

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

STREAM: Golf Creek (L-33)
 BASIN: Clackamas River
 SURVEY TYPE: Pre and Post-Tx
 DATE: November 4, 2003
 REPORT PREPARED BY: Paul Jacobsen

The Golf Creek restoration project extended approximately 400 meters, with the entire length of the project being monitored for pre- and post-treatment conditions. Thirteen habitat structures were created and 43 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, and enhanced salmonid spawning and rearing habitat. In the first seasons after restoration activities, large wood pieces, volume, and key pieces are increased as expected. Pool area is higher, and there are more complex pools during winter flow conditions. Summer riffle gravel is higher, although winter gravel levels have decreased.

	ODFW	Benchmark	Winter Pre	Summer Pre	Winter Post	Summer Post	
Habitat Variable	Desirable	Undesirable	2/23/00	6/30/00	2/7/01	6/26/01	
Reach #							
Pool Area	>35	<10	11.4	13.0	9.5	17.8	
Pool Frequency	5-8	>20	12.1	11.3	25.8	11.2	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.25	.21	.22	.19	
Complex Pools/km	>2.5	<1.0	1.9	3.8	5.8	0.0	
Width/Depth Ratio	<15	>30	9.1	6.8	5.9	6.4	
Riffle Gravel % area	>35	<15	80	37	62	48	
Silt-Sand-Organic %	<12	>25	12	28	31	24	
Shade %	>70	< 60		91		75	
LWD - pieces/100m	>20	<10	10.9	12.0	22.1	18.4	
LWD - Volume/100m	>30	<20	15.9	5.0	41.1	20.4	
LWD - Key pieces/ 100m	>3	<1	1.0	0.0	2.2	0.2	
Riparian Conifers>20" dbh/1000ft	>300	<150		41		20	
Riparian Conifers>35" dbh/1000ft	>200	<75		20		20	

COMMENTS:

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

The crew recorded nine habitat structures.

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

STREAM: Golf Creek (L-33)
BASIN: Clackamas River
SURVEY TYPE: Post-Tx
DATE: June 26, 2001
SURVEY CREW: Sara Meguffy, Rawlin Richardson
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 2.0 km²
USGS MAPS: Elwood
ECOREGION: Willamette Valley Foothills

GENERAL DESCRIPTION:

The Golf Creek habitat survey extended 518 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 13.8 (range: 3.0 – 20.0). Land use for the reach was agriculture and second growth (15-30 cm dbh) trees. The average unit gradient was 8.4 percent. Scour pools (45%) and riffles (29%) dominated stream habitat. Rapids (41%) and cascades (38%) dominated stream substrate. Wood volume was moderate at 20.4 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

T4S-R4E-S6SW

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: 13.8 range: 3.0-20.0

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	518	569	0
Secondary	32	20	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u>	<u>First Terrace</u>
Width 1.2	2.5	4.8	9.1
Depth 0.18	Height 0.4	0.7	2.1
	W:D ratio 6.4	Entrenchment 2.0	

Stream Flow Type: LF Water Temp: 13.0-13.0°C
 Avg. Unit Gradient: 8.4% Habitat Units/100m: 9.5

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	AG	ST
Riparian Vegetation:	M15	S

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	3%	Reach avg: 75%
Undercut Banks	2%	Range: 25-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces (≥3m x 0.15m)	95	18.4
Volume (m ³)	105	20.4
Key pieces (≥10m x 0.6m)	1	0.2

REACH 1

T4S-R4E-S6SW

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
CASCADE/BOULDERS	12	215	1.0	0.14	221	5	7	22	35	33	1	2
CULVERT CROSSING	1	6	0.6	0.08	4	0	5	95	0	0	0	0
POOL-BACKWATER	1	2	2.0	0.10	4	0	63	11	5	0	0	21
POOL-DAMMED	1	4	2.5	0.30	10	0	16	76	2	5	0	0
POOL-LATERAL SCOUR	14	44	1.4	0.24	63	4	18	36	19	17	2	8
POOL-PLUNGE	1	3	2.7	0.35	9	0	10	5	5	10	0	70
POOL-STRAIGHT SCOUR	3	14	1.4	0.15	20	0	22	18	21	16	0	24
RAPID/BOULDERS	13	238	1.1	0.18	242	0	10	20	36	33	0	1
RIFFLE	3	19	0.7	0.06	12	0	7	17	48	22	0	6
STEP/LOG	2	1	0.8	0.27	0	0	7	10	31	53	0	0
STEP/STRUCTURE	1	4	1.2	0.02	5	0	6	6	12	47	0	29
Total:	52	549	1.2	0.18	589	9	Avg:13	26	28	26	1	7

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m ²)	Percent	Large Number	Boulders #/100m ²
Dammed & BW Pools	2	6	2.3	0.20	14	2.31	0	0.0
Scour Pools	18	62	1.5	0.23	91	15.51	4	4.4
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	3	19	0.7	0.06	12	1.97	0	0.0
Rapids	13	238	1.1	0.18	242	41.09	0	0.0
Cascades	12	215	1.0	0.14	221	37.59	5	2.3
Step/Falls	3	5	0.9	0.18	5	0.88	0	0.0
Dry	0	0	-	-	0	0.00	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	20	36.4
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	0	0.0
Pool Frequency (channel widths/pool):	11.2	
Residual pool depth (avg)	0.19m	

STREAM SUMMARY

GOLF CREEK POST-TX (#33)

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	
52	549	1.2	0.18	589	13	26	28	26	1	7	9

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	91	15.5
Backwater Pools	14	2.3
Glide	0	0.0
Riffle	12	2.0
Rapid	242	41.1
Cascade	221	37.6
Step	5	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	325
Total conifers/1000 ft	305
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	1.3	1.3	0.7	1.0	0.7	2.7	2.7
15-30cm	1.0	0.7	0.0	1.0	0.7	1.0	1.7	2.7
30-50cm	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0
50-90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>90cm	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0
Total/100m ²	1.3	2.0	1.7	1.7	2.0	1.7	1.7	1.8

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	51		33		31	
Shrub cover	8		2		2	
Grass/forb cover	43		68		98	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	0		33		33
High terrace	67		67		67	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	33		0		0	
Riprap	0		0		0	
Surface slope (%)	0		15		17	

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	325
Total conifers/1000 ft	305
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	2.7	2.7
15-30cm	1.7	2.7
30-50cm	0.3	0.0
50-90cm	0.0	0.0
>90cm	0.3	0.0

RIPARIAN ZONE VEGETATION

Reach 1

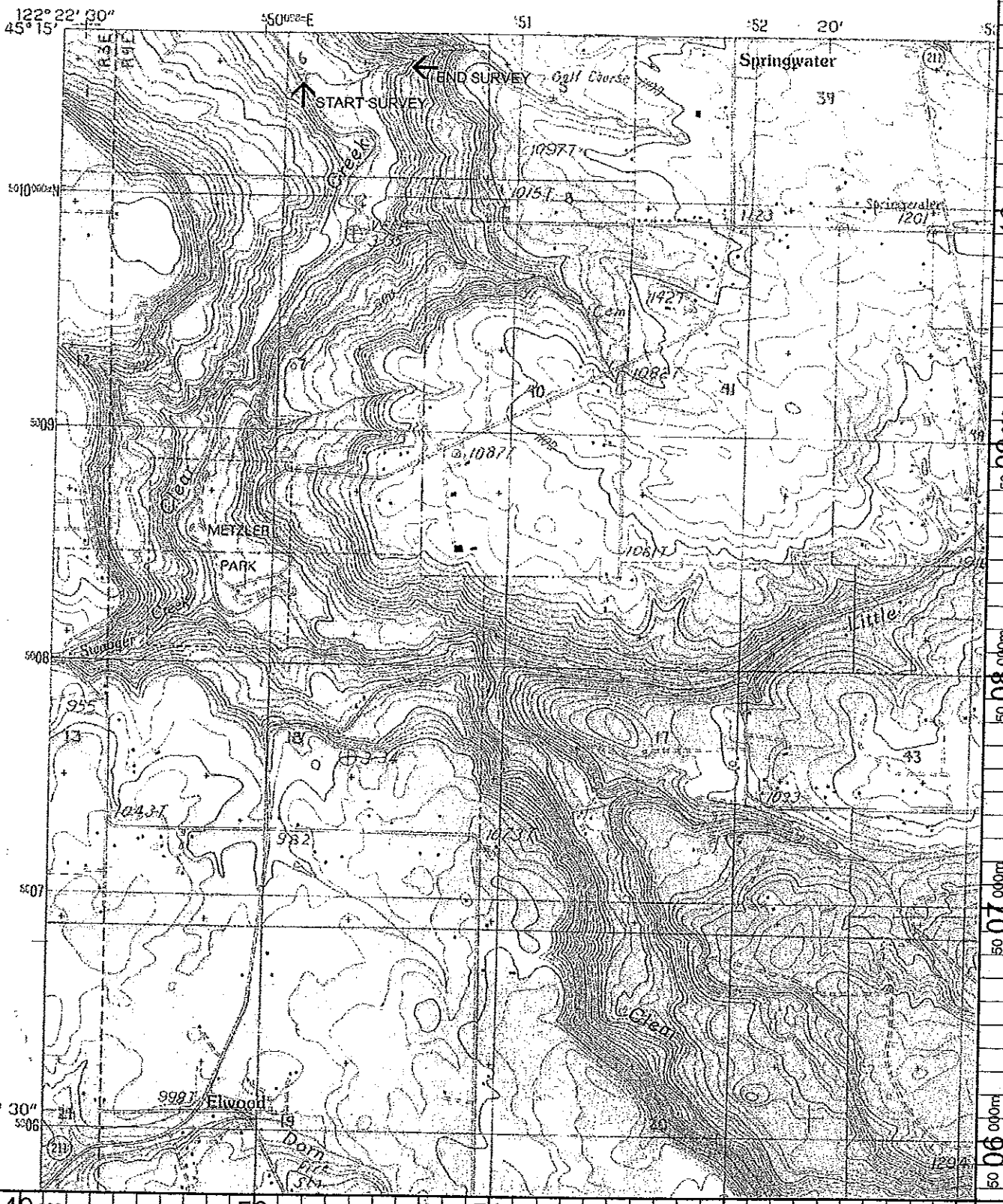
Reach 1

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	HT	0.0	65	30	5	Conifer	1	2	0	0	0	
								Hardwood	0	0	0	0	0	
11	LF	2	HT	0.0	10	0	5	Conifer	3	0	0	0	0	
								Hardwood	0	0	0	0	0	
11	LF	3	HT	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
11	RT	1	HT	0.0	65	0	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
11	RT	2	HT	0.0	0	0	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
11	RT	3	HT	0.0	0	0	100	Conifer	1	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	LF	1	RB	0.0	0	0	0	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	LF	2	HT	0.0	0	0	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	LF	3	HT	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	RT	1	RB	0.0	0	0	0	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	RT	2	HT	0.0	0	0	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	RT	3	HT	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
39	LF	1	HT	0.0	90	10	90	Conifer	0	0	0	0	0	
								Hardwood	1	2	0	0	0	
39	LF	2	HS	25.0	95	5	95	Conifer	1	0	0	0	0	
								Hardwood	2	2	0	0	0	
39	LF	3	HS	35.0	95	0	100	Conifer	1	0	0	0	0	
								Hardwood	2	0	0	0	0	
39	RT	1	HT	0.0	85	5	95	Conifer	0	1	0	0	0	
								Hardwood	3	0	0	0	0	
39	RT	2	HS	65.0	95	5	95	Conifer	0	0	1	0	0	
								Hardwood	0	1	0	0	0	
39	RT	3	HS	65.0	90	10	90	Conifer	1	2	0	0	1	
								Hardwood	0	3	0	0	0	

10 5 49 000m 10 5 50 000m 10 5 51 000m 10 5 52 000m

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Name: ELWOOD
Date: 11/8/100
Scale: 1 inch equals 2000 feet

Location: 10 550693 E 5008443 N
Caption: GOLF CREEK RESTORATION SITE - CLACKAMAS BASIN