

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

STREAM: Buffalo Creek (U-263)
BASIN: Umpqua River
SURVEY TYPE: Pre-Tx
DATE: July 18, 2005
SURVEY CREW: Kevin Drake, Erin Coleman
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 4.3 km²
USGS MAPS: Callahan
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Buffalo Creek habitat survey extended 1,275 meters. The channel was constrained by hillslopes in a moderate V-shaped valley. The average valley width index was 2.2 (range: 1.0-6.0). Land use for the reach was mature (50-90 cm dbh) and old growth (90+ cm dbh) trees. The average unit gradient was 6.6 percent. Cascades (43%) and rapids (23%) dominated stream habitat. Gravel (37%) and boulders (22%) dominated stream substrate. Wood volume was low at 19.3 m³/100m.

COMMENTS:

There were three potential barriers to upstream fish migration in the surveyed length. These were all boulder steps ranging in height from 0.6 to 1.4 m., located between 1,023 and 1,037 m from the start of the survey.

The crew noted two habitat structures during the survey.

REACH 1

T25S-R07W-S31SW

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	100%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	2.2	VWI Range:	1 - 6

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	100%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	0%	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	1,275	2,708	0
Secondary Channel	52	125	2
Off-Channel Units	21	26	1

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 2
Width: 2.0	Width: 3.8	6.1 (4.6 - 9)	8.1 (6.2 - 10)
Depth: 0.19	Height: 0.4	0.8 (0.6 - 1)	1.2 (0.7 - 1.7)

W:D ratio: 9.5
 Stream Flow Type: MF
 Average Unit Gradient: 6.6%
 Water temperature (°C): 14.0 - 14.0

Entrenchment (ACW:FPW ratio): 1.6
 Habitat Units/100m (total channel length): 9.9
 Habitat Units/100m (primary channel length): 10.4

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	MT	OG
Riparian Vegetation:	C50	D15

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	3%	Reach avg: 90%
Undercut Banks:	7%	Range: 34 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	192	15.1
Volume (m ³):	246	19.3
Key pieces (>=12m x 0.60m):	8	0.6

OREGON DEPT OF FISH AND WILDLIFE

BUFFALO CREEK PRE-TX (4-UJP, 263)

HABITAT INVENTORY

Report Date: 4/26/2006

Survey Date:

7/18/2005

REACH 1

T25S-R07W-S31SW

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	5	92	3.0	0.09	369	38	0	5	12	10	0	73
CASCADE/BOULDERS	34	468	1.8	0.14	854	540	0	11	37	22	29	1
DRY UNIT	2	23	2.1	0.00	60	2	0	0	35	18	5	43
POOL-ALCOVE	1	2	1.0	0.10	2	0	10	10	50	20	10	0
POOL-BACKWATER	2	3	1.8	0.10	7	7	15	45	40	0	0	0
POOL-LATERAL SCOUR	29	165	2.4	0.41	386	80	1	22	44	19	8	6
POOL-PLUNGE	3	9	2.7	0.45	26	11	2	23	25	7	33	10
PUDDLED UNIT	1	4	0.3	0.10	1	12	0	10	20	5	65	0
RAPID/BEDROCK	1	7	2.3	0.10	16	1	0	25	10	0	0	65
RAPID/BOULDERS	17	312	2.1	0.13	641	105	0	13	40	26	19	2
RIFFLE	16	229	1.9	0.13	435	60	0	13	44	27	14	3
STEP/BEDROCK	1	5	2.0	0.05	9	0	0	0	0	0	0	100
STEP/BOULDERS	15	22	1.5	0.09	44	63	0	6	22	10	62	0
STEP/COBBLE	3	5	1.4	0.10	6	0	0	20	63	17	0	0
STEP/STRUCTURE	3	2	1.1	0.10	3	4	0	10	57	10	10	13
Total:	133	1,348	2.0	0.19	2,859	923	Avg: 1	14	37	19	22	7

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	3	5	1.5	0.10	9	0.31%	7	80.0
Scour Pools	32	174	2.4	0.41	412	14.41%	91	22.1
Glides	0	0			0	0.00%	0	0.0
Riffles	16	229	1.9	0.13	435	15.22%	60	13.8
Rapids	18	319	2.2	0.13	657	22.98%	106	16.1
Cascades	39	559	2.0	0.14	1,223	42.78%	578	47.3
Step/Falls	22	34	1.5	0.09	62	2.16%	67	108.4
Dry	3	27	1.5	0.03	61	2.15%	14	22.8
Culverts	0	0			0	0.00%	0	0.0

REACH 1

T25S-R07W-S31SW

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	35	26.0	27.5
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	3	2.2	2.4
Pool frequency (channel widths/pool):	10.1		
Residual pool depth (avg):	0.33		

Survey Date 7/18/2005
Report Date: 4/26/2006

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

Summary of Riparian Zone (0-30m) 5 transects

Total hardwoods/1000	732
Total conifers/1000 ft	768
Total conifers >20" dbh/1000 ft	183
Total conifers >35" dbh/1000 ft	37

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	1.2	2.6	2.2	2.0	2.0	2.2	5.4	6.8
15-30cm	0.2	2.2	1.0	1.4	1.4	0.4	2.6	4.0
30-50cm	0.4	1.0	0.2	0.2	1.0	0.0	1.6	1.2
50-90cm	0.2	0.0	0.4	0.0	1.8	0.0	2.4	0.0
>90cm	0.0	0.0	0.2	0.0	0.4	0.0	0.6	0.0
Total/100m2	2.0	5.8	4.0	3.6	6.6	2.6	4.2	4.0

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Canopy closure	51	60	66
Shrub cover	25	17	20
Grass/forb cover	49	53	56

Predominant landform in each zone

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Hillslope	90	90	90
High terrace	10	10	10
Low terrace	0	0	0
Floodplain	0	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	0
Riprap	0	0	0
Surface slope (%)	43	36	33

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

5 transects

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

Total hardwoods/1000	732
Total conifers/1000 ft	768
Total conifers >20" dbh/1000 ft	183
Total conifers >35" dbh/1000 ft	37

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	5.4	6.8
15-30cm	2.6	4.0
30-50cm	1.6	1.2
50-90cm	2.4	0.0
>90cm	0.6	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		
19	LF	2	HT	0	60	5	95	Conifer						
								Hardwood						
19	LF	3	HT	0	60	20	80	Conifer						
								Hardwood						
19	RT	1	HS	10	70	50	30	Conifer		2	1		1	
								Hardwood						
19	RT	2	HS	20	80	25	30	Conifer						
								Hardwood						
19	RT	3	HS	37	95	15	35	Conifer		2		1	1	
								Hardwood						
19	LF	1	HT	0	35	25	75	Conifer					452919,	
								Hardwood					4799638	
44	RT	1	HS	51	50	30	25	Conifer						
								Hardwood						
44	RT	2	HS	10	80	0	50	Conifer						
								Hardwood						
44	LF	2	HS	45	80	0	10	Conifer						
								Hardwood						
44	LF	1	HS	50	80	15	35	Conifer						
								Hardwood						
44	LF	3	HS	25	70	10	30	Conifer		2	1	1		
								Hardwood						
44	RT	3	HS	20	75	0	50	Conifer						
								Hardwood						
61	LF	1	HS	48	50	40	40	Conifer					453265,	
								Hardwood					4799544	
61	LF	2	HS	48	10	30	40	Conifer		1	1			
								Hardwood						
61	LF	3	HS	60	50	40	50	Conifer		1	2	2	1	
								Hardwood						
61	RT	1	HS	78	60	10	40	Conifer						
								Hardwood						
61	RT	2	HS	78	75	25	50	Conifer		4	2			
								Hardwood						
61	RT	3	HS	78	75	25	50	Conifer					THIS ZONE	
								Hardwood					ESTIMATED	

115	LF	1	HS	55	40	10	50	Conifer						
								Hardwood			1			
115	RT	3	HS	25	50	20	70	Conifer					1	
								Hardwood	3	1				
115	RT	2	HS	56	50	10	60	Conifer	3					1
								Hardwood	3	1				
115	RT	1	HS	48	35	30	45	Conifer			1			
								Hardwood						
115	LF	2	HS	10	40	10	60	Conifer	2		1		1	
								Hardwood						
115	LF	3	HS	-5	50	5	60	Conifer	2				4	1
								Hardwood						
133	RT	2	HS	30	60	30	70	Conifer	1					
								Hardwood	3	1				
133	LF	1	HS	62	60	20	70	Conifer	1					453735,
								Hardwood	1					4779309
133	LF	2	HS	62	65	30	60	Conifer						
								Hardwood	3	1				
133	LF	3	HS	62	60	25	70	Conifer		1			1	
								Hardwood	4	1				
133	RT	3	HS	30	70	40	60	Conifer						1
								Hardwood	3					
133	RT	1	HS	27	30	20	80	Conifer						
								Hardwood	4	1				

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **4-UMP** SITE ID: **263** **BUFFALO CREEK PRE-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>
1	CR	00	10.3			START SURVEY
2	RI	00	41.6	BC, BC		
5	CR	00	76.5	HS		BOULDERS, PLANTED TREE
6	CR	01	117.5	HS		BOULDERS
11	RB	00	149			YELLOW FLAG = 5 LOGS 2/2
13	RI	00	174.5		FLAG = SITE 2 5 ALDERS	
15	RB	00	220.5		FLAG = SITE 4, 3 CEDAR	
16	LP	00	235		FLAG = SITE 5, 5 CEDAR	
17	RB	00	267.4		U 16 = 1 HEMLOCK	ERODED TERRACE
18	LP	00	274.4			1 M DEEP UNDERCUT
19	RI	00	296.4		FLAG = SITE 6	CABLE OVER STREAM
20	RB	00	307.1			T = 14 C
26	LP	00	343.7			CA-CT
27	RI	00	361.9		FLAG = SITE 7, 5 ALDER	
28	RB	00	401.2		U 27 = 1 CEDAR	
32	LP	01	429	/TJ		
35	SS	00	435		H = 1.4 M	
42	RI	00	489.5			CH-MV
56	CB	01	657	TJ/	TJ/ 453286, 4799545	T = 15 C
60	SS	00	670.3		H = 1.2 M	
66	SB	00	723.5		H = .6 M	

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **4-UMP** SITE ID: **263** **BUFFALO CREEK PRE-TX**

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
70	LP	00	762.3		2 FRY	
75	BW	10	796.5			FRY
76	LP	00	800.6		2 FRY	FRY
79	LP	00	813.7			UNDERCUTS ARE .9 M DEEP
83	SB	00	841.9		AQ INV 9-1-94 U70	
87	RI	00	861.7		DJ	
88	CB	00	880.7		/DJ	
91	LP	00	970.8		1 FRY, 1 5 INCH FISH	
92	SB	00	971.6		H = .6 M	
98	CB	00	1022.5		SS/	
99	SB	01	1023	PN	PNB, H = .6 M	
101	SB	01	1029.5	PN	PNB, H = .9 M	
103	SB	01	1036.7		PNB, H = 1.4 M	
105	CB	02	1041.1	WL		WOODPECKER ACTIVITY IN
108	SB	00	1041.9		H = 1.4 M	
110	SB	00	1048.9		H = 2.1 M	
114	CB	02	1079.9		0453633, 4799368	
115	CB	00	1089.9	DJ	/DJ 453639, 4799374	
120	SB	00	1124.4		PNB, H = .9 M	
121	RI	00	1125		AQ. INV. FLAGGING ON B	
123	LP	00	1165		/SS	

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: 4-UMP SITE ID: 263 BUFFALO CREEK PRE-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>
125	SS	00	1180.3		H = .6 M	
126	RI	00	1181.3		SS/	
130	SB	00	1216.5		H = .7 M	
132	CB	00	1251.5		/SS	
133	CB	00	1274.5	TJ/	TJ/	END SURVEY, TRIB T = 12 C

