

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

STREAM: Cougar Creek (MS-286)
BASIN: Millicoma River
SURVEY TYPE: Pre-Tx
DATE: July 6, 2005
SURVEY CREW: Eric Himmelreich, Kevin Cellura
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 6.3 km²
USGS MAPS: Elk Peak
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Cougar Creek habitat survey extended 1,182 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 4.7 (range: 3.2-6.2). Land use for the reach was mature (50-90 cm dbh) and second growth (15-30 cm dbh) trees. The average unit gradient was 3.2 percent. Riffles (53%) dominated stream habitat. Gravel (43%) dominated stream substrate. Wood volume was very high at 44.9 m³/100m.

COMMENTS:

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

REACH 1

T23S-R10W-S04SE

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	4.7	VWI Range:	3.2 - 6.2

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 Channel	1,182	2,388	0
Secondary Channel	0	0	0
Off-Channel Units	53	67	1

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 2
Width: 2.1	Width: 3.6	10.2 (3.9 - 17.5)	5.2 (4.7 - 5.6)
Depth: 0.24	Height: 0.3	0.7 (0.4 - 0.9)	1.1 (0.8 - 1.3)

W:D ratio: 11.5

Entrenchment (ACW:FPW ratio): 2.9

Stream Flow Type: LF

Habitat Units/100m (total channel length): 5.7

Average Unit Gradient: 3.2%

Habitat Units/100m (primary channel length): 6.0

Water temperature (°C): 12.5 - 12.5

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	MT	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:	8%	Reach avg: 87%
Undercut Banks:	10%	Range: 61 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	329	27.8
Volume (m ³):	530	44.9
Key pieces (>=12m x 0.60m):	15	1.3

OREGON DEPT OF FISH AND WILDLIFE

COUGAR CREEK PRE-TX (3-MS, 286)

HABITAT INVENTORY

Report Date: 4/26/2006

Survey Date:

7/6/2005

REACH 1		T23S-R10W-S04SE					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	Cbl	Bldr	Bdrk
CASCADE/BEDROCK	1	25	1.9	0.18	48	25	0	0	10	10	20	60
CASCADE/BOULDERS	8	135	1.6	0.12	205	20	15	13	50	20	1	0
DRY UNIT	1	7	1.4	0.00	10	3	0	10	30	60	0	0
POOL-ISOLATED	1	7	1.8	0.40	13	0	55	30	15	0	0	0
POOL-LATERAL SCOUR	11	89	3.3	0.54	300	1	28	28	32	6	3	4
POOL-PLUNGE	3	15	3.0	0.50	45	3	50	22	20	5	0	3
POOL-STRAIGHT SCOUR	7	38	2.9	0.46	111	9	15	23	45	12	2	2
RAPID/BOULDERS	10	224	1.7	0.10	407	59	3	13	50	31	3	0
RIFFLE	19	594	1.9	0.17	1,106	7	8	17	49	26	0	0
RIFFLE W/ POCKETS	2	89	2.2	0.09	191	18	0	10	42	33	6	8
STEP/BOULDERS	1	1	1.0	0.05	1	1	0	11	44	11	33	0
STEP/COBBLE	2	7	2.3	0.05	15	0	8	23	40	30	0	0
STEP/LOG	5	3	0.9	0.05	3	0	14	22	51	13	0	0
Total:	71	1,235	2.1	0.24	2,455	146	Avg: 14	19	43	20	2	2

HABITAT SUMMARY									
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders		
					(m ²)	Percent	Number	(# / 100m ²)	
Dammed & BW Pools	1	7	1.8	0.40	13	0.54%	0	0.0	
Scour Pools	21	141	3.1	0.51	456	18.57%	13	2.9	
Glides	0	0			0	0.00%	0	0.0	
Riffles	21	683	1.9	0.16	1,297	52.83%	25	1.9	
Rapids	10	224	1.7	0.10	407	16.57%	59	14.5	
Cascades	9	161	1.6	0.13	253	10.32%	45	17.8	
Step/Falls	8	11	1.2	0.05	19	0.76%	1	5.4	
Dry	1	7	1.4	0.00	10	0.41%	3	29.8	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY			
	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	22	17.8	18.6
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	8	6.5	6.8
Pool frequency (channel widths/pool):	15.5		
Residual pool depth (avg):	0.44		

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

COUGAR CREEK PRE-TX
GCG: 3-MS SITE ID: 286

Survey Date 7/6/2005
Report Date: 4/26/2006

RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000	732
Total conifers/1000 ft	142
Total conifers >20" dbh/1000 ft	41
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	0.0	2.7	0.0	2.3	0.0	2.0	0.0	7.0
15-30cm	0.0	0.3	0.3	0.0	0.0	0.0	0.3	0.3
30-50cm	0.0	1.3	0.7	0.7	0.7	1.7	1.3	3.7
50-90cm	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.7
>90cm	0.3	0.0	0.0	0.0	0.0	0.3	0.3	0.3
Total/100m2	0.3	4.3	1.0	3.3	1.0	4.3	0.8	4.0

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	66		82		84	
Shrub cover	21		26		19	
Grass/forb cover	66		53		62	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	50		83		83	
High terrace	33		17		17	
Low terrace	0		0		0	
Floodplain	17		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	20		58		58	

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

3 transects

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

Total hardwoods/1000	732
Total conifers/1000 ft	142
Total conifers >20" dbh/1000 ft	41
Total conifers >35" dbh/1000 ft	20

Average number of trees in a 5-m wide band

Diameter class (cm)	Zones 1-3	
	<u>0-30 meters</u>	
	<u>Conifer</u>	<u>Hardwood</u>
3-15cm	0.0	7.0
15-30cm	0.3	0.3
30-50cm	1.3	3.7
50-90cm	0.3	0.7
>90cm	0.3	0.3

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
24	LF	2	HS	75	60	20	40	Conifer							BEAVER
								Hardwood	5						
24	LF	3	HS	75	80	5	60	Conifer					1		
								Hardwood	4		1	1			
24	RT	1	HT	0	80	5	85	Conifer							
								Hardwood			1				
24	RT	2	HT	0	85	10	80	Conifer							
								Hardwood			1	1			
24	RT	3	HT	0	70	15	80	Conifer							
								Hardwood	2		1				
24	LF	1	HS	60	30	25	60	Conifer							0428942, 4826883
								Hardwood	3						
35	RT	2	HS	40	80	0	80	Conifer							
								Hardwood							
35	RT	3	HS	60	75	0	80	Conifer							
								Hardwood							
35	LF	3	HS	130	95	15	50	Conifer							
								Hardwood			2		1		
35	LF	2	HS	130	85	20	50	Conifer							ZONE 2 AND 3 ESTIMATED
								Hardwood							
35	LF	1	HT	0	85	25	60	Conifer							0429023, 4827105
								Hardwood	2	1	1				
35	RT	1	HS	40	90	0	80	Conifer						1	1.1 M DBH HEMLOCK
								Hardwood	2						
52	RT	2	HS	60	95	45	50	Conifer							
								Hardwood	2		1				
52	LF	1	HS	20	90	40	50	Conifer							429031, 4827276
								Hardwood	1		2				
52	RT	3	HS	40	95	30	60	Conifer							
								Hardwood			1				
52	RT	1	FP	0	20	30	60	Conifer							.8 M DBH DEAD SNAG
								Hardwood							
52	LF	3	HS	40	90	50	40	Conifer				2			
								Hardwood							
52	LF	2	HS	40	85	60	20	Conifer			1	2			
								Hardwood							

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **3-MS** SITE ID: **286** **COUGAR CREEK PRE-TX**

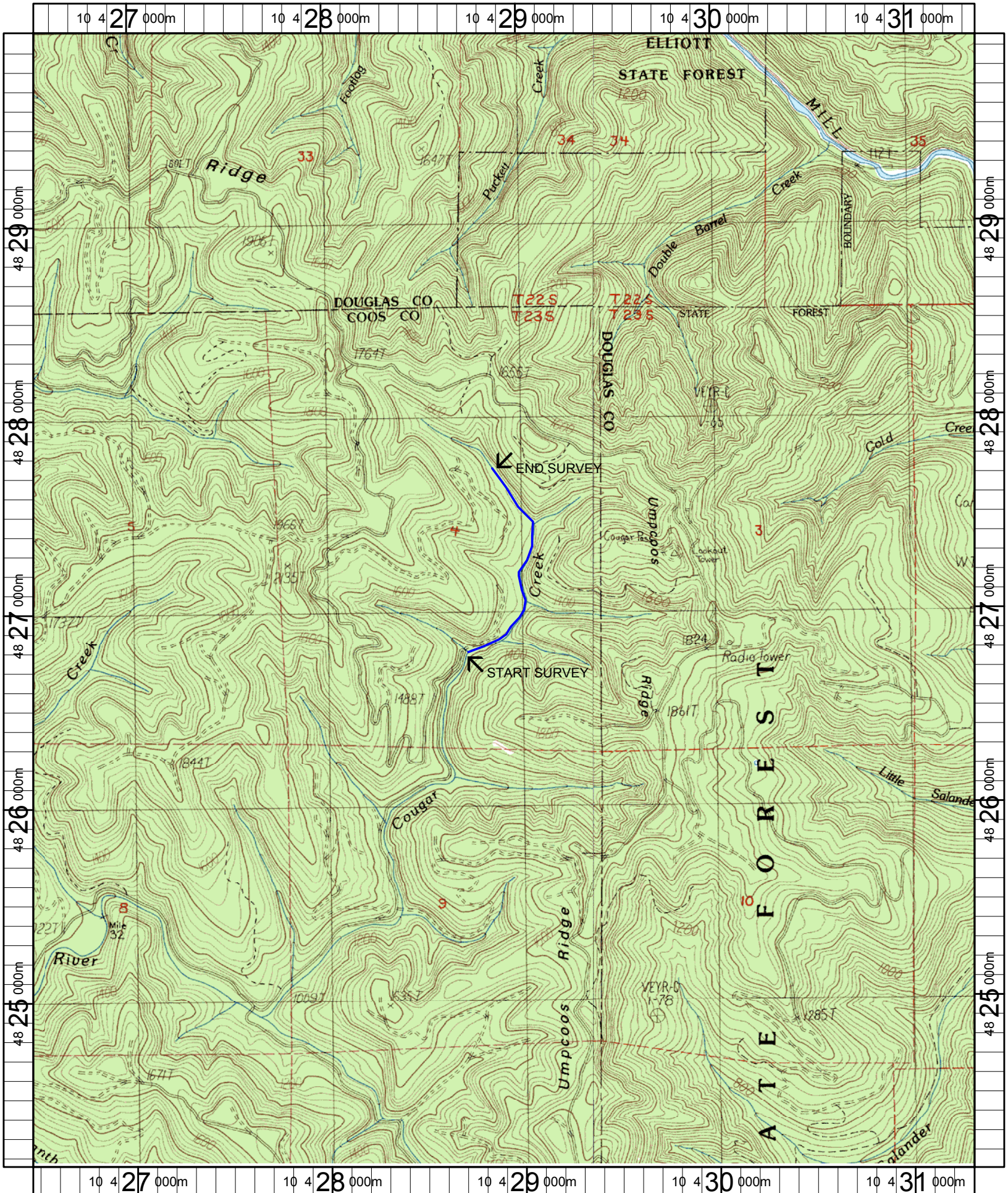
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	SL	00	0.6		H = .7 M	
4	LP	00	22		GRAVEL BAR SEPERATIO	
5	SL	00	22.2		H = .4 M	
17	IP	10	188.3		COHO FRY	
21	RI	01	232.8	/TJ		
22	DU	11	232.8		ACW = 1.4 M	TRIB A 048894, 4826806
23	RB	00	262		SS/	
24	RI	00	311.4			428939, 4826889
25	RI	00	360.6	SS/	SS/	
30	RI	01	480.8	/TJ	/TJ	TRIB B
31	RB	11	480.8		TRIB B T = 10.5 C	TRIB B 0429042, 4827030
32	SP	11	480.8			TRIB B
33	RB	11	480.8			TRIB B
34	RP	00	529.9		T = 11 C AT 1100	
35	RB	00	543.5		SS/	
37	SB	00	550.1		H = .5 M	
38	RB	00	595.8	SS/		
39	SP	00	600		NARROW VALLEY U 39 -	
42	CR	00	643.4	TJ/		
43	RP	01	683.1		TJ/	
44	CB	11	683.1		TRIB C T = 11.5 C	TRIB C

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **3-MS** SITE ID: **286** **COUGAR CREEK PRE-TX**

<u>UNIT#</u>	<u>TYPE</u>	<u>CHAN</u>	<u>DIST. (m)</u>	<u>COMMENTS</u>	<u>NOTE ESTIMATOR</u>	<u>NOTE NUMERATOR</u>
45	LP	00	688.8		T = 11 C AT 1100	0428985, 4827233
47	LP	00	711.8		SS/	
50	SL	00	739.3		H = .9 M	
53	RI	00	801.3		SS/	
54	RI	00	836	DJ	DJ	LG DJ COVERS UNIT
55	RI	00	879.6	SS/	SS/	
56	SP	00	886.1		DJ	
58	CB	01	927.3	LI, /TJ,DJ	/TJ, DJ	LG DJ COVERS UNIT
59	CB	11	927.3		TRIB D T = 12.5 C	TRIB D - 1ST 10 M DRY FRO
60	RI	00	953.8			U 60 = FISH UP IN THE TRIB
62	SL	00	993.4		H = .5 M	
63	RB	00	1018.2	SS/	SS/	
64	SL	00	1018.7		H = .6 M, T = 11.5 C	



Name: ELK PEAK
 Date: 1/6/2005
 Scale: 1 inch equals 2000 feet

Location: 10 428912 E 4827057 N
 Caption: COUGAR CREEK RESTORATION SITE - MILLICOMA BASIN