

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

STREAM: Devils Lake Fork Wilson River (N-27)
BASIN: Wilson River
SURVEY TYPE: Post-Tx
DATE: August 28, 2006
SURVEY CREW: Sharon Tippery, Ben Walczak, Gordon Rose
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 20.0 km²
USGS MAPS: Roaring Creek
ECOREGION: Coast Range Volcanic

GENERAL DESCRIPTION:

The Devils Lake Fork Wilson River habitat survey extended 782 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 8.3 (range: 2.5-15.0). Land use for the reach was large (30-50 cm dbh) and second growth (15-30 cm dbh) trees. The average unit gradient was 0.4 percent. Beaver pools (77%) and scour pools (20%) dominated stream habitat. Gravel (28%), sand (23%) and silt (23%) dominated stream substrate. Wood volume was moderate at 25.1 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.

Stream Devils Lake Fork Wilson River (NC-27)

Basin Wilson River

Treatment Large Wood

	ODFW Benchmark		Pre 7/19/99	Post 6/20/00	Post 8/28/06		
Habitat Variable	Desirable	Undesirable					
% Pool Area	>35%	<10%	27.4	55.5	100.0		
Number of Pools			7	14	13		
Deep Pools/km (>1.0 m)			2.1	5.4	6.1		
% Off-Channel			4.9	4.4	1.3		
LWD – Pieces/100m	>20	<10	16.3	13.4	12.4		
LWD – Volume/100m	>30	<20	27.6	20.2	25.1		
LWD – Key Pieces/100m	>3	<1	1.4	0.0	0.1		
Large Wood Jams/km			7.0	10.6	1.3		
% Riffle Fines	<10	>20	26	16	27		
% Riffle Gravel	>35	<15	15	9	47		
% Bedrock			13	18	16		

Bold is noticeable change

Comments: This site was treated with large wood, but wood numbers seem to decrease with treatment. It is more likely that the pre-treatment survey crew failed to accurately tally the wood. The treatment seems to have been effective, although much of the pool area is due to beaver-created ponds. Deep pools have increased as has riffle gravel.

REACH 1 T02N-R06W-S36NW 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	8.3	VWI Range:	2.5 - 15

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	782	6,940	0
Secondary Channel	12	40	0
Off-Channel Units	24	53	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 4	<u>First Terrace</u> n = 4
Width: 4.8	Width: 6.2	7.7 (5.1 - 10.2)	10.2 (7.2 - 11.7)
Depth: 0.52	Height: 0.3	0.6 (0.5 - 0.6)	1.0 (0.9 - 1.1)

W:D ratio: 21.3 Entrenchment (ACW:FPW ratio): 1.3
Stream Flow Type: LF Habitat Units/100m (total channel length): 2.6
Average Unit Gradient: 0.4% Habitat Units/100m (primary channel length): 2.7
Water temperature (°C): 14.5 - 14.5

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	LT	ST
Riparian Vegetation:	C30	G

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	16%	Reach avg: 60%
Undercut Banks:	11%	Range: 33 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	97	12.4
Volume (m ³):	196	25.1
Key pieces (>=12m x 0.60m):	1	0.1

OREGON DEPT OF FISH AND WILDLIFE DEVILS LAKE FORK WILSON POST-TX (1-NC, 27)

HABITAT INVENTORY Report Date: 3/5/2007 Survey Date: 8/28/2006

REACH 1		T02N-R06W-S36NW					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-BACKWATER	1	15	3.0	0.20	45	0	60	40	0	0	0	0
POOL-BEAVER DAM	3	475	9.2	1.20	5,329	0	30	27	33	8	0	2
POOL-ISOLATED	1	5	1.2	0.25	6	0	40	40	20	0	0	0
POOL-LATERAL SCOUR	6	246	5.6	0.83	1,344	0	21	22	22	15	1	19
POOL-PLUNGE	2	25	3.9	0.65	95	0	40	40	20	0	0	0
RIFFLE	3	41	3.4	0.09	181	0	12	15	47	10	0	17
STEP/BEAVER DAM	3	6	4.7	0.05	28	0	17	20	37	7	0	20
STEP/BEDROCK	1	3	0.4	0.05	1	0	0	0	0	0	0	100
STEP/COBBLE	1	1	3.2	0.05	4	0	0	10	45	45	0	0
Total:	21	818	4.8	0.52	7,033	0	Avg: 23	23	28	10	0	16

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	5	496	6.4	0.81	5,380	76.50%	0	0.0	
Scour Pools	8	271	5.2	0.79	1,439	20.46%	0	0.0	
Glides	0	0			0	0.00%	0	0.0	
Riffles	3	41	3.4	0.09	181	2.57%	0	0.0	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	5	10	3.6	0.05	33	0.47%	0	0.0	
Dry	0	0			0	0.00%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY			
	Total of all Channel Lengths		Primary Channel Length
	<u>Total</u>	<u># / Km</u>	<u># / Km</u>
All Pools:	13	15.9	16.6
Pools >=1m deep:	5	6.1	6.4
Complex pools (LWD pieces>=3):	7	8.6	9.0
Pool frequency (channel widths/pool):	10.2		
Residual pool depth (avg):	0.81		

Survey Date 8/28/2006
Report Date: 3/5/2007

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

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

Total hardwoods/1000	427
Total conifers/1000 ft	691
Total conifers >20" dbh/1000 ft	41
Total conifers >35" dbh/1000 ft	41

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	3.0	1.0	1.0	2.7	1.3	4.7	5.3
15-30cm	0.3	1.0	0.7	0.0	1.7	0.3	2.7	1.3
30-50cm	0.3	0.0	1.0	0.0	2.0	0.0	3.3	0.0
50-90cm	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
>90cm	0.0	0.0	0.7	0.0	0.0	0.0	0.7	0.0
Total/100m2	1.7	4.0	3.3	1.0	6.3	2.0	3.8	2.3

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	48		64		75	
Shrub cover	10		7		9	
Grass/forb cover	89		72		48	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		17		33	
High terrace	100		83		67	
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		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	427
Total conifers/1000 ft	691
Total conifers >20" dbh/1000 ft	41
Total conifers >35" dbh/1000 ft	41

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	4.7	5.3
15-30cm	2.7	1.3
30-50cm	3.3	0.0
50-90cm	0.0	0.3
>90cm	0.7	0.0

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

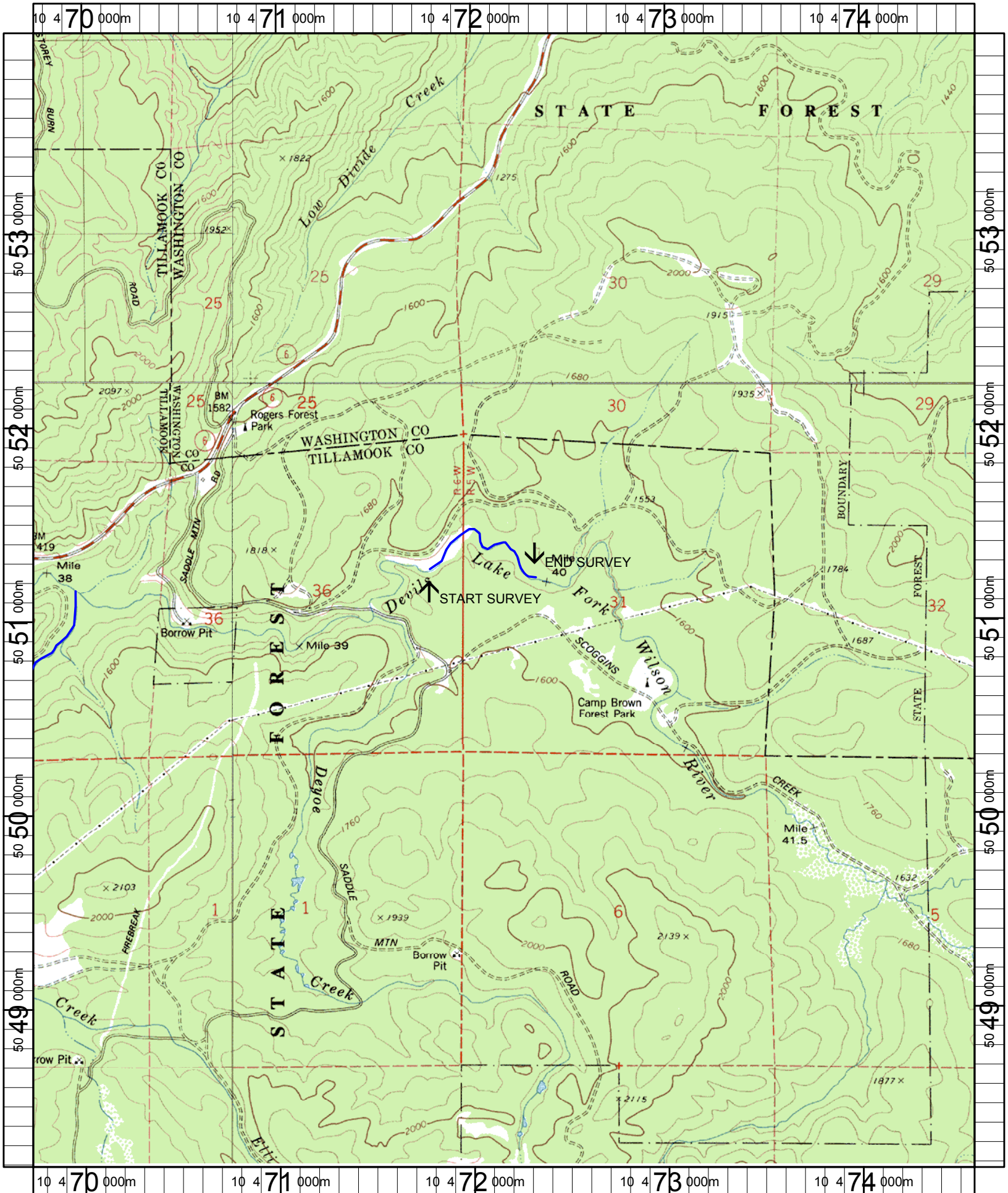
Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90	
8	RT	3	HS	15	85	0	30	Conifer				3		
								Hardwood						
8	LF	1	HT	0	15	5	95	Conifer						UTM 0471736-5051260 (2D)
								Hardwood						
8	RT	2	HS	15	85	5	40	Conifer	1	2	1			
								Hardwood						
8	RT	1	HT	0	50	20	80	Conifer		1	1			
								Hardwood						
8	LF	3	HT	0	25	0	100	Conifer						
								Hardwood						
8	LF	2	HT	0	20	0	100	Conifer						NO AMPHIBIANS
								Hardwood						
14	LF	2	HT	0	85	10	60	Conifer			1		2	
								Hardwood	3					
14	LF	1	HT	0	25	10	90	Conifer						UTM 0471894-5051529 (3D)
								Hardwood		1				
14	LF	3	HT	0	85	10	60	Conifer	2					
								Hardwood		1		1		
14	RT	2	HT	0	50	10	90	Conifer						
								Hardwood						
14	RT	3	HS	15	85	10	10	Conifer	3	1	1			
								Hardwood	1					
14	RT	1	HT	0	70	10	85	Conifer	3					
								Hardwood	4					
19	LF	1	HT	0	80	5	95	Conifer						POOR GPS COVERAGE
								Hardwood	2	1				
19	RT	2	HT	0	60	10	90	Conifer						
								Hardwood						
19	RT	1	HT	0	50	10	90	Conifer						
								Hardwood	3	1				
19	RT	3	HT	0	85	30	40	Conifer	1	1	2			
								Hardwood	3					
19	LF	2	HT	15	85	5	50	Conifer	2		1			
								Hardwood						
19	LF	3	HT	0	85	5	50	Conifer	2	3				
								Hardwood						

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: 1-NC SITE ID: 27 DEVILS LAKE FORK WILSON POST-

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	LP	00	38.3	HS	START SIGN ALDER RIGHT	
2	LP	00	61.7	HS		
6	SD	00	109.2	BD	H=0.40M	
7	BP	00	172.6	BV, HS, WL		RSN
8	LP	00	213.8	HS		T=14.5C AT 10:00
10	SR	02	229.9		H=0.35M	BEDROCK=HARDPAN
13	SD	00	231.1	BD	H=1.30M	
14	BP	00	581.1	BV, WL		PACIFIC TREE FROG
18	SD	00	704.8	BD	H=0.60M	
19	BP	01	766.8	BV, WL		FROG-SPECIES UNKNOW
21	RI	00	781.8		END SURVEY SIGN ALDER R	



Name: ROARING CREEK
 Date: 1/19/2006
 Scale: 1 inch equals 2000 feet

Location: 10 472161 E 50511103 N
 Caption: DEVILS LAKE FORK WILSON RIVER RESTORATION SITE -
 WILSON BASIN