

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

STREAM: Farmer Creek (N-30)
BASIN: Nestucca River
SURVEY TYPE: Post-Tx
DATE: June 28, 2006
SURVEY CREW: Gordon Rose, Ben Walczak
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 2.2 km²
USGS MAPS: Sand Lake
ECOREGION: Coast Range Sitka Spruce

GENERAL DESCRIPTION:

The Farmer Creek habitat survey extended 487 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 5.4 (range: 3.0-10.0). Land use for the reach was large (30-50 cm dbh) trees. The average unit gradient was 2.7 percent. Riffles (80%) dominated stream habitat. Gravel (72%) dominated stream substrate. Wood volume was high at 39.7 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.

Stream Farmer Creek (NC-30)

Basin Nestucca River

Treatment Large Wood

	ODFW Benchmark		Pre 6/20/00	Post 6/26/01	Post 6/28/06		
Habitat Variable	Desirable	Undesirable					
% Pool Area	>35%	<10%	26.3	16.5	15.9		
Number of Pools			10	4	7		
Deep Pools/km (>1.0 m)			0	0	0		
% Off-Channel			5.7	5.8	4.8		
LWD – Pieces/100m	>20	<10	3.4	15.8	13.1		
LWD – Volume/100m	>30	<20	2.2	54.8	39.7		
LWD – Key Pieces/100m	>3	<1	0.0	5.8	4.7		
Large Wood Jams/km			0	6.4	8.2		
% Riffle Fines	<10	>20	17	15	2		
% Riffle Gravel	>35	<15	34	14	74		
% Bedrock			4	2	3		

Bold is noticeable change

Comments: Since the treatment was large wood assembled in complex jams, it is no surprise that there was an increase in those variables. However, with time, it appears that the placed wood is leaving the treatment reach with little additional recruitment. This may be a symptom of little recruitable wood in the riparian area. Transects suggest that the riparian is comprised of smaller hardwoods and conifers, with few large conifers. Pool area and the number of pools have decreased with time while riffle gravel has increased. It may be that the treatment wood has retained the gravel as planned but also filled in some of the pools. Perhaps in time these will again scour out.

REACH 1

T04S-R10W-S03NE

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	5.4	VWI Range:	3 - 10

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 Channel	487	1,376	0
Secondary Channel	21	9	2
Off-Channel Units	20	60	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 3.0	Width: 5.5	6.3 (2.1 - 10.8)	8.3 (2.5 - 15)
Depth: 0.21	Height: 0.3	0.6 (0.4 - 0.9)	1.2 (0.8 - 2.1)

W:D ratio: 15.8

Entrenchment (ACW:FPW ratio): 1.1

Stream Flow Type: MF

Habitat Units/100m (total channel length): 6.4

Average Unit Gradient: 2.7%

Habitat Units/100m (primary channel length): 7.0

Water temperature (°C): -

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	LT	
Riparian Vegetation:	D30	S

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	18%	Reach avg: 95%
Undercut Banks:	1%	Range: 92 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	64	13.1
Volume (m ³):	193	39.7
Key pieces (>=12m x 0.60m):	23	4.7

HABITAT INVENTORY

Report Date: 3/5/2007

Survey Date:

6/28/2006

REACH 1		T04S-R10W-S03NE					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	Cbl	Bldr	Bdrk
POOL-LATERAL SCOUR	5	40	4.7	0.68	188	0	3	10	62	14	0	11
POOL-PLUNGE	2	7	5.5	0.55	41	0	0	5	65	15	0	15
PUDDLED UNIT	2	20	0.4	0.01	8	0	0	10	70	20	0	0
RAPID/BOULDERS	1	28	1.4	0.10	39	0	0	0	80	20	0	0
RIFFLE	19	428	3.1	0.12	1,160	0	0	2	74	24	0	0
STEP/LOG	2	2	2.0	0.10	4	0	0	0	75	25	0	0
STEP/STRUCTURE	3	3	1.3	0.05	5	0	0	3	77	20	0	0
Total:	34	527	3.0	0.21	1,445	0	Avg: 0	4	72	21	0	3

HABITAT SUMMARY									
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders		
					(m ²)	Percent	Number	(# / 100m ²)	
Dammed & BW Pools	0	0			0	0.00%	0	0.0	
Scour Pools	7	47	4.9	0.64	229	15.85%	0	0.0	
Glides	0	0			0	0.00%	0	0.0	
Riffles	19	428	3.1	0.12	1,160	80.28%	0	0.0	
Rapids	1	28	1.4	0.10	39	2.71%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	5	4	1.6	0.07	9	0.59%	0	0.0	
Dry	2	20	0.4	0.01	8	0.57%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY			
	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	7	13.3	14.4
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	3	5.7	6.2
Pool frequency (channel widths/pool):	13.8		
Residual pool depth (avg):	0.55		

**OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY**

**FARMER CREEK POST-TX
GCG: 1-NC SITE ID: 30**

**Survey Date 6/28/2006
Report Date: 3/5/2007**

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

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

Total hardwoods/1000	366
Total conifers/1000 ft	142
Total conifers >20" dbh/1000 ft	20
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	0.0	0.0	0.0	0.0	0.0
15-30cm	1.0	1.7	0.3	1.0	0.7	0.0	2.0	2.7
30-50cm	0.0	2.0	0.0	0.3	0.0	0.7	0.0	3.0
50-90cm	0.0	0.3	0.3	0.0	0.0	0.0	0.3	0.3
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	1.0	4.0	0.7	1.3	0.7	0.7	0.8	2.0

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	Conifer		Conifer		Conifer	
	(%)	(%)	(%)	(%)	(%)	(%)
Canopy closure	85	85	85	85	84	84
Shrub cover	40	40	48	48	45	45
Grass/forb cover	58	58	52	52	55	55

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	Conifer		Conifer		Conifer	
	(%)	(%)	(%)	(%)	(%)	(%)
Hillslope	0	0	0	0	17	17
High terrace	100	100	100	100	83	83
Low terrace	0	0	0	0	0	0
Floodplain	0	0	0	0	0	0
Wetland/meadow	0	0	0	0	0	0
Stream channel	0	0	0	0	0	0
Roadbed/Railroad	0	0	0	0	0	0
Riprap	0	0	0	0	0	0
Surface slope (%)	3	3	0	0	5	5

Summary of Riparian Zone (0-30m) for all reaches**3 transects****Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream**

Total hardwoods/1000	366
Total conifers/1000 ft	142
Total conifers >20" dbh/1000 ft	20
Total conifers >35" dbh/1000 ft	0

Average number of trees in a 5-m wide band

Diameter class (cm)	Zones 1-3	
	<u>0-30 meters</u>	
	<u>Conifer</u>	<u>Hardwood</u>
3-15cm	0.0	0.0
15-30cm	2.0	2.7
30-50cm	0.0	3.0
50-90cm	0.3	0.3
>90cm	0.0	0.0

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

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	85	60	40	Conifer							POOR GPS COVERAGE
								Hardwood				1			
7	LF	2	HT	0	85	60	40	Conifer							
								Hardwood			1				
7	LF	3	HT	0	85	50	50	Conifer							
								Hardwood			1				
7	RT	1	HT	20	85	20	70	Conifer		2					
								Hardwood		1					
7	RT	2	HT	0	85	70	30	Conifer		1					
								Hardwood							
7	RT	3	HT	0	85	70	30	Conifer		1					
								Hardwood							
16	RT	3	HT	0	85	50	50	Conifer							
								Hardwood							
16	RT	2	HT	0	85	50	50	Conifer							
								Hardwood							
16	LF	2	HT	0	85	60	40	Conifer							NO AMPHIBIANS ALL ZONES
								Hardwood		2					
16	LF	3	HS	30	85	50	50	Conifer							
								Hardwood			1				
16	LF	1	HT	0	85	60	40	Conifer							UTM 0430306-5011707-3D
								Hardwood			1				
16	RT	1	HT	0	85	60	40	Conifer							
								Hardwood		1	1				
27	LF	3	HT	0	85	20	80	Conifer							
								Hardwood							
27	RT	1	HT	0	85	20	80	Conifer							
								Hardwood		2	4				
27	RT	2	HT	0	85	30	70	Conifer							
								Hardwood		1					
27	LF	1	HT	0	85	20	80	Conifer		1					UTM 0430238-5011748-2D
								Hardwood		1					
27	LF	2	HT	0	85	20	80	Conifer					1		
								Hardwood							
27	RT	3	HT	0	80	30	70	Conifer		1					
								Hardwood							

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: 1-NC SITE ID: 30 FARMER CREEK POST-TX

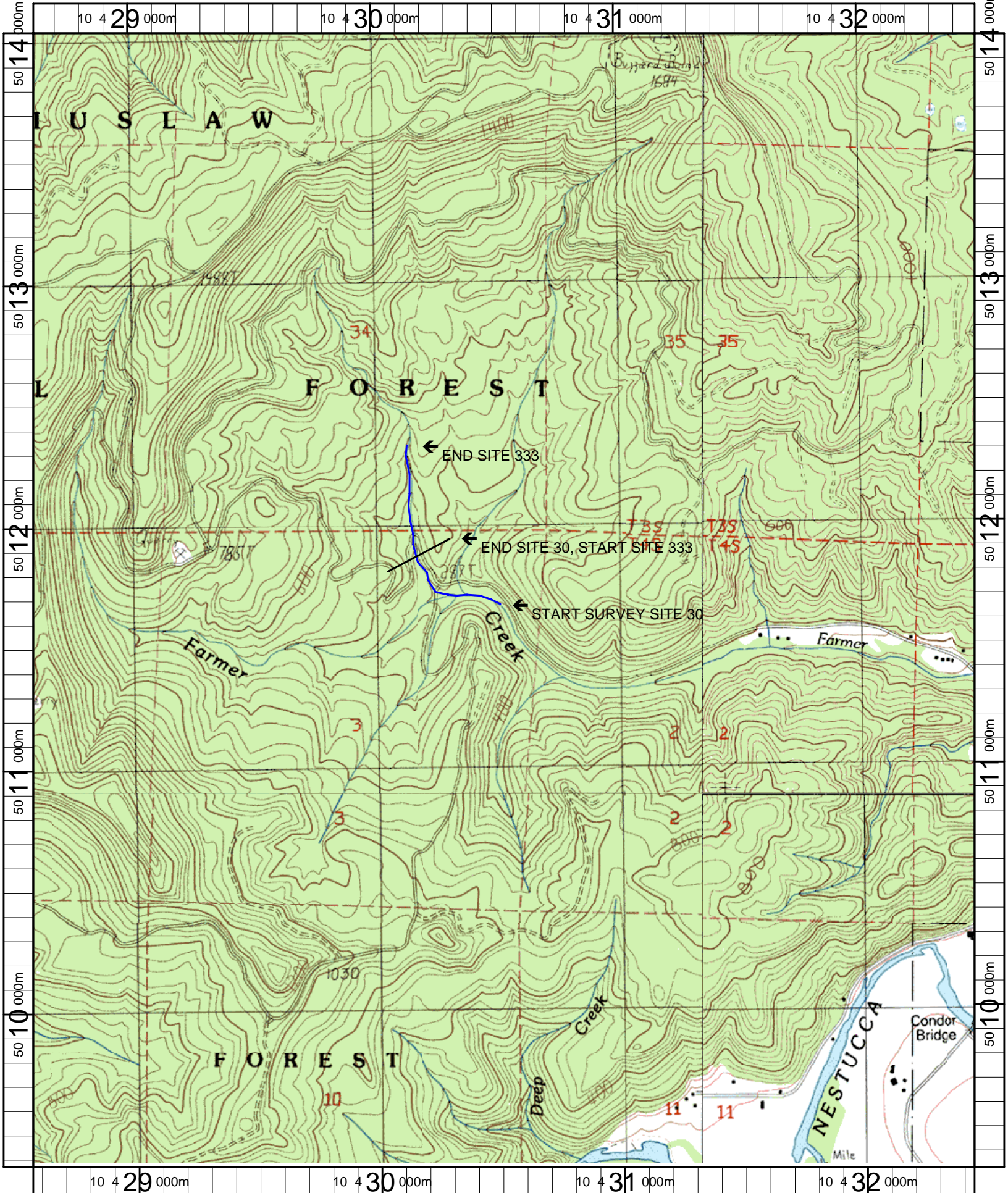
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RI	00	22	HS		START AT SIGN ALDER RI
2	LP	00	28.6	HS		
4	LP	00	61.9	HS		FAST
5	RI	00	83.9	HS		
6	RI	00	101.9	HS		PHOTO, SITE 3
7	LP	00	110.9			RIPARIAN #1
10	SL	00	134.8	HS	H=0.30M	
11	RI	00	144.8	HS		SITE 4, UTM 0430303-5011
12	LP	01	154.8	/TJ		FARMER CREEK TRIB A
13	RI	11	154.8	HS		SALMON SPAWNING SUR
14	RI	00	189.1	/SS		
16	RI	00	216.7			RIPARIAN #2
17	RI	01	241.1	HS, TJ/		SALMON SPAWNING SUR
18	RI	11	241.1		ACTUALLY MAINSTEM	ACTUAL MAINSTEM (SEE
19	SL	01	241.6		H=0.40M	
20	RI	01	257.3	HS		
22	SS	02	257.3	HS	H=0.60M	
24	PP	00	258.8	HS		
25	SS	00	260.3	HS	H=1.0M	H2O BEING DIVERTED @
27	RI	00	310.3	BC	PASS UNDER BRIDGE	1024 ROAD, RIPARIAN #3
30	RI	00	385.3	HS		

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: 1-NC SITE ID: 30 FARMER CREEK POST-TX

<u>UNIT#</u>	<u>TYPE</u>	<u>CHAN</u>	<u>DIST. (m)</u>	<u>COMMENTS</u>	<u>NOTE ESTIMATOR</u>	<u>NOTE NUMERATOR</u>
31	RI	00	410.3	HS		
32	RI	00	444.1	HS		
33	SS	00	444.8	HS	H=0.90M	
34	RI	00	486.8			END SURVEY



Name: SAND LAKE (OR)
 Date: 2/1/2007
 Scale: 1 inch equals 1600 feet

Location: 10 0430525 E 5011686 N
 Caption: FARMER CREEK RESTORATION SITES 30 AND 333 -
 NESTUCCA BASIN