

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

STREAM: ESMOND CREEK (MIDDLE)
 GCG: 2-MC
 SITE ID: 138
 BASIN: SIUSLAW
 TREATMENT DATE: 2002
 SURVEY DATE: 7/14/2011
 SURVEY CREW: Eric Bailey and Sara DeRischebourg
 USGS MAPS: ROMAN NOSE MTN
 ECOREGION: Mid-Coastal Sedimentary
 REPORT PREPARED BY: Lora Tennant

REACH: 1 LOCATION: T19S-R08W-S28NW

SURVEY DESCRIPTION:

Channel morphology: Constrained alternately by high terraces and hillslopes

Dominant landuse(s): Large timber (30-50 cm dbh)

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

Primary channel length (meters) and area (m²): 544 : 3,633

Secondary channel length (meters) and area (m²): 100 : 263

VWI average: 6.3 VWI Range: 5 - 8 Average Gradient: 0.8%

Pieces LWD per 100m: 24.2 Wood Volume (m³) per 100m: 24.6

Percent pools: 71% Complex pools (LWD pieces \geq 3): 6 Pools \geq 1m deep: 1

<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	13	16	23	1	4	42
Pool units	18	21	17	1	5	39
Fast water units	2	7	27	1	1	61

SURVEY COMMENTS:

This is a post-treatment (boulders) restoration survey. The crew observed beaver activity, juvenile coho, rough-skinned newts, juvenile lamprey, a gametrail, and a mallard duck. Habitat structures observed included cabled logs and boulders.

Survey Date: 7/14/2011

Report Date: 6/8/2012

T19S-R08W-S28NW

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	6.3	VWI Range:	5 - 8

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	544	3,633	0
Secondary	100	263	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 4.7	Width: 11.9	15.3 (10.2 - 23.3)	17.9 (10.7 - 25)
Depth: 0.34	Height: 0.6	1.2 (1.1 - 1.3)	1.7 (1.25 - 2.55)

W:D ratio: 20.4

Stream Flow Type: LF

Average Unit Gradient: 0.8%

Water temperature (°C): 13.5 - 13.5

Entrenchment (ACW:FPW ratio): 1.3

Habitat Units/100m (total channel length): 4.2

Habitat Units/100m (primary channel length): 5.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	LT	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:	18%	Reach avg: 86%
Undercut Banks:	6%	Range: 58 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	132	24.2
Volume (m ³):	134	24.6
Key pieces (>=12m x 0.60m):	7	1.3

Survey Date: 7/18/2011

Report Date: 6/8/2012

T19S-R08W-S28NW

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	8	2.5	0.45	20	0	20	70	5	5	0	0
POOL-ISOLATED	1	2	2.0	0.20	4	0	100	0	0	0	0	0
POOL-LATERAL SCOUR	8	281	4.7	0.58	1,669	65	27	26	12	1	2	32
POOL-STRAIGHT SCOUR	4	156	6.5	0.43	1,116	104	0	10	26	2	11	51
RAPID/BEDROCK	1	5	0.7	0.10	4	0	0	10	40	0	0	50
RIFFLE	5	127	5.7	0.17	776	4	1	5	22	2	1	69
RIFFLE W/ POCKETS	2	43	4.3	0.28	189	9	6	12	33	0	2	47
STEP/BEDROCK	2	13	5.3	0.10	78	2	0	3	3	0	3	93
STEP/COBBLE	2	6	2.6	0.10	15	2	5	18	78	0	0	0
STEP/STRUCTURE	1	4	6.4	0.25	26	31	0	20	40	0	40	0
Total:	27	645	4.7	0.34	3,896	217	Avg: 13	16	23	1	4	42

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	10	2.3	0.33	24	0.62%	0	0.0
Scour Pools	12	437	5.3	0.53	2,785	71.48%	169	6.1
Glides	0	0			0	0.00%	0	0.0
Riffles	7	170	5.3	0.20	965	24.76%	13	1.3
Rapids	1	5	0.7	0.10	4	0.09%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	5	23	4.4	0.13	119	3.05%	35	29.4
Dry	0	0			0	0.00%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

ESMOND CREEK (MIDDLE)
GCG: 2-MC SITE ID: 138

Survey Date: 7/14/2011

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T19S-R08W-S28NW

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	14	21.7	25.7
Pools >=1m deep:	1	1.6	1.8
Complex pools (LWD pieces>=3):	6	9.3	11.0
Pool frequency (channel widths/pool):	3.9		
Residual pool depth (avg):	0.39		

Survey Date 7/14/2011

Report Date: 6/8/2012

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

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

Total hardwoods/1000	1016
Total conifers/1000 ft	61
Total conifers >20" dbh/1000 f	20
Total conifers >35" dbh/1000 f	20

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	0.0	0.7	0.0	1.3	0.0	1.7	0.0	3.7
15-30cm	0.3	1.7	0.0	1.7	0.0	4.0	0.3	7.3
30-50cm	0.3	0.7	0.0	2.3	0.0	2.0	0.3	5.0
50-90cm	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7
>90cm	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0
Total/100m2	0.7	3.7	0.0	5.3	0.3	7.7	0.3	5.6

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	72		69		69	
Shrub cover	62		55		46	
Grass/forb cover	39		35		44	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	17		17		50	
High terrace	83		67		33	
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 (%)	2		3		11	

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	1016
Total conifers/1000 ft	61
Total conifers >20" dbh/1000 f	20
Total conifers >35" dbh/1000 f	20

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	0.0	3.7
15-30cm	0.3	7.3
30-50cm	0.3	5.0
50-90cm	0.0	0.7
>90cm	0.3	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		
7	LF	1	HT	0	75	60	40	Conifer							
								Hardwood			1	2			
7	LF	2	HT	0	40	50	30	Conifer							20% BARE GROUND
								Hardwood							
7	LF	3	HT	0	65	30	70	Conifer							1
								Hardwood	3						
7	RT	1	HS	11	70	85	15	Conifer		1					
								Hardwood							
7	RT	2	HS	20	70	50	50	Conifer							
								Hardwood		2	3				
7	RT	3	HS	19	65	85	15	Conifer							
								Hardwood		7	3				
19	LF	1	HT	0	70	80	20	Conifer							
								Hardwood		5					
19	LF	2	HT	0	75	90	10	Conifer							
								Hardwood	1	1	2				
19	LF	3	HS	22	80	90	10	Conifer							
								Hardwood		3	2				
19	RT	1	HT	0	65	65	36	Conifer				1			TRANSITIONA L SLOPE 26%
								Hardwood							
19	RT	2	HT	0	65	40	60	Conifer							
								Hardwood	2						
19	RT	3	HS	24	65	10	90	Conifer							
								Hardwood	2	2	1				
23	LF	1	HT	0	75	50	50	Conifer							TRANSITIONA L SLOPE 29%
								Hardwood							
23	LF	2	RB	0	80	20	40	Conifer							40% RB
								Hardwood				1			
23	LF	3	RB	0	70	0	40	Conifer							60% RB
								Hardwood							
23	RT	1	HT	0	75	30	70	Conifer							TRANSITIONA L SLOPE 28%
								Hardwood	2		1				
23	RT	2	HT	0	85	80	20	Conifer							
								Hardwood	1	2	1				
23	RT	3	HT	0	70	60	40	Conifer							
								Hardwood							

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 7/14/2011

COMMENT SUMMARY

MONITORING AREA: 2-MC SITE ID: 138 STREAM: ESMOND CREEK (MIDDLE)

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	1	RP	01	24.2	/TJ BV	START 447342/4859777
1	2	RR	11	24.2		ACW=2.7
1	3	LP	02	24.2	HS DJ	
1	4	SC	02	24.2		STEP HEIGHT=0.25
1	7	RI	01	124.1	WL	447316/4859684
1	8	LP	01	186.6	BV	
1	9	RP	02	186.6	AM DJ	
1	10	LP	02	186.6	BV WL	
1	13	LP	02	237.1	DJ HS AM	
1	15	LP	02	237.1	DJ HS	
1	17	LP	01	303.5	HS DJ	
1	18	BW	10	303.5	HS DJ	

COMMENT SUMMARY

MONITORING AREA: 2-MC SITE ID: 138 STREAM: ESMOND CREEK (MIDDLE)

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	19	SR	00	312.4		447263/4859513
1	22	SP	00	442	BV, WL	
1	23	RI	00	461.3		447183/4859394
1	24	SP	00	478.45	HS	
1	25	SS	00	482.45	HS	
1	26	SP	00	524.45	CS/CS BV	CS-REMOVED BRIDGE
1	27	RI	00	544.45		END 447200/4859319