

FIELD SAMPLE SHIPMENT PACKING/TRACKING FORM

Wadeable
 Boatable
 Other = Fax Verification Form
 Date Visited: / /

Willamette Research Station
 Poison Depot
 Site Name: (Write Unknown if unknown)
 Visit Number:

Check all that apply:
 1350 Goodnight Ave
 Other
 1 2 3

Corvallis, OR 97333

Airbill Number: _____
 Contact: (Person calling in or faxing tracking info. Include phone number if IM needs to contact you.) _____
 Date Sent: / /

Site ID	Sample ID	Sample Type	# Of Jars	Fish:	Comments (Fish tissue species and other comments here.)
		<input type="radio"/> Chem <input type="radio"/> Peri - BIO, CHLA, ID <input type="radio"/> Peri - Plankton Tow <input type="radio"/> Peri - STAR		<input type="radio"/> Big <input type="radio"/> Small	
		<input type="radio"/> Fish (Tissue) <input type="radio"/> Bent - Reachwide <input type="radio"/> Bent - Targeted Riffle <input type="radio"/> Vert (Vouchers)			
		<input type="radio"/> Chem		<input type="radio"/> Big	
		<input type="radio"/> Peri - BIO, CHLA, ID		<input type="radio"/> Small	
		<input type="radio"/> Peri - Plankton Tow			
		<input type="radio"/> Peri - STAR			
		<input type="radio"/> Fish (Tissue)		<input type="radio"/> Big	
		<input type="radio"/> Bent - Reachwide		<input type="radio"/> Small	
		<input type="radio"/> Bent - Targeted Riffle			
		<input type="radio"/> Vert (Vouchers)			

TRACKING: Fax or phone in all information on this form

Fax

Ph: _____

Lab contact: _____

Everything above the sample section on this form must be filled out when team is calling it in and/or sending it in to lab.

All sample information must be put on this form even the samples that are not sent. If more than one site is on a form, please put the date visited in the comments on the first line for that site.

For office use only

Initials: _____ Status:

Date Entered: / /

For Lab use only

Date Received: / /

SAMPLE TYPES	CONDITION CODES
BENT = Bent hos	B = Broken Syringe Tip
CHEM = Water Chemistry	C = Cracked Jar
FISH = Fish Tissue	F = Frozen
PERI = Periphyton	L = Leaking
VERT = Fish Museum	ML = Missing Label
	NP = Not Preserved
	OK = Seems Fine
	T = Thawed but still Cold
	W = Warm

Box is for # of Jars Reachwide and Targeted Riffle.

STREAM VERIFICATION FORM - STREAMS/RIVERS

Reviewed by (initial): _____

SITE NAME: _____	DATE: ____/____/____	VISIT: 0 1 2 3
SITE ID: _____	Don't forget to record Reach Length on back.	TEAM: _____

STREAM/RIVER VERIFICATION INFORMATION

Stream/River Verified by (X all that apply): GPS Local Contact Signs Roads Topo. Map
 Other (Describe Here): _____ Not Verified (Explain in Comments)

Coordinates	Latitude North	Longitude West	Type of GPS Fix	Are GPS Coordinates w/i 10 Sec. of map?
MAP Degrees, Minutes, and Seconds OR Decimal Degrees	_____ _____	_____ _____	<input type="checkbox"/> 2D <input type="checkbox"/> 3D	<input type="checkbox"/> Yes <input type="checkbox"/> No
GPS Degrees, Minutes, and Seconds OR Decimal Degrees	_____ _____	_____ _____		

DID YOU SAMPLE THIS SITE?

YES If YES, check one below

NO If NO, check one below

SAMPLEABLE (Choose method used)

- Wadeable - Continuous water, greater than 50% wadeable
- Boatable
- Partial - Sampled by wading (Explain in comments)
- Partial - Sampled by boat (Explain in comments)
- Wadeable Interrupted - Not continuous water along reach
- Boatable Interrupted - Not continuous water along reach
- Altered - Stream/River Present but not as on Map

NON-SAMPLEABLE-PERMANENT

- Dry - Visited
- Dry - Not visited
- Wetland (No Definable Channel)
- Map Error - No evidence channel/waterbody ever present
- Impounded (Underneath Lake or Pond)
- Other (explain in comments)

NON-SAMPLEABLE-TEMPORARY

- Not boatable - Need a different crew
- Not wadeable - Need a different crew
- Other (Explain in comments)

NO ACCESS

- Access Permission Denied
- Permanently Inaccessible (Unable/Unsafe to Reach Site)
- Temporarily Inaccessible-Fire, etc. (Explain in comments)

GENERAL COMMENTS:

DIRECTIONS TO STREAM/RIVER SITE:

Record information used to define length of reach, and sketch general features of reach on reverse side.

56029



STREAM VERIFICATION FORM - STREAMS/RIVERS (cont.)

Reviewed by _____
(initial): _____

SITE NAME: _____	DATE: ____/____/____	VISIT: 0 1 2 3
SITE ID: _____	TEAM: _____	

STREAM/RIVER REACH DETERMINATION

Channel Width Used to Define Reach (m)	DISTANCE (m) FROM X-SITE		Total Reach Length Intended (m)	Comment
	Upstream Length	Downstream Length		
_____	_____	_____	_____	

SKETCH MAP - Arrow Indicates North

PERSONNEL

NAME

DUTIES
Biomorph Geomorph Forms

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

56029



PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)					
	Cover in Channel					
	0	1	2	3	4	Flag
Filamentous Algae	0	1	2	3	4	
Macrophytes	0	1	2	3	4	
Woody Debris >0.3 m (BIG)	0	1	2	3	4	
Brush/Woody Debris <0.3 m (SMALL)	0	1	2	3	4	
Live Trees or Roots	0	1	2	3	4	
Overhanging Veg. =<1 m of Surface	0	1	2	3	4	
Undercut Banks	0	1	2	3	4	
Boulders	0	1	2	3	4	
Artificial Structures	0	1	2	3	4	

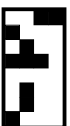
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None										
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
Canopy (>5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N						
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4						
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4						
Understory (0.5 to 5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N						
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4						
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4						
Ground Cover (<0.5 m high)																
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4						
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4						
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4						
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank															Flag
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B	0	P	C	B	0	P	C	B				
Buildings	0	P	C	B	0	P	C	B	0	P	C	B				
Pavement/Cleared Lot	0	P	C	B	0	P	C	B	0	P	C	B				
Road/Railroad	0	P	C	B	0	P	C	B	0	P	C	B				
Pipes (Inlet/Outlet)	0	P	C	B	0	P	C	B	0	P	C	B				
Landfill/Trash	0	P	C	B	0	P	C	B	0	P	C	B				
Park/Lawn	0	P	C	B	0	P	C	B	0	P	C	B				
Row Crops	0	P	C	B	0	P	C	B	0	P	C	B				
Pasture/Range/Hay Field	0	P	C	B	0	P	C	B	0	P	C	B				
Logging Operations	0	P	C	B	0	P	C	B	0	P	C	B				
Mining Activity	0	P	C	B	0	P	C	B	0	P	C	B				

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)					
	Cover in Channel					
	0	1	2	3	4	Flag
Filamentous Algae	0	1	2	3	4	
Macrophytes	0	1	2	3	4	
Woody Debris >0.3 m (BIG)	0	1	2	3	4	
Brush/Woody Debris <0.3 m (SMALL)	0	1	2	3	4	
Live Trees or Roots	0	1	2	3	4	
Overhanging Veg. =<1 m of Surface	0	1	2	3	4	
Undercut Banks	0	1	2	3	4	
Boulders	0	1	2	3	4	
Artificial Structures	0	1	2	3	4	

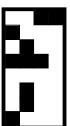
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None										
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
Canopy (>5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N						
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4						
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4						
Understory (0.5 to 5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N						
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4						
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4						
Ground Cover (<0.5 m high)																
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4						
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4						
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4						
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank					Left Bank					Right Bank					Flag
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B		0	P	C	B		0	P	C	B		
Buildings	0	P	C	B		0	P	C	B		0	P	C	B		
Pavement/Cleared Lot	0	P	C	B		0	P	C	B		0	P	C	B		
Road/Railroad	0	P	C	B		0	P	C	B		0	P	C	B		
Pipes (Inlet/Outlet)	0	P	C	B		0	P	C	B		0	P	C	B		
Landfill/Trash	0	P	C	B		0	P	C	B		0	P	C	B		
Park/Lawn	0	P	C	B		0	P	C	B		0	P	C	B		
Row Crops	0	P	C	B		0	P	C	B		0	P	C	B		
Pasture/Range/Hay Field	0	P	C	B		0	P	C	B		0	P	C	B		
Logging Operations	0	P	C	B		0	P	C	B		0	P	C	B		
Mining Activity	0	P	C	B		0	P	C	B		0	P	C	B		

BANK MEASUREMENTS			
	Bank Angle	Undercut	Flag
	0 - 360	Dist. (m)	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHAB: THALWEG PROFILE & WOODY DEBRIS FORM STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____

TRANSECT: A-B B-C C-D D-E E-F F-G G-H H-I I-J J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: _____ Total Reach Length (m): _____

STA-TION	THALWEG DEPTH (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH 1		SOFT SEDT./SMALL CHANNEL	POOL FORM CODE	SIDE CHANNEL	BACK WATER	FLAG	COMMENTS
			Present	XX.X						
0			Y	N	Y	N	Y	N		
1			Y	N	Y	N	Y	N		
2			Y	N	Y	N	Y	N		
3			Y	N	Y	N	Y	N		
4			Y	N	Y	N	Y	N		
*5			Y	N	Y	N	Y	N		
6			Y	N	Y	N	Y	N		
*7			Y	N	Y	N	Y	N		
8			Y	N	Y	N	Y	N		
9			Y	N	Y	N	Y	N		
10			Y	N	Y	N	Y	N		
11			Y	N	Y	N	Y	N		
12			Y	N	Y	N	Y	N		
13			Y	N	Y	N	Y	N		
14			Y	N	Y	N	Y	N		

SUBSTRATE	Station (5 or 7)	*	LFT	LCTR	CTR	RCTR	RGT	FLAG

FLAG	COMMENTS (for SUBSTRATE and LWD)						

SUBSTRATE SIZE CLASS CODES	POOL FORM CODES	CHANNEL UNIT CODES	0.1-<0.3 m	0.3-0.6 m	0.6-0.8 m	>0.8 m
RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR) RR = BEDROCK (ROUGH) - (LARGER THAN A CAR) RC = CONCRETE/ASPHALT XB = LG. BOULDER (1000 TO 4000 mm) - METERSTICK TO CAR) SB = SM. BOULDER (250 TO 1000 mm) - BASKETBALL TO METERSTICK) CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL) GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO MARBLE) GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE) SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE) FN = SILT/CLAY / MUCK - (NOT GRITTY) HP = HARDPAN - (FIRM, CONSOLIDATED FINE SUBSTRATE) WD = WOOD - (ANY SIZE) OT = OTHER (COMMENT ON OTHER SIDE)	N = Not a pool W = Large Woody Debris R = Rootwad B = Boulder or Bedrock F = Unknown, fluvial COMBINATIONS: eg. WR, BR, WRB	PP = Pool, Plunge PT = Pool, Trench PL = Pool, Lateral Scour PB = Pool, Backwater PD = Pool, Impoundment GL = Glide RI = Riffle RA = Rapid CA = Cascade FA = Falls DR = Dry Channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17021



Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, ect. = flags assigned by each field crew; G1, G2, etc. for flags not specific to one station. Explain all flags in comments. 1 = Measure Bar Width at Station 0 and Mid-Station (5 or 7).

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
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XX.XX m	XXX cm	Code	0-100%	Flag	
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LCtr					
Ctr					
RCtr					
Right					
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SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
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HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
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FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)				
	Cover in Channel				
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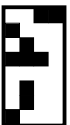
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	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
Canopy (>5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Understory (0.5 to 5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Ground Cover (<0.5 m high)																
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank					Left Bank					Right Bank					Flag
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B		0	P	C	B		0	P	C	B		
Buildings	0	P	C	B		0	P	C	B		0	P	C	B		
Pavement/Cleared Lot	0	P	C	B		0	P	C	B		0	P	C	B		
Road/Railroad	0	P	C	B		0	P	C	B		0	P	C	B		
Pipes (Inlet/Outlet)	0	P	C	B		0	P	C	B		0	P	C	B		
Landfill/Trash	0	P	C	B		0	P	C	B		0	P	C	B		
Park/Lawn	0	P	C	B		0	P	C	B		0	P	C	B		
Row Crops	0	P	C	B		0	P	C	B		0	P	C	B		
Pasture/Range/Hay Field	0	P	C	B		0	P	C	B		0	P	C	B		
Logging Operations	0	P	C	B		0	P	C	B		0	P	C	B		
Mining Activity	0	P	C	B		0	P	C	B		0	P	C	B		

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



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PHAB: THALWEG PROFILE & WOODY DEBRIS FORM STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____

TRANSECT: A-B B-C C-D D-E E-F F-G G-H H-I I-J J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: _____ Total Reach Length (m): _____

STA-TION	THALWEG (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH ¹		SOFT /SMALL SEDIMENT	CHANNEL CODE	POOL FORM CODE	SIDE CHANNEL	BACK WATER	FLAG	COMMENTS
			Present	XX.X							
0			Y	N	Y			Y	N		
1			Y	N	Y			Y	N		
2			Y	N	Y			Y	N		
3			Y	N	Y			Y	N		
4			Y	N	Y			Y	N		
*5			Y	N	Y			Y	N		
6			Y	N	Y			Y	N		
*7			Y	N	Y			Y	N		
8			Y	N	Y			Y	N		
9			Y	N	Y			Y	N		
10			Y	N	Y			Y	N		
11			Y	N	Y			Y	N		
12			Y	N	Y			Y	N		
13			Y	N	Y			Y	N		
14			Y	N	Y			Y	N		

SUBSTRATE	Station (5 or 7)	COMMENTS (for SUBSTRATE and LWD)						
		LFT	LCTR	CTR	RCTR	RGT	FLAG	
		* <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						

FLAG	COMMENTS (for SUBSTRATE and LWD)						

SUBSTRATE SIZE CLASS CODES		POOL FORM CODES		CHANNEL UNIT CODES	
RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR)	RR = BEDROCK (ROUGH) - (LARGER THAN A CAR)	RC = CONCRETE/ASPHALT	XB = LG. BOULDER (1000 TO 4000 mm) - METERSTICK TO CAR)	SB = SM. BOULDER (250 TO 1000 mm) - BASKETBALL TO METERSTICK)	CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL)
GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO MARBLE)	GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE)	SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE)	FN = SILT/CLAY / MUCK - (NOT GRITTY)	HP = HARDPAN - (FIRM, CONSOLIDATED FINE SUBSTRATE)	WD = WOOD - (ANY SIZE)
OT = OTHER (COMMENT ON OTHER SIDE)					

DIAMETER	Length 1.5-5m	5-15m	Length 1.5-5m	5-15m	Length 1.5-5m	>15m
>0.8 m						
0.6-0.8 m						
0.3-0.6 m						
0.1-<0.3 m						

Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, ect. = flags assigned by each field crew; G1, G2, etc. for flags not specific to one station. Explain

04/03/2002 Phab Thalweg Stream

17021

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)				
	Cover in Channel				
Filamentous Algae	0	1	2	3	4
Macrophytes	0	1	2	3	4
Woody Debris >0.3 m (BIG)	0	1	2	3	4
Brush/Woody Debris <0.3 m (SMALL)	0	1	2	3	4
Live Trees or Roots	0	1	2	3	4
Overhanging Veg. =<1 m of Surface	0	1	2	3	4
Undercut Banks	0	1	2	3	4
Boulders	0	1	2	3	4
Artificial Structures	0	1	2	3	4

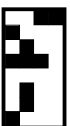
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None									
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank				
Canopy (>5 m high)															
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
Understory (0.5 to 5 m high)															
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
Ground Cover (<0.5 m high)															
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank														
	Left Bank					Right Bank					Flag				
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B		0	P	C	B						
Buildings	0	P	C	B		0	P	C	B						
Pavement/Cleared Lot	0	P	C	B		0	P	C	B						
Road/Railroad	0	P	C	B		0	P	C	B						
Pipes (Inlet/Outlet)	0	P	C	B		0	P	C	B						
Landfill/Trash	0	P	C	B		0	P	C	B						
Park/Lawn	0	P	C	B		0	P	C	B						
Row Crops	0	P	C	B		0	P	C	B						
Pasture/Range/Hay Field	0	P	C	B		0	P	C	B						
Logging Operations	0	P	C	B		0	P	C	B						
Mining Activity	0	P	C	B		0	P	C	B						

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHAB: THALWEG PROFILE & WOODY DEBRIS FORM STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____

TRANSECT: A-B B-C C-D D-E E-F F-G G-H H-I I-J J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: _____ Total Reach Length (m): _____

STA-TION	THALWEG (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH 1		SOFT /SMALL SEDIMENT	CHANNEL CODE	POOL FORM CODE	SIDE CHANNEL	BACK WATER	FLAG	COMMENTS
			Present	XX.X							
0			Y	N	Y			Y	N		
1			Y	N	Y			Y	N		
2			Y	N	Y			Y	N		
3			Y	N	Y			Y	N		
4			Y	N	Y			Y	N		
*5			Y	N	Y			Y	N		
6			Y	N	Y			Y	N		
*7			Y	N	Y			Y	N		
8			Y	N	Y			Y	N		
9			Y	N	Y			Y	N		
10			Y	N	Y			Y	N		
11			Y	N	Y			Y	N		
12			Y	N	Y			Y	N		
13			Y	N	Y			Y	N		
14			Y	N	Y			Y	N		

SUBSTRATE	Station (5 or 7) *	LFT	LCTR	CTR	RCTR	RGT	FLAG
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FLAG	COMMENTS (for SUBSTRATE and LWD)						

SUBSTRATE SIZE CLASS CODES		POOL FORM CODES		CHANNEL UNIT CODES	
RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR)	RR = BEDROCK (ROUGH) - (LARGER THAN A CAR)	RC = CONCRETE/ASPHALT	XB = LG. BOULDER (1000 TO 4000 mm) - METERSTICK TO CAR)	SB = SM. BOULDER (250 TO 1000 mm) - BASKETBALL TO METERSTICK)	F = Unknown, fluvial
CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL)	GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO TENNIS BALL)	GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE)	SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE)	FN = SILT/CLAY / MUCK - (NOT GRITTY)	HP = HARDPAN - (FIRM, CONSOLIDATED FINE SUBSTRATE)
WD = WOOD - (ANY SIZE)	OT = OTHER (COMMENT ON OTHER SIDE)				

DIAMETER	Length 1.5-5m	5-15m	Length 1.5-5m	5-15m	Length 1.5-5m	>15m
0.1-<0.3 m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.3-0.6 m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.6-0.8 m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
>0.8 m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, ect. = flags assigned by each field crew; G1, G2, etc. for flags not specific to one station. Explain

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)					
	Cover in Channel					
	0	1	2	3	4	Flag
Filamentous Algae	0	1	2	3	4	
Macrophytes	0	1	2	3	4	
Woody Debris >0.3 m (BIG)	0	1	2	3	4	
Brush/Woody Debris <0.3 m (SMALL)	0	1	2	3	4	
Live Trees or Roots	0	1	2	3	4	
Overhanging Veg. =<1 m of Surface	0	1	2	3	4	
Undercut Banks	0	1	2	3	4	
Boulders	0	1	2	3	4	
Artificial Structures	0	1	2	3	4	

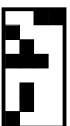
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None										
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
	Canopy (>5 m high)															
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
	Understory (0.5 to 5 m high)															
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
	Ground Cover (<0.5 m high)															
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank															
	Left Bank					Right Bank					Flag					
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B	0	P	C	B	0	P	C	B				
Buildings	0	P	C	B	0	P	C	B	0	P	C	B				
Pavement/Cleared Lot	0	P	C	B	0	P	C	B	0	P	C	B				
Road/Railroad	0	P	C	B	0	P	C	B	0	P	C	B				
Pipes (Inlet/Outlet)	0	P	C	B	0	P	C	B	0	P	C	B				
Landfill/Trash	0	P	C	B	0	P	C	B	0	P	C	B				
Park/Lawn	0	P	C	B	0	P	C	B	0	P	C	B				
Row Crops	0	P	C	B	0	P	C	B	0	P	C	B				
Pasture/Range/Hay Field	0	P	C	B	0	P	C	B	0	P	C	B				
Logging Operations	0	P	C	B	0	P	C	B	0	P	C	B				
Mining Activity	0	P	C	B	0	P	C	B	0	P	C	B				

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)					
	Cover in Channel					Flag
Filamentous Algae	0	1	2	3	4	
Macrophytes	0	1	2	3	4	
Woody Debris >0.3 m (BIG)	0	1	2	3	4	
Brush/Woody Debris <0.3 m (SMALL)	0	1	2	3	4	
Live Trees or Roots	0	1	2	3	4	
Overhanging Veg. =<1 m of Surface	0	1	2	3	4	
Undercut Banks	0	1	2	3	4	
Boulders	0	1	2	3	4	
Artificial Structures	0	1	2	3	4	

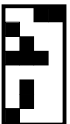
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None					
	RIPARIAN VEGETATION COVER		Left Bank			Right Bank			Flag		
Canopy (>5 m high)											
Vegetation Type	D	C	E	M	N	D	C	E	M	N	
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	
Understory (0.5 to 5 m high)											
Vegetation Type	D	C	E	M	N	D	C	E	M	N	
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	
Ground Cover (<0.5 m high)											
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank										
	Left Bank			Right Bank			Flag				
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B	0	P	C	B			
Buildings	0	P	C	B	0	P	C	B			
Pavement/Cleared Lot	0	P	C	B	0	P	C	B			
Road/Railroad	0	P	C	B	0	P	C	B			
Pipes (Inlet/Outlet)	0	P	C	B	0	P	C	B			
Landfill/Trash	0	P	C	B	0	P	C	B			
Park/Lawn	0	P	C	B	0	P	C	B			
Row Crops	0	P	C	B	0	P	C	B			
Pasture/Range/Hay Field	0	P	C	B	0	P	C	B			
Logging Operations	0	P	C	B	0	P	C	B			
Mining Activity	0	P	C	B	0	P	C	B			

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHAB: THALWEG PROFILE & WOODY DEBRIS FORM STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____

TRANSECT: A-B B-C C-D D-E E-F F-G G-H H-I I-J J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: _____ Total Reach Length (m): _____

STA-TION	THALWEG DEPTH (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH 1		SOFT SEDT-/SMALL CHANNEL	POOL FORM CODE	SIDE CHANNEL	BACK WATER	FLAG	COMMENTS
			Present	XX.X						
0			Y	N			Y	N		
1			Y	N			Y	N		
2			Y	N			Y	N		
3			Y	N			Y	N		
4			Y	N			Y	N		
*5			Y	N			Y	N		
6			Y	N			Y	N		
*7			Y	N			Y	N		
8			Y	N			Y	N		
9			Y	N			Y	N		
10			Y	N			Y	N		
11			Y	N			Y	N		
12			Y	N			Y	N		
13			Y	N			Y	N		
14			Y	N			Y	N		

SUBSTRATE	Station (5 or 7)	*	LFT	LCTR	CTR	RCTR	RGT	FLAG

FLAG	COMMENTS (for SUBSTRATE and LWD)					

SUBSTRATE SIZE CLASS CODES	POOL FORM CODES	CHANNEL UNIT CODES	DIA METER	LARGE END	>0.1<0.3 m	0.3-0.6 m	0.6-0.8 m	>0.8 m
RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR) RR = BEDROCK (ROUGH) - (LARGER THAN A CAR) RC = CONCRETE/ASPHALT RB = BOULDER (1000 TO 4000 mm) - METERSTICK TO CAR) XB = LG BOULDER (250 TO 1000 mm) - (TENNIS BALL TO BASKETBALL) SB = SM BOULDER (64 TO 250 mm) - (MARBLE TO TENNIS BALL) CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL) GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO MARBLE) GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE) SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE) FN = SILT/CLAY / MUCK - (NOT GRITTY) HP = HARDPAN - (FIRM, CONSOLIDATED FINE SUBSTRATE) WD = WOOD - (ANY SIZE) OT = OTHER (COMMENT ON OTHER SIDE)	N = Not a pool W = Large Woody Debris R = Rootwad B = Boulder or Bedrock F = Unknown, fluvial eg. WR, BR, WRB COMBINATIONS: GL = Glide RI = Riffle RA = Rapid CA = Cascade FA = Falls DR = Dry Channel							

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Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, ect. = flags assigned by each field crew; G1, G2, etc. for flags not specific to one station. Explain

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)				
	Cover in Channel				
	0	1	2	3	4
Filamentous Algae					
Macrophytes					
Woody Debris >0.3 m (BIG)					
Brush/Woody Debris <0.3 m (SMALL)					
Live Trees or Roots					
Overhanging Veg. =<1 m of Surface					
Undercut Banks					
Boulders					
Artificial Structures					

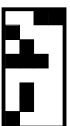
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None										
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
	Canopy (>5 m high)															
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
	Understory (0.5 to 5 m high)															
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
	Ground Cover (<0.5 m high)															
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank															
	Left Bank					Right Bank					Flag					
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B	0	P	C	B	0	P	C	B				
Buildings	0	P	C	B	0	P	C	B	0	P	C	B				
Pavement/Cleared Lot	0	P	C	B	0	P	C	B	0	P	C	B				
Road/Railroad	0	P	C	B	0	P	C	B	0	P	C	B				
Pipes (Inlet/Outlet)	0	P	C	B	0	P	C	B	0	P	C	B				
Landfill/Trash	0	P	C	B	0	P	C	B	0	P	C	B				
Park/Lawn	0	P	C	B	0	P	C	B	0	P	C	B				
Row Crops	0	P	C	B	0	P	C	B	0	P	C	B				
Pasture/Range/Hay Field	0	P	C	B	0	P	C	B	0	P	C	B				
Logging Operations	0	P	C	B	0	P	C	B	0	P	C	B				
Mining Activity	0	P	C	B	0	P	C	B	0	P	C	B				

BANK MEASUREMENTS			
	Bank Angle	Undercut	Flag
	0 - 360	Dist. (m)	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS						
DENSIOMETER (0-17Max)						
	Flag			Flag		
CenUp				CenR		
CenL				Left		
CenDwn				Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHAB: THALWEG PROFILE & WOODY DEBRIS FORM STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____

TRANSECT: A-B B-C C-D D-E E-F F-G G-H H-I I-J J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: _____ Total Reach Length (m): _____

STA-TION	THALWEG DEPTH (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH 1		SOFT SEDT-/SMALL CHANNEL	POOL FORM CODE	SIDE CHANNEL	BACK WATER	FLAG	COMMENTS
			Present	XX.X						
0			Y	N	Y	N	Y	N		
1			Y	N	Y	N	Y	N		
2			Y	N	Y	N	Y	N		
3			Y	N	Y	N	Y	N		
4			Y	N	Y	N	Y	N		
*5			Y	N	Y	N	Y	N		
6			Y	N	Y	N	Y	N		
*7			Y	N	Y	N	Y	N		
8			Y	N	Y	N	Y	N		
9			Y	N	Y	N	Y	N		
10			Y	N	Y	N	Y	N		
11			Y	N	Y	N	Y	N		
12			Y	N	Y	N	Y	N		
13			Y	N	Y	N	Y	N		
14			Y	N	Y	N	Y	N		

SUBSTRATE	Station (5 or 7)	*	LFT	LCTR	CTR	RCTR	RGT	FLAG

FLAG	COMMENTS (for SUBSTRATE and LWD)						

SUBSTRATE SIZE CLASS CODES	POOL FORM CODES	CHANNEL UNIT CODES
RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR) RR = BEDROCK (ROUGH) - (LARGER THAN A CAR) RC = CONCRETE/ASPHALT XB = LG BOULDER (1000 TO 4000 mm) - METERSTICK TO CAR) SB = SM BOULDER (250 TO 1000 mm) - BASKETBALL TO METERSTICK) CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL) GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO MARBLE) GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE) SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE) FN = SILT/CLAY / MUCK - (NOT GRITTY) HP = HARDPAN - (FIRM, CONSOLIDATED FINE SUBSTRATE) WD = WOOD - (ANY SIZE) OT = OTHER (COMMENT ON OTHER SIDE)	N = Not a pool W = Large Woody Debris R = Rootwad B = Boulder or Bedrock F = Unknown, fluvial eg. WR, BR, WRB COMBINATIONS: GL = Glide RI = Riffle RA = Rapid CA = Cascade FA = Falls DR = Dry Channel	PP = Pool, Plunge PT = Pool, Trench PL = Pool, Lateral Scour PB = Pool, Backwater PD = Pool, Impoundment B = Boulder or Bedrock F = Unknown, fluvial N = Not a pool W = Large Woody Debris R = Rootwad B = Boulder or Bedrock F = Unknown, fluvial eg. WR, BR, WRB COMBINATIONS: GL = Glide RI = Riffle RA = Rapid CA = Cascade FA = Falls DR = Dry Channel

DIAMETER	Length 1.5-5m	Length 1.5-5m	Length 1.5-5m	Length 1.5-5m	Length 1.5-5m	Length 1.5-5m	Length 1.5-5m	Length 1.5-5m	Length 1.5-5m	Length 1.5-5m
>15m	>15m	>15m	>15m	>15m	>15m	>15m	>15m	>15m	>15m	>15m

0.1-<0.3 m	0.3-0.6 m	0.6-0.8 m	>0.8 m

Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, ect. = flags assigned by each field crew; G1, G2, etc. for flags not specific to one station. Explain

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)				
	Cover in Channel				
	0	1	2	3	4
Filamentous Algae					
Macrophytes					
Woody Debris >0.3 m (BIG)					
Brush/Woody Debris <0.3 m (SMALL)					
Live Trees or Roots					
Overhanging Veg. =<1 m of Surface					
Undercut Banks					
Boulders					
Artificial Structures					

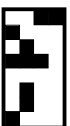
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None										
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
Canopy (>5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N						
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4						
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4						
Understory (0.5 to 5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N						
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4						
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4						
Ground Cover (<0.5 m high)																
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4						
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4						
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4						
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank					Left Bank					Right Bank					Flag
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B		0	P	C	B							
Buildings	0	P	C	B		0	P	C	B							
Pavement/Cleared Lot	0	P	C	B		0	P	C	B							
Road/Railroad	0	P	C	B		0	P	C	B							
Pipes (Inlet/Outlet)	0	P	C	B		0	P	C	B							
Landfill/Trash	0	P	C	B		0	P	C	B							
Park/Lawn	0	P	C	B		0	P	C	B							
Row Crops	0	P	C	B		0	P	C	B							
Pasture/Range/Hay Field	0	P	C	B		0	P	C	B							
Logging Operations	0	P	C	B		0	P	C	B							
Mining Activity	0	P	C	B		0	P	C	B							

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)				
	Cover in Channel				
	0	1	2	3	4
Filamentous Algae					
Macrophytes					
Woody Debris >0.3 m (BIG)					
Brush/Woody Debris <0.3 m (SMALL)					
Live Trees or Roots					
Overhanging Veg. =<1 m of Surface					
Undercut Banks					
Boulders					
Artificial Structures					

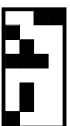
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None										
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
	Canopy (>5 m high)															
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
	Understory (0.5 to 5 m high)															
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
	Ground Cover (<0.5 m high)															
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank															
	Left Bank					Right Bank					Flag					
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B	0	P	C	B	0	P	C	B				
Buildings	0	P	C	B	0	P	C	B	0	P	C	B				
Pavement/Cleared Lot	0	P	C	B	0	P	C	B	0	P	C	B				
Road/Railroad	0	P	C	B	0	P	C	B	0	P	C	B				
Pipes (Inlet/Outlet)	0	P	C	B	0	P	C	B	0	P	C	B				
Landfill/Trash	0	P	C	B	0	P	C	B	0	P	C	B				
Park/Lawn	0	P	C	B	0	P	C	B	0	P	C	B				
Row Crops	0	P	C	B	0	P	C	B	0	P	C	B				
Pasture/Range/Hay Field	0	P	C	B	0	P	C	B	0	P	C	B				
Logging Operations	0	P	C	B	0	P	C	B	0	P	C	B				
Mining Activity	0	P	C	B	0	P	C	B	0	P	C	B				

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHAB: THALWEG PROFILE & WOODY DEBRIS FORM STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____

TRANSECT: A-B B-C C-D D-E E-F F-G G-H H-I I-J J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: _____ Total Reach Length (m): _____

STA-TION	THALWEG DEPTH (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH 1		SOFT SEDT-/SMALL CHANNEL	POOL FORM CODE	SIDE CHANNEL	BACK WATER	FLAG	COMMENTS
			Present	XX.X						
0			Y	N	Y	N	Y	N		
1			Y	N	Y	N	Y	N		
2			Y	N	Y	N	Y	N		
3			Y	N	Y	N	Y	N		
4			Y	N	Y	N	Y	N		
*5			Y	N	Y	N	Y	N		
6			Y	N	Y	N	Y	N		
*7			Y	N	Y	N	Y	N		
8			Y	N	Y	N	Y	N		
9			Y	N	Y	N	Y	N		
10			Y	N	Y	N	Y	N		
11			Y	N	Y	N	Y	N		
12			Y	N	Y	N	Y	N		
13			Y	N	Y	N	Y	N		
14			Y	N	Y	N	Y	N		

SUBSTRATE	Station (5 or 7)	*	LFT	LCTR	CTR	RCTR	RGT	FLAG

FLAG	COMMENTS (for SUBSTRATE and LWD)						

SUBSTRATE SIZE CLASS CODES	POOL FORM CODES	CHANNEL UNIT CODES	0.1-<0.3 m	0.3-0.6 m	0.6-0.8 m	>0.8 m
RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR) RR = BEDROCK (ROUGH) - (LARGER THAN A CAR) RC = CONCRETE/ASPHALT XB = LG. BOULDER (1000 TO 4000 mm) - METERSTICK TO CAR) SB = SM. BOULDER (250 TO 1000 mm) - BASKETBALL TO METERSTICK) CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL) GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO MARBLE) GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE) SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE) FN = SILT/CLAY / MUCK - (NOT GRITTY) HP = HARDPAN - (FIRM, CONSOLIDATED FINE SUBSTRATE) WD = WOOD - (ANY SIZE) OT = OTHER (COMMENT ON OTHER SIDE)	N = Not a pool W = Large Woody Debris R = Rootwad B = Boulder or Bedrock F = Unknown, fluvial eg. WR, BR, WRB COMBINATIONS: GL = Glide RI = Riffle RA = Rapid CA = Cascade FA = Falls DR = Dry Channel					

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Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, ect. = flags assigned by each field crew; G1, G2, etc. for flags not specific to one station. Explain all flags in comments. 1 = Measure Bar Width at Station 0 and Mid-Station (5 or 7).

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)					
	Cover in Channel					Flag
Filamentous Algae	0	1	2	3	4	
Macrophytes	0	1	2	3	4	
Woody Debris >0.3 m (BIG)	0	1	2	3	4	
Brush/Woody Debris <0.3 m (SMALL)	0	1	2	3	4	
Live Trees or Roots	0	1	2	3	4	
Overhanging Veg. =<1 m of Surface	0	1	2	3	4	
Undercut Banks	0	1	2	3	4	
Boulders	0	1	2	3	4	
Artificial Structures	0	1	2	3	4	

VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None										
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
Canopy (>5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Understory (0.5 to 5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Ground Cover (<0.5 m high)																
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank					Left Bank					Right Bank					Flag
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B		0	P	C	B		0	P	C	B		
Buildings	0	P	C	B		0	P	C	B		0	P	C	B		
Pavement/Cleared Lot	0	P	C	B		0	P	C	B		0	P	C	B		
Road/Railroad	0	P	C	B		0	P	C	B		0	P	C	B		
Pipes (Inlet/Outlet)	0	P	C	B		0	P	C	B		0	P	C	B		
Landfill/Trash	0	P	C	B		0	P	C	B		0	P	C	B		
Park/Lawn	0	P	C	B		0	P	C	B		0	P	C	B		
Row Crops	0	P	C	B		0	P	C	B		0	P	C	B		
Pasture/Range/Hay Field	0	P	C	B		0	P	C	B		0	P	C	B		
Logging Operations	0	P	C	B		0	P	C	B		0	P	C	B		
Mining Activity	0	P	C	B		0	P	C	B		0	P	C	B		

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHAB: THALWEG PROFILE & WOODY DEBRIS FORM STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____

TRANSECT: A-B B-C C-D D-E E-F F-G G-H H-I I-J J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: _____ Total Reach Length (m): _____

STA-TION	THALWEG DEPTH (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH 1		SOFT SEDT /SMALL CHANNEL	POOL FORM CODE	SIDE CHANNEL	BACK WATER	FLAG	COMMENTS
			Present	XX.X						
0			Y	N			Y	N		
1			Y	N			Y	N		
2			Y	N			Y	N		
3			Y	N			Y	N		
4			Y	N			Y	N		
*5			Y	N			Y	N		
6			Y	N			Y	N		
*7			Y	N			Y	N		
8			Y	N			Y	N		
9			Y	N			Y	N		
10			Y	N			Y	N		
11			Y	N			Y	N		
12			Y	N			Y	N		
13			Y	N			Y	N		
14			Y	N			Y	N		

SUBSTRATE	Station (5 or 7) *	LFT	LCTR	CTR	RCTR	RGT	FLAG
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FLAG	COMMENTS (for SUBSTRATE and LWD)						

SUBSTRATE SIZE CLASS CODES		POOL FORM CODES		CHANNEL UNIT CODES	
RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR)	RR = BEDROCK (ROUGH) - (LARGER THAN A CAR)	RC = CONCRETE/ASPHALT	XB = LG. BOULDER (1000 TO 4000 mm) - METERSTICK TO CAR)	SB = SM. BOULDER (250 TO 1000 mm) - BASKETBALL TO METERSTICK)	F = Unknown, fluvial
CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL)	GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO TENNIS BALL)	GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE)	SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE)	FN = SILT/CLAY / MUCK - (NOT GRITTY)	HP = HARDPAN - (FIRM, CONSOLIDATED FINE SUBSTRATE)
WD = WOOD - (ANY SIZE)	OT = OTHER (COMMENT ON OTHER SIDE)				

DIAMETER	Length 1.5-5m	5-15m	Length 1.5-5m	5-15m	Length 1.5-5m	>15m
>0.8 m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.6-0.8 m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.3-0.6 m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.1-<0.3 m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, ect. = flags assigned by each field crew; G1, G2, etc. for flags not specific to one station. Explain

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)					
	Cover in Channel					Flag
Filamentous Algae	0	1	2	3	4	
Macrophytes	0	1	2	3	4	
Woody Debris >0.3 m (BIG)	0	1	2	3	4	
Brush/Woody Debris <0.3 m (SMALL)	0	1	2	3	4	
Live Trees or Roots	0	1	2	3	4	
Overhanging Veg. =<1 m of Surface	0	1	2	3	4	
Undercut Banks	0	1	2	3	4	
Boulders	0	1	2	3	4	
Artificial Structures	0	1	2	3	4	

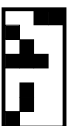
VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None										
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag
Canopy (>5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Understory (0.5 to 5 m high)																
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N	
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Ground Cover (<0.5 m high)																
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank															
	Left Bank					Right Bank					Flag					
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B		0	P	C	B							
Buildings	0	P	C	B		0	P	C	B							
Pavement/Cleared Lot	0	P	C	B		0	P	C	B							
Road/Railroad	0	P	C	B		0	P	C	B							
Pipes (Inlet/Outlet)	0	P	C	B		0	P	C	B							
Landfill/Trash	0	P	C	B		0	P	C	B							
Park/Lawn	0	P	C	B		0	P	C	B							
Row Crops	0	P	C	B		0	P	C	B							
Pasture/Range/Hay Field	0	P	C	B		0	P	C	B							
Logging Operations	0	P	C	B		0	P	C	B							
Mining Activity	0	P	C	B		0	P	C	B							

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

PHAB: THALWEG PROFILE & WOODY DEBRIS FORM STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____

TRANSECT: A-B B-C C-D D-E E-F F-G G-H H-I I-J J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: _____ Total Reach Length (m): _____

STA-TION	THALWEG DEPTH (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH 1		SOFT SEDT /SMALL MENT	CHANNEL UNIT CODE	POOL FORM CODE	SIDE CHANNEL	BACK WATER	FLAG	COMMENTS
			Present	XX.X							
0			Y	N	Y	N		Y	N		
1			Y	N	Y	N		Y	N		
2			Y	N	Y	N		Y	N		
3			Y	N	Y	N		Y	N		
4			Y	N	Y	N		Y	N		
*5			Y	N	Y	N		Y	N		
6			Y	N	Y	N		Y	N		
*7			Y	N	Y	N		Y	N		
8			Y	N	Y	N		Y	N		
9			Y	N	Y	N		Y	N		
10			Y	N	Y	N		Y	N		
11			Y	N	Y	N		Y	N		
12			Y	N	Y	N		Y	N		
13			Y	N	Y	N		Y	N		
14			Y	N	Y	N		Y	N		

SUBSTRATE	Station (5 or 7)	COMMENTS (for SUBSTRATE and LWD)						
		LFT	LCTR	CTR	RCTR	RGT	FLAG	DIAMETER
	*							

FLAG	COMMENTS (for SUBSTRATE and LWD)						

SUBSTRATE SIZE CLASS CODES		POOL FORM CODES		CHANNEL UNIT CODES	
RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR)	RR = BEDROCK (ROUGH) - (LARGER THAN A CAR)	RC = CONCRETE/ASPHALT	R = Rootwad	W = Large Woody Debris	N = Not a pool
RB = Boulder (1000 to 4000 mm) - METERSTICK TO CAR)	XB = LG. BOULDER (250 TO 1000 mm) - BASKETBALL TO METERSTICK)	SB = SM. BOULDER (250 TO 1000 mm) - METERSTICK TO CAR)	F = Unknown, fluvial	B = Boulder or Bedrock	PT = Pool, Trench
CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL)	GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO TENNIS BALL)	GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE)	COMBINATIONS:	eg. WR, BR, WRB	PL = Pool, Impoundment
SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE)	FN = SILT/CLAY / MUCK - (NOT GRITTY)	HP = HARDPAN - (FIRM, CONSOLIDATED FINE SUBSTRATE)	DR = Dry Channel		RI = Riffle
WD = WOOD - (ANY SIZE)	OT = OTHER (COMMENT ON OTHER SIDE)				GL = Glide

DIAMETER	Length 1.5-5m	5-15m	Length 1.5-5m	5-15m	Length 1.5-5m	>15m
0.1-<0.3 m						
0.3-0.6 m						
0.6-0.8 m						
>0.8 m						

Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, ect. = flags assigned by each field crew; G1, G2, etc. for flags not specific to one station. Explain

17021

PHab: CHANNEL/RIPARIAN CROSS-SECTION FORM - STREAMS

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____ / ____ / ____

TRANSECT: A B C D E F X-tra Side Channel
 G H I J K

SUBSTRATE CROSS-SECTIONAL INFORMATION					
Dist LB	Depth	Size Class	Embed.		
XX.XX m	XXX cm	Code	0-100%	Flag	
Left					
LCtr					
Ctr					
RCtr					
Right					
SUBSTRATE SIZE CLASS CODES			Embed. (%)		
RS = Bedrock (Smooth) - (Larger than a car)			0		
RR = Bedrock (Rough) - (Larger than a car)			0		
RC = Concrete/Asphalt					
XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)					
SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)					
CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)					
GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)					
GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)					
SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)			100		
FN = Silt / Clay / Muck - (Not Gritty)			100		
HP = Hardpan - (Firm, Consolidated Fine Substrate)			0		
WD = Wood - (Any Size)					
OT = Other (Write comment below)					

FISH COVER/ OTHER	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%) (circle one)					
	Cover in Channel					Flag
Filamentous Algae	0	1	2	3	4	
Macrophytes	0	1	2	3	4	
Woody Debris >0.3 m (BIG)	0	1	2	3	4	
Brush/Woody Debris <0.3 m (SMALL)	0	1	2	3	4	
Live Trees or Roots	0	1	2	3	4	
Overhanging Veg. =<1 m of Surface	0	1	2	3	4	
Undercut Banks	0	1	2	3	4	
Boulders	0	1	2	3	4	
Artificial Structures	0	1	2	3	4	

VISUAL RIPARIAN ESTIMATES	0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = Very Heavy (>75%)					D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None											
	RIPARIAN VEGETATION COVER					Left Bank					Right Bank					Flag	
Canopy (>5 m high)																	
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N		
BIG Trees (Trunk >0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4		
SMALL Trees (Trunk <0.3 m DBH)	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4		
Understory (0.5 to 5 m high)																	
Vegetation Type	D	C	E	M	N	D	C	E	M	N	D	C	E	M	N		
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4		
Non-Woody Herbs, Grasses, & Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4		
Ground Cover (<0.5 m high)																	
Woody Shrubs & Saplings	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4		
Non-Woody Herbs, Grasses and Forbs	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4		
Barren, Bare Dirt or Duff	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4		
HUMAN INFLUENCE	0 = Not Present P = >10 m C = Within 10 m B = On Bank					Left Bank					Right Bank					Flag	
Wall/Dike/Revetment /Riprap/Dam	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Buildings	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Pavement/Cleared Lot	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Road/Railroad	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Pipes (Inlet/Outlet)	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Landfill/Trash	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Park/Lawn	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Row Crops	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Pasture/Range/Hay Field	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Logging Operations	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	
Mining Activity	0	P	C	B	0	P	C	B	0	P	C	B	0	P	C	B	

BANK MEASUREMENTS			
Bank Angle	Undercut		
0 - 360	Dist. (m)	Flag	
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS					
DENSIOMETER (0-17Max)					
Flag			Flag		
CenUp			CenR		
CenL			Left		
CenDwn			Right		

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.

Flag	Comments



27657

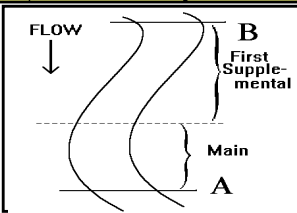
PHab: SLOPE AND BEARING FORM - STREAMS

Reviewed by (initial): _____

SITE ID: _____ DATE: ____ / ____ / ____

MAIN (always used)				FIRST SUPPLEMENTAL			SECOND SUPPLEMENTAL			FLAG
TRANSECT & METHOD	Slope(%) or Elev. Diff. (cm)	BEARING 0 - 359	PROPOR-TION %	Slope(%) or Elev. Diff. (cm)	BEARING 0 - 359	PROPOR-TION %	Slope(%) or Elev. Diff. (cm)	BEARING 0 - 359	PROPOR-TION %	
Mark method for every Transect	Mark Units for every Transect									
A < B <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
B < C <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
C < D <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
D < E <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
E < F <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
F < G <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
G < H <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
H < I <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
I < J <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	
J < K <input type="checkbox"/> CL <input type="checkbox"/> TR <input type="checkbox"/> HL <input type="checkbox"/> WT <input type="checkbox"/> LA <input type="checkbox"/> Other	_____ . _____ □ % □ cm	_____	_____	_____ . _____	_____	_____	_____ . _____	_____	_____	

FLAG	COMMENT



53488

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, M (M = Method - used for method comment only) = flag assigned by field crew. Explain all flags in comment sections
 03/20/2003 2003 Phab Slope CL=Clinometer; HL=Hand Level; LA=Laser rangefinder with electronic clinometer; TR=Transit, surveyors level or total station; WT=Water Tubing.

RIPARIAN "LEGACY" TREES AND INVASIVE ALIEN PLANTS

Reviewed by (initial): _____

SITE ID: _____

DATE: ____ / ____ / ____

22977

LARGEST POTENTIAL LEGACY TREE VISIBLE FROM THIS STATION							ALIEN PLANT SPECIES PRESENT IN LEFT AND RIGHT RIPARIAN PLOTS			
Tran	Trees not Visible	DBH (m)	Height (m)	Dist. from wetted margin (m)	Type	Taxonomic Category	Check all that are present			
A	<input type="checkbox"/>	<input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> .1-.3 <input type="checkbox"/> >2 <input type="checkbox"/> .3-.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	_____	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf Evergreen	_____	<input type="checkbox"/> NONE	<input type="checkbox"/> RC Grass <input type="checkbox"/> Salt Ced <input type="checkbox"/> Hblack <input type="checkbox"/> G Reed <input type="checkbox"/> Engl Ivy <input type="checkbox"/> CanThis <input type="checkbox"/> Teasel <input type="checkbox"/> C Burd <input type="checkbox"/> Ch Grass <input type="checkbox"/> M This <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol		
B	<input type="checkbox"/>	<input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> .1-.3 <input type="checkbox"/> >2 <input type="checkbox"/> .3-.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	_____	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf Evergreen	_____	<input type="checkbox"/> NONE	<input type="checkbox"/> RC Grass <input type="checkbox"/> Salt Ced <input type="checkbox"/> Hblack <input type="checkbox"/> G Reed <input type="checkbox"/> Engl Ivy <input type="checkbox"/> CanThis <input type="checkbox"/> Teasel <input type="checkbox"/> C Burd <input type="checkbox"/> Ch Grass <input type="checkbox"/> M This <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol		
C	<input type="checkbox"/>	<input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> .1-.3 <input type="checkbox"/> >2 <input type="checkbox"/> .3-.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	_____	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf Evergreen	_____	<input type="checkbox"/> NONE	<input type="checkbox"/> RC Grass <input type="checkbox"/> Salt Ced <input type="checkbox"/> Hblack <input type="checkbox"/> G Reed <input type="checkbox"/> Engl Ivy <input type="checkbox"/> CanThis <input type="checkbox"/> Teasel <input type="checkbox"/> C Burd <input type="checkbox"/> Ch Grass <input type="checkbox"/> M This <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol		

INSTRUCTIONS
<p>Potential Legacy trees are defined as the largest tree within your search area, which is as far as you can see, but within maximum limits as follows:</p> <p><u>Wadeable Streams:</u> Confine search to no more than 50 m from left and right bank and extending upstream to next transect (for 'K' look upstream 4 channel widths)</p> <p><u>Non-wadeable Rivers:</u> Confine search to no more than 100 m from left and right bank and extending both upstream and downstream as far as you can see confidently.</p> <p>Alien Plants: Confine search to riparian plots on left and right bank</p> <p><u>Wadeable Streams:</u> 10 m x 10 m</p> <p><u>Non-wadeable Rivers:</u> 10 m x 20 m</p> <p>Not all aliens are to be identified in all states. See Field Manual and Plant Identification Guide.</p>

TAXONOMIC CATEGORIES
Acacia/Mesquite Alder/Birch Ash Maple/Boxelder Oak Poplar/Cottonwood Sycamore Willow Unknown or Other Deciduous
Cedar/Cypress/Sequoia Fir (including Douglas fir and hemlock) Juniper Pine Spruce Unknown or Other Conifer
Unknown or Other Broadleaf Evergreen
Snag (Dead tree of any species)

ALIEN SPECIES		
RC Grass	Reed canarygrass	<i>Phalaris arundinacea</i>
Engl Ivy	English ivy	<i>Hedera helix</i>
ChGrass	Cheat grass	<i>Bromus tectorum</i>
Salt Ced	Salt Cedar	<i>Tamarix spp.</i>
Can This	Canada thistle	<i>Cirsium arvense</i>
M This	Musk thistle	<i>Carduus nutans</i>
Hblack	Himalayan blackberry	<i>Rubus discolor</i>
Teasel	Teasel	<i>Dipsacus fullonum</i>
Spurge	Leafy spurge	<i>Euphorbia esula</i>
G Reed	Giant reed	<i>Arundo donax</i>
C Burd	Common burdock	<i>Arctim minus</i>
Rus Ol	Russian-olive	<i>Elaeagnus angustifolia</i>

COMMENTS

Transects D to K continued on other side

RIPARIAN "LEGACY" TREES AND INVASIVE ALIEN PLANTS

Reviewed by (initial): _____

SITE ID: _____ DATE: _____ / _____ / _____	
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LARGEST POTENTIAL LEGACY TREE VISIBLE FROM THIS STATION	ALIEN PLANT SPECIES PRESENT IN LEFT AND RIGHT RIPARIAN PLOTS
---	--

Tran	Trees not visible	DBH (m)	Height (m)	Dist. from wetted margin (m)	Type	Taxonomic Category	Check all that are present
D	<input type="checkbox"/>	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf <input type="checkbox"/> Evergreen		<input type="checkbox"/> G Reed <input type="checkbox"/> Hblack <input type="checkbox"/> C Burd <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol <input type="checkbox"/> Salt Ced <input type="checkbox"/> CanThis <input type="checkbox"/> M This <input type="checkbox"/> Hblack <input type="checkbox"/> RC Grass <input type="checkbox"/> EngI Ivy <input type="checkbox"/> Ch Grass <input type="checkbox"/> NONE
E	<input type="checkbox"/>	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf <input type="checkbox"/> Evergreen		<input type="checkbox"/> G Reed <input type="checkbox"/> Hblack <input type="checkbox"/> C Burd <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol <input type="checkbox"/> Salt Ced <input type="checkbox"/> CanThis <input type="checkbox"/> M This <input type="checkbox"/> Hblack <input type="checkbox"/> RC Grass <input type="checkbox"/> EngI Ivy <input type="checkbox"/> Ch Grass <input type="checkbox"/> NONE
F	<input type="checkbox"/>	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf <input type="checkbox"/> Evergreen		<input type="checkbox"/> G Reed <input type="checkbox"/> Hblack <input type="checkbox"/> C Burd <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol <input type="checkbox"/> Salt Ced <input type="checkbox"/> CanThis <input type="checkbox"/> M This <input type="checkbox"/> Hblack <input type="checkbox"/> RC Grass <input type="checkbox"/> EngI Ivy <input type="checkbox"/> Ch Grass <input type="checkbox"/> NONE
G	<input type="checkbox"/>	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf <input type="checkbox"/> Evergreen		<input type="checkbox"/> G Reed <input type="checkbox"/> Hblack <input type="checkbox"/> C Burd <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol <input type="checkbox"/> Salt Ced <input type="checkbox"/> CanThis <input type="checkbox"/> M This <input type="checkbox"/> Hblack <input type="checkbox"/> RC Grass <input type="checkbox"/> EngI Ivy <input type="checkbox"/> Ch Grass <input type="checkbox"/> NONE
H	<input type="checkbox"/>	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf <input type="checkbox"/> Evergreen		<input type="checkbox"/> G Reed <input type="checkbox"/> Hblack <input type="checkbox"/> C Burd <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol <input type="checkbox"/> Salt Ced <input type="checkbox"/> CanThis <input type="checkbox"/> M This <input type="checkbox"/> Hblack <input type="checkbox"/> RC Grass <input type="checkbox"/> EngI Ivy <input type="checkbox"/> Ch Grass <input type="checkbox"/> NONE
I	<input type="checkbox"/>	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf <input type="checkbox"/> Evergreen		<input type="checkbox"/> G Reed <input type="checkbox"/> Hblack <input type="checkbox"/> C Burd <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol <input type="checkbox"/> Salt Ced <input type="checkbox"/> CanThis <input type="checkbox"/> M This <input type="checkbox"/> Hblack <input type="checkbox"/> RC Grass <input type="checkbox"/> EngI Ivy <input type="checkbox"/> Ch Grass <input type="checkbox"/> NONE
J	<input type="checkbox"/>	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf <input type="checkbox"/> Evergreen		<input type="checkbox"/> G Reed <input type="checkbox"/> Hblack <input type="checkbox"/> C Burd <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol <input type="checkbox"/> Salt Ced <input type="checkbox"/> CanThis <input type="checkbox"/> M This <input type="checkbox"/> Hblack <input type="checkbox"/> RC Grass <input type="checkbox"/> EngI Ivy <input type="checkbox"/> Ch Grass <input type="checkbox"/> NONE
K	<input type="checkbox"/>	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 1-3 <input type="checkbox"/> >2 <input type="checkbox"/> 0-0.1 <input type="checkbox"/> .75-2 <input type="checkbox"/> >3.75	<input type="checkbox"/> <5 <input type="checkbox"/> 5-15 <input type="checkbox"/> 15-30 <input type="checkbox"/> >30	<input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Broadleaf <input type="checkbox"/> Evergreen		<input type="checkbox"/> G Reed <input type="checkbox"/> Hblack <input type="checkbox"/> C Burd <input type="checkbox"/> Spurge <input type="checkbox"/> Rus Ol <input type="checkbox"/> Salt Ced <input type="checkbox"/> CanThis <input type="checkbox"/> M This <input type="checkbox"/> Hblack <input type="checkbox"/> RC Grass <input type="checkbox"/> EngI Ivy <input type="checkbox"/> Ch Grass <input type="checkbox"/> NONE



CHANNEL CONSTRAINT AND FIELD CHEMISTRY - STREAMS/RIVERS

Reviewed by (initial): _____

SITE ID: _____	DATE: ____/____/____
----------------	----------------------

IN SITU MEASUREMENTS		Station ID: _____ (Assume X-site unless marked)
		Comments
STREAM/RIVER DO mg/l: (optional) _____		
STREAM RIVER TEMP. (°C): _____		
TIME OF DAY: _____		

CHANNEL CONSTRAINT

CHANNEL PATTERN (Check One)

One channel

Anastomosing (complex) channel - (Relatively long major and minor channels branching and rejoining.)

Braided channel - (Multiple short channels branching and rejoining - mainly one channel broken up by numerous mid-channel bars.)

CHANNEL CONSTRAINT (Check One)

Channel very constrained in V-shaped valley (i.e. it is very unlikely to spread out over valley or erode a new channel during flood)

Channel is in Broad Valley but channel movement by erosion during floods is **constrained by Incision** (Flood flows do not commonly spread over valley floor or into multiple channels.)

Channel is in Narrow Valley but is not very constrained, but limited in movement by relatively narrow valley floor (< ~10 x bankfull width)

Channel is Unconstrained in Broad Valley (i.e. during flood it can fill off-channel areas and side channels, spread out over flood plain, or easily cut new channels by erosion)

CONSTRAINING FEATURES (Check One)

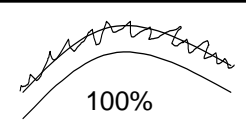
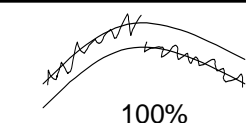
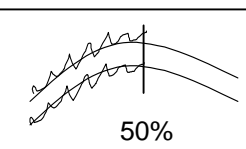
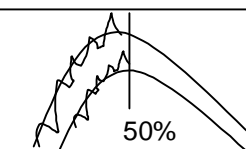
Bedrock (i.e. channel is a bedrock-dominated gorge)

Hillslope (i.e. channel constrained in narrow V-shaped valley)

Terrace (i.e. channel is constrained by its own incision into river/stream gravel/soil deposits)

Human Bank Alterations (i.e. constrained by rip-rap, landfill, dike, road, etc.)

No constraining features

Percent of channel length with margin in contact with constraining feature: _____ % ----> (0-100%)	Percent of Channel Margin Examples	
Bankfull width: _____ (m)	 100%	 100%
Valley width (Visual Estimated Average): _____ (m) Note: Be sure to include distances between both sides of valley border for valley width. If you cannot see the valley borders, record the distance you can see and mark this box. <input type="checkbox"/>	 50%	 50%

Comments	
-----------------	--



TORRENT EVIDENCE ASSESSMENT FORM - STREAMS

SITE ID: _____

DATE: ____ / ____ / ____

TORRENT EVIDENCE

Please X any of the following that are evident.

EVIDENCE OF TORRENT SCOURING:

01 - Stream channel has a recently devegetated corridor two or more times the width of the low flow channel. This corridor lacks riparian vegetation with possible exception of fireweed, even-aged alder or cottonwood seedlings, grasses, or other herbaceous plants.

02 - Stream substrate cobbles or large gravel particles are NOT IMBRICATED. (Imbricated means that they lie with flat sides horizontal and that they are stacked like roof shingles – imagine the upstream direction as the top of the "roof.") In a torrent scour or deposition channel, the stones are laying in unorganized patterns, lying "every which way." In addition many of the substrate particles are angular (not "water-worn.")

03 - Channel has little evidence of pool-riffle structure. (For example, could you ride a mountain bike down the channel?)

04 - The stream channel is scoured down to bedrock for substantial portion of reach.

05 - There are gravel or cobble berms (little levees) above bankfull level.

06 - Downstream of the scoured reach (possibly several miles), there are massive deposits of sediment, logs, and other debris.

07 - Riparian trees have fresh bark scars at many points along the stream at seemingly unbelievable heights above the channel bed.

08 - Riparian trees have fallen into the channel as a result of scouring near their roots.

EVIDENCE OF TORRENT DEPOSITS:

09 - There are massive deposits of sediment, logs, and other debris in the reach. They may contain wood and boulders that, in your judgement, could not have been moved by the stream at even extreme flood stage.

10 - If the stream has begun to erode newly laid deposits, it is evident that these deposits are "MATRIX SUPPORTED." This means that the large particles, like boulders and cobbles, are often not touching each other, but have silt, sand, and other fine particles between them (their weight is supported by these fine particles -- in contrast to a normal stream deposit, where fines, if present, normally "fill-in" the interstices between coarser particles.)

NO EVIDENCE:

11 - No evidence of torrent scouring or torrent deposits.

COMMENTS

SAMPLE COLLECTION FORM - STREAMS

Reviewed by (initial): _____

SITE ID: _____	DATE: ____ / ____ / ____
----------------	--------------------------

WATER CHEMISTRY

Sample ID	Transect	Comments
_____	_____	

REACH-WIDE BENTHOS SAMPLE

Sample ID	No. of Jars	Comment
_____	_____	

TRANSECT		A		B		C		D		E		F		G		H		I		J		K	
SUBSTRATE	CHAN.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.
Fine/Sand	Pool	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P	<input type="checkbox"/> F	<input type="checkbox"/> P
Gravel	Glide	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL	<input type="checkbox"/> G	<input type="checkbox"/> GL
Coarse	Riffle	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI	<input type="checkbox"/> C	<input type="checkbox"/> RI
Other: Note in Comments	Rapid	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA	<input type="checkbox"/> O	<input type="checkbox"/> RA

TARGETED RIFFLE BENTHOS SAMPLE

Sample ID	No. of Jars	Comment
_____	_____	

NEAREST TRANSECT	A	B	C	D	E	F	G	H	I	J	K	SUBSTRATE SIZE CLASSES
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	F/S - ladybug or smaller (<2 mm) G - ladybug to tennis ball (2 to 64 mm) C - tennis ball to car sized (64 to 4000 mm) O - bedrock, hardpan, wood, etc
Dom. Substrate	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	<input type="checkbox"/> F/S	
Fine/Sand	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G	
Gravel	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	
Coarse	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	<input type="checkbox"/> O	
Other: Note in Comments												

Additional Benthos Comments

COMPOSITE PERIPHYTON SAMPLE

Sample ID	Composite Volume (mL)	Number of transects sampled (0-11): _____			
_____	_____				
Assemblage ID (50-mL tube, preserved)		Chlorophyll (GF/F filter)		Biomass (GF/F Filter)	
Sample Vol. (mL)	Flag	Sample Vol. (mL)	Flag	Sample Vol. (mL)	Flag
_____	_____	_____	_____	_____	_____
Flag	Comments				

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = misc. flag assigned by field crew. Explain all flags in comment sections.



STREAM DISCHARGE FORM

Reviewed by (Initials): _____

SITE ID: _____

DATE: ____/____/____

Velocity Area

Distance Units
 ft cm

Depth Units
 ft cm

Velocity Units
 ft/s XX.X m/s X.XX

(Final measurement should be left bank.)

	Dist. from Bank	Depth	Velocity	Flag
1	0			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Timed Filling

Repeat	Volume (L)	Time (s)	Flag
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____

Neutral Bouyant Object

	Float 1	Float 2	Float 3
Float Dist. <input type="checkbox"/> ft <input type="checkbox"/> m	_____	_____	_____
Float Time (s)	_____	_____	_____
Flag	_____	_____	_____

Cross Sections on Float Reach

	Upper Section	Middle Section	Lower Section
Width <input type="checkbox"/> ft <input type="checkbox"/> m	_____	_____	_____
Depth 1 <input type="checkbox"/> ft <input type="checkbox"/> cm	_____	_____	_____
Depth 2	_____	_____	_____
Depth 3	_____	_____	_____
Depth 4	_____	_____	_____
Depth 5	_____	_____	_____

Q Value

If discharge is determined directly in field, record value here: Q = _____ cfs m³/s FLAG

Flag	Comments

Flag Codes: K = No measurement or observation made; U = Suspect measurement or observation; Q = Unacceptable QC check associated with measurement; Z = Last station measured (if not Station 20); F1, F2, etc. = Miscellaneous flags assigned by each field crew. Explain all flags in comments section.



VERTEBRATE COLLECTION FORM - STREAMS / RIVERS

Reviewed by (Initials): _____

SITE ID: _____ DATE: ____ / ____ / ____ PAGE: ____ of ____

NOT FISHED NO PERMIT
 NOT FISHED OTHER
 FISHED NONE COLLECTED
 FISHED ALL 10 SUBREACHES
 FISHED 5-9 SUBREACHES
 FISHED <5 SUBREACHES
 FLAG for Fished/Not Fished

Vertebrate Sample ID _____ Total Shock (button) Time (s) _____ Total Fishing Time (min) _____ Sample Distance (m) _____

Gear: bp bank/tow boat seine length (m) _____, mesh (mm) _____ ; length (m) _____, mesh (mm) _____

Water Visibility: Good Poor Water Temp. (C) _____ Cond (uS) _____

Anodes: Number _____ Diameters _____ in. cm Wave Form: AC DC Pulsed DC FLAG for other Sampling Information

Volts: (50-1000) _____
 Watts: likely 400 (bp), 2500 or 5000 (raft) _____
 Pulse Rate: pps or Hz _____
 Amps: (may not provided for bp) _____
 Pulse Width (ms) (not available for raft) _____

Tag No.	Common Name	Tally	Total Count	Vouch. Count	LENGTH (mm) *		Anom. Count	Mortality Count	Flag	Subreaches
					Minimum	Maximum				
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J
										<input type="radio"/> A <input type="radio"/> C <input type="radio"/> E <input type="radio"/> G <input type="radio"/> I <input type="radio"/> B <input type="radio"/> D <input type="radio"/> F <input type="radio"/> H <input type="radio"/> J

Flag	Comment



Flag codes: K = No measurement made, U = Suspect measurement., F1,F2, etc. = flags assigned by each field crew. Explain all flags in commentx. LENGTH* - Enter single fish as minimum. 03/27/2003 2003 Vertebrate Collection

RAPID HABITAT ASSESSMENT FORM: RIFFLE/RUN - STREAM

SITE ID: _____

DATE: ____ / ____ / ____

HABITAT PARAMETER	CONDITION CATEGORY																				
	OPTIMAL					SUB-OPTIMAL					MARGINAL					POOR					
1. Epifaunal Substrate/ Available Cover Score: <input style="width: 40px;" type="text"/>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential; (i.e., logs/snags that are NOT new fall and NOT transient.)					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
2. Embeddedness Score: <input style="width: 40px;" type="text"/>	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.					Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.					Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.					Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
3. Velocity/Depth Regime Score: <input style="width: 40px;" type="text"/>	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is less than 0.3 m/s, deep is greater than 0.5 m.)					Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).					Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).					Dominated by 1 velocity/depth regime (usually slow-deep).					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
4. Sediment Deposition Score: <input style="width: 40px;" type="text"/>	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.					Some new increases in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.					Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.					Heavy deposits of fine material; increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
5. Channel Flow Status Score: <input style="width: 40px;" type="text"/>	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.					Water fills over 75% of the available channel; or less than 25% of channel substrate is exposed.					Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.					Very little water in channel and mostly present as standing pools.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
6. Channel Alteration Score: <input style="width: 40px;" type="text"/>	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0



RAPID HABITAT ASSESSMENT FORM: RIFFLE/RUN (continued) - STREAM

SITE ID: _____

DATE: ____ / ____ / ____

HABITAT PARAMETER	CONDITION CATEGORY			
	OPTIMAL	SUB-OPTIMAL	MARGINAL	POOR
7. Frequency of Riffles (or bends) Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream greater than 7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by width of stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by width of stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by width of stream is a ratio of over 25.	
Score: <input style="width: 40px;" type="text"/>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8. Bank Stability (score each bank) NOTE: Determine left or right side by facing downstream.	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. Less than 5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Left Bank Score: <input style="width: 40px;" type="text"/>	Left Bank: 10 9	8 7 6	5 4 3	2 1 0
Right Bank Score: <input style="width: 40px;" type="text"/>	Right Bank: 10 9	8 7 6	5 4 3	2 1 0
9. Vegetative Protection (score each bank) More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% if the streambank surfaces covered by native vegetation; but one class of plants is not well represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruptions obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Left Bank Score: <input style="width: 40px;" type="text"/>	Left Bank: 10 9	8 7 6	5 4 3	2 1 0
Right Bank Score: <input style="width: 40px;" type="text"/>	Right Bank: 10 9	8 7 6	5 4 3	2 1 0
10. Riparian Vegetative Zone Width (score each bank) Width of riparian zone greater than 18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted the zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone less than 6 meters; little or no riparian vegetation due to human activities.	
Left Bank Score: <input style="width: 40px;" type="text"/>	Left Bank: 10 9	8 7 6	5 4 3	2 1 0
Right Bank Score: <input style="width: 40px;" type="text"/>	Right Bank: 10 9	8 7 6	5 4 3	2 1 0



RAPID HABITAT ASSESSMENT FORM: GLIDE/POOL - STREAMS

SITE ID: _____

DATE: ____ / ____ / ____

HABITAT PARAMETER	CATEGORY																				
	OPTIMAL					SUB-OPTIMAL					MARGINAL					POOR					
1. Epifaunal Substrate/ Available Cover Score: <input style="width: 40px;" type="text"/>	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e. logs/snags that are NOT new fall and NOT transient.)					30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
2. Pool Substrate Characterization Score: <input style="width: 40px;" type="text"/>	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.					Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.					All mud or clay or sand bottom; little or no root mat; no submerged vegetation.					Hard-pan clay or bedrock; no root mat or vegetation.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
3. Pool Variability Score: <input style="width: 40px;" type="text"/>	Even mix of large-shallow, large-deep, small shallow, small-deep pools present.					Majority of pools large-deep; very few shallows.					Shallow pools much more prevalent than deep pools.					Majority of pools small-shallow or absent.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
4. Sediment Deposition Score: <input style="width: 40px;" type="text"/>	Little or no enlargement of islands or point bars and less than 20% of the bottom affected by sediment deposition.					Some new increases in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.					Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.					Heavy deposits of fine material; increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
5. Channel Flow Status Score: <input style="width: 40px;" type="text"/>	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.					Water fills over 75% of the available channel; or less than 25% of channel substrate is exposed.					Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.					Very little water in channel and mostly present as standing pools.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
6. Channel Alteration Score: <input style="width: 40px;" type="text"/>	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0



RAPID HABITAT ASSESSMENT FORM: GLIDE/POOL (continued) - STREAMS

SITE ID: _____

DATE: ____/____/____

HABITAT PARAMETER	CATEGORY			
	OPTIMAL	SUB-OPTIMAL	MARGINAL	POOR
7. Channel Sinuosity Score: <input style="width: 50px;" type="text"/>	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note- channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.) 20 19 18 17 16	The bends in the stream increase the stream length 2 to 3 times longer than if it was in a straight line. 15 14 13 12 11	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line. 10 9 8 7 6	Channel straight; waterway has been channelized for a long distance. 5 4 3 2 1 0
8. Bank Stability (score each bank) NOTE: Determine left or right side by facing downstream. Left Bank Score: <input style="width: 50px;" type="text"/> Right Bank Score: <input style="width: 50px;" type="text"/>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. Less than 5% of bank affected. Left Bank: 10 9 Right Bank: 10 9	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion. 8 7 6 8 7 6	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods. 5 4 3 5 4 3	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars. 2 1 0 2 1 0
9. Vegetative Protection (score each bank) Left Bank Score: <input style="width: 50px;" type="text"/> Right Bank Score: <input style="width: 50px;" type="text"/>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally. Left Bank: 10 9 Right Bank: 10 9	70-90% if the streambank surfaces covered by native vegetation; but one class of plants is not well represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining. 8 7 6 8 7 6	50-70% of the streambank surfaces covered by vegetation; disruptions obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining. 5 4 3 5 4 3	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height. 2 1 0 2 1 0
10. Riparian Vegetation Zone Width (score each bank) Left Bank Score: <input style="width: 50px;" type="text"/> Right Bank Score: <input style="width: 50px;" type="text"/>	Width of riparian zone greater than 18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted the zone. Left Bank: 10 9 Right Bank: 10 9	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally. 8 7 6 8 7 6	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal. 5 4 3 5 4 3	Width of riparian zone less than 6 meters; little or no riparian vegetation due to human activities. 2 1 0 2 1 0



Classification of Stream Channels¹

VALLEY TYPE:	Colluvial	Bedrock	Alluvial					
CHARACTERISTIC			Cascade	Step-pool	Plane-bed	Pool-riffle	Regime	Braided
Predominant bed material	Variable	Bedrock	Boulder	Cobble/ boulder	Gravel/ cobble	Gravel	Sand	Variable
Bedform pattern	Variable	Variable	None	Vertical oscillatory	None	Laterally oscillatory	Multilayered	Laterally oscillatory
Dominant roughness elements	Boulders , large woody debris	Streambed , banks	Boulders , banks	Bedforms (steps, pools), boulders, large woody debris, banks	Boulders and cobbles, banks	Bedforms (bars, pools) boulders and cobbles, large woody debris, sinuosity, banks	Sinuosity, bedforms (dunes, riffles, bars), banks	Bedforms (bars, pools)
Dominant sediment sources	Hillslope, debris flows	Fluvial, hillslope, debris flows	Fluvial, hillslope, debris flows	Fluvial, hillslope, debris flows	Fluvial, bank erosion, debris flows	Fluvial, bank erosion, inactive channels, debris flows	Fluvial, bank erosion, inactive channels	Fluvial, bank erosion, debris flows
Typical slope (%)	>20	Variable	8 - 30	4 - 8	1 - 4	0.1 - 2	<0.1	<3
Typical confinement	Strongly confined	Strongly confined	Strongly confined	Moderately confined	Variable	Unconfined	Unconfined	Unconfined
Pool spacing (channel widths)	Variable	Variable	<1	1- 4	None	5 - 7	5 - 7	Variable

¹Adapted from Montgomery and Buffington, 1993, *Channel classification, prediction of channel response, and assessment of channel condition*, Report TFW-SH10-93-002, Washington State Timber/Fish/Wildlife.

EROSIONAL HABITAT DESCRIPTIONS

Name	Code	Description
Rapid	RA	Gradient >4% with swiftly flowing water and considerable surface turbulence. Rapids tend to have larger substrate sizes than riffles.
Riffle	RI	Gradient <4% and shallow with moderate velocity and moderate surface turbulence.
Run	RU	Runs are long, usually straight, low-gradient stream units without flow obstructions. The stream bottom is usually even and the water does not "pool".
Step-Run	SR	Step-runs are a series of runs that are separated by short (<3m) riffles or flow obstructions.

DEPOSITIONAL HABITAT DESCRIPTIONS

Name	Code	Description
Lateral	LAT	As streams go around bends they scour laterally and lateral scour pools are created along the banks. The deepest portion is the stream margin.
Scour	SCO	Pool shape is often like a bowl. The deepest part of pool is in the center of the channel.
Plunge	PLU	Plunge pools are formed as water drops over an object. The deepest portion of the pool is directly underneath the falling point.
Dammed	DAM	Water backs up against an obstruction in the stream channel. The deepest portion will be against the object forming the obstruction.