

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

STREAM: Esmond Creek Upper (MC-139)
BASIN: Siuslaw River
SURVEY TYPE: Post-Tx
DATE: February 26, 2007
SURVEY CREW: Andy Lanier, Laurel Moulton
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 9 km²
USGS MAPS: Clay Creek
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Esmond Creek Upper habitat survey extended 491 meters. The channel was alternately constrained by hillslope and terrace in a broad valley floor. The average valley width index was 2.7 (range: 2.5-3). Land use for the reach was second growth timber (15-30 cm dbh). The average unit gradient was 0.7 percent. Scour pools (66%) and riffles (15%) dominated stream habitat. Gravel (50%) and sand (23%) dominated stream substrate. Wood volume was high at 78.5 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.

Minimal beaver activity was noted in the survey.

Stream Esmond Creek Upper (MC-139)
 Basin Siuslaw River
 Treatment Large Wood

	ODFW Benchmark		Pre	Post	Post		
Habitat Variable	Desirable	Undesirable	2/11/03	2/23/04	2/26/07		
% Pool Area	>35%	<10%	76.6	67.3	76.5		
Number of Pools			28	24	19		
Deep Pools/km (>1.0 m)			4.0	3.3	19.7		
% Off-Channel			5.7	6.3	1.2		
LWD – Pieces/100m	>20	<10	20.5	29.1	35.5		
LWD – Volume/100m	>30	<20	10.9	66.9	78.5		
LWD – Key Pieces/100m	>3	<1	0.2	8.8	7.1		
Large Wood Jams/km			8.0	27.6			
% Riffle Fines	<10	>20	1	6	17		
% Riffle Gravel	>35	<15	82	85	71		
% Bedrock			14	8	8		

Bold is noticeable change

Comments: Pool area has remained stable since before treatment, but the number of pools has decreased in the same period. Deep pools have increased dramatically, but this may be due to the stream flow at the time of the surveys rather than a real change. Off channel habitat has decreased through time. However, large wood pieces and volume are higher since treatment, suggesting that the original wood is staying in the reach and retaining additional pieces. Substrate has remained unchanged. The treatment has successfully increased the amount of large wood for cover and structure in the reach.

REACH 1

T19S-R08W-26SW

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	2.7	VWI Range:	2.5 - 3

Channel Morphology (Percent Reach Length)

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

Channel Characteristics

<u>Type</u>	<u>Length (m)</u>	<u>Area (m2)</u>	<u>Dry Units</u>
Primary Channel	491	3,679	0
Secondary Channel	50	25	1
Off-Channel Units	17	21	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 6.6	Width: 9.3	12.4 (10 - 16.5)	14.3 (12 - 18.5)
Depth: 0.69	Height: 0.5	1.1 (1 - 1.1)	1.3 (1.2 - 1.6)

W:D ratio: 17.5
 Stream Flow Type: HF
 Average Unit Gradient: 0.7%
 Water temperature (°C): 7.0 - 7.0

Entrenchment (ACW:FPW ratio): 1.4
 Habitat Units/100m (total channel length): 6.5
 Habitat Units/100m (primary channel length): 7.3

Riparian, Bank, and Wood Summary

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

Bank Condition and Shade

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

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	174	35.5
Volume (m ³):	385	78.5
Key pieces (>=12m x 0.60m):	35	7.1

OREGON DEPT OF FISH AND WILDLIFE

ESMOND CREEK UPPER POST-TX (2-MC, 139)

HABITAT INVENTORY

Report Date: 4/25/2007

Survey Date:

2/26/2007

REACH 1		T19S-R08W-26SW					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-BACKWATER	1	7	1.5	0.60	11	0	35	65	0	0	0	0
POOL-DAMMED	1	33	11.0	1.00	363	0	10	30	50	10	0	0
POOL-LATERAL SCOUR	15	309	7.5	1.05	2,328	0	3	30	50	7	1	10
POOL-PLUNGE	2	23	6.8	1.05	146	0	2	19	22	19	17	20
PUDDLED UNIT	1	50	0.5	0.05	25	0	40	40	20	0	0	0
RIFFLE	5	96	5.1	0.34	566	0	2	15	71	9	3	0
STEP/BEDROCK	1	11	8.0	0.35	88	0	0	10	10	0	5	76
STEP/BOULDERS	1	3	7.0	0.30	18	0	0	5	29	5	48	14
STEP/COBBLE	4	16	7.4	0.34	115	0	2	12	69	8	9	0
STEP/LOG	5	12	5.9	0.31	66	0	2	12	55	12	15	4
Total:	36	558	6.6	0.69	3,725	0	Avg: 4	23	50	8	6	8

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	40	6.3	0.80	374	10.03%	0	0.0	
Scour Pools	17	332	7.4	1.05	2,475	66.43%	0	0.0	
Glides	0	0			0	0.00%	0	0.0	
Riffles	5	96	5.1	0.34	566	15.18%	0	0.0	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	11	41	6.7	0.32	287	7.70%	0	0.0	
Dry	1	50	0.5	0.05	25	0.67%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

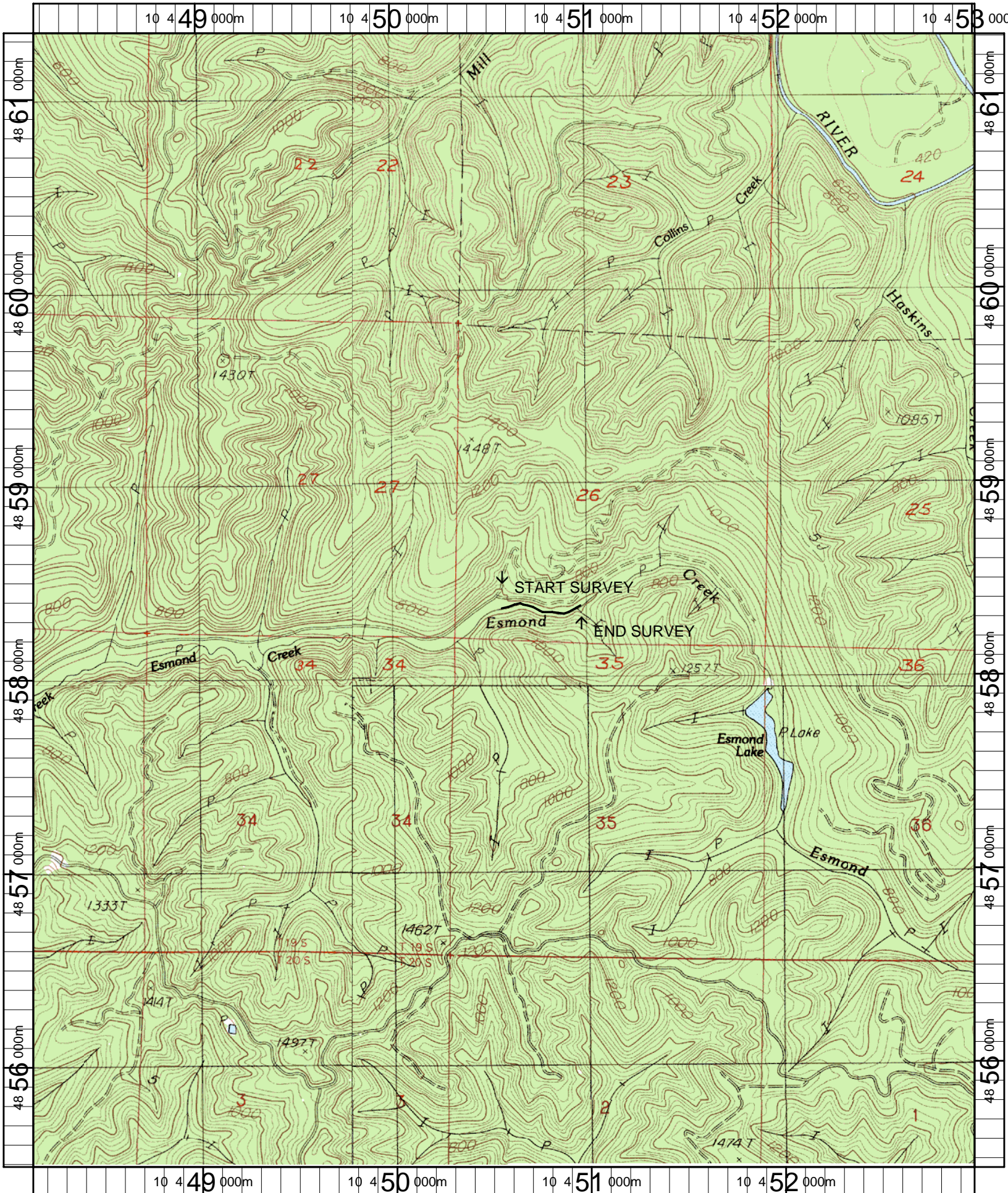
POOL SUMMARY			
	<u>Total</u>	Total of all Channel Lengths	Primary Channel Length
		<u># / Km</u>	<u># / Km</u>
All Pools:	19	34.1	38.7
Pools >=1m deep:	11	19.7	22.4
Complex pools (LWD pieces>=3):	13	23.3	26.5
Pool frequency (channel widths/pool):	3.2		
Residual pool depth (avg):	0.62		

Comment Summary

Restoration Monitoring Sites 2007

MONITORING AREA: **2-MC** SITE ID: **139** **ESMOND CREEK UPPER POST-TX**

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR
1	LP	01	21	TJ/	TEMPERATURE = 7.5
2	SL	11	21		TEMPERATURE =8.0
7	SL	00	68.5	HS	PLACED LOG STRUCTURE
8	DP	00	101.5	SS/	
11	RI	00	163.5	HS	LOGS
12	LP	01	193.5	HS	BIG 'S' CURVE POOL.
16	LP	00	247.5	/SS, HS	
17	PD	02	247.5		ACW=1.5
21	LP	00	300.5	HS	LOGS
24	LP	00	357.5	HS	LOGS
29	LP	01	435.5	SS/SS /TJ	
30	RI	11	435.5		ACW=2.5
32	SC	00	442	RF	OLD RD CROSSING
34	LP	00	470.5	/SS	
35	SL	00	475.5	BV	
36	PP	00	490.5	HS	LOGS. RESTORATION ACTIVITIES



Name: CLAY CREEK (OR)
 Date: 4/26/2007
 Scale: 1 inch equals 2000 feet

Location: 10 0450569 E 4858398 N
 Caption: ESMOND CREEK (UPPER) RESTORATION SITE - SIUSLAW BASIN