

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

STREAM: Elk Creek (N-316)
BASIN: Nehalem River
SURVEY TYPE: Pre-Tx
DATE: July 11, 2005
SURVEY CREW: Ben Walczak, Scott Young
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 8.8 km²
USGS MAPS: Bacona
ECOREGION: Coast Range Astoria Willapa

GENERAL DESCRIPTION:

The Elk Creek habitat survey extended 522 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 7.1 (range: 3.5-10.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 0.9 percent. Scour pools (55%) and glides (24%) dominated stream habitat. Gravel (51%) and sand (29%) dominated stream substrate. Wood volume was very low at 6.7 m³/100m.

COMMENTS:

There were two potential barriers to upstream fish migration in the surveyed length. The first was a 0.5 m high step to a concrete box culvert at units 8 and 9, while the second was a 1.0 m high step to a poorly designed culvert at units 19 and 20.

REACH 1

T04N-R04W-S36SW

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	7.1	VWI Range:	3.5 - 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	522	1,477	0
Secondary Channel	0	0	0
Off-Channel Units	3	3	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 4	<u>First Terrace</u> n = 4
Width: 2.7	Width: 3.1	3.6 (2.5 - 5.2)	4.2 (3.2 - 5.7)
Depth: 0.51	Height: 0.4	0.9 (0.8 - 1)	1.7 (1.4 - 2)

W:D ratio: 7.5
 Stream Flow Type: MF
 Average Unit Gradient: 0.9%
 Water temperature (°C): -

Entrenchment (ACW:FPW ratio): 1.2
 Habitat Units/100m (total channel length): 5.3
 Habitat Units/100m (primary channel length): 5.4

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	
Riparian Vegetation:	M30	

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	5%	Reach avg: 60%
Undercut Banks:	26%	Range: 28 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	45	8.6
Volume (m ³):	35	6.7
Key pieces (>=12m x 0.60m):	1	0.2

OREGON DEPT OF FISH AND WILDLIFE

ELK CREEK PRE-TX (1-NC, 316)

HABITAT INVENTORY

Report Date: 4/26/2006

Survey Date:

7/11/2005

REACH 1		T04N-R04W-S36SW					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	40	1.5	0.03	65	0	0	0	50	50	0	0
GLIDE	6	150	2.3	0.63	350	0	20	33	47	0	0	0
POOL-BACKWATER	1	3	1.0	0.25	3	0	20	30	50	0	0	0
POOL-BEAVER DAM	1	60	3.0	0.90	180	0	20	40	40	0	0	0
POOL-LATERAL SCOUR	9	181	2.8	0.73	529	0	19	31	50	0	0	0
POOL-PLUNGE	2	53	5.8	1.10	286	0	18	30	53	0	0	0
RIFFLE	3	33	1.5	0.10	51	0	10	30	60	0	0	0
STEP/BEAVER DAM	1	2	4.0	0.05	8	0	20	40	40	0	0	0
STEP/COBBLE	1	2	3.0	0.05	6	0	10	20	70	0	0	0
STEP/STRUCTURE	2	1	3.3	0.05	3	0	15	25	50	10	0	0
Total:	28	525	2.7	0.51	1,480	0	Avg: 16	29	51	4	0	0

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	2	63	2.0	0.58	183	12.36%	0	0.0	
Scour Pools	11	234	3.3	0.80	815	55.03%	0	0.0	
Glides	6	150	2.3	0.63	350	23.64%	0	0.0	
Riffles	3	33	1.5	0.10	51	3.41%	0	0.0	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	4	5	3.4	0.05	17	1.17%	0	0.0	
Dry	0	0			0	0.00%	0	0.0	
Culverts	2	40	1.5	0.03	65	4.39%	0	0.0	

POOL SUMMARY			
	<u>Total</u>	Total of all Channel Lengths	Primary Channel Length
		<u># / Km</u>	<u># / Km</u>
All Pools:	13	24.8	24.9
Pools >=1m deep:	1	1.9	1.9
Complex pools (LWD pieces>=3):	5	9.5	9.6
Pool frequency (channel widths/pool):	13.0		
Residual pool depth (avg):	0.72		

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

ELK CREEK PRE-TX
GCG: 1-NC SITE ID: 316

Survey Date 7/11/2005
Report Date: 4/26/2006

RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000	284
Total conifers/1000 ft	142
Total conifers >20" dbh/1000 ft	20
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	0.0	0.7	0.0	0.3	0.0	0.7	0.0	1.7
15-30cm	0.0	0.3	0.0	0.7	0.0	0.3	0.0	1.3
30-50cm	0.0	0.7	1.3	0.3	0.7	0.7	2.0	1.7
50-90cm	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.3	1.7	1.3	1.3	0.7	1.7	0.8	1.6

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Canopy closure	55	57	60
Shrub cover	13	15	17
Grass/forb cover	87	85	83

Predominant landform in each zone

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Hillslope	17	33	33
High terrace	83	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 (%)	6	7	8

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	284
Total conifers/1000 ft	142
Total conifers >20" dbh/1000 ft	20
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	0.0	1.7
15-30cm	0.0	1.3
30-50cm	2.0	1.7
50-90cm	0.3	0.0
>90cm	0.0	0.0

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

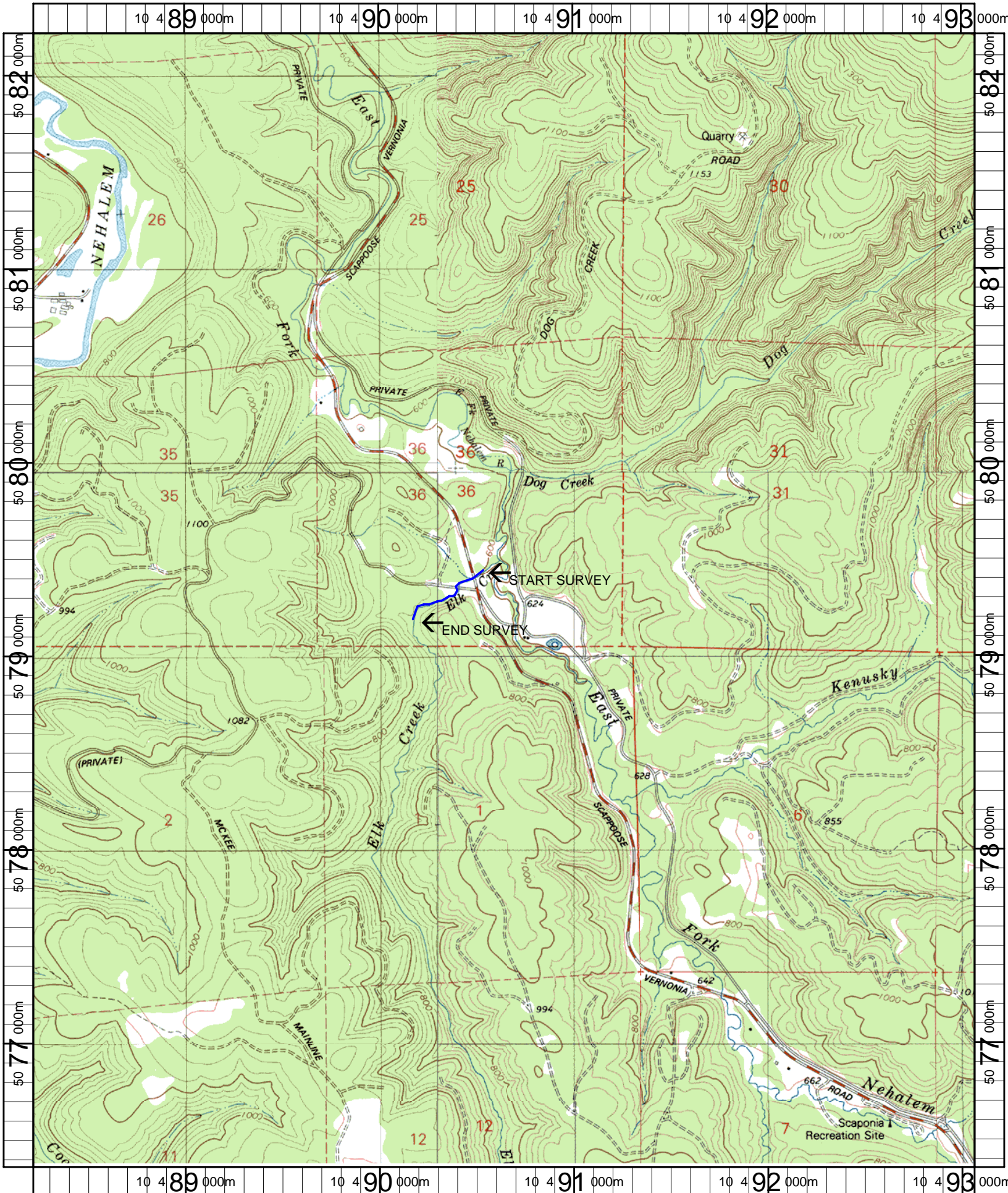
Unit	Side	Zone	Surface	Slope	Cover (percent)			Diameter class (cm)					Notes	
					Canopy	Shrub	Grass	3-15	15-30	30-50	50-90	>90		
10	LF	1	HT	0	70	10	90	Conifer				1		3D 0490441/50794
								Hardwood		1				21
10	LF	2	HT	0	70	10	90	Conifer						
								Hardwood		1				
10	LF	3	HT	0	70	10	90	Conifer						
								Hardwood			1			
10	RT	1	HT	0	70	10	90	Conifer						
								Hardwood						
10	RT	2	HT	0	70	10	90	Conifer						
								Hardwood			1			
10	RT	3	HT	0	70	10	90	Conifer						
								Hardwood		1	1			
18	RT	1	HT	0	70	20	80	Conifer						
								Hardwood	2					
18	RT	2	HT	0	60	20	80	Conifer				1		
								Hardwood						
18	LF	2	HT	0	70	10	90	Conifer				1		
								Hardwood		1				
18	LF	1	HT	0	70	10	90	Conifer						2D
								Hardwood			2			0490396/50793
														53
18	LF	3	HT	0	70	10	90	Conifer				1		
								Hardwood						
18	RT	3	HT	0	60	30	70	Conifer				1		
								Hardwood						
24	RT	3	HS	20	50	20	80	Conifer						
								Hardwood	2					
24	LF	1	HS	37	40	20	80	Conifer						3D
								Hardwood						0490324/50792
														82
24	LF	2	HS	30	40	20	80	Conifer				1		
								Hardwood						
24	LF	3	HS	30	40	20	80	Conifer						
								Hardwood						
24	RT	1	HT	0	10	10	90	Conifer						
								Hardwood						
24	RT	2	HS	10	30	20	80	Conifer				1		
								Hardwood	1					

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: 1-NC SITE ID: 316 ELK CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RI	00	12	WL		ELK XING
5	LP	00	48			COHO FRY
8	SS	00	72.5	PA	H=0.5M	
9	CC	00	97.5	CC, PA		CONCRETE BOX CULVERT 2
10	LP	00	134.5			SCAPPOOSE VERNONIA RD,
13	LP	00	214.5	/SS		
17	SC	00	254.5		STEP HEIGHT=0.4M	
18	PP	00	294.5			RIPARIAN 2
19	SS	00	295	PA	HEIGHT=1M	
20	CC	00	310	CC, PA		2.2M ROUND GALVANIZED,
24	GL	00	410			RIPARIAN 3
25	SD	00	412	BD	HEIGHT 0.7M	
26	BP	00	472	BV		
28	GL	00	522	/SS	END SURVEY	3D 0490250/5079263



Name: BACONA
 Date: 5/1/2006
 Scale: 1 inch equals 2000 feet

Location: 10 490642 E 5079288 N
 Caption: ELK CREEK RESTORATION SITE - NEHALEM BASIN