

REACH 1

T10S-R8W-31

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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 avg: 4.9 range: 3.0-6.0

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	445	1,909	0
Secondary	27	27	1

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	3.9	Width	6.7	10.5	15.1
Depth	0.24	Height	0.4	0.8	1.1
		W:D ratio	16.0	Entrenchment	1.7

Stream Flow Type: MF Water Temp: 14.0-14.0°C  
 Avg. Unit Gradient: 1.9% Habitat Units/100m: 9.3

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	YT
Riparian Vegetation:	D30	G

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	2%	Reach avg: 97%
Undercut Banks	2%	Range: 83-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces (≥3m x 0.15m)	58	13.0
Volume (m <sup>3</sup> )	56	12.6
Key pieces (≥10m x 0.6m)	5	1.1

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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
POOL-ISOLATED	1	6	1.2	0.15	8	0	90	10	0	0	0	0
POOL-LATERAL SCOUR	21	217	4.2	0.38	951	22	24	35	6	3	2	30
POOL-STRAIGHT SCOUR	1	8	3.5	0.30	29	0	30	30	5	5	0	30
PUDDLED CHANNEL	1	14	1.0	0.01	14	6	20	0	0	0	0	80
RAPID/BEDROCK	3	37	6.1	0.04	232	0	0	0	0	0	0	100
RAPID/BOULDERS	3	34	3.6	0.09	149	1	11	28	51	5	2	4
RIFFLE	7	108	3.5	0.12	380	21	7	17	24	12	4	36
RIFFLE W/ POCKETS	2	29	3.5	0.25	103	1	15	24	13	11	0	36
STEP/BEDROCK	3	13	3.4	0.08	44	0	0	7	7	0	0	85
STEP/COBBLE	2	5	4.4	0.10	25	2	5	20	50	25	0	0
<b>Total:</b>	<b>44</b>	<b>471</b>	<b>3.9</b>	<b>0.24</b>	<b>1,936</b>	<b>53</b>	<b>Avg:17</b>	<b>25</b>	<b>13</b>	<b>5</b>	<b>2</b>	<b>37</b>

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m <sup>2</sup> )	Area Percent	Large Boulders Number	Boulders #/100m <sup>2</sup>
Dammed & BW Pools	1	6	1.2	0.15	8	0.39	0	0.0
Scour Pools	22	225	4.1	0.38	981	50.66	22	2.2
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	9	137	3.5	0.15	483	24.94	22	4.6
Rapids	6	71	4.9	0.07	381	19.68	1	0.3
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	5	18	3.8	0.09	69	3.58	2	2.9
Dry	1	14	1.0	0.01	14	0.74	6	41.7

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	23	48.8
Pools $\geq 1m$ deep:	0	0.0
Complex pools (LWD pieces $\geq 3$ ):	5	10.6
Pool Frequency (channel widths/pool):	3.0	
Residual pool depth (avg)	0.24m	

STREAM SUMMARY

BUTTERMILK CREEK (POST SUM 99)

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	
44	471	3.9	0.24	1,936	17	25	13	5	2	37	53

Wetted Area

Habitat Group	(m <sup>2</sup> )	Percent
Scour Pool	981	50.7
Backwater Pools	8	0.4
Glide	0	0.0
Riffle	483	24.9
Rapid	381	19.7
Cascade	0	0.0
Step	69	3.6
Dry	14	0.7

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RIPARIAN ZONE VEGETATION SUMMARY

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Summary of Riparian Zone (0-30m) (2 transects)

Total hardwoods/1000 ft	1,067
Total conifers/1000 ft	30
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	2.5	0.0	5.0	0.0	3.5	0.0	11.0
15-30cm	0.0	1.0	0.0	0.0	0.0	0.5	0.0	1.5
30-50cm	0.0	0.5	0.0	2.5	0.5	1.0	0.5	4.0
50-90cm	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5
>90cm	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
Total/100m <sup>2</sup>	0.0	4.5	0.0	7.5	0.5	5.5	0.2	5.8

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	91		85		88	
Shrub cover	28		48		40	
Grass/forb cover	70		53		35	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	25		75		75
High terrace	50		25		0	
Low terrace	25		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		25	
Riprap	0		0		0	
Surface slope (%)	9		26		23	

Summary of Riparian Zone (0-30m) for all reaches ( 2 transects)

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

Total hardwoods/1000 ft	1,067
Total conifers/1000 ft	30
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	0.0	11.0
15-30cm	0.0	1.5
30-50cm	0.5	4.0
50-90cm	0.0	0.5
>90cm	0.0	0.5

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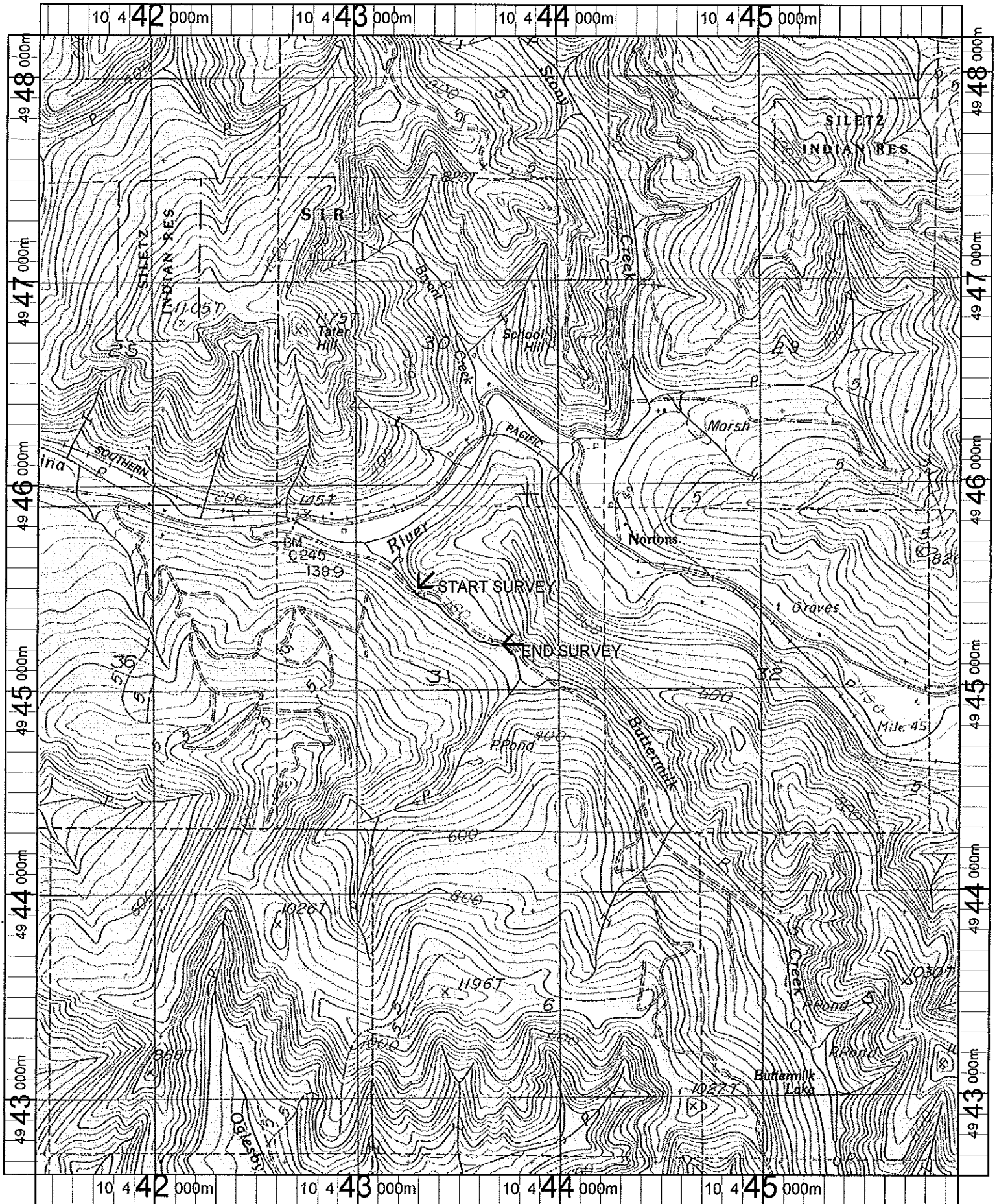
RIPARIAN ZONE VEGETATION

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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	
14	LF	1	HT	0.0	90	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	0	0	ALDER
14	LF	2	HS	18.0	95	25	75	Conifer	0	0	0	0	0	
								Hardwood	1	0	3	0	0	BL MAPLE, ALDER
14	LF	3	HS	15.0	95	0	80	Conifer	0	0	0	0	0	
								Hardwood	0	1	2	0	0	RB=20% GRAVEL, BL M
14	RT	1	HS	35.0	93	30	60	Conifer	0	0	0	0	0	
								Hardwood	4	1	0	0	0	10% DIRT, ALDER
14	RT	2	HS	10.0	95	80	20	Conifer	0	0	0	0	0	
								Hardwood	4	0	0	0	0	
14	RT	3	HS	10.0	95	70	25	Conifer	0	0	0	0	0	
								Hardwood	4	0	0	0	1	5% DIRT, 90+ BL MAP
29	LF	1	HT	0.0	95	5	95	Conifer	0	0	0	0	0	
								Hardwood	1	1	0	0	0	
29	LF	2	HT	0.0	85	80	20	Conifer	0	0	0	0	0	
								Hardwood	2	0	2	0	0	ALDER
29	LF	3	RB	0.0	75	10	15	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	75%=GRAVEL ROADBED
29	RT	1	LT	0.0	85	75	25	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	1	0	
29	RT	2	HS	75.0	65	5	95	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	
29	RT	3	HS	65.0	85	80	20	Conifer	0	0	1	0	0	
								Hardwood	3	0	0	0	0	



Name: NORTONS  
 Date: 4/24/100  
 Scale: 1 inch equals 2000 feet

Location: 10 443612 E 4945387 N  
 Caption: BUTTERMILK CREEK  
 RESTORATION SITE  
 ODFW 1999