

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

STREAM: Elk Creek Phase 2 (MS-325)
BASIN: Millicoma River
SURVEY TYPE: Post-Tx
DATE: July 19, 2007
SURVEY CREW: Peter Cole, Lisa Biggs
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 13.3 km²
USGS MAPS: Elk Peak
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Elk Creek habitat survey extended 2,888 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 3.3 (range: 1.0-7.0). Land use for the reach was mature (50-90 cm dbh) and second growth (15-30 cm dbh) trees. The average unit gradient was 1.0 percent. Scour pools (47%) and rapids (19%) dominated stream habitat. Gravel (30%) and bedrock (25%) dominated stream substrate. Wood volume was high at 32.1 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

T23S-R11W-S24NE

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	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	3.3	VWI Range:	1 - 7

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	0%	Braided Channel	0%
Alt. Terrace/Hill	100%		
Landuse	0%		

Channel Characteristics

<u>Type</u>	<u>Length (m)</u>	<u>Area (m2)</u>	<u>Dry Units</u>
Primary Channel	2,888	18,438	0
Secondary Channel	42	84	2
Off-Channel Units	144	383	2

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 13	<u>First Terrace</u> n = 9
Width: 5.6	Width: 12.3	16.9 (11.2 - 24.7)	18.4 (13.2 - 26.4)
Depth: 0.37	Height: 0.6	1.2 (1 - 1.5)	1.5 (1.2 - 1.75)

W:D ratio: 21.0
 Stream Flow Type: MF
 Average Unit Gradient: 1.0%
 Water temperature (°C): 16.0 - 16.0

Entrenchment (ACW:FPW ratio): 1.4
 Habitat Units/100m (total channel length): 4.2
 Habitat Units/100m (primary channel length): 4.4

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	MT	ST
Riparian Vegetation:	M50	S

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	7%	Reach avg: 79%
Undercut Banks:	6%	Range: 53 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	406	14.1
Volume (m ³):	927	32.1
Key pieces (>=12m x 0.60m):	68	2.4

OREGON DEPT OF FISH AND WILDLIFE

ELK CREEK PHASE 2 POST-TX (3-MS, 325)

HABITAT INVENTORY

Report Date: 11/14/2007

Survey Date:

7/19/2007

REACH 1

T23S-R11W-S24NE

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/BOULDERS	1	26	5.5	0.30	141	60	0	15	20	15	45	5
CULVERT CROSSING	1	23	1.8	0.10	41	1	0	10	80	10	0	0
DRY CHANNEL	1	15	1.0	0.00	15	15	10	10	10	19	52	0
DRY UNIT	2	29	2.7	0.00	80	4	6	11	26	46	11	0
GLIDE	2	61	5.8	0.20	350	25	15	23	23	11	5	23
POOL-BACKWATER	8	81	3.8	0.50	283	7	51	13	12	4	3	16
POOL-BEAVER DAM	3	210	8.6	1.17	1,877	36	26	23	37	5	5	5
POOL-ISOLATED	1	4	3.0	0.95	13	0	85	15	0	0	0	0
POOL-LATERAL SCOUR	38	1,055	7.5	0.72	7,856	356	14	14	27	8	10	27
POOL-PLUNGE	1	15	12.0	0.90	176	9	21	25	21	4	8	21
POOL-STRAIGHT SCOUR	5	142	5.6	0.54	800	43	8	17	10	5	6	55
PUDDLED UNIT	1	27	0.9	0.15	24	4	20	25	40	5	10	0
RAPID/BEDROCK	9	377	6.6	0.10	2,461	230	2	5	5	2	5	80
RAPID/BOULDERS	6	194	6.0	0.18	1,179	254	2	13	9	17	28	30
RIFFLE	24	607	4.2	0.15	2,647	187	3	14	47	16	7	13
RIFFLE W/ POCKETS	2	92	4.9	0.18	455	20	10	10	26	10	10	36
STEP/BEAVER DAM	3	3	8.3	0.05	24	2	29	16	47	4	4	0
STEP/BEDROCK	5	36	5.8	0.05	193	20	2	5	3	4	3	83
STEP/BOULDERS	2	7	4.0	0.13	32	30	0	8	20	8	65	0
STEP/COBBLE	13	72	3.6	0.07	259	12	1	12	57	23	7	1
Total:	128	3,074	5.6	0.37	18,905	1,315	Avg: 11	13	30	11	10	25

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	12	295	4.9	0.71	2,172	11.49%	43	2.0
Scour Pools	44	1,212	7.4	0.71	8,833	46.72%	408	4.6
Glides	2	61	5.8	0.20	350	1.85%	25	7.1
Riffles	26	699	4.2	0.15	3,102	16.41%	207	6.7
Rapids	15	570	6.3	0.13	3,640	19.25%	484	13.3
Cascades	1	26	5.5	0.30	141	0.74%	60	42.6
Step/Falls	23	118	4.7	0.07	508	2.68%	64	12.6
Dry	4	71	1.8	0.04	119	0.63%	23	19.3
Culverts	1	23	1.8	0.10	41	0.22%	1	2.4

REACH 1

T23S-R11W-S24NE

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	56	18.2	19.4
Pools >=1m deep:	7	2.3	2.4
Complex pools (LWD pieces>=3):	26	8.5	9.0
Pool frequency (channel widths/pool):	4.5		
Residual pool depth (avg):	0.65		

Survey Date 7/17/2007

RIPARIAN ZONE

Report Date: 11/7/2007

VEGETATION SUMMARY

REACH 1

Summary of Riparian Zone (0-30m) 11 transects

Total hardwoods/1000	576
Total conifers/1000 ft	67
Total conifers >20" dbh/1000 ft	28
Total conifers >35" dbh/1000 ft	17

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	1.3	0.1	2.7	0.4	1.5	0.5	5.5
15-30cm	0.0	0.6	0.1	0.6	0.1	0.4	0.2	1.6
30-50cm	0.0	0.4	0.0	0.2	0.0	0.6	0.0	1.2
50-90cm	0.0	0.4	0.0	0.2	0.2	0.2	0.2	0.7
>90cm	0.0	0.1	0.1	0.3	0.2	0.1	0.3	0.5
Total/100m2	0.0	2.7	0.3	4.0	0.8	2.7	0.4	3.2

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	54		61		61	
Shrub cover	78		63		54	
Grass/forb cover	19		26		33	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	41		55		64	
High terrace	45		32		18	
Low terrace	14		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		14		18	
Riprap	0		0		0	
Surface slope (%)	34		40		50	

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

11 transects

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

Total hardwoods/1000	576
Total conifers/1000 ft	67
Total conifers >20" dbh/1000 ft	28
Total conifers >35" dbh/1000 ft	17

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	0.5	5.5
15-30cm	0.2	1.6
30-50cm	0.0	1.2
50-90cm	0.2	0.7
>90cm	0.3	0.5

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		
15	LT	1	HS	70	95	70	30	Conifer							
								Hardwood		2	1				
15	LT	2	RB	0	95	0	40	Conifer							
								Hardwood							
15	LT	3	HS	110	100	70	30	Conifer							
								Hardwood	4						
15	RT	1	HT	0	80	95	5	Conifer							
								Hardwood			1	2			
15	RT	2	HT	10	95	90	10	Conifer							
								Hardwood	3						
15	RT	3	HT	0	90	5	95	Conifer						2	DOUG FIR
								Hardwood	1			1			
32	LT	1	HT	10	0	50	50	Conifer							
								Hardwood							
32	LT	1	HS	70	95	35	65	Conifer							
								Hardwood	2	1					
32	LT	1	HT	5	0	95	5	Conifer							
								Hardwood							
32	LT	2	RB	0	0	30	40	Conifer							
								Hardwood							
32	LT	2	HS	130	95	40	50	Conifer							
								Hardwood	2	2					
32	LT	2	HT	5	5	100	0	Conifer							
								Hardwood							
32	LT	3	HS	45	25	100	0	Conifer							
								Hardwood							
32	LT	3	HT	10	25	95	5	Conifer	1						
								Hardwood							
32	LT	3	RB	0	65	30	25	Conifer			1			5	M OF HS
								Hardwood							
32	RT	1	HT	0	75	25	75	Conifer							
								Hardwood	1	3	1				
32	RT	1	HT	0	0	85	15	Conifer							
								Hardwood							
32	RT	1	HT	0	0	100	0	Conifer							
								Hardwood	1						

32	RT	2	HT	0	65	10	85	Conifer						
								Hardwood	1				1	
32	RT	2	HT	0	10	100	0	Conifer						
								Hardwood						
32	RT	2	HS	95	5	100	0	Conifer						
								Hardwood						
32	RT	3	HS	85	10	100	0	Conifer						
								Hardwood						
32	RT	3	HS	65	75	5	55	Conifer					1	
								Hardwood			1			
32	RT	3	HT	0	55	95	5	Conifer						
								Hardwood	1					
59	LT	1	HT	5	75	95	5	Conifer						
								Hardwood						
59	LT	2	HS	50	90	80	20	Conifer						
								Hardwood					1	
59	LT	3	HS	60	85	40	60	Conifer						
								Hardwood					1	
59	RT	1	HS	150	55	95	5	Conifer						WF-BOOMER HOLES
								Hardwood	6					
59	RT	2	HS	170	75	55	25	Conifer						AMPHIB - 4" DUNNS
								Hardwood	11				1	
59	RT	3	HS	90	100	25	75	Conifer	2				1	
								Hardwood	1					
70	LT	1	LT	0	80	80	10	Conifer						
								Hardwood						
70	LT	2	HS	10	70	80	20	Conifer						1
								Hardwood						
70	LT	3	HS	20	70	40	40	Conifer						
								Hardwood				2		
70	RT	1	HS	100	40	80	10	Conifer						
								Hardwood				1		
70	RT	2	HS	80	80	20	70	Conifer	1	1				
								Hardwood						
70	RT	3	HS	90	80	30	60	Conifer	1					
								Hardwood						
82	LT	1	HS	30	60	80	10	Conifer						
								Hardwood						
82	LT	2	HS	40	70	80	10	Conifer						
								Hardwood			5			
82	LT	3	RB	10	50	30	20	Conifer						
								Hardwood						
82	RT	1	HS	20	60	60	30	Conifer						
								Hardwood						
82	RT	2	HS	40	50	80	10	Conifer						
								Hardwood	1			1		

82	RT	3	HS	70	60	70	20	Conifer				
								Hardwood				
90	LT	1	HS	120	95	80	20	Conifer				
								Hardwood				
90	LT	2	RB	5	65	5	35	Conifer				
								Hardwood				
90	LT	3	HS	110	80	40	60	Conifer				
								Hardwood	3	3	1	
90	RT	1	LT	0	60	100	0	Conifer				
								Hardwood				
90	RT	2	HS	80	70	80	20	Conifer				
								Hardwood	7			
90	RT	3	HS	85	70	80	20	Conifer				
								Hardwood	3			
102	LT	1	HT	10	15	100	0	Conifer				
								Hardwood				
102	LT	2	HT	5	45	100	0	Conifer				
								Hardwood	1			
102	LT	3	RB	0	10	20	40	Conifer				
								Hardwood				
102	RT	1	LT	5	40	100	0	Conifer				
								Hardwood		1		
102	RT	2	HS	15	85	90	10	Conifer				
								Hardwood	1		1	
102	RT	3	HS	80	85	85	15	Conifer				
								Hardwood	1		3	
109	LT	1	HT	0	60	70	30	Conifer				
								Hardwood				1
109	LT	1	HS	25	75	85	10	Conifer				
								Hardwood			2	
109	LT	2	HS	15	80	80	10	Conifer				
								Hardwood				1
109	LT	2	HT	0	60	50	40	Conifer				
								Hardwood				
109	LT	3	HS	65	50	25	25	Conifer				
								Hardwood				
109	LT	3	RB	0	40	25	40	Conifer				
								Hardwood				
109	RT	1	HS	110	85	50	40	Conifer				
								Hardwood	4			
109	RT	1	HT	10	50	95	5	Conifer				
								Hardwood				
109	RT	2	HS	120	90	25	65	Conifer				
								Hardwood	3			1
109	RT	2	HT	5	40	95	5	Conifer				
								Hardwood				

109	RT	3	HS	110	80	75	25	Conifer		
								Hardwood	3	1
109	RT	3	HT	5	35	95	5	Conifer		
								Hardwood		

COMMENT SUMMARY

MONITORING AREA: 3-MS SITE ID: 325 STREAM: ELK CREEK PHASE 2 POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	RP	00	26.4	BV	TEMP=16C AT 1:10PM, BEAVER CHEWED STICKS.
2	SR	00	36.7		LOTS OF COHO JUVENILES
4	SR	00	66.4	HS	LWD
5	LP	00	80.4	HS	HS CONTINUES FROM UNIT 4-6
7	LP	00	107.5	HS, AM	HS CONTINUES THRU UNIT 9. 1 RSN ADULT. LWD
8	LP	00	120.6		SMALL STEP BETWEEN POOLS
12	BW	10	217.1		LOTS OF COHO JUVENILE.S
15	PP	00	262.4		1, 3-4" COHO-DEAD, RIP#1
20	RR	00	335.7		OLD BC NO LONGER OVER
22	SR	00	368.2	BV	
23	SD	00	368.7	BD	BEAVER DAM
24	BP	01	413.7	BV	ELK TRAX ALL OVER
26	SC	00	425.4		15.5 °C AT 12:00PM
27	LP	01	457.2		BEAVER ACTIVITY
28	BW	10	457.2	AM	FROG RIPPET (RLF?)
30	LP	00	485	DJ	BEAVER ACTIVITY, POSSIBLE BW
31	RP	00	550.6	WL	ELK TRAIL
32	LP	01	588.6		RIP#2
36	RR	00	738.6	HS	LWD
39	RR	00	830.8	AM, HS	HABITAT END SIGN # 1025 PB/BC, RIP#3, PICTURE, 1 ADULT RSN
40	RB	00	842.8	HS	LWD
42	RR	00	923.6	DJ	

COMMENT SUMMARY

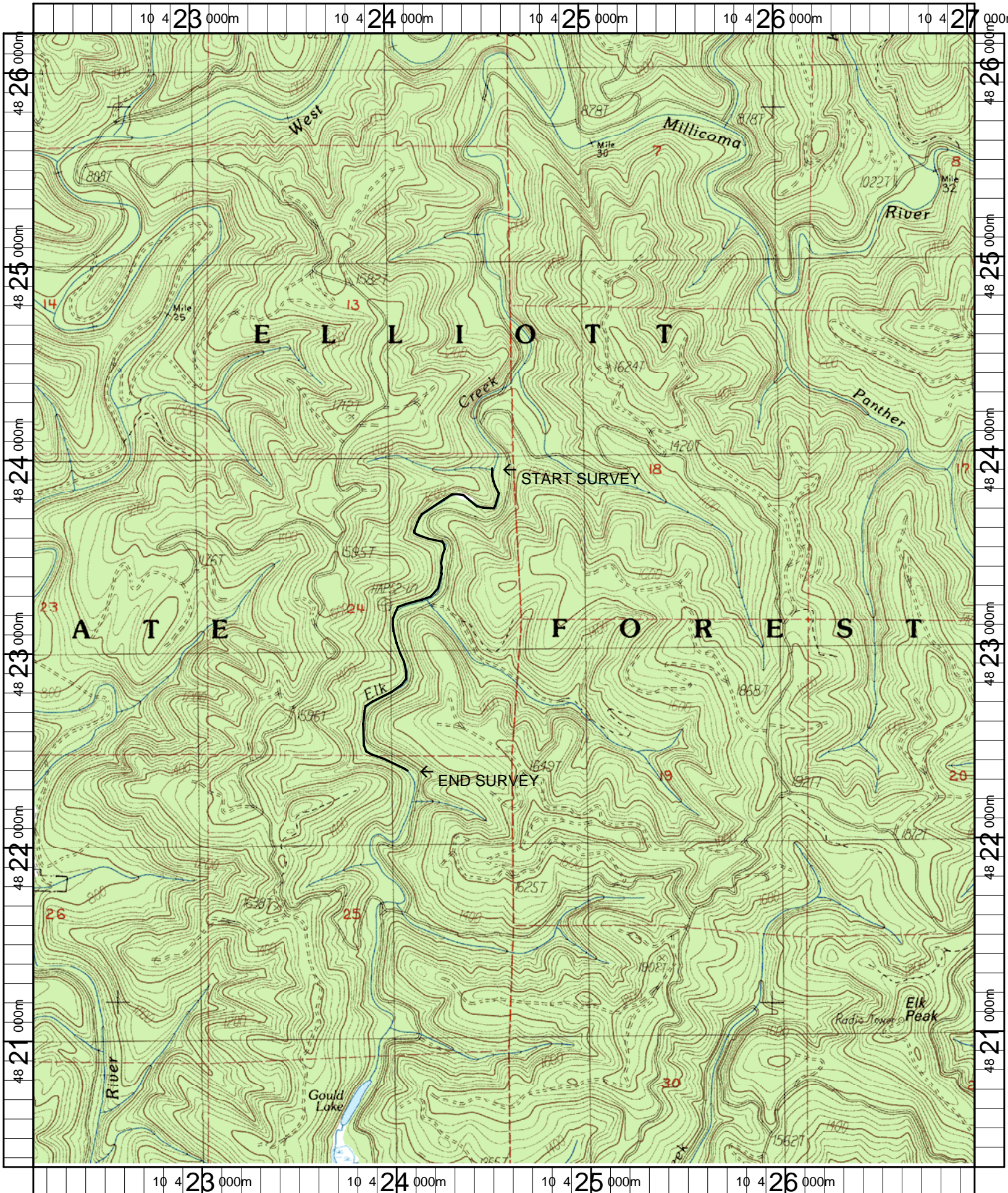
MONITORING AREA: 3-MS SITE ID: 325 STREAM: ELK CREEK PHASE 2 POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
44	LP	01	973	/TJ	
45	DC	11	973		TRIB A
48	RI	00	1037.9	HS	RIP#4, LWD
51	LP	01	1117.1	HS	LWD
54	LP	00	1154.4	HS	LWD
57	RI	00	1197.6	WL	ELK TRAIL
58	LP	00	1243.5	/SS	
59	RI	00	1282.5		RIP#5
60	LP	00	1305.5	HS	LWD
62	SP	00	1399.6	HS	LWD
65	SB	00	1453.6	HS	BOULDER WEIR
66	RI	01	1476	TJ/	TRIB B
68	CC	11	1476	CC	OVAL BAFFLED CMP CULVERT W=2.5, H=1.4, ACW=4.3
70	RI	00	1529.1		RIP#6
76	DU	11	1657.1		TRIB C, ACW=1.4
78	LP	00	1686.8	AM	3" JUVENILE PGS
82	LP	00	1787.8	HS	RIP#7, LWD
84	LP	00	1849	HS	LWD
85	RI	00	1882.1	HS	LWD
89	RI	00	2020.5	AM	4-2.5" DUNNS
90	RI	00	2042.4		RIP#8
92	LP	01	2130.3	DJ, HS, AM	AUDIO RLF?

COMMENT SUMMARY

MONITORING AREA: 3-MS SITE ID: 325 STREAM: ELK CREEK PHASE 2 POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
95	SD	00	2137.2	BD	
96	BP	00	2193.6	BV	WOULD BE LP IF NO BD
97	RI	01	2210.6	AM	3 " PGS
99	SD	00	2212.1	BD	
100	BP	01	2320.6	BV	1-RSN, 1-15" GARTER SNAKE, HEAVY BEAVER ACTIVITY
102	RI	00	2339	AM	1 - 3.5" PGS
103	LP	00	2402.6	HS, AM	LWD, 2-ADULT RSN
107	LP	00	2481.7		HAB SIGN-END 1040, 8-10-04, PS/BC
108	RI	00	2526.5	AM	1 - ADULT RSN
109	LP	01	2552.9	/TJ	RIP#10
110	DU	02	2552.9		TRIB C, ACW=1.6
112	LP	01	2576.5	HS	LWD
115	LP	00	2606.4	AM	2 - ADULT RSN
117	LP	00	2639.7	/SS, HS	
119	LP	00	2684.8	HS	LWD
124	SC	00	2742.5		RIP#11
125	LP	00	2762.4	HS	
129	GL	00	2887.5		END



Name: ELK PEAK (OR)
 Date: 4/26/2007
 Scale: 1 inch equals 2000 feet

Location: 10 0424584 E 4823252 N
 Caption: ELK CREEK #325 RESTORATION SITE - MILLICOMA BASIN