

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

STREAM: GOURLAY CREEK  
 GCG: 7-L  
 SITE ID: 201  
 BASIN: SCAPPOOSE  
 TREATMENT DATE: 2003  
 SURVEY DATE: 3/19/2009  
 SURVEY CREW: Ryan Jacobsen / Miles Johnson  
 USGS MAPS: DIXIE MTN  
 ECOREGION: Willapa Hills  
 REPORT PREPARED BY: Matt Strickland / Sharon Tippery / Charles Stein

REACH: 1 LOCATION: T03N-R02S-S17SE

**SURVEY DESCRIPTION:**

Channel morphology: Constrained alternately by high terraces and hillslopes

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

Dominant riparian vegetation: Deciduous trees: size class 30-50cm dbh

Primary channel length (meters) and area (m<sup>2</sup>): 499 : 2,189

Secondary channel length (meters) and area (m<sup>2</sup>): 75 : 165

VWI average: 4.4 VWI Range: 3 - 8 Average Gradient: 3.7%

Pieces LWD per 100m: 19.2 Wood Volume (m<sup>3</sup>) per 100m: 34.3

Percent pools: 19% Complex pools (LWD pieces $\geq$ 3): 3 Pools  $\geq$ 1m deep:0

<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	4	16	40	33	6	0
Pool units	9	28	37	26	0	0
Fast water units	1	9	40	39	11	0

**SURVEY COMMENTS:**

Gourlay Creek reach 1 is a post-treatment, long term monitoring site. Reach 1 ended at a tributary junction approximately 450 meters upstream from the start of the survey. The crew noted a large active landslide approximately 360 meters upstream from the start of the survey. There were no potential barriers to upstream fish migration observed within the survey reach. A previous post-treatment habitat survey was conducted during the winter of 2004. Comparisons were made among key coho salmon habitat attributes: total secondary channel length, pieces of LWD per 100 m, wood volume per 100 m, percent pools, and complex pools. All key attributes stayed approximately the same or showed a slight decrease.

Survey Date: 3/19/2009

Report Date: 2/16/2010

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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	4.4	VWI Range:	3 - 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	499	2,189	0
Secondary	75	165	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 4.2	Width: 8.9	13.1 ( 7.5 - 21 )	16.0 ( 9.5 - 25 )
Depth: 0.41	Height: 0.5	0.9 ( 0.8 - 1 )	1.4 ( 1 - 1.9 )

W:D ratio: 19.2

Stream Flow Type: MF

Average Unit Gradient: 3.7%

Water temperature (°C): 7.0 - 7.0

Entrenchment (ACW:FPW ratio): 1.6

Habitat Units/100m (total channel length): 6.4

Habitat Units/100m (primary channel length): 7.4

**Riparian, Bank, and Wood Summary**

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	LT
Riparian Vegetation:	D30	S

Bank Condition and Shade

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

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	96	19.2
Volume (m <sup>3</sup> ):	171	34.3
Key pieces (>=12m x 0.60m):	13	2.6

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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	1	15	1.8	0.20	27	0	0	5	40	40	15	0
POOL-BACKWATER	1	3	1.8	0.60	5	0	10	0	90	0	0	0
POOL-LATERAL SCOUR	10	81	4.7	0.70	387	0	9	28	37	25	1	0
POOL-PLUNGE	2	16	4.3	0.60	69	0	7	29	35	29	0	0
RAPID/BOULDERS	15	391	4.2	0.28	1,583	0	1	9	39	40	11	0
RIFFLE	2	47	3.2	0.15	170	0	5	10	47	33	5	0
STEP/COBBLE	3	14	4.1	0.32	58	0	0	5	38	53	3	0
STEP/LOG	3	8	5.4	0.27	54	0	3	31	38	21	7	0
<b>Total:</b>	<b>37</b>	<b>574</b>	<b>4.2</b>	<b>0.41</b>	<b>2,354</b>	<b>0</b>	<b>Avg: 4</b>	<b>16</b>	<b>40</b>	<b>33</b>	<b>6</b>	<b>0</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	1	3	1.8	0.60	5	0.23%	0	0.0
Scour Pools	12	97	4.6	0.68	457	19.40%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	2	47	3.2	0.15	170	7.23%	0	0.0
Rapids	15	391	4.2	0.28	1,583	67.25%	0	0.0
Cascades	1	15	1.8	0.20	27	1.15%	0	0.0
Step/Falls	6	22	4.8	0.29	112	4.75%	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

GOURLAY CREEK  
GCG: 7-L SITE ID: 201

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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:	13	22.6	26.0
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	3	5.2	6.0
Pool frequency (channel widths/pool):	4.9		
Residual pool depth (avg):	0.36		

COMMENT SUMMARY

MONITORING AREA: 7-L SITE ID: 201 STREAM: GOURLAY CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	1	LP	00	6.5	/SS	T=7C
1	5	RB	00	78.3	/TJ	
1	29	RB	02	361.4	/LA,/SS	LA=10M LONG, 20M HIGH
1	34	RB	01	453.4	/TJ	BEGIN REACH 2 AT /TJ
1	35	CB	11	453.4		T=8C, ACW=2.1M



**Gourlay Creek (L-201) 2009 Winter Habitat Survey Photographs**



Unit 1 - Large wood placement near the start of the survey.



Unit 1 - Small tributary with large wood placement.



Unit 6 - Upstream view of placed large wood habitat structures.



Unit 20 - Upstream view of large wood habitat structures.



Unit 23 - Upstream view of large wood placement and gravel recruitment.



Unit 24 - Upstream view of large wood placement within scour pool.