

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

STREAM: Knife Creek Lower (MS-161)  
BASIN: Millicoma River  
SURVEY TYPE: Post-Tx  
DATE: July 21, 2003  
SURVEY CREW: Jeremiah Bernier, Alex Higgins  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 6.2 km<sup>2</sup>  
USGS MAPS: Elk Peak  
ECOREGION: Coast Range Sedimentary

**GENERAL DESCRIPTION:**

The Knife Creek habitat survey extended 518 meters. The channel was constrained by hillslopes in a moderate V-shaped valley. The average valley width index was 2.1 (range: 1.4-3.0). Land use for the reach was young (3-15 cm dbh) and mature (50-90 cm dbh) trees. The average unit gradient was 2.3 percent. Rapids (39%) and scour pools (28%) dominated stream habitat. Bedrock (46%) dominated stream substrate. Wood volume was low at 12.4 m<sup>3</sup>/100m.

**COMMENTS:**

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

The crew noted one habitat structure during the survey.

REACH 1

T23S-R11W-S12NW

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	2.1	VWI Range: 1.4 - 3	

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	518	1,773	0
Secondary	20	10	0

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	3.3	Width	8.2	11.8	17.2
Depth	0.24	Height	0.5	1.1	2.1
		W:D ratio	15.2	Entrenchment	1.5

Stream Flow Type:	LF	Water temp (C):	16.0 - 16.0
Avg. Unit Gradient:	2.3%	Habitat Units/100m:	5.8

**Riparian, Bank, and Wood Summary**

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	0%	Reach avg: 80%
Undercut Banks:	4%	Range: 39 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m</u>
All pieces ( $\geq 3m \times 0.15m$ ):	30	5.8
Volume ( $m^3$ ):	64	12.4
Key pieces ( $\geq 10m \times 0.60m$ ):	4	0.8

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OREGON DEPARTMENT OF FISH AND WILDLIFE

KNIFE CREEK LOWER POST-TX (MS-161)

HABITAT INVENTORY

Report Date: 12/17/03

Survey Date:

7/21/03

REACH 1		T23S-R11W-S12NW					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	Cbl	Bldr	Bdrk	
CASCADE/BEDROCK	1	41	4.2	0.08	170	2	0	0	0	5	5	90	
CASCADE/BOULDERS	1	20	2.8	0.20	56	10	0	0	5	15	40	40	
GLIDE	3	33	3.5	0.26	117	5	2	15	25	23	7	29	
POOL-DAMMED	1	15	5.5	0.50	83	3	0	0	5	0	5	90	
POOL-LATERAL SCOUR	9	119	4.2	0.47	502	23	1	12	12	10	9	56	
RAPID/BEDROCK	4	116	3.0	0.12	339	14	0	1	5	12	9	73	
RAPID/BOULDERS	5	132	2.4	0.11	349	33	0	5	25	24	24	22	
RIFFLE	1	10	2.7	0.08	27	3	0	10	30	30	10	20	
RIFFLE W/ POCKETS	1	24	2.9	0.15	70	3	0	0	38	38	19	5	
STEP/BEDROCK	2	13	2.9	0.05	37	9	0	0	0	0	8	93	
STEP/BOULDERS	2	12	2.0	0.13	24	11	0	5	30	40	25	0	
STEP/COBBLE	1	5	2.1	0.05	10	5	0	0	20	60	20	0	
<b>Total:</b>	<b>31</b>	<b>538</b>	<b>3.3</b>	<b>0.24</b>	<b>1,783</b>	<b>121</b>	<b>Avg</b>	<b>0</b>	<b>7</b>	<b>16</b>	<b>18</b>	<b>14</b>	<b>46</b>

HABITAT SUMMARY									
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders		20
					(m <sup>2</sup> )	Percent	Number	(# / 100m <sup>2</sup> )	
Dammed & BW Pools	1	15	5.5	0.50	83	4.66%	3	3.6	
Scour Pools	9	119	4.2	0.47	502	28.13%	23	4.6	
Glides	3	33	3.5	0.26	117	6.58%	5	4.3	
Riffles	2	34	2.8	0.12	97	5.42%	6	6.2	
Rapids	9	248	2.7	0.11	688	38.56%	47	6.8	
Cascades	2	61	3.5	0.14	226	12.68%	12	5.3	
Step/Falls	5	30	2.4	0.08	71	3.98%	25	35.2	
Dry	0	0			0	0.00%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY		
	<u>Total</u>	<u># / Km</u>
All Pools:	10	18.6
Pools >=1m deep:	0	0.0
Complex pools (LWD pieces>=3):	1	1.9
Pool frequency (channel widths/pool):	6.6	
Residual pool depth (avg):	0.40	

**STREAM SUMMARY**

**KNIFE CREEK LOWER POST-TX (MS-161)**

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Substrate Percent Wetted Area						Large Boulders (>0.5m)
					S/O	Snd	Grvl	Cbl	Bldr	Bdrk	
31	538	3.3	0.24	1,783	0	7	16	18	14	46	121

Habitat Group	Wetted Area	
	(m <sup>2</sup> )	Percent
Dammed & BW Pools	83	4.66%
Scour Pools	502	28.13%
Glides	117	6.58%
Riffles	97	5.42%
Rapids	688	38.56%
Cascades	226	12.68%
Step/Falls	71	3.98%
Dry	0	0.00%
Culverts	0	0.00%

**RIPARIAN ZONE VEGETATION SUMMARY**

REACH 1	REACH 1
<b>Summary of Riparian Zone (0-30m) 3 transects</b>	
Total hardwoods/1000	528
Total conifers/1000 ft	244
Total conifers >20" dbh/1000 ft	163
Total conifers >35" dbh/1000 ft	41

**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	2.3	0.0	0.0	0.3	1.0	0.3	3.3
15-30cm	0.3	0.0	0.3	1.0	0.0	1.7	0.7	2.7
30-50cm	0.0	0.7	0.0	0.7	0.3	0.3	0.3	1.7
50-90cm	0.0	0.3	0.3	0.7	1.7	0.0	2.0	1.0
>90cm	0.3	0.0	0.3	0.0	0.0	0.0	0.7	0.0
Total/100m2	0.7	3.3	1.0	2.3	2.3	3.0	1.3	2.9

**Canopy closure and ground cover**

	Zone 1 0-10 meters	Zone 2 10 - 20 meters	Zone 3 20 - 30 meters
	(%)	(%)	(%)
Canopy closure	53	58	62
Shrub cover	39	31	35
Grass/forb cover	40	49	33

**Predominant landform in each zone**

	Zone 1 0-10 meters	Zone 2 10 - 20 meters	Zone 3 20 - 30 meters
	(%)	(%)	(%)
Hillslope	67	100	83
High terrace	17	0	0
Low terrace	17	0	0
Floodplain	0	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	17
Riprap	0	0	0
Surface slope (%)	25	30	38

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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	528
Total conifers/1000 ft	244
Total conifers >20" dbh/1000 ft	163
Total conifers >35" dbh/1000 ft	41

**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	0.3	3.3
15-30cm	0.7	2.7
30-50cm	0.3	1.7
50-90cm	2.0	1.0
>90cm	0.7	0.0

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**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		
8	RT	3	HS	35	65	40	60	Conifer	1						
								Hardwood							
8	LF	1	HS	30	70	30	50	Conifer							
								Hardwood	4		1	1			
8	LF	2	HS	40	70	30	50	Conifer							
								Hardwood		3	1				
8	LF	3	RB	40	65	30	50	Conifer							
								Hardwood	1	1	1				
8	RT	1	HT	0	75	15	85	Conifer							
								Hardwood			1				
8	RT	2	HS	20	75	5	95	Conifer							
								Hardwood			1	2			
18	RT	3	HS	45	0	100	0	Conifer							
								Hardwood							
18	RT	2	HS	45	0	100	0	Conifer							
								Hardwood							
18	RT	1	HS	45	0	100	0	Conifer							
								Hardwood							
18	LF	3	HS	40	90	0	10	Conifer			1	5			
								Hardwood							
18	LF	1	LT	0	60	10	90	Conifer							
								Hardwood	1						
18	LF	2	HS	20	75	0	80	Conifer		1		1	1		
								Hardwood							
25	LF	2	HS	30	50	50	30	Conifer							
								Hardwood							
25	RT	3	HS	25	75	0	40	Conifer							
								Hardwood							
25	RT	2	HS	25	75	0	40	Conifer							
								Hardwood							
25	RT	1	HS	40	80	0	15	Conifer		1			1		
								Hardwood							
25	LF	1	HS	35	30	80	0	Conifer							
								Hardwood	2						
25	LF	3	HS	40	75	40	40	Conifer							
								Hardwood	2	4					

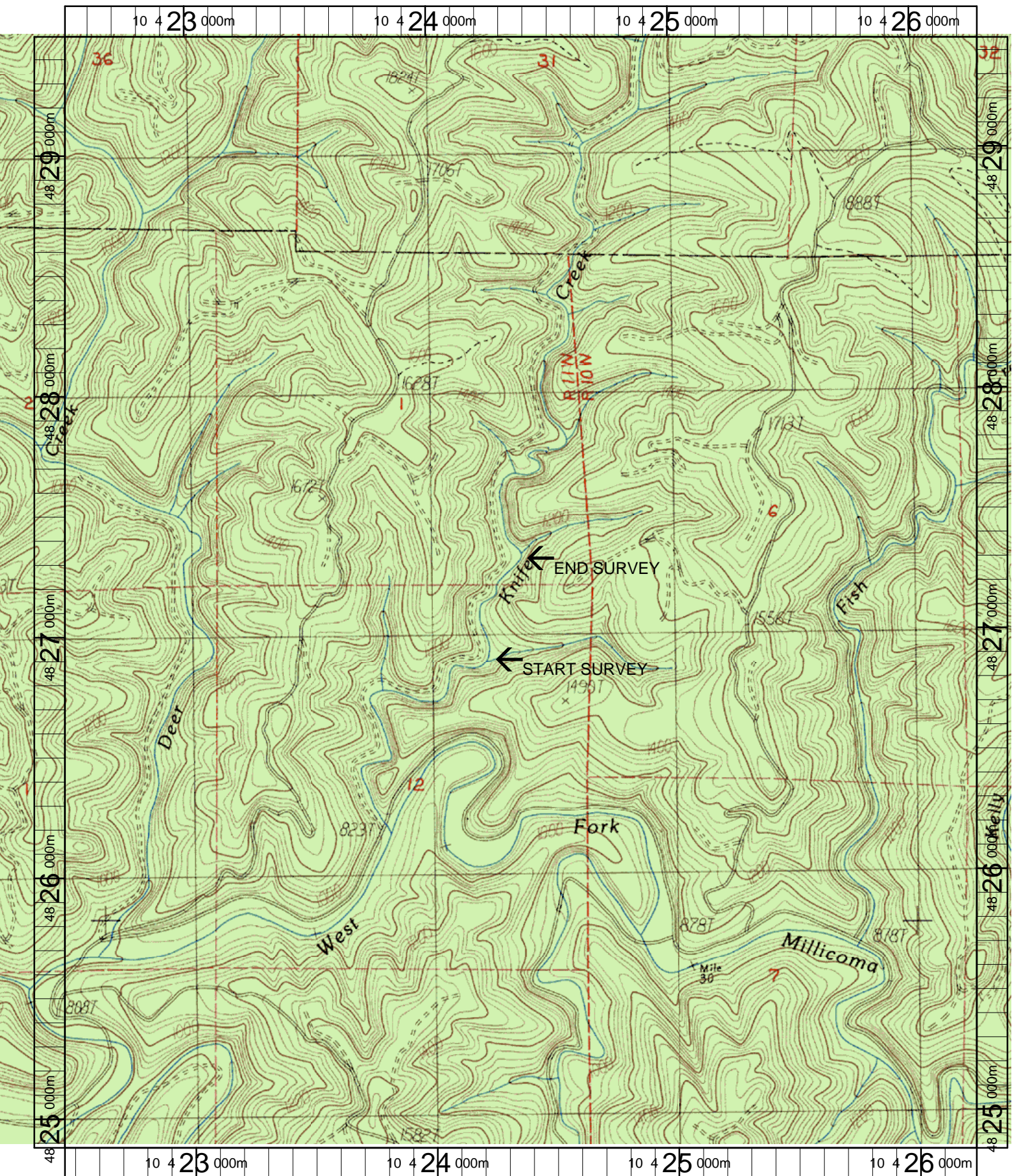
# Comment Summary

## Oregon Plan Monitoring Sites 2003

MONITORING AREA: 3-MS      SITE ID: 161      KNIFE CREEK LOWER POST-TX (MS-

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	GL	00	8.6		COHO IN ALL SLOW WAT	
7	LP	00	89.3	/SS		RIP #1
17	LP	00	267.6		SALMON SPAWNING SUR	
18	RR	00	294.2	/SS		RIP 2
19	RI	00	304.2	/TJ		
21	RB	11	325.6		T=17.5;ACW=1.5 NO NAM	NO NAME ON TOPO, NO BLU
24	SR	00	350.7	CS/		
25	LP	00	371.5			RIP 3
26	RR	00	401.3			START CLEARCUT ON RIGH
28	RP	00	463.7	HS		
31	LP	00	518.3			END





Name: ELK PEAK  
 Date: 3/20/2003  
 Scale: 1 inch equals 1666 feet

Location: 10 424365 E 4827171 N  
 Caption: KNIFE CREEK LOWER RESTORATION SITE - MILLICOMA BASIN