

**ODFW AQUATIC INVENTORY PROJECT  
RESTORATION MONITORING  
STREAM HABITAT REPORT**

STREAM: NORTH FORK MOLALLA RIVER  
 GCG: 8-W  
 SITE ID: 423  
 BASIN: MOLALLA  
 TREATMENT DATE:  
 SURVEY DATE: 7/27/2011  
 SURVEY CREW: Frank Drake and Mark Mclaughlin  
 USGS MAPS: FERNWOOD  
 ECOREGION: Willamette River and Tributaries Gallery Forest  
 REPORT PREPARED BY: Lora Tennant

REACH: 1 LOCATION: T05S-R03E-S36SW

**SURVEY DESCRIPTION:**

Channel morphology: Constrained by hillslopes

Dominant landuse(s): Second growth timber (15-30 cm dbh)

Dominant riparian vegetation: Deciduous trees: size class 15-30cm dbh

Primary channel length (meters) and area (m<sup>2</sup>): 2,981 : 41,882

Secondary channel length (meters) and area (m<sup>2</sup>) 859 : 3,798

VWI average: 2.3 VWI Range: 1.1 - 3.6 Average Gradient: 2.7%

Pieces LWD per 100m: 5.6 Wood Volume (m<sup>3</sup>) per 100m: 7.1

Percent pools: 28% Complex pools (LWD pieces>=3): 10 Pools >=1m deep:20

<u>Percent substrate (avg):</u>	<u>Silt / organics</u>	<u>Sand</u>	<u>Gravel</u>	<u>Cobble</u>	<u>Boulder</u>	<u>Bedrock</u>
All units	3	13	17	37	28	2
Pool units	3	16	18	36	24	3
Fast water units	1	9	16	39	33	2

**SURVEY COMMENTS:**

This is a pre-treatment (wood) restoration survey. The crew observed salmonid fry, beaver activity, and a rough-skinned newt.

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**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	100%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	2.3	VWI Range:	1.1 - 3.6

Channel Morphology (Percent Reach Length)

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

Channel Characteristics

<u>Type</u>	<u>Length (m)</u>	<u>Area (m<sup>2</sup>)</u>	<u>Dry Units</u>
Primary	2,981	41,882	0
Secondary	859	3,798	7

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 6	<u>First Terrace</u> n = 4
Width: 10.8	Width: 19.0	26.7 ( 17 - 51 )	30.5 ( 20 - 53 )
Depth: 0.63	Height: 0.8	1.5 ( 1.5 - 1.5 )	2.5 ( 1.9 - 3.1 )

W:D ratio: 25.3

Stream Flow Type: LF

Average Unit Gradient: 2.7%

Water temperature (°C): 12.0 - 12.0

Entrenchment (ACW:FPW ratio): 1.4

Habitat Units/100m (total channel length): 2.7

Habitat Units/100m (primary channel length): 3.5

**Riparian, Bank, and Wood Summary**

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	0%	Reach avg: 73%
Undercut Banks:	0%	Range: 47 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	168	5.6
Volume (m <sup>3</sup> ):	212	7.1
Key pieces (>=12m x 0.60m):	8	0.3

OREGON DEPT OF FISH AND WILDLIFE

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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	16	673	12.5	0.43	8,827	877	1	7	11	33	44	4
DRY CHANNEL	1	68	2.8	0.00	190	1	26	21	16	32	5	0
DRY UNIT	3	138	7.6	0.00	1,140	11	0	10	18	53	18	0
POOL-BACKWATER	7	50	3.4	0.49	209	10	10	35	28	18	10	0
POOL-ISOLATED	1	18	3.0	0.35	54	1	5	35	10	30	20	0
POOL-LATERAL SCOUR	21	577	13.1	1.25	8,310	213	3	15	21	38	21	2
POOL-PLUNGE	3	58	10.8	1.63	637	68	2	20	10	21	33	14
POOL-STRAIGHT SCOUR	11	316	10.9	1.10	3,725	189	5	15	17	35	28	0
PUDDLED UNIT	3	202	2.3	0.15	610	75	12	6	16	43	23	0
RAPID/BOULDERS	26	1,509	11.9	0.29	19,679	912	1	9	18	41	30	1
RIFFLE	4	175	9.5	0.28	1,575	31	3	12	23	46	16	0
RIFFLE W/ POCKETS	1	31	15.0	0.40	465	12	0	20	25	35	20	0
STEP/BOULDERS	5	21	12.0	0.35	251	30	0	1	9	32	54	4
STEP/COBBLE	1	4	2.1	0.05	8	0	0	5	15	70	10	0
<b>Total:</b>	103	3,840	10.8	0.63	45,679	2,430	<b>Avg:</b> 3	13	17	37	28	2

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	8	68	3.4	0.47	263	0.58%	11	4.2
Scour Pools	35	951	12.2	1.23	12,671	27.74%	470	3.7
Glides	0	0			0	0.00%	0	0.0
Riffles	5	206	10.6	0.30	2,040	4.47%	43	2.1
Rapids	26	1,509	11.9	0.29	19,679	43.08%	912	4.6
Cascades	16	673	12.5	0.43	8,827	19.32%	877	9.9
Step/Falls	6	25	10.4	0.30	259	0.57%	30	11.6
Dry	7	408	4.6	0.06	1,941	4.25%	87	4.5
Culverts	0	0			0	0.00%	0	0.0

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**POOL SUMMARY**

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	43	11.2	14.4
Pools >=1m deep:	20	5.2	6.7
Complex pools (LWD pieces>=3):	10	2.6	3.4
Pool frequency (channel widths/pool):	4.7		
Residual pool depth (avg):	0.90		

Survey Date 7/27/2011

**RIPARIAN ZONE  
VEGETATION SUMMARY**

REACH 1

Report Date: 6/8/2012

**Summary of Riparian Zone (0-30m) 5 transects**

Total hardwoods/1000	1414
Total conifers/1000 ft	232
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

**Average number of trees in a 5-meter wide band**

Diameter class (cm)	Zone 1 <u>0-10 meters</u>		Zone 2 <u>10 - 20 meters</u>		Zone 3 <u>20 - 30 meters</u>		Zones 1-3 <u>0-30 meters</u>	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.4	8.0	0.4	5.8	0.8	1.8	1.6	15.6
15-30cm	0.0	3.8	0.4	0.2	1.0	1.6	1.4	5.6
30-50cm	0.0	0.8	0.2	0.6	0.6	0.4	0.8	1.8
50-90cm	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.4	12.8	1.0	6.6	2.4	3.8	1.3	7.7

**Canopy closure and ground cover**

	Zone 1 <u>0-10 meters</u>		Zone 2 <u>10 - 20 meters</u>		Zone 3 <u>20 - 30 meters</u>	
	(%)		(%)		(%)	
Canopy closure	73		79		70	
Shrub cover	33		47		36	
Grass/forb cover	48		54		53	

**Predominant landform in each zone**

	Zone 1 <u>0-10 meters</u>		Zone 2 <u>10 - 20 meters</u>		Zone 3 <u>20 - 30 meters</u>	
	(%)		(%)		(%)	
Hillslope	30		60		70	
High terrace	30		40		20	
Low terrace	10		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	10		0		0	
Roadbed/Railroad	20		0		10	
Riprap	0		0		0	
Surface slope (%)	84		85		67	

**Summary of Riparian Zone (0-30m) for all reaches****5 transects****Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream**

Total hardwoods/1000	1414
Total conifers/1000 ft	232
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	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	1.6	15.6
15-30cm	1.4	5.6
30-50cm	0.8	1.8
50-90cm	0.0	0.2
>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		
78	LF	3	HT		100	60	40	Conifer							
								Hardwood	2	4					
78	RT	1	RB	70	10	10	30	Conifer							3M HS GRAVEL RB
								Hardwood							
78	RT	2	HS	100	100	35	60	Conifer				1			5% DIRT
								Hardwood				3			
78	RT	3	HS	80	100	20	80	Conifer							
								Hardwood	3						
99	LF	1	HT		80	80	20	Conifer							0549485/49914 32
								Hardwood	6	2					
99	LF	2	HT		100	50	50	Conifer							
								Hardwood	8						
99	LF	3	HS	70	100	60	40	Conifer							3M HT
								Hardwood		2	2				
99	RT	1	RB				30	Conifer							4M HS, BLDR/RB
								Hardwood							
99	RT	2	HS	80	80	90	10	Conifer							
								Hardwood							
99	RT	3	HS	70	100	40	50	Conifer				1			DIRT
								Hardwood							



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OREGON PLAN MONITORING SITE  
SURVEY DATE: 7/27/2011

COMMENT SUMMARY

MONITORING AREA: 8-W SITE ID: 423 STREAM: NORTH FORK MOLALLA RIVER

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	1	CB	00	37		T=14C/1100
1	2	PP	00	56		LI/
1	3	SB	00	62	LI/	LI/, H=1.1M
1	4	CB	00	120		LI/
1	5	SP	00	152		
1	6	CB	00	176	/SS,AM	/SS,AM=PGS
1	7	PP	00	199	/SS	
1	8	SB	00	200		H=0.6M
1	9	CB	00	281		
1	10	LP	00	309		
1	11	CB	01	327		
1	12	RB	01	400		

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REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	13	LP	01	416		
1	14	RB	01	441	DJ	
1	15	PD	02	441		5 PUDDLES 2-0.5M
1	16	LP	01	482		
1	18	LP	01	565		
1	20	LP	01	656	/SS,BV,SS/	BV, OLD FISH LADDER, BRIDGE
1	21	DU	03	656		
1	22	PD	03	656		
1	23	RI	04	656		
1	25	CB	01	674		SS/
1	26	RB	01	736	BC, SS/SS	BC
1	27	CB	02	736	BV	

COMMENT SUMMARY

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REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	28	SP	02	736		
1	29	RB	02	736	BC,/CS	BC
1	30	CB	01	853		T=12C/1000
1	31	BW	10	853		
1	32	CB	00	896		
1	33	SP	00	917		
1	34	CB	00	950		
1	35	LP	00	977		
1	36	RB	00	1032		
1	37	LP	00	1050		
1	38	CB	00	1084		
1	39	RB	00	1197	/SS	/SS

COMMENT SUMMARY

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REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	40	LP	00	1246		
1	41	RB	01	1355		
1	42	BW	10	1355		
1	43	CB	01	1404		
1	44	PD	02	1404		
1	45	SP	00	1424		
1	46	CB	00	1451		
1	47	PP	00	1467		
1	48	SB	00	1469	H=0.6M	
1	49	RB	01	1521		
1	50	IP	10	1521		
1	51	LP	00	1550		

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REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	52	RB	00	1563		
1	53	LP	00	1588		
1	55	SP	02	1638		WATER FLOW FROM SS/
1	57	SP	02	1638	AM	AM-RSN
1	58	CB	02	1638	SS/	
1	61	LP	00	1701		
1	62	RB	01	1789		
1	63	BW	10	1789		
1	64	RP	00	1820		
1	65	SP	00	1845	/SS	
1	67	LP	02	1893		
1	68	LP	01	1920		

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REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	69	RB	01	1979		
1	70	DC	02	1979		
1	71	RB	01	2067		
1	72	RB	02	2067		
1	73	LP	02	2067		
1	76	LP	02	2121		
1	77	LP	00	2148	/SS,/CS	
1	78	RB	01	2262		
1	79	BW	10	2262		
1	80	SP	00	2300		
1	81	SB	00	2304		H=0.6M
1	82	LP	00	2319		

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REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	83	RB	01	2382	SS/	
1	84	BW	10	2382		
1	85	RI	00	2417		
1	87	RB	01	2540		
1	88	RB	02	2540		
1	89	LP	02	2540		
1	90	RI	02	2540		
1	91	BW	10	2540		
1	92	SP	00	2597		
1	94	LP	00	2628		
1	95	RB	00	2656		
1	97	RB	01	2777	/CS,BV	

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REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	98	BW	10	2777		/CS
1	99	RB	00	2856	/CS	/CS
1	100	SP	00	2888		
1	101	CB	01	2913		
1	102	LP	02	2913		
1	103	LP	01	2981	TJ,BC,CS/	TJ/, BC