

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

STREAM: Little Rock Creek (MC-44)
BASIN: Siletz River
SURVEY TYPE: Post-Tx
DATE: July 20, 2006
SURVEY CREW: Brian Cannon, Paul Jacobsen
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 4.4 km²
USGS MAPS: Summit, Nortons
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Little Rock Creek habitat survey extended 577 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 9.3 (range: 6.5-13.0). Land use for the reach was second growth (15-30 cm dbh) and large (30-50 cm dbh) trees. The average unit gradient was 0.9 percent. Scour pools (63%) and riffles (30%) dominated stream habitat. Gravel (54%) dominated stream substrate. Wood volume was low at 13.7 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 Little Rock Creek Lower (MC-44)
 Basin Siletz River
 Treatment Large Wood

	ODFW Benchmark		Pre 7/3/00	Post 7/18/01	Post 7/20/06		
Habitat Variable	Desirable	Undesirable					
% Pool Area	>35%	<10%	60.4	59.0	63.5		
Number of Pools			24	20	33		
Deep Pools/km (>1.0 m)			0	0	0		
% Off-Channel			0.7	0.0	0.6		
LWD – Pieces/100m	>20	<10	6.0	9.5	8.7		
LWD – Volume/100m	>30	<20	6.0	17.1	13.7		
LWD – Key Pieces/100m	>3	<1	0.5	0.4	0.7		
Large Wood Jams/km			0.0	3.6	8.7		
% Riffle Fines	<10	>20	9	10	11		
% Riffle Gravel	>35	<15	42	67	57		
% Bedrock			27	12	9		

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 right after treatment. With time, however, it appears that wood is moving out of the reach with little additional recruitment. Pool area remained unchanged, as did substrate numbers, while the number of pools appears to be higher.

REACH 1

T10S-R08W-S14SE

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	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	9.3	VWI Range:	6.5 - 13

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	577	1,432	0
Secondary Channel	0	0	0
Off-Channel Units	21	8	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 2.3	Width: 5.4	13.4 (7.2 - 21.5)	17.0 (11 - 25)
Depth: 0.22	Height: 0.4	0.8 (0.7 - 0.9)	1.3 (1 - 1.6)

W:D ratio: 13.6

Entrenchment (ACW:FPW ratio): 2.5

Stream Flow Type: LF

Habitat Units/100m (total channel length): 10.7

Average Unit Gradient: 0.9%

Habitat Units/100m (primary channel length): 11.1

Water temperature (°C): 14.0 - 14.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	LT
Riparian Vegetation:	D3	G

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	4%	Reach avg: 87%
Undercut Banks:	15%	Range: 44 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	50	8.7
Volume (m ³):	79	13.7
Key pieces (>=12m x 0.60m):	4	0.7

HABITAT INVENTORY

Report Date: 3/5/2007

Survey Date:

7/20/2006

REACH 1		T10S-R08W-S14SE					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/BOULDERS	2	15	0.3	0.02	4	0	0	10	85	5	0	0
POOL-BACKWATER	1	3	1.1	0.09	3	0	11	21	37	32	0	0
POOL-ISOLATED	1	3	0.5	0.12	1	0	30	50	20	0	0	0
POOL-LATERAL SCOUR	31	331	2.7	0.37	910	1	9	22	50	8	1	10
RIFFLE	17	181	2.0	0.10	374	3	0	11	57	21	1	10
RIFFLE W/ POCKETS	1	30	2.1	0.15	62	0	0	10	19	24	10	38
STEP/COBBLE	11	35	2.2	0.08	86	0	0	8	64	25	0	2
Total:	64	598	2.3	0.22	1,441	4	Avg: 5	16	54	15	1	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	2	6	0.8	0.11	5	0.32%	0	0.0	
Scour Pools	31	331	2.7	0.37	910	63.19%	1	0.1	
Glides	0	0			0	0.00%	0	0.0	
Riffles	18	211	2.0	0.10	436	30.27%	3	0.7	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	2	15	0.3	0.02	4	0.26%	0	0.0	
Step/Falls	11	35	2.2	0.08	86	5.96%	0	0.0	
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:	33	55.2	57.2
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	6	10.0	10.4
Pool frequency (channel widths/pool):	3.3		
Residual pool depth (avg):	0.28		

Survey Date 7/20/2006

RIPARIAN ZONE

Report Date: 3/5/2007

VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000	2012
Total conifers/1000 ft	122
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	12.7	0.0	14.7	0.0	5.0	0.0
15-30cm	0.0	0.3	0.0	0.3	0.7	0.0	0.7	0.7
30-50cm	0.0	0.0	0.0	0.0	1.3	0.0	1.3	0.0
50-90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.0	13.0	0.0	15.0	2.0	5.0	0.7	11.0

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	Conifer (%)		Conifer (%)		Conifer (%)	
	Canopy closure	29	55	56		
Shrub cover	18	27	27			
Grass/forb cover	82	67	67			

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	Conifer (%)		Conifer (%)		Conifer (%)	
	Hillslope	0	33	50		
High terrace	67	50	50			
Low terrace	0	0	0			
Floodplain	33	0	0			
Wetland/meadow	0	0	0			
Stream channel	0	0	0			
Roadbed/Railroad	0	17	0			
Riprap	0	0	0			
Surface slope (%)	1	17	23			

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	2012
Total conifers/1000 ft	122
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	32.3
15-30cm	0.7	0.7
30-50cm	1.3	0.0
50-90cm	0.0	0.0
>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		
15	RT	3	HS	45	40	20	80	Conifer							ALDER
								Hardwood	5						
15	RT	2	HS	45	95	5	95	Conifer							ALDER
								Hardwood	7	1					
15	RT	1	FP	0	90	0	100	Conifer							
								Hardwood	17	1					
15	LF	3	HT	0	10	2	50	Conifer							MAIN CHANNEL (SC),
								Hardwood							ALDER, MAPLE
15	LF	2	HT	0	50	15	85	Conifer							
								Hardwood	18						
15	LF	1	HT	0	10	0	100	Conifer							ALDER
								Hardwood	7						
31	LF	2	RB	5	10	10	60	Conifer							NO TREES, 30% ROCK
								Hardwood							
31	RT	3	HT	0	50	20	80	Conifer							ELDERBERRY
								Hardwood	6						
31	RT	2	HT	0	80	30	70	Conifer							ELDERBERRY
								Hardwood	15						
31	LF	1	HT	2	10	10	90	Conifer							NO TREES
								Hardwood							
31	LF	3	HS	40	95	10	30	Conifer			1	3			60% DUFF
								Hardwood							
31	RT	1	FP	0	10	0	100	Conifer							ALDER
								Hardwood	1						
48	RT	3	HS	45	70	90	10	Conifer							ALDER
								Hardwood	4						
48	RT	1	HT	3	50	40	60	Conifer							ALDER, ELDERBERRY
								Hardwood	9						
48	RT	2	HS	45	70	90	0	Conifer							ALDER, 10% DUFF
								Hardwood	4						
48	LF	2	HT	7	25	10	90	Conifer							NO TREES
								Hardwood							
48	LF	1	HT	2	5	60	40	Conifer							ALDER
								Hardwood	4						
48	LF	3	HT	5	70	20	80	Conifer			1	1			DOUGLAS FIR
								Hardwood							

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: **2-MC** SITE ID: **44** LITTLE ROCK CREEK POST-TX

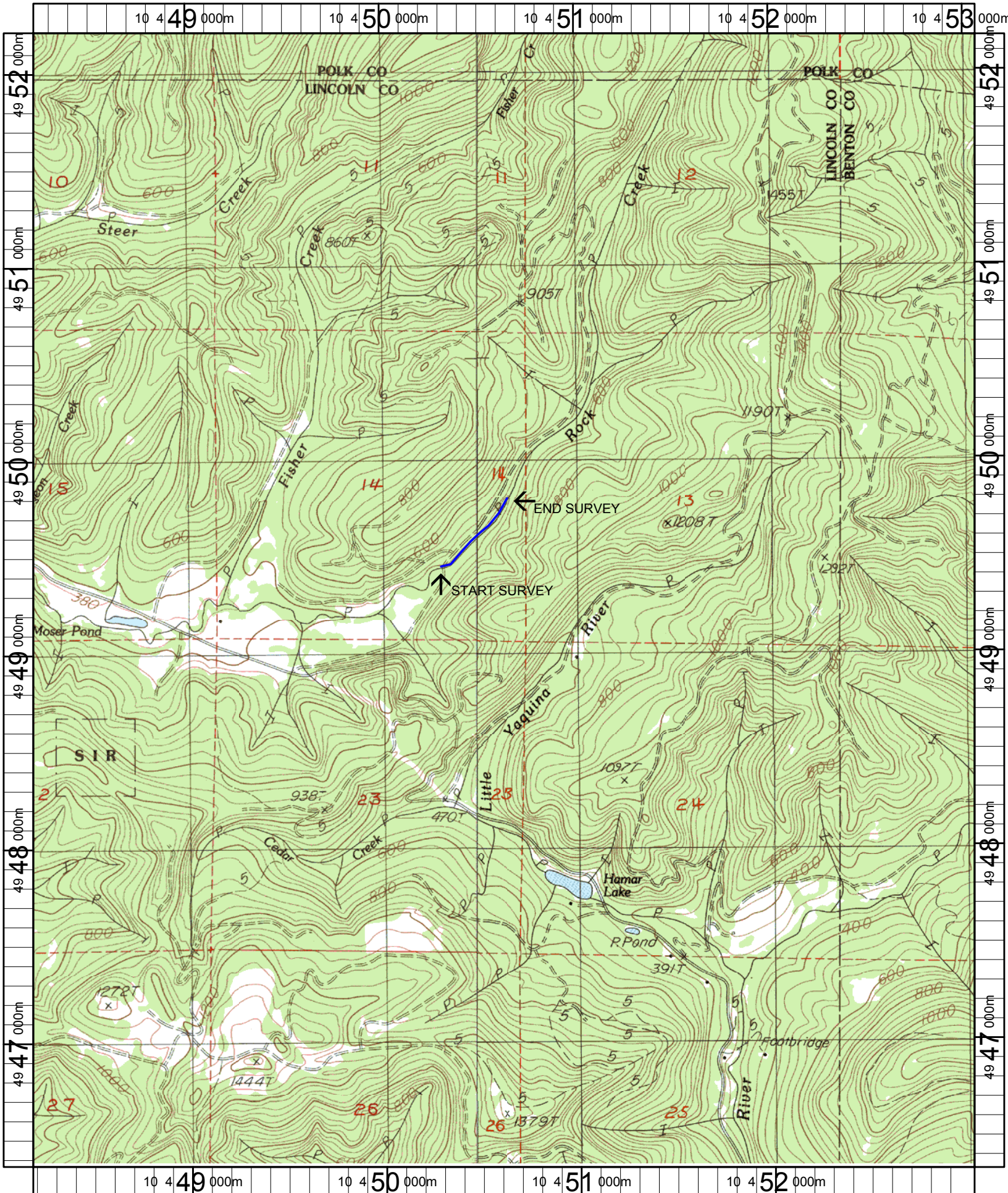
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RI	00	15.5	CS/	US-MT,D15/S,ST/LT	RIPRAP NEAR BRIDGE
2	LP	00	35.2	HS		COHO FRY, 4 LOGS
3	RI	00	47.4	WL	T=14.0C, LF	SWAINSON'S THRUSH
4	LP	00	54.4	WL		WRENTIT
5	SC	00	57.5	WL		PACIFIC SLOPE FLYCATC
6	LP	01	67.5	BV, /LI		DEAD PACIFIC LAMPREY -
7	IP	10	67.5	WL		SONG SPARROW
8	LP	00	74.3	WL		BANDTAIL PIGEON
10	LP	00	95.5			DIGITALIS
13	LP	00	118.1	WL		RSN
14	LP	00	127.3	BV		
15	RI	00	132.3		US-MT,D3/G,ST	
16	LP	00	141.2			FRY, CRAYFISH
19	SC	00	176.2	WL		RSN
22	LP	00	196.9			FRY
26	LP	00	229	HS		5 LOGS
28	CB	11	233.5		ACW=0.80M	
31	LP	00	265.9	WL	CT-CT,D3/G,ST/LT	KINGFISHER
32	RI	00	273.9	HS		4 LOGS
33	LP	00	279.5	HS		3 LOGS
35	LP	00	292.8			FRY

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: **2-MC** SITE ID: **44** LITTLE ROCK CREEK POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
39	LP	00	321.8			FRY
43	LP	00	349.7			DUCKWEED
48	RI	00	401.9		CT-CT,D3/G,ST/LT	
51	LP	00	445.8	HS		7 LOGS
55	LP	00	490.6	WL, CF		BIRD NEST, COHO FRY
58	SC	00	506.4			POSSIBLE LAMPREY RED
59	LP	01	518.4			.
60	CB	11	518.4		ACW=0.60M	
63	RP	00	572.1		CT-CT,D3/G,ST/LT	
64	LP	00	577.1	HS, DJ	END AT UPSTREAM END OF	6 LOGS



Name: NORTONS
 Date: 1/23/2006
 Scale: 1 inch equals 2000 feet

Location: 10 450622 E 4949274 N
 Caption: LITTLE ROCK CREEK LOWER #44 RESTORATION SITE -
 SILETZ BASIN