

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

STREAM: Little Rock Creek (MC-44)  
 BASIN: Siletz River  
 SURVEY TYPE: Pre and Post-Tx  
 DATE: October 27, 2003  
 REPORT PREPARED BY: Paul Jacobsen

The Little Rock Creek restoration project extended approximately 800 meters, with about 550 meters of the project being monitored for pre- and post-treatment conditions. Nine habitat structures were created and 19 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 salmonids spawning and rearing habitat. In the first seasons after restoration activities, large wood pieces, volume, and key pieces are increased as expected. In addition, there are more complex pools and more riffle gravel.

	ODFW	Benchmark	Winter Pre	Summer Pre	Winter Post	Summer Post	
Habitat Variable	Desirable	Undesirable	1/27/00	7/3/00	2/6/01	7/18/01	
Reach #							
Pool Area	>35	<10	41.7	60.5	39.2	59.0	
Pool Frequency	5-8	>20	5.2	4.3	6.2	5.4	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.48	.43	.38	.39	
Complex Pools/km	>2.5	<1.0	1.7	5.3	7.4	10.8	
Width/Depth Ratio	<15	>30	8.6	10.9	12.0	9.4	
Riffle Gravel % area	>35	<15	56	42	69	67	
Silt-Sand-Organic %	<12	>25	11	9	10	10	
Shade %	>70	< 60		40		46	
LWD - pieces/100m	>20	<10	5.0	6.0	10.4	9.5	
LWD - Volume/100m	>30	<20	6.1	6.0	19.9	17.1	
LWD - Key pieces/ 100m	>3	<1	0.2	0.5	1.5	0.4	
Riparian Conifers>20" dbh/1000ft	>300	<150		20		0	
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. Six habitat structures were also recorded.

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

STREAM: Little Rock Creek (MC-44)  
BASIN: Siletz River  
SURVEY TYPE: Post-Tx  
DATE: July 18, 2001  
SURVEY CREW: Justin Gerding, Russ Macal  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 4.4 km<sup>2</sup>  
USGS MAPS: Nortons, Summit  
ECOREGION: Coast Range Sedimentary

**GENERAL DESCRIPTION:**

The Little Rock Creek habitat survey extended 556 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 7.4 (range: 6.0 – 10.0). Land use for the reach was light grazing and second growth (15-30 cm dbh) trees. The average unit gradient was 1.5 percent. Scour pools (53%) and riffles (35%) dominated stream habitat. Gravel (48%) and sand (25%) dominated stream substrate. Wood volume was low at 17.1 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

T10S-R8W-S14NE

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: 7.4 range: 6.0-10.0

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	556	1,083	0
Secondary	0	0	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u>	<u>First Terrace</u>
Width 1.9	5.1	17.5	10.3
Depth 0.28	Height 0.6	1.1	1.1
	W:D ratio 9.4	Entrenchment 3.8	

Stream Flow Type: LF Water Temp: 12.5-12.5°C  
 Avg. Unit Gradient: 1.5% Habitat Units/100m: 7.7

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	LG	ST
Riparian Vegetation:	G	D3

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	5%	Reach avg: 46%
Undercut Banks	6%	Range: 33- 83

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ( $\geq 3m \times 0.15m$ )	53	9.5
Volume (m <sup>3</sup> )	95	17.1
Key pieces ( $\geq 10m \times 0.6m$ )	2	0.4

REACH 1

T10S-R8W-S14NE

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
GLIDE	2	28	2.2	0.23	62	0	0	20	55	18	0	8
POOL-BEAVER DAM	1	32	2.1	0.80	67	0	15	60	20	5	0	0
POOL-LATERAL SCOUR	19	241	2.3	0.45	572	3	4	37	31	6	1	20
RIFFLE	20	253	1.4	0.12	378	7	0	10	67	15	1	7
STEP/BEAVER DAM	1	1	3.4	0.01	4	0	5	70	20	5	0	0
<b>Total:</b>	<b>43</b>	<b>556</b>	<b>1.9</b>	<b>0.28</b>	<b>1,083</b>	<b>10</b>	<b>Avg: 2</b>	<b>25</b>	<b>48</b>	<b>11</b>	<b>1</b>	<b>12</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	Boulders #/100m <sup>2</sup>
Dammed & BW Pools	1	32	2.1	0.80	67	6.19	0	0.0
Scour Pools	19	241	2.3	0.45	572	52.84	3	0.5
Glides	2	28	2.2	0.23	62	5.72	0	0.0
Riffles	20	253	1.4	0.12	378	34.87	7	1.9
Rapids	0	0	-	-	0	0.00	0	0.0
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	1	1	3.4	0.01	4	0.38	0	0.0
Dry	0	0	-	-	0	0.00	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	20	36.0
Pools $\geq$ 1m deep:	0	0.0
Complex pools (LWD pieces $\geq$ 3):	6	10.8
Pool Frequency (channel widths/pool):	5.4	
Residual pool depth (avg)	0.39m	

STREAM SUMMARY

LITTLE ROCK CR POST-TX (#44)

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	
43	556	1.9	0.28	1,083	2	25	48	11	1	12	10

Wetted Area

Habitat Group	(m <sup>2</sup> )	Percent
Scour Pool	572	52.8
Backwater Pools	67	6.2
Glide	62	5.7
Riffle	378	34.9
Rapid	0	0.0
Cascade	0	0.0
Step	4	0.4
Dry	0	0.0

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	772
Total conifers/1000 ft	183
Total conifers >20" dbh/1000 ft	0
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	0.0	3.0	0.0	3.3	1.3	6.0	1.3	12.3
15-30cm	0.0	0.3	1.3	0.0	0.3	0.0	1.7	0.3
30-50cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0
Total/100m <sup>2</sup>	0.0	3.3	1.3	3.3	1.7	6.0	1.0	4.2

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	14		20		48	
Shrub cover	20		26		35	
Grass/forb cover	80		74		55	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	33		50		50
High terrace	17		17		50	
Low terrace	50		33		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	11		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	772
Total conifers/1000 ft	183
Total conifers >20" dbh/1000 ft	0

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	1.3	12.3
15-30cm	1.7	0.3
30-50cm	0.0	0.0
50-90cm	0.0	0.0
>90cm	0.0	0.0

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RIPARIAN ZONE VEGETATION

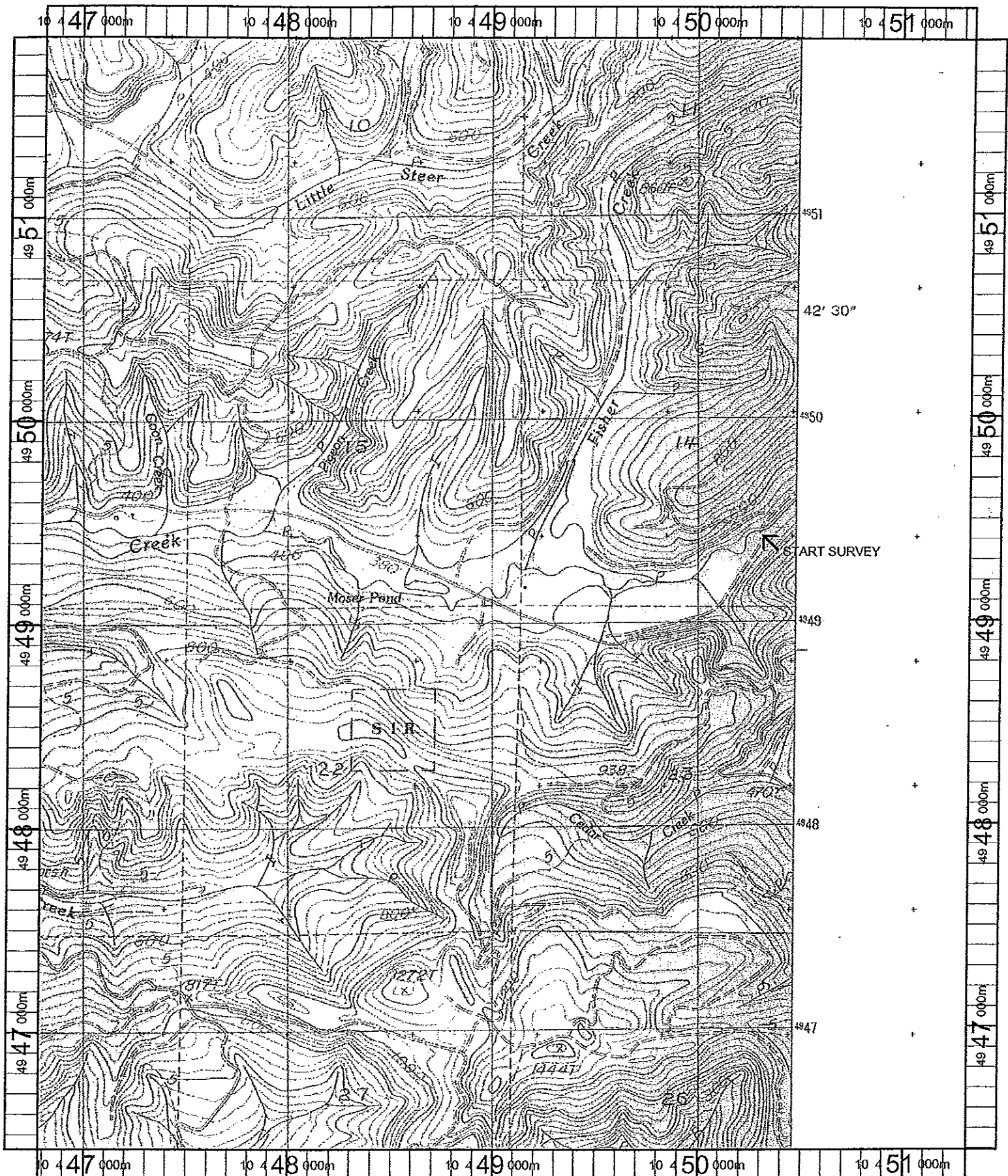
Reach 1

Reach 1

VEGETATION DETAIL

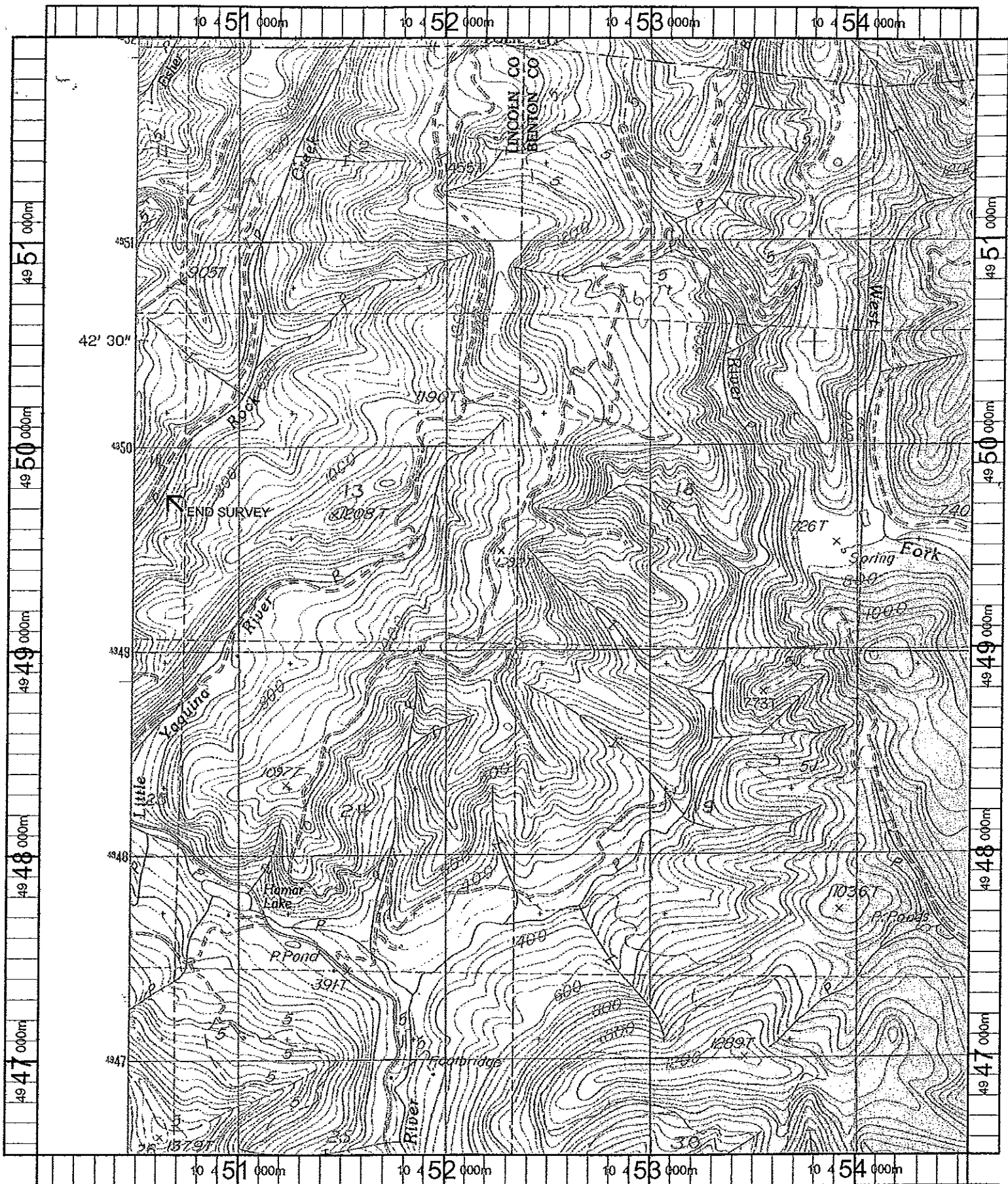
Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90	
10	LF	1	LT	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
10	LF	2	LT	0.0	0	5	95	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	VINE MAPLE
10	LF	3	HT	0.0	90	90	10	Conifer	1	0	0	0	0	
								Hardwood	7	0	0	0	0	D. FIR, VINE MAPLE
10	RT	1	HS	40.0	10	30	70	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	ALDER
10	RT	2	HS	40.0	40	40	60	Conifer	0	2	0	0	0	
								Hardwood	2	0	0	0	0	DOUGLAS FIR, HAZEL
10	RT	3	HS	40.0	90	10	30	Conifer	3	0	0	0	0	
								Hardwood	0	0	0	0	0	
19	LF	1	HS	25.0	30	70	30	Conifer	0	0	0	0	0	
								Hardwood	2	0	0	0	0	
19	LF	2	HS	20.0	0	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
19	LF	3	HS	20.0	65	30	70	Conifer	0	1	0	0	0	
								Hardwood	3	0	0	0	0	HAZEL
19	RT	1	LT	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
19	RT	2	LT	0.0	10	20	80	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	ALDER, ELDERBERRY
19	RT	3	HT	0.0	10	30	70	Conifer	0	0	0	0	0	
								Hardwood	6	0	0	0	0	ELDERBERRY
31	LF	1	HT	0.0	10	20	80	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
31	LF	2	HT	0.0	50	10	90	Conifer	0	2	0	0	0	
								Hardwood	0	0	0	0	0	DOUGLAS FIR
31	LF	3	HT	0.0	20	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
31	RT	1	LT	0.0	35	0	100	Conifer	0	0	0	0	0	
								Hardwood	4	1	0	0	0	ALDER, CASCARA
31	RT	2	HS	30.0	20	50	50	Conifer	0	0	0	0	0	
								Hardwood	4	0	0	0	0	ALDER
31	RT	3	HS	40.0	10	50	50	Conifer	0	0	0	0	0	
								Hardwood	2	0	0	0	0	CASCARA





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

Location: 10 448964 E 4949127 N  
 Caption: LITTLE ROCK CREEK RESTORATION SITE - SILETZ BASIN



Name: SUMMIT  
 Date: 11/8/100  
 Scale: 1 Inch equals 2000 feet

Location: 10 452201 E 4949244 N  
 Caption: LITTLE ROCK CREEK RESTORATION SITE - SILETZ BASIN