	0	2	3
12. Presence of Baseflow		<u> </u>	2	3.
13. Iron oxidizing bacteria	0		0.5	10)
14. Leaf litter	1.5	1 0.5	1 1	1.5
15. Sediment on plants or debris	(0)	0.5 0.5	1 1	1.5
16. Organic debris lines or piles	<u> (0)</u> N	0.5	l	s = 3
17. Soil-based evidence of high water table?		0-0	1	
C. Biology (Subtotal = 2)		2	0	0
18. Fibrous roots in streambed	3	2	<u> </u>	0
19. Rooted upland plants in streambed	3 Ø	1	2	3
20. Macrobenthos (note diversity and abundance)		 	2	3
21. Aquatic Mollusks	<u>@</u>	0.5	1 1	1.5
22. Fish	(b) (c)	0.5	1	1.5
23. Crayfish		0.5	1	1.5
24. Amphibians	(O)	0.5	1	1.5
25. Algae	10		OBL = 1.5 Other	
26. Wetland plants in streambed	<u>l</u>		OBE 1.0 Galo.	
*perennial streams may also be identified using other methods.	A AP	auel		



Waterbody scmp008 facing east upstream.



Waterbody scmp008 facing west downstream.



Waterbody scmp008 facing southwest across channel

MC:	4		

Site # (indicate on attached ma	ap)
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1. Applicant's name: Dominion 2. Evaluator's name: EST (Lloper) 3. Date of evaluation: 91914 4. Time of evaluation: 2:30 pm
5. Name of stream: UNT to Cape Fear River 6. River basin: Cape Fear
7. Approximate drainage area: 300 acres 8. Stream order:
9. Length of reach evaluated: 50 ft 10. County: Cumberland
11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35, 20067 Longitude (ex77.556611): -78, 67812
Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any): Proposed pipeline
15. Recent weather conditions: News water within 24 hrs.
16. Site conditions at time of visit: was disturbed drawage between an field. 17. Identify any special waterway classifications known:Section 10Tidal WatersEssential Fisheries HabitaTrout WatersOutstanding Resource WatersNutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? (ES) NO If yes, estimate the water surface area: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
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: \(\frac{10}{\infty}\)% Residential \(\bigcup_\%\) Commercial \(\bigcup_\%\) Industrial \(\bigcup_\%\) Agricultural
* (Train Right)
* (Top of Bank) 22. Bankfull width: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
24. Channel slope down center of stream: Flat (0 to 2%)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bendsFrequent meanderVery sinuousBraided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based of location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign point 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 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 pastual 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): 67 Comments:
Evaluator's Signature This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stresquality. The total score resulting from the completion of this form is subject to USACE approval and does not imply particular mitigation ratio or requirement. Form subject to change – version 06 03. To Comment, please call 919-876-8441 x 2

	#1	CHARACTERISTICS:	ECOREG Coastal	ION:POINI Piedmont	RANGE	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0-5	5
	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	5
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3.
A STATE OF THE PARTY OF THE PAR	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	_3_
2	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	4.
	<i>i</i> 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	4.
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0-4	0-2	5_
	[*] 9	Channel sinuosity (extensive channelization = 0; natural meander = max points) Sediment input	0 – 5	0-4	0-3	4
1.5X	10	(extensive deposition= 0; little or no sediment = max points) Size & diversity of channel bed substrate	0-5	0-4	0-4	2
	11	(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	NA*	0-4	0-5	
×	12	(deeply incised = 0; stable bed & banks = max points) Presence of major bank failures	0-5	0-4	0-5	3
STABILITY	13	(severe erosion = 0; no erosion, stable banks = max points) Root depth and density on banks	0-5	0-5	0-5	3
M	14	(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production	0-3	0-4	0-5	1
	15	(substantial impact =0; no evidence = max points)	0-5	0-4	0-5	2
ITAL	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	06	2
ITA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	1 .	0-6	0-6	4
HAB	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points) Substrate embeddedness	0-5	0-5	0-5	1
総統	19	(deeply embedded = 0; loose structure = max) Presence of stream invertebrates (see page 4)	NA*	0-4	0-4	
>	20	(no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
000	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	3
RIOTOGY	22	(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	5
$C_{i,i,k}$		Total Points Possible	100	100	100	
13		TOTAL SCORE (also enter or	n first page) 🗀			-َ ما

^{*} These characteristics are not assessed in coastal streams.

scmp009

NC DWQ Stream Identification Form Version 4.11 Project/Site: ACP Latitude: 35, 20067 Date: Q county: Camberland Longitude: -78,678/2. (LRoper Evaluator: Other Total Points: Stream Determination (circle one) Ephemeral Intermittent Perennial e.g. Quad Name: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = 13.5) Strong Weak Moderate Absent 3 0 .1 1a. Continuity of channel bed and bank 3 0 2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, 3 1 0 ripple-pool sequence 3 0 4. Particle size of stream substrate (3)2 0 1 5. Active/relict floodplain **(D)** 2 3 0 6. Depositional bars or benches 2 3 0 7. Recent alluvial deposits 2 3 Ø) 8. Headcuts 4) 1.5 0.5 9. Grade control 1.5 0.5, 0 10. Natural valley Yes = 3 $N_0 = 0$ 11. Second or greater order channel a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = (3) 0 1 12. Presence of Baseflow 2 1 (0) 13. Iron oxidizing bacteria 0 0.5 (1.5) 14. Leaf litter 1.5 0.5 1 15. Sediment on plants or debris (1.) 1.5 0.5 0 16. Organic debris lines or piles (Yes = 3 No = 0 17. Soil-based evidence of high water table? C. Biology (Subtotal = 0 2 /3) 18. Fibrous roots in streambed 0 13 2 1 19. Rooted upland plants in streambed 3 1 2 (10) 20. Macrobenthos (note diversity and abundance) 3 2 1 (0) 21. Aquatic Mollusks 1.5 70) 0.5 22. Fish 1.5 1 (o) 0.5 23. Crayfish (1.5) 0.5 24. Amphibians 1.5 (0) 0.5 25. Algae FACW = 0.75; OBL = 1.5 Other = 0 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: -mcwbong wcmp.009 70 Sketch: scmp809 u

OHWM width: 8 Ft. Top of Bank width: 10 ft.



Waterbody scmp009 facing northeast upstream.



 $Waterbody\ scmp009\ facing\ southwest\ downstream.$



Waterbody scmp009 facing south across channel

DWO				
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Site =____ (indicate on attached map)

scmp 010



Provide the following information for the stream reach und	
I. Applicant's name: Dominion	2. Evaluator's name: EST (LKOper)
3. Date of evaluation: 911014	4. Time of evaluation: 945 am
5. Name of stream: UNT to Cape Fear River	6. River basin: Cape Fear
7. Approximate drainage area: 200 ac	8. Stream order:
9. Length of reach evaluated: 50ft	10. County: Cumberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): VA
.atitude (ex. 34.872312): 35,19527	Longitude (ex77.556611); - 78, 68217
Method location determined (circle): PS Topo Sheet Ortho (.	
13. Location of reach under evaluation (note nearby roads and	
	South of Godwin Falcon Rd
14. Proposed channel work (if any): PVD PD5ed P	ipeline
15. Recent weather conditions: Kam within	70 N/S.
16. Site conditions at time of visit: Undis turbed	
17. Identify any special waterway classifications known:	Section 10 Tidal Waters Essential Fisheries Habitat
	Nutrient Sensitive Waters \(\sum \) Water Supply Watershed \(\frac{\frac{1}{\cup}}{\cup} (I-IV) \)
18. Is there a pond or lake located upstream of the evaluation p	point? (YES) NO If yes, estimate the water surface area: 3 44
19. Does channel appear on USGS quad map? (ES) NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:	% Commercial% Industrial 45% Agricultural
	% Cleared / Logged% Other ()
* (Top of Bank) 22. Bankfull width: 7++	23. Bank height (from bed to top of bank): 274
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the clinto a forest), the stream may be divided into smaller reaches	Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points pregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a notitions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture a that display more continuity, and a separate form used to evaluate each the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): Commo	ents:
Evaluator's Signature	Date 9/10/14 as a guide to assist landowners and environmental professionals in
This channel evaluation form is intended to be used dally gathering the data required by the United States Army	, as a guide to assist landowners and environmental professionals in y 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.

#		CHARACTERISTICS		ION POINT Piedmont	RANGE Mountains	SCORE
1	S.3-18	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0-5	5
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	Tin Control
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	3
	5	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	4
	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	Traine)
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	۵
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	3
1	0	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	3
	1	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	- AMARINA TO S
	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0-5	0-5	3
ABI	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	hou
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	4
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2
	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	5
	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	4
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
QGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
8	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	5
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter or	first page)			וד

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11 Project/Site: ACP Latitude: 35, 19527 Date: county: Comberland L Roper) Longitude: Evaluator: Other **Total Points:** Stream Determination (circle-one) 30,5 Ephemeral Intermittent Perennial e.g. Quad Name: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = 15 Weak Strong Moderate Absent (3) 0 1a. Continuity of channel bed and bank (2) 0 1 2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, 3 1 0 ripple-pool sequence 3 0 1 4. Particle size of stream substrate 3 1 0 5. Active/relict floodplain 3 0 1 6. Depositional bars or benches 3 0 0 7. Recent alluvial deposits 2 3 (O) 8. Headcuts 1.5 0.5 n 9. Grade control 1 1.5 0 0.510. Natural valley (No = 0 Yes = 3 11. Second or greater order channel a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 1 2 (3) 12. Presence of Baseflow 1 2 (15) 3 13. Iron oxidizing bacteria 0.5 0 14. Leaf litter 1.5 **(**5) 1 0 15. Sediment on plants or debris 1.5 1 0 16. Organic debris lines or piles No = 0 $\sqrt{\text{es}} = 3$ 17. Soil-based evidence of high water table? C. Biology (Subtotal = ٥ 2 1 18. Fibrous roots in streambed 0 2 1 19. Rooted upland plants in streambed 3 **6** 2 1 20. Macrobenthos (note diversity and abundance) 3 2 1 <u>(り</u> 21. Aquatic Mollusks 1.5 <u>(0)</u> 1 0.5 22. Fish 1.5 1 **(**0) 0.5 23. Crayfish 1.5 0.5 0 24. Amphibians 1.5 Ő 0.5 25. Algae FACW = 0.75; OBL = 1.5 /Other = 0 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: Sketch: wemp 010 W scmp010 W OHWM width: 6 A

Top of Bank width: 7ft



Waterbody scmp010 facing southwest upstream.



Waterbody scmp010 facing northeast downstream.



Waterbody scmp010 facing southwest across channel

USACE.	A ID≅		

DWO≓		

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scmp Oll



STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under	. In
1. Applicant's name: Dominion	2. Evaluator's name: EST (L COPE)
3. Date of evaluation: 9/10/14	4. Time of evaluation: 130 am
5. Name of stream: UNT to Cape Fear River	6. River basin: Cape Fear
7. Approximate drainage area: 75 ac	8. Stream order:
9. Length of reach evaluated: 50 F+	10. County: Cumberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):n/a
Latitude (ex. 34.872312): 35.1929	Longitude (ex77.556611): 78.666
Method location determined (circle): GPS Topo Sheet Onho (A 13. Location of reach under evaluation (note nearby roads and I between 95 * V5301 * Cost	
14. Proposed channel work (if any): proposed	pipeline
15. Recent weather conditions: Por the Williams	1 48 hc
16. Site conditions at time of visit: was 510bec	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive Waters X Water Supply Watershed \overline{V} (I-IV)
18. Is there a pond or lake located upstream of the evaluation p	oint? (ES) NO. If yes, estimate the water surface area: \ \ \(\omega \omega \)
19. Does channel appear on USGS quad map? YES	20. Does channel appear on USDA Soil Survey? YES
21. Estimated watershed land use: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	% Commercial % Industrial 60% Agricultural
* (Too of Bank)	% Cleared / Logged % Other () 23. Bank height (from bed to top of bank):
y ·	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
	Frequent meander Very sinuous Braided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eco characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather cor comment section. Where there are obvious changes in the clinto a forest), the stream may be divided into smaller reaches	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a additions, enter 0 in the scoring box and provide an explanation in the saracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 65 Comme	nts:
	as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream

1

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.

	#	CHARACTERISTICS	ECOREG	ION POINT Piedmont	RANGE :	SCORE
		Presence of flow / persistent pools in stream	S. C. L. S. C. S. S. C. S.	tu .	S. C.	<u> </u>
1	1	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	4
	7	Evidence of past human alteration	0-6	0-5	0-5	5
	2	(extensive alteration = 0; no alteration = max points)			·	
Ž.	3	Riparian zone	0-6	0-4	0-5	5
		(no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges		Here the second		
	4	(extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	4
		Groundwater discharge	0-3	0-4	0-4	2
KHYSICAL	5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	- - -	.0-4	0-4	
4	6	Presence of adjacent floodplain	0-4	0-4	0-2	2
12.5		(no floodplain = 0; extensive floodplain = max points)	4.4			
	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	3
4		Presence of adjacent wetlands				
	. 8	(no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0-4	0-2	<u> </u>
	1	Channel sinuosity	0 – 5	0-4	35.0−3	Lud
) (9	(extensive channelization = 0; natural meander = max points)	0-3	0-4	0-3	
	10	Sediment input	0-5	0-4	0-4	4
	10	(extensive deposition= 0; little or no sediment = max points)				
	11	Size & diversity of channel bed substrate	NA*	0 – 4	0-5	
		(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	(SAME ALTON AND MARKET AND MARK	*	 	
	12	(deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	. "3
STABILITY		Presence of major bank failures	0-5	0.5	0.5	
	13	(severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	_4_
B	1.4	Root depth and density on banks	0-3	0 – 4	0-5	2
₹.	14	(no visible roots = 0; dense roots throughout = max points)	<u> </u>	-	0 3	2
Ś	15	Impact by agriculture, livestock, or timber production	0-5	0-4	0-5	3
24	13	(substantial impact =0; no evidence = max points)		1		
~ %	16	Presence of riffle-pool/ripple-pool complexes	0-3	0-5	0 – 6	3
Н		(no riffles/ripples or pools = 0; well-developed = max points) Habitat complexity	<u> </u>	n sa		20
ITAIL	17	(little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
8		Canopy coverage over streambed		0-5	0 6	4.1
HAB	18	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-3	0-5	
	19	Substrate embeddedness	NA*	0-4	0-4	
	19	(deeply embedded = 0; loose structure = max)	- 35 STATE			
	20	Presence of stream invertebrates (see page 4)	0-4	0-5	0-5	0
		(no evidence = 0; common, numerous types = max points)	_			
֓֓֞֜֜֜֜֜֜֓֓֓֓֓	21	Presence of amphibians	0-4	0-4	0-4	2
	<u> </u>	(no evidence = 0; common, numerous types = max points) Presence of fish			1	- Fra
RIGIOCY	22	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	
7		Evidence of wildlife use	^ ^			1.1
	23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	7
ĩ		The contract of the contract o	100	100	100	
		Total Points Possible	100	N 100 F	100	
		TOTAL SCORE (also enter or	first nage)		NAMES :	وها ا
1		101AL SCORE (also chief of		(Transferrances		4 W

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11 Latitude: 35, Project/Site: A-CP Date: 4 county: Cumberland Longitude: Stream Determination (circle one) Total Points: e.g. Quad Name: Stream is at least intermittent Ephemeral Intermittent Rerennia if ≥ 19 or perennial if ≥ 30* Moderate Strong Weak Absent A. Geomorphology (Subtotal = **(**2) 0 1a. Continuity of channel bed and bank ③ 1 2 0 2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, **(3**) 0 1 2 ripple-pool sequence 3 0 4. Particle size of stream substrate <u>O</u> 3 0 5. Active/relict floodplain 3 0 1 6. Depositional bars or benches 3 O 0 7. Recent alluvial deposits 2 3 6 8. Headcuts 1.5 1 (0.5) 9. Grade control 1.5 1 0 10. Natural valley Yes = 311. Second or greater order channel ^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = ③ 1 0 12. Presence of Baseflow 2 <u>ത</u> 3 13. Iron oxidizing bacteria (1) 0.5 1.5 14. Leaf litter 1.5 0.5 0 15. Sediment on plants or debris 1.5 (1*)* 0.5 0 16. Organic debris lines or piles Yes = 3 No = 017. Soil-based evidence of high water table? C. Biology (Subtotal = 0 1 2 18. Fibrous roots in streambed 0 1 2 19. Rooted upland plants in streambed 3 2 1 20. Macrobenthos (note diversity and abundance) 3 (O) (O) 1 2 21. Aquatic Mollusks 1 1.5 0.5 22. Fish 1.5 (Ō) 0.5 23. Crayfish 1.5 (0,5) 0 24. Amphibians 1.5 25. Algae FACW = 0.75; OBL = 1.5 Other = 0.) 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: study corridor Sketch: scmpOII-OHWM width!

Top of Bank width: 4 ft



Waterbody scmp011 facing south upstream.



Waterbody scmp011 facing north downstream.



Waterbody scmp011 facing southwest across channel

•	
>WC =	

Site =____ (indicate on attached map)



SCMP 022 STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach unc	der assessment:
1. Applicant's name: Downing	2. Evaluator's name: ESI (L RODER)
3. Date of evaluation: 10/16/14	4. Time of evaluation: \Dam
5. Name of stream: UNT to CAREFEAR QUEL	6. River basin: Cape Fear
7. Approximate drainage area: > 50 ac	8. Stream order:
9. Length of reach evaluated: SOF+	10. County: Comberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35. \8788	Longitude (ex77,556611): <u>-78,70469</u>
Method location determined (circle): GPS Topo Sheet Ortho 13. Location of reach under evaluation (note nearby roads and	
	and US301 near McCollum In
14. Proposed channel work (if any): DM 0586	
15. Recent weather conditions: Neary YAIN W	lithin 24hrs.
16. Site conditions at time of visit: undisturbed	
17. Identify any special waterway classifications known:	
	Nutrient Sensitive Waters Water Supply Watershed (I-IV)
	point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? (FE) NO	20. Does channel appear on USDA Soil Survey? (FS) NO
	% Commercial% Industrial 45% Agricultural
50% Forested	% Cleared / Logged% Other ()
* (Top of Bank) 22. Bankfull width: 3,5 ft	23. Bank height (from bed to top of bank): 6 in
24. Channel slope down center of stream: Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Eve to each characteristic within the range shown for the e characteristics identified in the worksheet. Scores should characteristic cannot be evaluated due to site or weather comment section. Where there are obvious changes in the into a forest), the stream may be divided into smaller reach reach. The total score assigned to a stream reach must ra highest quality.	age 2): Begin by determining the most appropriate ecoregion based on ry characteristic must be scored using the same ecoregion. Assign points coregion. Page 3 provides a brief description of how to review the reflect an overall assessment of the stream reach under evaluation. If a conditions, enter 0 in the scoring box and provide an explanation in the character of a stream under review (e.g., the stream flows from a pasture es that display more continuity, and a separate form used to evaluate each nige between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 67 Com	ments:
gathering the data required by the United States Ar quality. The total score resulting from the completi	Date 16/14 It as a guide to assist landowners and environmental professionals i my Corps of Engineers to make a preliminary assessment of stream on of this form is subject to USACE approval and does not imply a ct to change - version 06 03. To Comment, please call 919-876-8441 x 26

in stream max points) ntion max points) max points) max points)	0-5	<u>Piedmout</u> 0 − 4 0 − 5	Mountains 0 – 5	SCORE
max points) max points) max points)	0 – 6	···	0-5	
ntion max points) max points)		···	* -	\subseteq
max points)		0-5		<u></u>
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tc≀= max points)	0-3	0-4	0-4	3
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max points)	0-4	0-4	0-2	4
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nt = max points)	0-5	0-4	0-4	Ц
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= max points)	0-5	0-4	0-5	3
ires				
xš = max points)	0-5	0-5	0-5	3
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ber production				
max points)	0-5	0-4	0-5	· H
complexes				
ped = max points)	0-3	0-5	0-6	· 1
red max points)				
tats = max points)	0-6	0-6	0-6	4
ibed		<u></u>	<u> </u>	
ppy = max points)	0-5	0 - 5	0-5	1 4
ppy — max points)	er gestelle misses er i			1,
re = max)	NA*	0 - 4	0 – 4	
see page 4)	<u>्रिक्त क्षेत्र ने अंतर्के शिक्षा</u>	- **		
es = max points)	0-4	0 – 5	0-5	0
es – max points)				
es = max points)	0-4	0-4	0-4	0
es - max points)				
	0 – 4	0-4	0-4	6
es = max points)	·	<u> </u>	J = 1	
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被几日曾经国际政策 医叶子门科学	100	170	100	19633
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/alen antar an e	A de la reservación	nastania ira	せい ひょうけんしゅぎくきょご かん 御着か デザー	1 100
	e = max points)		$= \max \text{ points}) \qquad 0-6 \qquad 0-5$ $100 \qquad 100$	$= \max \text{ points}) \qquad 0-6 \qquad 0-5 \qquad 0-5$

NC DWQ Stream Identification Form Version 4.11 Project/Site: Latitude: Date: county: Cumberland Longitude: Evaluator: EST Stream Determination (circle one) Other **Total Points:** Ephemeral Intermittent Perennial e.g. Quad Name: 1 Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = 105) Strong Weak Moderate Absent 3 0 1a. Continuity of channel bed and bank 3 0 2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, 2 3 0 ripple-pool sequence 3 0 4. Particle size of stream substrate 3 0 5. Active/relict floodplain 3 2 0 6. Depositional bars or benches 2 3 رز) 7. Recent alluvial deposits 3 2 (Q) 8, Headcuts 1.5 1 9. Grade control 1.5 1 10. Natural valley Yes = 3 No = 011. Second or greater order channel ^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 2 1 0 12. Presence of Baseflow 1 70, 13. Iron oxidizing bacteria 0 <u>1.5</u> 14. Leaf litter 1.5 (1.5) 15. Sediment on plants or debris 1.5 62 0.5 16. Organic debris lines or piles Yes = 3 No = 017. Soil-based evidence of high water table? C. Biology (Subtotal = 2 18. Fibrous roots in streambed 0 3 2 19. Rooted upland plants in streambed 3 2 1 20. Macrobenthos (note diversity and abundance) 2 3 $\overline{\mathcal{M}}$ 21. Aquatic Mollusks 1.5 (O) 0.5 22, Fish 1.5 1 \mathcal{I}_0 0.5 23. Crayfish 1.5 0.5 24. Amphibians 1.5 0.5 25. Algae FACW = 0.75; OBL = 1.5 Other = 0 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. rain within 24 hrs. -scmp/22 Sketch: OHWM width: 3Ft.

Top of Bank width: 3,5 ft.



Waterbody scmp022 facing south upstream.



Waterbody scmp022 facing north downstream.



Waterbody scmp022 facing west across channel

5cm0041 NC DWO Stream Identification Form Version 4.11 Latitude: 35, 18 954 Date: 10/18/16 Project/Site: A (P Longitude: -78:71167 Evaluator: ESI - RODEr County: 6cmo 041 **Total Points:** Stream Determination (circle one) Stream is at least intermittent 30 e.g. Quad Name: Ephemeral Intermittent Perennial if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = 14 Weak Moderate Strong Absent 2 30 1^a Continuity of channel bed and bank 0 1 (2) 3 0 2. Sinuosity of channel along thalweg 1 3. In-channel structure: ex. riffle-pool, step-pool, 3 0 1 (2) ripple-pool sequence 3 0 1 4. Particle size of stream substrate 3 0 2 5. Active/relict floodplain 1 0 1 (2) 3 6. Depositional bars or benches 3 0 1 2 7. Recent alluvial deposits 0 2 3 1 8. Headcuts 1.5 0 0.5 1 9. Grade control 0.5 1.5 10. Natural valley Yes = 3No = 0 11. Second or greater order channel artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 3 2 0 1 12. Presence of Baseflow 1 2 3 13. Iron oxidizing bacteria 1 0 15 1 0.5 14. Leaf litter 1.5 0.5 1 15. Sediment on plants or debris 0 1.5 0 0.5 16. Organic debris lines or piles Yes = 317. Soil-based evidence of high water table? No = 0C. Biology (Subtotal = 0 2 18. Fibrous roots in streambed 2 0 3) 1 19. Rooted upland plants in streambed 2 3 0 20. Macrobenthos (note diversity and abundance) 1 2 3 0 21. Aquatic Mollusks 1 1.5 70 0.5 1 22. Fish 0.5 1 1.5 0 23. Crayfish 0 1.5 0.5 24. Amphibians 0 1.5 25. Algae 0 0.5 FACW = 0.75; OBL = 1.5 Other = 0 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. intised channe

Sisk Culbreth Rd

OHWM: 4 ft

Sketch:

Bank; 6ft





Provide the following information for the stream reach under assessment: 2. Evaluator's name: ESI - Roper 1. Applicant's name: Dominion 3. Date of evaluation: 10/18/16 4. Time of evaluation: 10 am 5. Name of stream: Unt to Cope Fear River basin: Cape Fear 7. Approximate drainage area: 100 ac 8. Stream order: 0 9. Length of reach evaluated: 30ft 10. County: Cumberland 11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision name (if any): none Latitude (ex. 34.872312): 35.18954 Longitude (ex. -77.556611): -78.71167 Method location determined (circle): 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): East of Sisk Culbreth Rd 14. Proposed channel work (if any): TBD 15. Recent weather conditions: Warm and dry 16. Site conditions at time of visit: ag. field + wooded edges 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: 19. Does channel appear on USGS quad map? YES 10. Does channel appear on USDA Soil Survey? YES 10. Does channel appear on USDA Soil Survey? YES 10. 21. Estimated watershed land use: 10% Residential ___% Commercial ___% Industrial ___% Agricultural SD% Forested ____% Cleared / Logged ____% Other (______) 22. Bank full width: 6 ft 23. Bank height (from bed to top of bank): 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): 41 Comments:

Evaluator's Signature Date 10/18/16
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.

		CHAPA CEEDICEICO	ECORE			SCORE
	#	CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	5
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0-5	0-5	2
	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	3
	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
13	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	0
	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)	NA*	0-4	0-5	_
	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0-5	0-5	5
	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
2	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
100000	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2
	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
HADILAL	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	4
2000	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	_
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	D
DIOLOGI	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	3
	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	
		Total Points Possible	100	100	100	

^{*} These characteristics are not assessed in coastal streams.



Waterbody data point scmo0041 facing north upstream.



Waterbody data point scmo041 facing south downstream.



Waterbody data point scmo041 facing east across.

USACE AID#	DWQ #	Site #	(indicate on attached map)
STREAN Provide the following information for	SCANCOC	SSMENT WORKSHI	EET
1. Applicant's name: Dominion 3. Date of evaluation: 2/10/2015 5. Name of stream: UT to Cope 7. Approximate drainage area: 50 9. Length of reach evaluated: 100 11. Site coordinates (if known): prefer is Latitude (ex. 34.872312): 35° 10° 58,97 Method location determined (circle): GPS 13. Location of reach under evaluation (notes)	2. Ex Feas River 6. Ri acres 8. Str feet 10. Con n decimal degrees. 12. S Topo Sheet Ortho (Aerial) I	raluator's name: Nation me of evaluation: 11:10 representation: 11:10 representation: 11:10 representation: 13:10 representation name (if any): 12:10:10:10:10:10:10:10:10:10:10:10:10:10:	
14. Proposed channel work (if any): No. 15. Recent weather conditions: No. 16. Site conditions at time of visit: No. 17. Identify any special waterway classified Trout Waters No. Outstanding Research Proposed Propose	tain within piermal cations known: NA Section prince Waters NA Nutrier mof the evaluation point? The piermap? YES NO 20. D. 20. D. 20. Residential %	nt Sensitive Waters NA Wate	Soil Survey? YES 👀
22. Bankfull width:	23 . B	Cleared / Logged <u>5</u> % Othe ank height (from bed to top of b	oank): 2.5°
24. Channel slope down center of stream:		/	(4 to 10%)Steep (>10%)
Instructions for completion of workshelocation, terrain, vegetation, stream classito each characteristic within the range characteristics identified in the workshee characteristic cannot be evaluated due to comment section. Where there are obviounto a forest), the stream may be divided reach. The total score assigned to a streatighest quality. Total Score (from reverse):	seet (located on page 2): B fication, etc. Every characters shown for the ecoregion. It. Scores should reflect an site or weather conditions, us changes in the character of the smaller reaches that disput meach must range between the comments: Comments:	egin by determining the most ristic must be scored using the Page 3 provides a brief desoverall assessment of the streat enter 0 in the scoring box and a stream under review (e.g., lay more continuity, and a sepan 0 and 100, with a score of 1	appropriate ecoregion based on a same ecoregion. Assign points ecription of how to review the arm reach under evaluation. If a d provide an explanation in the the stream flows from a pasture the stream flows from a pasture arate form used to evaluate each 00 representing a stream of the
fait soud track with a followed wetland.	snised gendel, be	IM base, Stleam is	associated with a

Evaluator's Signature Core Reger 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.

	#	CHARACTERISTICS	ECOREG	ION POINT	RANGE	SCORE
	п	CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	3
		Evidence of past human alteration			<u> </u>	
	2	(extensive alteration = 0; no alteration = max points)	0-6	0 – 5	0 – 5	5
	3	Riparian zone	0-6	0-4	0 – 5	3
		(no buffer = 0; contiguous, wide buffer = max points)	0 0			
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	4
П	5	Groundwater discharge	0-3	0-4	0 1	11
PHYSICAL		(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	7
SI	6	Presence of adjacent floodplain	0 - 4	0-4	0 - 2	4
		(no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access				1 1
	7	(deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0 - 2	4
	8	Presence of adjacent wetlands	0-6	0-4	0-2	4
		(no wetlands = 0; large adjacent wetlands = max points)	0-0	0-4	0-2	
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0 - 3	4
	10	Sediment input			_	^
	10	(extensive deposition= 0; little or no sediment = max points)	0 - 5	0 – 4	0 – 4	2
	11	Size & diversity of channel bed substrate	NA*	0-4	0-5	a
		(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening		-		
	12	(deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0 - 5	4
STABILITY	13	Presence of major bank failures	0-5	0-5	0 5	3
	υ.	(severe erosion = 0; no erosion, stable banks = max points)	0-3	0-3	0 – 5	
AE	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0 – 5	4
ST		Impact by agriculture, livestock, or timber production				2.6
	15	(substantial impact =0; no evidence = max points)	0-5	0-4	0 – 5	4
	16	Presence of riffle-pool/ripple-pool complexes	0-3	0-5	0-6	3
Ы		(no riffles/ripples or pools = 0; well-developed = max points)		9 2		
TA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	\mathcal{Z}
HABITAT	18	Canopy coverage over streambed	0-5	0.6	0.5	2
HA	10	(no shading vegetation = 0; continuous canopy = max points)	V — 3	0-5	0 – 5	<u> </u>
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	-3
	3.	Presence of stream invertebrates (see page 4)				
ايرا	20	(no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	Q
[5]	21	Presence of amphibians	0-4	0-4	0-4	0
		(no evidence = 0; common, numerous types = max points) Presence of fish			•	
BIOLOGY	22	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0 – 4	\circ
m l	23	Evidence of wildlife use	0-6	0.5	0.5	3
	23	(no evidence = 0; abundant evidence = max points)	U-0	0-5	0-5	To the second se
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on fi	rst nage)			C8
		paractaristics are not assessed in coastal streams	Label			

^{*} These characteristics are not assessed in coastal streams.

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification For	m Version 4.11	BCMCOORI		
Date: 2/10/2015	Project/Site:	ACP	Latitude: 35°	10'58.97"N
Evaluator: Natural Besonce GOUP	County: Com	ibecland	Longitude: 7 %	3°42'36.18"h
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determi Ephemeral Inte	nation (circle one) rmittent (Perennial	Other e.g. Quad Name:	
A. Geomorphology (Subtotal =	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	
2. Sinuosity of channel along thalweg	0	1	2	(3) (3)
3. In-channel structure: ex. riffle-pool, step-pool,	0	1	- <u> </u>	
ripple-pool sequence 4. Particle size of stream substrate			(2)	3
Active/relict floodplain	0	(D)	2	3
Active/relict floodplain Depositional bars or benches	0	1	2	<u> </u>
Recent alluvial deposits	0	1	<u>(2)</u>	3
Necent and variety of the second and va	0	Q	2	3
9. Grade control	0	<u>(1)</u>	2	3
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	0	0.5	1	(1.5)
^a artificial ditches are not rated; see discussions in manual	No	= 0	Yes =	3
B. Hydrology (Subtotal =)				
12. Presence of Baseflow				
	0	1	2	<u>(3)</u>
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1,5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles17. Soil-based evidence of high water table?	0	0.5	1	1.5
C. Biology (Subtotal = \$75)	No	= 0	(Yes =	3
18. Fibrous roots in streambed				
Rooted upland plants in streambed	3	2	1	0
	3	2	1	0
Macrobenthos (note diversity and abundance) Aquatic Mollusks	0	11	2	3
22. Fish	0	1	2	3
23. Crayfish		0.5	1	1.5
24. Amphibians		0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	(0)	0.5	1	1.5
*perennial streams may also be identified using other metho	(FACW = 0.75; OBL	= 1.5 Other = 0	
Notes:	ods. See p. 35 of manual.			
110.00.				
Sketch:	Foresta cethni		, K	Rife
	perential Spol	3Heart		
KZ // X	* 50 VI.	- *		\\H\$'



Waterbody SCMC001 facing south upstream



Waterbody SCMC001 facing west across



Waterbody SCMC001 facing north downstream

USACE AID#	
USAUE AID#	

DWO	#
$\nu \sim$	TT.

Site	#	
SHE	#	

(indicate on attached map)



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: Natural Resource Group
3. Date of evaluation: 2/10/2015	4. Time of evaluation: 1:00 PM
5. Name of stream: UT to Cape Feat River	6. River basin: Cape Fear
7. Approximate drainage area: ~50 & C(e)	8. Stream order: 2 n2
9. Length of reach evaluated ~ 200 Feet	10. County: Comberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
	Longitude (ex77.556611): 78°42′44.19 " W
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and la	Lerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any): None	
15. Recent weather conditions: light Cain within	n previous 24 hours
16. Site conditions at time of visit: Started to Cain	at the time of survey
	Section 10 , MA Tidal Waters MA Essential Fisheries Habitat
<u>MA</u> Trout Waters <u>MA</u> Outstanding Resource Waters <u>MA</u>	Nutrient Sensitive Waters WM Water Supply Watershed MA (I-IV)
18. Is there a pond or lake located upstream of the evaluation po	int? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? (YES)	20. Does channel appear on USDA Soil Survey? (YES)
	% Commercial% Industrial% Agricultural
100% Forested	% Cleared / Logged% Other ()
22. Bankfull width: 30 1	23. Bank height (from bed to top of bank): 5
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity: Straight Occasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every classifica	2): Begin by determining the most appropriate ecoregion based on haracteristic must be scored using the same ecoregion. Assign points agion. Page 3 provides a brief description of how to review the ect an overall assessment of the stream reach under evaluation. If a ditions, enter 0 in the scoring box and provide an explanation in the racter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 77 Comment by a beaver dam located visiteam. The total width of the bigided Systems	1. Stream runs through a forested wetland
00.	7.10.15
Evaluator's Signature of Keylon This channel evaluation form is intended to be used only as	Date Z-10-15 a guide to assist landowners and environmental professionals in
gathering the data required by the United States Army C	Corps of Engineers to make a preliminary assessment of stream 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.

l n	GILADA COMPONENCO	ECOREG	ION POINT	'RANGE	SCORE
#	CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
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	4
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	4
6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	4_
7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	4
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	4
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	4
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0 – 4	4
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	. 0-4	0-5	Ö
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0 – 5	4
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0 – 5	4
13	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0 – 5	4
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0 – 4	0-5	_ 4
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	5
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0-6	45
17	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0-5	0-5	4
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	4
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	0
21 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	3
100	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fi	irst page)			77

^{*} These characteristics are not assessed in coastal streams.



NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11 SCMCOO NC DWQ Stream Identification Form Version 4.11

Date: 2/10/2015	Project/Site: ALP	Latitude: 35° 10' 57. 51"
Evaluator: Natural Resource Group	County: Combestand	Longitude: 78° 42'44 19 1 W
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent (Perennial)	Other e.g. Quad Name:

A. Geomorphology (Subtotal = <u>22.5</u>)	Absent	Weak	Moderate	Strong
l ^{a.} Continuity of channel bed and bank	0	1	2	<u> </u>
2. Sinuosity of channel along thalweg	0	1	2	(3)
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
Particle size of stream substrate	0	(b)	2	3
5. Active/relict floodplain	0	1	2	(3\
5. Depositional bars or benches	0	1	(2)	<u> </u>
7. Recent alluvial deposits	0	Ó	2	3
3. Headcuts	0	4	2	3
9. Grade control	0	0.5	(B)	(1.5)
0. Natural valley	0	0.5	7	1.5
Second or greater order channel		lo = 0	(Yes	
artificial ditches are not rated; see discussions in manual	1 ''		7.62	
B. Hydrology (Subtotal = $\frac{9.5}{}$)				
2. Presence of Baseflow	0	1	2	(3)
Iron oxidizing bacteria	0	<u>(1)</u>	2	3
4. Leaf litter	1.5		0.5	6
5. Sediment on plants or debris	0	0.5	1	(1.5)
6. Organic debris lines or piles	0	0.5	6	1.5
7. Soil-based evidence of high water table?	N	lo = 0	(Yes =	= 3
C. Biology (Subtotal = <u>7, 75</u>)	1			
8. Fibrous roots in streambed	<u>(3)</u>	2	1	Ø.
9. Rooted upland plants in streambed	<u>(3)</u>	2	1	63
Macrobenthos (note diversity and abundance)	6	1	2	3
1. Aquatic Mollusks	6	1	2	3
2. Fish	6	0.5	1	1.5
3. Crayfish	(i)	0.5	1	1.5
4. Amphibians	0	0.5	1	1.5
5. Algae	0	0.5	(1)	1.5
6. Wetland plants in streambed			DBL = 1.5 Other = 0	
perennial streams may also be identified using other methods.	See p. 35 of manu	al.		
lotes: Large beaver dam upstream ar			dams alon	19 Strong
Tesult in a brailed system				1
Sketch: Floi)	5 0		Bont O	Ponere
		>	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	> '.



Waterbody SCMC002 facing south upstream



Waterbody SCMC002 facing west across



Waterbody SCMC002 facing north downstream

# USACE AID#	DWQ #	S	ite # (ir	ndicate on at	ttached map)
STREAM QUA	LITY ASSES	SMENT WORK	KSHEET		
Provide the following information for the strea	m reach under asses	sment:			
1. Applicant's name: Dominion	2. Eva	luator's name: Nate	ral Reso	ource 6	Proup
3. Date of evaluation: 2/10/2015	4. Tim	e of evaluation: <u>9</u> :	15 AM		
5. Name of stream: UT to Cape Feat	River 6. Rive	er basin:_Cape Fe	ar		
7. Approximate drainage area: ~ 25 acres	8. Stre	am order:	****		
9. Length of reach evaluated: 100 Ft.		unty: Comberland	<u> </u>		
11. Site coordinates (if known): prefer in decimal		bdivision name (if any			
Latitude (ex. 34.872312): 35° 10' 54.902' N	Longi	tude (ex. –77.556611): 7	8 42 45	! 282 ° 4	<u>/</u>
Method location determined (circle): GPS Topo SI	neet Ortho (Aerial) Ph	oto/GIS Other GIS	Other		
13. Location of reach under evaluation (note near	y roads and landmark	cs and attach map ident	tifying stream	(s) location):
14. Proposed channel work (if any): None					
15. Recent weather conditions: 1:qh+ [aid	N WITHIN DRY	tous 24 hour	ς		
16. Site conditions at time of visit: Norma I	,				
17. Identify any special waterway classifications k	nown: NA Section	n 10	iters MA	Essential Fi	sheries Habita
NA Trout Waters NA Outstanding Resource Wa			-		
18. Is there a pond or lake located upstream of the					
19. Does channel appear on USGS quad map? Y	_	es channel appear on U			
21. Estimated watershed land use:% Resid		ommercial			
2) 40% ree % Fores		leared / Logged			
22. Bankfull width: 3	23 . Ba	nk height (from bed to	top of bank):	4 1	
24. Channel slope down center of stream:Fla	t (0 to 2%)Gen	le (2 to 4%)M	oderate (4 to	10%) 5	Steep (>10%)
25. Channel sinuosity:StraightOccasio	/				
Instructions for completion of worksheet (local location, terrain, vegetation, stream classification, to each characteristic within the range shown characteristics identified in the worksheet. Score characteristic cannot be evaluated due to site or comment section. Where there are obvious changinto a forest), the stream may be divided into smareach. The total score assigned to a stream reach highest quality.	etc. Every character for the ecoregion. es should reflect an o weather conditions, of ges in the character of ller reaches that displanmust range between	istic must be scored us Page 3 provides a bit verall assessment of the enter 0 in the scoring of a stream under review ay more continuity, and and 100, with a score	sing the same rief description he stream real box and pro- w (e.g., the standard a separate ore of 100 re-	e ecoregion. on of how ach under ex vide an exp ream flows form used to presenting a	Assign point to review the valuation. If a lanation in the from a pasture o evaluate each
Total Score (from reverse): 45	Comments: Ep	hemeral Chinnel	1 that	dains	He
agricultural field located up	istram,				
0. 4.			2-107-	15	
Evaluator's Signature Ok Collection form is interested to be	ugod only and a til	Date	2-10-		
This channel evaluation form is intended to be gathering the data required by the United Standard, The total score resulting from the coparticular mitigation ratio or requirement. For	ates Army Corps of ompletion of this fo	f Engineers to make rm is subject to USA	a prelimina ACE approv	ry assessme al and does	ent of streams not imply a

#	CHARACTERISTICS	ECORE	GION POINT	POINT RANGE	
		Coastal	Piedmont	Mountain	SCOR
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	A
3	Evidence of past human alteration (extensive alteration = 0; no alteration = max points) Riparian zone	0-6	0-5	0-5	4
4	(no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges	0-6	0-4	0-5	3
5	(extensive discharges = 0; no discharges = max points) Groundwater discharge	0-5	0-4	0-4	<i>L</i>
- 6	(no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain	0 – 3	0-4	0-4	0
7	(no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access	0-4	0-4	0-2	
8	(deeply entrenched = 0; frequent flooding = max points) Presence of adjacent wetlands	0-5	0 – 4	0-2	2
9	(no wetlands = 0; large adjacent wetlands = max points) Channel sinuosity	0-6	0-4	0-2	0
10	(extensive channelization = 0; natural meander = max points) Sediment input	0-5	0-4	0 – 3	Ч
10	(extensive deposition= 0; little or no sediment = max points) Size & diversity of channel bed substrate	0 – 5	0-4	0-4	The
12	(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	NA*	0-4	0 – 5	0
13	(deeply incised = 0; stable bed & banks = max points) Presence of major bank failures	0-5	0-4	0 – 5	3
13	(severe erosion = 0; no erosion, stable banks = max points) Root depth and density on banks	0-5	0-5	0-5	4
15	(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production	0 – 3	0-4	0-5	4
16	(substantial impact =0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes	0-5	0-4	0 – 5	3
17	(no riffles/ripples or pools = 0; well-developed = max points) Habitat complexity	0-3	0-5	0-6	2
18	(little or no habitat = 0; frequent, varied habitats = max points) Canopy coverage over streambed	0-6	0-6	0-6	2
19	(no shading vegetation = 0; continuous canopy = max points) Substrate embeddedness	0-5	0 – 5	0-5	3
20	(deeply embedded = 0; loose structure = max) Presence of stream invertebrates (see page 4)	NA*	0-4	0-4	İ
21	(no evidence = 0; common, numerous types = max points) Presence of amphibians	0-4	0-5	0-5	\bigcirc
22	(no evidence = 0; common, numerous types = max points) Presence of fish	0-4	0-4	0-4	0
23	(no evidence = 0; common, numerous types = max points) Evidence of wildlife use	0-4	0-4	0 – 4	\bigcirc
	(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 racteristics are not assessed in coastal streams.	page)			45

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

SCMC003

NC DWQ Stream Identification For		A A D	7-8	10/0: 0
	Project/Site:		Latitude: 35	10 54.90"N
Evaluator: Natural Resource Group	County: Comi	serbanz	Longitude: 78	10' 54.90" N 2° 4 2' 49, 28
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determi	nation (circle one) rmittent Perennial	Other e.g. Quad Name:	W = 0.00
A. Geomorphology (Subtotal = 105)	Absent	Weak	Moderate	
1 ^{a.} Continuity of channel bed and bank	0	vveak	Moderate (2)	Strong
Sinuosity of channel along thalweg	0	1	- 3	<u>3</u>
3. In-channel structure: ex. riffle-pool, step-pool,			2	
ripple-pool sequence	0	1	②	3
Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	O	(0.5)	1	1.5
10. Natural valley	(6)	0.5	1	1.5
11. Second or greater order channel	(No	= 0	Yes =	
artificial ditches are not rated; see discussions in manual	Mary and American Ame			
B. Hydrology (Subtotal = 1.5)		ş		
12. Presence of Baseflow	6	1	2	3
13. Iron oxidizing bacteria	(6)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?		= 0	Yes =	
C. Biology (Subtotal = 2.75)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	2	75	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish		0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae		0.5	1	1.5
26. Wetland plants in streambed			= 1.5 Other = 0	1.5
*perennial streams may also be identified using other meth	ods See n 35 of manual	TAOVV - U.T.J., OBL	- 1.5 Other - 0	
Notes:	ous. occ p. so of manual.			
Sketch: 12 12 12 12 12 12 12 12 12 12 12 12 12	Focested			
3. S.	Flow >77			



Waterbody SCMC003 facing north upstream



Waterbody SCMC003 facing west across



Waterbody SCMC003 facing south downstream

	STREAM QUALITY ASSESSMENT WO	1
USACE AID#	DWQ #	 ndicate on attached map)

-	
TALKS AND DESCRIPTION OF THE PERSON OF THE P	
18:11.3:31	
15: : 21:21	

ALITY ASSESSMENT WORKSHEET SCMCOSS



Provide the following information for the stream reach un-	der assessment:
1. Applicant's name: Dominion	2. Evaluator's name: Natural Resource Group
3. Date of evaluation: 2/13/2015	4. Time of evaluation: 1): \5
5. Name of stream: UT to Cape Fear Rivel	6. River basin: Cape Fear
7. Approximate drainage area: ~ 25 acres	8. Stream order:
9. Length of reach evaluated: 100 fee 4	10. County: Comberlana
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35° 10° 44′. 815″ N	Longitude (ex77.556611): 78°43' lo. 669" W
Method location determined (circle): GPS Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and	Aerial) Photo/GIS Other GIS Otherlandmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): None	
15. Recent weather conditions: 1:94 (2) (2)	in the past 24 hours
16. Site conditions at time of visit: Noimal	
	Section 10 <u>NA</u> Tidal Waters <u>MaEssential Fisheries Habitat</u>
NA Trout Waters NA Outstanding Resource Waters NA	Nutrient Sensitive Waters WAWater Supply Watershed WA (I-IV)
	point? YES No If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES 60	20. Does channel appear on USDA Soil Survey? YES
21. Estimated watershed land use:% Residential	% Commercial% Industrial% Agricultural
10 % Forested	% Cleared / Logged% Other ()
22. Bankfull width: 3,5	23. Bank height (from bed to top of bank): 2.51
24. Channel slope down center of stream: √Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
to each characteristic within the range shown for the econ characteristics identified in the worksheet. Scores should ref characteristic cannot be evaluated due to site or weather con comment section. Where there are obvious changes in the characteristic cannot be seven as a positive of the section of the	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a additions, enter 0 in the scoring box and provide an explanation in the aracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each a between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 49 Commen Stream is entrached and showed 5:	nts: Stream Fund through agricultural land 1905 of bank Rillores. Densley regented where
Cata D	ahal .c
Evaluator's Signature OR Region This channel evaluation form is intended to be used only a	Date 2/13/2015 as a guide to assist landowners and environmental professionals in
gathering the data required by the United States Army quality. The total score resulting from the completion of	Corps of Engineers to make a preliminary assessment of stream f this form is subject to USACE approval and does not imply a change – version 06/03. To Comment, please call 919-876-8441 x 26.

#	CHARACTERISTICS ECOREGION POINT		GION POINT RANGE		SCORE
#		Coastal	Piedmont	Mountain	SCURE
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 - 5	0-4	0-5	2
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3
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	3
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	4
5 6 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	
置 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	2
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	3
9	Channel sinuosity (extensive channelization = 0; natural meander = max points) Sediment input	0 – 5	0-4	0-3	3
10	(extensive deposition= 0; little or no sediment = max points) Size & diversity of channel bed substrate	0 – 5	0-4	0-4	3
11	(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	NA*	. 0-4	0 – 5	
12	(deeply incised = 0; stable bed & banks = max points) Presence of major bank failures	0-5	0 – 4	0-5	2
13 13 14 14	(severe erosion = 0; no erosion, stable banks = max points) Root depth and density on banks	0-5 $0-3$	0-5 $0-4$	0-5 $0-5$	3
2 17 15 15	(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production	0-5	0-4	0-5	2
16	(substantial impact =0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0 - 3	0-5	0-6	3
<u> </u>	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	a
17 18 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)	NA*	0-4	0-4	4
→ 20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
21 22	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
22 Z	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	9
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fi	rst page)			49

^{*} These characteristics are not assessed in coastal streams.

NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 2/13/15	Project/Site: ACP	Latitude: 35 10 44 815 "N
Evaluator: Notural Resource Group	County: Combarland	Longitude: 78° 43' 10.669° 4
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral (ntermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 12,5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	(D)
2. Sinuosity of channel along thalweg	0	1	2	(3)
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	②	3
4. Particle size of stream substrate	0	0	2	3
5. Active/relict floodplain	0	(ħ)	2	3
6. Depositional bars or benches	0	<u> </u>	2	3
7. Recent alluvial deposits	0	Ð	2	3
8. Headcuts	0	1	2	3
9. Grade control	()	0.5	1	1.5
10. Natural valley	. 0	(0.5)	1	1.5
11. Second or greater order channel	(No	=0>	Yes = 3	

artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 4,5)

12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	0	①	2	3
14. Leaf litter	1,5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	(No	0=0	Yes	= 3

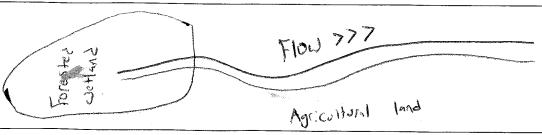
C. Bio	logy (Subtotal	=	5	

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	. 3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	Ø	0.5	1	1.5
26. Wetland plants in streambed		(FACW = 0.75: 0)	BI = 15 Other =	^

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:





Waterbody SCMC005 facing east upstream



Waterbody SCMC005 facing north across



Waterbody SCMC005 facing West downstream

$\Delta W \cap$		

Site =____ (indicate on attached map)



SCMP 021 STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under	r assessment:
1. Applicant's name: Dominion	2. Evaluator's name: ESI-J. Harboar, K. Mulphrey
3. Date of evaluation: (0/1/14	4. Time of evaluation: 1:00 PM
5. Name of stream: UNT +0 CARE FEAR RIVER	. 6. River basin: CAPE FEAY
7. Approximate drainage area: 15 acres	8. Stream order:
9. Length of reach evaluated: 50 Ft	10. County: <u>Camberland</u>
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
1.atitude (ex. 34.872312): 36.16927	Longitude (ex77.556611): -78.73514
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and I HIS CARAL IS 10 COTED AT THE	
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: Sunny	
16. Site conditions at time of visit: Und Starred	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	oint? YES NO If yes, estimate the water surface area: BOCYES
19. Does channel appear on USGS quad map? (YES)NO	20. Does channel appear on USDA Soil Survey? YES NO
	% Commercial % Industrial 40% Agricultural
* (Top of Bank) 22. Bankfull width: 6 Ft.	% Cleared / Logged% Other () 23. Bank height (from bed to top of bank): 5 F4.
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity: Straight Occasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eco characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the clinto a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must ranginghest quality.	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a additions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each e between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): H Commo	ents: This is a man mode can an
gathering the data required by the United States Army quality. The total score resulting from the completion	Date 10/1/14 as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a o change – version 06 03. To Comment, please call 919-876-8441 x 26.

	#	CHARACTERISTICS		ION POINT		SCORE
1000 1000 1000 1000	1000	Presence of flow / persistent pools in stream	Coastal	Piedmont	Mountain	935
74 74]	(no flow or saturation = 0 ; strong flow = max points)	0 – 5	0-4	0-5	2
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	0
8	3	Riparian zone	0 – 6	0-4	0 - 5	5
		(no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges	<u>year year year year ye. Y</u>	0-4		
	4	(extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	4
N.	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	.0-4	0-4	2 .
PHYSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	2
E	7	Entrenchment / floodplain access	0-5	0-4	_	
		(deeply entrenched = 0; frequent flooding = max points) Presence of adjacent wetlands	0-3	. 0 – 4	0-2	3
	8	(no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0-2	3
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	0
	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	NA*	0-4		
		(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	range of the transfer of the second		0 – 5	
	12	(deeply incised = 0; stable bed & banks = max points)	0-5	0-4	· · · 0 – 5 ·	5
H	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
STABILITY	14	Root depth and density on banks	0-3	0-4	0-5	
ST	15	(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production		<u> </u>		2
13.	13	(substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	\circ
BITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
HAB	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	3
田殿	19	Substrate embeddedness	NA*	0-4	0-4	
787 787		(deeply embedded = 0; loose structure = max) Presence of stream invertebrates (see page 4)	The second secon		0-4	
7	20	(no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
OG	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
BIOLOGY	22	Presence of fish	0-4	0-4	0-4	0
8	23	(no evidence = 0: common, numerous types = max points) Evidence of wildlife use	0 (7
(1) (3)	1 134,54	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	3
1		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on)	irst page)	Triate Hi		47
* *	Theca	characteristics are not assessed in coastal streams.	telumate that white	ere divine semili ali di	(1) 美国新疆 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	1 '/

^{*} These characteristics are not assessed in coastal streams.

Scmp021

NC DWQ Stream Identification Form Version 4.11 Project/Site: ACP Latitude: 35.16927 Date: (()/1 / 14 county: Cumberton d Longitude: -7分。73514 Evaluator: EST-K. Marphey, J. Harmar wade, NC Other Stream Determination (circle one) Ephemeral (ntermittent) Perennial Stream is at least intermittent e.g. Quad Name: if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = 5.5 Strong Weak Moderate Absent 1 2 3 0 1a. Continuity of channel bed and bank 1 2 3 <u>(0)</u> 2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, (1)2 3 0 ripple-pool sequence (3.) 2 0 4. Particle size of stream substrate <u>(1)</u> 2 3 5. Active/relict floodplain 2 3 (0)6. Depositional bars or benches 2 3 (0)1 7. Recent alluvial deposits 2 3 (o) 8. Headcuts 1.5 0.5. 1 0) 9. Grade control (0.5)1.5 1 10. Natural valley Yes = 3 $No \neq 0$ 11. Second or greater order channel ^а artificial ditches are not rated; see discussions in manual В B. Hydrology (Subtotal = 3 (2) 0 12. Presence of Baseflow 3 $\overline{(1)}$ 0 13. Iron oxidizing bacteria 0 0.5 (1) 1.5 14. Leaf litter 1.5 0.5 ໌0ັ) 15. Sediment on plants or debris 1.5 (1) 0 16. Organic debris lines or piles No = 0Yes ≠ 3 17. Soil-based evidence of high water table? C. Biology (Subtotal = 0 2 $(3\chi$ 18. Fibrous roots in streambed 0 3) 2 19. Rooted upland plants in streambed 3 2 0.) 20. Macrobenthos (note diversity and abundance) 2 3 ۰۵.) 21. Aquatic Mollusks 1.5 1 0.5 0 22. Fish 1.5 0.5 (0)23. Crayfish 1.5 1 0.5 Ó 24. Amphibians 1.5 0.5 0 25. Algae FACW = 0.75; ØBL = 1.5) Other = 0 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. canal. Access 500X man mode Feature Notes: Sketch: · K SCMP \$21

OHWM width: H

Top of Bank width: 6

Environmental Field Surveys Waterbody Photo Page



Waterbody scmp021 facing northeast upstream.



Waterbody scmp021 facing southwest downstream.

Environmental Field Surveys Waterbody Photo Page



Waterbody scmp021 facing north across channel

USACE	110-	
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DWQ≖			

Site =	(indicate on	anached	map)
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scmp 005



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under assessment: 1. Applicant's name: Porninion 2. Evaluator's name: EST 4. Time of evaluation: 3. Date of evaluation: 8/28/14 5. Name of stream: LANT to Cape Fear River 6. River basin: Cape Fear 7. Approximate drainage area: 30-40 ac 8. Stream order: 9. Length of reach evaluated: 15 F+ 10. County: Carmo bear to ve 11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision name (if any): npn@ 1. ongitude (ex. -77.556611):_- 7B.74/64 Latitude (ex. 34.872312): 35.17212 Method location determined (circle): (PS) 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): East of River Rd Parcel 22-069 14. Proposed channel work (if any):_ 15. Recent weather conditions:_ Clear / 16. Site conditions at time of visit: undisturbed 17. Identify any special waterway classifications known: Section 10 ____ Trout Waters ____ Outstanding Resource Waters ____ Nutrient Sensitive Waters ____ Water Supply Watershed ____ (1-1V) 18. Is there a pond or lake located upstream of the evaluation point YES NO If yes, estimate the water surface area: 2 a 4 19. Does channel appear on USGS quad map? VES NO

20. Does channel appear on USDA Soil Survey? YES NO

21. Estimated watershed land use: 5 % Residential 6 Commercial 6 Industrial 6 Agricultural 70% Forested ___% Cleared / Logged ___% Other (_____ 22. Bank height (from bed to top of bank): \(\frac{1}{50}\) \(\frac{1}{50} 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. heights range from 15-20 ft. to areas when they Total Score (from reverse):_ Evaluator's Signature Date 5/28/14
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.

#:	CHARACTERISTICS	Coastal	ION POINT Piedmont	Mountain	SCOR
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0 – 4	0 – 5	5
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	0
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
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	0
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 5	0-4	0-3	5
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)	NA*	0-4	0-5	- Bernard
12 13 14	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0 – 5	
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	3
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	4
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	
17	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	
19	(deeply embedded – 0, loose structure – max)	NA*	0-4	0-4	
20	(no evidence = 0; common, numerous types - max points)	0-4	0-5	0-5	2
21	(no evidence = 0; common, numerous types - max points)	0-4	0-4	0-4	2
22	(no evidence = 0, common, numerous types - max points)	0-4	0-4	0-4	
23	Evidence of wildlife use	0-6	0-5	0-5	
	Total Points Possible	100	100	100	

^{*} These characteristics are not assessed in coastal streams.

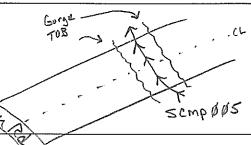
NC DWQ Stream Identification Form Version 4.11

scmp005

Date: 8128114	Project/Site: 5E R	Latitude: 35.17212
Evaluator: ESI (LROPER)	County: amberland	Longitude: 78.74164
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other WAde, NC e.g. Quad Name:

A. Geomorphology (Subtotal = 20)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool,	0	1	2	(3)
ripple-pool sequence		J	4	
Particle size of stream substrate	0	1	2	(3)
5. Active/relict floodplain	0	<u>(1)</u>	2	3
6. Depositional bars or benches	0	11	(2)	3
7. Recent alluvial deposits	0	<u>(1)</u>	2	3
8. Headcuts	(0,)	1	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No	0 = 0	Yes	₹3]_
a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal = 10)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	1.5	<u>(1)</u>	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	0	1.5
17. Soil-based evidence of high water table?	N	o = 0	Yés	= 3
C. Biology (Subtotal =lO)			* California de la Cali	- 11 manual gar
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	Ö	1	(2)	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	Q	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	(0.5)	1 3/1/5/200704	1.5
26. Wetland plants in streambed		C. w.,	OBL = 1.5 Other =	\{
*perennial streams may also be identified using other meth	nods, See p. 35 of manu			n oo et .
Notes:				
				

Sketch:



Top of look = 50ft + Varies greatly

Environmental Field Surveys Waterbody Photo Page



Waterbody scmp005 facing south upstream.



Waterbody scmp005 facing north downstream.

Photo Sheet 1 of 2

Environmental Field Surveys Waterbody Photo Page



Waterbody scmp005 facing west across channel

USACE	AID#
USACE	AID#

DWO	Ħ
DYY	TT

Site:	#
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(indicate on attached map)



SCMBIO2 STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under assessment:

1. Applicant's name: Dominion -	ACP	2. Evaluator's name: 1	ODD Preuninger
3. Date of evaluation: 3 4/15		4. Time of evaluation:	AM
5. Name of stream: SCMB102 - UN		6. River basin: Cape 8. Stream order:	Fear
	,	8. Stream order:	<u> </u>
9. Length of reach evaluated: ~ vo	Ø ⁶	10. County: Combe	rland
11. Site coordinates (if known): pro Latitude (ex. 34.872312): 35°10'1! Method location determined (circle):	efer in decimal degrees. 9"N	12. Subdivision name (i Longitude (ex. –77.556611	
13. Location of reach under evaluation	on (note nearby roads and	(Aerial) Photo/GIS Other G d landmarks and attach map	ordentifying stream(s) location):
14. Proposed channel work (if any):_			
15. Recent weather conditions: <a>	in in last 24 h	iouri	
16. Site conditions at time of visit:c			
17. Identify any special waterway cla	assifications known: _	Section 10Tid	al WatersEssential Fisheries Habitat
Trout WatersOutstanding	Resource Waters	_ Nutrient Sensitive Waters	sWater Supply Watershed(I-IV)
18. Is there a pond or lake located up	stream of the evaluation	point? YES NO If yes,	estimate the water surface area:
19. Does channel appear on USGS q	uad map? YES NO	20. Does channel appea	r on USDA Soil Survey? YES (NO)
21. Estimated watershed land use:	№ % Residential	% Commercial	% Industrial% Agricultural
	<u>►</u> ► Sorested	No % Cleared / Logged	% Other (
22. Bankfull width: 3		23. Bank height (from b	ped to top of bank): 5
24. Channel slope down center of str	ream:Flat (0 to 2%)	<u>★</u> Gentle (2 to 4%)	Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:Straight	Coccasional bends	Frequent meander	Very sinuousBraided channel
location, terrain, vegetation, stream to each characteristic within the recharacteristics identified in the work characteristic cannot be evaluated document section. Where there are einto a forest), the stream may be div	classification, etc. Every ange shown for the ecc ksheet. Scores should reduce to site or weather coobvious changes in the cookided into smaller reaches a stream reach must range.	y characteristic must be sco oregion. Page 3 provides eflect an overall assessment onditions, enter 0 in the sc character of a stream under is that display more continu- ge between 0 and 100, with	ing the most appropriate ecoregion based on pred using the same ecoregion. Assign points is a brief description of how to review the fit of the stream reach under evaluation. If a soring box and provide an explanation in the review (e.g., the stream flows from a pasture ity, and a separate form used to evaluate each has a score of 100 representing a stream of the
Total Score (from reverse): 16 from adjacent agricu	Heral Field	ents: epheneral chav	melditch conveying Fun off
Evaluator's Signature Joll w	Accounting to the second secon		Date 3 U 15
This channel evaluation form is in gathering the data required by t	ntended to be used only he United States Army	y Corps of Engineers to	Date 3 4 15 owners and environmental professionals in make a preliminary assessment of stream o 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.

	#	CHARACTERISTICS	ECOREG Coastal	Piembi Piembi	ERRORENCE DE L'ANDRE D	SCORE
	1	Presence of flow / persistent pools in stream	0-5	(0-2	Mountain 0-5	
	2	(no flow or saturation = 0; strong flow = max points) Evidence of past human alteration	0-6	0-5	0-5	\
	3	(extensive alteration = 0; no alteration = max points) Riparian zone	0-6			
		(no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges		0-4	0-5	1
د	4	(extensive discharges = 0; no discharges = max points) Groundwater discharge	0-5	0-4	0-4	2
	5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
PHYSICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
H	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	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	١
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	1
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	1
7	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	,
ABILITY	13	Presence of major bank failures	0-5	0-5	0-5	2
ABI	14	(severe erosion = 0; no erosion, stable banks = max points) Root depth and density on banks	0-3	0-4	0-5	2
5	15	(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production	0-5	0-4		0
	16	(substantial impact =0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes			0-5	
T		(no riffles/ripples or pools = 0; well-developed = max points) Habitat complexity	0-3	0-5	0-6	0
BITAT	17	(little or no habitat = 0; frequent, varied habitats = max points) Canopy coverage over streambed	0-6	0-6	0-6	0
HA	18	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	2
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	ı
بر	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
90	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
RIGITOLS A	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
1	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	1
1		Total Points Possible	100	100	100	1
		TOTAL SCORE (also enter on fir	st page)		and the second second	16
* 7	l 1					, 🐷

^{*} These characteristics are not assessed in coastal streams.

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form	Version 4.11		SCME	,102
Date: 3 4 15	Project/Site: De	ominion IACP	Latitude: 35	°10'19"N
Evaluator: TODD Preuninger	County: Cow	berland	Longitude: 7	8°44'38"W
Total Points: Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$	Stream Determine Ephemeral Inte	nation (circle one) ermittent Perennial	Other e.g. Quad Name:	
A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
A. Geomorphology (Subtotal =) 1a Continuity of channel bed and bank - to any Field	0	<u>(1)</u>	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(5)	1	2	3
Particle size of stream substrate	0	O	2	3
5. Active/relict floodplain	Ø	1	2	3
6. Depositional bars or benches	0	0	2	3
7. Recent alluvial deposits	<u> </u>	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley		0.5	1	1.5
11, Second or greater order channel	N-	0=0)	Yes :	= 3
^a artificial ditches are not rated; see discussions in manual	· Incommend			
B. Hydrology (Subtotal =)		200104		
12. Presence of Baseflow - Rain in last 24 hours	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	N-	o = 0	Yes:	= 3
C. Biology (Subtotal =)		<u> </u>		
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed		FACW = 0.75; OB	L = 1.5 Other = 0)
*perennial streams may also be identified using other methods	See p. 35 of manua	al.		
Notes: Epheneral channel ditch conveys.	od cov-oft	From adjourn	<u>agricultura</u>	l field
Sketch: SCMB102 Mix	xP, f.	2)		٨
/		CB		1
150' — /	14 1001-	/ 50		N
//	- 150 -/			



Waterbody SCMB102 facing southeast upstream



Waterbody SCMB102 facing north across



Waterbody SCMB102 facing west downstream

USACE	AlD=	
C 12/1 1 C 12	11 1 7	

DWQ	Ξ		
-		 	

Site = ___ (indicate on attached map) 5cm p 002



STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach und	
1. Applicant's name: Down to to	2. Evaluator's name: EST (L Loper)
3. Date of evaluation: 812814	4. Time of evaluation: 12 pm
5. Name of stream: UNT to Cape Fear River	6. River basin: <u>Lape Fear</u>
7. Approximate drainage area: 60 at	8. Stream order:
9. Length of reach evaluated: 50 ft	10. County: Cumber ac
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NONE
Latitude (ex. 34.872312): 35.17052	_ 1 ongitude (ex77,556611); <u>- 78.7448 6</u>
	Aerial) Photo GIS Other GIS Otherlandmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: cool & day	
16. Site conditions at time of visit: Was Sturbed	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive Waters Water Supply Watershed \(\square\) (1-1V)
18. Is there a pond or lake located upstream of the evaluation p	point? YES (NO) If yes, estimate the water surface area:
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:o Residential	% Commercial% Industrial% Agricultural
To a Floorly 40% Forested	10 % Cleared , Logged% Other ()
21. Estimated watershed land use:o Residential Top of bank 22. Bankfulk width: F+	23. Bank height (from bed to top of bank): 2 f+
24. Channel slope down center of stream:Flat (0 to 20 o)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eco characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather comment section. Where there are obvious changes in the clinto a forest), the stream may be divided into smaller reaches	the 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points pregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a anditions, enter 0 in the scoring box and provide an explanation in the character of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 103 Commo Channelized long ago.	ents: Appers to be a stream that was
برسور	
Evaluator's Signature 101 12	Date
	as a guide to assist landowners and environmental professionals in

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.

#		CHARACTERISTICS	The special of the paper of the special of the spec	ION ROINI	Language Page Court, porty . Supre-	SCORE	
ŢŢ			Coastal	Piedmont	/ Mountain		
1		Presence of flow / persistent pools in stream	0-5	0 - 4	0 – 5	4	
		(no flow or saturation = 0; strong flow = max points)					
2		Evidence of past human alteration	0-6	0 5	0-5		
	_	(extensive alteration = 0; no alteration = max points)		<u></u>			
3	ļ	Riparian zone	0 – 6	0 - 4	0-5	U	
		(no buffer = 0; contiguous, wide buffer = max points)					
4		Evidence of nutrient or chemical discharges	0-5	0 - 4	0-4	2	
		(extensive discharges = 0; no discharges = max points)					
5		Groundwater discharge	0-3	0 - 4	0-4	2	
		(no discharge = 0; springs, seeps, wetlands, etc. = max points)	•			- Company	
6	:	Presence of adjacent floodplain	0 – 4	0 - 4	0-2	72	
		(no floodplain = 0; extensive floodplain = max points)			<u> </u>	\$	
7	,	Entrenchment / floodplain access	0 – 5	0-4	0-2	L	
		(deeply entrenched = 0; frequent flooding = max points)			<u> </u>		
5	3	Presence of adjacent wetlands	0 – 6	0-4	0-2	100	
	_	(no wetlands = 0; large adjacent wetlands = max points)			1		
g	,	Channel sinuosity	0 - 5	0-4	0-3		
		(extensive channelization = 0; natural meander = max points)				1	
1	0	Sediment input	0-5	0-4	0 – 4	L-	
		(extensive deposition= 0; little or no sediment = max points)	12 15 to 3 (5) (5) (5)			1	
1	1	Size & diversity of channel bed substrate	NA*	0 4	0-5	No.	
	_	(fine, homogenous = 0; large, diverse sizes = max points)			+	$+\mathscr{I}_{\cdot\cdot}$	
1	2	Evidence of channel incision or widening	0-5	0-4	0 - 5	U	
		(deeply incised = 0; stable bed & banks = max points)					
1	13	Presence of major bank failures	0 5	0 – 5	0-5	4	
		(severe erosion = 0; no erosion, stable banks = max points)				3	
1	14	Root depth and density on banks	0-3	0 - 4	0-5	J.	
L		(no visible roots = 0; dense roots throughout = max points)	-			<u> </u>	
	15	Impact by agriculture, livestock, or timber production	0-5	0-4	0 - 5	2	
1		(substantial impact =0; no evidence = max points)					
1	16	Presence of riffle-pool/ripple-pool complexes	0 - 3	0-5	0 - 6	2	
_		(no riffles/ripples or pools = 0; well-developed = max points)	-			 	
	17	Habitat complexity	0-6	0-6	0-6	4	
_		(little or no habitat = 0; frequent, varied habitats = max points)					
1	18	Canopy coverage over streambed	0-5	0-5	0-5	L	
		(no shading vegetation = 0; continuous canopy = max points)	1,9,00 115 13			-	
	19	Substrate embeddedness	NA*	0-4	0 - 4	age of the control of	
4		(deeply embedded = 0; loose structure = max)	1 100 0 20 0 AND 0	`\			
1	20	Presence of stream invertebrates (see page 4)	0 - 4	0 - 5	0-5	(
		(no evidence = 0; common, numerous types = max points)				 -	
	21	Presence of amphibians	0 - 4	0-4	0-4		
		(no evidence = 0; common, numerous types = max points)			-		
35	22	Presence of fish	0 – 4	0 - 4	0 - 4	1	
21 22 22 23		(no evidence = 0; common, numerous types = max points)				-	
	23	Evidence of wildlife use	0-6	0-5	0-5		
25	ر ـــ	(no evidence = 0; abundant evidence = max points)		#		3-	
		Total Points Possible	100	100	100		
Ŋ.			an Indiana in 1997 and a second	<u>. 1</u> 794 335			
44.0	ja s sk	TOTAL SCORE (also enter or	frat magal		中國基础的基础表		

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

Date: 8/28/14	Project/Site: SERF	Latitude: 35,17052
Evaluator: ESI (L Roper)	County: Comper wo	Longitude: -78,74486
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other WADE, NC e.g. Quad Name:

if ≥ 19 or perennial if ≥ 30*	Ephemeral Inter	mittent Perennial	e.g. Quad Name:		
A. Geomorphology (Subtotal = \ 3)	Absent	Weak	Moderate	Strong	
1 ^a Continuity of channel bed and bank	0	1	2	(3)	
2. Sinuosity of channel along thalweg	0	1	(2)	3	
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3	
4. Particle size of stream substrate	0	(1)	2	3	
5. Active/relict floodplain	0	1	2	3	
6. Depositional bars or benches	0	1	(2)	3	
7. Recent alluvial deposits	<u>@</u>	1	2	3	
8. Headcuts	6)	1	2	3	
9. Grade control	0	(Ó.5.)	1	1.5	
10. Natural valley	0	9.5)	1	1.5	
11. Second or greater order channel	No = 0)		Yes = 3		
artificial ditches are not rated; see discussions in manual	1703				
B. Hydrology (Subtotal =)					
12. Presence of Baseflow	0	1	2)	3	
13. Iron oxidizing bacteria	(0)	1	2	3	
14. Leaf litter	1.5	(1)	0.5	0	
15. Sediment on plants or debris	0	(0.5)	1	1.5	
16. Organic debris lines or piles	0	0.5)	1	1.5	
17. Soil-based evidence of high water table?	No = 0		Yes = 3		
C. Biology (Subtotal =, 5_)					
18. Fibrous roots in streambed	(3)	2	1	0	
19. Rooted upland plants in streambed	(3,2	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	1	2	3	
21. Aquatic Mollusks	0	(1)	2	3	
22. Fish	(0)	0.5	1	1.5	
23. Crayfish	0	0.5	1	1.5	
24. Amphibians	0	(0.5)	1	1.5	
25. Algae	(0)	0.5	1	1.5	
26. Wetland plants in streambed			BL = 1.5 Other =	1 %	
*perennial streams may also be identified using other meth	nods, See p. 35 of manu	···	A CONTRACTOR OF THE CONTRACTOR	*	

Channelized Notes: Appears to

Sketch: 1

OHUM width = 3ft. TOB width = 6ft.

Scmp 003 2cm p OOH



Waterbody scmp002 facing west upstream.



Waterbody scmp002 facing east downstream.

Photo Sheet 1 of 2



Waterbody scmp002 facing north across channel

USACE AID#	

DWO	#
$\mathcal{D} W O$	π

Site	#

(indicate on attached map)



SCMB NO3 STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach und	
1. Applicant's name: Dominion / ACP	2. Evaluator's name: TODD Previous
3. Date of evaluation: 3 4 15	4. Time of evaluation: AM
5. Name of stream: SCMB 103_ UNT to Cope Fear	6. River basin: Cape Fear
7. Approximate drainage area:	6. River basin: Cape Fear 8. Stream order:
9. Length of reach evaluated: ^ 75'	10. County: Comberland
11. Site coordinates (if known): prefer in decimal degrees. Latitude (ex. 34.872312):35°10′14″N	12. Subdivision name (if any):
Method location determined (circle): GPS Topo Sheet Ortho To 13. Location of reach under evaluation (note nearby roads and Feet south of River Rd	
14. Proposed channel work (if any):	
15. Recent weather conditions: Tain in last 34 h	your S
16. Site conditions at time of visit:	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	oint? YES Oolf yes, estimate the water surface area:
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: 10 % Residential	% Commercial % Industrial 40 % Agricultural
	\ <u>\O</u> % Cleared / Logged % Other ()
22. Bankfull width:	23. Bank height (from bed to top of bank):
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 _X_Occasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the econ characteristics identified in the worksheet. Scores should ref characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the chinto a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must range highest quality.	Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a additions, enter 0 in the scoring box and provide an explanation in the aracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the late: Ephaneral James, and supplies And
	7
gathering the data required by the United States Army	Date 3 4 15 as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream 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.

#	CHARACTERISTICS	ECOREG Coastal	HON POINT	RANGE Mountain	SCORE
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	. \
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	. 2
3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	·a
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	2
TAT 5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	
5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
图 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	1
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	2
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)	NA*	0-4	0-5	
→ 12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 - 5	0-4	0-5	A
a 13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	.3
13 14 14 14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	0
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	·a
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	Ō
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	·a
2 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)	NA†	0-4	0-4	. 1
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	0
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	•
	Total Points Possible	. 100	100	100	
4.00	TOTAL SCORE (also enter on fin	st page)			BC

^{*} These characteristics are not assessed in coastal streams.

NC Division of Water Quality - Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

SCWB103 NC DWQ Stream Identification Form Version 4.11 Project/Site: Doning ACP Latitude: 35°10'14"N Date: Top Preminger Longitude: 78°44'40"W Evaluator: **Total Points:** Stream Determination (circle one) Other Stream is at least intermittent Ephemeral) Intermittent Perennial e.g. Quad Name: 11.5 if \geq 19 or perennial if \geq 30* A. Geomorphology (Subtotal = 4.5) Absent Weak Moderate Strong 1^a Continuity of channel bed and bank 0 2 1 3 2. Sinuosity of channel along thalweg (1) 0 3 2 3. In-channel structure: ex. riffle-pool, step-pool, (O) 2 3 1 ripple-pool sequence 4. Particle size of stream substrate 1 3 0 2 5. Active/relict floodplain **の** 2 3 1 \bigcirc 6. Depositional bars or benches 2 3 1 7. Recent alluvial deposits 0 1 2 3 8. Headcuts 0) 2 3 1 9. Grade control (0.5)1.5 0 1 10. Natural valley (O) 1 1.5 0.5 11. Second or greater order channel No = 0 Yes = 3 artificial ditches are not rated; see discussions in manual 12. Presence of Baseflow- Rain in last 24 hours 2 0 1 3 13. Iron oxidizing bacteria (0)2 3 14. Leaf litter (0.5)1.5 1 0 15. Sediment on plants or debris 0 0.5 1.5 16. Organic debris lines or piles $\sqrt{0.5}$ 1 1.5 17. Soil-based evidence of high water table? No = 0Yes = C. Biology (Subtotal = 18. Fibrous roots in streambed 3 2 0 19. Rooted upland plants in streambed 3 2 1 0 0 20. Macrobenthos (note diversity and abundance) 1 3 707 21. Aquatic Mollusks 1 2 3 22. Fish 0) 1 1.5 0.5 23. Crayfish (0) 1.5 0.5 1 24. Amphibians (0) 0.5 1 1.5 25. Algae (ത 0.5 1.5 26. Wetland plants in streambed FACW = 0.75; OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: Ephonoral channel, noted sayings and look Litter in base of channel Impacted by 2 roads + sewer Pasement SCMP Sketch: 002 150' SCMP COP SCMB103 150

003 🛪

SCMPass



Waterbody SCMB103 facing east upstream



Waterbody SCMB103 facing north across



Waterbody SCMB103 facing west downstream

USACE	AID=	

DWQ =	

Site ≠____ (indicate on attached map) scmp 003



STREAM QUALITY A	ASSESSMENT WORKSHEET
Provide the following information for the stream reach un	der assessment:
1. Applicant's name: Dominion	2. Evaluator's name: EST (L Roper)
3. Date of evaluation: 8/28/14	4. Time of evaluation: 12 30 5 W
5. Name of stream: UNT to Cape Fear River	6. River basin: CAPC FEAR
7. Approximate drainage area: 60 ac	8. Stream order:
9. Length of reach evaluated: 50 f-+	10. County: Comberland
11. Site coordinates (if known): preser in decimal degrees.	12. Subdivision name (if any): None
Latitude (ex. 34.872312): 35.17051	1 ongitude (ex77.556611): -78,744177
Method location determined (circle): (PS) Topo Sheet Ortho 13. Location of reach under evaluation (note nearby roads and Pacel 22-070; west of River	(Aerial) Photo:GIS Other GIS Other
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: Clar / dry	
16. Site conditions at time of visit: undisturbed	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive Waters Water Supply Watershed $\overline{\mathcal{L}}$ (I-IV)
18. Is there a pond or lake located upstream of the evaluation	point? YES (NO) If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES (NO)	20. Does channel appear on USDA Soil Survey? YES NO
	% Commercial% Industrial &O% Agricultural
Top of bank 40° o Forested 22. Bankfull width: 5 Ft.	23. Bank height (from bed to top of bank): 2 +.
24. Channel slope down center of stream:Flat (0 to 20 o)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Ever to each characteristic within the range shown for the excharacteristics identified in the worksheet. Scores should characteristic cannot be evaluated due to site or weather of comment section. Where there are obvious changes in the into a forest), the stream may be divided into smaller reaches	age 2): Begin by determining the most appropriate ecoregion based on y characteristic must be scored using the same ecoregion. Assign points coregion. Page 3 provides a brief description of how to review the reflect an overall assessment of the stream reach under evaluation. If a conditions, enter 0 in the scoring box and provide an explanation in the character of a stream under review (e.g., the stream flows from a pasture es that display more continuity, and a separate form used to evaluate each age between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 63 Comm	nents:

Date_ Evaluator's Signature____ 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.

#	CHARACTERISTICS	Coastal	ION POINT Piedmont	Mountain	SÇOR
1.34 (P. 1)	Presence of flow / persistent pools in stream	e de la financia de la companya del companya del companya de la co	2 0 1 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		4 8
]	(no flow or saturation = 0; strong flow = max points)	0-5	0 – 4	0-5	4
	Evidence of past human alteration	0 – 6	0 – 5	0 – 5	4
2	(extensive alteration = 0; no alteration = max points)	0-0	0 – 21	0-3	
	Riparian zone	0-6	0 – 4	0-5	5
3	(no buffer = 0; contiguous, wide buffer = max points)	0-0	0-4	0-5	قبيب
_	Evidence of nutrient or chemical discharges	0-5	0-4	··· 0-4	2
4	(extensive discharges = 0; no discharges = max points)	V-J	0 4	V - 4	
_	Groundwater discharge	0 3	0 – 4	0-4	3
5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)			* '	-
6	Presence of adjacent floodplain	0 – 4	0-4	0-2	4
	(no floodplain = 0; extensive floodplain = max points)			ļ	- I
7	Entrenchment / floodplain access	0 – 5	0-4	0-2	4
	(deeply entrenched = 0; frequent flooding = max points)				<u> </u>
8	Presence of adjacent wetlands	0 – 6	0-4	0-2	O
	(no wetlands = 0; large adjacent wetlands = max points)				
9	Channel sinuosity	0 - 5	0-4	0-3	
	(extensive channelization = 0; natural meander = max points)			 	, ,
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	4
	Size & diversity of channel bed substrate	1 3 194 1 10 100 100			
11	(fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0-5	out the same of th
	Evidence of channel incision or widening				
Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points) Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points Root depth and density on banks (no visible roots = 0; dense roots throughout = max points Impact by agriculture, livestock, or timber production		0 – 5	0-4	0-5	4
	Presence of major bank failures	0.5	0 5	0-5	
13	(severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-3	
	Root depth and density on banks	0-3	0-4	0 – 5	3
14	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	
1.5	Impact by agriculture, livestock, or timber production	0-5	0-4	0-5	2
15	(substantial impact =0; no evidence = max points)	0 3			Contr
16	Presence of riffle-pool/ripple-pool complexes	0-3	0-5	0-6	1
10	(no riffles/ripples or pools = 0; well-developed = max points)				
17	Habitat complexity	0-6	0-6	0-6	L
	(little or no habitat = 0; frequent, varied habitats = max points)				
16 17 18	Canopy coverage over streambed	0-5	0-5	0-5	Co
	(no shading vegetation = 0; continuous canopy = max points)	TOWN 15 S			1000
19	Substrate embeddedness	NA*	0-4	0 – 4	S. Carlotte
71	(deeply embedded = 0; loose structure - max)		1		
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0-5	0-5	
	Presence of amphibians				
21	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	- The state of the
<u> </u>	Presence of fish				
22	(no evidence = 0; common, numerous types = max points)	0 – 4	0-4	0-4	
21	Evidence of wildlife use	1	2 -	^ -	
23	(no evidence = 0; abundant evidence = max points)	0 – 6	0-5	0-5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
2 1 高光		100	100	170	
	Total Points Possible	100	100	100	
		- ه ^{ا ا} يعرز ورقه طو ازه ردي	and the short half and the		2.1

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

Date: 8/28/14	Project/Site: 52RP	Latitude: 35,170511
Evaluator: ESS (L Roper)	County: Cum ser and	Longitude: -78, 74477
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other WADE, NC e.g. Quad Name:

n = 10 or perennial if = 30 .				
A. Geomorphology (Subtotal = 12.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank		1	2	3
Sinuosity of channel along thalweg	0	1	2)	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	(3)
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	(g)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	0.5	<u>(1)</u>	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	N	lo = 0)	Yes	= 3
artificial ditches are not rated; see discussions in manual			, , , , , , , , , , , , , , , , , , , ,	
B. Hydrology (Subtotal =				
12. Presence of Baseflow	0	1	2	(3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	<u>(1)</u>	0.5	0
15. Sediment on plants or debris	0)	0,5	1	1.5
16. Organic debris lines or piles	0	0.5	1 1	1.5
17. Soil-based evidence of high water table?	1	1o = 0	Yes	= 3
C Diology (Cultural - 1	•			200 F

16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No	o = 0	Yes = 3	
C. Biology (Subtotal = 1,5)	•	1		
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(°Ô)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1,5
24. Amphibians	0	0.5	1	4.5
25. Algae	(0)	0.5	1 Marian Carana	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 (Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

OHWM width = 2.5 ft TOB width = 5 ft

scmp004



Waterbody scmp003 facing east upstream.



 $Waterbody\ scmp 003\ facing\ west\ downstream.$

Photo Sheet 1 of 2



Waterbody scmp003 facing north across channel

USACE AID=	
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ite =	tindicate	on attached	map)

cm0004



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	1	32	7	-	

Provide the following information for the stream reach und	
1. Applicant's name: Dominion	2. Evaluator's name: EST (Legen)
3. Date of evaluation: 8/28/14	4. Time of evaluation: 12:50 pm
5. Name of stream: UNT to Cape Fear River	6. River basin: Cape Fear
7. Approximate drainage area: しりゅこ	8. Stream order:
9. Length of reach evaluated: 50 Ft.	10. County: Comberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): none
1.atitude (ex. 34.872312): 38,17029	1. ongitude (ex77.556611): -78,74612
Method location determined (circle): GPS Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and Parcel 22-070; west of River F.	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): \(\tag{8.0} \)	
15. Recent weather conditions: Clear / dry	
16. Site conditions at time of visit: undisturbed	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES	20. Does channel appear on USDA Soil Survey? YES NO
	° Commercial% Industrial 50 % Agricultural
Top of bank OC	10% Cleared / Logged% Other ()
22. Bankfull-width: 9 ft.	23. Bank height (from bed to top of bank): 3 ft.
24. Channel slope down center of stream:Flat (0 to 20%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather co-comment section. Where there are obvious changes in the cinto a forest), the stream may be divided into smaller reaches	Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points pregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a anditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture a that display more continuity, and a separate form used to evaluate each ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 62 Commo	ents:
Evaluator's Signature 100	Date <u>8128/14</u> y as a guide to assist landowners and environmental professionals in
gathering the data required by the United States Arm quality. The total score resulting from the completion	y as a guide to assist landowners and environmental professionals in y Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a to change – version 06 03. To Comment, please call 919-876-8441 x 26.

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

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

scmp004

Date: 812814	Project/Site: SERP	Latitude: 35, 7029
Evaluator: EST (L'ROBET)	County: Cumberland	Longitude: - 78,74517
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other WALE, NC e.g. Quad Name:

11 = 10 of perchintar if = 30	₹. €	A PARTICULAR OF THE PARTICULAR	l <u></u>	
A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
		vveak		Strong
1 ^{a.} Continuity of channel bed and bank	(0)	1	2	3
Sinuosity of channel along thalweg	0	1	(2)	3
 In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence 	0	1	②	3
4. Particle size of stream substrate	0	(D)	2	3
5. Active/relict floodplain	0	0	2	3
6. Depositional bars or benches	0	0	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts		1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	<u> </u>	o = 0	Yes	= 3
artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal =)				
12. Presence of Baseflow	0	1	2	<u>3</u>
13. Iron oxidizing bacteria	<u></u>	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5)	1	1.5
17. Soil-based evidence of high water table?	N	lo = 0	Yes	= 3 }
C Diology (Cubintal m. ***)			**stocks	SAN TO SA

14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	0.5	a	1.5
16. Organic debris lines or piles	0	0.5)	1	1.5
17. Soil-based evidence of high water table?	No	= 0	Yes =	.3 }
C. Biology (Subtotal =)		· · · · · · · · · · · · · · · · · · ·	, ender Note you, it	
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3°)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5

23. Crayfish (0) 0.5 1.5 24. Amphibians 0 0.5 4 1.5 25. Algae (0) 1.5 26. Wetland plants in streambed FACW = 0.75; OBL = 1.5 Other = 0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Channelized Stream

OHWM width = 4 ft TOB width = 9 ft

Sketch:

scmp0029

,scmp003



Waterbody scmp004 facing south upstream.



Waterbody scmp004 facing north downstream.

Photo Sheet 1 of 2



Waterbody scmp004 facing west across channel

scmp001



STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach und	
1. Applicant's name: Dominion	2. Evaluator's name: EST (L Loper)
3. Date of evaluation: 8/28/14	4. Time of evaluation:
5. Name of stream: UNT to Cape Fear River	6. River basin: Cape Fear
7. Approximate drainage area: 30 ac	8. Stream order:
9. Length of reach evaluated: 50 +	10. County: Camper and
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): none
Latitude (ex. 34 872312): 35.16 640	Longitude (ex. ~77.556611): <u>- 78.75485</u>
Method location determined (circle): GPS Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and	landmarks and attach map identifying stream(s) location):
Parcel 22-080, north of Swamp	<u> C4.</u>
14. Proposed channel work (if any): TBD	in the second state of the second
15. Recent weather conditions: CDD1 cdv 55	MY SCATIENCE SHOWERS
16. Site conditions at time of visit: undistubed	
	Section 10Tidal WatersEssential Fisheries Habitat
	Nutrient Sensitive Waters Water Supply Watershed I (I-IV)
18. Is there a pond or lake located upstream of the evaluation	
19. Does channel appear on USGS quad map? YES NO	
Topof Bank. 5 ft	5% Cleared / Logged % Other ()
22. Bankfull width: 15 ft	23. Bank height (from bed to top of bank): 5 ++
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
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eccharacteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather occomment section. Where there are obvious changes in the cinto a forest), the stream may be divided into smaller reacher reach. The total score assigned to a stream reach must ranghighest quality.	ge 2): Begin by determining the most appropriate ecoregion based on a characteristic must be scored using the same ecoregion. Assign points oregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a conditions, enter 0 in the scoring box and provide an explanation in the character of a stream under review (e.g., the stream flows from a pasture s that display more continuity, and a separate form used to evaluate each ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 26 Comm	ients: Channelized was
Evaluator's Signature In IAMA A	Pate 8/28/14

#		CHARACTERISTICS	ECOREG	ON ROINT Piedmont	RANGE	SCORE
1.2	\$3.4	Presence of flow / persistent pools in stream	1 2 C - 2 - 4 - 1 - 2 - 2 - 3 - 4 - 1 - 2 - 3 - 2 - 3 - 3 - 3 - 3 - 3 - 3 - 3			A 64 19
]		(no flow or saturation = 0; strong flow = max points)	0-5	0 - 4	0-5	0
-		Evidence of past human alteration	0 6	0 5	0.5	
2	2	(extensive alteration = 0; no alteration = max points)	0-6	0 – 5	0-5	
		Riparian zone	0 – 6	0 – 4	0-5	ľ
3	3	(no buffer = 0; contiguous, wide buffer = max points)	0-0	V = 4	0-3	
	4	Evidence of nutrient or chemical discharges	0-5	0 – 4	0-4	2
1 -	4	(extensive discharges = 0; no discharges = max points)				lucis
	5	Groundwater discharge	0-3	0 - 4	0-4	0
<u>`</u>		(no discharge = 0; springs, seeps, wetlands, etc. = max points)				
١.	6	Presence of adjacent floodplain	0-4	0 - 4	0-2	(
<u> </u>		(no floodplain = 0; extensive floodplain = max points)			-	
	7	Entrenchment / floodplain access	0 – 5	0 - 4	0-2	
\vdash	-	(deeply entrenched = 0; frequent flooding = max points) Presence of adjacent wetlands				
	8	(no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0-2	0
_	+	Channel sinuosity		^ .	0.0	
	9	(extensive channelization = 0; natural meander = max points)	0 5	0-4	0-3	NAME OF THE PARTY
╁	-	Sediment input	0 5	0-4	0-4	
	10	(extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	2
		Size & diversity of channel bed substrate	NA*	0 – 4	0-5	
	11	(fine, homogenous = 0; large, diverse sizes = max points)	1 INA	0-7	V-3	
	10	Evidence of channel incision or widening	0-5	0-4	0-5	2.
Ĭ	12	(deeply incised = 0; stable bed & banks = max points)	1 0 5	<u> </u>		Leaz.
ġ 🗀	13	Presence of major bank failures	0 – 5	0 – 5	0-5	
	15	(severe erosion = 0; no erosion, stable banks = max points)				
	14	Root depth and density on banks	0 - 3	0 - 4	0-5	2
		(no visible roots = 0; dense roots throughout = max points)				- Carrier
2	15	Impact by agriculture, livestock, or timber production	0-5	0-4	0-5	
/4		(substantial impact = 0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes				
70	16	(no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0-5	0-6	
		Habitat complexity	<u> </u>			1 .
Ç.	17	(little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	STAGE
TABLICA		Canopy coverage over streambed	1	0.5	0 6	
	18	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0 – 5	. 644
╏├		Substrate embeddedness	\ \\ *	0-4	0 – 4	1
14.6 15.5 15.5	19	(deeply embedded = 0; loose structure = max)	NA*	V-4	V - 4	
	~~	Presence of stream invertebrates (see page 4)	0-4	0-5	0-5	j j
	20	(no evidence = 0; common, numerous types = max points)	V = 4	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0 - 3	<u>U</u>
31	21	Presence of amphibians	0 – 4	0-4	0-4	
51	21	(no evidence = 0; common, numerous types = max points)	J			
NOTO EX	22	Presence of fish	0-4	0-4	0-4	<i>[</i>
∷	22	(no evidence = 0; common, numerous types = max points)				<u> </u>
	23	Evidence of wildlife use	0-6	0-5	0-5	2
		(no evidence = 0; abundant evidence = max points)				No.
À 3.5		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter or	first page)			12

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form	m Version 4.11			1	
Date: 8128/14	Project/Site: SERD Latitude: 351/00				
Evaluator: EST (L Carer)	County: COXX			78.754.8E	
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determi	Stream Determination (circle one) Ephemeral Intermittent Perennial		cum, NC	
A. Geomorphology (Subtotal = V	Absent	Weak	Moderate	Strong	
1 ^a Continuity of channel bed and bank	(9)	1	2	· 	
Sinuosity of channel along thalweg		(i)	2	3	
In-channel structure: ex. riffle-pool, step-pool,				1 3	
ripple-pool sequence	0	1	2	3	
4. Particle size of stream substrate	0	(1)	2	3	
5. Active/relict floodplain	(0)	1	2	3	
6. Depositional bars or benches	0	0	2	3	
7. Recent alluvial deposits	0	M	2	3	
8. Headcuts	(Ô).	1	2	3	
9. Grade control	0	0,5	1	1.5	
10. Natural valley	0	0.5	1	1.5	
11. Second or greater order channel	N	o = 0	Yes		
artificial ditches are not rated; see discussions in manual	No.	estill.			
B. Hydrology (Subtotal = 5.5)					
12. Presence of Baseflow	(0)	1	2	3	
13. Iron oxidizing bacteria	(0)				
14. Leaf litter	1.5		2	3	
15. Sediment on plants or debris	1.5	W.7007	0.5	0	
16. Organic debris lines or piles	0	₂ 0.5	1	1.5	
17. Soil-based evidence of high water table?		0.5 lo = 0			
C. Biology (Subtotal = 7,5)		10-0	res	s = 3)	
18. Fibrous roots in streambed	/ ^ 1				
	(.3)	2	1	0	
19. Rooted upland plants in streambed	/37	2	1	0	
20. Macrobenthos (note diversity and abundance)	<u></u>	1 1	2	3	
21. Aquatic Mollusks	(0)	1 1	2	3	
22. Fish	07	0.5	1	1.5	
23. Crayfish	.07	0.5	1	1.5	
24. Amphibians	0	0.5	1	1.5	
25. Algae	(ō)	0.5	1	1.5	
26. Wetland plants in streambed	***	FACW = 0.75; O	BL = 1,5) Other =	: 0	
*perennial streams may also be identified using other met	thods. See p. 35 of man	ual.			
Notes: Channelized					
Sketch:		NwHo	9 Ft wide	50	
/ J.	1	TAR Ma.	15 ft. wide	_	
A / wods	/	IND MIGHT	, , , , , , , , , , , , , , , , , , , ,		
/ Words /					
1 words	sampool				

Swamp Rd



Waterbody scmp001 facing southeast upstream.



Waterbody scmp001 facing northwest downstream.



Waterbody scmp001 facing northeast across channel

USACE AID# DW	Q #	Site # (indicate on attached map))
STREAM QUALIT	Y ASSESSMEN	T WORKSHEET	
Provide the following information for the stream read			
. Applicant's name: Dominion	2. Evaluator's n	name: L. Roper	
3. Date of evaluation: 4/26/16	4. Time of evalu	uation: 12pm	
5. Name of stream: UT to Cape Fear River	6. River basin:	Cape Fear	
7. Approximate drainage area: 30 ac.		: O	
. Length of reach evaluated: 50ft		umberland	
Site coordinates (if known): prefer in decimal degree		name (if any): none	
atitude (ex. 34.872312): 35, 161,086	Longitude (ex. –7	77.556611): -78,756/04	
Method location determined (circle) GPS Topo Sheet G 3. Location of reach under evaluation (note nearby road)	Ortho (Aerial) Photo/GIS	Other GIS Other	
Parcel 22-080, north of Swa	mp Rd	of the second second second	
4. Proposed channel work (if any): TBD	14 12 18 18 18 18 18 18 18 18 18 18 18 18 18	29H 70 HC WE SET CHEET AND WITH 26H 2 FEE AL	
5. Recent weather conditions: Cool - dry	Langer tem estima	AND AND THE RESERVE ASSESSMENT OF THE SECOND	
6. Site conditions at time of visit: Clear cut		Carefornia Edecologia Ani	
7. Identify any special waterway classifications known:	Section 10	Tidal WatersEssential Fisheries Ha	bitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive	e WatersWater Supply Watershed(l-	·IV)
8. Is there a pond or lake located upstream of the evalua	ation point? YES NO	If yes, estimate the water surface area:	
9. Does channel appear on USGS quad map? YES (N	20. Does channe	el appear on USDA Soil Survey? YES	
1. Estimated watershed land use:% Residential	% Commercia	al% Industrial 70 % Agricultur	al
		ogged% Other ((A.
2. Bankfull width: \\ f+	23. Bank height	t (from bed to top of bank): 5 F+	
4. Channel slope down center of stream:Flat (0 to			%)
5. Channel sinuosity:StraightOccasional be	endsFrequent mea	ander Very sinuous Braided chan	nel
nstructions for completion of worksheet (located of ocation, terrain, vegetation, stream classification, etc. to each characteristic within the range shown for the characteristics identified in the worksheet. Scores show the characteristic cannot be evaluated due to site or weather the comment section. Where there are obvious changes in	Every characteristic must e ecoregion. Page 3 puld reflect an overall as the conditions, enter 0 in the character of a stream	st be scored using the same ecoregion. Assign p provides a brief description of how to review ssessment of the stream reach under evaluation. In the scoring box and provide an explanation in	oint the If a n the stur

into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to eval 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.

Comments: Channelized Total Score (from reverse):_

Date 4/26/16 Evaluator's Signature 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.

# CHARACTERISTICS		ECOREC	SCORE			
		CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	0.
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	١
STATE OF THE PARTY	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	2
	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	U
1	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	1
Miller	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	D
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	10 12 10
	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)	NA*	0-4	0 – 5	-
	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0 – 5	4
	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	3
2	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	0
110000	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0 – 6	1-2
	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	
1	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	4
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	national state
100	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
5	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	6
DIOPOIO I	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
1	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	3
10 mm		Total Points Possible	100	100	100	
200		TOTAL SCORE (also enter on fi	rst page)	THE PARTY		26

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

Date: 4/26/16

Project/Site: ACP

Latitude: 35.16/088

Evaluator: L. Roper

County: Cumberland

Longitude: 78.756/04

Total Points:

Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*

A. Geomorphology (Subtotal = 6)

Absent Weak Moderate Strong

1ª Continuity of channel bed and bank disched © 1 2 3

A. Geomorphology (Subtotal = 6	Absent	Weak	Moderate	Strong
1ª Continuity of channel bed and bank disched	0	1	2	3
Sinuosity of channel along thalweg	0	0	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	0	2	3
Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	0	2	3
7. Recent alluvial deposits	0	Ð	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	(0.5)	1 1	1.5
11. Second or greater order channel	No	=0'	Yes	= 3
a artificial ditches are not rated; see discussions in manual	6			
B. Hydrology (Subtotal = 5.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(h)	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	10/	1.5
17. Soil-based evidence of high water table?	No	0 = 0	Yes	= 3)
C. Biology (Subtotal = 75)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed		FACW = 0.75	OBL = 1.5 Other =	0
*perennial streams may also be identified using other methods.	See p. 35 of manua	l.		
Notes: Channelized				(a) (1 - 2) (a)
Holes. Chanteller			THE RESERVE AND ADDRESS OF THE PARTY OF THE	

GHWM: 9 FT



Waterbody data point scmp001_s2 facing east upstream.



Waterbody data point scmp001_s2 facing west downstream.



Waterbody data point scmp001_s2 facing south across.

USACE	AID=	D'
the trail of the Aces	1 1 1 2 1	

DWO=		
DITU	The second of the property of the particle particle of the par	

Site =	(indicate	on	attached	map
scmo	037			





Provide the following information for the stream reach und	
1. Applicant's name: Dominion	2. Evaluator's name: ESI(W. Vaughan, L. Roper)
3. Date of evaluation: 4-26-16	4. Time of evaluation: 11:30 am
5. Name of stream: UNT to CAPETERS	6. River basin: Cape Fear
7. Approximate drainage area: SOO acres	8. Stream order: 2nd
9. Length of reach evaluated: 20 Ft	10. County: Cumberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): None
Latitude (ex. 34.872312): 35,1597777	Longitude (ex77.556611): -78. 758523
Method location determined (circle): GPS Topo Sheet Ontho (13. Location of reach under evaluation (note nearby roads and North of Swamp Rd and Sou	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): Proposed P.	peline
15. Recent weather conditions: Warm, Suny	
16. Site conditions at time of visit: Stream near	clearent and agriculture field
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
	Nutrient Sensitive Waters Water Supply Watershed IV (1-IV)
18. Is there a pond or lake located upstream of the evaluation	point? YES NO If yes, estimate the water surface area:
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: 5 % Residential	% Commercial% Industrial% Agricultural
45% Forested	% Cleared / Logged% Other ()
* (Top of Bank) 22. Bankfull width: 10 ft	23. Bank height (from bed to top of bank):
24. Channel slope down center of stream: Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eccharacteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather comment section. Where there are obvious changes in the cinto a forest), the stream may be divided into smaller reaches	ge 2): Begin by determining the most appropriate ecoregion based on a characteristic must be scored using the same ecoregion. Assign points oregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a conditions, enter 0 in the scoring box and provide an explanation in the character of a stream under review (e.g., the stream flows from a pasture s that display more continuity, and a separate form used to evaluate each ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 47 Comm	ents:
	NOT THE REPORT OF THE PROPERTY
	等可以用证据的。但是是是有的证明。
The state of the s	
Evaluator's Signature Willa & Vaugh	Date_ 4/26/16
This channel evaluation form is intended to be used on gathering the data required by the United States Arm	ly as a guide to assist landowners and environmental professionals in by Corps of Engineers to make a preliminary assessment of stream 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.

	CHARLETERNICHOS	ECOREGION POINT RANGE			SCORE	
#	CHARACTERISTICS	Coastal	Piedmont	Mountain.	SCOK	
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	5	
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	2	
3	(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	6 0-4	0-4	5	
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4		
6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0	
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	1	
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	3	
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5		
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	5	
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	5	
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	1	
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0-5	0-6	2	
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2	
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)	NA*	0-4	0-4		
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5		
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2	
22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	-	
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	1	
The second	Total Points Possible	100	100	100		

^{*} These characteristics are not assessed in coastal streams.

Date: 4-26-16	Project/Site: A	CP.	Latitude: 35	Latitude: 35. 1597777		
Evaluator: ESI (L. Roper, W. Vacughan)	County: Cow	iberland.	Longitude: 78.758523			
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		nation (circle one) rmittent Perennia	Other e.g. Quad Name:	Slocywb		
A. Geomorphology (Subtotal = 1)	Absent	Weak	Moderate	Strong		
1ª. Continuity of channel bed and bank	0	1	2	3		
Sinuosity of channel along thalweg	0	0	2	3		
3. In-channel structure: ex. riffle-pool, step-pool,				2		
ripple-pool sequence	0	1	(2)	3		
Particle size of stream substrate	0	(1)	2	3		
5. Active/relict floodplain	0	1	2	3		
6. Depositional bars or benches	0	1	2	3		
7. Recent alluvial deposits	@	1	2	3		
8. Headcuts	0	1	2	3		
9. Grade control	0	0.5	1	1.5		
10. Natural valley	0	0.5	1	1.5		
11. Second or greater order channel	No	0 = 0	Yes	= 3		
artificial ditches are not rated; see discussions in manual			-			
B. Hydrology (Subtotal = 12)						
12. Presence of Baseflow	0	1	2	3		
13. Iron oxidizing bacteria	0	1	2	(3)		
14. Leaf litter	(1.5)	1	0.5	0		
15. Sediment on plants or debris	0	0.5	0	1.5		
16. Organic debris lines or piles	0	(0.5)	1 _	1.5		
17. Soil-based evidence of high water table?		0 = 0	Yes			
C. Biology (Subtotal = /O)						
18. Fibrous roots in streambed	(3)	2	1	0		
19. Rooted upland plants in streambed	(3)	2	1	0		
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3		
	0	1	2	3		
21. Aquatic Mollusks	0	0.5	(1)	1.5		
22. Fish	0	0.5	1	1.5		
23. Crayfish		0.5	Ð	1.5		
24. Amphibians	0	0.5	<u>(1)</u> _	1.5		
25. Algae	U	FACW = 0.75; OB				
26. Wetland plants in streambed	de Coop 25 of marrie		L - 1.0 (Other -			
*perennial streams may also be identified using other metho	ous, see p. 35 of manua	- Ω				
Notes:	-0	0N/				
Sketch:	ocmo 028 po go	\$ //	3			
	amp Rd					

OHWM: 4 Bank width: 10

Supost



Waterbody data point scmo037 facing west upstream.



Waterbody data point scmo037 facing east downstream.



Waterbody data point scmo037 facing south across.

5cmp 038



STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach un	der assessment:
1. Applicant's name: Dominion	2. Evaluator's name: ESJ-J. Harbour, K. Murphreg
3. Date of evaluation: 3/28/16	4. Time of evaluation: (OAM
5. Name of stream: UNT to COPE FEON RIVEY	6. River basin: Cape Fear
7. Approximate drainage area: 5 acres	8. Stream order: 2 nd
9. Length of reach evaluated: 100 F+	10. County: Cumberland
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): ΛA
Latitude (ex. 34.872312): 35,15 468	
Method location determined (circle): GPS Topo Sheet Ortho 13. Location of reach under evaluation (note nearby roads and Located South of Swamp Road	d landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): Proposed P:Pe	line
15. Recent weather conditions: Sunny, (ain w	ithin Past 24 hours
16. Site conditions at time of visit: undisturbed	2 galaxian da urranit d
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding 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:
19. Does channel appear on USGS quad map? (ES) NO	20. Does channel appear on USDA Soil Survey? YES NO
	% Commercial% Industrial% Agricultural
7 (To 58.1) 20% Forested	% Cleared / Logged % Other () 23. Bank height (from bed to top of bank): 108+
22. Bankfull width: 108+	23. Bank height (from bed to top of bank): 108+
24. Channel slope down center of stream: Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Even to each characteristic within the range shown for the eccharacteristics identified in the worksheet. Scores should characteristic cannot be evaluated due to site or weather comment section. Where there are obvious changes in the into a forest), the stream may be divided into smaller reaches	age 2): Begin by determining the most appropriate ecoregion based on ry characteristic must be scored using the same ecoregion. Assign points coregion. Page 3 provides a brief description of how to review the reflect an overall assessment of the stream reach under evaluation. If a conditions, enter 0 in the scoring box and provide an explanation in the character of a stream under review (e.g., the stream flows from a pasture es that display more continuity, and a separate form used to evaluate each age between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 31 Comm	nents:
Control of the Contro	Control of the Contro
	Activities to manufacture and the second sec
	1600 zara - greekli galles garder (h
Evaluator's Signature Kell Mushor	Date 3/28/16
This channel evaluation form is intended to be used on	ly as a guide to assist landowners and environmental professionals in my 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.

#	CHARACTERISTICS	ECOREG Coastal	ION POINT Piedmont	RANGE Mountain	scor
	Presence of flow / persistent pools in stream	COSTABBIONEDADARINI ZAMA	The second secon	Carlo de la como de	1980 STATE OF 1
1	(no flow or saturation = 0; strong flow = max points)	0-5	0 – 4	0-5	4
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0-5	0-5	2
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	2
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	and the
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	1
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)	NA*	0-4	0-5	Tion is
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	2
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	2
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	1
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
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)	NA*	0-4	0-4	The rese
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	C
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	C
22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	C
21 22 23	Evidence of wildlife use	0-6	0-5	0-5	3
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on	first nage)	Me Many 1	TATAL NEW YORK	3

NC DWO Stream Identification Form Version 4.11

THE DAY & Stream Identification I of the	T CI STOIL TITE			
Date: 3/28/16	Project/Site: ACP	Latitude: 35.15468		
Evaluator: [S]-J, Harbour, K. murphley	County: Cumberland	Longitude:_78.75773		
Total Points: Stream is at least intermittent 26 if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other Slocumb, NC		

A. Geomorphology (Subtotal = 12)	Absent	Weak	Moderate	Strong
1ª. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	0	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	1.	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No	= 0	Yes	=3)
artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal =)	- 00 G- 181 eccq 00			
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	1 1	1.5
16. Organic debris lines or piles	0	0.5	0	1.5
17. Soil-based evidence of high water table?	No	0 = 0	Yes	€3)
C. Biology (Subtotal = 7	~			
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	0	0.5	(1)	1.5
26. Wetland plants in streambed		FACW = 0.75;	OBL = 1.5 Other =	0)
*perennial streams may also be identified using other method	ls. See p. 35 of manua	ıl.		
		tched		
Sketch: 1 V CL Scmp 03	sem1038			
oost.				

OHWM Width: 3 TOP OF BOOK WIDTH: 108+



Waterbody scmp038 facing east upstream.



Waterbody scmp038 facing west downstream.



Waterbody scmp038 facing south across bank.

USACE	AID	
COULT	TILD-	

DWQ=	
DWO-	

Site =	(indicate	on attached	map
	5	cmp 0	39





Provide the following information for the stream reach under assessment:
1. Applicant's name: Dominion 2. Evaluator's name: ESJ-J. Harbour, K. Murphrey
3. Date of evaluation: 3/28/16 4. Time of evaluation: 1 Pm
5. Name of stream: UNT to Cape Fear River 6. River basin: Cape Fear
7. Approximate drainage area: <5 acres 8. Stream order: Znd
9. Length of reach evaluated: 50 64 10. County: Cumbertand
11. Site coordinates (if known): prefer in decimal degrees.
Latitude (ex. 34.872312): 35.15128 Longitude (ex77.556611): -78.75711
Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any): POPOSED Pileline
15. Recent weather conditions: Rain Within Past 24hrs
16. Site conditions at time of visit: man-made ditch in ag field
17. Identify any special waterway classifications known:Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource WatersNutrient Sensitive WatersWater Supply Watershed(1-1V)
18. Is there a pond or lake located upstream of the evaluation point? YES (NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO 20. Does channel appear on USDA Soil Survey? YES NO
10 % Forested % Cleared / Logged % Other ()
21. Estimated watershed land use:% Residential% Commercial% Industrial% Agricultural% Cleared / Logged% Other () 22. Bankfull width: 23. Bank height (from bed to top of bank): 7F+
24. Channel slope down center of stream: Flat (0 to 2%)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bendsFrequent meanderVery sinuousBraided 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): 2) Comments:
。
Evaluator's Signature Yeur Muphy Date 3/28/16 This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in
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.

1	CHARACTERISTICS	ECOREGION POINT RANGE.			SCOR
#	CHARACTERISTICS	Coastal	Piedmont	Mountain;	
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0-5	2
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0-5	0-5	1
3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	0
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	6 0-4	0-4	3
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
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	0
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	0
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	C
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	4
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	1
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	C
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	(
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	(
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	(
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	C
22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	(
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	1
	Total Points Possible	100	100	100	

^{*} These characteristics are not assessed in coastal streams.

Date: 3/26/16

Evaluator: ESI-J. Harbour, K mariphies	County: CUN	Stream Determination (circle one) Ephemeral Intermittent Perennial		Other Slocumb, NC		
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determine Ephemeral (Inter					
A. Geomorphology (Subtotal = 16)	Absent	Weak	Moderate	Strong		
1ª Continuity of channel bed and bank Dibb	0	1	2	3		
2. Sinuosity of channel along thalweg	(0)	1	2	3		
3. In-channel structure: ex. riffle-pool, step-pool,	0	1	2	3		
ripple-pool sequence 4. Particle size of stream substrate	0	1	2	3)		
5. Active/relict floodplain	0	1	2	3		
6. Depositional bars or benches	(0)	1	2	3		
7. Recent alluvial deposits	0	1	(2)	3		
B. Headcuts	0	(1)	2	3		
9. Grade control	0	0.5	1	1.5		
10. Natural valley	(0)	0.5	1	1.5		
11. Second or greater order channel	The state of the s	= 0	Yes			
artificial ditches are not rated; see discussions in manual						
B. Hydrology (Subtotal = 7, 5)			ope the same and a second			
12. Presence of Baseflow	0	1	(2)	3		
13. Iron oxidizing bacteria	(0)	1	2	3		
14. Leaf litter	1.5	0	0.5	0		
5. Sediment on plants or debris	0	(0.5)	1	1.5		
16. Organic debris lines or piles	0	0.5	1)	1.5		
17. Soil-based evidence of high water table?	No	0 = 0	Yes	(= 3)		
C. Biology (Subtotal =)						
18. Fibrous roots in streambed	(3)	2	1	0		
19. Rooted upland plants in streambed	(3)	2	1	0		
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3		
21. Aquatic Mollusks	(0)	1	2	3		
22. Fish	(0)	0.5	1 .	1.5		
23. Crayfish	(0)	0.5	1	1.5		
24. Amphibians	(0)	0.5	1	1.5		
25. Algae	(0)	0.5	1	1.5		
26. Wetland plants in streambed		FACW = 0.75; OE	3L = 1.5 Other =	ره		
*perennial streams may also be identified using other meth	ods. See p. 35 of manua	ıl.		1700 0 110 D		
Notes: ditch: Rain in previous 2	1 hours					
N III CL						
Sketch:	+					
1 \ x P	Scompl	039				
SCMp037						
	1					
HWM Width: 38+						
C 2001511 date 664						
TOP of BONK width: 68+						

ACP

Project/Site:



Waterbody scmp039 facing east upstream.



Waterbody scmp039 facing west downstream.



Waterbody scmp039 facing south across bank.