

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

STREAM: Swartz Creek (MC-154)
BASIN: Siuslaw River
SURVEY TYPE: Post-Tx
DATE: August 16, 2006
SURVEY CREW: Lanoah Babcock, Sharon Tippery
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 11.9 km²
USGS MAPS: Horton
ECOREGION: Coast Range Sedimentary

GENERAL DESCRIPTION:

The Swartz Creek habitat survey extended 954 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 10.6 (range: 9.0-13.0). Land use for the reach was second growth (15-30 cm dbh) and large (30-50 cm dbh) trees. The average unit gradient was 1.0 percent. Scour pools (79%) dominated stream habitat. Sand (57%) and gravel (34%) dominated stream substrate. Wood volume was low at 14.0 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.

Stream Swartz Creek (MC-154)
 Basin Siuslaw River
 Treatment Large Wood

	ODFW Benchmark		Pre 7/1/98	Post 6/28/99	Post 8/16/06		
Habitat Variable	Desirable	Undesirable					
% Pool Area	>35%	<10%	83.9	87.4	89.3		
Number of Pools			23	31	38		
Deep Pools/km (>1.0 m)			13.5	14.8	5.1		
% Off-Channel			4.2	3.5	0.9		
LWD – Pieces/100m	>20	<10	22.7	25.0	16.7		
LWD – Volume/100m	>30	<20	23.1	23.9	14.0		
LWD – Key Pieces/100m	>3	<1	0.9	0.4	0.2		
Large Wood Jams/km			3.6	8.8	11.5		
% Riffle Fines	<10	>20	6	10	32		
% Riffle Gravel	>35	<15	95	89	67		
% Bedrock			0	1	0		

Bold is noticeable change

Comments: Since the treatment was large wood assembled in complex jams, it is no surprise that there was an increase in those variables. However, increases appear to have been small right after treatment and are generally declining with time, suggesting that wood is moving out of the reach and no new recruitment is taking place. Deep pools were reduced, but that may be a symptom of stream flows rather than an actual change. Pool area has remained stable, but the number of pools has increased. Riffle fines appear to be on the increase while gravel seems to have decreased.

REACH 1

T15S-R07W-S36NE

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	10.6	VWI Range:	9 - 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	954	3,812	1
Secondary Channel	0	0	0
Off-Channel Units	21	35	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 3.3	Width: 4.8	7.2 (5.8 - 8.6)	10.1 (9.3 - 11.3)
Depth: 0.46	Height: 0.4	0.8 (0.7 - 1)	1.4 (1.15 - 1.55)

W:D ratio: 11.9

Entrenchment (ACW:FPW ratio): 1.5

Stream Flow Type: LF

Habitat Units/100m (total channel length): 7.3

Average Unit Gradient: 1.0%

Habitat Units/100m (primary channel length): 7.4

Water temperature (°C): 14.0 - 14.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	LT
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: 76%
Undercut Banks:	9%	Range: 44 - 89

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	159	16.7
Volume (m ³):	134	14.0
Key pieces (>=12m x 0.60m):	2	0.2

HABITAT INVENTORY

Report Date: 3/5/2007

Survey Date:

8/16/2006

REACH 1		T15S-R07W-S36NE					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
DRY UNIT	1	4	2.0	0.00	8	0	0	15	85	0	0	0
POOL-BEAVER DAM	4	106	3.4	0.61	376	0	10	75	13	0	0	3
POOL-ISOLATED	3	15	2.1	0.38	32	0	23	77	0	0	0	0
POOL-LATERAL SCOUR	31	618	5.0	0.86	3,026	6	9	81	9	0	0	0
RIFFLE	18	199	1.7	0.09	343	0	3	29	67	0	0	0
STEP/BEAVER DAM	4	3	1.8	0.08	6	0	6	65	29	0	0	0
STEP/BOULDERS	1	2	4.2	0.10	8	5	5	10	5	0	80	0
STEP/COBBLE	9	28	1.7	0.06	48	0	3	24	72	0	0	1
Total:	71	975	3.3	0.46	3,847	11	Avg: 7	57	34	0	1	0

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	7	121	2.9	0.51	408	10.60%	0	0.0	
Scour Pools	31	618	5.0	0.86	3,026	78.65%	6	0.2	
Glides	0	0			0	0.00%	0	0.0	
Riffles	18	199	1.7	0.09	343	8.91%	0	0.0	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	14	33	1.9	0.07	63	1.63%	5	8.0	
Dry	1	4	2.0	0.00	8	0.21%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY			
	<u>Total</u>	Total of all Channel Lengths	Primary Channel Length
		<u># / Km</u>	<u># / Km</u>
All Pools:	38	39.0	39.8
Pools >=1m deep:	5	5.1	5.2
Complex pools (LWD pieces>=3):	19	19.5	19.9
Pool frequency (channel widths/pool):	5.3		
Residual pool depth (avg):	0.77		

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

SWARTZ CREEK POST-TX
GCG: 2-MC SITE ID: 154

Survey Date 8/16/2006
Report Date: 3/5/2007

RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

Summary of Riparian Zone (0-30m) 4 transects

Total hardwoods/1000	518
Total conifers/1000 ft	290
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	1.5	0.0	0.8	0.0	0.5	0.0	2.8
15-30cm	0.5	0.8	0.5	1.5	1.0	1.3	2.0	3.5
30-50cm	0.3	1.5	0.8	0.0	1.5	0.3	2.5	1.8
50-90cm	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.3
>90cm	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Total/100m2	1.0	4.3	1.3	2.3	2.5	2.0	1.6	2.8

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	66		71		72	
Shrub cover	41		48		32	
Grass/forb cover	59		53		62	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		13		50	
High terrace	100		88		50	
Low terrace	0		0		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 (%)	26		15		23	

Summary of Riparian Zone (0-30m) for all reaches**4 transects****Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream**

Total hardwoods/1000	518
Total conifers/1000 ft	290
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	2.8
15-30cm	2.0	3.5
30-50cm	2.5	1.8
50-90cm	0.3	0.3
>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		
15	LF	2	HT	5	85	60	40	Conifer		1					
								Hardwood		2					
15	RT	2	HT	23	75	60	40	Conifer							TRANS, NO TREES
								Hardwood							
15	LF	3	HT	7	90	30	50	Conifer		1	1				
								Hardwood							
15	RT	1	HT	25	80	0	100	Conifer							
								Hardwood						1	
15	RT	3	HS	35	70	50	40	Conifer		1	1				
								Hardwood							
15	LF	1	HT	20	40	20	80	Conifer		1					
								Hardwood							
20	RT	3	HS	43	80	20	70	Conifer		1	1				
								Hardwood							
20	LF	2	HT	5	0	0	100	Conifer							NO TREES
								Hardwood							
20	RT	2	HT	17	70	40	60	Conifer			1				TRANS
								Hardwood							
20	LF	3	HT	3	0	0	100	Conifer							
								Hardwood							
20	LF	1	HT	35	10	0	100	Conifer							NO TREES
								Hardwood							
20	RT	1	HT	35	85	10	90	Conifer							
								Hardwood	4		1				
27	RT	3	HS	30	90	35	65	Conifer							
								Hardwood	2	2	1				
27	RT	2	HS	25	90	40	60	Conifer							
								Hardwood	3	1					
27	RT	1	HT	15	80	60	40	Conifer							
								Hardwood	2		2				
27	LF	3	HT	5	85	50	40	Conifer			1	2			
								Hardwood							
27	LF	2	HT	12	85	40	60	Conifer				2			
								Hardwood							
27	LF	1	HT	25	85	70	30	Conifer			1	1	1		
								Hardwood			1				

49	RT	1	HT	30	70	70	30	Conifer			
								Hardwood		3	
49	LF	3	HT	25	80	30	70	Conifer		1	TRANS
								Hardwood	1		
49	LF	2	HT	10	80	80	20	Conifer	1		
								Hardwood	2		
49	LF	1	HT	20	75	95	5	Conifer			
								Hardwood	2	1	
49	RT	3	HS	35	80	40	60	Conifer			
								Hardwood	2		
49	RT	2	HT	25	80	60	40	Conifer			TRANS
								Hardwood	1		

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: **2-MC** SITE ID: **154** SWARTZ CREEK POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	LP	00	11	HS, WL	HS	START SIGN ALDER RT
3	SD	00	16.5	BD	H=.35M	
4	BP	00	34.5	BV		
5	RI	00	40	BV		CRAWDAD
6	LP	00	54	BV		
7	RI	01	59.6	WL		DEER
9	SD	00	60.4	BD	H=.35M	
10	BP	00	100.4	BV, WL		BEAR, DEER
12	LP	00	120.1	BV, WL		DEER, RSN
13	SC	00	122.3	BV		
14	LP	00	132.3	BV		
15	SC	00	136.5	WL	RIPARIAN #1	
16	LP	00	159.5	WL		DEER
17	RI	00	170.5	BV		
18	LP	00	196.5	BV		
19	RI	00	229.5	BV, WL		DEER
20	LP	01	261.5	BV	RIPARIAN #2	
22	RI	00	284.5	WL		
23	LP	00	341.5	BV, WL		DEER
24	SD	00	342	BD	H=0.30M	
25	BP	00	364	BV		

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: **2-MC** SITE ID: **154** SWARTZ CREEK POST-TX

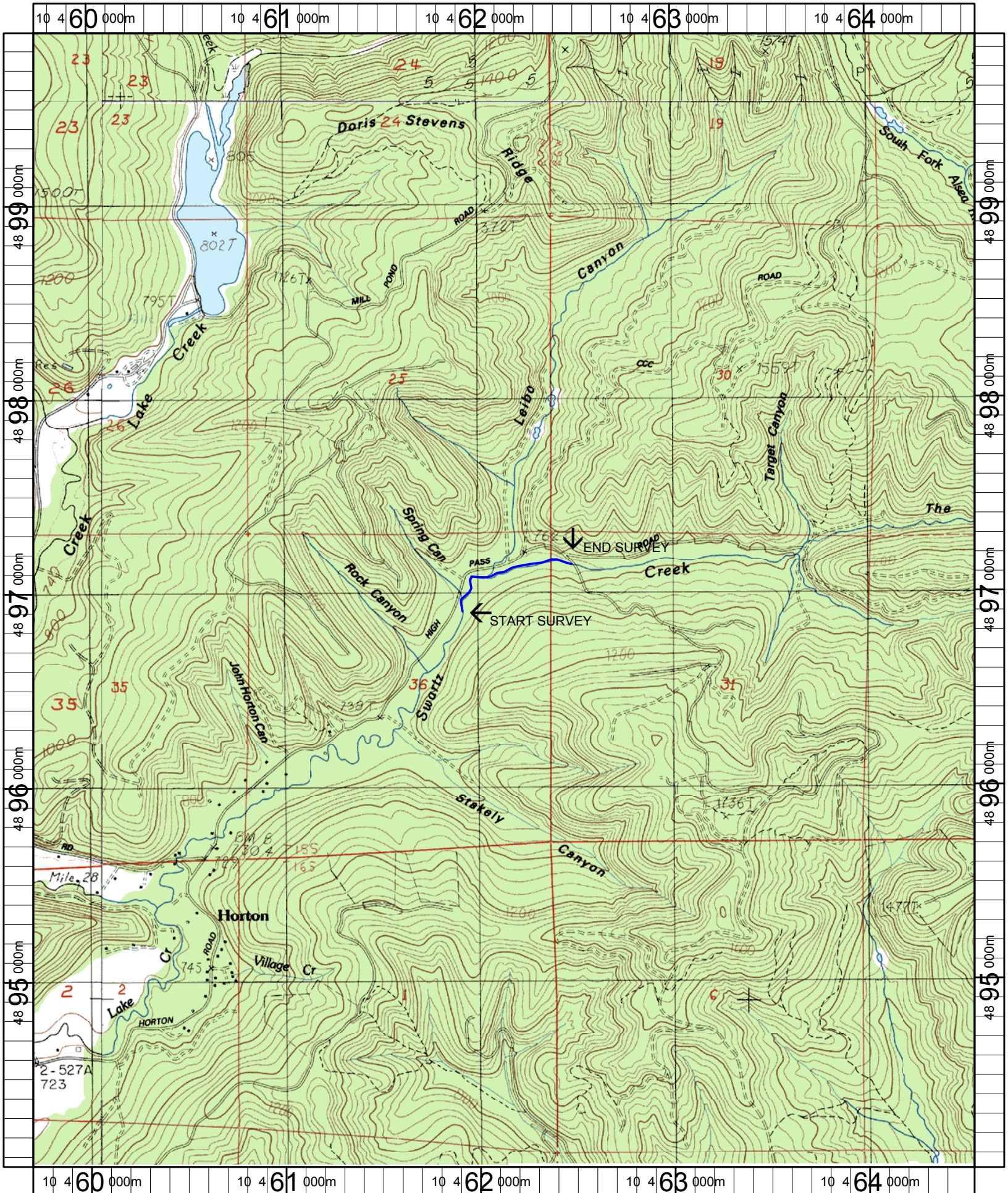
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
26	RI	00	375	BV		
27	LP	00	386	BV, WL	RIPARIAN #3	
29	LP	00	408	BV		
30	SC	00	410.6	BV		
31	LP	00	421.6	HS, BV	HS	
33	LP	00	446.3	BV		
34	LP	01	454.7	TJ/	TJ/	
35	RI	11	454.7			T=13.0C
38	SD	00	495.5	BD	H=0.30M	
39	BP	00	521.5	BV		
41	LP	00	551.8	BV		
42	LP	00	570.8	BV		
44	LP	00	590.8	HS, BV		
45	DU	00	594.8	WL	BEAR PRINT	BEAR, SUBSURFACE FLO
49	LP	00	663	HS, WL	HS, RIPARIAN #4	DEER
53	LP	00	713.8	WL		DEER
57	RI	00	751.8	WL		COUGAR
58	LP	00	757.8	WL		DEER
62	LP	00	814.8	WL		
63	LP	00	847.8	BV		
64	RI	00	854.3	WL		DEER

Comment Summary

Restoration Monitoring Sites 2006

MONITORING AREA: 2-MC SITE ID: 154 SWARTZ CREEK POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
65	LP	00	887.3	WL, BV		
67	LP	00	912.3	WL		DEER
69	LP	00	933.3	HS	HS	LOGS + BOULDERS
70	SB	00	935.3	HS	CABLED IN	BOULDER, RIPRAP
71	LP	00	954.3	CC	FLAG & WHISKER ALDER 30	END AT HUGE CULVERT,



Name: HORTON
 Date: 1/23/2006
 Scale: 1 inch equals 2000 feet

Location: 10 462134 E 4896959 N
 Caption: SWARTZ CREEK RESTORATION SITE - SIUSLAW BASIN