

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

STREAM: Charlotte Creek (U-14)
 BASIN: Umpqua River
 SURVEY TYPE: Pre and Post-Tx
 DATE: October 23, 2003
 REPORT PREPARED BY: Paul Jacobsen

The Charlotte Creek restoration project extended approximately 1,600 meters, with about 500 meters of the project being monitored for pre- and post-treatment conditions. Twelve habitat structures were constructed and 47 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, streambank stabilization, and enhanced salmonids spawning and rearing habitat. Additionally, it is hoped that this project will help increase water in the stream during low flows. In the first seasons after restoration activities, large wood pieces, volume, and key pieces are increased as expected.

	ODFW	Benchmark	Winter Pre	Summer Pre	Winter Post	Summer Post	
Habitat Variable	Desirable	Undesirable	3/1/00	8/16/00	2/23/01	8/7/01	
Reach #							
Pool Area	>35	<10	30.8	48.7	41.9	38.8	
Pool Frequency	5-8	>20	5.1	6.3	3.9	6.2	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.80	.45	.72	.58	
Complex Pools/km	>2.5	<1.0	15.4	14.4	15.6	13.3	
Width/Depth Ratio	<15	>30	22.3	28.7	16.7	21.9	
Riffle Gravel % area	>35	<15	55	80	74	63	
Silt-Sand-Organic %	<12	>25	9	14	18	13	
Shade %	>70	< 60		48		58	
LWD - pieces/100m	>20	<10	20.8	14.2	19.7	30.7	
LWD - Volume/100m	>30	<20	10.3	7.3	32.0	56.2	
LWD - Key pieces/ 100m	>3	<1	0	0	0.9	2.0	
Riparian Conifers>20" dbh/1000ft	>300	<150		20		0	
Riparian Conifers>35" dbh/1000ft	>200	<75		20		0	

COMMENTS:

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

The crew noted evidence of beaver activity during the survey. Seven habitat structures were recorded with the crew noting that there were more structures upstream.

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

STREAM: Charlotte Creek (U-14)
BASIN: Umpqua River
SURVEY TYPE: Post-Tx
DATE: August 7, 2001
SURVEY CREW: Loren Stucker, LaNoah Babcock
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 10.0 km²
USGS MAPS: Deer Head Point
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Charlotte Creek habitat survey extended 547 meters. The channel was constrained by hillslopes in a steep V-shaped valley. The average valley width index was 2.3 (range: 1.2 – 3.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 1.7 percent. Riffles (58%) and scour pools (39%) dominated stream habitat. Gravel (56%) dominated stream substrate. Wood volume was high at 56.2 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

T22S-R10W-S17NW

REACH 1

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

<u>Narrow Valley Floor</u>		<u>Broad Valley Floor</u>	
Steep V-shape	100	Constraining Terraces	0
Moderate V-shape	0	Multiple Terraces	0
Open V-shape	0	Wide Floodplain	0

Valley Width Index avg: 2.3 range: 1.2-3.0

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	100	Single Channel	0
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	547	2,621	0
Secondary	53	103	1

Channel Dimensions (m)

	<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u>	<u>First Terrace</u>
Width	4.0	8.8	11.9	12.8
Depth	0.30	0.4	0.7	0.9
W:D ratio		21.9	Entrenchment	1.5

Stream Flow Type: LF Water Temp: 14.0-14.0°C
Avg. Unit Gradient: 1.7% Habitat Units/100m: 4.7

Riparian, Bank, and Wood Summary

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	5%	Reach avg: 58%
Undercut Banks	6%	Range: 42- 73

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces (≥3m x 0.15m)	168	30.7
Volume (m ³)	307	56.2
Key pieces (≥10m x 0.6m)	11	2.0

REACH 1

T22S-R10W-S17NW

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
DRY UNITS	1	10	1.0	0.00	10	0	20	5	55	20	0	0
POOL-LATERAL SCOUR	9	149	4.2	0.67	749	13	14	11	56	17	2	0
POOL-STRAIGHT SCOUR	2	63	4.3	0.53	308	32	58	5	20	8	10	0
RAPID/BOULDERS	1	12	3.9	0.10	45	11	0	0	40	10	35	15
RIFFLE	14	357	4.0	0.08	1,569	32	7	6	63	20	4	0
STEP/LOG	1	10	4.3	0.05	43	0	15	10	40	15	20	0
Total:	28	600	4.0	0.30	2,724	88	Avg:13	7	56	17	6	1

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	0	0	-	-	0	0.00	0	0.0
Scour Pools	11	211	4.2	0.65	1,057	38.80	45	4.3
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	14	357	4.0	0.08	1,569	57.60	32	2.0
Rapids	1	12	3.9	0.10	45	1.66	11	24.3
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	1	10	4.3	0.05	43	1.58	0	0.0
Dry	1	10	1.0	0.00	10	0.37	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	11	18.3
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	8	13.3
Pool Frequency (channel widths/pool):	6.2	
Residual pool depth (avg)	0.58m	

STREAM SUMMARY

CHARLOTTE CREEK POST-TX (#14)

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	
28	600	4.0	0.30	2,724	13	7	56	17	6	1	88

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	1,057	38.8
Backwater Pools	0	0.0
Glide	0	0.0
Riffle	1,569	57.6
Rapid	45	1.7
Cascade	0	0.0
Step	43	1.6
Dry	10	0.4

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	1,138
Total conifers/1000 ft	0
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	2.0	0.0	5.3	0.0	3.7	0.0	11.0
15-30cm	0.0	2.0	0.0	1.0	0.0	2.3	0.0	5.3
30-50cm	0.0	1.3	0.0	0.3	0.0	0.3	0.0	2.0
50-90cm	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m ²	0.0	5.3	0.0	7.0	0.0	6.3	0.0	6.2

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	77		59		68	
Shrub cover	41		31		48	
Grass/forb cover	43		48		42	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	67		50		100
High terrace	17		17		0	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	17		33		0	
Riprap	0		0		0	
Surface slope (%)	21		39		56	

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	1,138
Total conifers/1000 ft	
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	11.0
15-30cm	0.0	5.3
30-50cm	0.0	2.0
50-90cm	0.0	0.3
>90cm	0.0	0.0

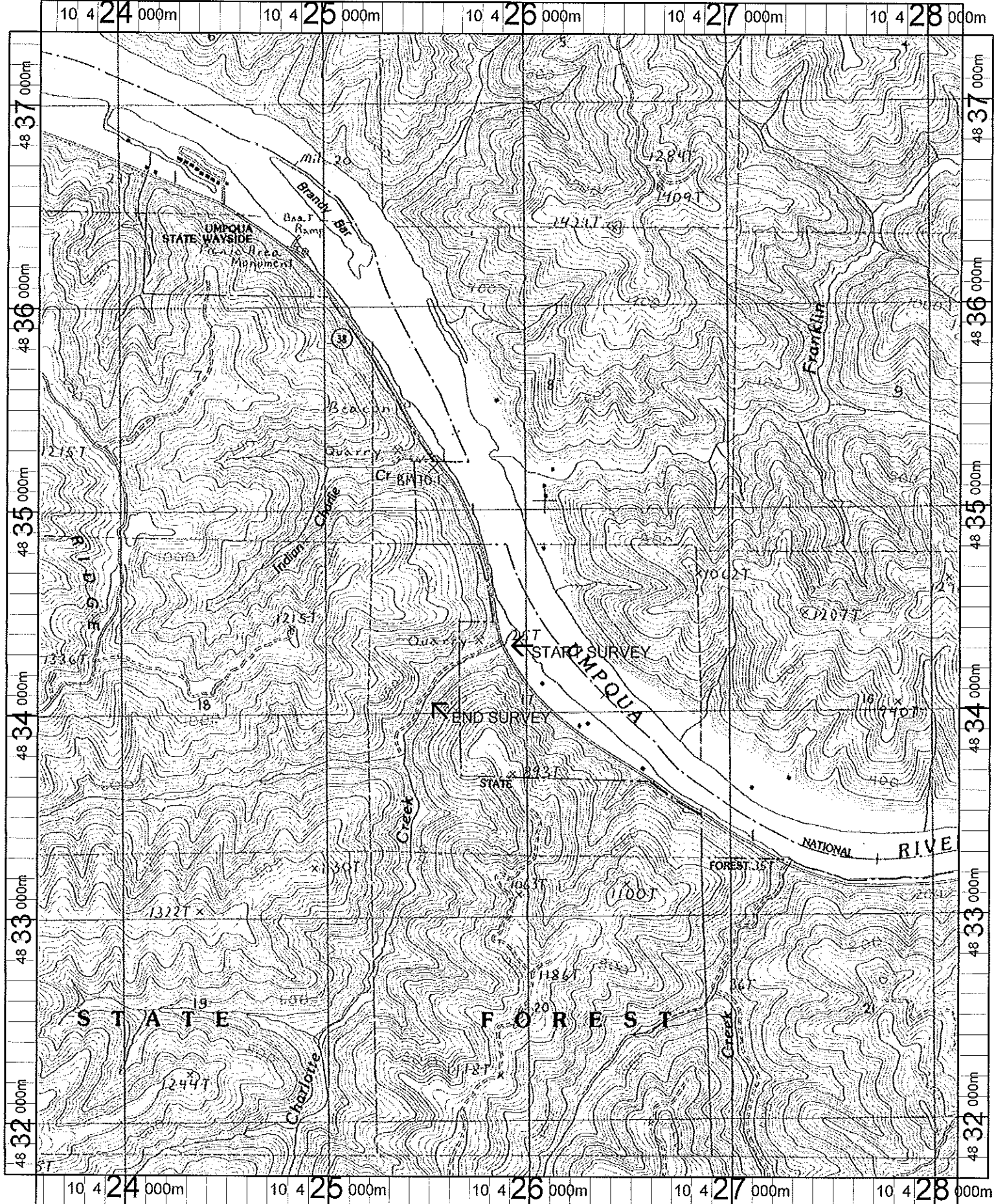
RIPARIAN ZONE VEGETATION

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	
11	LF	1	HS	5.0	90	5	75	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
11	LF	2	HS	85.0	95	5	90	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	1	0	
11	LF	3	HS	85.0	90	65	35	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
11	RT	1	HS	20.0	65	85	5	Conifer	0	0	0	0	0	
								Hardwood	0	0	2	0	0	
11	RT	2	RB	0.0	0	0	5	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
11	RT	3	HS	50.0	0	0	75	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
17	LF	1	HT	0.0	65	20	75	Conifer	0	0	0	0	0	
								Hardwood	0	0	2	0	0	
17	LF	2	HT	0.0	30	30	65	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	0	0	
17	LF	3	HS	30.0	55	85	5	Conifer	0	0	0	0	0	
								Hardwood	0	3	0	0	0	
17	RT	1	RB	0.0	75	40	10	Conifer	0	0	0	0	0	
								Hardwood	0	2	0	0	0	
17	RT	2	HS	85.0	60	60	35	Conifer	0	0	0	0	0	
								Hardwood	7	0	0	0	0	
17	RT	3	HS	75.0	80	65	30	Conifer	0	0	0	0	0	
								Hardwood	3	2	0	0	0	
22	LF	1	HS	70.0	80	75	20	Conifer	0	0	0	0	0	
								Hardwood	2	1	0	0	0	
22	LF	2	HS	65.0	80	80	20	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
22	LF	3	HS	65.0	85	70	25	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	0	0	
22	RT	1	HS	30.0	85	20	70	Conifer	0	0	0	0	0	
								Hardwood	4	3	0	0	0	
22	RT	2	RB	0.0	90	10	75	Conifer	0	0	0	0	0	
								Hardwood	9	2	0	0	0	
22	RT	3	HS	30.0	95	5	80	Conifer	0	0	0	0	0	
								Hardwood	7	2	0	0	0	



Name: DEER HEAD POINT
 Date: 1/10/2002
 Scale: 1 inch equals 2000 feet

Location: 10 425867 E 4834529 N
 Caption: CHARLOTTE CREEK RESTORATION SITE -
 UMPQUA BASIN