

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

STREAM: Mail Creek (N-48)  
BASIN: Necanicum River  
SURVEY TYPE: Post-Tx  
DATE: July 10, 2007  
SURVEY CREW: Trevor Diemer, Nathan Wilson  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 4.9 km<sup>2</sup>  
USGS MAPS: Necanicum Junction  
ECOREGION: Coast Range Coastal Uplands

**GENERAL DESCRIPTION:**

The Mail Creek habitat survey extended 629 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 7.5 (range: 6.0-12.0). Land use for the reach was timber harvest and second growth (15-30 cm dbh) trees. The average unit gradient was 1.8 percent. Riffles (44%) and scour pools (40%) dominated stream habitat. Cobble (36%) and gravel (33%) dominated stream substrate. Wood volume was moderate at 21.0 m<sup>3</sup>/100m.

**COMMENTS:**

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

The crew noted several habitat structures during the survey.

REACH 1

T05N-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	7.5	VWI Range:	6 - 12

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	629	2,560	0
Secondary Channel	0	0	0
Off-Channel Units	13	13	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 4	<u>First Terrace</u> n = 4
Width: 4.0	Width: 6.2	9.1 ( 4.7 - 14 )	11.1 ( 5 - 14.25 )
Depth: 0.34	Height: 0.4	0.7 ( 0.6 - 0.8 )	1.4 ( 0.95 - 2 )

W:D ratio: 17.8

Entrenchment (ACW:FPW ratio): 1.4

Stream Flow Type: LF

Habitat Units/100m (total channel length): 5.6

Average Unit Gradient: 1.8%

Habitat Units/100m (primary channel length): 5.7

Water temperature (°C): 16.0 - 16.0

**Riparian, Bank, and Wood Summary**

	<u>Primary</u>	<u>Secondary</u>
Land Use:	TH	ST
Riparian Vegetation:	D15	S

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	6%	Reach avg: 84%
Undercut Banks:	8%	Range: 22 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	125	19.9
Volume (m <sup>3</sup> ):	132	21.0
Key pieces (>=12m x 0.60m):	6	1.0

OREGON DEPT OF FISH AND WILDLIFE

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

HABITAT INVENTORY

Report Date: 11/14/2007

Survey Date:

7/10/2007

REACH 1		T05N-R10W-S24SW					REACH 1						
HABITAT DETAIL													
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Large Boulders (#>0.5m)	Substrate Percent Wetted Area						
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk	
GLIDE	1	17	3.5	0.25	58	2	0	0	30	50	20	0	
POOL-BACKWATER	1	3	2.0	0.25	6	0	20	50	30	0	0	0	
POOL-LATERAL SCOUR	13	186	4.8	0.61	937	9	2	10	35	35	7	11	
POOL-STRAIGHT SCOUR	1	10	4.5	0.50	43	1	0	5	10	10	5	71	
POOL-TRENCH	2	18	3.0	0.68	57	3	0	5	13	18	5	60	
RAPID/BEDROCK	3	85	3.7	0.08	301	5	0	0	15	17	5	63	
RAPID/BOULDERS	2	17	1.7	0.08	26	0	0	10	45	40	5	0	
RIFFLE	12	305	3.8	0.13	1,135	21	0	5	38	48	10	0	
STEP/COBBLE	1	2	5.0	0.15	10	2	0	10	40	40	10	0	
<b>Total:</b>	36	642	4.0	0.34	2,573	43	<b>Avg:</b> 1	8	33	36	8	14	

HABITAT SUMMARY									
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders		
					(m <sup>2</sup> )	Percent	Number	(# / 100m <sup>2</sup> )	
Dammed & BW Pools	1	3	2.0	0.25	6	0.23%	0	0.0	
Scour Pools	16	214	4.6	0.61	1,036	40.28%	13	1.3	
Glides	1	17	3.5	0.25	58	2.24%	2	3.5	
Riffles	12	305	3.8	0.13	1,135	44.13%	21	1.8	
Rapids	5	102	2.9	0.08	327	12.72%	5	1.5	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	1	2	5.0	0.15	10	0.39%	2	20.0	
Dry	0	0			0	0.00%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY			
	Total of all Channel Lengths		Primary Channel Length
	<u>Total</u>	<u># / Km</u>	<u># / Km</u>
All Pools:	17	26.5	27.0
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	7	10.9	11.1
Pool frequency (channel widths/pool):	6.1		
Residual pool depth (avg):	0.50		

Survey Date 7/10/2007  
Report Date: 11/7/2007

**RIPARIAN ZONE  
VEGETATION SUMMARY**

REACH 1

**Summary of Riparian Zone (0-30m) 4 transects**

Total hardwoods/1000	594
Total conifers/1000 ft	503
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	0.5	1.5	0.5	0.3	0.5	0.3	1.5	2.0
15-30cm	0.8	3.3	1.8	1.0	1.5	1.5	4.0	5.8
30-50cm	0.3	1.8	1.3	0.3	1.3	0.0	2.8	2.0
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	1.5	6.5	3.5	1.5	3.3	1.8	2.8	3.3

**Canopy closure and ground cover**

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	63		44		47	
Shrub cover	49		37		34	
Grass/forb cover	42		28		31	

**Predominant landform in each zone**

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	50		50		63	
High terrace	50		50		38	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	21		12		19	

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

**4 transects**

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

Total hardwoods/1000	594
Total conifers/1000 ft	503
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	1.5	2.0
15-30cm	4.0	5.8
30-50cm	2.8	2.0
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		
1	LT	1	HT	0	65	90	10	Conifer							0432801
								Hardwood		3	1				5083229
1	LT	2	HT	0	50	95	5	Conifer	1						
								Hardwood		2	1				
1	LT	3	HT	0	75	80	20	Conifer	2	1					
								Hardwood		1					
1	RT	1	HS	30	90	70	30	Conifer							
								Hardwood	3	2					
1	RT	2	HS	35	85	60	40	Conifer			3				
								Hardwood	1						
1	RT	3	HS	40	90	30	30	Conifer			1	1			40% DUFF
								Hardwood							
7	LT	1	HT	0	60	20	80	Conifer							0432718
								Hardwood	1	1	1				5083045
7	LT	2	HT	0	70	25	75	Conifer			3	1			
								Hardwood							
7	LT	3	HS	35	20	25	25	Conifer			3	1			50%
								Hardwood							EXPOSED
7	RT	1	HS	15	15	15	15	Conifer	2						SOIL
								Hardwood			2				50%
7	RT	2	HS	20	0	5	5	Conifer							EXPOSED
								Hardwood							SOIL
7	RT	3	HS	35	0	5	5	Conifer							90%
								Hardwood							EXPOSED
16	LT	1	HS	85	50	45	55	Conifer				1			SOIL
								Hardwood	1	2					NO GPS
16	LT	2	HS	20	0	0	0	Conifer							CLEAR CUT
								Hardwood							ALL
16	LT	3	HS	20	0	0	0	Conifer							EXPOSED
								Hardwood							ALL CLEAR
16	RT	1	HT	0	75	50	50	Conifer			1				CUT
								Hardwood			3				ALL
16	RT	2	HT	0	80	40	60	Conifer	1	1	2				
								Hardwood			1				
16	RT	3	HT	0	85	30	70	Conifer				2			
								Hardwood			1				

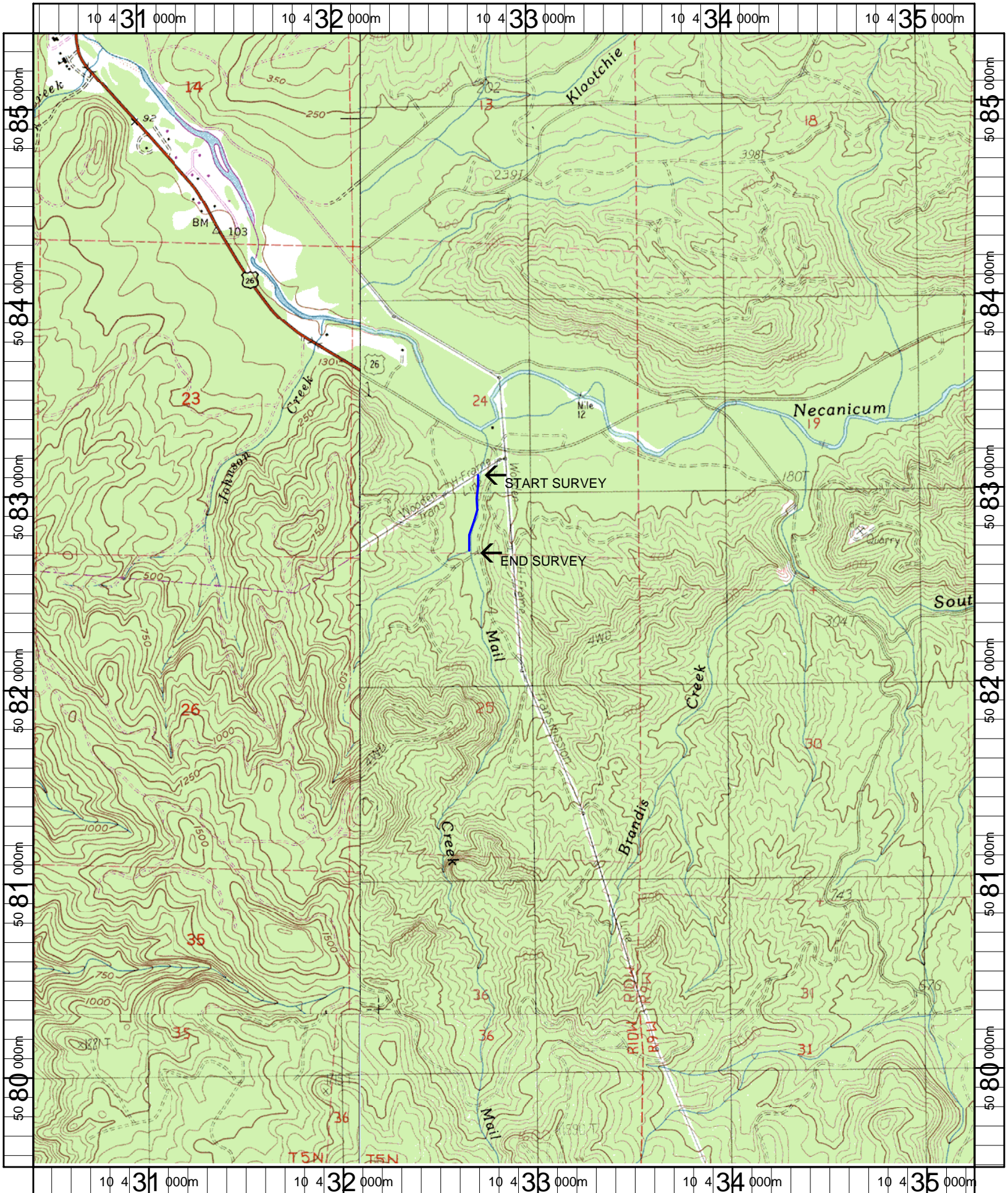
36	LT	1	HT	0	75	65	35	Conifer				0432693
								Hardwood	1		3	5082706
36	LT	2	HT	0	0	0	5	Conifer				ROAD BED
								Hardwood				
36	LT	3	HT	0	60	50	50	Conifer				
								Hardwood	1	2		
36	RT	1	HS	35	70	40	60	Conifer		2		
								Hardwood			2	
36	RT	2	HS	20	65	70	30	Conifer			2	
								Hardwood	1			
36	RT	3	HS	20	45	55	45	Conifer		1	1	EDGE OF
								Hardwood		2		CLEAR CUT

**COMMENT SUMMARY**

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

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	RI	00	50		START AT FLAGGING ON LEFT
2	LP	00	59	HS	
4	GL	00	88.5		CLEAR CUT UNDER HIGH TENSION POWER LINES
6	TP	00	120.5		FOUND START SIGN 100 METERS ABOVE POWER LINES
7	RR	00	157.5	HS	
10	LP	00	205.5	HS	
12	LP	00	250.5	HS	
20	LP	00	402.5	HS	
23	SC	00	427.5	HS	
27	RI	00	484.5	HS	
33	LP	01	613.5	HS, /TJ	
34	RB	11	613.5		16 DEGREES





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