

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

STREAM: ESMOND CREEK (LOWER)
 GCG: 2-MC
 SITE ID: 137
 BASIN: SIUSLAW
 TREATMENT DATE: 2002
 SURVEY DATE: 7/12/2011
 SURVEY CREW: Eric Bailey, Sara DeRischebourg, and Matt Strickland
 USGS MAPS: ROMAN NOSE MTN
 ECOREGION: Mid-Coastal Sedimentary
 REPORT PREPARED BY: Lora Tennant

REACH: 1 LOCATION: T19S-R08W-S16NE

SURVEY DESCRIPTION:

Channel morphology: Constrained by high terraces
 Dominant landuse(s): Second growth timber (15-30 cm dbh)
 Dominant riparian vegetation: Mixed conifer/deciduous: size class 30-50cm dbh
 Primary channel length (meters) and area (m²): 567 : 3,993
 Secondary channel length (meters) and area (m²): 51 : 130
 VWI average: 16.4 VWI Range: 12 - 20 Average Gradient: 0.4%
 Pieces LWD per 100m: 5.3 Wood Volume (m³) per 100m: 22.4
 Percent pools: 83% Complex pools (LWD pieces>=3): 3 Pools >=1m deep: 2
 Percent substrate (avg):

	<u>Silt / organics</u>	<u>Sand</u>	<u>Gravel</u>	<u>Cobble</u>	<u>Boulder</u>	<u>Bedrock</u>
All units	3	16	30	5	4	43
Pool units	4	13	15	4	5	60
Fast water units	0	13	35	7	9	37

SURVEY COMMENTS:

This is a post-treatment (boulders) restoration survey. The crew observed dace, juvenile salmonids, beaver activity, crayfish and a lamprey redd.

Survey Date: 7/12/2011

Report Date: 6/8/2012

T19S-R08W-S16NE

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	16.4	VWI Range:	12 - 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	567	3,993	0
Secondary	51	130	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 5.6	Width: 13.2	16.0 (12.4 - 19.4)	17.7 (15.2 - 20.5)
Depth: 0.45	Height: 0.5	1.1 (1 - 1.2)	1.7 (1.4 - 2.1)

W:D ratio: 24.7

Stream Flow Type: LF

Average Unit Gradient: 0.4%

Water temperature (°C): 12.5 - 12.5

Entrenchment (ACW:FPW ratio): 1.2

Habitat Units/100m (total channel length): 3.7

Habitat Units/100m (primary channel length): 4.1

Riparian, Bank, and Wood Summary

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	2%	Reach avg: 78%
Undercut Banks:	6%	Range: 67 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	30	5.3
Volume (m ³):	127	22.4
Key pieces (>=12m x 0.60m):	4	0.7

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

ESMOND CREEK (LOWER)
GCG: 2-MC SITE ID: 137

Survey Date: 7/12/2011

Report Date: 6/8/2012

T19S-R08W-S16NE

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	2	24	2.2	0.33	57	0	5	15	48	2	0	30
POOL-ISOLATED	3	18	1.8	0.15	36	0	6	38	37	5	0	13
POOL-LATERAL SCOUR	10	434	7.5	0.77	3,241	100	4	13	15	4	4	59
POOL-STRAIGHT SCOUR	1	27	7.1	0.50	188	21	0	9	14	5	9	64
RIFFLE	4	90	4.2	0.18	399	8	0	13	35	7	9	37
STEP/BEDROCK	1	6	3.0	0.10	18	0	0	5	5	5	0	86
STEP/COBBLE	2	20	9.3	0.10	183	0	0	7	83	7	0	2
Total:	23	618	5.6	0.45	4,122	129	Avg: 3	16	30	5	4	43

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	5	42	2.0	0.22	93	2.25%	0	0.0
Scour Pools	11	461	7.4	0.75	3,429	83.19%	121	3.5
Glides	0	0			0	0.00%	0	0.0
Riffles	4	90	4.2	0.18	399	9.68%	8	2.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	3	26	7.2	0.10	201	4.88%	0	0.0
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 (LOWER)
GCG: 2-MC SITE ID: 137

Survey Date: 7/12/2011

Report Date: 6/8/2012

T19S-R08W-S16NE

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	16	25.9	28.2
Pools >=1m deep:	2	3.2	3.5
Complex pools (LWD pieces>=3):	3	4.9	5.3
Pool frequency (channel widths/pool):	2.9		
Residual pool depth (avg):	0.62		

Survey Date 7/12/2011

RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

Report Date: 6/8/2012

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

Total hardwoods/1000	1585
Total conifers/1000 ft	325
Total conifers >20" dbh/1000 f	81
Total conifers >35" dbh/1000 f	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	0.0	5.3	1.0	6.7	1.0	8.7	2.0	20.7
15-30cm	0.0	4.3	0.7	0.0	0.7	0.3	1.3	4.7
30-50cm	0.3	0.3	0.3	0.0	0.0	0.0	0.7	0.3
50-90cm	0.7	0.0	0.3	0.3	0.3	0.0	1.3	0.3
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	1.0	10.0	2.3	7.0	2.0	9.0	1.8	8.7

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	56		59		42	
Shrub cover	48		47		37	
Grass/forb cover	52		38		57	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	17		0		17	
High terrace	83		83		67	
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 (%)	7		0		6	

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	1585
Total conifers/1000 ft	325
Total conifers >20" dbh/1000 f	81
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	2.0	20.7
15-30cm	1.3	4.7
30-50cm	0.7	0.3
50-90cm	1.3	0.3
>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		
5	LF	1	HT	0	70	85	15	Conifer							transitional slope 27.5
								Hardwood	5	12					
5	LF	2	HT	0	35	90	10	Conifer							
								Hardwood	3						
5	LF	3	HT	0	30	40	60	Conifer							
								Hardwood							
5	RT	1	HT	0	75	10	90	Conifer							transitional slope 54.0
								Hardwood							
5	RT	2	HT	0	60	80	20	Conifer	1	2					
								Hardwood	5						
5	RT	3	RB	0	75	10	50	Conifer	1			1			half zone road bed
								Hardwood	1						
13	LF	1	HT	0	35	80	20	Conifer							transitional slop 39.0
								Hardwood	2						
13	LF	2	HT	0	80	85	15	Conifer							
								Hardwood	1						
13	LF	3	HT	0	10	95	5	Conifer							
								Hardwood	5						
13	RT	1	HT	0	8	10	90	Conifer				1	1		transitional slope 25.0
								Hardwood	6						
13	RT	2	HT	0	75	5	95	Conifer							BV chewed vine maple
								Hardwood	11						
13	RT	3	HT	0	80	10	90	Conifer			1				
								Hardwood		1					
19	LF	1	HS	40	80	80	20	Conifer							
								Hardwood		1	1				
19	LF	2	RB	0	15	10	15	Conifer							Esmond Cr Rd 75% of zone
								Hardwood							
19	LF	3	HS	38	40	30	70	Conifer							
								Hardwood	6						
19	RT	1	HT	0	65	20	75	Conifer					1		5% open grnd, trans slope 36.0
								Hardwood	3						
19	RT	2	HT	0	90	10	75	Conifer	2		1	1			15% open grnd
								Hardwood					1		
19	RT	3	HT	0	15	35	65	Conifer	2	1					
								Hardwood	14						

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 7/12/2011

COMMENT SUMMARY

MONITORING AREA: 2-MC SITE ID: 137 STREAM: ESMOND CREEK (LOWER)

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	1	LP	00	57	CS/CS HS	CT/MT, M30/S, ST/LT, UTM:448149/4862686
1	2	LP	01	100	AM HS	
1	3	IP	10	100		
1	5	RI	01	124.8		CT/MT, D15/S, ST/LT, UTM:448060/4862615
1	7	LP	01	166.8		
1	9	RI	01	185.8	SS	
1	10	IP	10	185.8	AM	
1	11	LP	00	223.8	WL	
1	13	LP	01	267.2	WL, /TJ	CT/MT, M50/G, ST/LT, UTM:448036/4862615
1	15	SC	00	276.7	BV	
1	16	LP	00	307.5	WL	
1	17	LP	00	380	BV HS	

COMMENT SUMMARY

MONITORING AREA: 2-MC SITE ID: 137 STREAM: ESMOND CREEK (LOWER)

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	18	SP	00	406.5	BV HS	
1	19	RI	00	443.2		CA/CT, D15/G, ST/LT, UTM:448161/4862521
1	20	LP	00	483.2	BV	
1	21	LP	00	517.8	WL SS	
1	23	LP	00	566.8	SS BV	CA/MT, M30/G, ST/LT, UTM:448173/4862456, END SURVEY 448244/4862391