

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

STREAM: PEBBLE CREEK
 GCG: 1-NC
 SITE ID: 257
 BASIN: NEHALEM
 TREATMENT DATE: 2004
 SURVEY DATE: 3/17/2010
 SURVEY CREW: Andrew Walch / Josh Williams
 USGS MAPS: VERNONIA
 ECOREGION: Willapa Hills
 REPORT PREPARED BY: Sharon Tippery / Charles Stein

REACH: 1 LOCATION: T04N-R04W-S21NE

SURVEY DESCRIPTION:

Channel morphology: Constrained by high terraces
 Dominant landuse(s): Young forest trees (3-15 cm dbh)
 Dominant riparian vegetation: Deciduous trees: size class 30-50cm dbh
 Primary channel length (meters) and area (m²): 751 : 7,049
 Secondary channel length (meters) and area (m²) 54 : 354
 VWI average: 15.1 VWI Range: 4.5 - 20 Average Gradient: 0.7%
 Pieces LWD per 100m: 30.9 Wood Volume (m³) per 100m: 40.3
 Percent pools: 37% Complex pools (LWD pieces>=3): 5 Pools >=1m deep:9
 Percent substrate (avg):

	<u>Silt / organics</u>	<u>Sand</u>	<u>Gravel</u>	<u>Cobble</u>	<u>Boulder</u>	<u>Bedrock</u>
All units	9	70	20	0	0	1
Pool units	15	71	14	0	0	1
Fast water units	2	56	42	0	0	0

SURVEY COMMENTS:

This is a post-treatment restoration survey. The crew noted several large wood habitat structures and debris jams in the survey. Beaver activity was observed during the survey.

Survey Date: 3/17/2010

Report Date: 5/13/2010

T04N-R04W-S21NE

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	15.1	VWI Range:	4.5 - 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	751	7,049	0
Secondary	54	354	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 9.1	Width: 10.7	13.5 (10.6 - 17)	16.4 (13.8 - 19.3)
Depth: 0.95	Height: 0.9	1.7 (1.5 - 2)	4.5 (2.2 - 12.6)

W:D ratio: 12.4

Stream Flow Type: MF

Average Unit Gradient: 0.7%

Water temperature (°C): 6.5 - 6.5

Entrenchment (ACW:FPW ratio): 1.3

Habitat Units/100m (total channel length): 2.9

Habitat Units/100m (primary channel length): 3.1

Riparian, Bank, and Wood Summary

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	32%	Reach avg: 99%
Undercut Banks:	1%	Range: 89 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	232	30.9
Volume (m ³):	302	40.3
Key pieces (>=12m x 0.60m):	13	1.7

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T04N-R04W-S21NE

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
GLIDE	8	371	9.0	0.59	3,298	0	8	75	15	0	0	2
POOL-BACKWATER	1	8	4.0	0.55	32	0	0	100	0	0	0	0
POOL-LATERAL SCOUR	6	229	9.4	1.60	2,208	0	16	68	15	0	0	1
POOL-STRAIGHT SCOUR	3	57	8.9	1.47	508	0	12	76	12	0	0	0
RIFFLE	1	8	8.0	0.35	64	0	0	35	65	0	0	0
RIFFLE W/ POCKETS	4	133	10.4	0.56	1,294	0	3	62	36	0	0	0
Total:	23	805	9.1	0.95	7,403	0	Avg: 9	70	20	0	0	1

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	1	8	4.0	0.55	32	0.43%	0	0.0
Scour Pools	9	285	9.2	1.56	2,715	36.68%	0	0.0
Glides	8	371	9.0	0.59	3,298	44.54%	0	0.0
Riffles	5	141	9.9	0.52	1,358	18.35%	0	0.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	0	0			0	0.00%	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

PEBBLE CREEK
GCG: 1-NC SITE ID: 257

Survey Date: 3/17/2010

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T04N-R04W-S21NE

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	10	12.4	13.3
Pools >=1m deep:	9	11.2	12.0
Complex pools (LWD pieces>=3):	5	6.2	6.7
Pool frequency (channel widths/pool):	7.5		
Residual pool depth (avg):	1.02		

Survey Date 3/17/2010
Report Date: 5/13/2010

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

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

Total hardwoods/1000	406
Total conifers/1000 ft	345
Total conifers >20" dbh/1000 f	20
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	0.7	0.0	0.0	0.0	0.0	0.0	0.7
15-30cm	0.3	1.3	1.0	0.3	0.7	2.0	2.0	3.7
30-50cm	0.7	1.7	1.3	0.0	1.3	0.3	3.3	2.0
50-90cm	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0
>90cm	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Total/100m2	1.0	4.0	2.7	0.3	2.0	2.3	1.9	2.2

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	81		81		86	
Shrub cover	32		18		20	
Grass/forb cover	23		31		27	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		33		33	
High terrace	100		67		67	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	0		3		3	

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	406
Total conifers/1000 ft	345
Total conifers >20" dbh/1000 f	20
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	0.0	0.7
15-30cm	2.0	3.7
30-50cm	3.3	2.0
50-90cm	0.3	0.0
>90cm	0.0	0.3

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		
9	LT	1	HT	0	85	20	40	Conifer							40% BARE SAND
								Hardwood					1		
9	LT	2	HT	0	55	35	35	Conifer							30% BARE
								Hardwood							
9	LT	3	HT	0	75	40	35	Conifer							25% BARE DUFF
								Hardwood		2	1				
9	RT	1	HT	0	90	20	35	Conifer		1	1				45% BARE DUFF/ SAND
								Hardwood	2	2	1				
9	RT	2	HT	0	85	30	30	Conifer							40% BARE
								Hardwood							
9	RT	3	HT	0	85	35	35	Conifer							30% BARE DUFF
								Hardwood		1					
16	LT	1	HT	0	85	25	20	Conifer							55% BARE
								Hardwood		2	2				
16	LT	2	HT	0	90	5	40	Conifer		1	2				55% BARE
								Hardwood							
16	LT	3	HT	0	95	10	30	Conifer		1					60% BARE
								Hardwood							
16	RT	1	HT	0	85	25	15	Conifer				1			60% BARE
								Hardwood							
16	RT	2	HT	0	90	10	15	Conifer				1	1		75% BARE
								Hardwood							
16	RT	3	HT	0	95	15	15	Conifer				1			70% BARE
								Hardwood							
22	LT	1	HT	0	60	40	10	Conifer							50% BARE/SAND
								Hardwood							
22	LT	2	HS	10	80	10	25	Conifer		1	1				65% BARE
								Hardwood							
22	LT	3	HS	8	85	10	30	Conifer		1	2				60% BARE DUFF
								Hardwood		1					
22	RT	1	HT	0	80	60	15	Conifer							25% BARE
								Hardwood			2				
22	RT	2	HS	10	85	20	40	Conifer		1					40% BARE
								Hardwood		1					
22	RT	3	HS	10	80	10	15	Conifer				1			75% BARE DUFF
								Hardwood		2					

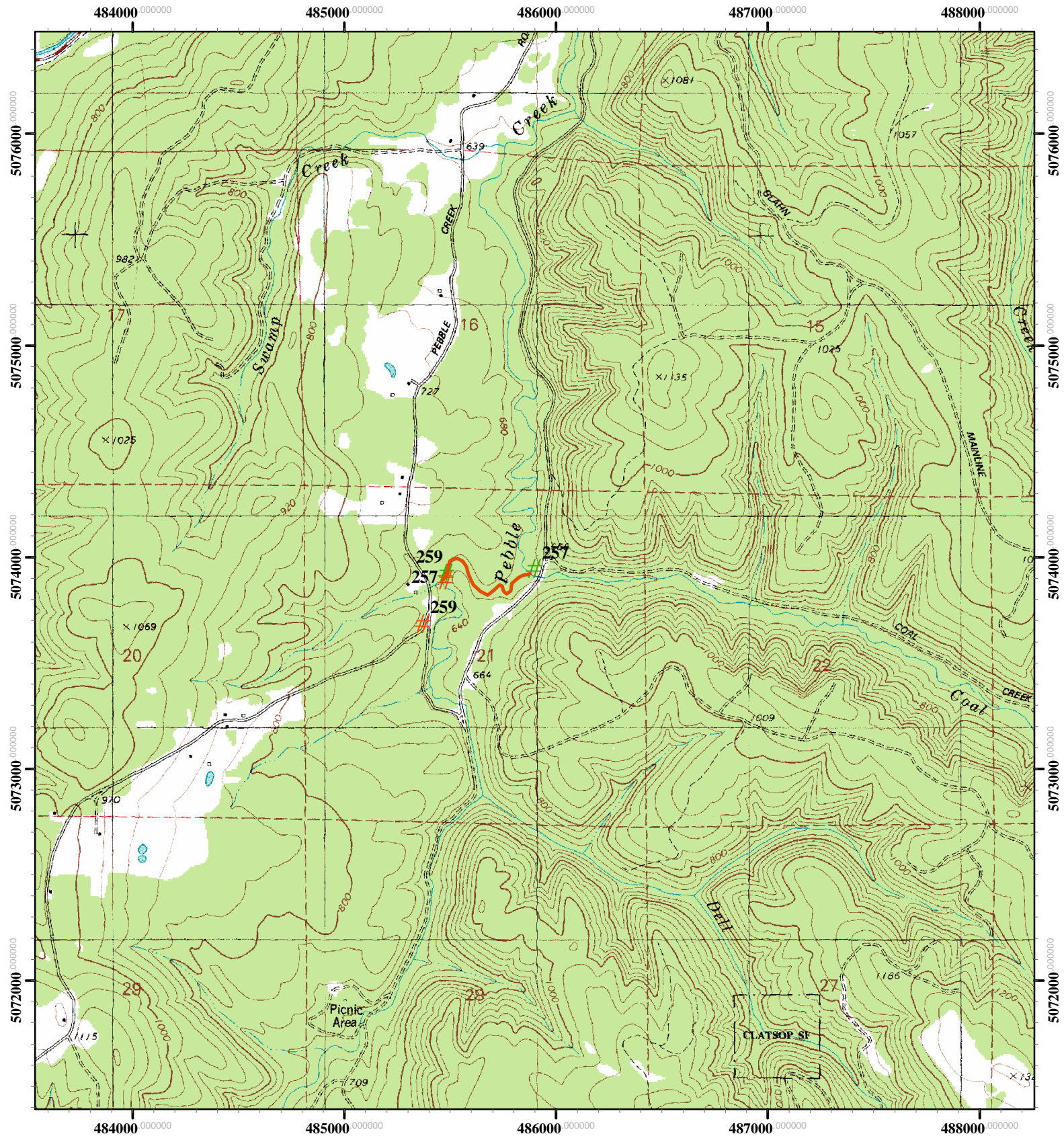
OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 3/17/2010

COMMENT SUMMARY

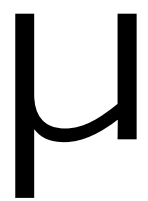
MONITORING AREA: 1-NC SITE ID: 257 STREAM: PEBBLE CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	1	GL	00	66.8		CT/CT-D15/C30-ST/YT, T=6.5C
1	3	RP	00	103.5	DJ	
1	5	GL	00	147.8	SS/	
1	6	LP	00	172.4	HS,DJ,SS/	
1	9	LP	00	217.4		CT/CT-D30/S-YT
1	10	LP	00	295.1	DJ,HS,LI	HS ERODED BANK, TREES FELL INTO CREEK
1	11	GL	00	330.7	BV	BEAVER STICKS
1	12	LP	01	364.2	DJ	
1	15	RP	00	426.2	HS	
1	16	GL	00	503.7		CT/CT-D30/S-YT
1	20	LP	01	653.2	DJ	
1	21	RP	02	653.2	DJ	
1	22	SP	00	675.1		CT/CT-D30/S-ST/YT
1	23	GL	00	750.8	/SS	CT/CT-D30/S



Restoration Site ID: 257
 Stream: Pebble Creek
 T04N - R04W - S21
 USGS Map: Vernonia

#	Approximate Start Point
#	Approximate End Point
—	Approximate Location of Each Survey



1-NC-257 Pebble Creek - Restoration 2010 Winter

