

ODFW AQUATIC INVENTORY PROJECT
OREGON PLAN FOR SALMON & WATERSHEDS
STREAM RESTORATION HABITAT REPORT

STREAM: Bear Creek Upper (MC-300)
BASIN: Salmon River
SURVEY TYPE: Post-Tx
DATE: June 30, 2005
SURVEY CREW: Tory Fitchett, Lanoah Babcock
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 13.9 km²
USGS MAPS: Devils Lake
ECOREGION: Coast Range Volcanics

GENERAL DESCRIPTION:

The Bear Creek habitat survey extended 1,167 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 9.8 (range: 4.0-12.0). Land use for the reach was light grazing and timber harvest. The average unit gradient was 4.1 percent. Rapids (47%) and riffles (23%) dominated stream habitat. Cobble (31%) and gravel (30%) dominated stream substrate. Wood volume was low at 13.7 m³/100m.

COMMENTS:

There were four potential barriers to upstream fish migration in the surveyed length. Three were beaver dams and one was a log step. All ranged in height from 0.7 to 1.4 m.

The crew noted several habitat structures during the survey.

REACH 1

T07S-R10W-S11NW

REACH 1

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

<u>Narrow Valley Floor</u>		<u>Broad Valley Floor</u>	
Steep V-shape	0%	Constraining Terraces	0%
Moderate V-shape	0%	Multiple Terraces	100%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	9.8	VWI Range:	4 - 12

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	100%	Braided Channel	0%
Alt. Terrace/Hill	0%		
Landuse	0%		

Channel Characteristics

<u>Type</u>	<u>Length (m)</u>	<u>Area (m2)</u>	<u>Dry Units</u>
Primary Channel	1,167	5,292	0
Secondary Channel	166	461	2
Off-Channel Units	55	132	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 3
Width: 4.0	Width: 5.4	11.4 (8.5 - 17)	23.9 (11.1 - 40.5)
Depth: 0.27	Height: 0.5	0.9 (0.8 - 1.1)	1.4 (1.1 - 1.6)

W:D ratio: 11.7

Entrenchment (ACW:FPW ratio): 2.2

Stream Flow Type: MF

Habitat Units/100m (total channel length): 5.5

Average Unit Gradient: 4.1%

Habitat Units/100m (primary channel length): 6.6

Water temperature (°C): 11.0 - 11.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	LG	TH
Riparian Vegetation:	M30	M15

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	9%	Reach avg: 55%
Undercut Banks:	4%	Range: 29 - 78

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	227	19.4
Volume (m ³):	160	13.7
Key pieces (>=12m x 0.60m):	9	0.8

OREGON DEPT OF FISH AND WILDLIFE

BEAR CREEK UPPER POST-TX (2-MC, 300)

HABITAT INVENTORY

Report Date: 4/26/2006

Survey Date:

6/30/2005

REACH 1

T07S-R10W-S11NW

REACH 1

HABITAT DETAIL

Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
CASCADE/BEDROCK	1	8	2.2	0.10	18	4	0	0	6	17	17	61
CASCADE/BOULDERS	2	73	2.9	0.13	205	24	0	5	15	38	30	13
DRY CHANNEL	1	10	0.7	0.00	7	1	10	30	30	30	0	0
POOL-BACKWATER	1	10	1.1	0.20	11	0	10	30	30	30	0	0
POOL-BEAVER DAM	3	74	6.2	0.57	530	0	40	53	5	2	0	0
POOL-DAMMED	1	3	4.7	0.60	14	0	10	25	40	20	5	0
POOL-ISOLATED	3	23	4.4	0.33	102	0	87	13	0	0	0	0
POOL-LATERAL SCOUR	5	59	5.5	0.68	334	0	2	18	36	22	5	18
POOL-PLUNGE	7	42	4.8	0.65	204	2	3	17	37	27	4	11
POOL-STRAIGHT SCOUR	2	22	3.2	0.60	68	3	5	15	22	15	5	39
PUDDLED UNIT	1	30	1.1	0.05	33	0	5	25	30	30	10	0
RAPID/BEDROCK	3	70	3.8	0.15	276	7	0	3	13	17	10	57
RAPID/BOULDERS	19	555	4.3	0.18	2,519	151	0	4	24	50	15	7
RIFFLE	15	348	3.3	0.17	1,286	18	3	17	42	30	4	5
RIFFLE W/ POCKETS	1	16	5.4	0.45	86	0	5	20	35	30	10	0
STEP/BEAVER DAM	4	20	4.6	0.03	97	0	11	33	48	9	0	0
STEP/BOULDERS	2	8	2.2	0.08	24	12	0	5	19	45	26	5
STEP/COBBLE	3	9	3.8	0.10	35	9	0	0	37	50	13	0
STEP/LOG	3	9	4.7	0.01	36	1	2	20	45	28	5	0
Total:	77	1,388	4.0	0.27	5,885	232	Avg: 7	15	30	31	8	9

HABITAT SUMMARY

Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m ²)	Percent	Number	(# / 100m ²)
Dammed & BW Pools	8	110	4.7	0.44	657	11.17%	0	0.0
Scour Pools	14	122	4.8	0.65	606	10.30%	5	0.8
Glides	0	0			0	0.00%	0	0.0
Riffles	16	364	3.4	0.19	1,372	23.31%	18	1.3
Rapids	22	626	4.2	0.18	2,795	47.49%	158	5.7
Cascades	3	81	2.7	0.12	223	3.79%	28	12.6
Step/Falls	12	46	4.0	0.05	192	3.26%	22	11.5
Dry	2	40	0.9	0.03	40	0.68%	1	2.5
Culverts	0	0			0	0.00%	0	0.0

REACH 1

T07S-R10W-S11NW

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	22	15.9	18.8
Pools >=1m deep:	1	0.7	0.9
Complex pools (LWD pieces>=3):	4	2.9	3.4
Pool frequency (channel widths/pool):	11.7		
Residual pool depth (avg):	0.55		

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

BEAR CREEK UPPER POST-TX
GCG: 2-MC SITE ID: 300

Survey Date 6/30/2005
Report Date: 4/26/2006

RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

Summary of Riparian Zone (0-30m) 4 transects

Total hardwoods/1000	1722
Total conifers/1000 ft	244
Total conifers >20" dbh/1000 ft	0
Total conifers >35" dbh/1000 ft	0

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters		Zones 1-3 0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	4.5	0.0	8.0	0.3	4.5	0.3	17.0
15-30cm	0.0	2.5	1.0	1.5	1.5	1.8	2.5	5.8
30-50cm	0.8	1.8	0.0	0.8	0.5	2.0	1.3	4.5
50-90cm	0.0	0.3	0.0	0.5	0.0	0.3	0.0	1.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.8	9.0	1.0	10.8	2.3	8.5	1.3	9.4

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	71		66		60	
Shrub cover	16		26		22	
Grass/forb cover	84		73		61	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		25		75	
High terrace	75		63		13	
Low terrace	0		0		0	
Floodplain	25		13		13	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	4		5		11	

Summary of Riparian Zone (0-30m) for all reaches

4 transects

Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream

Total hardwoods/1000	1722
Total conifers/1000 ft	244
Total conifers >20" dbh/1000 ft	0
Total conifers >35" dbh/1000 ft	0

Average number of trees in a 5-m wide band

Diameter class (cm)	Zones 1-3	
	<u>0-30 meters</u>	
	<u>Conifer</u>	<u>Hardwood</u>
3-15cm	0.3	17.0
15-30cm	2.5	5.8
30-50cm	1.3	4.5
50-90cm	0.0	1.0
>90cm	0.0	0.0

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
20	RT	1	HT	4	85	30	70	Conifer							
								Hardwood	3	2	2	1			
20	RT	2	HT	3	90	15	75	Conifer							
								Hardwood			1				
20	LF	3	FP	2	90	10	90	Conifer		2				CLEAR CUT HILLSLOPE BEYOND	
								Hardwood	2	3	4				
20	LF	2	FP	-1	80	0	100	Conifer							
								Hardwood	1	2	1				
20	LF	1	FP	7	65	0	100	Conifer							
								Hardwood			1				
20	RT	3	HS	25	95	0	75	Conifer						ATV TRAIL	
								Hardwood	2			1			
33	RT	1	HT	1	75	0	100	Conifer			3				
								Hardwood	5						
33	LF	3	HS	10	90	15	85	Conifer							
								Hardwood	3		1				
33	LF	2	HT	5	85	10	90	Conifer							
								Hardwood	1	1	1				
33	LF	1	HT	3	80	10	90	Conifer						2D 0430940 / 4981610	
								Hardwood	3		1				
33	RT	2	HT	4	65	15	85	Conifer		2					
								Hardwood				1			
33	RT	3	HT	-5	50	15	85	Conifer			1				
								Hardwood							
48	RT	1	FP	4	80	20	80	Conifer							
								Hardwood	1	1	1				
48	LF	1	HT	6	75	25	75	Conifer						3D 0431060 / 4981811	
								Hardwood	3	4	2				
48	LF	2	HT	-1	75	35	65	Conifer							
								Hardwood	19						
48	LF	3	HS	18	20	10	40	Conifer	1	2	1			CLEARCUT BEYOND RIP	
								Hardwood		2	2				
48	RT	2	HS	10	70	40	60	Conifer							
								Hardwood	3	3		1			
48	RT	3	HS	12	85	15	85	Conifer							
								Hardwood	4	2	1				

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **2-MC** SITE ID: **300** BEAR CREEK UPPER POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RI	00	23		TEMP 11C	TEMP 11C, CUT LOGS
2	RB	00	53.1		OLD BV	SMALL POCKET, 0.35M DEE
3	LP	00	62.5	SS/		
4	CB	00	92.5			SMALL POCKET, 0.5M DEEP
5	PP	00	97.9	HS, DJ	HS 1, DJ	
6	SL	00	98.9	DJ, PN	H=0.7M	H 0.7M
7	DP	00	101.9	DJ, BD	OLD BV	
8	SD	00	108.5	DJ, PN, BD	H=1.1M	H 1.1M
9	BP	00	120.8	BV		
11	RB	01	191.4	WL	HS 2	BIG DEER, DOE
12	CB	01	234.4	HS, DJ-(4)		
13	PD	02	234.4	TJ/	TJ/	
14	RI	11	234.4			SMALL TRICKLE OVER GRO
17	SL	03	234.4	DJ, HS	H=0.5M, DJ	H 0.5M
18	RB	01	284.4			RIPARIAN 1
20	RB	00	334.4		RIP 1, NO GPS COVERAG	
22	RP	00	359.5	DJ	DJ	
25	SP	00	390.7	SS/		
26	RB	00	409.5	SS/		
27	PP	00	417.3	SS/, DJ		
28	SB	00	423.4	DJ		H 0.6M

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **2-MC** SITE ID: **300** BEAR CREEK UPPER POST-TX

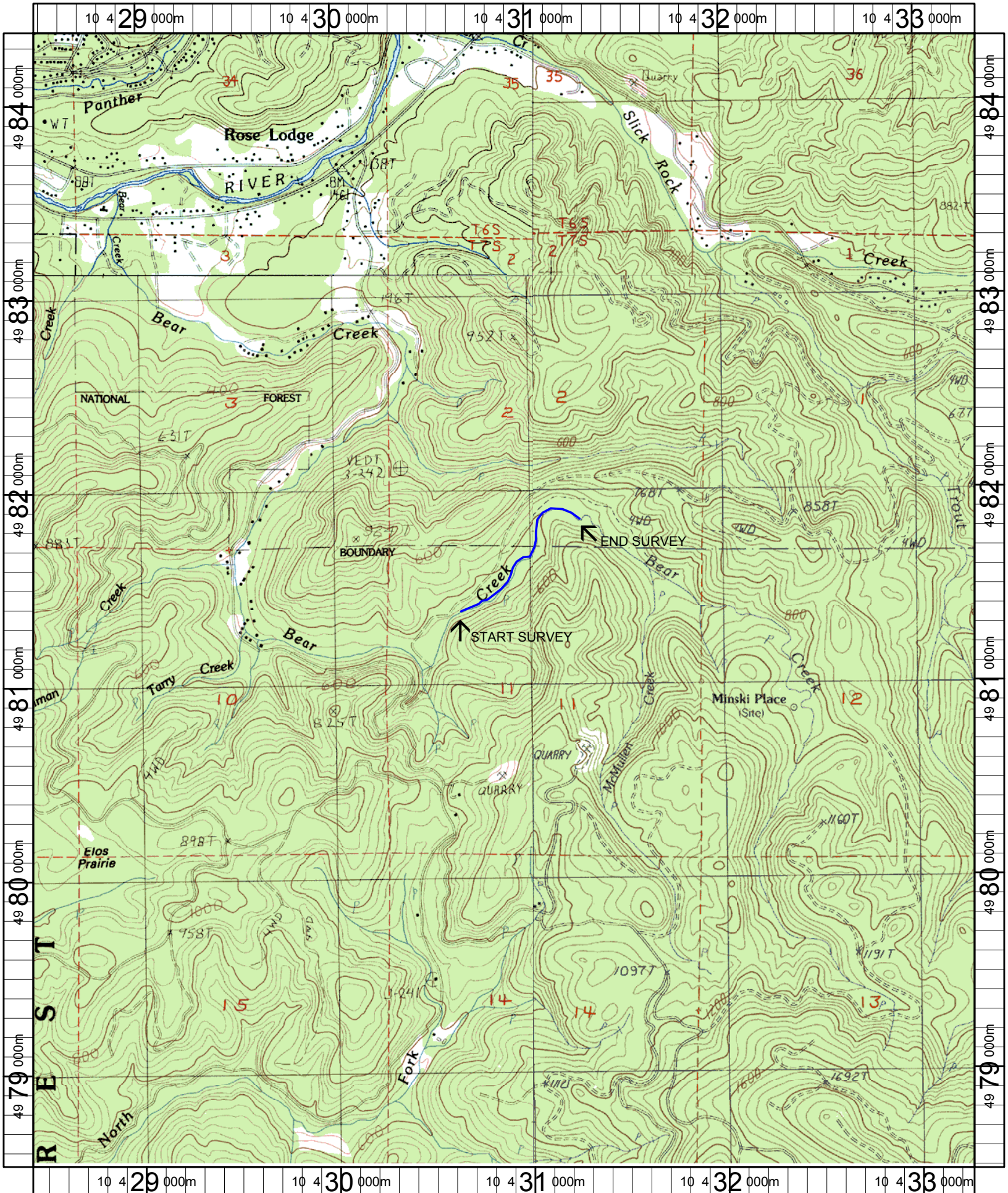
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
30	RB	01	489.4	TJ/	TJ/	
31	SB	11	489.4		H=0.9M	TRIB
32	RI	11	489.4			TRIB
33	LP	00	499.7	DJ	RIP 2	RIPARIAN 2
36	RB	00	598		BV	
37	LP	00	616	DJ		2 POCKETS
38	RI	01	666	/TJ		
39	DC	02	666			TRIB CHANNEL
40	RI	00	693.3		BV TRAIL, BV	
41	RI	00	728.4	DJ BV		GOV'T LAND SURVEY MARK
42	CR	00	736.4			0.4M DEEP POCKET
45	IP	10	750.6	SS	UNDERGROUND FLOW	SEEP FROM DAM OVERFLO
46	SD	00	752.2	PN, BV, BD	H=1.4M	H 1.4M
47	BP	01	795.9	BV		
48	IP	10	795.9	SS		SEEPING FROM BP
49	RB	00	847.9		RIPARIAN 3	HABITAT/REARING SURVEY
56	BW	10	933.9	SS		UNDERGROUND FLOW
57	SC	00	938		H=0.5M	H 0.5M
59	SD	00	959.6	BD	H=0.4M, DJ, BV	H 0.4M
60	RI	00	985.8	WL	BEAR PAW PRINTS	BEAR PRINTS
61	PP	01	993.1	/TJ, HS	/TJ, HS	

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **2-MC** SITE ID: **300** BEAR CREEK UPPER POST-TX

<u>UNIT#</u>	<u>TYPE</u>	<u>CHAN</u>	<u>DIST. (m)</u>	<u>COMMENTS</u>	<u>NOTE ESTIMATOR</u>	<u>NOTE NUMERATOR</u>
62	SC	00	995.3	HS, DJ	H=0.35M	H 0.35M
66	RI	02	1070.8	BV		
67	SD	02	1070.8	DJ, PN, BD	H=0.7M	H 0.7M
68	BP	02	1070.8	BV		COHO FRY
69	RI	02	1070.8	BV, DJ		
70	SL	02	1070.8	HS	H=1.3M, HS	H 0.3M
73	RI	00	1092.8		RIPARIAN 4	RIPARIAN 4
75	PP	00	1120.5	HS, DJ	HS	
76	SC	00	1123.2		H=0.2M	H 0.2M
78	RB	00	1167.3		END	END SIGN ON RIGHT ALDER



Name: DEVILS LAKE
 Date: 1/21/2005
 Scale: 1 inch equals 2000 feet

Location: 10 430869 E 4981431 N
 Caption: BEAR CREEK UPPER RESTORATION SITE - SALMON RIVER BASIN