

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

STREAM: PEBBLE CREEK
 GCG: 1-NC
 SITE ID: 445
 BASIN: NEHALEM
 TREATMENT DATE: 2011
 SURVEY DATE: 3/31/2011
 SURVEY CREW: Nick Chambers and Aaron McAlexander
 USGS MAPS: VERNONIA
 ECOREGION: Willapa Hills
 REPORT PREPARED BY: Matt Strickland / Charles Stein

REACH: 1 LOCATION: T04N-R04W-S33NW

SURVEY DESCRIPTION:

Channel morphology: Constrained alternately by high terraces and hillslopes

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): 2,420 : 13,076

Secondary channel length (meters) and area (m²): 99 : 200

VWI average: 5.8 VWI Range: 2 - 15 Average Gradient: 0.6%

Pieces LWD per 100m: 20.1 Wood Volume (m³) per 100m: 27.8

Percent pools: 28% Complex pools (LWD pieces>=3): 16 Pools >=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	40	44	1	0	3
Pool units	7	45	44	0	0	3
Fast water units	5	35	55	1	0	4

SURVEY COMMENTS:

This is a pre treatment restoration survey. The crew noted several debris jams and active landslides within the survey. The crew also noted an active timber harvest near the end of the survey. Juvenile coho and a salmon redd were observed.

Survey Date: 3/31/2011

Report Date: 9/14/2011

T04N-R04W-S33NW

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	5.8	VWI Range:	2 - 15

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	2,420	13,076	0
Secondary	99	200	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 10	<u>First Terrace</u> n = 4
Width: 5.7	Width: 9.8	36.6 (14.5 - 75)	20.2 (16.5 - 29.3)
Depth: 0.65	Height: 0.8	1.7 (1.5 - 2)	2.2 (1.75 - 3)

W:D ratio: 12.1

Stream Flow Type: MF

Average Unit Gradient: 0.6%

Water temperature (°C): 8.0 - 8.0

Entrenchment (ACW:FPW ratio): 4.4

Habitat Units/100m (total channel length): 2.3

Habitat Units/100m (primary channel length): 2.4

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:	6%	Reach avg: 87%
Undercut Banks:	8%	Range: 36 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	486	20.1
Volume (m ³):	672	27.8
Key pieces (>=12m x 0.60m):	28	1.2

Survey Date: 3/31/2011

Report Date: 9/14/2011

T04N-R04W-S33NW

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	5	39	3.8	0.70	168	0	46	46	8	0	0	0
POOL-ISOLATED	2	26	2.4	0.60	56	0	98	3	0	0	0	0
POOL-LATERAL SCOUR	20	457	7.5	1.03	3,599	0	8	45	44	0	0	3
POOL-PLUNGE	2	13	9.3	1.10	115	0	0	48	50	3	0	0
RIFFLE	26	1,983	4.4	0.36	9,320	0	5	35	55	1	0	4
STEP/LOG	3	2	8.9	0.23	18	0	19	53	28	0	0	0
Total:	58	2,519	5.7	0.65	13,276	0	Avg: 13	40	44	1	0	3

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	7	65	3.4	0.67	224	1.69%	0	0.0
Scour Pools	22	470	7.6	1.03	3,714	27.98%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	26	1,983	4.4	0.36	9,320	70.20%	0	0.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	3	2	8.9	0.23	18	0.14%	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: 445

Survey Date: 3/31/2011

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T04N-R04W-S33NW

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	29	11.5	12.0
Pools >=1m deep:	11	4.4	4.5
Complex pools (LWD pieces>=3):	16	6.4	6.6
Pool frequency (channel widths/pool):	8.9		
Residual pool depth (avg):	0.72		

Survey Date 3/30/2011

**RIPARIAN ZONE
VEGETATION SUMMARY**

Report Date: 9/14/2011

REACH 1

Summary of Riparian Zone (0-30m) 8 transects

Total hardwoods/1000	366
Total conifers/1000 ft	46
Total conifers >20" dbh/1000 f	8
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	0.3	0.0	1.4	0.1	2.8	0.1	4.4
15-30cm	0.0	0.3	0.0	0.4	0.1	0.1	0.1	0.8
30-50cm	0.0	0.1	0.1	0.4	0.3	0.3	0.4	0.8
50-90cm	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.0	0.6	0.1	2.3	0.6	3.1	0.3	2.0

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	0-10 meters (%)		10 - 20 meters (%)		20 - 30 meters (%)	
Canopy closure	64		62		69	
Shrub cover	33		40		37	
Grass/forb cover	58		56		61	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	0-10 meters (%)		10 - 20 meters (%)		20 - 30 meters (%)	
Hillslope	13		56		81	
High terrace	19		31		6	
Low terrace	69		13		13	
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 (%)	6		15		20	

Summary of Riparian Zone (0-30m) for all reaches

8 transects

Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream

Total hardwoods/1000	366
Total conifers/1000 ft	46
Total conifers >20" dbh/1000 f	8
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	0.1	4.4
15-30cm	0.1	0.8
30-50cm	0.4	0.8
50-90cm	0.1	0.1
>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		
11	LT	1	LT	0	60	40	60	Conifer							
								Hardwood		1					
11	LT	2	HT	0	60	60	40	Conifer							
								Hardwood	1						
11	LT	3	HS	15	95	25	75	Conifer				1			
								Hardwood							
11	RT	1	HS	75	65	20	40	Conifer							40%BARE GROUND DUE TO LA
								Hardwood							
11	RT	2	HS	78	65	10	75	Conifer							
								Hardwood							
11	RT	3	HS	14	80	10	85	Conifer				1	1		
								Hardwood		1					
15	LT	3	HS	0	80	25	75	Conifer							
								Hardwood	1						
15	RT	1	HS	15	50	60	40	Conifer							
								Hardwood							
15	RT	1	LT	0	80	75	25	Conifer							
								Hardwood							
15	RT	2	HS	0	50	25	75	Conifer							
								Hardwood	1						
15	RT	2	HS	10	60	50	50	Conifer							
								Hardwood		1	1				
15	RT	3	HS	30	45	5	85	Conifer							
								Hardwood							
22	LT	1	LT	0	70	10	40	Conifer							50%BARE GROUND AND DUFF
								Hardwood							
22	LT	2	HS	13	80	70	20	Conifer							
								Hardwood							
22	LT	3	HS	5	55	75	20	Conifer							
								Hardwood	3						
22	RT	1	LT	0	65	40	60	Conifer							
								Hardwood	1						
22	RT	2	HS	50	65	35	65	Conifer							
								Hardwood	2						
22	RT	3	HS	40	70	20	80	Conifer							
								Hardwood	2		1				
26	LT	1	HT	0	80	60	30	Conifer							
								Hardwood							
26	LT	2	HS	6	55	50	40	Conifer							
								Hardwood	1						

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		
26	LT	3	HS	4	45	75	25	Conifer	1						
								Hardwood	2						
26	RT	1	LT	5	85	15	80	Conifer							
								Hardwood			1				
26	RT	2	HT	0	75	50	50	Conifer							
								Hardwood				1			
26	RT	3	HS	60	90	10	85	Conifer		1					
								Hardwood	1						
41	LT	1	HT	0	20	20	80	Conifer							
								Hardwood							
41	LT	2	HT	0	20	60	30	Conifer							
								Hardwood							
41	LT	3	HT	0	75	60	40	Conifer							
								Hardwood	5						
41	RT	1	LT	0	70	40	60	Conifer							
								Hardwood							
41	RT	2	HT	0	60	75	25	Conifer							
								Hardwood	1						
41	RT	3	HS	26	55	80	20	Conifer							
								Hardwood							
45	LT	1	HT	0	40	10	90	Conifer							
								Hardwood							
45	LT	2	HS	0	80	30	70	Conifer							
								Hardwood	1						
45	LT	3	HS	4	80	50	50	Conifer							
								Hardwood							
45	RT	1	LT	0	40	10	90	Conifer							
								Hardwood	1						
45	RT	2	LT	0	30	15	85	Conifer							
								Hardwood							
45	RT	3	LT	0	40	40	60	Conifer							
								Hardwood	2						
48	LT	1	LT	0	70	80	20	Conifer							
								Hardwood							
48	LT	2	HS	14	70	50	50	Conifer				1			
								Hardwood							
48	LT	3	HS	8	75	35	65	Conifer							
								Hardwood	4						
48	RT	1	LT	0	85	20	70	Conifer							
								Hardwood		1					

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		
48	RT	2	LT	0	80	30	70	Conifer							
								Hardwood			1	1			
48	RT	3	LT	0	75	50	50	Conifer							
								Hardwood							
52	LT	1	LT	0	70	25	70	Conifer							
								Hardwood							
52	LT	2	HS	60	75	10	80	Conifer							
								Hardwood	4						
52	RT	1	LT	0	80	10	70	Conifer							
								Hardwood							
52	RT	2	HT	3	70	25	70	Conifer							
								Hardwood			2				
52	RT	3	HS	60	90	15	85	Conifer							
								Hardwood	2						
52	RT	3	HS	50	60	10	80	Conifer							
								Hardwood			1				

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 3/30/2011

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 445 STREAM: PEBBLE CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	2	RI	00	77		15 HARDPAN
1	3	LP	00	97	/LA	
1	5	LP	00	158	LA/BVSS	
1	8	SL	00	180		H=.40
1	9	LP	00	200	SS/	
1	12	LP	00	310	DJ /LA	
1	15	RI	01	536	SS/	CARC ASS
1	16	BW	10	536		COMES UNDER DJ
1	18	SL	00	582	DJ	H=.50 DJ FORMS STEP
1	20	IP	10	645		ISOLATED BY LARGE LOGS
1	22	RI	00	766	/SS	
1	24	LP	00	787	DJ	

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 445 STREAM: PEBBLE CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	28	SL	01	1000.5		H=.30
1	30	RI	02	1045.5		
1	31	BW	10	1045.5		COHO JUV PRESENT
1	35	RI	01	1184.5	TJ/	
1	37	RI	02	1184.5	DJ	
1	49	LP	00	1851	LA/	GIANT RW FORMING NICE POOL HABITAT. REDD AT TAIL
1	52	RI	01	2159	LA/	
1	58	RI	00	2420	/LA	

1-NC 445 Pebble Creek (Nehalem River Basin) 2011 Winter Restoration Survey Photographs



Downstream view at start of survey.



Upstream view at start of survey.



Downstream view at unit 26.



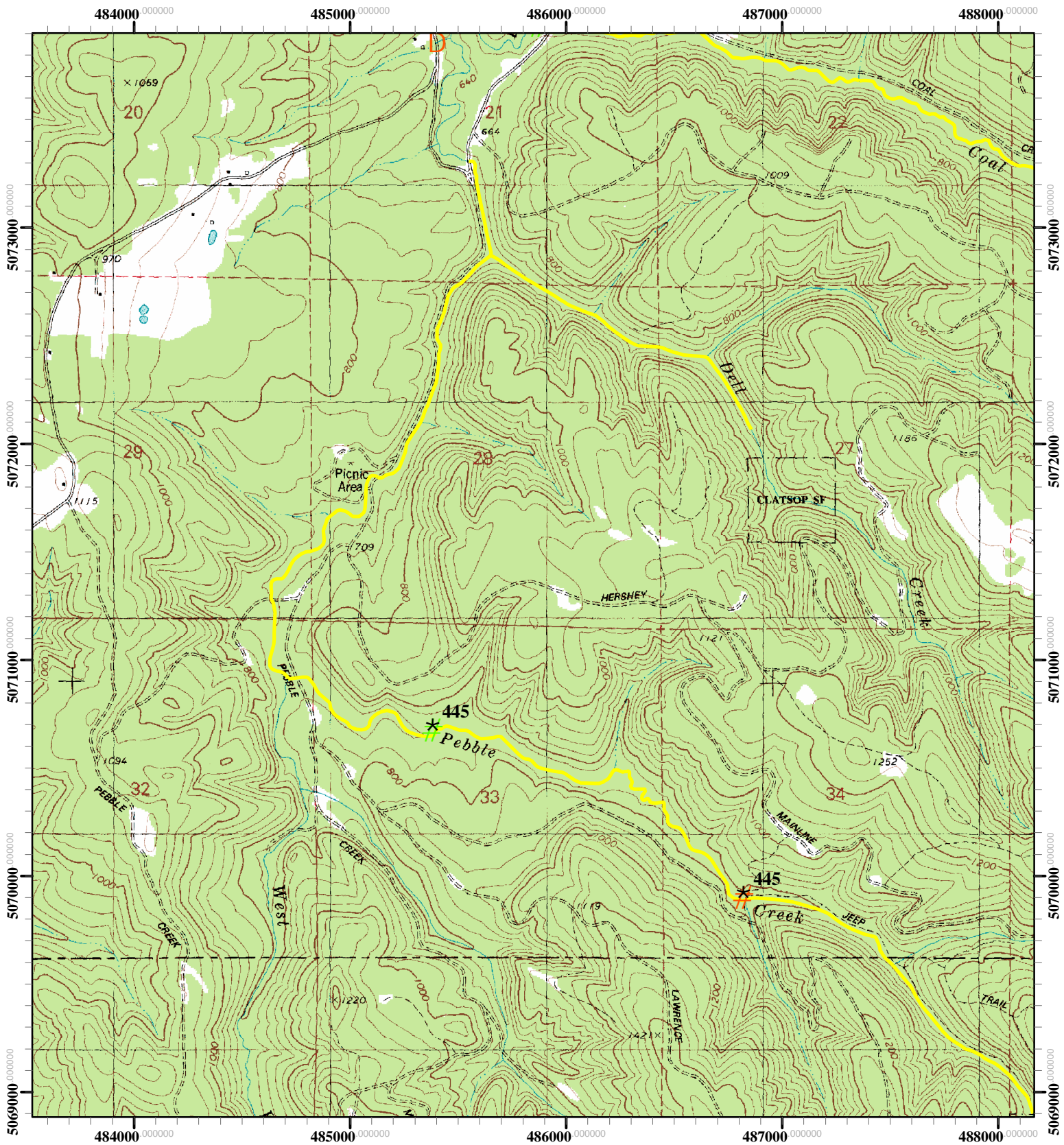
Upstream view at unit 26.







Upstream view near the end of the survey.
Aaron McAlexander in photo.



Downstream view near the end of the survey.



Restoration Site ID: 445
 Stream: Pebble Creek
 T04N- R04W - S33
 USGS Map: Vernonia
 Basin: Nehalem

-  Proposed Pre-Tx REST Start Point
-  Proposed Pre-Tx REST End Point
-  Potential Barrier
-  Spawning Survey Segments

