

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

STREAM: Deer Creek (MC-23)
BASIN: Yaquina River
SURVEY TYPE: Post-Tx
DATE: July 26, 2006
SURVEY CREW: Lanoah Babcock, Sharon Tippery
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 10.2 km²
USGS MAPS: Elk City
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Deer Creek habitat survey extended 487 meters. The channel was constrained by hillslopes in a moderate V-shaped valley. The average valley width index was 4.2 (range: 1.0-13.5). Land use for the reach was second growth (15-30 cm dbh) and young (3-15 cm dbh) trees. The average unit gradient was 1.6 percent. Scour pools (72%) dominated stream habitat. Sand (38%) and gravel (28%) dominated stream substrate. Wood volume was moderate at 26.6 m³/100m.

COMMENTS:

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

The crew noted several habitat structures during the survey.

Stream Deer Creek (MC-23)

Basin Yaquina River

Treatment Large Wood

	ODFW Benchmark		Pre 7/14/99	Post 6/19/00	Post 7/26/06		
Habitat Variable	Desirable	Undesirable					
% Pool Area	>35%	<10%	39.5	39.2	71.8		
Number of Pools			14	8	20		
Deep Pools/km (>1.0 m)			0	2.3	0		
% Off-Channel			2.0	3.9	0.8		
LWD – Pieces/100m	>20	<10	4.8	12.5	12.7		
LWD – Volume/100m	>30	<20	5.2	39.9	26.6		
LWD – Key Pieces/100m	>3	<1	0.0	0.3	0.0		
Large Wood Jams/km			2.1	10.2	10.3		
% Riffle Fines	<10	>20	23	17	7		
% Riffle Gravel	>35	<15	37	64	75		
% Bedrock			0	0	0		

Bold is noticeable change

Comments: Since the treatment was large wood assembled in complex jams, it is no surprise that there was an increase in those variables. What is important is that the large wood is being retained in the treated reach and is accumulating additional wood pieces. Deep pools increased immediately after treatment but fell to pre-treatment levels six years post-treatment. However, that may be a symptom of stream flows rather than an actual change. Pool area appears to have nearly doubled and the number of pools is higher. Riffle fines have decreased while riffle gravel appears to have doubled over time.

REACH 1

T11S-R09W-S34SW

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	4.2	VWI Range:	1 - 13.5

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	487	1,890	0
Secondary Channel	0	0	0
Off-Channel Units	15	15	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 2
Width: 3.5	Width: 6.7	10.0 (7 - 16.7)	8.8 (8.1 - 9.4)
Depth: 0.24	Height: 0.4	0.8 (0.7 - 0.9)	1.3 (1.2 - 1.3)

W:D ratio: 16.8

Entrenchment (ACW:FPW ratio): 1.5

Stream Flow Type: LF

Habitat Units/100m (total channel length): 7.8

Average Unit Gradient: 1.6%

Habitat Units/100m (primary channel length): 8.0

Water temperature (°C): 17.0 - 17.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	YT
Riparian Vegetation:	D30	S

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:	0%	Range: 72 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	62	12.7
Volume (m ³):	129	26.6
Key pieces (>=12m x 0.60m):	0	0.0

HABITAT INVENTORY

Report Date: 3/5/2007

Survey Date:

7/26/2006

REACH 1		T11S-R09W-S34SW					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
POOL-LATERAL SCOUR	20	317	4.3	0.38	1,369	91	5	70	10	8	8	0
RAPID/BOULDERS	3	71	4.0	0.13	285	82	0	2	13	28	54	3
RIFFLE	5	65	1.9	0.10	115	8	0	7	75	16	2	0
STEP/BOULDERS	3	15	3.9	0.07	59	46	0	0	8	22	70	0
STEP/COBBLE	8	34	2.2	0.08	78	11	0	5	56	31	9	0
Total:	39	502	3.5	0.24	1,905	238	Avg: 2	38	28	16	16	0

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	0	0			0	0.00%	0	0.0	
Scour Pools	20	317	4.3	0.38	1,369	71.84%	91	6.6	
Glides	0	0			0	0.00%	0	0.0	
Riffles	5	65	1.9	0.10	115	6.01%	8	7.0	
Rapids	3	71	4.0	0.13	285	14.98%	82	28.7	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	11	49	2.7	0.08	137	7.17%	57	41.7	
Dry	0	0			0	0.00%	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:	20	39.8	41.1
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	5	10.0	10.3
Pool frequency (channel widths/pool):	3.7		
Residual pool depth (avg):	0.31		

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

DEER CREEK POST-TX
GCG: 2-MC SITE ID: 23

Survey Date 7/26/2006
Report Date: 3/5/2007

RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

Summary of Riparian Zone (0-30m) 3 transects

Total hardwoods/1000	488
Total conifers/1000 ft	0
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		Zone 2		Zone 3		Zones 1-3	
	0-10 meters		10 - 20 meters		20 - 30 meters		0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0
15-30cm	0.0	0.3	0.0	2.0	0.0	1.7	0.0	4.0
30-50cm	0.0	0.3	0.0	0.3	0.0	2.0	0.0	2.7
50-90cm	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.0	1.7	0.0	2.7	0.0	3.7	0.0	2.7

Canopy closure and ground cover

	Zone 1		Zone 2		Zone 3	
	0-10 meters		10 - 20 meters		20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	61		59		53	
Shrub cover	76		76		58	
Grass/forb cover	24		13		22	

Predominant landform in each zone

	Zone 1		Zone 2		Zone 3	
	0-10 meters		10 - 20 meters		20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	50		67		67	
High terrace	33		33		17	
Low terrace	0		0		0	
Floodplain	17		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		17	
Riprap	0		0		0	
Surface slope (%)	43		34		25	

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

3 transects

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

Total hardwoods/1000	488
Total conifers/1000 ft	0
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	0.0	1.0
15-30cm	0.0	4.0
30-50cm	0.0	2.7
50-90cm	0.0	0.3
>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			
10	LF	1	FP	3	65	15	85	Conifer							NO TREES, NO GPS EPE
								Hardwood							
10	LF	2	HS	55	75	30	10	Conifer							60% OPEN
								Hardwood		4			1		
10	LF	3	HS	60	60	55	20	Conifer							
								Hardwood				3			
10	RT	1	HS	65	60	95	5	Conifer							NO TREES
								Hardwood							
10	RT	2	HS	30	65	90	10	Conifer							NO TREES
								Hardwood							
10	RT	3	HS	28	75	85	15	Conifer							
								Hardwood			1		1		
18	RT	3	RB	5	20	5	10	Conifer							NO TREES
								Hardwood							
18	LF	2	HT	5	85	50	40	Conifer							
								Hardwood			2		1		
18	RT	2	HS	70	60	90	10	Conifer							NO TREES
								Hardwood							
18	LF	3	HT	7	80	55	40	Conifer							NO TREES
								Hardwood							
18	RT	1	HS	130	85	95	5	Conifer							NO TREES
								Hardwood							
18	LF	1	HT	7	22	80	20	Conifer							NO GPS EPE
								Hardwood		2					
30	LF	1	HS	35	80	90	10	Conifer							NO GPS EPE
								Hardwood					1		
30	LF	2	HS	27	10	100	0	Conifer							NO TREES - BLACKBERRY
								Hardwood							
30	LF	3	HS	15	15	75	25	Conifer							
								Hardwood				4			
30	RT	1	HT	20	55	80	20	Conifer							
								Hardwood		1		1			
30	RT	2	HT	15	60	95	5	Conifer							NO TREES
								Hardwood							
30	RT	3	HS	37	70	75	20	Conifer							
								Hardwood					2		

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: **2-MC** SITE ID: **23** DEER CREEK POST-TX

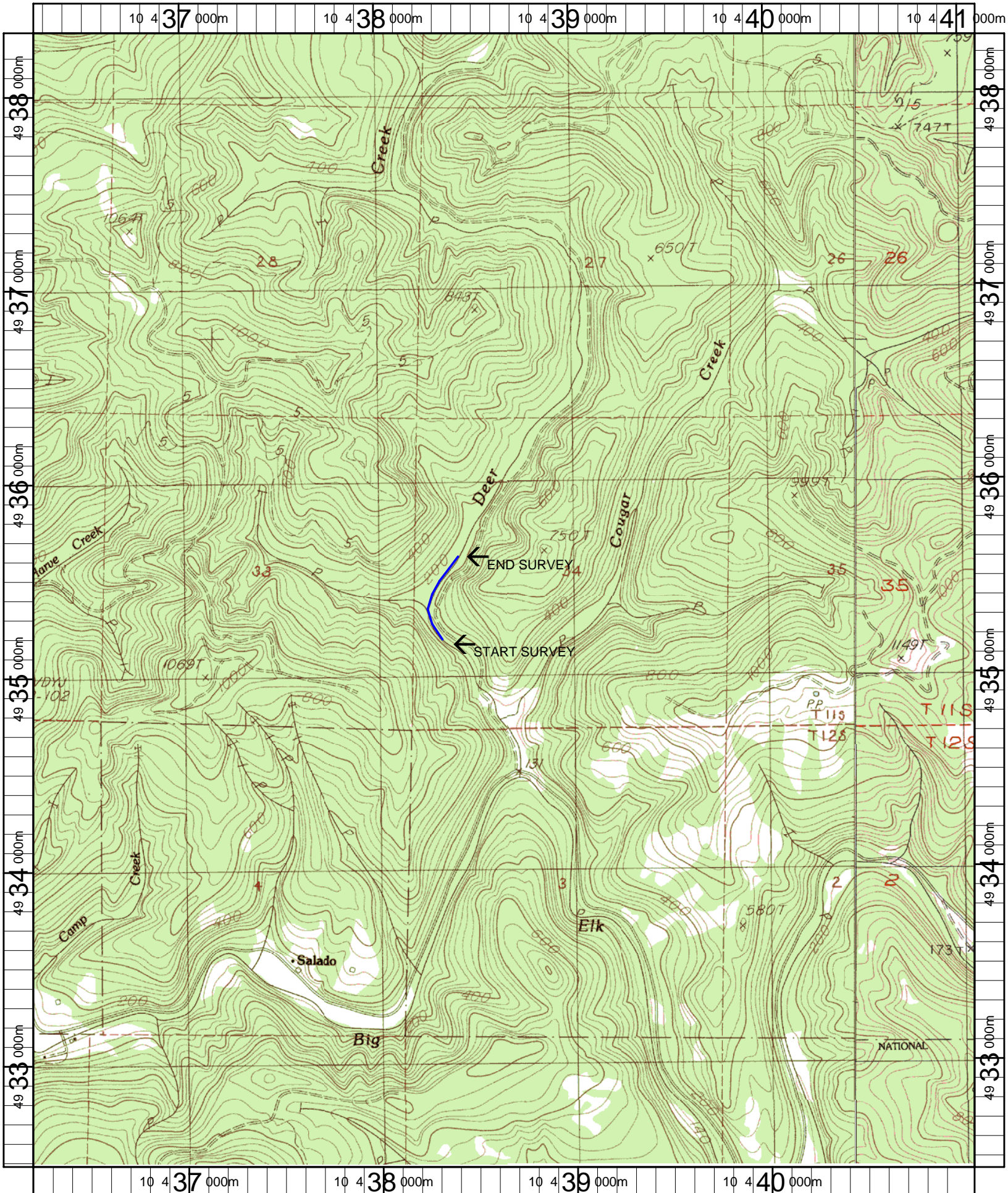
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RB	00	25	BV	T=17.0C AT 12:45PM	
2	LP	00	33	BV		
4	LP	00	44			COHO
6	LP	00	78	BV; HS	HS#1	
7	LP	00	97	BV; WL		STARTS OF BV DAM; COH
9	LP	00	115.4			COHO
10	RI	00	139.4		RIP#1; CH-MV	
11	LP	01	183.9	HS; BV	HS#2; TJ/	COHO
12	RI	11	183.9	TJ; WL	TRIB UNIT, T=16.0C	T=16.0C
13	SC	00	186.4	BV		
14	LP	00	195.4	BV; WL		GAME TRAIL
16	LP	00	220.5	WL; BV		BIG GAME TRAIL
17	SC	00	226.5	WL		
18	LP	00	248.5	HS; BV	Rip#2	COHO
20	LP	00	272.9	BV		COHO
22	LP	00	300.9	BV		COHO
24	LP	00	314.1	BV		
26	LP	00	328	BV		COHO
27	SC	00	334	BV		
28	LP	00	350	BV		COHO
30	LP	00	364.5	BV		COHO

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: 2-MC SITE ID: 23 DEER 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>
32	LP	00	397.5	BV	HARDWOOD 30-50/	COHO
33	SB	00	403.7	BV		
36	LP	00	450.2			COHO
37	LP	00	470.2	BV		COHO
39	LP	00	486.9	BV		COHO; END SIGN /ALDER



Name: ELK CITY
 Date: 5/22/2006
 Scale: 1 inch equals 2000 feet

Location: 10 438645 E 4935385 N
 Caption: DEER CREEK UPPER RESTORATION SITE - YAQUINA BASIN