SWAMP Stream Habitat Characterization Form *FULL VERSION* *Revision Date: May 29th, 2008*

REACH DOCUMENTATION

Standard Reach Length (wetted width ≤ 10 m) = 150 m Distance between transects = 15 m
Alternate Reach Length (wetted width >10 m) = 250 m Distance between transects = 25 m

Project Name:	Date:	Time:
Stream Name:	Site Name/ Description:	
Site Code:	Crew Members:	
Latitude (actual): ºN	datum: NAD83	
Longitude (actual): ºW	other:	

AMBIENT WATER QUALITY MEASUREMENTS

turbidity and silica are optional; calibration date required

Temp (°C)		pH		Alkalinity (mg/L)		Turbidity (ntu)	
		cal. date				cal. date	
Dissolved O^2 (mg/L)		Specific. Conduct (µS/cm)		Salinity. (ppt)		Silica (mg/L)	
cal. date		cal. date		cal. date		cal. date	

REACH LENGTH

Actual Length (m) *(see reach length guidelines at top of form)*	
Explanation:	

DISCHARGE MEASUREMENTS

1st measurement = left bank (looking downstream)

check if discharge measurements not possible (explain in field notes section) ☐

VELOCITY AREA METHOD (preferred)

cal. date

Transect Width (m):

	Distance from Left Bank (cm)	Depth (cm)	Velocity (ft/sec)		Distance from Left Bank (cm)	Depth (cm)	Velocity (ft/sec)
1				11			
2				12			
3				13			
4				14			
5				15			
6				16			
7				17			
8				18			
9				19			
10				20			

BOUYANT OBJECT METHOD (use ONLY if velocity area method not possible)

	Float 1	Float 2	Float 3
Distance			
Float Time			

Float Reach Cross Section

width (m) depth	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

NOTABLE FIELD CONDITIONS (check one box per topic)

Evidence of recent rainfall (enough to increase surface runoff)	NO	☐	minimal	☐	>10% flow increase	☐
Evidence of fires in reach or immediately upstream (<500 m)	NO	☐	< 1 year	☐	< 5 years	☐
Dominant landuse/ landcover in area surrounding reach	Agriculture	☐	Forest	☐	Rangeland	☐
	Urban/ Industrial	☐	Suburb/Town	☐	Other	☐

ADDITIONAL COBBLE EMBEDDEDNESS MEASURES

(carry over from transect forms if needed; measure in mm)

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	

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Site Code:	Date: __ __ / __ __ / __ __ __ __	

SLOPE and BEARING FORM (transect based - for Full PHAB only)

AUTOLEVEL	
CLINOMETER	
HANDLEVEL	
OTHER	

Starting Transect	MAIN SEGMENT (record percent of inter-transect distance in each segment if supplemental segments are used)					SUPPLEMENTAL SEGMENT (record percent of inter-transect distance in each segment if supplemental segments are used)					
	Stadia rod measurements	Slope (%) or Elevation Difference cm ☐ % ☐	Segment Length (m)	Bearing (0°-359°)	Percent of Total Length (%)	Stadia rod measurements	Slope or Elevation Difference cm ☐ % ☐	Segment Length (m)	Bearing (0°-359°)	Percent of Total Length (%)	
K											
J											
I											
H											
G											
F											
E											
D											
C											
B											
A											
additional calculation area											

ADDITIONAL HABITAT CHARACTERIZATION

High Gradient ☐ Low Gradient ☐

Parameter	Optimal	Suboptimal	Marginal	Poor
Epifaunal Substrate/ Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover (50% for low-gradient streams); mix of submerged logs, undercut banks, cobble or other stable habitat	40-70% mix of stable habitat (30-50% for low-gradient streams); well-suited for full colonization potential	20-40% mix of stable habitat (10-30% in low-gradient streams); substrate frequently disturbed or removed	Less than 20% stable habitat (10% in low-gradient streams); lack of habitat is obvious; substrate unstable or lacking
Score:	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition (<20% in low-gradient streams)	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected (20-50% in low-gradient streams)	Moderate deposition of new gravel, sand, or fine sediment on bars; 30-50% of the bottom affected (50 - 80% in low-gradient streams)	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently (>80% in low-gradient streams)
Score:	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern	Some channelization present, (e.g., bridge abutments); evidence of past channelization (> 20yrs) may be present but recent channelization not present	Channelization may be extensive: embankments or shoring structures present on both banks; 40 to 80% of stream reach disrupted	Banks shored with gabian or cement; Over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely
Score:	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

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Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect A

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: AB

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

TAKE PHOTOGRAPHS

(check box if taken and record photo code)

Downstream (**optional**) ☐

Upstream (**required**) ☐

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Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect B

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: BC

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

SWAMP Stream Habitat Characterization Form *FULL VERSION* *Revision Date: May 29th, 2008*

Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect C

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: CD

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

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Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect D

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: DE

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

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Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect E

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: EF

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

SWAMP Stream Habitat Characterization Form *FULL VERSION* *Revision Date: May 29th, 2008*

Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect F

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: FG

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

TAKE PHOTOGRAPHS

(check box if taken and record photo code)

Downstream (**required**) ☐

Upstream (**required**) ☐

SWAMP Stream Habitat Characterization Form *FULL VERSION* *Revision Date: May 29th, 2008*

Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect G

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: GH

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

SWAMP Stream Habitat Characterization Form *FULL VERSION* *Revision Date: May 29th, 2008*

Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect H

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: HI

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

SWAMP Stream Habitat Characterization Form *FULL VERSION* *Revision Date: May 29th, 2008*

Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect I

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: IJ

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

SWAMP Stream Habitat Characterization Form *FULL VERSION* *Revision Date: May 29th, 2008*

Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m):

Transect J

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

Inter-transect: JK

Wetted Width (m):

FLOW HABITATS (% between transects, total=100%)

Channel Type	%
Cascade/ Falls	
Rapid	
Riffle	
Run	
Glide	
Pool	
Dry	

INTER-TRANSECT SUBSTRATES (measure in mm or use size classes)

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

Note**: Substrate sizes can be recorded either as direct measures of the median axis of each particle or one of size class categories listed on the supplemental page **(direct measurements are preferred)

SWAMP Stream Habitat Characterization Form *FULL VERSION* *Revision Date: May 29th, 2008*

Site Code:	Site Name:	Date: __ __ / __ __ / __ __ __ __
Wetted Width (m):	Bankfull Width (m):	Bankfull Height (m): **Transect K**

TRANSECT SUBSTRATES

Position	Dist from LB (m)	Depth (cm)	mm/ size class	CPOM	Cobble Embeddedness (%)
Left Bank				P A	
Left Center				P A	
Center				P A	
Right Center				P A	
Right Bank				P A	

BANK STABILITY (score zone 5m up and 5m downstream of transect between bankfull - wetted width)

Left Bank	eroded	vulnerable	stable
Right Bank	eroded	vulnerable	stable

HUMAN INFLUENCE (circle only the closest to wetted channel)

0 = Not Present **B** = On Bank **C** = Between Bank and 10 m from Channel
P = >10 m + <50 m from Channel **Channel (record Yes or No)**

	Left Bank				Channel		Right Bank			
Walls/ Rip-rap/ Dams	P	C	B	0	Y	N	0	B	C	P
Buildings	P	C	B	0	Y	N	0	B	C	P
Pavement/ Cleared Lot	P	C	B	0			0	B	C	P
Road/ Railroad	P	C	B	0	Y	N	0	B	C	P
Pipes (Inlet/ Outlet)	P	C	B	0	Y	N	0	B	C	P
Landfill/ Trash	P	C	B	0	Y	N	0	B	C	P
Park/ Lawn	P	C	B	0			0	B	C	P
Row Crops	P	C	B	0			0	B	C	P
Pasture/ Range	P	C	B	0			0	B	C	P
Logging Operations	P	C	B	0			0	B	C	P
Mining Activity	P	C	B	0	Y	N	0	B	C	P
Vegetation Management	P	C	B	0			0	B	C	P
Bridges/ Abutments	P	C	B	0	Y	N	0	B	C	P
Orchards/ Vineyards	P	C	B	0			0	B	C	P

RIPARIAN VEGETATION (facing downstream)

0 = Absent (0%) 3 = Heavy (40-75%)
1 = Sparse (<10%) 4 = Very Heavy>75%)
2 = Moderate (10-40%) **circle one**

Vegetation Class	Left Bank	Right Bank
Upper Canopy (>5 m high)		
Trees and saplings >5 m high	0 1 2 3 4	0 1 2 3 4
Lower Canopy (0.5 m-5 m high)		
All vegetation 0.5 m to 5 m	0 1 2 3 4	0 1 2 3 4
Ground Cover (<0.5 m high)		
Woody shrubs and saplings <0.5 m	0 1 2 3 4	0 1 2 3 4
Herbs/ grasses	0 1 2 3 4	0 1 2 3 4
Barren, bare soil/ duff	0 1 2 3 4	0 1 2 3 4

INSTREAM HABITAT COMPLEXITY

0 = Absent (0%)
1 = Sparse (<10%)
2 = Moderate (10-40%)
3 = Heavy (40-75%)
4 = Very Heavy (>75%)

Filamentous Algae	0 1 2 3 4
Aquatic Macrophytes/ Emergent Vegetation	0 1 2 3 4
Boulders	0 1 2 3 4
Woody Debris >0.3 m	0 1 2 3 4
Woody Debris <0.3 m	0 1 2 3 4
Undercut Banks	0 1 2 3 4
Overhang. Vegetation	0 1 2 3 4
Live Tree Roots	0 1 2 3 4
Artificial Structures	0 1 2 3 4

DENSIOMETER READINGS (0-17)

count covered dots

Center Left	
Center Upstream	
Center Downstream	
Center Right	
Left Bank (optional)	
Right Bank (optional)	

No Inter-transect Measures

TAKE PHOTOGRAPHS

(check box if taken and record photo code)

Upstream (**optional**) ☐

Downstream (**required**) ☐

Site Code:	Date: __ __ / __ __ / __ __ __ __	**FULL FORM**

BENTHIC INVERTEBRATE SAMPLES

Collection Method (indicate standard or margin-center-margin)			Replicate #	# jars
RWB (standard)	**RWB** (MCM)	**TRC**		
RWB (standard)	**RWB** (MCM)	**TRC**		
RWB (standard)	**RWB** (MCM)	**TRC**		
RWB (standard)	**RWB** (MCM)	**TRC**		

Field Notes/ Comments:

Chemistry Equipment ID

Analyte	Equipment
temperature	
pH	
dissolved oxygen	
specific conductance	
salinity	
alkalinity	
turbidity	
dissolved silica	
Velocity	

Check if a water chemistry **grab** sample was collected (nutrients, SSC, etc.)	
Check if a DUPLICATE water chemistry **grab** sample was collected	
Check if a water chemistry **integrated** sample was collected (e.g., chl a, AFDM)	
Check if a DUPLICATE water chemistry **integrated** sample was collected	

ALGAE SAMPLES

Check if duplicate algae assemblage ID samples collected ☐

Composite Volume (mL)		Assemblage ID volume **(diatoms)** (50 mL tube, preserved)		Chororophyll a volume (25 mL, use GF/F filter)	
Number of transects sampled (0-11)		Assemblage ID volume **(soft algae)** (50 mL tube, preserved)		Biomass volume (25 mL, GF/F filter)	

ADDITIONAL PHOTOGRAPHS

Description	Photo Code	Description	Photo Code

Flow Habitat Type	DESCRIPTION
Cascades	Short, high gradient drop in stream bed elevation often accompanied by boulders and considerable turbulence
Falls	High gradient drop in elevation of the stream bed associated with an abrupt change in the bedrock
Rapids	Sections of stream with swiftly flowing water and considerable surface turbulence. Rapids tend to have larger substrate sizes than riffles
Riffles	Shallow sections where the water flows over coarse stream bed particles that create mild to moderate surface turbulence; (< 0.5 m deep, > 0.3 m/s).
Runs	Long, relatively straight, low-gradient sections without flow obstructions. The stream bed is typically even and the water flows faster than it does in a pool; (> 0.5 m deep, > 0.3 m/s). A **step-run** is a series of runs separated by short riffles or flow obstructions that cause discontinuous breaks in slope
Glides	A section of stream with little or no turbulence, but faster velocity than pools; (< 0.5 m deep, < 0.3 m/s)
Pools	A reach of stream that is characterized by deep, low-velocity water and a smooth surface; (> 0.5 m deep, < 0.3 m/s)

Size Class Code	Size Class Range	Size Class Description	Common Size Reference
RS	> 4 m	bedrock, smooth	larger than a car
RR	> 4 m	bedrock, rough	larger than a car
XB	1 - 4 m	boulder, large	meter stick to car
SB	25 cm - 1.0 m	boulder, small	basketball to meter stick
CB	64 - 250 mm	cobble	tennis ball to basketball
GC	16 - 64 mm	gravel, coarse	marble to tennis ball
GF	2 – 16 mm	gravel, fine	ladybug to marble
SA	0.06 – 2 mm	sand	gritty to ladybug
FN	< 0.06 mm	fines	not gritty
HP	< 0.06 mm	hardpan (consolidated fines)	
WD	NA	wood	
RC	NA	concrete/ asphalt	
OT	NA	other	

BANK STABILITY

Although this measure of the degree of erosive potential is subjective, it can provide clues to the erosive potential of the banks within the reach. Assign the category whose description best fits the conditions in the area between the wetted channel and bankfull channel (see figure below)

Eroded	Banks show obvious signs of erosion from the current or previous water year; banks are usually bare or nearly bare
Vulnerable	Banks have some vegetative protection (usually annual growth), but not enough to prevent erosion during flooding
Stable	Bank vegetation has well-developed roots that protect banks from erosion; alternately, bedrock or artificial structures (e.g., concrete/ rip-rap) prevent bank erosion

CPOM/ COBBLE EMBEDDEDNESS

CPOM: Record presence (P) or absence (A) of coarse particulate organic matter (>1.0 mm particles) within 1 cm of each substrate particle

Cobble Embeddedness: Visually estimate % embedded by fine particles (record to nearest 5%)

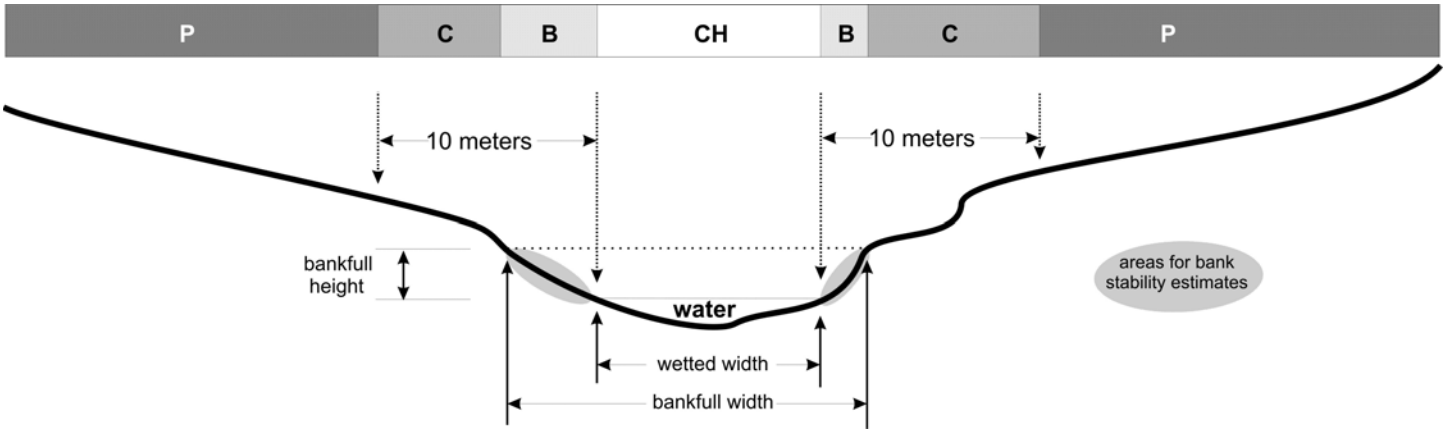
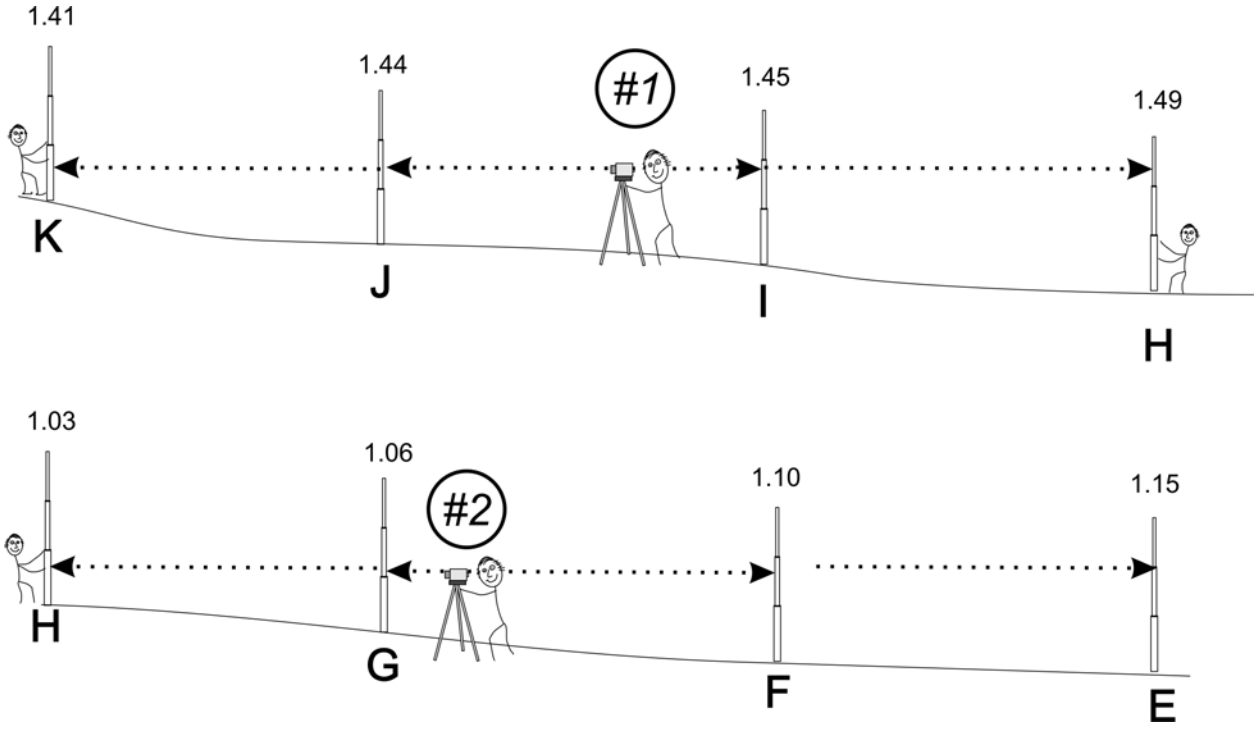


Figure 1. Cross-sectional diagram of stream transect indicating regions for assessing human influence measures:

- The measurement zone extends 5 meters upstream and 5 meters downstream of each transect
- Record one category for each bank and for the wetted channel (3 values possible)
- In reaches with wide banks, region "C" may be entirely overlapped by region "B"; in these cases, circle "B"
- Region "P" extends from 10 meters to the distance that can be seen from the channel, but not greater than 50 m

SLOPE and BEARING FORM **EXAMPLE**	AUTOLEVEL	X
	CLINOMETER	
	HANDLEVEL	

Starting Transect	MAIN SEGMENT (record percent of inter-transect distance in each segment if supplemental segments are used)						SUPPLEMENTAL SEGMENT (record percent of inter-transect distance in each segment if supplemental segments are used)					
	Stadia rod measurements		Slope (%) or Elevation Difference cm ■ % □	Segment Length (m)	Bearing (0°-359°)	Percent of Total Length (%)	Stadia rod measurements		Slope or Elevation Difference cm □ % □	Segment Length (m)	Bearing (0°-359°)	Percent of Total Length (%)
K	1.41											
J	1.44		3	15	140	100						
I	1.45		1	15	145	100						
H	1.49	1.03	4	15	150	100						
G		1.06	3	15	143	100						
F		1.10	4	15	187	100						
E		1.15	5	15	195	100						



1. Level the autolevel at Position #1
2. Place base of stadia rod at water level every time
3. Sight to stadia rod at Transect K, then Transect J
4. Rotate scope and sight to Transects I and H.
5. Move level to Position #2 and re-level
6. Re-sight to stadia rod at Transect H, then Transect G
7. Rotate scope and sight to Transects F and E

Note: sites will vary in the number of separate level positions needed to survey the reach