

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

STREAM: Roaring River Creek Tributary (W-56)
 BASIN: South Santiam River
 SURVEY TYPE: Pre and Post-Tx
 DATE: October 27, 2003
 REPORT PREPARED BY: Paul Jacobsen

The Roaring River Tributary restoration project extended approximately 1,000 meters, with about 500 meters of the project being monitored for pre- and post-treatment conditions. Sixteen habitat structures were created and 66 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, streambank stabilization, increased pool area, 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	Summer	Winter	Summer	
Habitat Variable	Desirable	Undesirable	Pre	Pre	Post	Post	
			2/22/00	6/19/00	1/31/01	7/17/01	
Reach #							
Pool Area	>35	<10	22.6	9.3	9.8	12.1	
Pool Frequency	5-8	>20	6.5	12.4	15.9	8.1	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.34	.30	.16	.26	
Complex Pools/km	>2.5	<1.0	7.3	3.3	3.1	1.4	
Width/Depth Ratio	<15	>30	11.9	11.4	15.3	17.3	
Riffle Gravel % area	>35	<15	35	31	31	23	
Silt-Sand-Organic %	<12	>25	29	31	26	33	
Shade %	>70	< 60		94		47	
LWD - pieces/100m	>20	<10	13.7	16.9	19.8	53.3	
LWD - Volume/100m	>30	<20	15.4	21.4	30.0	150.5	
LWD - Key pieces/ 100m	>3	<1	0.8	0.8	0.4	8.3	
Riparian Conifers>20" dbh/1000ft	>300	<150		41		91	
Riparian Conifers>35" dbh/1000ft	>200	<75		0		30	

COMMENTS:

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

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

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

STREAM: Roaring River Tributary (W-56)
BASIN: South Santiam River
SURVEY TYPE: Post-Tx
DATE: July 17, 2001
SURVEY CREW: LaNoah Babcock, Loren Stucker
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 4.4 km²
USGS MAPS: Jordan
ECOREGION: Willamette Valley Foothills

GENERAL DESCRIPTION:

The Roaring River Tributary habitat survey extended 589 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 3.1 (range: 1.8 – 4.5). Land use for the reach was second growth (15-30 cm dbh) and large (30-50 cm dbh) trees. The average unit gradient was 4.4 percent. Riffles (63%) and rapids (23%) dominated stream habitat. Fines (31%) and cobble (26%) dominated stream substrate. Wood volume was very high at 150.5 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

T11S-R1E-S5SE

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: 3.1 range: 1.8-4.5

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	589	1,763	0
Secondary	101	150	1

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	2.6	Width	6.1	14.3	11.5
Depth	0.15	Height	0.4	0.7	0.7
		W:D ratio	17.3	Entrenchment	2.4

Stream Flow Type: LF Water Temp: 12.0-12.0°C
Avg. Unit Gradient: 4.4% Habitat Units/100m: 6.2

Riparian, Bank, and Wood Summary

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	5%	Reach avg: 47%
Undercut Banks	12%	Range: 28- 72

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces (≥3m x 0.15m)	314	53.3
Volume (m ³)	887	150.5
Key pieces (≥10m x 0.6m)	49	8.3

REACH 1

T11S-R1E-S5SE

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
CULVERT CROSSING	1	12	0.6	0.15	7	0	10	10	40	40	0	0
POOL-BACKWATER	2	14	2.0	0.10	23	0	75	13	13	0	0	0
POOL-ISOLATED	1	1	1.5	0.10	2	0	100	0	0	0	0	0
POOL-LATERAL SCOUR	11	67	2.9	0.33	207	5	45	13	16	17	6	3
PUDDLED CHANNEL	1	18	1.7	0.05	30	0	80	5	5	10	0	0
RAPID/BEDROCK	1	23	0.7	0.05	16	0	0	5	10	20	5	60
RAPID/BOULDERS	5	112	3.8	0.06	420	38	9	12	22	33	20	4
RIFFLE	20	443	2.6	0.09	1,204	28	22	11	23	34	6	4
STEP/COBBLE	1	1	2.6	0.05	3	0	20	30	10	40	0	0
Total:	43	690	2.6	0.15	1,912	71	Avg:31	12	19	26	7	5

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	3	15	1.8	0.10	25	1.28	0	0.0
Scour Pools	11	67	2.9	0.33	207	10.84	5	2.4
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	20	443	2.6	0.09	1,204	62.94	28	2.3
Rapids	6	135	3.3	0.06	437	22.84	38	8.7
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	1	1	2.6	0.05	3	0.18	0	0.0
Dry	1	18	1.7	0.05	30	1.56	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	14	20.3
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	1	1.4
Pool Frequency (channel widths/pool):	8.1	
Residual pool depth (avg)	0.26m	

STREAM SUMMARY

ROARING R. TRIB POST-TX (#56)

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	
43	690	2.6	0.15	1,912	31	12	19	26	7	5	71

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	207	10.8
Backwater Pools	25	1.3
Glide	0	0.0
Riffle	1,204	62.9
Rapid	437	22.8
Cascade	0	0.0
Step	3	0.2
Dry	30	1.6

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

Summary of Riparian Zone (0-30m) (4 transects)

Total hardwoods/1000 ft	960
Total conifers/1000 ft	366
Total conifers >20" dbh/1000 ft	91
Total conifers >35" dbh/1000 ft	30

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	4.5	0.3	3.3	0.5	2.0	1.8	9.8
15-30cm	0.5	2.8	0.0	1.8	1.0	0.3	1.5	4.8
30-50cm	1.0	0.5	0.0	0.5	0.3	0.3	1.3	1.3
50-90cm	0.3	0.0	0.8	0.0	0.0	0.0	1.0	0.0
>90cm	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0
Total/100m ²	2.8	7.8	1.5	5.5	1.8	2.5	2.0	5.3

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	76		68		49	
Shrub cover	57		59		50	
Grass/forb cover	33		37		25	

Predominant landform in each zone

	Zone 1 0-10 meters	Zone 2 10-20 meters	Zone 3 20-30 meters
Hillslope	38	88	75
High terrace	0	13	13
Low terrace	0	0	0
Floodplain	63	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	13
Riprap	0	0	0
Surface slope (%)	12	17	14

Summary of Riparian Zone (0-30m) for all reaches (4 transects)

Summary of riparian zone (0-100ft) extrapolated to 1,000 feet along stream

Total hardwoods/1000 ft	960
Total conifers/1000 ft	366
Total conifers >20" dbh/1000 ft	91

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	1.8	9.8
15-30cm	1.5	4.8
30-50cm	1.3	1.3
50-90cm	1.0	0.0
>90cm	0.5	0.0

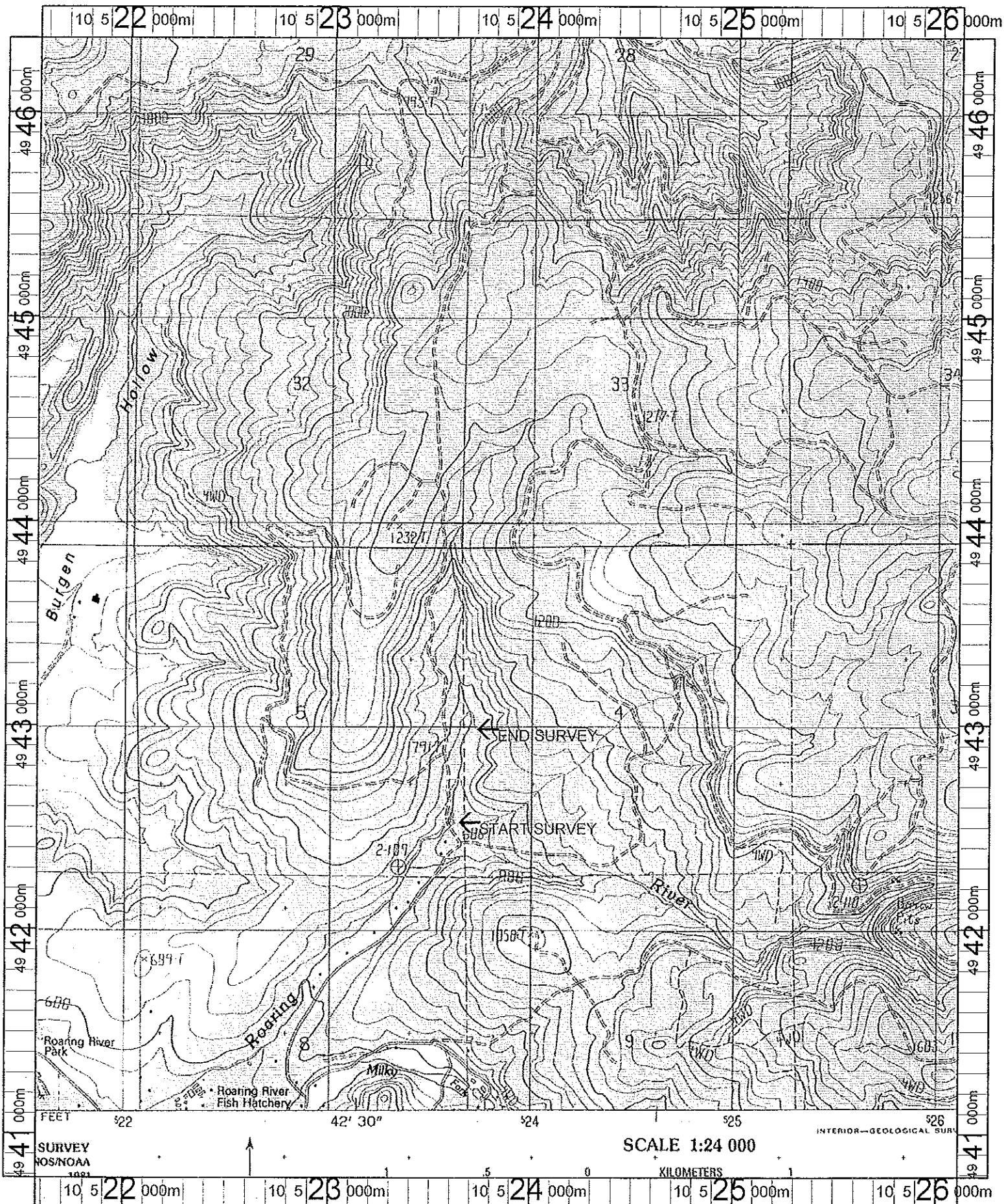
RIPARIAN ZONE VEGETATION

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	
9	LF	1	FP	0.0	80	15	85	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
9	LF	2	HS	30.0	85	40	60	Conifer	0	0	0	2	1	
								Hardwood	0	0	2	0	0	
9	LF	3	RB	0.0	30	10	20	Conifer	0	1	0	0	0	
								Hardwood	0	0	0	0	0	
9	RT	1	FP	0.0	65	5	60	Conifer	0	1	3	0	0	
								Hardwood	1	1	1	0	0	HEAVILY USED LOGGIN
9	RT	2	HT	0.0	60	40	50	Conifer	1	0	0	0	0	
								Hardwood	1	1	0	0	0	
9	RT	3	HT	0.0	55	90	10	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
14	LF	1	FP	0.0	90	30	45	Conifer	0	1	0	0	0	
								Hardwood	1	1	1	0	0	
14	LF	2	HS	25.0	85	60	40	Conifer	0	0	0	0	0	
								Hardwood	2	2	0	0	0	
14	LF	3	HS	25.0	50	70	20	Conifer	2	0	0	0	0	
								Hardwood	1	1	1	0	0	
14	RT	1	HS	30.0	75	55	30	Conifer	3	0	1	1	0	
								Hardwood	10	0	0	0	0	
14	RT	2	HS	25.0	60	40	55	Conifer	0	0	0	0	1	
								Hardwood	6	0	0	0	0	
14	RT	3	HS	25.0	20	20	10	Conifer	0	0	0	0	0	
								Hardwood	4	0	0	0	0	
24	LF	1	HS	20.0	90	90	10	Conifer	0	0	0	0	0	
								Hardwood	4	6	0	0	0	
24	LF	2	HS	15.0	85	75	25	Conifer	0	0	0	0	0	
								Hardwood	0	3	0	0	0	
24	LF	3	HS	15.0	85	35	65	Conifer	0	1	0	0	0	
								Hardwood	0	0	0	0	0	
24	RT	1	HS	45.0	60	90	10	Conifer	1	0	0	0	0	
								Hardwood	1	3	0	0	0	
24	RT	2	HS	25.0	70	70	25	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
24	RT	3	HS	20.0	60	50	15	Conifer	0	2	0	0	0	
								Hardwood	0	0	0	0	0	
36	LF	1	FP	0.0	80	80	20	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
36	LF	2	HS	10.0	60	60	35	Conifer	0	0	0	1	0	
								Hardwood	2	0	0	0	0	
36	LF	3	HS	20.0	70	40	55	Conifer	0	0	1	0	0	
								Hardwood	3	0	0	0	0	
36	RT	1	FP	0.0	70	90	5	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
36	RT	2	HS	5.0	40	90	5	Conifer	0	0	0	0	0	
								Hardwood	1	1	0	0	0	
36	RT	3	HS	5.0	20	85	5	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	



Name: JORDAN
 Date: 10/3/101
 Scale: 1 inch equals 2000 feet

Location: 10 523738 E 4943560 N
 Caption: ROARING RIVER TRIBUTARY RESTORATION SITE -
 SOUTH SANTIAM BASIN