

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

STREAM: Bear Creek (MS-4)  
 BASIN: Coquille River  
 SURVEY TYPE: Pre and Post-Tx  
 DATE: October 21, 2003  
 REPORT PREPARED BY: Paul Jacobsen

The Bear Creek restoration project extended approximately 480 meters, with all of that length monitored for pre- and post-treatment conditions. Nine habitat structures were constructed and 43 key pieces (according to the ODF Large Wood Placement Guide) were placed. The intended goals of the project included increasing stream complexity, improved interaction with the floodplain, gravel retention, increased pool area, and enhanced over-wintering habitat. In the first seasons after restoration activities, large wood volume and key pieces are increased as expected. In addition, there are more complex pools and more riffle gravel during summer flow conditions.

	ODFW	Benchmark	Winter Pre	Summer Pre	Winter Post	Summer Post	
Habitat Variable	Desirable	Undesirable	3/9/00	7/4/00	2/9/01	7/26/01	
Reach #							
Pool Area	>35	<10	41.3	58.7	39.5	45.4	
Pool Frequency	5-8	>20	3.7	4.7	5.9	8.5	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.54	.53	.56	.52	
Complex Pools/km	>2.5	<1.0	15.9	12.2	14.1	18.0	
Width/Depth Ratio	<15	>30	13.7	11.5	13.0	12.1	
Riffle Gravel % area	>35	<15	81	62	55	80	
Silt-Sand-Organic %	<12	>25	3	15	39	16	
Shade %	>70	< 60		85		93	
LWD - pieces/100m	>20	<10	45.1	16.5	37.4	33.4	
LWD - Volume/100m	>30	<20	31.8	25.7	41.7	107.1	
LWD - Key pieces/ 100m	>3	<1	0.4	1.1	3.5	3.1	
Riparian Conifers>20" dbh/1000ft	>300	<150		61		41	
Riparian Conifers>35" dbh/1000ft	>200	<75		0		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.

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

STREAM: Bear Creek (MS-4)  
BASIN: Coquille River  
SURVEY TYPE: Post-Tx  
DATE: July 26, 2001  
SURVEY CREW: John Blanchard, Franklin Wall  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 10.2 km<sup>2</sup>  
USGS MAPS: Bill Peak  
ECOREGION: Coast Range Sitka Spruce

**GENERAL DESCRIPTION:**

The Bear Creek habitat survey extended 540 meters. The channel was constrained by hillslopes in a moderate V-shaped valley. The average valley width index was 2.2 (range: 1.0 – 4.0). Land use for the reach was young (3-15 cm dbh) and second growth (15-30 cm dbh) trees. The average unit gradient was 0.9 percent. Riffles (49%) and scour pools (45%) dominated stream habitat. Gravel (75%) dominated stream substrate. Wood volume was high at 107.1 m<sup>3</sup>/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

T29S-R14W-S13SE

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	100	Multiple Terraces	0
Open V-shape	0	Wide Floodplain	0

Valley Width Index avg: 2.2 range: 1.0-4.0

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	540	1,223	0
Secondary	73	96	2

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u>	<u>First Terrace</u>
Width 2.1	Width 6.0	8.1	8.7
Depth 0.25	Height 0.5	1.0	1.8
W:D ratio	12.1	Entrenchment	1.4

Stream Flow Type: LF Water Temp: 14.0-14.0°C  
 Avg. Unit Gradient: 0.9% Habitat Units/100m: 5.4

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	YT	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	2%	Reach avg: 93%
Undercut Banks	4%	Range: 72-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces (≥3m x 0.15m)	180	33.4
Volume (m <sup>3</sup> )	578	107.1
Key pieces (≥10m x 0.6m)	17	3.1

REACH 1

T29S-R14W-S13SE

REACH 1

HABITAT DETAIL

Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbbl	Bldr	Bdrk
DRY UNITS	2	42	1.4	0.00	58	0	0	8	93	0	0	0
POOL-LATERAL SCOUR	11	161	2.9	0.55	477	0	8	22	64	4	0	1
POOL-STRAIGHT SCOUR	1	31	4.0	0.60	122	0	5	30	60	5	0	0
RIFFLE	16	366	1.6	0.09	649	0	2	14	80	5	0	0
STEP/COBBLE	3	14	1.0	0.06	13	0	0	7	79	1	0	13
<b>Total:</b>	<b>33</b>	<b>613</b>	<b>2.1</b>	<b>0.25</b>	<b>1,319</b>	<b>0</b>	<b>Avg: 4</b>	<b>16</b>	<b>75</b>	<b>4</b>	<b>0</b>	<b>2</b>

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m <sup>2</sup> )	Percent	Large Boulders Number	#/100m <sup>2</sup>
Dammed & BW Pools	0	0	-	-	0	0.00	0	0.0
Scour Pools	12	191	3.0	0.55	599	45.42	0	0.0
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	16	366	1.6	0.09	649	49.22	0	0.0
Rapids	0	0	-	-	0	0.00	0	0.0
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	3	14	1.0	0.06	13	0.98	0	0.0
Dry	2	42	1.4	0.00	58	4.39	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	12	19.6
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces≥3):	11	18.0
Pool Frequency (channel widths/pool):	8.5	
Residual pool depth (avg)	0.52m	

STREAM SUMMARY

BEAR CREEK POST-TX (#4)

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Substrate Percent Wetted Area						Total Large Boulder
					S/O	Sand	Grvl	Cbbl	Bldr	Bdrk	
33	613	2.1	0.25	1,319	4	16	75	4	0	2	0

Wetted Area

Habitat Group	(m <sup>2</sup> )	Percent
Scour Pool	599	45.4
Backwater Pools	0	0.0
Glide	0	0.0
Riffle	649	49.2
Rapid	0	0.0
Cascade	0	0.0
Step	13	1.0
Dry	58	4.4

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REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	630
Total conifers/1000 ft	244
Total conifers >20" dbh/1000 ft	41
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	0.3	0.3	0.0	1.7	1.3	1.3	1.7	3.3
15-30cm	1.0	1.3	0.3	2.3	0.0	0.7	1.3	4.3
30-50cm	0.3	2.3	0.0	0.0	0.0	0.0	0.3	2.3
50-90cm	0.0	0.3	0.7	0.0	0.0	0.0	0.7	0.3
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m <sup>2</sup>	1.7	4.3	1.0	4.0	1.3	2.0	1.3	3.4

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	63		35		12	
Shrub cover	38		11		8	
Grass/forb cover	40		47		32	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	50		33		50
High terrace	50		50		17	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		17		33	
Riprap	0		0		0	
Surface slope (%)	20		5		8	

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	630
Total conifers/1000 ft	244
Total conifers >20" dbh/1000 ft	41

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	1.7	3.3
15-30cm	1.3	4.3
30-50cm	0.3	2.3
50-90cm	0.7	0.3
>90cm	0.0	0.0

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Reach 1

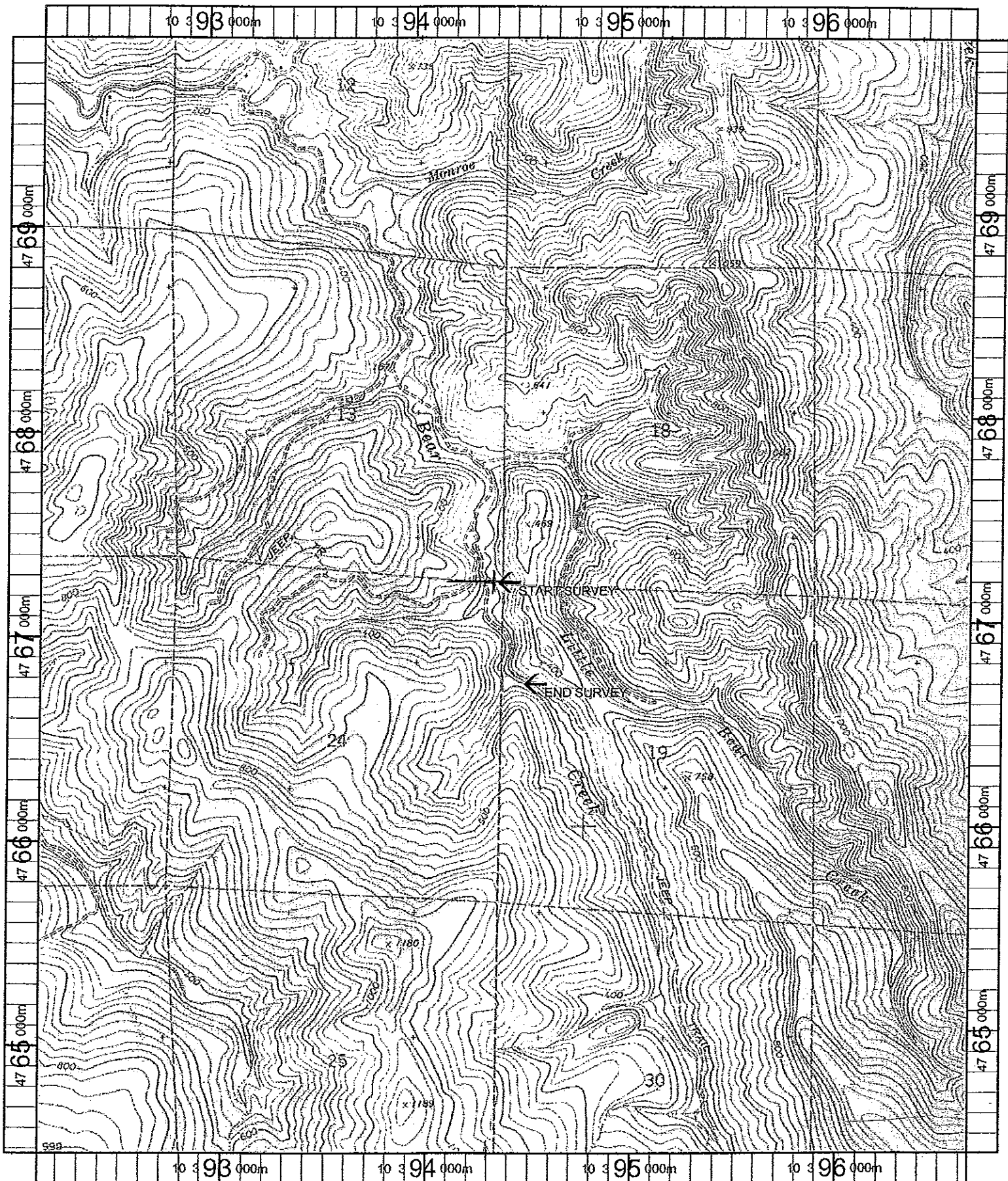
RIPARIAN ZONE VEGETATION

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	HT	0.0	75	15	70	Conifer	1	0	0	0	0	
								Hardwood	0	1	1	0	0	
10	LF	2	HT	0.0	60	5	70	Conifer	0	0	0	0	0	
								Hardwood	3	2	0	0	0	
10	LF	3	HS	15.0	10	0	70	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	
10	RT	1	HS	60.0	55	20	60	Conifer	0	0	1	0	0	
								Hardwood	0	0	1	0	0	
10	RT	2	HS	10.0	90	15	20	Conifer	0	0	0	2	0	
								Hardwood	0	0	0	0	0	
10	RT	3	HS	10.0	40	30	10	Conifer	2	0	0	0	0	
								Hardwood	0	1	0	0	0	
23	LF	1	HT	0.0	80	30	40	Conifer	0	3	0	0	0	
								Hardwood	0	0	0	0	0	
23	LF	2	HT	0.0	40	10	60	Conifer	0	0	0	0	0	
								Hardwood	0	2	0	0	0	
23	LF	3	HT	0.0	10	0	60	Conifer	0	0	0	0	0	
								Hardwood	1	1	0	0	0	
23	RT	1	HT	5.0	90	60	10	Conifer	0	0	0	0	0	
								Hardwood	0	1	1	0	0	
23	RT	2	HT	5.0	10	5	60	Conifer	0	1	0	0	0	
								Hardwood	2	0	0	0	0	
23	RT	3	RB	0.0	0	0	20	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	LF	1	HS	15.0	50	50	40	Conifer	0	0	0	0	0	
								Hardwood	0	1	2	1	0	
28	LF	2	HS	15.0	0	20	30	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	LF	3	HS	20.0	0	10	10	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	RT	1	HS	40.0	30	50	20	Conifer	0	0	0	0	0	
								Hardwood	1	1	2	0	0	
28	RT	2	RB	0.0	10	10	40	Conifer	0	0	0	0	0	
								Hardwood	0	3	0	0	0	
28	RT	3	RB	0.0	10	5	20	Conifer	2	0	0	0	0	
								Hardwood	0	0	0	0	0	





Name: BILL PEAK  
 Date: 11/1/100  
 Scale: 1 Inch equals 2000 feet

Location: 10 394316 E 4767152 N  
 Caption: BEAR CREEK RESTORATION SITE - COQUILLE BASIN