

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

STREAM: North Fork Rock Creek - Upper (#NC 105)
 BASIN: Nehalem River
 SURVEY TYPE: Post-Tx
 DATE: November 3, 2003
 REPORT PREPARED BY: Paul Jacobsen

The North Fork Rock Creek Upper 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 1993, two years prior to treatment. This site has a companion reference reach located just downstream. Pool area and complex pools are increased and occur more frequently. Riffle gravel has doubled while riffle fines are very low. Large wood piece and volume are higher although key pieces have decreased.

Habitat Variable	ODFW Benchmark		AQI Survey	Post Project	Post Project
	Desirable	Undesirable	7/15/93	7/17/96	7/10/01
Pool Area	>35%	<10%	29.4	47.6	37.2
Pool Frequency	5-8	>20%	5.5	2.3	3.8
Residual Pool Depth	.5-1m	.2-.5m	.51	.41	.49
Complex Pools/km	>2.5	<1	8.7	23.2	17.7
Width/Depth Ratio	<15	>30	13.6	18.4	16.1
Riffle Gravel % area	>35%	<15%	26	53	54
Silt-Sand-Organic %	<8%	>15%	0	16	7
Shade %	>70%	< 60%	100	95	92
LWD - pieces/100m	>20	<10	25.5	28.8	38.8
LWD - Volume/100m	>30	<20	64.0	38.3	41.1
LWD - Key pieces/ 100m	>3	<1	3.4	1.6	1.5

COMMENTS:

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

The 1996 and 2001 survey crews both recorded five habitat structures.

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OREGON PLAN FOR SALMON & WATERSHEDS
STREAM RESTORATION HABITAT REPORT**

STREAM: North Fork Rock Creek Upper (NC-105)
BASIN: Nehalem River
SURVEY TYPE: Post-Tx
DATE: July 10, 2001
SURVEY CREW: Rachel Werner, Sean Allen
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 17.9 km²
USGS MAPS: Sunset Spring
ECOREGION: Coast Range Volcanic

GENERAL DESCRIPTION:

The North Fork Rock Creek habitat survey extended 389 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 8.0 (range: 3.0 – 20.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 1.5 percent. Riffles (55%) and scour pools (35%) dominated stream habitat. Gravel (42%) and cobble (26%) dominated stream substrate. Wood volume was high at 41.1 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: North Fork Rock Creek - Upper (#NC 105)
 BASIN: Nehalem River
 SURVEY TYPE: Post-Tx
 DATE: September 9, 2002
 SURVEY CREW: Sean Allen, Rachel Werner
 REPORT PREPARED BY: Paul Jacobsen
 BASIN AREA: 17.9 km²
 USGS MAPS: Sunset Spring
 ECOREGION: Coast Range Volcanic

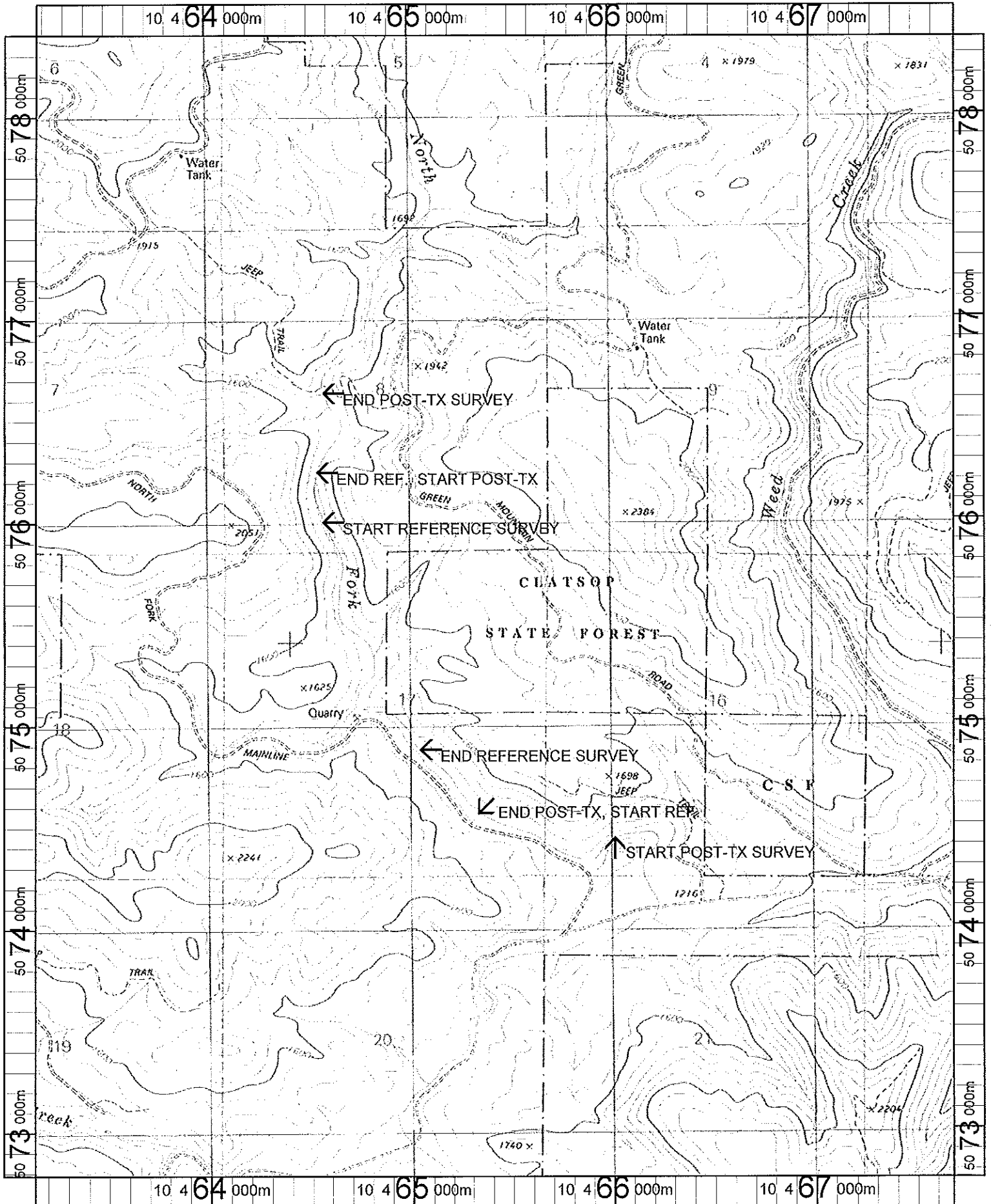
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	ODFW	Benchmark		AQI Survey	Post Project	Post Project	Post Project
Habitat Variable	Desirable	Undesirable		7/15/93	7/17/96	7/10/01	3/15/02
Pool Area	>35%	<10%		29.4	47.6	37.2	45.5
Pool Frequency	5-8	>20%		5.5	2.3	3.8	3.1
Residual Pool Depth	.5-1m	.2-.5m		.51	.41	.49	1.44
Complex Pools/km	≥2.5	<1		8.7	23.2	17.7	12.6
Width/Depth Ratio	<15	>30		13.6	18.4	16.1	19.7
Riffle Gravel % area	>35%	<15%		26	53	54	44
Silt-Sand-Organic %	<8%	>15%		0	16	7	10
Shade %	>70%	< 60%		100	95	92	
LWD - pieces/100m	>20	<10		25.5	28.8	38.8	27.4
LWD - Volume/100m	>30	<20		64.0	38.3	41.1	35.0
LWD - Key pieces/ 100m	>3	<1		3.4	1.6	1.5	1.0

COMMENTS:

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



Name: SUNSET SPRING
 Date: 1/10/2002
 Scale: 1 inch equals 2000 feet

Location: 10 465427 E 5075582 N
 Caption: 4-6 YEAR POST-TX AND REFERENCE SURVEYS -
 UPPER AND LOWER ROCK CREEK - NEHALEM
 BASIN

REACH 1

T4N-R6W-S8SW

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: 8.0 range: 3.0-20.0

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	389	2,101	0
Secondary	120	348	2

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	4.6	Width	9.7	21.2	17.0
Depth	0.29	Height	0.6	1.2	1.4
		W:D ratio	16.1	Entrenchment	2.1

Stream Flow Type: LF Water Temp: 13.0-13.0°C
 Avg. Unit Gradient: 1.5% Habitat Units/100m: 7.5

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	7%	Reach avg: 92%
Undercut Banks	7%	Range: 67-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ($\geq 3m \times 0.15m$)	151	38.8
Volume (m ³)	160	41.1
Key pieces ($\geq 10m \times 0.6m$)	6	1.5

REACH 1 T4N-R6W-S8SW 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 S/O	Wetted Area Snd	Wetted Area Grvl	Wetted Area Cbbl	Wetted Area Bldr	Wetted Area Bdrk
DRY UNITS	1	8	4.5	0.00	37	0	0	15	20	55	10	0
POOL-ALCOVE	1	5	9.5	0.70	51	0	30	70	0	0	0	0
POOL-ISOLATED	1	3	0.6	0.30	2	0	20	45	10	20	5	0
POOL-LATERAL SCOUR	11	169	4.9	0.58	848	1	7	18	43	19	5	7
POOL-PLUNGE	1	2	5.1	0.50	10	0	10	20	30	30	10	0
PUDDLED CHANNEL	1	7	0.6	0.10	4	0	10	15	25	40	10	0
RAPID/BOULDERS	4	39	3.3	0.13	131	1	1	8	20	38	34	0
RIFFLE	11	176	4.5	0.12	798	0	0	7	54	30	8	1
RIFFLE W/ POCKETS	4	95	5.5	0.21	541	0	6	15	54	23	4	0
STEP/LOG	3	4	5.0	0.05	26	0	3	20	48	15	0	13
Total:	38	509	4.6	0.29	2,449	2	Avg: 5	16	42	26	9	3

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m ²)	Wetted Area Percent	Large Boulders Number	Large Boulders #/100m ²
Dammed & BW Pools	2	8	5.1	0.50	53	2.16	0	0.0
Scour Pools	12	171	4.9	0.58	858	35.03	1	0.1
Slides	0	0	-	-	0	0.00	0	0.0
Riffles	15	271	4.8	0.15	1,339	54.68	0	0.0
Rapids	4	39	3.3	0.13	131	5.37	1	0.8
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	3	4	5.0	0.05	26	1.06	0	0.0
Dry	2	16	2.6	0.05	42	1.70	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	14	27.5
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	9	17.7
Pool Frequency (channel widths/pool):	3.8	
Residual pool depth (avg)	0.49m	

STREAM SUMMARY

NF ROCK UPPER POST-TX (#105)

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	509	4.6	0.29	2,449	5	16	42	26	9	3	2

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	858	35.0
Backwater Pools	53	2.2
Glide	0	0.0
Riffle	1,339	54.7
Rapid	131	5.4
Cascade	0	0.0
Step	26	1.1
Dry	42	1.7

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	650
Total conifers/1000 ft	325
Total conifers >20" dbh/1000 ft	61
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	0.0	0.7	0.7	1.3	2.0	2.0	2.7
15-30cm	0.0	2.7	0.3	2.0	0.0	2.3	0.3	7.0
30-50cm	0.0	1.0	0.0	0.0	2.0	0.0	2.0	1.0
50-90cm	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m ²	0.0	3.7	1.0	2.7	4.3	4.3	1.8	3.6

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	56		66		56	
Shrub cover	43		28		10	
Grass/forb cover	57		72		90	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	17		50		83
High terrace	17		33		0	
Low terrace	67		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		17		17	
Riprap	0		0		0	
Surface slope (%)	14		30		36	

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	650
Total conifers/1000 ft	325
Total conifers >20" dbh/1000 ft	61

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	2.0	2.7
15-30cm	0.3	7.0
30-50cm	2.0	1.0
50-90cm	1.0	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	
15	LF	1	LT	5.0	65	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	3	1	0	0	
15	LF	2	HS	20.0	65	25	75	Conifer	1	0	0	0	0	
								Hardwood	1	1	0	0	0	
15	LF	3	HS	6.0	70	5	95	Conifer	1	0	0	0	0	
								Hardwood	0	4	0	0	0	
15	RT	1	LT	8.0	55	20	80	Conifer	0	0	0	0	0	
								Hardwood	0	3	1	0	0	
15	RT	2	HS	56.0	50	10	90	Conifer	1	1	0	0	0	
								Hardwood	0	0	0	0	0	
15	RT	3	HS	60.0	60	5	95	Conifer	0	0	0	0	0	
								Hardwood	4	0	0	0	0	
30	LF	1	LT	5.0	50	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
30	LF	2	RB	5.0	60	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	JEEP TRAIL
30	LF	3	RB	10.0	60	15	85	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	JEEP TRAIL
30	RT	1	LT	3.0	70	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
30	RT	2	HT	7.0	70	5	95	Conifer	0	0	0	0	0	
								Hardwood	0	2	0	0	0	
30	RT	3	HS	22.0	65	0	100	Conifer	0	0	6	1	0	
								Hardwood	0	1	0	0	0	
38	LF	1	HT	3.0	20	100	0	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
38	LF	2	HT	10.0	70	100	0	Conifer	0	0	0	0	0	
								Hardwood	1	2	0	0	0	
38	LF	3	HS	45.0	10	5	95	Conifer	3	0	0	0	0	
								Hardwood	2	0	0	0	0	
38	RT	1	HS	60.0	75	60	40	Conifer	0	0	0	0	0	
								Hardwood	0	2	1	0	0	
38	RT	2	HS	80.0	80	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
38	RT	3	HS	75.0	70	30	70	Conifer	0	0	0	2	0	
								Hardwood	0	1	0	0	0	