

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

STREAM: Bergsvick Creek (#NC 117)
 BASIN: Necanicum River
 SURVEY TYPE: Post-Tx
 DATE: October 29, ~~2002~~ 2003
 REPORT PREPARED BY: Paul Jacobsen

The Bergsvick Creek restoration project was treated in 1995, and then monitored in 1996 and again in 2001 for post-treatment conditions. There is also baseline information available from three years prior to treatment. This site has a companion reference reach located just downstream. In comparing the pre-treatment data with both of the post-treatment surveys, it is notable that the reach was pool-rich prior to treatment. Pool frequency improved, and there are now more complex pools. Riffle gravel has increased and riffle fines are lower. Large wood pieces are higher, but wood volume and key wood pieces are lower after treatment. The 2001 survey had more large wood pieces and slightly more wood volume, but fewer key pieces than in 1996.

	ODFW	Benchmark		AQI Survey	Post Project	Post Project	
Habitat Variable	Desirable	Undesirable		8/19/92	7/25/96	7/17/01	
Pool Area	>35%	<10%		78.4	62.1	77.1	
Pool Frequency	5-8	>20%		3.5	2.3	2.7	
Residual Pool Depth	.5-1m	.2-.5m		.51	.61	.57	
Complex Pools/km	>2.5	<1		4.9	8.4	15.0	
Width/Depth Ratio	<15	>30		9.4	16.8	14.5	
Riffle Gravel % area	>35%	<15%		40	57	54	
Silt-Sand-Organic %	<8%	>15%		27	5	13	
Shade %	>70%	< 60%		80	77	84	
LWD - pieces/100m	>20	<10		9.5	13.5	17.2	
LWD - Volume/100m	>30	<20		27	18.3	19.1	
LWD - Key pieces/ 100m	>3	<1		1.4	.9	.6	

COMMENTS:

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

The crew noted evidence of beaver activity during the survey. The 1996 survey crew recorded five habitat structures while the 2001 survey crew recorded four.

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

STREAM: Bergsvick Creek (NC-117)
BASIN: Necanicum River
SURVEY TYPE: Post-Tx
DATE: July 17, 2001
SURVEY CREW: Rachel Werner, Sean Allen
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 12.1 km²
USGS MAPS: Necanicum Junction
ECOREGION: Coast Range Sitka Spruce

GENERAL DESCRIPTION:

The Bergsvick Creek habitat survey extended 465 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 20.6 (range: 8.0 – 30.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 1.1 percent. Scour pools (77%) and riffles (17%) dominated stream habitat. Gravel (47%) and cobble (31%) dominated stream substrate. Wood volume was low at 19.1 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.

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

STREAM: Bergsvick Creek (#NC 117)
 BASIN: Necanicum River
 SURVEY TYPE: Post-Tx
 DATE: September 9, 2002
 SURVEY CREW: Sean Allen, Rachel Werner
 REPORT PREPARED BY: Paul Jacobsen
 BASIN AREA: 12.1 km²
 USGS MAPS: Necanicum Junction
 ECOREGION: Coast Range Sitka Spruce

GENERAL DESCRIPTION:

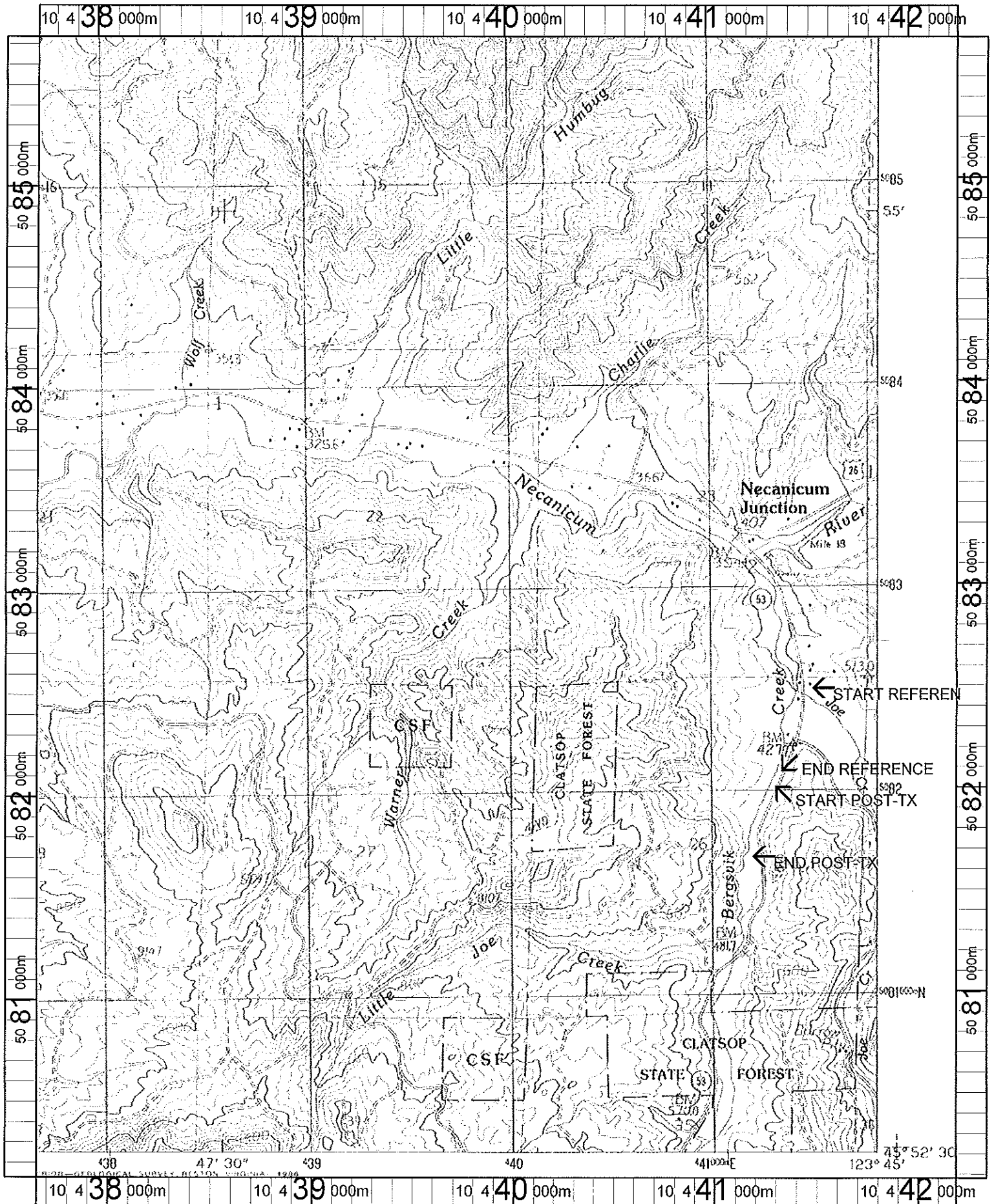
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	ODFW	Benchmark		AQI Survey	Post Project	Post Project	Post Project
Habitat Variable	Desirable	Undesirable		8/19/92	7/25/96	7/17/01	2/20/02
Pool Area	>35%	<10%		78.4	62.1	77.1	70.3
Pool Frequency	5-8	>20%		3.5	2.3	2.7	2.8
Residual Pool Depth	.5-1m	.2-.5m		.51	.61	.57	.91
Complex Pools/km	>2.5	<1		4.9	8.4	15.0	12.2
Width/Depth Ratio	<15	>30		9.4	16.8	14.5	14.7
Riffle Gravel % area	>35%	<15%		40	57	54	53
Silt-Sand-Organic %	<8%	>15%		27	5	13	14
Shade %	>70%	< 60%		80	77	84	
LWD - pieces/100m	>20	<10		9.5	13.5	17.2	9.0
LWD - Volume/100m	>30	<20		27	18.3	19.1	8.0
LWD - Key pieces/ 100m	>3	<1		1.4	.9	.6	.6

COMMENTS:

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

The crew noted evidence of beaver activity during the survey.



Name: NECANICUM JUNCTION
 Date: 1/10/2002
 Scale: 1 inch equals 2000 feet

Location: 10 439948 E 5082908 N
 Caption: 4-6 YEAR POST-TX AND REFERENCE SURVEY -
 BERGSVICK CREEK - NECANICUM BASIN

REACH 1

T5N-R9W-S26NW

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 avg: 20.6 range: 8.0-30.0

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0	Single Channel	100
Bedrock	0	Multiple Channel	0
Terrace	0	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	465	2,346	0
Secondary	134	228	0

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	4.0	Width	9.9	32.3	0.0
Depth	0.41	Height	0.7	1.4	0.0
		W:D ratio	14.5	Entrenchment	3.3

Stream Flow Type: LF Water Temp: 11.0-11.0°C
 Avg. Unit Gradient: 1.1% Habitat Units/100m: 6.3

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	
Riparian Vegetation:	D3	C50

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	15%	Reach avg: 84%
Undercut Banks	12%	Range: 56-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ($\geq 3m \times 0.15m$)	80	17.2
Volume (m ³)	89	19.1
Key pieces ($\geq 10m \times 0.6m$)	3	0.6

REACH 1

T5N-R9W-S26NW

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-ISOLATED	1	4	2.3	0.35	9	0	30	50	20	0	0	0
POOL-LATERAL SCOUR	19	383	4.5	0.66	1,874	2	5	14	49	27	5	0
POOL-PLUNGE	2	21	4.6	0.73	101	0	5	12	46	29	7	0
RAPID/BOULDERS	2	19	4.2	0.10	82	0	0	0	32	49	19	0
RIFFLE	11	159	2.5	0.06	437	0	1	12	54	28	4	0
STEP/BEAVER DAM	1	3	3.7	0.05	12	0	0	5	45	50	0	0
STEP/COBBLE	1	9	6.2	0.05	55	0	0	0	20	75	5	0
STEP/LOG	1	1	9.0	0.15	5	0	0	0	10	75	15	0
Total:	38	599	4.0	0.41	2,574	2	Avg: 4	13	47	31	6	0

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	4	2.3	0.35	9	0.36	0	0.0
Scour Pools	21	404	4.5	0.66	1,975	76.73	2	0.1
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	11	159	2.5	0.06	437	16.99	0	0.0
Rapids	2	19	4.2	0.10	82	3.17	0	0.0
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	3	13	6.3	0.08	71	2.75	0	0.0
Dry	0	0	-	-	0	0.00	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	22	36.8
Pools ≥1m deep:	1	1.7
Complex pools (LWD pieces≥3):	9	15.0
Pool Frequency (channel widths/pool):	2.7	
Residual pool depth (avg)	0.57m	

STREAM SUMMARY

BERGSVICK CREEK POST-TX (#117)

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	
38	599	4.0	0.41	2,574	4	13	47	31	6	0	2

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	1,975	76.7
Backwater Pools	9	0.4
Glide	0	0.0
Riffle	437	17.0
Rapid	82	3.2
Cascade	0	0.0
Step	71	2.8
Dry	0	0.0

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	853
Total conifers/1000 ft	853
Total conifers >20" dbh/1000 ft	102
Total conifers >35" dbh/1000 ft	81

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	3.7	3.0	2.0	4.7	1.0	7.7	6.7
15-30cm	0.3	2.3	1.0	1.3	2.7	2.7	4.0	6.3
30-50cm	0.0	0.7	0.0	0.0	0.7	0.3	0.7	1.0
50-90cm	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0
>90cm	0.7	0.0	0.0	0.0	0.7	0.0	1.3	0.0
Total/100m ²	1.3	6.7	4.0	3.3	8.7	4.0	4.7	4.7

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	78		73		82	
Shrub cover	23		22		14	
Grass/forb cover	74		55		49	

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	67		83		83	
Low terrace	33		17		17	
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 (%)	3		5		3	

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	853
Total conifers/1000 ft	853
Total conifers >20" dbh/1000 ft	102

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	7.7	6.7
15-30cm	4.0	6.3
30-50cm	0.7	1.0
50-90cm	0.3	0.0
>90cm	1.3	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	
7	LF	1	HT	0.0	90	25	70	Conifer	0	0	0	0	0	
								Hardwood	0	1	1	0	0	
7	LF	2	HT	10.0	95	70	25	Conifer	0	0	0	0	0	
								Hardwood	0	2	0	0	0	
7	LF	3	HT	5.0	95	75	20	Conifer	0	0	0	0	1	
								Hardwood	2	5	0	0	0	
7	RT	1	LT	5.0	80	20	80	Conifer	0	0	0	0	1	
								Hardwood	5	0	0	0	0	
7	RT	2	HT	5.0	90	0	15	Conifer	6	2	0	0	0	
								Hardwood	5	0	0	0	0	
7	RT	3	HT	3.0	90	0	0	Conifer	12	3	0	0	0	
								Hardwood	0	0	0	0	0	FIR REPROD.
14	LF	1	LT	2.0	90	5	90	Conifer	0	0	0	0	0	
								Hardwood	1	2	0	0	0	
14	LF	2	LT	1.0	55	10	85	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
14	LF	3	LT	0.0	45	0	95	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
14	RT	1	HT	10.0	80	65	25	Conifer	0	0	0	1	1	
								Hardwood	2	1	1	0	0	
14	RT	2	HT	6.0	60	40	15	Conifer	3	1	0	0	0	
								Hardwood	0	0	0	0	0	
14	RT	3	HT	2.0	95	0	5	Conifer	2	3	2	0	0	
								Hardwood	1	0	0	0	0	
29	LF	1	HT	1.0	60	10	90	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	
29	LF	2	HT	3.0	75	5	95	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
29	LF	3	HT	4.0	85	5	80	Conifer	0	0	0	0	1	
								Hardwood	0	0	0	0	0	STOP @ WETLAND, 10M
29	RT	1	HT	1.0	70	10	90	Conifer	0	1	0	0	0	
								Hardwood	0	3	0	0	0	
29	RT	2	HT	2.0	60	5	95	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
29	RT	3	HT	5.0	80	5	95	Conifer	0	2	0	0	0	
								Hardwood	0	3	1	0	0	