

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

STREAM: Mail Creek (NC-48)
BASIN: Necanicum River
SURVEY TYPE: Post-Tx
DATE: March 1, 2007
SURVEY CREW: Jeff O'Leary, Sheri Etchemendy
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 4.9 km²
USGS MAPS: Necanicum Junction
ECOREGION: Coast Range Coastal Uplands

GENERAL DESCRIPTION:

The Mail Creek habitat survey extended 502 meters. The channel was constrained by multiple terraces in a broad valley floor. The average valley width index was 13.4 (range: 8-20). Land use for the reach was timber harvest and second growth timber (15-30 cm dbh). The average unit gradient was 2.0 percent. Rapids (54%) and scour pools (35%) dominated stream habitat. Cobble (50%) and gravel (22%) dominated stream substrate. Wood volume was moderate at 23.0 m³/100m.

COMMENTS:

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

Stream Mail Creek (48)
 Basin Necanicum River
 Treatment Large Wood

	ODFW Benchmark		Pre	Post	Post		
Habitat Variable	Desirable	Undesirable	2/25/99	2/24/00	3/1/07		
% Pool Area	>35%	<10%	29.3	25.5	39.9		
Number of Pools			21	11	13		
Deep Pools/km (>1.0 m)			7.6	5.6	9.3		
% Off-Channel			7.6	0.7	2.4		
LWD – Pieces/100m	>20	<10	13.4	8.9	15.5		
LWD – Volume/100m	>30	<20	18.3	13.8	23.0		
LWD – Key Pieces/100m	>3	<1	1.2	1.0	0.6		
Large Wood Jams/km				11.6			
% Riffle Fines	<10	>20	12	17	0		
% Riffle Gravel	>35	<15	59	49	15		
% Bedrock			9	19	13		

Bold is noticeable change

Comments: Pool area is increased from previous surveys, while the number of pools has decreased when compared to pre-treatment conditions. Deep pools have increased with time, but off channel habitat has decreased since the pre-treatment survey. Large wood pieces and volume are higher since treatment, suggesting that the structures are accumulating additional pieces. Riffle gravel has decreased, but the report shows riffle cobble as very high (80%). It appears that the treatment has been effective.

REACH 1

T5N-R10W-S24SW

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	0%	Multiple Terraces	100%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	13.4	VWI Range:	8 - 20

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	502	3,276	0
Secondary Channel	25	59	0
Off-Channel Units	10	20	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 6.2	Width: 8.2	10.9 (6.4 - 19)	12.8 (7.2 - 20.5)
Depth: 0.48	Height: 0.5	1.0 (0.9 - 1)	1.6 (1.1 - 3)

W:D ratio: 17.3
 Stream Flow Type: MF
 Average Unit Gradient: 2.0%
 Water temperature (°C): 6.0 - 6.0

Entrenchment (ACW:FPW ratio): 1.3
 Habitat Units/100m (total channel length): 5.8
 Habitat Units/100m (primary channel length): 6.2

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	TH	ST
Riparian Vegetation:	M30	

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):	78	15.5
Volume (m ³):	116	23.0
Key pieces (>=12m x 0.60m):	3	0.6

OREGON DEPT OF FISH AND WILDLIFE

MAIL CREEK POST-TX (1-NC, 48)

HABITAT INVENTORY

Report Date: 4/25/2007

Survey Date:

3/1/2007

REACH 1		T5N-R10W-S24SW					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	1	16	2.0	0.15	32	0	20	10	20	50	0	0
POOL-DAMMED	1	30	6.0	1.00	180	0	21	21	32	21	5	0
POOL-LATERAL SCOUR	11	176	6.1	0.80	1,080	0	4	10	30	43	4	10
POOL-PLUNGE	1	10	8.2	1.40	79	0	0	0	67	29	5	0
RAPID/BEDROCK	5	125	6.2	0.26	775	0	0	1	8	25	7	60
RAPID/BOULDERS	10	155	6.2	0.20	1,023	0	0	2	16	74	7	0
RIFFLE	1	25	7.0	0.20	175	0	0	0	15	80	5	0
STEP/LOG	1	1	10.0	0.10	10	0	20	20	40	20	0	0
Total:	31	537	6.2	0.48	3,354	0	Avg: 3	6	22	50	5	13

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	30	6.0	1.00	180	5.37%	0	0.0	
Scour Pools	12	185	6.3	0.85	1,159	34.56%	0	0.0	
Glides	0	0			0	0.00%	0	0.0	
Riffles	1	25	7.0	0.20	175	5.22%	0	0.0	
Rapids	15	280	6.2	0.22	1,798	53.60%	0	0.0	
Cascades	1	16	2.0	0.15	32	0.97%	0	0.0	
Step/Falls	1	1	10.0	0.10	10	0.30%	0	0.0	
Dry	0	0			0	0.00%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

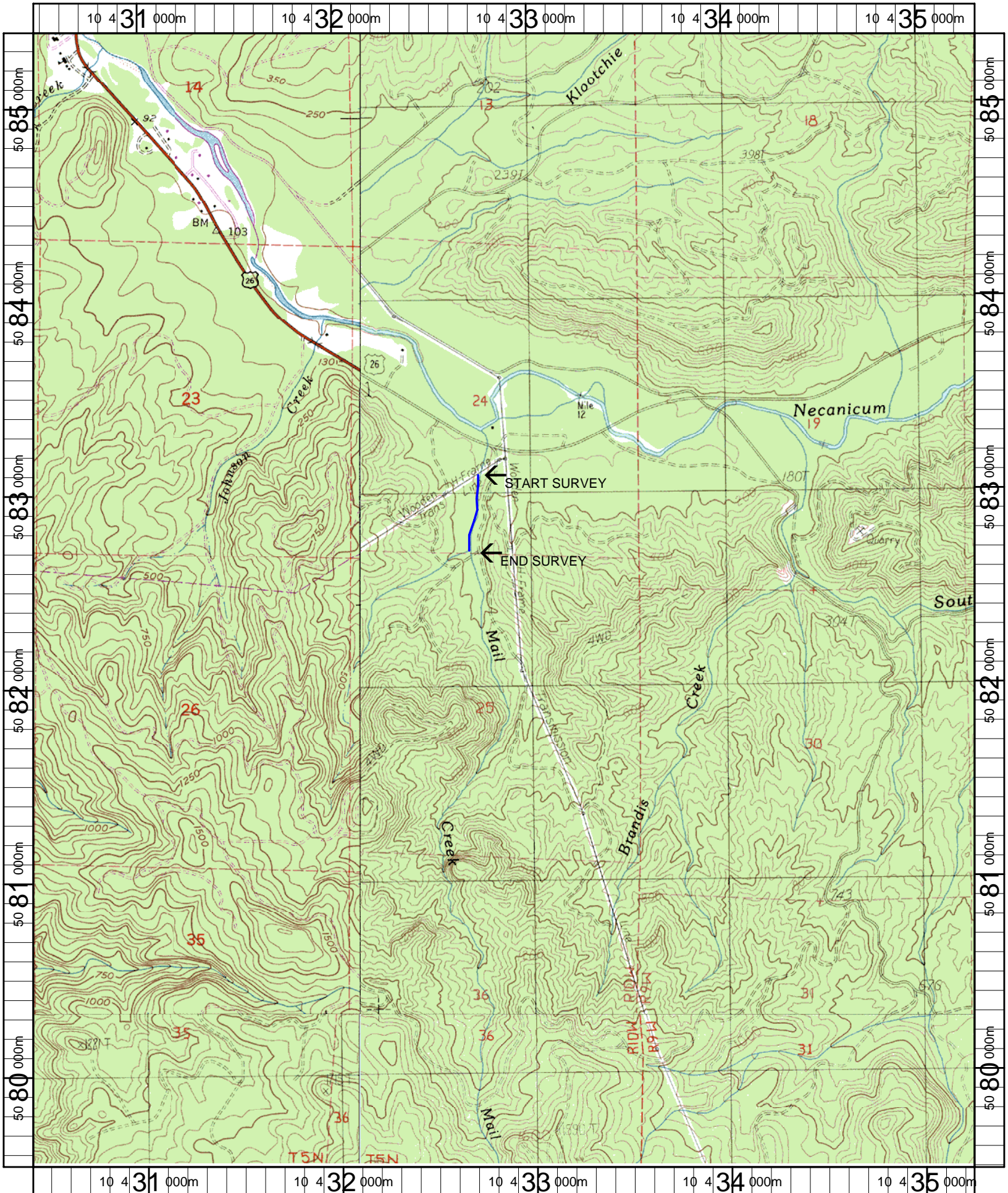
POOL SUMMARY			
	<u>Total</u>	Total of all Channel Lengths	
		<u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	13	24.2	25.9
Pools >=1m deep:	5	9.3	10.0
Complex pools (LWD pieces>=3):	5	9.3	10.0
Pool frequency (channel widths/pool):	5.0		
Residual pool depth (avg):	0.64		

Comment Summary

Restoration Monitoring Sites 2007

MONITORING AREA: 1-NC SITE ID: 48 MAIL CREEK POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR
25	LP	00	403.1	/SS	
29	RB	11	475.1		ACW=2.5



Name: NECANICUM JUNCTION
Date: 5/9/2007
Scale: 1 inch equals 2000 feet

Location: 10 432856 E 5082441 N
Caption: MAIL CREEK RESTORATION SITE - NECANICUM BASIN