

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

STREAM: Farmer Creek (NC-30)  
 BASIN: Nestucca River  
 SURVEY TYPE: Pre and Post-Tx  
 DATE: October 23, 2003  
 REPORT PREPARED BY: Paul Jacobsen

The Farmer Creek restoration project extended approximately 800 meters, with about 450 meters of the project being monitored for pre- and post-treatment conditions. Eighteen habitat structures were created and 86 key pieces (according to the ODF Large Wood Placement Guide) were used. 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. Winter pool area and pool frequency were higher and there were more complex pools. In addition, riffle fines were slightly lower.

	ODFW	Benchmark	Winter Pre	Summer Pre	Winter Post	Summer Post	
Habitat Variable	Desirable	Undesirable	2/28/00	6/20/00	1/24/01	6/26/01	
Reach #							
Pool Area	>35	<10	15.9	26.3	32.7	16.5	
Pool Frequency	5-8	>20	12.0	9.4	8.2	21.8	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.41	.29	.32	.38	
Complex Pools/km	>2.5	<1.0	4.2	0.0	8.2	2.0	
Width/Depth Ratio	<15	>30	12.4	10.0	12.2	14.9	
Riffle Gravel % area	>35	<15	53	34	32	14	
Silt-Sand-Organic %	<12	>25	21	17	14	15	
Shade %	>70	< 60		98		97	
LWD - pieces/100m	>20	<10	7.6	3.4	10.9	15.8	
LWD - Volume/100m	>30	<20	3.4	2.2	39.5	54.8	
LWD - Key pieces/ 100m	>3	<1	0.0	0.0	4.9	5.8	
Riparian Conifers>20" dbh/1000ft	>300	<150		20		0	
Riparian Conifers>35" dbh/1000ft	>200	<75		0		0	

**COMMENTS:**

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

Nine habitat structures were recorded.

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

STREAM: Farmer Creek (NC-30)  
BASIN: Nestucca River  
SURVEY TYPE: Post-Tx  
DATE: June 26, 2001  
SURVEY CREW: Ben Soeby, Victor Vrell  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 6.6 km<sup>2</sup>  
USGS MAPS: Sand Lake  
ECOREGION: Coast Range Sitka Spruce

**GENERAL DESCRIPTION:**

The Farmer Creek habitat survey extended 467 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 7.0 (range: 5.0 – 10.0). Land use for the reach was second growth (15-30 cm dbh) trees and agriculture. The average unit gradient was 3.3 percent. Riffles (81%) and scour pools (17%) dominated stream habitat. Cobble (56%) dominated stream substrate. Wood volume was high at 54.8 m<sup>3</sup>/100m.

**COMMENTS:**

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

The crew noted several habitat structures during the survey.

REACH 1

T4S-R10W-S3NE

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: 7.0 range: 5.0-10.0

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0	Single Channel	0
Bedrock	0	Multiple Channel	0
Terrace	0	Braided Channel	0
Alt. Terrace/Hill	100		
Landuse	0		

Channel Characteristics

<u>Type</u>	<u>Length(m)</u>	<u>Area (m2)</u>	<u>Dry Units</u>
Primary	467	1,910	0
Secondary	29	118	0

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	4.3	Width	5.7	8.0	9.9
Depth	0.25	Height	0.4	0.7	1.1
		W:D ratio	14.9	Entrenchment	1.4

Stream Flow Type: MF Water Temp: 9.5-9.5°C  
 Avg. Unit Gradient: 3.3% Habitat Units/100m: 4.8

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	AG
Riparian Vegetation:	D15	S

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	1%	Reach avg: 97%
Undercut Banks	9%	Range: 89-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ( $\geq 3m \times 0.15m$ )	74	15.8
Volume (m <sup>3</sup> )	256	54.8
Key pieces ( $\geq 10m \times 0.6m$ )	27	5.8

REACH 1

T4S-R10W-S3NE

REACH 1

HABITAT DETAIL

Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbbl	Bldr	Bdrk
POOL-LATERAL SCOUR	4	52	6.6	0.60	335	1	6	32	15	35	5	7
RAPID/BOULDERS	1	25	2.1	0.10	53	5	0	5	58	21	16	0
RIFFLE	16	346	4.0	0.17	1,362	11	3	12	14	64	7	0
RIFFLE W/ POCKETS	3	74	3.8	0.23	278	0	3	12	15	54	13	3
<b>Total:</b>	<b>24</b>	<b>496</b>	<b>4.3</b>	<b>0.25</b>	<b>2,028</b>	<b>17</b>	<b>Avg: 4</b>	<b>15</b>	<b>16</b>	<b>56</b>	<b>8</b>	<b>2</b>

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders Number	Boulders #/100m <sup>2</sup>
					(m <sup>2</sup> )	Percent		
Dammed & BW Pools	0	0	-	-	0	0.00	0	0.0
Scour Pools	4	52	6.6	0.60	335	16.53	1	0.3
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	19	420	4.0	0.18	1,640	80.88	11	0.7
Rapids	1	25	2.1	0.10	53	2.59	5	9.5
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	0	0	-	-	0	0.00	0	0.0
Dry	0	0	-	-	0	0.00	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	4	8.1
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	1	2.0
Pool Frequency (channel widths/pool):	21.8	
Residual pool depth (avg)	0.38m	

STREAM SUMMARY

FARMER CREEK POST-TX (#30)

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Substrate Percent Wetted Area					Total Large Boulder	
					S/O	Sand	Grvl	Cbbl	Bldr		Bdrk
24	496	4.3	0.25	2,028	4	15	16	56	8	2	17

Wetted Area

Habitat Group	(m <sup>2</sup> )	Percent
Scour Pool	335	16.5
Backwater Pools	0	0.0
Glide	0	0.0
Riffle	1,640	80.9
Rapid	53	2.6
Cascade	0	0.0
Step	0	0.0
Dry	0	0.0

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REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	1,565
Total conifers/1000 ft	183
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	1.7	0.0	2.7	0.0	3.7	0.0	8.0
15-30cm	0.0	5.7	1.0	5.7	0.7	3.0	1.7	14.3
30-50cm	0.0	2.3	0.3	1.0	1.0	0.0	1.3	3.3
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 <sup>2</sup>	0.0	9.7	1.3	9.3	1.7	6.7	1.0	8.6

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	98		98		70	
Shrub cover	52		58		48	
Grass/forb cover	48		42		43	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	0		17		83
High terrace	100		83		17	
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 (%)	0		3		37	

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	1,565
Total conifers/1000 ft	183
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	0.0	8.0
15-30cm	1.7	14.3
30-50cm	1.3	3.3
50-90cm	0.0	0.0
>90cm	0.0	0.0

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RIPARIAN ZONE VEGETATION

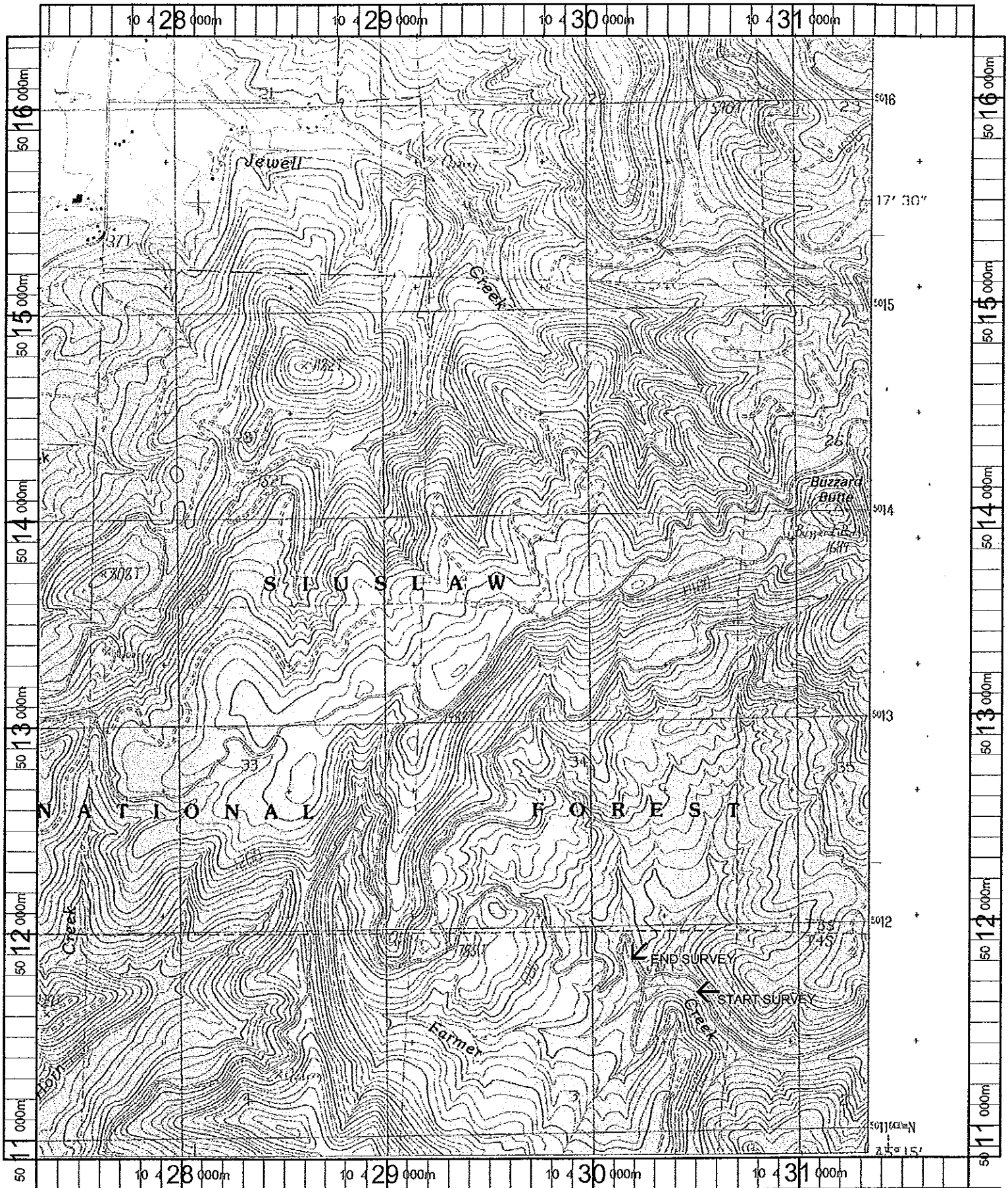
Reach 1

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	0.0	100	30	70	Conifer	0	0	0	0	0	
								Hardwood	5	2	0	0	0	
8	LF	2	HT	0.0	100	80	20	Conifer	0	0	0	0	0	
								Hardwood	2	5	1	0	0	
8	LF	3	HS	70.0	40	90	10	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	CLEARCUT
8	RT	1	HT	0.0	100	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	7	0	0	0	
8	RT	2	HT	0.0	100	70	30	Conifer	0	0	1	0	0	
								Hardwood	0	4	0	0	0	
8	RT	3	HS	20.0	50	50	50	Conifer	0	0	1	0	0	
								Hardwood	0	5	0	0	0	
12	LF	1	HT	0.0	90	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	4	1	0	0	
12	LF	2	HT	0.0	100	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	6	1	0	0	
12	LF	3	HS	90.0	80	50	50	Conifer	0	0	0	0	0	
								Hardwood	5	0	0	0	0	
12	RT	1	HT	0.0	100	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	0	3	0	0	
12	RT	2	HT	0.0	100	50	50	Conifer	0	0	0	0	0	
								Hardwood	2	0	1	0	0	
12	RT	3	HT	0.0	100	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	4	0	0	0	
18	LF	1	HT	0.0	100	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	4	2	0	0	
18	LF	2	HS	20.0	100	50	50	Conifer	0	2	0	0	0	
								Hardwood	3	0	0	0	0	
18	LF	3	HS	20.0	100	30	70	Conifer	0	0	2	0	0	
								Hardwood	1	0	0	0	0	
18	RT	1	HT	0.0	100	80	20	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	0	0	
18	RT	2	HT	0.0	90	50	50	Conifer	0	1	0	0	0	
								Hardwood	1	2	0	0	0	
18	RT	3	HS	20.0	50	20	30	Conifer	0	2	0	0	0	
								Hardwood	2	0	0	0	0	





<p>Name: SAND LAKE          Date: 11/8/100          Scale: 1 Inch equals 2000 feet</p>	<p>Location: 10 429489 E 5013586 N          Caption: FARMER CREEK RESTORATION SITE - NESTUCCA BASIN</p>
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