

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

STREAM: Buffalo Creek (UMP-263)
BASIN: Umpqua River
SURVEY TYPE: Post-Tx
DATE: 8/24/2006
SURVEY CREW: Andy Livesay, Jennifer Jacobs
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 1300 meters. The channel was hillslope constrained within a moderate, v-shaped valley. The average valley width index was 5.4 (range: 1.2-20). Land use for the reach was second growth timber (15-30 cm dbh) and old growth timber (over 90 cm dbh). The average unit gradient was 7.3 percent. Cascades (45%), scour pools (27%) and rapids (22%) dominated stream habitat. Stream substrate was a mix of cobble (27%), fines (23%) and gravel (22%). Wood volume was high at 39.6 m³/100m.

COMMENTS:

The crew noted that several of the high slope cascades could be potential barriers to upstream fish migration.

The crew noted several habitat structures during the survey.

Cutthroat trout and Coho fry were identified within the surveyed reach.

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	5.4	VWI Range:	1.2 - 20

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	1,300	2,473	1
Secondary Channel	31	69	1
Off-Channel Units	27	24	2

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 6	<u>First Terrace</u> n = 3
Width: 1.9	Width: 3.6	5.9 (3.7 - 7.9)	7.3 (5 - 10.6)
Depth: 0.20	Height: 0.4	0.9 (0.72 - 1)	1.5 (1.1 - 1.75)

W:D ratio: 8.5
 Stream Flow Type: MF
 Average Unit Gradient: 7.3%
 Water temperature (°C): 14.0 - 14.0

Entrenchment (ACW:FPW ratio): 1.7
 Habitat Units/100m (total channel length): 9.8
 Habitat Units/100m (primary channel length): 10.2

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	OG
Riparian Vegetation:	M15	C30

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	5%	Reach avg: 93%
Undercut Banks:	3%	Range: 44 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	338	26.0
Volume (m ³):	515	39.6
Key pieces (>=12m x 0.60m):	20	1.5

OREGON DEPT OF FISH AND WILDLIFE

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

HABITAT INVENTORY

Report Date: 3/5/2007

Survey Date:

8/23/2006

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	85	2.0	0.02	221	55	0	10	8	3	15	64
CASCADE/BOULDERS	27	527	1.6	0.09	946	453	0	10	20	34	30	6
DRY UNIT	4	35	2.3	0.00	72	5	1	22	42	26	10	0
POOL-BACKWATER	1	1	2.1	0.30	2	2	5	48	10	19	19	0
POOL-LATERAL SCOUR	50	328	2.0	0.37	623	101	3	36	19	19	10	13
POOL-PLUNGE	8	34	2.3	0.47	76	42	3	23	13	18	28	14
RAPID/BOULDERS	23	301	1.8	0.04	562	78	0	14	27	42	11	6
RIFFLE	2	18	1.1	0.05	20	3	0	31	47	17	6	0
STEP/BEDROCK	2	7	2.1	0.02	13	1	0	3	3	0	0	95
STEP/BOULDERS	1	2	2.3	0.03	5	4	0	10	20	30	40	0
STEP/COBBLE	10	20	1.4	0.02	25	6	1	15	36	42	7	1
Total:	133	1,358	1.9	0.20	2,566	750	Avg: 1	22	22	27	15	12

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	1	1	2.1	0.30	2	0.08%	2	95.2	
Scour Pools	58	362	2.0	0.38	700	27.26%	143	20.4	
Glides	0	0			0	0.00%	0	0.0	
Riffles	2	18	1.1	0.05	20	0.78%	3	15.0	
Rapids	23	301	1.8	0.04	562	21.89%	78	13.9	
Cascades	32	613	1.7	0.08	1,167	45.48%	508	43.5	
Step/Falls	13	28	1.6	0.02	43	1.69%	11	25.4	
Dry	4	35	2.3	0.00	72	2.82%	5	6.9	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY			
	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	59	43.5	45.4
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	18	13.3	13.8
Pool frequency (channel widths/pool):	6.4		
Residual pool depth (avg):	0.35		

Survey Date 8/23/2006
Report Date: 3/5/2007

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

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

Total hardwoods/1000	213
Total conifers/1000 ft	747
Total conifers >20" dbh/1000 ft	46
Total conifers >35" dbh/1000 ft	15

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	0.8	0.3	2.8	0.0	3.5	0.0	7.0	0.3
15-30cm	1.0	2.3	1.0	0.5	1.5	0.5	3.5	3.3
30-50cm	0.0	0.0	0.5	0.0	0.5	0.0	1.0	0.0
50-90cm	0.0	0.0	0.3	0.0	0.3	0.0	0.5	0.0
>90cm	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0
Total/100m2	1.8	2.5	4.8	0.5	5.8	0.5	4.1	1.2

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	70		73		79	
Shrub cover	28		22		26	
Grass/forb cover	49		46		41	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	88		88		100	
High terrace	13		13		0	
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 (%)	53		41		44	

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	213
Total conifers/1000 ft	747
Total conifers >20" dbh/1000 ft	46
Total conifers >35" dbh/1000 ft	15

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	7.0	0.3
15-30cm	3.5	3.3
30-50cm	1.0	0.0
50-90cm	0.5	0.0
>90cm	0.3	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		
32	RT	3	HS	35	85	10	30	Conifer	5						
								Hardwood		1					
32	RT	2	HS	45	90	20	60	Conifer		1	1	1			
								Hardwood							
32	RT	1	HS	25	40	20	60	Conifer	2	1					
								Hardwood		1					
32	LF	3	HS	30	65	30	50	Conifer	2	2				RB/HS	
								Hardwood							
32	LF	2	HT	0	10	5	45	Conifer						HT/RB	
								Hardwood							
32	LF	1	HT	0	30	30	60	Conifer							
								Hardwood							
66	RT	3	HS	25	90	5	60	Conifer	1		1				
								Hardwood		1					
66	LF	2	HS	40	90	15	60	Conifer	2	1					
								Hardwood							
66	LF	3	HS	40	90	15	60	Conifer	1	1					
								Hardwood							
66	RT	1	HS	60	85	50	50	Conifer						FP/HS	
								Hardwood		4					
66	RT	2	HS	25	90	5	50	Conifer	3	1					
								Hardwood							
66	LF	1	HS	75	90	25	55	Conifer							
								Hardwood		2					
89	LF	1	HS	70	85	10	50	Conifer		1					
								Hardwood	1						
89	LF	2	HS	65	85	40	40	Conifer	1		1				
								Hardwood							
89	LF	3	HS	65	85	40	40	Conifer	1	1					
								Hardwood							
89	RT	1	HS	50	70	70	20	Conifer							
								Hardwood		1					
89	RT	2	HS	70	60	80	10	Conifer	1					1	
								Hardwood							
89	RT	3	HS	70	60	65	20	Conifer	2	1					
								Hardwood							

111	RT	2	HS	20	85	5	50	Conifer	4	1	
								Hardwood			
111	RT	3	HS	30	90	20	30	Conifer	2		1
								Hardwood			
111	RT	1	HS	80	80	10	50	Conifer	1	1	
								Hardwood			
111	LF	2	HS	60	70	5	50	Conifer			
								Hardwood		2	
111	LF	1	HS	60	80	10	50	Conifer		1	
								Hardwood		1	HS/HT
111	LF	3	HS	60	70	20	40	Conifer		1	
								Hardwood			1

Comment Summary

Restoration Monitoring Sites 2006

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

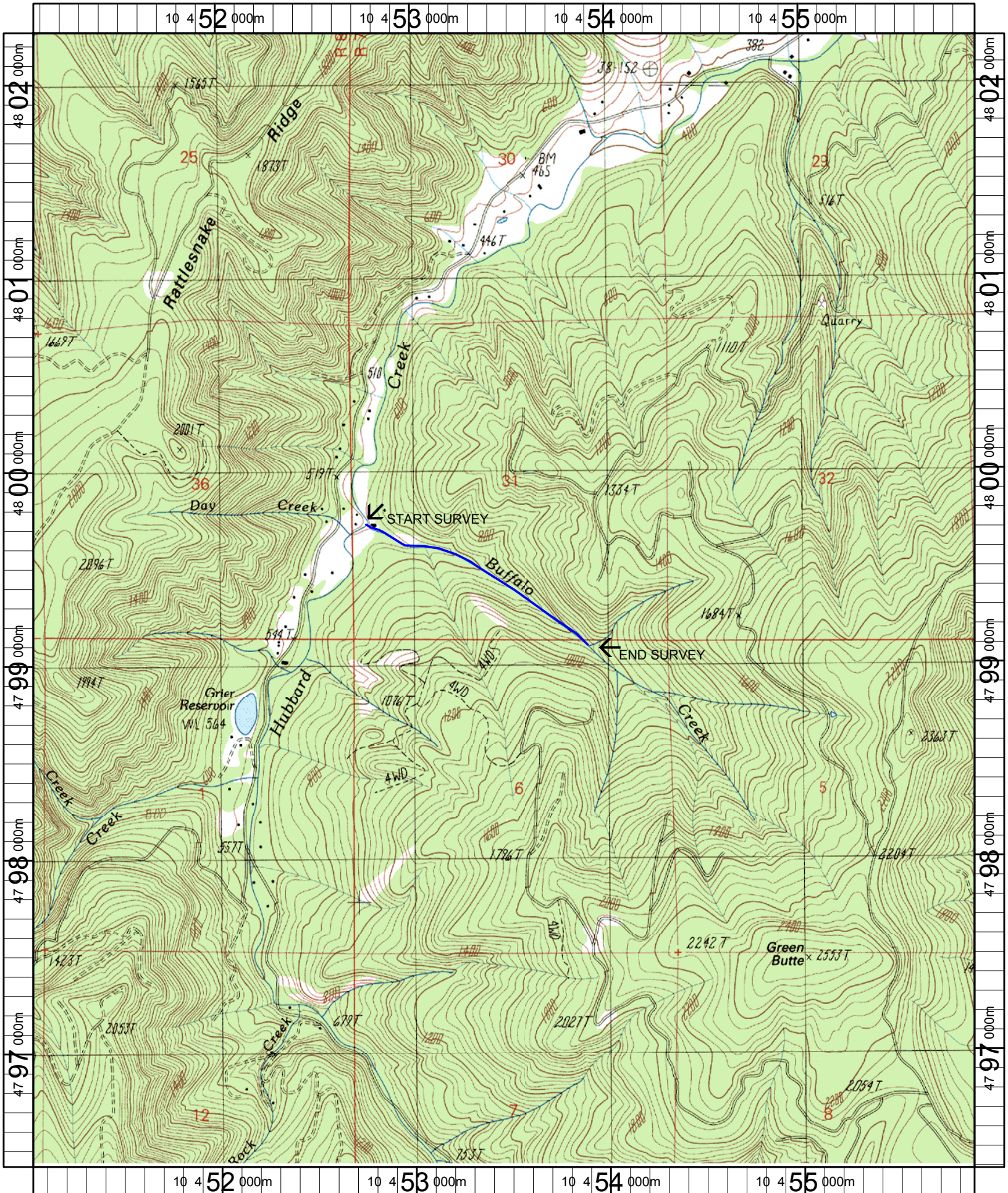
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RB	00	25.3	HS		
2	LP	00	28.3		COHO FRY	
5	RB	00	52.6	HS	COHO FRY	
7	CR	00	106.4	HS	LNDOWNER CONCERN HS E	
8	CR	00	114.8	HS		
15	LP	00	150	HS, DJ		
17	LP	00	175.1		COHO FRY	
21	LP	00	220.4	LI		
23	LP	00	234.2	DJ		
25	LP	00	241.8	DJ		
31	LP	00	281.5		3D-0452945-4799613	
50	PP	01	433.3	/TJ		
52	SC	00	436.7	DJ		
56	LP	00	470.3		CUTTHROAT	
60	LP	00	498.3	DJ		
62	LP	00	504.4		FRY COHO?	
65	LP	00	538.9		NO GPS COVERAGE	
66	RB	01	564.9	/TJ		
76	CR	00	645.5	PN		
78	CB	00	673.5	/SS		
80	CB	01	686.6	TJ/		

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: **4-UMP** SITE ID: **263** **BUFFALO CREEK 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>
83	CB	00	700.1	PN, DJ		
88	LP	00	787.3			T=14.0C
89	RB	00	793.1		2D-0453340-4799441	
93	CB	01	824.8		FRY	
99	LP	00	847.9	DJ, PN		
100	DU	00	852.2		SEDIMENT BACKED UP BEHI	
103	CB	00	883.5	BV		
105	CB	00	896		ESTIMATED SLOPE	
109	CB	00	979.5		HS ERODING AROUND 5 6M	
110	LP	00	982.6		3D-0453477-4799389	
114	CB	01	1040.1	SS/, PN		
117	CB	00	1080.1	PN	SLOPE AVG B/C TOO STEEP	
120	CB	00	1139.5	PN	PN	
124	LP	00	1195.5	/SS		
133	CB	00	1300.3		END SIGN ALDER/ BEFORE	



Name: CALLAHAN
 Date: 1/27/2005
 Scale: 1 inch equals 2000 feet

Location: 10 453468 E 4799328 N
 Caption: BUFFALO CREEK RESTORATION SITE - UMPQUA BASIN