

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

STREAM: North Fork Rock Creek - Lower (#NC 102)
 BASIN: Nehalem River
 SURVEY TYPE: Reference
 DATE: November 3, 2003
 REPORT PREPARED BY: Paul Jacobsen

The North Fork Rock Creek Lower reference site is located just upstream of the companion North Fork Rock Creek Lower treatment site. This site was surveyed for reference conditions in 1993, 1996, and 2001. Pool area is higher in 2001 than in 1993, but has decreased somewhat since 1996. The same trend was noted in complex pools and the frequency of pools. Riffle gravel has increased steadily as has riffle fines. Large wood pieces, volume, and key pieces are all higher than in 1993.

Habitat Variable	ODFW Benchmark		Post Project	Post Project	Post Project
	Desirable	Undesirable	7/13/93	7/15/96	7/9/01
Pool Area	>35%	<10%	28.2	35.4	31.4
Pool Frequency	5-8	>20%	5.6	1.7	2.8
Residual Pool Depth	.5-1m	.2-.5m	.4	.44	.43
Complex Pools/km	>2.5	<1	0.0	18.0	9.5
Width/Depth Ratio	<15	>30	14.7	20.5	23.1
Riffle Gravel % area	>35%	<15%	18	25	31
Silt-Sand-Organic %	<8%	>15%	0	14	18
Shade %	>70%	< 60%	100	98	94
LWD - pieces/100m	>20	<10	6.5	28.2	26.7
LWD - Volume/100m	>30	<20	10.6	24.7	23.9
LWD - Key pieces/ 100m	>3	<1	0.0	0.9	0.3

COMMENTS:

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

The crew noted evidence of beaver activity during the survey.

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

STREAM: North Fork Rock Creek Lower (NC-102)
BASIN: Nehalem River
SURVEY TYPE: Reference
DATE: July 9, 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 386 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 5.0 (range: 2.0 – 9.0). Land use for the reach was young (3-15 cm dbh) trees. The average unit gradient was 2.0 percent. Riffles (51%) dominated stream habitat. Gravel (30%) and cobble (27%) dominated stream substrate. Wood volume was moderate at 23.9 m³/100m.

COMMENTS:

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

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

STREAM: North Fork Rock Creek - Lower (#NC 102)
 BASIN: Nehalem River
 SURVEY TYPE: Reference
 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

GENERAL DESCRIPTION:

The North Fork Rock Creek habitat survey extended 386 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 5.0 (range: 2.0-9.0). Land use for the reach was young (3-15 cm dbh) trees. The average unit gradient was 2.0 percent. Riffles (51%) and scour pools (18%) dominated stream habitat.

	ODFW	Benchmark		Post Project	Post Project	Post Project	Post Project
Habitat Variable	Desirable	Undesirable		7/13/93	7/15/96	7/9/01	2/12/02
Pool Area	>35%	<10%		28.2	35.4	31.4	38.7
Pool Frequency	5-8	>20%		5.6	1.7	2.8	2.1
Residual Pool Depth	.5-1m	.2-.5m		.4	.44	.43	.54
Complex Pools/km	>2.5	<1		0.0	18.0	9.5	15.1
Width/Depth Ratio	<15	>30		14.7	20.5	23.1	28.4
Riffle Gravel % area	>35%	<15%		18	25	31	48
Silt-Sand-Organic %	<8%	>15%		0	14	18	9
Shade %	>70%	< 60%		100	98	94	
LWD - pieces/100m	>20	<10		6.5	28.2	26.7	26.0
LWD - Volume/100m	>30	<20		10.6	24.7	23.9	16.0
LWD - Key pieces/ 100m	>3	<1		0.0	0.9	0.3	0.3

COMMENTS:

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

The crew noted evidence of beaver activity during the survey.

REACH 1

T4N-R6W-S17SE

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: 5.0 range: 2.0-9.0

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	386	2,303	0
Secondary	243	618	2

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	4.4	Width	13.9	19.2	22.1
Depth	0.30	Height	0.6	1.2	1.3
		W:D ratio	23.1	Entrenchment	1.5

Stream Flow Type: LF Water Temp: 14.0-14.0°C
 Avg. Unit Gradient: 2.0% Habitat Units/100m: 6.7

Riparian, Bank, and Wood Summary

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	3%	Reach avg: 94%
Undercut Banks	6%	Range: 86-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces (≥3m x 0.15m)	103	26.7
Volume (m ³)	92	23.9
Key pieces (≥10m x 0.6m)	1	0.3

REACH 1

T4N-R6W-S17SE

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
DRY UNITS	1	14	4.0	0.00	56	0	10	10	30	40	10	0
GLIDE	1	25	6.1	0.25	150	0	5	30	35	30	0	0
POOL-BACKWATER	2	6	2.7	0.45	14	0	20	45	15	15	5	0
POOL-BEAVER DAM	2	46	8.0	0.83	354	0	25	25	35	15	0	0
POOL-DAMMED	1	7	1.3	0.30	9	3	10	10	15	40	25	0
POOL-LATERAL SCOUR	8	85	4.5	0.53	412	2	9	18	42	22	4	6
POOL-STRAIGHT SCOUR	3	27	3.6	0.43	128	1	8	15	43	23	10	0
PUDDLED CHANNEL	1	12	3.3	0.30	40	0	20	35	10	10	25	0
RAPID/BEDROCK	1	7	6.0	0.30	44	1	0	0	5	15	20	60
RAPID/BOULDERS	3	40	5.3	0.15	222	3	1	4	17	37	28	13
RIFFLE	15	308	3.7	0.14	1,181	3	4	14	31	31	12	9
RIFFLE W/ POCKETS	2	51	6.1	0.28	304	3	0	5	15	40	25	15
STEP/BEAVER DAM	1	1	5.4	0.01	5	0	20	40	40	0	0	0
STEP/LOG	1	0	6.2	0.02	2	0	10	20	40	30	0	0
Total:	42	629	4.4	0.30	2,921	16	Avg: 8	17	30	27	11	7

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m ²)	Percent	Large Boulders Number	#/100m ²
Dammed & BW Pools	5	59	4.5	0.57	378	12.93	3	0.8
Scour Pools	11	113	4.2	0.50	539	18.46	3	0.6
Glides	1	25	6.1	0.25	150	5.14	0	0.0
Riffles	17	359	4.0	0.16	1,485	50.84	6	0.4
Rapids	4	47	5.5	0.19	266	9.12	4	1.5
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	2	1	5.8	0.02	7	0.23	0	0.0
Dry	2	26	3.7	0.15	96	3.28	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	16	25.4
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	6	9.5
Pool Frequency (channel widths/pool):	2.8	
Residual pool depth (avg)	0.43m	

STREAM SUMMARY

NF ROCK LOWER REFERENCE (#102)

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	
42	629	4.4	0.30	2,921	8	17	30	27	11	7	16

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	539	18.5
Backwater Pools	378	12.9
Glide	150	5.1
Riffle	1,485	50.8
Rapid	266	9.1
Cascade	0	0.0
Step	7	0.2
Dry	96	3.3

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	1,077
Total conifers/1000 ft	224
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	0.0	0.3	0.7	1.7	1.3	3.3	2.0
15-30cm	0.0	5.3	0.3	2.3	1.3	1.7	1.7	9.3
30-50cm	0.0	2.3	0.0	0.3	0.0	0.3	0.0	3.0
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/100m ²	0.0	8.0	1.0	4.3	2.7	5.3	1.2	5.9

Canopy closure and ground cover

	Zone 1 0-10 meters	Zone 2 10-20 meters	Zone 3 20-30 meters
	(%)	(%)	(%)
Canopy closure	68	66	68
Shrub cover	8	24	23
Grass/forb cover	92	76	78

Predominant landform in each zone

	Zone 1 0-10 meters	Zone 2 10-20 meters	Zone 3 20-30 meters
	Hillslope	17	17
High terrace	67	83	33
Low terrace	17	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 (%)	9	7	33

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	1,077
Total conifers/1000 ft	224
Total conifers >20" dbh/1000 ft	0

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	5.3
15-30cm	1.7	9.3
30-50cm	0.0	3.0
50-90cm	0.0	0.0
>90cm	0.0	0.0

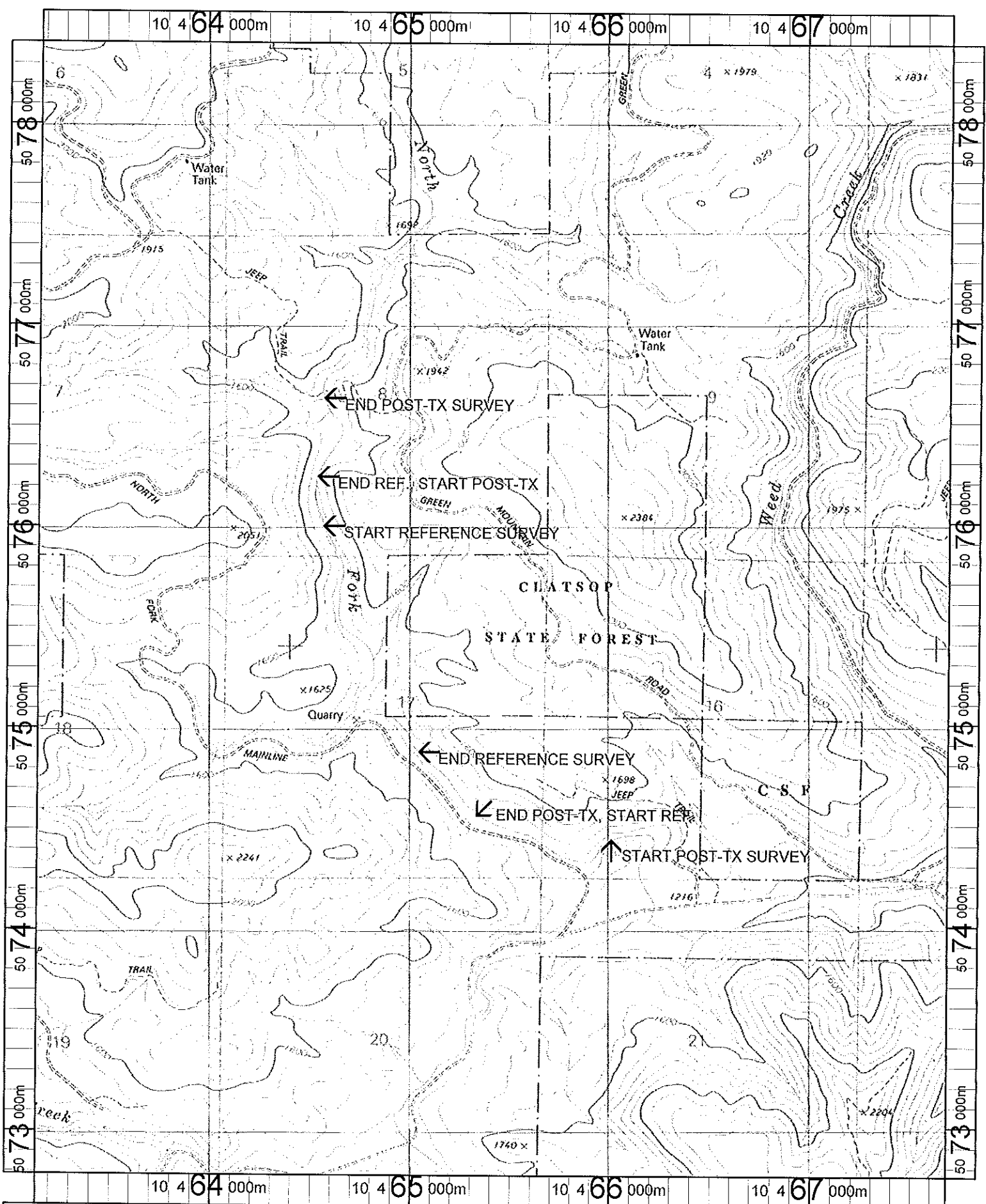
RIPARIAN ZONE VEGETATION

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	
8	LF	1	HT	3.0	50	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
8	LF	2	HT	0.0	50	5	95	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
8	LF	3	HT	10.0	20	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
8	RT	1	LT	6.0	70	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	3	3	0	0	
8	RT	2	HT	3.0	60	30	70	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
8	RT	3	HS	40.0	80	40	60	Conifer	3	1	0	0	0	
								Hardwood	0	0	0	0	0	
23	LF	1	HT	6.0	70	5	95	Conifer	0	0	0	0	0	
								Hardwood	0	1	2	0	0	
23	LF	2	HT	0.0	70	30	70	Conifer	0	0	0	0	0	
								Hardwood	4	3	0	0	0	
23	LF	3	HS	40.0	75	20	80	Conifer	0	0	0	0	0	
								Hardwood	7	0	0	0	0	
23	RT	1	HT	6.0	70	5	95	Conifer	0	0	0	0	0	
								Hardwood	1	0	1	0	0	
23	RT	2	HT	0.0	70	40	60	Conifer	0	0	0	0	0	
								Hardwood	0	3	1	0	0	
23	RT	3	HS	55.0	65	10	90	Conifer	0	1	0	0	0	
								Hardwood	0	0	1	0	0	
33	LF	1	HT	0.0	75	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	7	0	0	0	
33	LF	2	HT	0.0	70	20	80	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
33	LF	3	HT	5.0	80	25	75	Conifer	0	0	0	0	0	
								Hardwood	0	4	0	0	0	
33	RT	1	HS	33.0	75	10	90	Conifer	0	0	0	0	0	
								Hardwood	0	4	1	0	0	
33	RT	2	HS	40.0	75	20	80	Conifer	2	1	0	0	0	
								Hardwood	0	0	0	0	0	
33	RT	3	HS	45.0	85	10	90	Conifer	1	2	0	0	0	
								Hardwood	3	0	0	0	0	



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