

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

STREAM: South Fork Little Nestucca River (#NC 113)
 BASIN: Nestucca River
 SURVEY TYPE: Post-Tx
 DATE: November 3, 2003
 REPORT PREPARED BY: Paul Jacobsen

The South Fork Little Nestucca River 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 two years prior to treatment. This site has a companion reference reach located just upstream. Pool area has remained unchanged since 1993, but pools occur more frequently and there are more complex pools. Riffle gravel is higher while riffle fines are lower. Large wood pieces and volume has increased while key pieces have stayed steady.

Habitat Variable	ODFW Benchmark		AQI Survey	Post Project	Post Project
	Desirable	Undesirable	9/13/93	8/24/96	6/27/01
Pool Area	>35%	<10%	52.4	51.8	55.1
Pool Frequency	5-8	>20%	3.9	3.2	2.7
Residual Pool Depth	.5-1m	.2-.5m	.39	.47	.68
Complex Pools/km	>2.5	<1	0.0	10.9	12.5
Width/Depth Ratio	<15	>30	17.2	17.9	17.7
Riffle Gravel % area	>35%	<15%	29	35	50
Silt-Sand-Organic %	<8%	>15%	22	17	9
Shade %	>70%	< 60%	79	87	88
LWD - pieces/100m	>20	<10	12.2	14.8	20.7
LWD - Volume/100m	>30	<20	9.4	15.4	18.8
LWD - Key pieces/ 100m	>3	<1	0.2	0.5	0.2

COMMENTS:

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

The 1996 survey crew recorded twelve habitat structures while the 2001 crew noted ten.

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STREAM RESTORATION HABITAT REPORT

STREAM: South Fork Little Nestucca River (NC-113)
BASIN: Nestucca River
SURVEY TYPE: Post-Tx
DATE: June 27, 2001
SURVEY CREW: Rachel Werner, Sean Allen
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 16.4 km²
USGS MAPS: Dolph
ECOREGION: Coast Range Volcanic

GENERAL DESCRIPTION:

The South Fork Little Nestucca River habitat survey extended 464 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 4.4 (range: 4.0 – 5.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 1.6 percent. Scour pools (49%) and rapids (22%) dominated stream habitat. Gravel (30%) and bedrock (29%) dominated stream substrate. Wood volume was low at 18.8 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.

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OREGON PLAN FOR SALMON & WATERSHEDS
STREAM RESTORATION HABITAT REPORT

STREAM: South Fork Little Nestucca River (#NC 113)
 BASIN: Nestucca River
 SURVEY TYPE: Post-Tx
 DATE: September 9, 2002
 SURVEY CREW: Sean Allen, Rachel Werner
 REPORT PREPARED BY: Paul Jacobsen
 BASIN AREA: 16.4 km²
 USGS MAPS: Dolph
 ECOREGION: Coast Range Volcanic

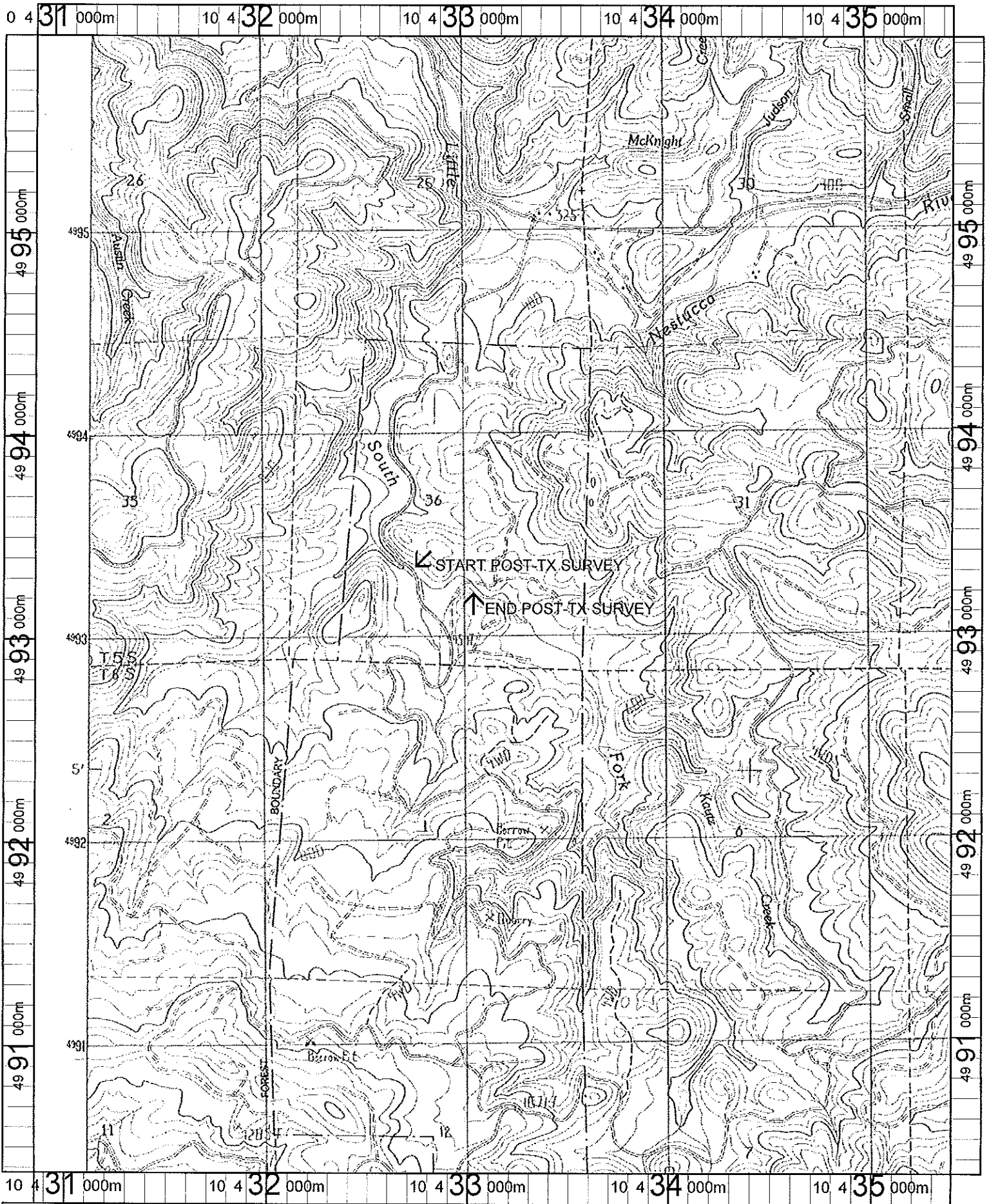
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	ODFW	Benchmark		AQI Survey	Post Project	Post Project	Post Project
Habitat Variable	Desirable	Undesirable		9/13/93	8/24/96	6/27/01	3/5/02
Pool Area	>35%	<10%		52.4	51.8	55.1	55.1
Pool Frequency	5-8	>20%		3.9	3.2	2.7	2.7
Residual Pool Depth	.5-1m	.2-.5m		.39	.47	.68	.80
Complex Pools/km	>2.5	<1		0.0	10.9	12.5	10.5
Width/Depth Ratio	<15	>30		17.2	17.9	17.7	17.7
Riffle Gravel % area	>35%	<15%		29	35	50	45
Silt-Sand-Organic %	<8%	>15%		22	17	9	9
Shade %	>70%	< 60%		79	87	88	
LWD - pieces/100m	>20	<10		12.2	14.8	20.7	9.8
LWD - Volume/100m	>30	<20		9.4	15.4	18.8	6.3
LWD - Key pieces/ 100m	>3	<1		0.2	0.5	0.2	0.0

COMMENTS:

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



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

Location: 10 433151 E 4993150 N
 Caption: 4-6 YEAR POST-TX SURVEY - SF. LITTLE
 NESTUCCA RIVER - NESTUCCA BASIN

REACH 1

T5S-R10W-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	0
Moderate V-shape	0	Multiple Terraces	100
Open V-shape	0	Wide Floodplain	0

Valley Width Index avg: 4.4 range: 4.0-5.0

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	464	3,099	0
Secondary	94	365	2

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u>	<u>First Terrace</u>
Width 6.1	12.4	24.6	14.3
Depth 0.49	Height 0.7	1.3	1.7
W:D ratio 17.7		Entrenchment 1.9	

Stream Flow Type: LF Water Temp: 11.0-11.0°C
 Avg. Unit Gradient: 1.6% Habitat Units/100m: 6.3

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	
Riparian Vegetation:	D30	P

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	6%	Reach avg: 88%
Undercut Banks	4%	Range: 50-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ($\geq 3m \times 0.15m$)	96	20.7
Volume (m ³)	87	18.8
Key pieces ($\geq 10m \times 0.6m$)	1	0.2

REACH 1 T5S-R10W-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	Cbbl	Bldr	Bdrk
CASCADE/BEDROCK	2	36	5.9	0.28	197	0	8	3	3	3	3	83
GLIDE	1	17	3.5	0.25	61	0	0	0	80	20	0	0
POOL-ALCOVE	1	20	4.8	0.70	96	0	20	20	0	0	0	60
POOL-BACKWATER	3	23	4.9	0.43	117	0	19	56	23	1	0	0
POOL-LATERAL SCOUR	8	146	5.2	0.73	810	2	7	21	41	10	3	19
POOL-PLUNGE	2	58	8.9	1.40	535	1	4	4	30	23	23	18
POOL-STRAIGHT SCOUR	2	30	6.6	0.78	202	1	5	10	28	23	20	15
POOL-TRENCH	1	25	5.9	0.70	148	0	0	5	15	0	0	80
PUDDLED CHANNEL	2	30	2.6	0.35	75	0	18	45	33	4	2	0
RAPID/BEDROCK	5	103	7.3	0.30	763	2	2	11	11	8	3	65
RIFFLE	3	52	7.0	0.18	352	0	2	7	50	22	5	15
STEP/BEDROCK	1	10	5.9	0.05	61	0	0	0	0	0	0	100
STEP/COBBLE	1	3	3.5	0.10	11	0	0	0	50	50	0	0
STEP/LOG	3	4	9.2	0.15	36	0	2	23	42	22	7	5
Total:	35	558	6.1	0.49	3,463	6	Avg: 6	18	30	12	5	29

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	4	43	4.9	0.50	213	6.15	0	0.0
Scour Pools	13	259	6.0	0.84	1,694	48.92	4	0.2
Glides	1	17	3.5	0.25	61	1.76	0	0.0
Riffles	3	52	7.0	0.18	352	10.17	0	0.0
Rapids	5	103	7.3	0.30	763	22.03	2	0.3
Cascades	2	36	5.9	0.28	197	5.70	0	0.0
Step/Falls	5	17	7.4	0.12	108	3.11	0	0.0
Dry	2	30	2.6	0.35	75	2.17	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	17	<u>#/Km</u>	30.5
Pools ≥1m deep:		1		1.8
Complex pools (LWD pieces ≥3):		7		12.5
Pool Frequency (channel widths/pool):		2.7		
Residual pool depth (avg)		0.68m		

STREAM SUMMARY

SF L NESTUCCA POST-TX (#113)

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	
35	558	6.1	0.49	3,463	6	18	30	12	5	29	6

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	1,694	48.9
Backwater Pools	213	6.1
Glide	61	1.8
Riffle	352	10.2
Rapid	763	22.0
Cascade	197	5.7
Step	108	3.1
Dry	75	2.2

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	488
Total conifers/1000 ft	1,199
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	1.0	1.0	1.7	0.7	6.0	0.3	8.7	2.0
15-30cm	1.0	2.3	2.3	1.0	3.7	1.0	7.0	4.3
30-50cm	0.7	1.7	1.3	0.0	2.0	0.0	4.0	1.7
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	2.7	5.0	5.3	1.7	11.7	1.3	6.6	2.7

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	53		74		78	
Shrub cover	39		12		8	
Grass/forb cover	61		70		70	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	17		17		17
High terrace	17		67		83	
Low terrace	67		17		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 (%)	25		21		18	

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	488
Total conifers/1000 ft	1,199
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	8.7	2.0
15-30cm	7.0	4.3
30-50cm	4.0	1.7
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	LT	2.0	65	65	35	Conifer	0	0	0	0	0	
								Hardwood	1	0	3	0	0	SEDGES
8	LF	2	HT	22.0	85	5	80	Conifer	0	1	3	0	0	
								Hardwood	2	0	0	0	0	
8	LF	3	HT	5.0	85	5	60	Conifer	8	3	2	0	0	
								Hardwood	0	0	0	0	0	FIR, HEMLOCK
8	RT	1	LT	0.0	20	20	80	Conifer	0	0	0	0	0	
								Hardwood	0	1	1	0	0	ALDERS, SEDGES
8	RT	2	LT	0.0	60	10	90	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
8	RT	3	HT	8.0	75	10	90	Conifer	1	0	0	0	0	
								Hardwood	1	3	0	0	0	ALDERS, SKUNK CABBA
21	LF	1	LT	4.0	55	10	90	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
21	LF	2	HT	5.0	75	15	85	Conifer	2	2	0	0	0	
								Hardwood	0	1	0	0	0	
21	LF	3	HT	3.0	80	10	90	Conifer	1	1	1	0	0	
								Hardwood	0	0	0	0	0	
21	RT	1	HT	30.0	65	90	10	Conifer	3	2	1	0	0	
								Hardwood	1	1	0	0	0	
21	RT	2	HT	2.0	80	0	5	Conifer	3	3	0	0	0	
								Hardwood	0	1	0	0	0	
21	RT	3	HT	3.0	80	0	5	Conifer	6	3	1	0	0	
								Hardwood	0	0	0	0	0	FIR AND SPRUCE
27	RT	1	LT	5.0	60	20	80	Conifer	0	0	0	0	0	
								Hardwood	0	5	1	0	0	
27	RT	2	HT	8.0	70	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
27	RT	3	HT	0.0	80	15	85	Conifer	2	2	2	0	0	
								Hardwood	0	0	0	0	0	
27	LF	1	HS	110.0	55	30	70	Conifer	0	1	1	0	0	
								Hardwood	0	0	0	0	0	
27	LF	2	HS	90.0	75	10	90	Conifer	0	1	1	0	0	
								Hardwood	0	0	0	0	0	
27	LF	3	HS	90.0	70	10	90	Conifer	0	2	0	0	0	
								Hardwood	0	0	0	0	0	