

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

STREAM: Bear Creek Middle (MC-299)
BASIN: Salmon River
SURVEY TYPE: Post-Tx
DATE: June 28, 2005
SURVEY CREW: Tory Fitchett, Lanoah Babcock
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 13.9 km²
USGS MAPS: Devils Lake
ECOREGION: Coast Range Volcanics

GENERAL DESCRIPTION:

The Bear Creek habitat survey extended 592 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 4.1 (range: 2.5-5.5). Land use for the reach was light grazing and timber harvest. The average unit gradient was 2.4 percent. Riffles (41%) and beaver pools (36%) dominated stream habitat. Gravel (42%), sand (24%) and cobble (20%) dominated stream substrate. Wood volume was very high at 51.9 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

T17S-R10W-S10NE

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	4.1	VWI Range:	2.5 - 5.5

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	592	4,302	0
Secondary Channel	60	96	0
Off-Channel Units	23	27	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 4	<u>First Terrace</u> n = 4
Width: 6.1	Width: 9.7	11.8 (9.5 - 14.5)	17.5 (13 - 27.2)
Depth: 0.42	Height: 0.5	0.9 (0.8 - 1.1)	1.4 (1.05 - 1.55)

W:D ratio: 21.7

Entrenchment (ACW:FPW ratio): 1.2

Stream Flow Type: MF

Habitat Units/100m (total channel length): 6.2

Average Unit Gradient: 2.4%

Habitat Units/100m (primary channel length): 7.1

Water temperature (°C): 11.0 - 11.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	LG	TH
Riparian Vegetation:	M30	M15

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	9%	Reach avg: 57%
Undercut Banks:	2%	Range: 33 - 74

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	132	22.3
Volume (m ³):	308	51.9
Key pieces (>=12m x 0.60m):	29	4.9

OREGON DEPT OF FISH AND WILDLIFE

BEAR CREEK MIDDLE POST-TX (2-MC, 299)

HABITAT INVENTORY

Report Date: 4/26/2006

Survey Date:

6/28/2005

REACH 1

T17S-R10W-S10NE

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	31	2.1	0.40	65	0	0	10	40	20	0	30
CASCADE/BOULDERS	2	20	0.8	0.10	15	0	0	15	45	40	0	0
POOL-BACKWATER	1	3	2.3	0.40	6	0	20	60	20	0	0	0
POOL-BEAVER DAM	2	72	20.5	1.03	1,462	0	30	48	15	8	0	0
POOL-DAMMED	1	18	6.2	0.60	113	0	20	40	30	10	0	0
POOL-LATERAL SCOUR	4	50	6.4	0.90	348	0	9	33	38	12	0	7
POOL-PLUNGE	4	30	5.0	0.73	150	0	9	33	40	9	0	10
POOL-STRAIGHT SCOUR	1	12	6.1	0.70	74	0	10	40	30	5	0	15
RAPID/BOULDERS	2	44	5.9	0.75	261	4	10	23	38	28	3	0
RIFFLE	14	340	4.5	0.27	1,624	5	3	15	50	28	1	4
RIFFLE W/ POCKETS	2	38	6.1	0.55	191	0	10	28	48	15	0	0
STEP/BEAVER DAM	2	2	18.8	0.01	32	0	22	37	39	2	0	0
STEP/BEDROCK	1	1	0.8	0.15	1	0	0	0	0	0	0	100
STEP/COBBLE	1	12	6.1	0.20	70	0	0	10	29	57	0	5
STEP/LOG	4	3	5.2	0.07	12	0	3	20	55	23	0	0
Total:	42	675	6.1	0.42	4,425	9	Avg: 7	24	42	20	0	7

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	4	93	12.4	0.76	1,581	35.74%	0	0.0
Scour Pools	9	92	5.7	0.80	572	12.92%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	16	378	4.7	0.30	1,816	41.03%	5	0.3
Rapids	2	44	5.9	0.75	261	5.89%	4	1.5
Cascades	3	51	1.2	0.20	80	1.81%	0	0.0
Step/Falls	8	17	8.2	0.08	115	2.60%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

REACH 1

T17S-R10W-S10NE

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	13	19.3	21.9
Pools >=1m deep:	2	3.0	3.4
Complex pools (LWD pieces>=3):	5	7.4	8.4
Pool frequency (channel widths/pool):	5.4		
Residual pool depth (avg):	0.72		

**OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY**

**BEAR CREEK MIDDLE POST-TX
GCG: 2-MC SITE ID: 299**

**Survey Date 6/28/2005
Report Date: 4/26/2006**

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

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

Total hardwoods/1000	1321
Total conifers/1000 ft	325
Total conifers >20" dbh/1000 ft	41
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	0.3	2.7	3.0	6.3	3.3
15-30cm	0.0	0.7	0.3	1.0	1.0	1.3	1.3	3.0
30-50cm	0.0	3.0	0.0	1.3	0.0	0.3	0.0	4.7
50-90cm	0.7	1.0	0.0	0.0	0.0	0.7	0.7	1.7
>90cm	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Total/100m2	0.7	8.0	0.7	5.0	4.0	8.7	1.8	7.2

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Canopy closure	83	58	63
Shrub cover	13	28	25
Grass/forb cover	75	60	65

Predominant landform in each zone

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Hillslope	50	67	83
High terrace	33	0	0
Low terrace	17	17	17
Floodplain	0	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	17	0
Riprap	0	0	0
Surface slope (%)	27	14	17

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	1321
Total conifers/1000 ft	325
Total conifers >20" dbh/1000 ft	41
Total conifers >35" dbh/1000 ft	0

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	3.3	12.0
15-30cm	1.3	3.0
30-50cm	0.0	4.7
50-90cm	0.7	1.7
>90cm	0.0	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		
13	RT	2	LT	10	35	60	40	Conifer							
								Hardwood	3						
13	RT	1	LT	5	95	10	90	Conifer							
								Hardwood			2		1		
13	LF	3	HS	20	80	0	100	Conifer							
								Hardwood							
13	LF	2	HS	10	75	0	100	Conifer							2D 0430251 / 4981203
								Hardwood							
13	LF	1	HS	45	70	0	100	Conifer							POOR GPS COVERAGE
								Hardwood				1			
13	RT	3	LT	0	80	40	60	Conifer							
								Hardwood	9						
21	LF	3	HS	15	60	0	70	Conifer							CLEARCUT BEYOND
								Hardwood							
21	LF	2	RB	3	50	0	40	Conifer							
								Hardwood							
21	RT	1	HS	25	85	0	60	Conifer					1		
								Hardwood	1						
21	RT	2	HS	35	50	70	30	Conifer							
								Hardwood	2	2					
21	RT	3	HS	40	30	80	20	Conifer							
								Hardwood	2	3					
21	LF	1	HT	15	95	30	60	Conifer					1		NO GPS COVERAGE
								Hardwood	2				1		
40	RT	3	HS	15	90	0	70	Conifer	6	3					
								Hardwood		1			2		
40	RT	2	HS	20	75	10	80	Conifer	1	1					
								Hardwood	1	1	3				
40	RT	1	HT	4	70	30	70	Conifer							
								Hardwood	4	2			1		
40	LF	1	HS	70	80	10	70	Conifer							
								Hardwood	2		7				
40	LF	2	HS	5	65	30	70	Conifer							
								Hardwood	2		1				
40	LF	3	HS	10	40	30	70	Conifer	3						
								Hardwood	8		1				

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **2-MC** SITE ID: **299** BEAR CREEK MIDDLE POST-TX

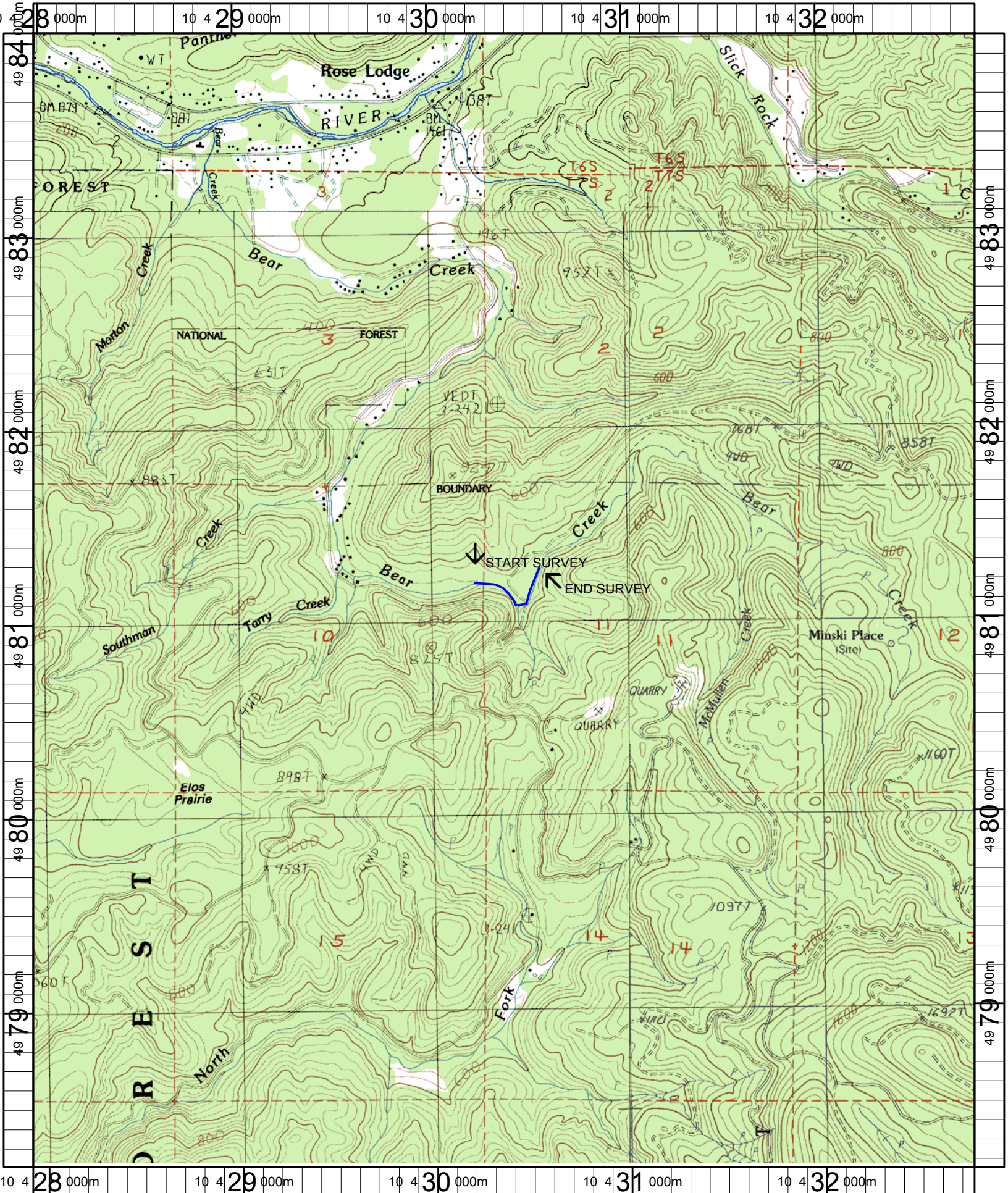
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	PP	00	5.1	/SS	TEMP 11C, PHOTO	TEMP 11C
2	SL	00	5.4		H=0.2M	H 0.2M
3	LP	00	23.2	/SS		SCULPIN
4	RI	00	33.3	/SS		
5	LP	00	44.1	/SS		
7	RP	00	89.5	HS, DJ, BV	HS BV	STREAM RESTORATION SIG
8	RI	01	116.5	WL		ELK PRINTS
9	BW	10	116.5		CREATED BY RN LOG	
11	RI	00	137.5			RESTORATION SIGN ON RT
12	LP	00	147.7	HS	HS	
13	RI	00	183.2		SS/	RIPARIAN, PHOTOS
14	RI	00	214.9	DJ	RIPARIAN 1, PHOTOS	
15	SP	00	227.1	DJ		
16	RI	00	277.1	HS		HS 3, NOT VERY EFFECTIVE
17	RI	00	301.6		HS	
18	SL	00	302.2	DJ, BV	H=0.3M	H 0.3M, NOT BEAVER DAM Y
19	DP	00	320.5	BV	BV	BEAVER DEN ON LEFT
20	RB	00	342.7	HS, DJ	HS	HS 4
21	RI	00	362.2			RIPARIAN, PHOTOS
22	PP	00	372.8	HS	RIPARIAN 2, HS	PICTURE, HS 5
23	SC	00	384.3	/SS	H=0.3M, /SS	H 0.3M

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **2-MC** SITE ID: **299** BEAR CREEK MIDDLE POST-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>
24	RI	00	398	BC, CS	BC	CS W/ RIPRAP UNDER BRID
25	RB	01	420	DJ /TJ /TJ	/TJ X2	3 CHANNELS SEPARATED B
26	RI	11	420		TRIB UNIT 1	TRIB A
27	CB	12	420	DJ	TRIB UNIT 2	TRIB B
28	PP	01	431.7			PTC 7M LONG
29	SL	01	432.9	BV	H=0.8M	H 0.8M
30	RI	01	472.9	DJ, BV, HS		
31	SL	01	473.7	BV	H=0.45M	H 0.45M
32	RP	01	499.1	HS, DJ	HS, BV	HS 6, POCKETS UNDER LOG
33	RI	02	499.1			HARDPAN
34	PP	02	499.1			HARDPAN
35	SR	02	499.1		H=0.55M	HARDPAN
36	CR	02	499.1		HARD PAN	HARDPAN, POCKETS UP TO
37	SD	00	500.3	DJ, BD	H=1.0M	H 1.0M
38	BP	00	522.3	DJ, BV		
39	SD	00	522.8	DJ, BV, BD	H=0.6M	H 0.6M
40	BP	00	572.8	BV	RIPARIAN 3	COHO FRY, RIPARIAN, PICT
41	RI	01	592.4	TJ/	TJ/, END OF SURVEY	
42	CB	02	592.4		TEMP 11C	



Name: DEVILS LAKE
 Date: 1/21/2005
 Scale: 1 inch equals 2000 feet

Location: 10 430369 E 4981106 N
 Caption: BEAR CREEK MIDDLE RESTORATION SITE - SALMON RIVER BASIN