

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

STREAM: Peterson Creek (NC-54)
 BASIN: Miami River
 SURVEY TYPE: Pre and Post-Tx
 DATE: October 27, 2003
 REPORT PREPARED BY: Paul Jacobsen

The Peterson Creek restoration project extended approximately 680 meters, including habitat structures and fish passage improvement. The entire project was monitored for pre- and post-treatment conditions. Ten habitat structures were created and 60 key pieces (according to the ODF Large Wood Placement Guide) were used. In addition, a culvert was replaced with a bridge crossing. The intended goals of the project included increasing stream complexity, improved interaction with the floodplain, 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. In addition, pool area, complex pools, and riffle gravel are all higher, while riffle fines have been reduced.

	ODFW	Benchmark	Winter Pre	Summer Pre	Winter Post	Summer Post	
Habitat Variable	Desirable	Undesirable	2/16/00	6/19/00	2/12/01	7/16/01	
Reach #							
Pool Area	>35	<10	58.9	63.0	59.2	68.1	
Pool Frequency	5-8	>20	3.2	3.2	3.6	3.2	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.60	.66	.63	.65	
Complex Pools/km	>2.5	<1.0	3.9	10.7	9.0	15.2	
Width/Depth Ratio	<15	>30	15.4	15.7	16.0	16.8	
Riffle Gravel % area	>35	<15	81	62	90	82	
Silt-Sand-Organic %	<12	>25	17	32	10	13	
Shade %	>70	< 60		76		75	
LWD - pieces/100m	>20	<10	8.8	7.3	11.3	15.0	
LWD - Volume/100m	>30	<20	7.4	6.6	28.7	25.1	
LWD - Key pieces/ 100m	>3	<1	0.0	0.1	3.2	2.1	
Riparian Conifers>20" dbh/1000ft	>300	<150		0		20	
Riparian Conifers>35" dbh/1000ft	>200	<75		0		20	

COMMENTS:

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

The crew noted evidence of beaver activity during the survey. Eighteen habitat structures were also recorded.

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

STREAM: Peterson Creek (NC-54)
BASIN: Miami River
SURVEY TYPE: Post-Tx
DATE: July 16, 2001
SURVEY CREW: Sean Allen, Rachel Werner
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 6.9 km²
USGS MAPS: Garibaldi
ECOREGION: Coast Range Sitka Spruce

GENERAL DESCRIPTION:

The Peterson Creek habitat survey extended 718 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 9.6 (range: 5.0 – 15.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 1.0 percent. Scour pools (49%) and riffles (31%) dominated stream habitat. Gravel (61%) and sand (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.

REACH 1

T1N-R10W-S2NW

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: 9.6 range: 5.0-15.0

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	718	3,299	0
Secondary	73	119	0

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	4.1	Width	9.6	20.9	18.2
Depth	0.45	Height	0.6	1.1	1.7
		W:D ratio	16.8	Entrenchment	2.3

Stream Flow Type: LF Water Temp: 11.0-11.0°C
Avg. Unit Gradient: 1.0% Habitat Units/100m: 5.8

Riparian, Bank, and Wood Summary

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	13%	Reach avg: 75%
Undercut Banks	11%	Range: 33-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ($\geq 3m \times 0.15m$)	108	15.0
Volume (m ³)	180	25.1
Key pieces ($\geq 10m \times 0.6m$)	15	2.1

REACH 1

T1N-R10W-S2NW

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
POOL-BACKWATER	3	13	2.1	0.45	28	0	25	48	27	0	0	0
POOL-BEAVER DAM	2	81	7.8	0.90	629	0	23	45	33	0	0	0
POOL-ISOLATED	1	2	2.2	0.40	4	0	30	70	0	0	0	0
POOL-LATERAL SCOUR	19	323	4.6	0.73	1,524	0	12	25	59	3	0	0
POOL-STRAIGHT SCOUR	1	24	6.0	1.00	144	0	30	40	20	10	0	0
RIFFLE	14	273	2.8	0.11	825	15	3	10	82	5	1	0
RIFFLE W/ POCKETS	3	71	3.2	0.22	234	0	6	8	82	5	0	0
STEP/BEAVER DAM	2	2	7.7	0.05	12	0	25	25	50	0	0	0
STEP/LOG	1	2	7.8	0.05	18	0	15	30	40	15	0	0
Total:	46	791	4.1	0.45	3,419	15	Avg:12	23	61	4	0	0

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m ²)	Percent	Large Boulders Number	Boulders #/100m ²
Dammed & BW Pools	6	97	4.0	0.59	662	19.35	0	0.0
Scour Pools	20	347	4.6	0.74	1,668	48.79	0	0.0
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	17	344	2.8	0.13	1,059	30.98	15	1.4
Rapids	0	0	-	-	0	0.00	0	0.0
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	3	4	7.7	0.05	30	0.88	0	0.0
Dry	0	0	-	-	0	0.00	0	0.0

POOL SUMMARY

	Total	#/Km
All Pools	26	32.9
Pools ≥1m deep:	4	5.1
Complex pools (LWD pieces ≥3):	12	15.2
Pool Frequency (channel widths/pool):	3.2	
Residual pool depth (avg)	0.65m	

STREAM SUMMARY

PETERSON CREEK POST-TX (#54)

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	
46	791	4.1	0.45	3,419	12	23	61	4	0	0	15

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	1,668	48.8
Backwater Pools	662	19.4
Glide	0	0.0
Riffle	1,059	31.0
Rapid	0	0.0
Cascade	0	0.0
Step	30	0.9
Dry	0	0.0

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	589
Total conifers/1000 ft	284
Total conifers >20" dbh/1000 ft	20
Total conifers >35" dbh/1000 ft	20

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	0.3	2.0	0.0	2.0	1.7	2.0	2.0	6.0
15-30cm	0.3	0.7	0.0	1.3	1.3	0.0	1.7	2.0
30-50cm	0.0	0.0	0.3	0.7	0.3	0.3	0.7	1.0
50-90cm	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
>90cm	0.0	0.0	0.0	0.3	0.3	0.0	0.3	0.3
Total/100m ²	0.7	2.7	0.3	4.3	3.7	2.7	1.6	3.2

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	34		34		50	
Shrub cover	33		58		39	
Grass/forb cover	57		42		55	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	0		33		50
High terrace	50		67		50	
Low terrace	33		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	17		0		0	
Riprap	0		0		0	
Surface slope (%)	8		20		36	

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	589
Total conifers/1000 ft	284
Total conifers >20" dbh/1000 ft	20

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	6.0
15-30cm	1.7	2.0
30-50cm	0.7	1.0
50-90cm	0.0	0.3
>90cm	0.3	0.3

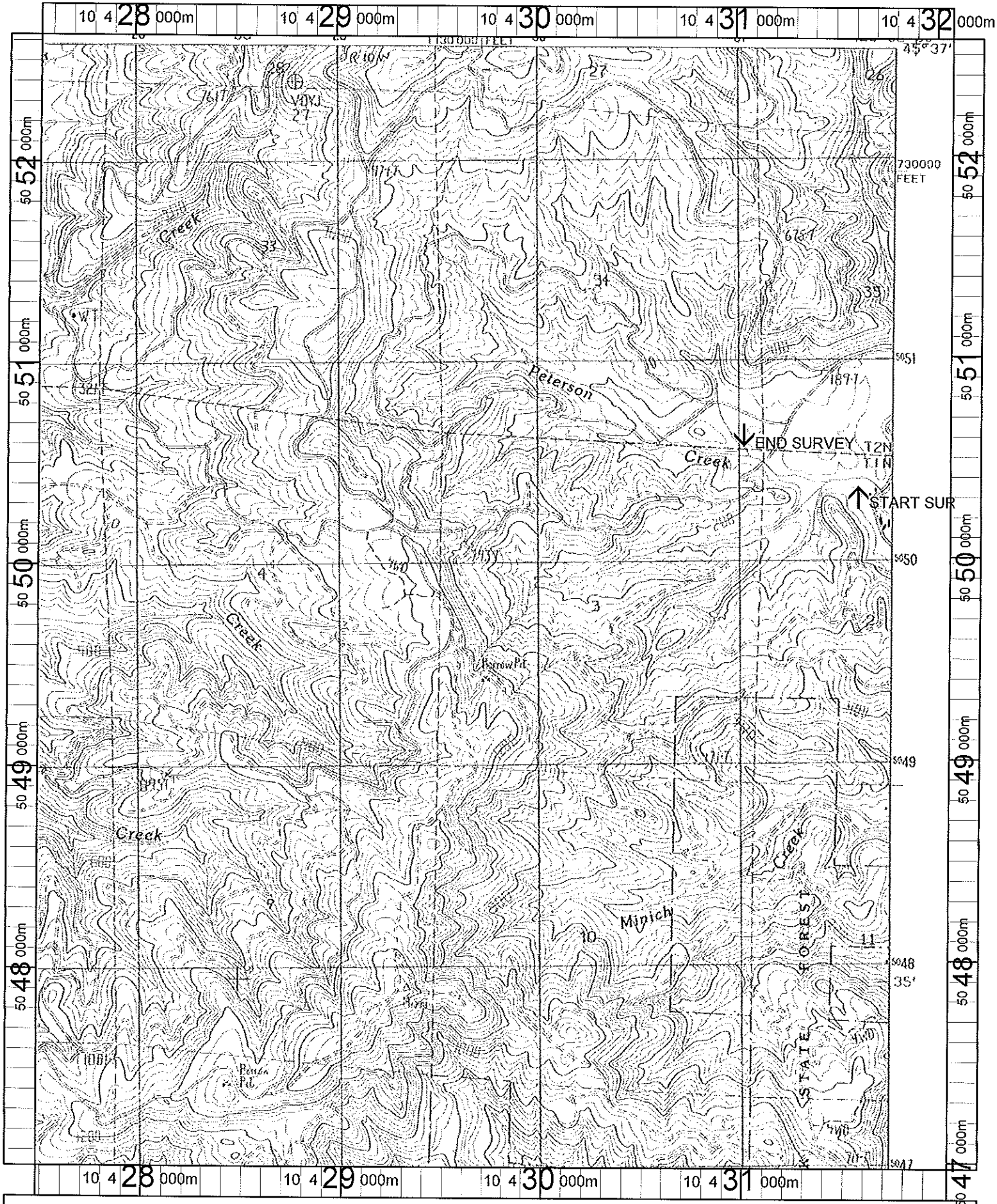
RIPARIAN ZONE VEGETATION

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	
10	LF	1	LT	8.0	60	65	35	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	COW PARSNIP
10	LF	2	HS	19.0	70	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	1	1	0	0	
10	LF	3	HS	105.0	80	5	70	Conifer	1	2	1	0	0	
								Hardwood	1	0	0	0	0	ROAD CUT, HEMLOCK
10	RT	1	HT	0.0	0	20	80	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	POWER LINE RIGHT-OF
10	RT	2	HT	1.0	0	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	HIMALAYAS
10	RT	3	HT	3.0	60	60	40	Conifer	0	0	0	0	1	
								Hardwood	0	0	0	0	0	BIG SPRUCE, WETLAND
23	LF	1	RB	4.0	0	5	95	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
23	LF	2	HS	80.0	5	20	80	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	CASCARA
23	LF	3	HS	50.0	20	50	50	Conifer	3	0	0	0	0	
								Hardwood	0	0	0	0	0	
23	RT	1	HT	21.0	75	10	90	Conifer	1	1	0	0	0	
								Hardwood	2	0	0	0	0	
23	RT	2	HT	0.0	60	70	30	Conifer	0	0	1	0	0	
								Hardwood	0	0	0	0	0	
23	RT	3	HT	5.0	70	90	10	Conifer	1	1	0	0	0	
								Hardwood	4	0	0	1	0	
37	LF	1	LT	10.0	10	40	0	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	ELDERBERRY, SEDGES
37	LF	2	HT	9.0	0	90	10	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
37	LF	3	HS	50.0	0	10	80	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	OLD CAT ROAD
37	RT	1	HT	4.0	60	60	40	Conifer	0	0	0	0	0	
								Hardwood	4	0	0	0	0	ELDERBERRY
37	RT	2	HT	8.0	70	90	10	Conifer	0	0	0	0	0	
								Hardwood	3	3	1	0	1	BIG ALDER
37	RT	3	HT	1.0	70	20	80	Conifer	0	1	0	0	0	
								Hardwood	0	0	1	0	0	SKUNK CABBAGE



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

Location: 10 429778 E 5049799 N
 Caption: PETERSON CREEK RESTORATION SITE - MIAMI
 BASIN