

ODFW AQUATIC INVENTORY PROJECT
OREGON PLAN FOR SALMON & WATERSHEDS
STREAM RESTORATION HABITAT REPORT

STREAM: Square Creek (N-256)
BASIN: Necanicum River
SURVEY TYPE: Post-Tx
DATE: September 9, 2006
SURVEY CREW: Gordon Rose, Ben Walczak
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 1.8 km²
USGS MAPS: Tillamook Head
ECOREGION: Coast Range Sitka Spruce

GENERAL DESCRIPTION:

The Square Creek habitat survey extended 594 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 4.1 (range: 1.5-10.0). Land use for the reach was timber harvest and second growth (15-30 cm dbh) trees. The average unit gradient was 2.9 percent. Riffles (37%) and rapids (21%) dominated stream habitat. Gravel (52%) and cobble (32%) dominated stream substrate. Wood volume was moderate at 29.6 m³/100m.

COMMENTS:

There were no potential barriers to upstream fish migration in the surveyed length.

The crew noted several habitat structures during the survey.

REACH 1

T06N-R10W-S02SE

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	4.1	VWI Range:	1.5 - 10

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 Channel	594	942	6
Secondary Channel	22	22	1
Off-Channel Units	19	12	2

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 3
Width: 1.7	Width: 5.1	6.5 (5.3 - 9.4)	6.8 (6.3 - 7.3)
Depth: 0.05	Height: 0.1	0.3 (0.2 - 0.3)	0.6 (0.4 - 0.8)

W:D ratio: 37.0
 Stream Flow Type: LF
 Average Unit Gradient: 2.9%
 Water temperature (°C): 14.0 - 14.0

Entrenchment (ACW:FPW ratio): 1.3
 Habitat Units/100m (total channel length): 4.9
 Habitat Units/100m (primary channel length): 5.2

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	TH	ST
Riparian Vegetation:	S	M15

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	14%	Reach avg: 74%
Undercut Banks:	6%	Range: 56 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	172	29.0
Volume (m ³):	176	29.6
Key pieces (>=12m x 0.60m):	13	2.2

OREGON DEPT OF FISH AND WILDLIFE

SQUARE CREEK POST-TX (1-NC, 256)

HABITAT INVENTORY

Report Date: 3/5/2007

Survey Date:

9/6/2006

REACH 1		T06N-R10W-S02SE					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
CULVERT CROSSING	1	9	0.9	0.02	8	1	0	10	50	20	20	0
DRY CHANNEL	1	22	1.0	0.00	22	0	20	20	50	10	0	0
POOL-LATERAL SCOUR	3	49	3.0	0.30	139	0	8	17	57	13	0	5
PUDDLED UNIT	8	154	1.5	0.00	227	1	9	13	48	31	0	0
RAPID/BOULDERS	6	157	1.4	0.03	210	72	2	3	44	40	11	1
RIFFLE	11	243	1.5	0.03	358	7	2	3	59	35	1	0
STEP/LOG	1	2	6.0	0.01	12	0	0	0	50	50	0	0
Total:	31	635	1.7	0.05	975	81	Avg: 5	7	52	32	3	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	0	0			0	0.00%	0	0.0	
Scour Pools	3	49	3.0	0.30	139	14.20%	0	0.0	
Glides	0	0			0	0.00%	0	0.0	
Riffles	11	243	1.5	0.03	358	36.73%	7	2.0	
Rapids	6	157	1.4	0.03	210	21.48%	72	34.4	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	1	2	6.0	0.01	12	1.23%	0	0.0	
Dry	9	176	1.5	0.00	249	25.53%	1	0.4	
Culverts	1	9	0.9	0.02	8	0.83%	1	12.3	

POOL SUMMARY			
	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	3	4.7	5.1
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	1	1.6	1.7
Pool frequency (channel widths/pool):	41.8		
Residual pool depth (avg):	0.27		

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

SQUARE CREEK POST-TX
GCG: 1-NC SITE ID: 256

Survey Date 9/6/2006
Report Date: 3/5/2007

RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000	264
Total conifers/1000 ft	345
Total conifers >20" dbh/1000 ft	0
Total conifers >35" dbh/1000 ft	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	1.3	0.0	2.3	0.3
15-30cm	1.7	1.0	0.3	0.0	0.7	1.0	2.7	2.0
30-50cm	0.3	1.3	0.0	0.3	0.3	0.3	0.7	2.0
50-90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	3.0	2.7	0.3	0.3	2.3	1.3	1.9	1.4

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	46		49		58	
Shrub cover	68		58		52	
Grass/forb cover	31		29		31	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	33		67		83	
High terrace	50		17		17	
Low terrace	17		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 (%)	15		32		40	

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	264
Total conifers/1000 ft	345
Total conifers >20" dbh/1000 ft	0
Total conifers >35" dbh/1000 ft	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	2.3	0.3
15-30cm	2.7	2.0
30-50cm	0.7	2.0
50-90cm	0.0	0.0
>90cm	0.0	0.0

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

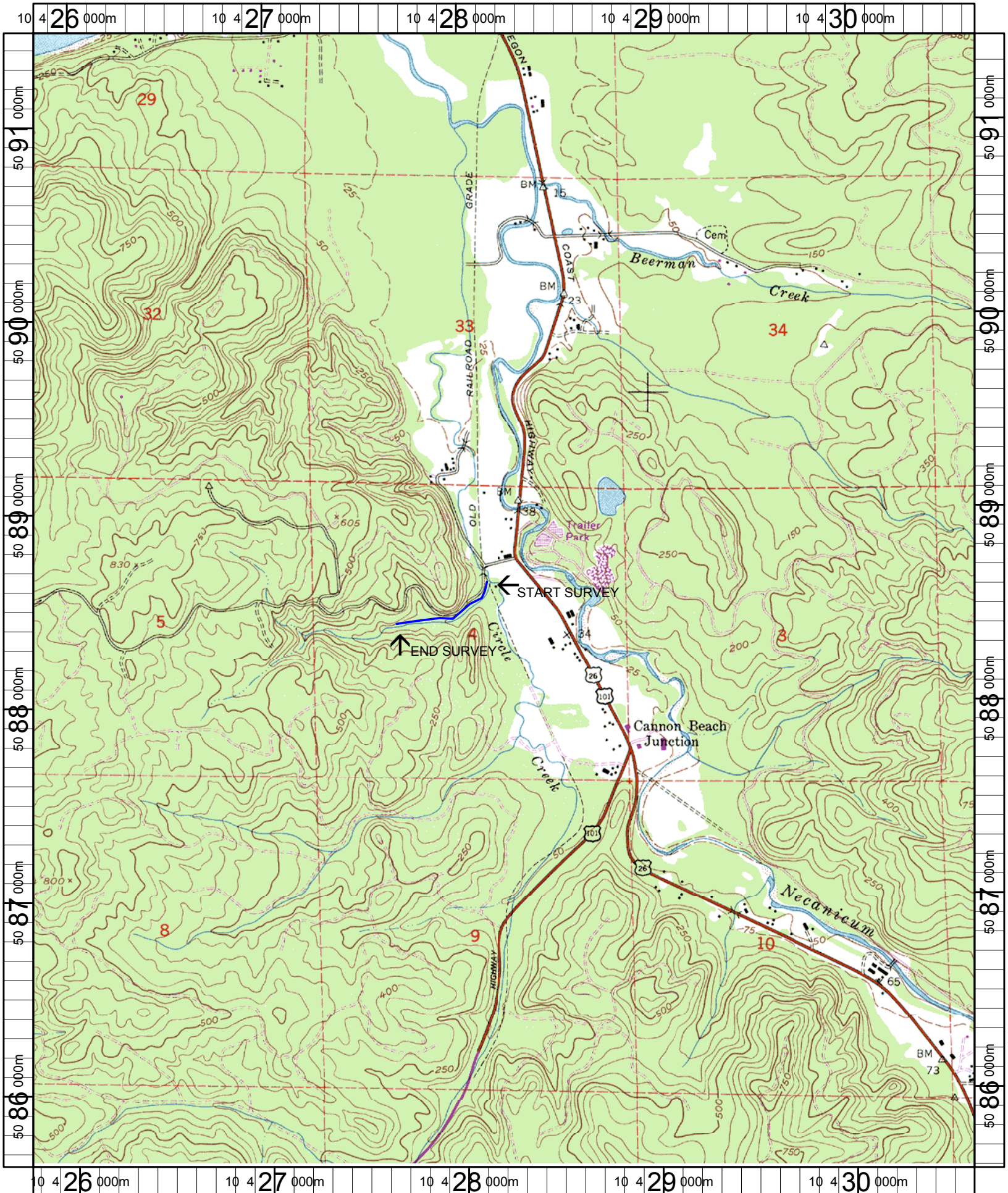
Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
9	RT	2	RB	0	70	5	40	Conifer							
								Hardwood							
9	LF	2	HT	0	85	70	30	Conifer							NO AMPHIBIANS
								Hardwood							
9	RT	1	HS	80	85	20	70	Conifer	3	2					
								Hardwood		1	1				
9	RT	3	HS	40	85	15	60	Conifer	1		1				
								Hardwood							
9	LF	3	HT	0	85	70	30	Conifer							
								Hardwood		2	1				
9	LF	1	HT	0	85	70	30	Conifer							POOR GPS COVERAGE
								Hardwood		2	1				
15	LF	1	HT	0	20	90	10	Conifer							UTM 0427981-5088451 (2D)
								Hardwood	1						
15	RT	1	HS	10	35	50	50	Conifer			1				SLASH PILE ALL 3 ZONES
								Hardwood							
15	RT	2	HS	25	30	50	50	Conifer							
								Hardwood							
15	RT	3	HS	45	45	50	50	Conifer							
								Hardwood							
15	LF	3	HS	45	30	30	20	Conifer			1				CLEARCUT
								Hardwood							
15	LF	2	HS	50	30	60	30	Conifer							
								Hardwood							
20	LF	2	HS	45	20	95	5	Conifer							1 RED-LEGGED FROG
								Hardwood							
20	LF	1	HT	0	20	95	5	Conifer			1				UTM 0427905-5088422 (3D)
								Hardwood							
20	LF	3	HS	40	20	95	5	Conifer							
								Hardwood							
20	RT	2	HS	70	60	70	20	Conifer			1				
								Hardwood				1			
20	RT	3	HS	70	85	50	20	Conifer	3	1					
								Hardwood		1					
20	RT	1	LT	0	30	80	20	Conifer			1	1			
								Hardwood				2			

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: 1-NC SITE ID: 256 SQUARE CREEK POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	PD	00	20		START AT CONFLUENCE	
3	PD	00	41	BC, HS		DRIVEWAY
4	LP	00	61.5	HS		
5	CC	00	70.5	CC	2 ROUND .90M, POOL COND.	
7	RI	00	98.5	HS		UNDERCUT=COVERED BY
8	RI	00	123.5	/SS		
9	RI	00	148.5		RIPARIAN #1	
10	LP	00	166	WL		BDRK=HARDPAN, RED-LE
11	RB	00	187			BDRK=HRDPN, UNDERCU
13	RI	00	227	HS		
14	RB	00	251.5	HS		
15	RI	00	276.5		RIPARIAN #2	T=14.0C AT 13:00
16	PD	00	301.5	WL		SLASH PILE IN CREEK, FR
17	PD	00	326.5			SLASH PILE IN CREEK
18	PD	00	351.5	HS		SLASH PILE IN CREEK
19	RI	00	376.5	SS/, HS		
20	RI	00	401.5	HS	RIPARIAN #3	
25	RB	01	530.5	/TJ		
29	SL	00	564.5		H=1.20M	
30	PD	01	593.5	SS/	END SURVEY AT TOP OF UN	



Name: TILLAMOOK HEAD
 Date: 6/9/2005
 Scale: 1 inch equals 2000 feet

Location: 10 428212 E 5088536 N
 Caption: SQUARE CREEK RESTORATION SITE - NECANICUM BASIN