

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

STREAM: SQUARE CREEK  
 GCG: 1-NC  
 SITE ID: 256  
 BASIN: NECANICUM  
 TREATMENT DATE: 2005  
 SURVEY DATE: 3/24/2011  
 SURVEY CREW: Derrick Wheeler and Jim Davies  
 USGS MAPS: TILLAMOOK HEAD  
 ECOREGION: Coastal Uplands  
 REPORT PREPARED BY: Matt Strickland / Charles Stein

REACH: 1 LOCATION: T05N-R10W-S04NE

**SURVEY DESCRIPTION:**

Channel morphology: Constrained by high terraces

Dominant landuse(s): Timber harvest - not yet replanted.

Dominant riparian vegetation: Shrubs (willow, salmonberry, some small alder)

Primary channel length (meters) and area (m<sup>2</sup>): 582 : 1,938

Secondary channel length (meters) and area (m<sup>2</sup>): 15 : 24

VWI average: 13.0 VWI Range: 5 - 20 Average Gradient: 3.3%

Pieces LWD per 100m: 22.7 Wood Volume (m<sup>3</sup>) per 100m: 19.7

Percent pools: 23% Complex pools (LWD pieces>=3): 7 Pools >=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	9	15	53	23	0	0
Pool units	9	23	50	17	1	0
Fast water units	3	10	60	28	0	0

**SURVEY COMMENTS:**

This is a post treatment restoration survey. The crew noted beaver activity near the end of the survey.

Survey Date: 3/24/2011

Report Date: 9/14/2011

T05N-R10W-S04NE

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	13.0	VWI Range:	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 (m<sup>2</sup>)</u>	<u>Dry Units</u>
Primary	582	1,938	0
Secondary	15	24	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 3.3	Width: 3.7	4.9 ( 4.6 - 5.2 )	6.9 ( 5.9 - 7.8 )
Depth: 0.23	Height: 0.3	0.6 ( 0.4 - 0.6 )	0.8 ( 0.6 - 0.9 )

W:D ratio: 13.2

Stream Flow Type: MF

Average Unit Gradient: 3.3%

Water temperature (°C): 8.5 - 8.5

Entrenchment (ACW:FPW ratio): 1.4

Habitat Units/100m (total channel length): 5.7

Habitat Units/100m (primary channel length): 5.8

**Riparian, Bank, and Wood Summary**

	<u>Primary</u>	<u>Secondary</u>
Land Use:	TH	YT
Riparian Vegetation:	S	M30

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	8%	Reach avg: 65%
Undercut Banks:	5%	Range: 33 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	132	22.7
Volume (m <sup>3</sup> ):	114	19.7
Key pieces (>=12m x 0.60m):	1	0.2

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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	5	0.7	0.05	4	0	0	0	30	70	0	0
CULVERT CROSSING	1	6	1.6	0.10	10	0	27	27	36	9	0	0
POOL-DAMMED	1	20	3.5	0.60	68	0	10	10	70	10	0	0
POOL-LATERAL SCOUR	9	105	3.5	0.48	384	0	9	24	48	18	1	0
RIFFLE	15	451	3.1	0.13	1,455	0	3	11	62	25	0	0
STEP/LOG	7	11	3.9	0.14	42	0	23	11	46	20	0	0
<b>Total:</b>	<b>34</b>	<b>597</b>	<b>3.3</b>	<b>0.23</b>	<b>1,962</b>	<b>0</b>	<b>Avg: 9</b>	<b>15</b>	<b>53</b>	<b>23</b>	<b>0</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	20	3.5	0.60	68	3.48%	0	0.0
Scour Pools	9	105	3.5	0.48	384	19.55%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	15	451	3.1	0.13	1,455	74.19%	0	0.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	1	5	0.7	0.05	4	0.18%	0	0.0
Step/Falls	7	11	3.9	0.14	42	2.12%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	1	6	1.6	0.10	10	0.49%	0	0.0

OREGON DEPT OF FISH AND WILDLIFE  
HABITAT INVENTORY

SQUARE CREEK  
GCG: 1-NC SITE ID: 256

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Survey Date: 3/24/2011

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T05N-R10W-S04NE

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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:	10	16.8	17.2
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	7	11.7	12.0
Pool frequency (channel widths/pool):	16.3		
Residual pool depth (avg):	0.40		

Survey Date 3/24/2011

RIPARIAN ZONE  
VEGETATION SUMMARY

REACH 1

Report Date: 9/14/2011

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

Total hardwoods/1000	406
Total conifers/1000 ft	264
Total conifers >20" dbh/1000 f	0
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	1.0	0.3	0.0	0.0	0.7	0.0	1.7	0.3
15-30cm	0.7	0.7	0.0	0.0	1.3	2.3	2.0	3.0
30-50cm	0.0	2.3	0.0	0.0	0.7	0.7	0.7	3.0
50-90cm	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	1.7	3.7	0.0	0.0	2.7	3.0	1.4	2.2

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	19		12		18	
Shrub cover	48		62		60	
Grass/forb cover	43		23		32	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	17		50		83	
High terrace	83		33		17	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		17		0	
Riprap	0		0		0	
Surface slope (%)	8		26		38	

**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	264
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

**Average number of trees in a 5-m wide band**

<u>Diameter</u> <u>class (cm)</u>	<u>Zones 1-3</u> <u>0-30 meters</u>	
	<u>Conifer</u>	<u>Hardwood</u>
3-15cm	1.7	0.3
15-30cm	2.0	3.0
30-50cm	0.7	3.0
50-90cm	0.0	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		
9	LF	1	HT	0	10	20	80								
								Conifer							
								Hardwood	1		1				
9	LF	2	HT	0	10	90	10	Conifer							NO TREES
								Hardwood							
9	LF	3	HT	0	25	90	10	Conifer				1			
								Hardwood		3					
9	RT	1	HS	50	60	10	40	Conifer			2				
								Hardwood				2			
9	RT	2	RB	10	10	0	10	Conifer							90% GRAVEL
								Hardwood							
9	RT	3	HS	40	30	30	20	Conifer			3	1			50% DOWNED TIMBER
								Hardwood							
13	LF	1	HT	0	5	70	30	Conifer	3						
								Hardwood			1				
13	LF	2	HT	0	5	90	10	Conifer							NO TREES
								Hardwood							
13	LF	3	HS	40	5	100	0	Conifer							NO TREES
								Hardwood							
13	RT	1	HT	0	10	80	20	Conifer							
								Hardwood				1			
13	RT	2	HS	70	15	90	10	Conifer							NO TREES
								Hardwood							
13	RT	3	HS	70	20	80	20	Conifer			1				
								Hardwood				2			
26	LF	1	HT	0	5	60	40	Conifer							NO TREES
								Hardwood							
26	LF	2	HS	35	5	30	70	Conifer							NO TREES
								Hardwood							
26	LF	3	HS	35	5	30	70	Conifer							NO TREES
								Hardwood							
26	RT	1	HT	0	25	50	50	Conifer							
								Hardwood			1	3	1		
26	RT	2	HS	40	25	70	30	Conifer							NO TREES
								Hardwood							
26	RT	3	HS	40	20	30	70	Conifer	2						
								Hardwood			4				

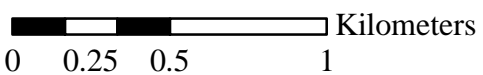
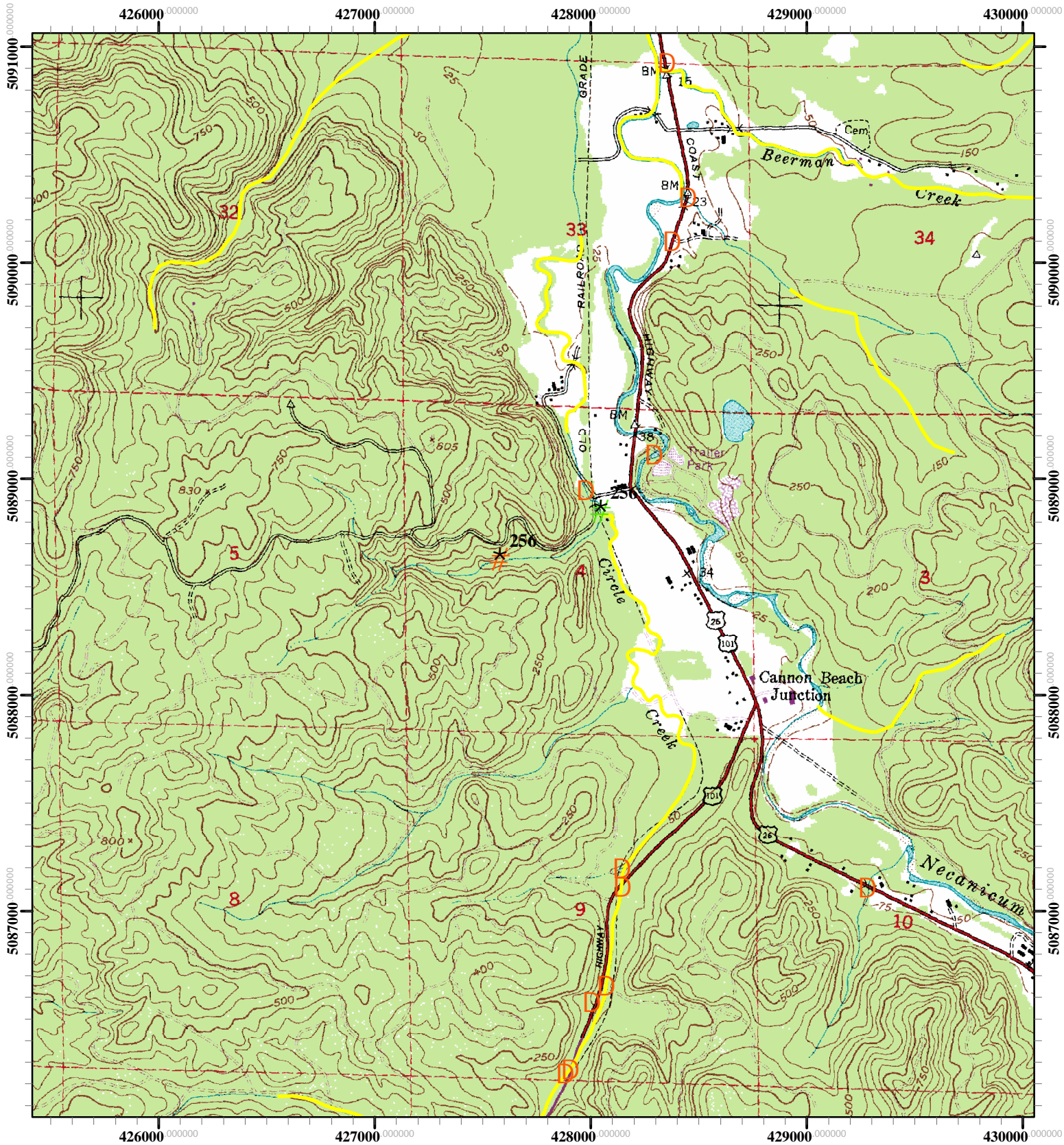
COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 256 STREAM: SQUARE CREEK





REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	1	RI	00	10		START AT CONFLUENCE WITH CIRCLE CREEK.
1	3	RI	00	48.5		BC= 428008E 5088824N
1	5	CC	00	67	CC	DOUBLE BARREL CV 428013E 5088813N. METAL PIPES
1	17	DP	00	319		BEAVER ACTIVITY
1	28	RI	01	478	/TJ	TJ CONTRIBUTES ~40%







Restoration Site ID: 256  
 Stream: Square Creek  
 T05N- R10W - S04  
 USGS Map: Tillamook Head  
 Basin: Necanicum

-  Restoration Start Point
-  Restoration End Point
-  Potential Barrier
-  Spawning Survey Segments

