

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

STREAM: Beerman Creek (NC-6)
 BASIN: Necanicum River
 SURVEY TYPE: Pre- and Post-Tx
 DATE: October 22, 2003
 REPORT PREPARED BY: Paul Jacobsen

The Beerman Creek restoration project extended approximately 1,000 meters, with about 500 meters of the project being monitored for pre- and post-treatment conditions. Fourteen habitat structures were constructed and 63 key pieces (according to the ODF Large Wood Placement Guide) were placed. The intended goals of the project included increasing stream complexity, improved interaction with the floodplain, gravel retention, increased pool area, and enhanced salmonids spawning and rearing habitat. In the first seasons after restoration activities, large wood pieces, volume, and key pieces are increased as expected. In addition, pool area is slightly higher, pool frequency has seen improvement, and there are more complex pools.

	ODFW	Benchmark	Winter	Summer	Winter	Summer	
Habitat Variable	Desirable	Undesirable	Pre	Pre	Post	Post	
Reach #			2/22/00	6/22/00	2/6/01	7/4/01	
Pool Area	>35%	<10	18.1	16.4	22.4	17.8	
Pool Frequency	5-8	>20	7.9	8.8	5.6	7.4	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.48	.55	.52	.41	
Complex Pools/km	>2.5	<1.0	1.9	0	10.1	6.5	
Width/Depth Ratio	<15	>30	15.1	13.3	13.9	13.3	
Riffle Gravel % Area	>35	<15%	49	18	37	22	
Riffle Fines % Area	<12	>25	14	14	24	40	
Shade %	>70	< 60		98		99	
LWD - pieces/100m	>20	<10	6.8	4.5	19.1	19.6	
LWD - Volume/100m	>30	<20	9.2	4.0	39.9	36.3	
LWD - Key pieces/ 100m	>3	<1	0	0	4.0	1.8	
Riparian Conifers>20" dbh/1000ft	>300	<150		244		224	
Riparian Conifers>35" dbh/1000ft	>200	<75		20		0	

COMMENTS:

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

The crew noted evidence of beaver activity during the survey. Fourteen habitat structures were also recorded.

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

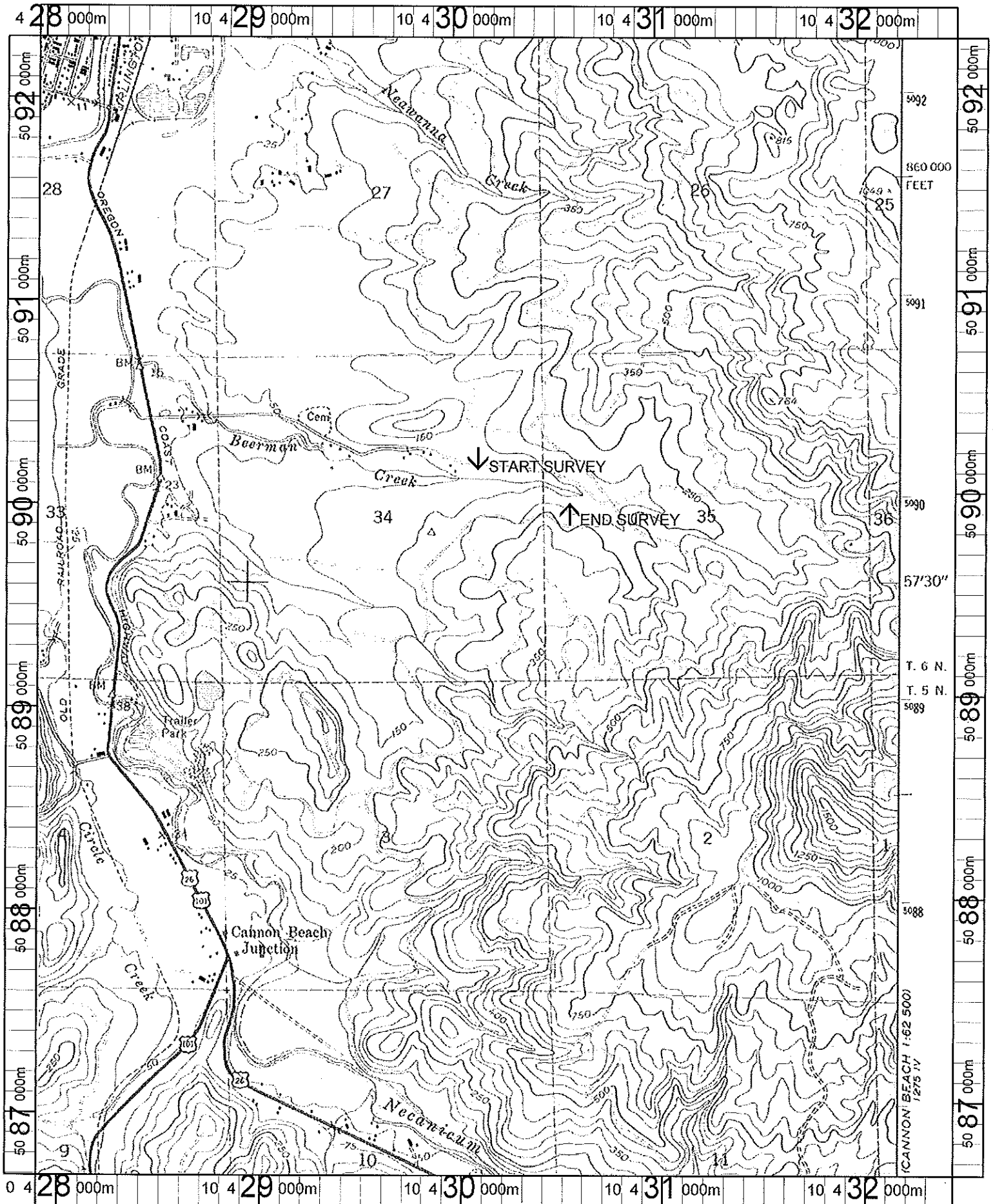
STREAM: Beerman Creek (NC-6)
BASIN: Necanicum River
SURVEY TYPE: Post-Tx
DATE: July 4, 2001
SURVEY CREW: Sean Allen, Rachel Werner
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 2.6 km²
USGS MAPS: Tillamook Head
ECOREGION: Coast Range Sitka Spruce

GENERAL DESCRIPTION:

The Beerman Creek habitat survey extended 439 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 13.6 (range: 5.0 – 20.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 2.7 percent. Rapids (49%) and riffles (32%) dominated stream habitat. Cobble (40%) and gravel (25%) dominated stream substrate. Wood volume was high at 36.3 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.



Name: TILLAMOOK HEAD
 Date: 1/10/2002
 Scale: 1 inch equals 2000 feet

Location: 10 430198 E 5089470 N
 Caption: BEERMAN CREEK RESTORATION SITE -
 NECANICUM BASIN

REACH 1

T6N-R10W-S34NE

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 avg: 13.6 range: 5.0-20.0

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	439	2,231	0
Secondary	23	16	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u>	<u>First Terrace</u>
Width 4.8	Width 7.8	19.4	21.2
Depth 0.24	Height 0.6	1.3	1.5
	W:D ratio 13.3	Entrenchment 2.3	

Stream Flow Type: LF Water Temp: 12.0-12.0°C
Avg. Unit Gradient: 2.7% Habitat Units/100m: 6.3

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	
Riparian Vegetation:	C30	C15

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	13%	Reach avg: 99%
Undercut Banks	5%	Range: 78-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces (≥3m x 0.15m)	86	19.6
Volume (m ³)	159	36.3
Key pieces (≥10m x 0.6m)	8	1.8

REACH 1

T6N-R10W-S34NE

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	Cbbl	Bldr	Bdrk
POOL-DAMMED	1	17	5.2	0.30	88	0	10	25	20	30	15	0
POOL-LATERAL SCOUR	5	53	4.8	0.52	247	1	2	13	26	37	22	0
POOL-PLUNGE	2	11	5.4	0.70	64	0	0	13	30	36	21	0
RAPID/BOULDERS	11	212	5.2	0.13	1,094	15	2	7	25	42	22	1
RIFFLE	3	74	3.4	0.12	327	3	10	30	22	22	15	2
RIFFLE W/ POCKETS	3	87	4.3	0.18	384	9	2	8	30	38	18	3
STEP/COBBLE	1	2	7.0	0.10	11	0	0	0	20	55	25	0
STEP/LOG	3	7	4.3	0.04	32	0	5	12	20	57	7	0
Total:	29	462	4.8	0.24	2,248	28	Avg: 3	12	25	40	19	1

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m ²)	Percent	Large Boulders Number	Boulders #/100m ²
Dammed & BW Pools	1	17	5.2	0.30	88	3.93	0	0.0
Scour Pools	7	64	5.0	0.57	311	13.85	1	0.3
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	6	161	3.9	0.15	711	31.61	12	1.7
Rapids	11	212	5.2	0.13	1,094	48.67	15	1.4
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	4	8	5.0	0.06	44	1.94	0	0.0
Dry	0	0	-	-	0	0.00	0	0.0

POOL SUMMARY

	<u>Total</u>	<u>#/Km</u>
All Pools	8	17.3
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	3	6.5
Pool Frequency (channel widths/pool):	7.4	
Residual pool depth (avg)	0.41m	

STREAM SUMMARY

BEERMAN CREEK POST-TX (#6)

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Substrate Percent Wetted Area						Total Large Boulder
					S/O	Sand	Grvl	Cbbl	Bldr	Bdrk	
29	462	4.8	0.24	2,248	3	12	25	40	19	1	28

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	311	13.8
Backwater Pools	88	3.9
Glide	0	0.0
Riffle	711	31.6
Rapid	1,094	48.7
Cascade	0	0.0
Step	44	1.9
Dry	0	0.0

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	284
Total conifers/1000 ft	1,097
Total conifers >20" dbh/1000 ft	224
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	0.0	0.3	0.0	0.3	0.3	1.7	0.3
15-30cm	1.0	0.3	2.3	0.0	2.3	2.0	5.7	2.3
30-50cm	2.3	1.0	2.7	0.0	2.0	1.0	7.0	2.0
50-90cm	0.3	0.0	1.7	0.0	1.7	0.0	3.7	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m ²	4.7	1.3	7.0	0.0	6.3	3.3	6.0	1.6

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	80		82		82	
Shrub cover	0		0		0	
Grass/forb cover	73		53		52	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
Hillslope	0		0		0	
High terrace	100		100		100	
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 (%)	7		5		2	

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

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

Total hardwoods/1000 ft	284
Total conifers/1000 ft	1,097
Total conifers >20" dbh/1000 ft	224

Average number of trees in a 5-meter wide band

<u>Diameter</u> <u>class (cm)</u>	<u>Zones 1-3</u>	
	<u>Conifer</u>	<u>Hardwood</u>
3-15cm	1.7	0.3
15-30cm	5.7	2.3
30-50cm	7.0	2.0
50-90cm	3.7	0.0
>90cm	0.0	0.0

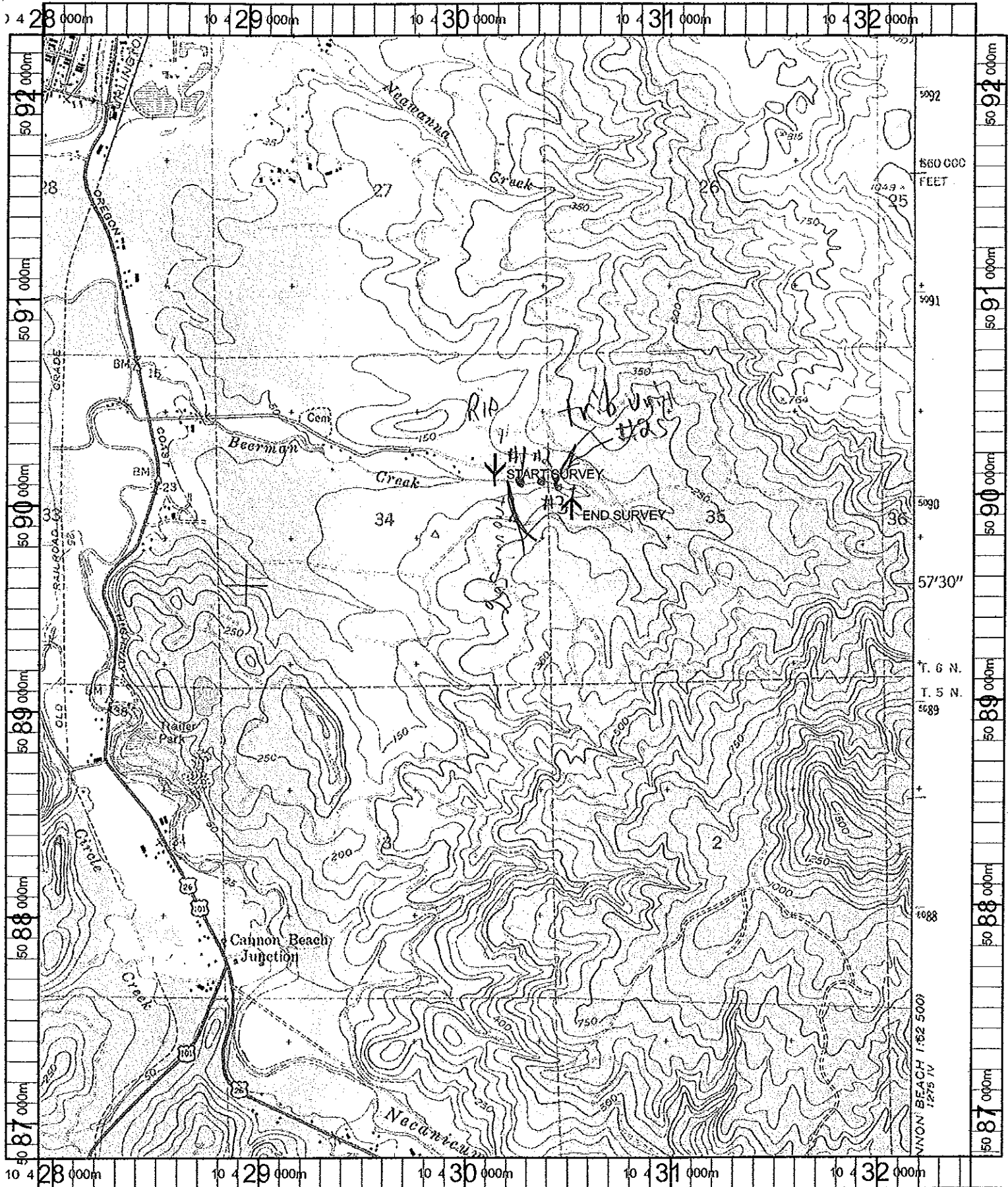
RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

VEGETATION DETAIL

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	0.0	85	0	85	Conifer	0	0	2	0	0	LOTS OF LWD AND STU
								Hardwood	0	0	0	0	0	
10	LF	2	HT	6.0	85	0	75	Conifer	0	0	2	1	0	
								Hardwood	0	0	0	0	0	
10	LF	3	HT	1.0	85	0	75	Conifer	0	1	0	1	0	
								Hardwood	0	0	0	0	0	
10	RT	1	HT	10.0	85	0	20	Conifer	0	2	3	0	0	
								Hardwood	0	0	0	0	0	
10	RT	2	HT	0.0	85	0	30	Conifer	0	3	1	0	0	
								Hardwood	0	0	0	0	0	
10	RT	3	HT	5.0	85	0	70	Conifer	0	1	1	1	0	
								Hardwood	0	3	0	0	0	
16	LF	1	HT	3.0	85	0	75	Conifer	2	0	0	0	0	
								Hardwood	0	0	0	0	0	
16	LF	2	HT	9.0	85	0	50	Conifer	0	0	3	2	0	
								Hardwood	0	0	0	0	0	
16	LF	3	HT	4.0	85	0	60	Conifer	0	1	1	1	0	
								Hardwood	1	0	0	0	0	
16	RT	1	HT	10.0	85	0	85	Conifer	1	1	1	0	0	
								Hardwood	0	0	0	0	0	
16	RT	2	HT	2.0	85	0	50	Conifer	0	3	1	0	0	
								Hardwood	0	0	0	0	0	
16	RT	3	HT	0.0	80	0	30	Conifer	0	2	2	0	0	
								Hardwood	0	3	3	0	0	
23	LF	1	HT	10.0	70	0	80	Conifer	0	0	1	0	0	
								Hardwood	0	0	0	0	0	
23	LF	2	HT	11.0	75	0	15	Conifer	0	0	1	1	0	
								Hardwood	0	0	0	0	0	
23	LF	3	HT	1.0	75	0	15	Conifer	1	2	0	0	0	
								Hardwood	0	0	0	0	0	
23	RT	1	HT	10.0	70	0	95	Conifer	0	0	0	1	0	
								Hardwood	0	1	3	0	0	
23	RT	2	HT	0.0	75	0	95	Conifer	1	1	0	1	0	
								Hardwood	0	0	0	0	0	
23	RT	3	HT	2.0	80	0	60	Conifer	0	0	2	2	0	
								Hardwood	0	0	0	0	0	



Name: TILLAMOOK HEAD
 Date: 10/23/100
 Scale: 1 inch equals 2000 feet

Location: 10 430121 E 5089517 N
 Caption: BEERMANN CREEK RESTORATION SITE - NECANICUM BASIN

7/4/01 R. Werner + Sean Allen