

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

STREAM: Big Creek Phase 2 (U-241)
BASIN: Smith River
SURVEY TYPE: Post-Tx
DATE: July 6, 2005
SURVEY CREW: Andy Livesay, Jennifer Jacobs
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 19.7 km²
USGS MAPS: Devils Graveyard
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Big Creek habitat survey extended 2,212 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 6.8 (range: 1.5-13.0). Land use for the reach was second growth (15-30 cm dbh) and timber harvest. The average unit gradient was 1.6 percent. Scour pools (51%) and riffles (36%) dominated stream habitat. Gravel (50%) dominated stream substrate. Wood volume was high at 43.2 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

T21S-R08W-S17NW

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	6.8	VWI Range:	1.5 - 13

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	100%	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 Channel	2,212	8,826	0
Secondary Channel	68	285	3
Off-Channel Units	153	289	3

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 10	<u>First Terrace</u> n = 9
Width: 3.7	Width: 7.8	10.9 (8 - 17.4)	14.6 (9 - 18.8)
Depth: 0.28	Height: 0.6	1.1 (0.9 - 1.25)	2.2 (1.2 - 3.5)

W:D ratio: 14.0
 Stream Flow Type: MF
 Average Unit Gradient: 1.6%
 Water temperature (°C): 14.5 - 14.5

Entrenchment (ACW:FPW ratio): 1.4
 Habitat Units/100m (total channel length): 7.0
 Habitat Units/100m (primary channel length): 7.7

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	TH
Riparian Vegetation:	D15	C30

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	4%	Reach avg: 94%
Undercut Banks:	18%	Range: 61 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	570	25.8
Volume (m ³):	955	43.2
Key pieces (>=12m x 0.60m):	53	2.4

OREGON DEPT OF FISH AND WILDLIFE

BIG CREEK PHASE 2 POST-TX (4-UJP, 241)

HABITAT INVENTORY

Report Date: 4/26/2006

Survey Date:

7/6/2005

REACH 1

T21S-R08W-S17NW

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	2	38	4.0	0.18	150	9	0	11	4	2	0	82
CASCADE/BOULDERS	2	22	2.8	0.19	61	33	0	15	22	15	31	17
CULVERT CROSSING	1	10	1.2	0.05	12	0	0	0	60	40	0	0
DRY CHANNEL	4	70	2.6	0.00	238	0	6	21	71	1	0	0
GLIDE	1	26	3.6	0.15	92	0	5	38	19	0	0	38
POOL-BACKWATER	14	90	2.0	0.22	193	7	23	28	36	1	0	12
POOL-ISOLATED	1	2	1.8	0.15	3	0	10	15	75	0	0	0
POOL-LATERAL SCOUR	63	960	4.4	0.50	4,179	185	6	27	39	2	3	22
POOL-PLUNGE	4	43	5.8	0.41	267	5	6	25	30	1	0	38
POOL-STRAIGHT SCOUR	6	90	4.1	0.48	369	7	4	34	25	0	0	37
PUDDLED UNIT	2	14	0.4	0.04	6	0	17	39	27	18	0	0
RAPID/BOULDERS	1	10	1.8	0.08	18	0	0	0	70	30	0	0
RIFFLE	36	722	3.0	0.10	2,325	32	0	12	78	5	1	4
RIFFLE W/ POCKETS	9	240	4.6	0.14	1,079	147	1	18	49	6	3	23
STEP/BEDROCK	9	33	5.8	0.06	194	8	0	8	12	0	0	80
STEP/BOULDERS	1	6	3.5	0.17	19	15	0	10	35	20	35	0
STEP/COBBLE	15	60	3.1	0.09	196	3	0	11	83	5	0	1
Total:	171	2,433	3.7	0.28	9,401	451	Avg: 5	21	50	4	2	19

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	15	91	2.0	0.22	196	2.08%	7	3.6
Scour Pools	73	1,093	4.4	0.50	4,815	51.22%	197	4.1
Glides	1	26	3.6	0.15	92	0.98%	0	0.0
Riffles	45	962	3.3	0.11	3,404	36.21%	179	5.3
Rapids	1	10	1.8	0.08	18	0.19%	0	0.0
Cascades	4	59	3.4	0.18	211	2.24%	42	20.0
Step/Falls	25	99	4.1	0.08	408	4.34%	26	6.4
Dry	6	84	1.8	0.01	245	2.60%	0	0.0
Culverts	1	10	1.2	0.05	12	0.13%	0	0.0

REACH 1

T21S-R08W-S17NW

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	88	36.2	39.8
Pools >=1m deep:	1	0.4	0.5
Complex pools (LWD pieces>=3):	33	13.6	14.9
Pool frequency (channel widths/pool):	3.6		
Residual pool depth (avg):	0.41		

Survey Date 7/6/2005
Report Date: 4/26/2006

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

Summary of Riparian Zone (0-30m) 8 transects

Total hardwoods/1000	1143
Total conifers/1000 ft	114
Total conifers >20" dbh/1000 ft	15
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	4.5	0.0	2.8	0.0	2.1	0.0	9.4
15-30cm	0.0	2.4	0.1	0.8	0.9	1.5	1.0	4.6
30-50cm	0.3	2.4	0.0	1.3	0.4	0.6	0.6	4.3
50-90cm	0.0	0.3	0.0	0.1	0.3	0.1	0.3	0.5
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.3	9.5	0.1	4.9	1.5	4.4	0.6	6.3

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	64		49		45	
Shrub cover	58		45		27	
Grass/forb cover	36		45		44	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	31		44		56	
High terrace	69		50		13	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		6		31	
Riprap	0		0		0	
Surface slope (%)	12		19		25	

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

8 transects

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

Total hardwoods/1000	1143
Total conifers/1000 ft	114
Total conifers >20" dbh/1000 ft	15
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	0.0	9.4
15-30cm	1.0	4.6
30-50cm	0.6	4.3
50-90cm	0.3	0.5
>90cm	0.0	0.0

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		
22	LF	1	HT	0	60	85	10	Conifer							0445664, 4843601
								Hardwood	5	1	2				
22	LF	2	HS	50	70	60	40	Conifer							
								Hardwood							
22	LF	3	HS	50	85	10	80	Conifer							
								Hardwood	1	2	1				
22	RT	1	HT	0	60	80	5	Conifer							
								Hardwood	4		3				
22	RT	2	HT	0	55	85	10	Conifer							
								Hardwood	1			1			
22	RT	3	HT	0	40	90	5	Conifer							
								Hardwood		1	1	1			
42	LF	1	HT	0	60	5	75	Conifer							0445438, 4843487
								Hardwood	3	1	2				
42	RT	3	RB	0	85	0	10	Conifer							
								Hardwood							
42	RT	2	HT	0	65	70	20	Conifer							
								Hardwood	1	2	4				
42	LF	2	HT	0	70	5	85	Conifer							ALSO A TRIB BED
								Hardwood	2						
42	LF	3	HS	40	65	30	70	Conifer					1		
								Hardwood	2		1				
42	RT	1	HT	0	45	25	70	Conifer							
								Hardwood			1				
59	LF	1	HS	40	75	10	85	Conifer							0445303, 4843191
								Hardwood	2	1	1				
59	LF	2	HS	45	75	5	90	Conifer							
								Hardwood	2						
59	LF	3	HS	45	75	5	85	Conifer							
								Hardwood	1	1					
59	RT	1	HT	0	55	50	45	Conifer					1		
								Hardwood	13	1					
59	RT	2	HT	0	55	35	55	Conifer							
								Hardwood	5		3				
59	RT	3	RB	0	60	0	90	Conifer							ALSO HT
								Hardwood	8	1	1				

71	LF	3	HS	45	35	45	45	Conifer		2		
								Hardwood	3			
71	RT	3	HS	45	0	20	40	Conifer				
								Hardwood				
71	RT	1	HT	0	65	50	50	Conifer			1	
								Hardwood	4		1	
71	LF	2	HS	45	50	30	60	Conifer		1		
								Hardwood	6			
71	LF	1	HS	30	65	60	40	Conifer				0445244,
								Hardwood	2		1	4843076
71	RT	2	RB	0	0	20	30	Conifer				ALSO HT
								Hardwood	2			
84	LF	1	HS	30	65	50	50	Conifer				
								Hardwood		4	1	
84	LF	2	HS	30	40	60	40	Conifer				
								Hardwood				
84	LF	3	HS	45	20	65	45	Conifer				1
								Hardwood				
84	RT	1	HS	45	85	70	30	Conifer				
								Hardwood	3		1	
84	RT	2	HS	50	65	70	30	Conifer				
								Hardwood				
84	RT	3	RB	0	50	10	20	Conifer		2		ALSO HS
								Hardwood				
100	RT	3	RB	0	30	5	20	Conifer				ALSO HS
								Hardwood				
100	RT	2	HT	0	35	75	35	Conifer				ALSO RB
								Hardwood		2		
100	LF	2	HS	40	55	35	45	Conifer				ALSO HT
								Hardwood	2	1		
100	LF	1	HT	0	70	85	10	Conifer				0445202,
								Hardwood	3	2		4842647,
100	RT	1	HT	0	60	70	20	Conifer				ALSO FP
								Hardwood		2		
100	LF	3	HS	40	25	5	55	Conifer		2	1	
								Hardwood				
111	LF	1	HT	0	60	75	25	Conifer				0445161,
								Hardwood	5			4842493
111	LF	2	HT	0	35	70	30	Conifer				
								Hardwood		1		
111	LF	3	HT	0	40	70	30	Conifer				
								Hardwood	5	1		
111	RT	1	HS	40	35	40	40	Conifer				
								Hardwood		2		
111	RT	2	HS	50	0	10	70	Conifer				
								Hardwood	1			

111	RT	3	HS	50	0	15	75	Conifer		
								Hardwood	2	
137	LF	3	HS	45	85	60	30	Conifer		
								Hardwood	2	
137	RT	3	RB	0	20	0	10	Conifer		3
								Hardwood		
137	RT	1	HT	0	75	85	10	Conifer		
								Hardwood	3	
137	LF	2	HT	0	85	75	20	Conifer		
								Hardwood	3	
137	LF	1	HT	0	85	90	5	Conifer		
								Hardwood	2	0445047, 4842529
137	RT	2	HT	0	35	10	60	Conifer		
								Hardwood		REPLANTED CONIFERS (YT)

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **4-UMP** SITE ID: **241** **BIG CREEK PHASE 2 POST-TX**

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	LP	01	10.7	/TJ	START AT /TJ, T = 14.5 C	
3	CC	11	10.7	CC		
5	BW	10	25.7	HS		
6	LP	00	35.7	HS		
9	LP	00	72.9	HS		
10	LP	00	96.4	HS	FRY, HS	
12	LP	00	115.6	HS		
14	LP	00	126.6	HS		
15	SC	00	128.1	HS		
16	LP	00	141.1	DJ, HS		
19	LP	00	190.6	HS		
20	RI	00	200.1	DJ	FRY	
22	RI	01	235.8			0445669, 4843601
26	LP	01	306.8	HS	PLACED BOULDERS	BLDR WEIR ACROSS CHANN
28	SP	01	325.4	HS		BOULDERS
30	SR	00	331.4	DJ		
32	RI	00	349.9	HS		
34	RP	00	390.4			BRAIDED
35	LP	00	399.4	BV		
37	RP	00	425.9		SNORKEL, ELECTROSHO	MANY FALLEN TREES
38	LP	00	442.9	HS		COHO FRY

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: 4-UMP SITE ID: 241 BIG CREEK PHASE 2 POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
39	CR	01	466.9	TJ/		CASCADE WITH LARGE POO
41	LP	00	483.2	HS		
42	SR	00	484.7	HS	0445438, 4843487	
43	PP	00	504	HS, DJ		
44	SR	00	505.3		H = .4 M	
48	RP	00	574.8		COHO FRY	BRAIDED CHANNEL
49	LP	00	579.1	HS	PLACED BOULDERS	PLACED BOULDERS
50	RP	00	592.1	HS	PLACED BOULDERS	PLACED BOUDLERS
51	LP	00	598.6	HS	PLACED BOULDERS	PLACED BOULDERS
52	GL	00	624.1	HS	PLACED BOULDERS	PLACED BOULDERS
53	PP	00	630.6	HS		PLACED BOULDERS
54	RP	00	662.1	HS		PLACED BOULDERS
55	LP	00	674.1	HS		PLACED BOULDERS
56	SR	00	679.6	HS		PLACED BOULDERS
57	SP	01	694.6	/TJ, HS		PLACED BOULDERS
58	RI	11	694.6	HS	BIG CR TRIB C SURV STA	PLACED BOULDERS IN TRIB
59	RI	00	729.6	HS		PLACED BOULDERS AND LO
60	RP	00	761.1	HS		PLACED BOULDERS AND LO
63	LP	00	800.4	HS		PLACED BOULDERS AND LO
65	LP	00	810.9	HS		
66	RP	00	830.4	HS	PLACED BOULDERS	PLACED BOULDERS ACROS

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **4-UMP** SITE ID: **241** **BIG CREEK PHASE 2 POST-TX**

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
67	LP	01	872.4	HS, DJ	PLACED BOULDERS, HAB	COHO FRY
69	RI	00	913.4	HS		
70	LP	00	925.4		CLEARCUT STARTS	
71	RP	00	953.4	HS, DJ	0445244, 4843076	PLACED BOULDERS
74	LP	00	1000.9		COHO FRY	
75	RI	00	1050.9	HS, DJ		
76	LP	00	1071.9			COHO FRY
78	LP	00	1098.9	HS		PLACED BOULDERS
79	CB	00	1106.9	HS		PLACED BOULDERS
80	LP	00	1127.4	HS		PLACED BOULDERS
81	RI	00	1176.4	HS		LOGS
82	LP	01	1190.4	HS		
83	LP	02	1190.4	HS, DJ		
84	RI	01	1226.4			BRAIDED CHANNEL
90	RI	00	1311.9	DJ		
91	LP	00	1322.4	HS		PLACED LOGS
92	SC	00	1324.9	DJ		
96	BW	10	1384.4	DJ		
97	SR	01	1387.4	DJ		
99	LP	00	1402.4			COHO FRY
100	RI	00	1449.4	HS, DJ	0445202, 4842647	

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: **4-UMP** SITE ID: **241** **BIG CREEK PHASE 2 POST-TX**

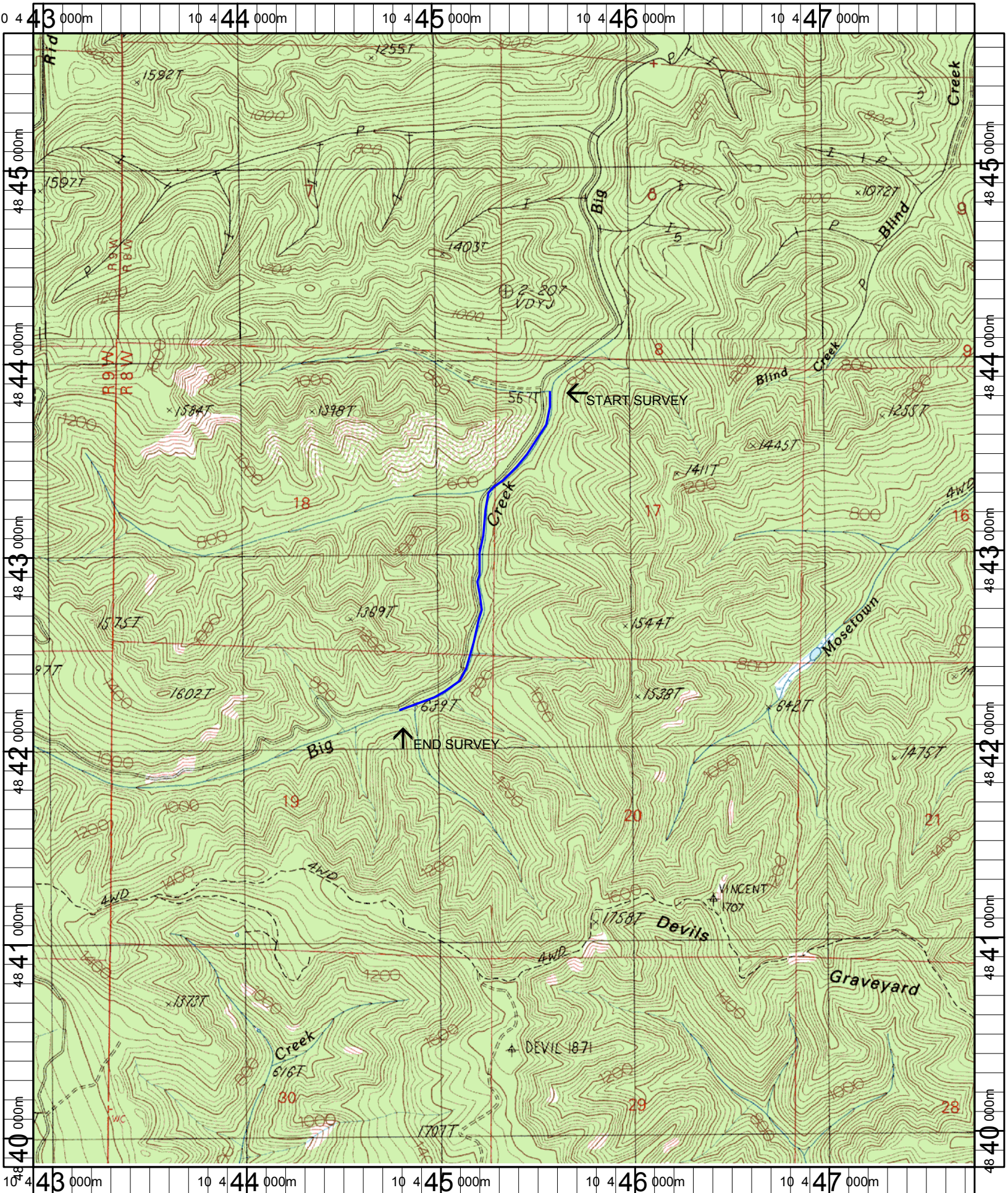
<u>UNIT#</u>	<u>TYPE</u>	<u>CHAN</u>	<u>DIST. (m)</u>	<u>COMMENTS</u>	<u>NOTE ESTIMATOR</u>	<u>NOTE NUMERATOR</u>
101	LP	00	1470.4	HS		COHO FRY
104	SC	01	1528.9	HS		LOGS
106	LP	00	1536.4	HS		COHO FRY
107	LP	00	1553.4	DJ		LARGE DJ GOES THRU U 11
108	SC	00	1559.4	DJ		
109	LP	00	1566.9	HS		LOGS
111	RI	00	1591.4		0445161, 4842493	COHO FRY, 1 DEAD COHO F
113	LP	00	1605.9	DJ		COHO FRY
114	RI	01	1615.9		END OF CLEARCUT	
115	PD	11	1615.9	TJ/		
123	RI	01	1685.6	HS		LOGS
125	LP	00	1703.6			UNSTABLE BANK
129	RI	00	1749.9	DJ		
130	PP	00	1759.9	DJ		SOME SUBSURFACE FLOW
137	LP	00	1826.4	HS		0445047, 4842529
138	LP	00	1835.9		RUSTED CULVERT	
140	LP	00	1878.4			BEDROCK = HARDPAN
145	RI	01	1926.4	TJ/		
147	LP	00	1941.4			COHO FRY
151	LP	00	1989.9			BLDR = PIECES OF HARDPA
155	LP	01	2027.9			BEDROCK = HARDPAN

Comment Summary

Restoration Monitoring Sites 2005

MONITORING AREA: 4-UMP SITE ID: 241 BIG CREEK PHASE 2 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>
157	LP	01	2044.9	DJ		
163	LP	00	2089.3			BEDROCK = HARDPAN
165	LP	01	2107.8	TJ/		
171	RI	00	2212.2			END SIGN ALDER LEFT



Name: DEVILS GRAVEYARD
Date: 6/13/2005
Scale: 1 inch equals 2000 feet

Location: 10 445348 E 4842762 N
Caption: BIG CREEK PHASE 2 RESTORATION SITE - SMITH BASIN