ODFW AQUATIC INVENTORY PROJECT

OREGON PLAN FOR SALMON & WATERSHEDS

STREAM RESTORATION HABITAT REPORT

STREAM:	Boulder Creek (S-72)
BASIN:	Euchre Creek
SURVEY TYPE:	Post-Tx
DATE:	March 15, 2007
SURVEY CREW:	Andy Lanier, Laurel Moulton
REPORT PREPARED BY:	Paul Jacobsen
BASIN AREA:	5.9 km^2
USGS MAPS:	Brushy Bald Mountain
ECOREGION:	Coast Range Coastal Uplands

GENERAL DESCRIPTION:

The Boulder Creek habitat survey extended 804 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 3.1 (range: 1.0-5.5). Land use for the reach was timber harvest and large (30-50 cm dbh) trees. The average unit gradient was 4.0 percent. Rapids (54%) and scour pools (26%) dominated stream habitat. Gravel (43%) and cobble (40%) dominated stream substrate. Wood volume was moderate at 27.9 m^3/100m.

COMMENTS:

There were no potential barriers to upstream fish migration in the surveyed length.

The crew noted several habitat structures during the survey.

Stream Boulder Creek (S-72)

Basin Euchre Creek

Treatment Large Wood, Culvert

	ODFW Benchmark		Pre	Post	Post		
Habitat Variable	**Desirable**	**Undesirable**	2/10/00	3/5/01	3/15/07		
% Pool Area	>35%	<10%	27.4	18.6	26.4		
Number of Pools			21	13	**32**		
Deep Pools/km (>1.0 m)			4.1	1.5	**1.2**		
% Off-Channel			9.8	5.7	**3.1**		
LWD – Pieces/100m	>20	<10	28.7	27.1	23.6		
LWD – Volume/100m	>30	<20	22.3	31.4	27.9		
LWD – Key Pieces/100m	>3	<1	0.2	1.0	**0.1**		
Large Wood Jams/km			12.2	16.1			
% Riffle Fines	<10	>20	2	13	1		
% Riffle Gravel	>35	<15	63	71	42		
% Bedrock			0	1	0		

Bold is noticeable change

Comments: While pool area is similar to pre-treatment conditions, the number of pools has increased, but the number of deep pools has decreased with time. The decrease in deep pools may just be a symptom of stream flow rather than actual change. Off channel area has decreased from pre-treatment conditions, and all wood numbers have decreased through time. The loss of wood may be due to wood leaving the reach without being replenished from the riparian or from points upstream. Stream substrate seems to have remained basically the same. It is uncertain whether the treatment was effective.

OREGON DEPT OF FISH AND WILDLIFE **BOULDER CREEK POST-TX (5-SC, 72)**

HABITAT INVENTORY Report Date: 4/25/2007 Survey Date: 3/15/2007

REACH 1 **T35S-R14W-S10-N** **REACH 1**

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%

Valley Width Index 3.1 VWI Range: 1 - 5.5

Channel Morphology (Percent Reach Length)

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

Channel Characteristics

Type	Length (m)	Area (m2)	Dry Units
Primary Channel	804	2,696	0
Secondary Channel	30	48	1
Off-Channel Units	21	37	0

Channel Dimensions (m)

	Wetted	Active		Floodprone *n* = 5		First Terrace *n* = 4	
Width:	3.3	Width:	4.4	7.1	(4.5 - 9.5)	9.9	(7.5 - 13)
Depth:	0.36	Height:	0.6	1.2	(1.1 - 1.2)	1.7	(1.3 - 2.5)

W:D ratio: 7.7
Entrenchment (ACW:FPW ratio): 1.7
Stream Flow Type: MF
Habitat Units/100m (total channel length): 8.9
Average Unit Gradient: 4.0%
Habitat Units/100m (primary channel length): 9.5
Water temperature (°C): 9.0 - 9.0

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	TH	LT
Riparian Vegetation:	D15	S

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:		Reach avg:
Undercut Banks:		Range: -

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	190	23.6
Volume (m^3):	224	27.9
Key pieces (>=12m x 0.60m):	1	0.1

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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/BOULDERS	4	48	2.1	0.19	104	0	0	1	37	37	18	6
POOL-BACKWATER	2	6	1.5	0.33	10	0	7	31	48	14	0	0
POOL-LATERAL SCOUR	19	133	3.7	0.61	507	0	2	15	52	28	2	1
POOL-PLUNGE	11	51	4.7	0.72	218	0	1	11	47	30	11	0
PUDDLED UNIT	1	16	0.9	0.05	14	0	0	18	23	32	27	0
RAPID/BOULDERS	20	446	3.2	0.18	1,491	0	0	3	35	52	10	0
RIFFLE W/ POCKETS	4	90	2.9	0.15	246	0	0	1	42	52	5	0
STEP/BOULDERS	1	4	2.0	0.20	8	0	0	0	20	40	40	0
STEP/COBBLE	6	36	3.8	0.14	127	0	0	0	47	50	3	0
STEP/LOG	8	25	2.1	0.12	56	0	0	9	36	44	11	0
Total:	76	855	3.3	0.36	2,782	0	**Avg:** 1	8	43	40	8	0

HABITAT SUMMARY

Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m^2)	Wetted Area Percent	Large Boulders Number	Large Boulders (# / $100m^2$)
Dammed & BW Pools	2	6	1.5	0.33	10	0.36%	0	0.0
Scour Pools	30	184	4.1	0.65	725	26.06%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	4	90	2.9	0.15	246	8.84%	0	0.0
Rapids	20	446	3.2	0.18	1,491	53.60%	0	0.0
Cascades	4	48	2.1	0.19	104	3.74%	0	0.0
Step/Falls	15	65	2.8	0.13	191	6.87%	0	0.0
Dry	1	16	0.9	0.05	14	0.52%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

POOL SUMMARY

	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	32	37.4	39.8
Pools >=1m deep:	1	1.2	1.2
Complex pools (LWD pieces>=3):	12	14.0	14.9
Pool frequency (channel widths/pool):	6.0		
Residual pool depth (avg):	0.48		

Comment Summary
Restoration Monitoring Sites 2007

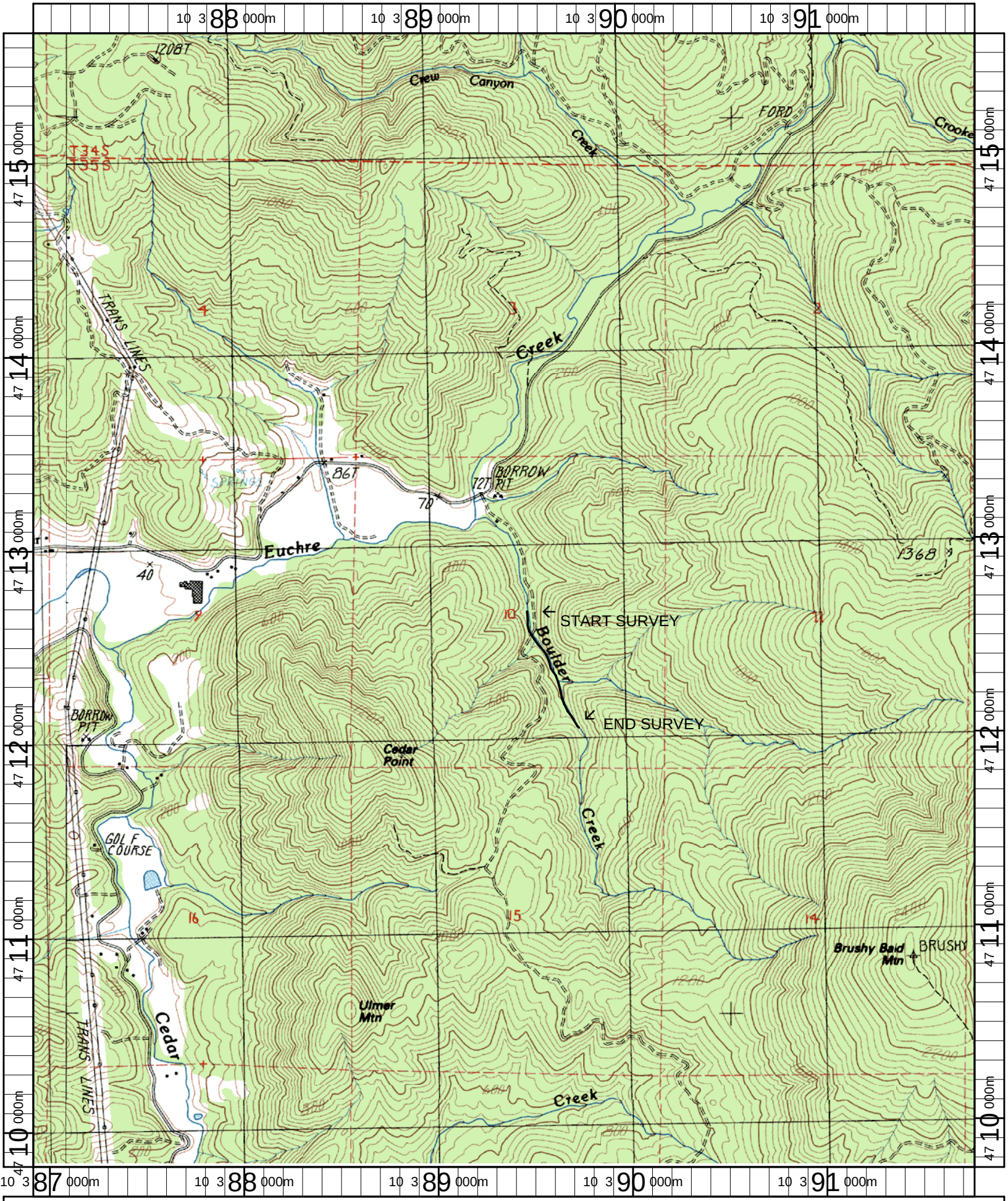
MONITORING AREA: **5-SC** **SITE ID:** **72** **BOULDER CREEK POST-TX**

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR
1	LP	00	4	HS	PLACED LOGS
2	RP	01	18	HS	LOGS
4	LP	00	29	HS	LOGS
6	PP	00	39	HS	LOGS
8	LP	00	57	HS	LOGS
10	PP	00	89	HS	ROCK WALL STRUCTURE, ENCLOSED
11	RB	00	110	CS/CS	
12	LP	00	118	CS/CS, BC	REDD
13	RB	00	148	/SS	SC WATERSHED SIGN. REACH 4.
14	LP	00	152	HS	LOGS
18	LP	00	204	HS, /SS	LOGS, SS PART OF THE SMALL TR
22	SC	00	282		ODFW SIGN, END SITE R1687.
28	RB	00	358		PICTURE OF LOWER REACH HAB
29	LP	00	374	/SS	
30	RB	00	422		ROUGHSKIN NEWT.
42	SC	01	486.5	TJ/	
44	SL	11	486.5		ACW=4.0
53	RP	00	601.5		REDD. ADULT STEALHEAD OBSERVED
54	LP	00	606.5		REDD. 2ND ADULT STEALHEAD OBSE
56	LP	00	626.5		REDD
57	RB	01	636.5	/TJ	JUVENILE SALMONID. 0.2M LONG.

Comment Summary
Restoration Monitoring Sites 2007

MONITORING AREA: **5-SC** **SITE ID:** **72** **BOULDER CREEK POST-TX**

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR
58	RB	11	636.5		ACW=1.7
68	PP	00	730.5		REDD
73	RB	00	760		BRAIDED CHANNELS AND SLMNBERRY
74	RB	00	792	/SS	



Name: BRUSHY BALD MT
Date: 4/26/2007
Scale: 1 inch equals 2000 feet

Location: 10 0389381 E 4712712 N
Caption: BOULDER CREEK RESTORATION SITE - EUCHRE CREEK BASIN