

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

STREAM: Russell Creek (W-298)  
BASIN: Molalla River  
SURVEY TYPE: Pre-Tx  
DATE: July 14, 2005  
SURVEY CREW: Jeremy Romer, Sheila Davis  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 7.5 km<sup>2</sup>  
USGS MAPS: Wilhoit  
ECOREGION: Willamette River and Tributaries Gallery Forest

**GENERAL DESCRIPTION:**

The Russell Creek habitat survey extended 570 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 12.5 (range: 1.0-20.0). Land use for the reach was rural residential and timber harvest. The average unit gradient was 2.6 percent. Beaver ponds (97%) dominated stream habitat. Sand (27%), cobble (24%) and gravel (20%) dominated stream substrate. Wood volume was moderate at 25.2 m<sup>3</sup>/100m.

**COMMENTS:**

There was one potential barrier to upstream fish migration in the surveyed length. This was a 2.4 m high step to culvert and a high gradient, failing wood culvert in units 22 and 23.

REACH 1

T05S-R02E-S36NW

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	12.5	VWI Range:	1 - 20

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	570	35,286	0
Secondary Channel	86	110	0
Off-Channel Units	30	27	1

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 4	<u>First Terrace</u> n = 3
Width: 7.6	Width: 34.7	39.0 ( 6.1 - 135 )	9.4 ( 9 - 10 )
Depth: 0.27	Height: 0.7	1.5 ( 0.7 - 3.2 )	1.4 ( 0.9 - 2.3 )

W:D ratio: 27.2  
 Stream Flow Type: MF  
 Average Unit Gradient: 2.6%  
 Water temperature (°C): -

Entrenchment (ACW:FPW ratio): 1.5  
 Habitat Units/100m (total channel length): 4.7  
 Habitat Units/100m (primary channel length): 5.6

**Riparian, Bank, and Wood Summary**

	<u>Primary</u>	<u>Secondary</u>
Land Use:	RR	TH
Riparian Vegetation:	D30	M50

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	2%	Reach avg: 55%
Undercut Banks:	1%	Range: 22 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	117	20.5
Volume (m <sup>3</sup> ):	144	25.2
Key pieces (>=12m x 0.60m):	6	1.1

HABITAT INVENTORY

Report Date: 4/26/2006

Survey Date:

7/14/2005

REACH 1		T05S-R02E-S36NW					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
CASCADE/BOULDERS	4	116	1.2	0.05	136	145	4	0	15	49	33	0
CULVERT CROSSING	1	20	0.8	0.05	16	0	0	30	10	50	10	0
DRY CHANNEL	1	20	0.8	0.00	16	0	20	80	0	0	0	0
POOL-BACKWATER	1	6	1.6	0.30	9	0	60	40	0	0	0	0
POOL-BEAVER DAM	2	285	66.0	1.23	34,446	0	65	35	0	0	0	0
POOL-DAMMED	1	13	5.6	0.60	70	2	60	30	0	5	5	0
POOL-LATERAL SCOUR	6	47	3.2	0.43	149	10	14	38	23	21	4	0
POOL-PLUNGE	1	12	7.0	1.50	82	1	10	15	15	40	20	0
RAPID/BOULDERS	4	78	3.2	0.09	236	88	0	3	25	53	20	0
RIFFLE	5	83	2.2	0.06	213	3	7	39	45	8	0	1
STEP/BEAVER DAM	2	2	17.0	0.03	32	0	70	30	0	0	0	0
STEP/BEDROCK	1	2	2.5	0.08	5	0	0	0	0	0	0	100
STEP/LOG	2	1	3.8	0.03	5	0	10	48	28	15	0	0
STEP/STRUCTURE	1	2	3.0	0.05	7	30	0	0	20	60	20	0
<b>Total:</b>	<b>32</b>	<b>686</b>	<b>7.6</b>	<b>0.27</b>	<b>35,423</b>	<b>279</b>	<b>Avg: 18</b>	<b>27</b>	<b>20</b>	<b>24</b>	<b>9</b>	<b>3</b>

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	4	303	34.8	0.84	34,526	97.47%	2	0.0	
Scour Pools	7	59	3.7	0.59	231	0.65%	11	4.8	
Glides	0	0			0	0.00%	0	0.0	
Riffles	5	83	2.2	0.06	213	0.60%	3	1.4	
Rapids	4	78	3.2	0.09	236	0.67%	88	37.3	
Cascades	4	116	1.2	0.05	136	0.38%	145	106.4	
Step/Falls	6	7	7.9	0.04	49	0.14%	30	61.5	
Dry	1	20	0.8	0.00	16	0.05%	0	0.0	
Culverts	1	20	0.8	0.05	16	0.05%	0	0.0	

POOL SUMMARY			
	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	11	16.0	19.3
Pools >=1m deep:	2	2.9	3.5
Complex pools (LWD pieces>=3):	3	4.4	5.3
Pool frequency (channel widths/pool):	1.8		
Residual pool depth (avg):	0.64		

OREGON DEPARTMENT OF FISH AND WILDLIFE  
HABITAT INVENTORY

RUSSELL CREEK PRE-TX  
GCG: 8-W SITE ID: 298

Survey Date 7/14/2005

RIPARIAN ZONE

Report Date: 4/26/2006

VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000	853
Total conifers/1000 ft	406
Total conifers >20" dbh/1000 ft	102
Total conifers >35" dbh/1000 ft	41

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	1.0	3.0	0.7	2.0	0.0	2.3	1.7	7.3
15-30cm	2.0	0.0	1.0	0.7	0.3	2.0	3.3	2.7
30-50cm	0.0	1.3	0.0	0.7	0.0	1.0	0.0	3.0
50-90cm	0.0	0.3	0.7	0.3	0.3	0.3	1.0	1.0
>90cm	0.0	0.0	0.3	0.0	0.3	0.0	0.7	0.0
Total/100m2	3.0	4.7	2.7	3.7	1.0	5.7	2.2	4.7

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	58		58		63	
Shrub cover	44		18		10	
Grass/forb cover	56		77		90	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	67		67		67	
High terrace	33		17		17	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		17		17	
Riprap	0		0		0	
Surface slope (%)	22		16		10	

**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	853
Total conifers/1000 ft	406
Total conifers >20" dbh/1000 ft	102
Total conifers >35" dbh/1000 ft	41

**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	1.7	7.3
15-30cm	3.3	2.7
30-50cm	0.0	3.0
50-90cm	1.0	1.0
>90cm	0.7	0.0

**RIPARIAN ZONE VEGETATION**

Reach 1 Reach 1

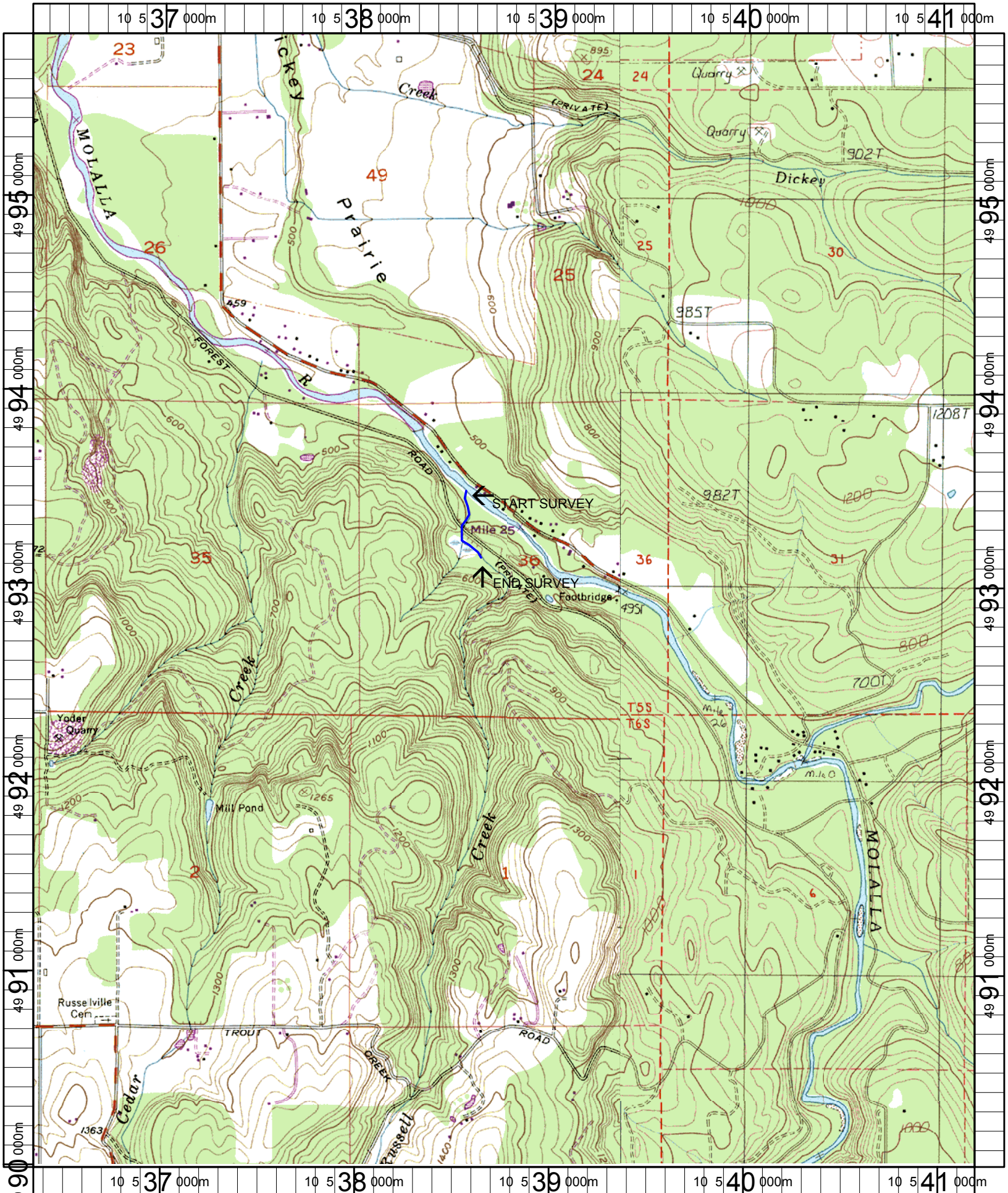
Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
20	LF	1	HS	47	50	20	80	Conifer	2	2					538539, 4993331
								Hardwood	1						
20	LF	2	HS	25	50	25	75	Conifer		3					
								Hardwood							
20	LF	3	HS	10	30	25	75	Conifer							
								Hardwood	2						
20	RT	1	HT	0	20	95	5	Conifer							
								Hardwood	1						
20	RT	2	HS	30	40	25	75	Conifer						1	
								Hardwood							
20	RT	3	HS	20	75	5	95	Conifer							
								Hardwood	1	3	2	1			
25	LF	1	HS	40	70	50	50	Conifer	1	2					538507, 4993269
								Hardwood				1			
25	RT	3	HT	0	70	0	100	Conifer						1	
								Hardwood	2						
25	RT	2	HT	0	75	0	100	Conifer							
								Hardwood	3						
25	RT	1	HT	0	80	0	100	Conifer		1					
								Hardwood	3						
25	LF	2	HS	8	90	0	100	Conifer	2				1		
								Hardwood					1		
25	LF	3	RB	15	75	10	90	Conifer		1					
								Hardwood	1						
32	RT	2	HS	30	70	30	70	Conifer							
								Hardwood	2	2	2				
32	LF	1	HS	10	60	50	50	Conifer		1					TAKEN AT BV POOL
								Hardwood	2		1				
32	RT	1	HS	35	70	50	50	Conifer							ESTIMATED,B P TOO DEEP TO CROSS
								Hardwood	2		3				
32	LF	3	HS	-10	60	10	90	Conifer					1		
								Hardwood	1						
32	LF	2	RB	3	20	30	40	Conifer					1		
								Hardwood	1						
32	RT	3	HS	25	70	10	90	Conifer							
								Hardwood		3	1				

# Comment Summary

## Restoration Monitoring Sites 2005

MONITORING AREA: **8-W**      SITE ID: **298**      **RUSSELL CREEK PRE-TX**

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RI	00	28.7		538569, 4993471	
3	LP	01	45.5	/TJ		
6	SL	00	45.9		H = .2 M	
7	LP	00	53.2	DJ		
8	RI	00	71.6		INFLUENCE FROM MOLL	
9	LP	00	78.2	BV		
10	RI	01	94.9		CT-MT, M50, S, RR, MT	
11	RI	11	94.9		ACW = .9 M	ACW = .9 M
18	CB	03	172.8		CA-CT, M15, G	
20	RB	00	188.2		CA-CT	
22	SS	00	202.3	PA	H = 2.4 M, LARGE WOOD	H = 2.4 M
23	CC	00	222.3	CC	DEER CARCASS IN CULV	OLD WOODEN CULVERT
24	RB	00	252.3	CS, /SS		
25	RB	00	262		CA-CT, C50, G	
27	SL	00	270.8		H = .55 M	H = .55 M
28	DP	00	283.3	BV		
29	SD	00	283.8	BD	H = .3 M	H = .3 M
30	BP	00	294	BV		
31	SD	00	295	BD	H = 2 M, LARGE BD, BP	H = 2 M
32	BP	00	570	BV	UNIT ESTIMATED, CH-MV,	HUGE WETLAND, BV POOL



Name: WILHOIT  
 Date: 6/9/2005  
 Scale: 1 inch equals 2000 feet

Location: 10 538752 E 4992926 N  
 Caption: RUSSELL CREEK RESTORATION SITE - MOLALLA BASIN