

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

STREAM: Square Creek (N-256)
BASIN: Necanicum River
SURVEY TYPE: Pre-Tx
DATE: August 3, 2005
SURVEY CREW: Ben Walczak, Scott Young
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 533 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 3.6 (range: 1.5-5.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 3.1 percent. Rapids (52%) and riffles (33%) dominated stream habitat. Cobble (44%) and gravel (43%) dominated stream substrate. Wood volume was very low at 6.1 m³/100m.

COMMENTS:

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

REACH 1

T05N-R10W-S04NW

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	3.6	VWI Range:	1.5 - 5

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 Channel	533	1,106	0
Secondary Channel	55	32	2
Off-Channel Units	11	6	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 6	<u>First Terrace</u> n = 4
Width: 2.1	Width: 5.1	6.6 (1.75 - 8.8)	10.1 (7.8 - 13.2)
Depth: 0.20	Height: 0.2	0.4 (0.2 - 0.5)	0.8 (0.55 - 1)

W:D ratio: 23.5
 Stream Flow Type: MF
 Average Unit Gradient: 3.1%
 Water temperature (°C): 8.0 - 8.0

Entrenchment (ACW:FPW ratio): 1.3
 Habitat Units/100m (total channel length): 6.2
 Habitat Units/100m (primary channel length): 6.9

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	
Riparian Vegetation:	D15	

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	2%	Reach avg: 80%
Undercut Banks:	0%	Range: 44 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	64	12.0
Volume (m ³):	32	6.1
Key pieces (>=12m x 0.60m):	1	0.2

OREGON DEPT OF FISH AND WILDLIFE

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

HABITAT INVENTORY

Report Date: 4/26/2006

Survey Date:

8/3/2005

REACH 1		T05N-R10W-S04NW					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	2	18	1.0	0.10	18	0	0	0	20	80	0	0
POOL-ISOLATED	1	1	1.0	0.10	1	0	40	60	0	0	0	0
POOL-LATERAL SCOUR	8	41	2.4	0.43	99	0	11	12	32	42	0	3
POOL-PLUNGE	1	5	3.5	0.70	18	0	5	21	37	37	0	0
PUDDLED UNIT	2	46	0.5	0.10	23	0	0	20	70	10	0	0
RAPID/BOULDERS	13	294	2.0	0.11	590	0	0	5	43	52	0	0
RIFFLE	8	192	2.0	0.14	383	0	0	7	57	37	0	0
STEP/COBBLE	1	3	4.0	0.10	10	0	0	5	32	63	0	0
STEP/LOG	1	1	4.0	0.10	2	0	0	5	74	21	0	0
Total:	37	599	2.1	0.20	1,144	0	Avg: 4	9	43	44	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	1	1.0	0.10	1	0.09%	0	0.0	
Scour Pools	9	46	2.5	0.46	116	10.17%	0	0.0	
Glides	0	0			0	0.00%	0	0.0	
Riffles	8	192	2.0	0.14	383	33.49%	0	0.0	
Rapids	13	294	2.0	0.11	590	51.62%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	2	3	4.0	0.10	12	1.05%	0	0.0	
Dry	2	46	0.5	0.10	23	2.01%	0	0.0	
Culverts	2	18	1.0	0.10	18	1.57%	0	0.0	

POOL SUMMARY			
	Total of all Channel Lengths		Primary Channel Length
	<u>Total</u>	<u># / Km</u>	<u># / Km</u>
All Pools:	10	16.7	18.8
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	1	1.7	1.9
Pool frequency (channel widths/pool):	11.8		
Residual pool depth (avg):	0.36		

Survey Date 8/3/2005
Report Date: 4/26/2006

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

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

Total hardwoods/1000	244
Total conifers/1000 ft	264
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	0.7	0.7	0.0	0.0	0.0	0.0	0.7	0.7
15-30cm	0.7	1.3	1.3	0.3	1.0	0.0	3.0	1.7
30-50cm	0.0	0.7	0.3	0.7	0.3	0.3	0.7	1.7
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	1.3	2.7	1.7	1.0	1.3	0.3	1.4	1.3

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	71		71		71	
Shrub cover	43		43		33	
Grass/forb cover	58		58		68	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	67		67		67	
High terrace	33		33		33	
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 (%)	24		23		28	

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	244
Total conifers/1000 ft	264
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	0.7	0.7
15-30cm	3.0	1.7
30-50cm	0.7	1.7
50-90cm	0.0	0.0
>90cm	0.0	0.0

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

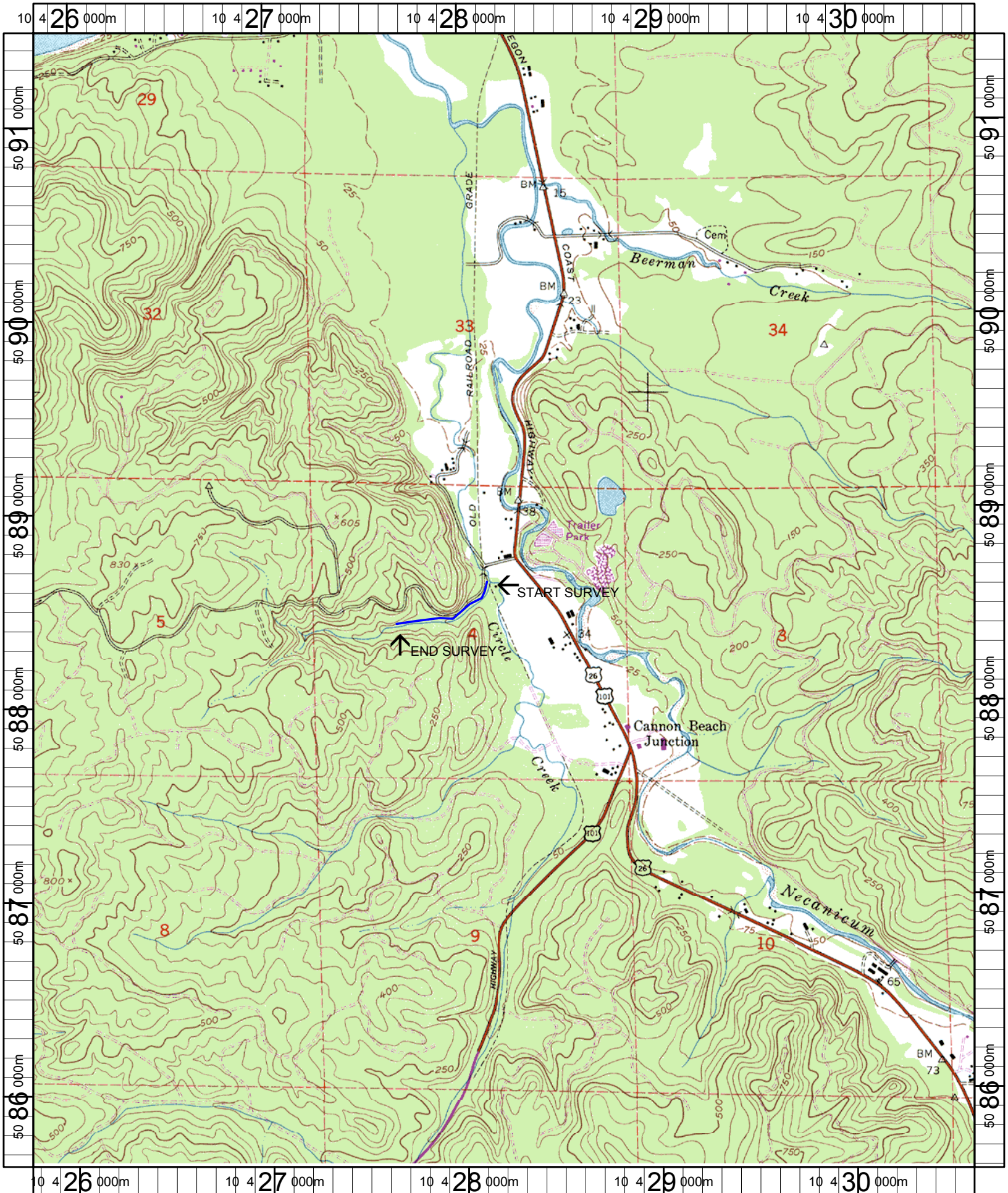
Unit	Side	Zone	Surface	Slope	Cover (percent)			Diameter class (cm)					Notes	
					Canopy	Shrub	Grass	3-15	15-30	30-50	50-90	>90		
7	RT	2	HS	45	80	5	95	Conifer			1			
								Hardwood						
7	LF	2	HT	0	70	60	40	Conifer		2				
								Hardwood		1				
7	RT	1	HS	75	80	5	95	Conifer		1				
								Hardwood		1	1			
7	LF	1	HT	0	70	60	40	Conifer						3D
								Hardwood	1	2				0428035/50885 69
7	LF	3	HT	0	70	60	40	Conifer						
								Hardwood						
7	RT	3	HS	45	80	5	95	Conifer				1		
								Hardwood						
16	LF	2	HS	40	60	95	5	Conifer						
								Hardwood				1		
16	LF	3	HS	55	60	80	20	Conifer						
								Hardwood				1		
16	RT	3	HS	30	60	40	60	Conifer		2				
								Hardwood						
16	RT	1	HS	15	65	80	20	Conifer						
								Hardwood	1					
16	RT	2	HS	30	60	80	20	Conifer						
								Hardwood						
16	LF	1	HS	40	60	95	5	Conifer						3D
								Hardwood						0427574/50884 66
24	LF	1	HT	0	75	10	90	Conifer			1			3D
								Hardwood			1			0427872/50884 20
24	LF	3	HT	0	75	5	95	Conifer						
								Hardwood						
24	RT	1	HS	15	75	5	95	Conifer		2				
								Hardwood				1		
24	RT	2	HS	25	80	5	95	Conifer			2			
								Hardwood						
24	RT	3	HS	35	80	5	95	Conifer				1		
								Hardwood						
24	LF	2	HT	0	75	10	90	Conifer						
								Hardwood				1		

Comment Summary

Restoration Monitoring Sites 2005

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

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
2	RI	00	41	BC		
4	CC	01	55	CC		
5	CC	02	55	CC		
8	RI	00	127.8		RIPARIAN 1	
10	SL	00	133.3		H=0.2M	
16	RB	01	267		RIPARIAN 2	
20	RB	00	338.5	SS/		
29	RB	01	474	/TJ		
35	SC	00	507.1		H=0.6M	



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