send the data to: Streamkeepers Database, Department of Fisheries and Oceans,
Suite 400, 555 W. Hastings Street, Station 321, Vancouver, B.C. V6B 5G3
or fax to (604) 666-0292

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2**

Stream Name/Nearest Town: Paul Creek / Clearwater		Date Feb. 17, 01
Organization Name: Paul Creek Streamkeepers		Watershed code 349 956 400
Contact Name: Bonnie Brooke		Phone # 555-1414
Crew Names: Charle Fry, mr. Little	Bonnie Brooke, may Frisk	Stream Segment # 1
		Stream Section # 1
		Length Surveyed 67.8

Upstream End Point

Mapsheet number pg 28 Type municipal Scale 1:2,500

Location (distance from known stream landmark, directions to benchmark)
37.5 m upstream of BM
Back yard of 1607 Hope Rd playfort on left bank

Time: 1:00pm Weather ☑ clear ☐ shower (1-2.5 cm in 24 hr) ☐ snow ☐ overcast ☐ storm (<2.5 cm in 24 hr) ☐ rain on snow

Water turbidity (cm visibility) > 53cm Temperature °C (leave thermometer 2 min.) air 7 water 8

Measurements taken every 1 m

Bankfull Channel width 3.5 (m) Average depth .57 (m)

Wetted Channel width 2.7 (m) Average depth .11 (m)

Downstream End Point

Mapsheet number pg 28 Type municipal Scale 1:2,500

Location (distance from known stream landmark, directions to benchmark)
30.3 m downstream of BM North end of picnic shelter (Right bank)

Time: 4:00pm Weather ☑ clear ☐ shower (1-2.5 cm in 24 hr) ☐ snow ☐ overcast ☐ storm (<2.5 cm in 24 hr) ☐ rain on snow

Water turbidity (cm visibility) > 47 Temperature °C (leave thermometer 2 min.) air 7 water 8

Measurements taken every 1 m

Bankfull Channel width 3.2 (m) Average depth .35 (m)

Wetted Channel width 2.3 (m) Average depth .08 (m)

(Upstream) First and Last Measurements taken .1 m from streambank edge (Downstream)

Left Bank	.1	.5	1	2	3	3.4			Right Bank
Wetted Depth	X	1	9	21	12	X			Wetted Depth
Bankfull Depth	50	54	58	72	65	40			Bankfull Depth

Left Bank	.1	.5	1	2	3	3.1			Right Bank
Wetted Depth	X	1	15	8	13	6			Wetted Depth
Bankfull Depth	12	26	47	37	48	41			Bankfull Depth

Take measurements every 0.5m in streams less than 5m wide, every 1m in streams 5 to 15m

send this data to the Streamkeepers Database

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2**

Stream Name: Paul Creek	Date: Feb. 17, 2001
Organization Name: Paul Creek Streamkeepers	Stream Segment # 1 / Section # 1
	Map Sheet # 92 P / pg 28

STEP 1. BENCHMARK LOCATION

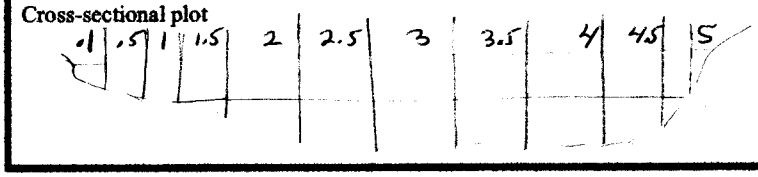
Directions to benchmark
8m west (toward stream) of Southwest corner of Hope's Grocery 1591 Hope Rd, Large cedar tree

STEP 2. CROSS-SECTIONAL SURVEY

Location relative to benchmark at BM	Photos taken: (yes or no) yes
Bankfull channel width (m) 5	Average bankfull depth (m) .19
Wetted channel width (m) 3.45	Average wetted depth (m) .12

Measurements taken every .5 metres

Cross-sectional plot



Left Bank

Right Bank

Left Bank	.1	.5	1	1.5	2	2.5	3	3.5	4	4.5	5	Right Bank
Wetted Depth	X	X	X	1	4	12	17	16	20	23	6	Wetted Depth
Bankfull Depth	4	12	8	8	12	21	28	28	33	39	25	Bankfull Depth

STEP 3. STREAM DISCHARGE

Cross-sectional area of wetted stream (m^2): 3.45 (wetted width) x .12 (average wetted depth) = .41 m^2

Average Time (sec): [17 (trial 1) + 15 (trial 2) + 14 (trial 3) + 13 (trial 4) + 22 (trial 5)] = 81 (total trials) ÷ 5 = 16.2 sec (Average Time (sec))

Average Velocity (m/sec): 10m (length (m)) ÷ 16.2 sec (average time (sec)) = .62 m/sec (Average Velocity (m/sec))

Average Stream Discharge (m^3/sec): .41 m^2 (cross sectional area (m^2)) x .62 m/sec (average velocity (m/sec)) x 0.8 (correction factor) = .21 m^3/sec (Discharge (m^3/sec))

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2**

Stream Name: Paul Creek	Date: Feb. 17, 2001
Organization Name: Paul Creek Streamkeepers	Stream Seg # 1 Section# 2
	Map Sheet # 92 P

STEP 4.1 LONGITUDINAL SURVEY, MEASUREMENTS

		Photos (yes, no)
Length of survey site (minimum 12 times the bankfull width)	Minimum 60 (m) Actual 67.8 (m)	
Upstream survey boundary (m upstream of benchmark)	Minimum 30 (m) Actual 37.5 (m)	Yes
Downstream boundary (m downstream of benchmark)	Minimum 30 (m) Actual 30.3 (m)	yes

* distance **upstream** (Up) of benchmark

habitat unit type (pool or riffle)	bottom of habitat unit*	top of habitat unit*	length of habitat unit (m)	% slope	Photo Frame #
Riffle	0 Up	20.5 Up	20.5m	2.5%	3
Pool	20.5 Up	27.5 Up	7m	0%	4
Riffle	27.5 Up	37.5 Up	10m	2%	5
	Up	Up			
	Up	Up			
	Up	Up			
	Up	Up			

* distance **downstream** (Dn) of benchmark in metres

habitat unit type (pool or riffle)	top of habitat unit*	bottom of habitat unit*	length of habitat unit (m)	% slope	Photo Frame #
Pool	0 Dn	4 Dn	4	0%	6
Riffle	4 Dn	30.3 Dn	26.3	1.5%	7
	Dn	Dn			
	Dn	Dn			
	Dn	Dn			
	Dn	Dn			
	Dn	Dn			

send the data to the Streamkeepers Database

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2: (con't)**

Stream Name	Paul Creek	Date	Feb 17, 2001
Stream segment and section #'s	Seg 1, section 1		

STEP 4.2 LONGITUDINAL SURVEY, HABITAT QUALITY

1. Streambed material

Collect 25 samples

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

% fines (<0-2cm) - ladybug size and smaller

% gravel(0.2-5 cm) - ladybug to tennis ball

% cobble (5-25cm) - tennis ball to basketball

% boulder (>25cm) – bigger then a basketball with definable edges

% bedrock - slab of rock

Fines 2 = 8 %
Gravel 12 = 48 %
Cobble 11 = 44 %
Boulder 0 = 0 %
Bedrock 0 = 0 %
Cobble + Boulder *Total* = 44 %

2. % embeddedness - cover of gravel and cobble by fine sediment 25 %

3. Instream cover

LWD HH HH 1

Rooted cutbank 1111 HH HH

11 # pieces LWD
+ 14 # rooted cutbanks
= 26 + (67.8 ÷ 5) 13.6 = 1.9
total cover (length of reference site + bankfull width) instream cover

4. Percent pool habitat

survey site slope 1.2%

total length of reference site (m) 67.8

total length of pools (m) 11

% pool habitat 16%

5. Off channel habitat (if present, describe habitat type, size, and whether it is seasonal or year-round)

description 1 small trib year round flow

PRESENT ✓

ABSENT

6. Bank stability (left or right bank facing downstream)

# of sites and length of bank affected (m)

	LEFT BANK	RIGHT BANK
# active bank erosion		3m
bank stabilization		
# slides reaching the channel		

7. Length of bank with no vegetation (m) LEFT BANK 0 RIGHT BANK 0

8. Overhead canopy % bankfull channel covered by overhanging branches 70%

9. Riparian zone

type and amount of vegetation: Good mix understory full

# of channel widths: 3+

coniferous trees	none ☐	few ☑	many ☐
deciduous trees	none ☐	few ☐	many ☑
shrubs	none ☐	few ☐	many ☑
grasses	none ☐	few ☑	many ☐

Adjacent land use and impacts: Trail, parking lot, dogs, commercial, playarea, tree cutting.

send the data to the Streamkeepers Database

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2 (con't)**

Stream Name Paul Creek	Date Feb 17, 2001
Stream segment and section #'s Seg 1, Sec 1	

STEP 5 HABITAT ASSESSMENT ***(the score in bold, estimate a value within the range listed)***

Characteristic	Results	Good	Acceptable	Marginal	Poor	Score
1: Streambed material: % boulder and cobble	44%	**15 - 20** 50%	**10 - 15** 30-50%	**5 - 10** 10-30%	**0 - 5** <10%	13
2: Embeddedness:	25%	**15 - 20** 25-0%	**10 - 15** 50-25%	**5 - 10** 75-50%	**0 - 5** >75%	15
3: Instream cover:	1.9	**15 - 20** >3	**10 - 15** 2 to 3	**5 - 10** 1 to 2	**0 - 5** <1	9
4: % Pool Habitat <2% stream slope 1.2% ~~2-5% stream slope~~ ~~>5% stream slope~~	16%	**11 - 15** >60% pool ~~>50% pool~~ ~~>40% pool~~	**7 - 11** 50-60% ~~40-50%~~ ~~30-40%~~	**3 - 7** 40-50% ~~30-40%~~ ~~20-30%~~	**0 - 3** <40% ~~<30%~~ ~~<20%~~	1
5: Off-channel habitat: ponds, side channels with protection from flood flows	Present	**11 - 15** year round, good protection	**7 - 11** seasonal, good protection	**3 - 7** seasonal, minimal protection	**0 - 3** little or none, no protection	3
6: Bank stability stability 3m out of 135.6 m evidence of erosion or bank failure *(see note 1)*		**11 - 15** stable none	**7 - 11** moderately stable some	**3 - 7** moderately unstable some	**0 - 3** unstable lots	14
7. Bank vegetation: % stream bank covered by vegetation	100%	**8 - 10** >90%	**5 - 8** 70-90%	**2 - 5** 50-70%	**0 - 2** and <50%	10
8. Overhead canopy: % bankfull channel overhung by trees and shrubs	70%	**8 - 10** >30%	**5 - 8** 20-30%	**2 - 5** 10-20%	**0 - 2** 0-10%	10
9. Riparian zone: # bankfull channels wide **trees and shrubs**		**8 - 10** 2 or more abundant on whole floodplain	**5 - 8** 1 to 2 good species mix	**2 - 5** <1 common, few species	**0 - 2** 0 sparse or absent	9
TOTAL SCORE		**102 - 135**	**66 - 102**	**30 - 66**	**0 - 30**	84

Note 1: The evidence of erosion or bank failure changes from **Good** (intact banks) to **Acceptable** (healed or banks stabilized) to **Marginal** (active erosion or extensive bank stabilization) to **Poor** (many actively eroding areas or upslope slides reaching channel).