

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

STREAM: Horse Creek (MC-336)  
BASIN: Alsea River  
SURVEY TYPE: Pre-Tx  
DATE: August 1, 2007  
SURVEY CREW: Josh Togstad, Jeff Snyder  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 10.3 km<sup>2</sup>  
USGS MAPS: Elk City, Toledo South  
ECOREGION: Coast Range Coastal Uplands

**GENERAL DESCRIPTION:**

The Horse Creek habitat survey extended 4,548 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 7.4 (range: 1.0-19.0). Land use for the reach was second growth (15-30 cm dbh) and young (3-15 cm dbh) trees. The average unit gradient was 1.1 percent. Scour pools (50%), riffles (24%) and beaver pools (20%) dominated stream habitat. Gravel (41%) and sand (26%) dominated stream substrate. Wood volume was low at 12.4 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

T12S-R10W-S14SE

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	7.4	VWI Range:	1 - 19

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	4,548	18,989	6
Secondary Channel	0	0	0
Off-Channel Units	177	288	2

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 9	<u>First Terrace</u> n = 7
Width: 3.8	Width: 5.8	8.5 ( 6 - 12.9 )	12.1 ( 8.7 - 17.5 )
Depth: 0.40	Height: 0.4	0.7 ( 0.6 - 0.9 )	1.6 ( 1.1 - 2 )

W:D ratio: 16.0  
 Stream Flow Type: LF  
 Average Unit Gradient: 1.1%  
 Water temperature (°C): 14.0 - 14.0  
 Entrenchment (ACW:FPW ratio): 1.5  
 Habitat Units/100m (total channel length): 5.2  
 Habitat Units/100m (primary channel length): 5.4

**Riparian, Bank, and Wood Summary**

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	10%	Reach avg: 80%
Undercut Banks:	10%	Range: 22 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	501	11.0
Volume (m <sup>3</sup> ):	562	12.4
Key pieces (>=12m x 0.60m):	27	0.6

OREGON DEPT OF FISH AND WILDLIFE

HORSE CREEK PRE-TX (2-MC, 336)

HABITAT INVENTORY

Report Date: 11/14/2007

Survey Date:

7/26/2007

REACH 1		T12S-R10W-S14SE					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	Cbl	Bldr	Bdrk
CULVERT CROSSING	3	50	3.3	0.30	170	0	5	40	38	17	0	0
DRY UNIT	2	24	1.0	0.01	24	0	0	10	60	30	0	0
POOL-ALCOVE	1	2	2.0	0.70	4	0	90	10	0	0	0	0
POOL-BACKWATER	3	12	3.3	0.30	54	0	42	55	3	0	0	0
POOL-BEAVER DAM	13	653	5.3	0.90	3,879	4	33	41	25	0	0	1
POOL-ISOLATED	1	1	0.8	0.15	0	0	90	10	0	0	0	0
POOL-LATERAL SCOUR	92	2,034	4.7	0.72	9,688	88	17	37	40	4	1	0
PUDDLED UNIT	6	342	1.2	0.04	419	0	0	14	45	41	0	0
RAPID/BOULDERS	2	21	3.8	0.25	81	32	0	5	25	30	40	0
RIFFLE	81	1,479	2.8	0.15	4,564	292	1	22	50	24	3	0
STEP/BEAVER DAM	11	16	7.3	0.02	143	0	100	0	0	0	0	0
STEP/BEDROCK	1	5	6.0	0.10	32	2	0	0	0	0	10	90
STEP/COBBLE	25	93	2.4	0.10	234	0	0	13	57	30	0	0
STEP/LOG	3	2	5.4	0.02	15	0	100	0	0	0	0	0
<b>Total:</b>	<b>244</b>	<b>4,734</b>	<b>3.8</b>	<b>0.40</b>	<b>19,306</b>	<b>418</b>	<b>Avg: 16</b>	<b>26</b>	<b>41</b>	<b>14</b>	<b>2</b>	<b>1</b>

HABITAT SUMMARY									
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders		
					(m <sup>2</sup> )	Percent	Number	(# / 100m <sup>2</sup> )	
Dammed & BW Pools	18	667	4.6	0.74	3,936	20.39%	4	0.1	
Scour Pools	92	2,034	4.7	0.72	9,688	50.18%	88	0.9	
Glides	0	0			0	0.00%	0	0.0	
Riffles	81	1,479	2.8	0.15	4,564	23.64%	292	6.4	
Rapids	2	21	3.8	0.25	81	0.42%	32	39.4	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	40	117	4.1	0.07	424	2.20%	2	0.5	
Dry	8	366	1.1	0.03	443	2.29%	0	0.0	
Culverts	3	50	3.3	0.30	170	0.88%	0	0.0	

POOL SUMMARY			
	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	110	23.2	24.2
Pools >=1m deep:	20	4.2	4.4
Complex pools (LWD pieces>=3):	44	9.3	9.7
Pool frequency (channel widths/pool):	7.4		
Residual pool depth (avg):	0.66		

Survey Date 7/30/2007  
Report Date: 11/7/2007

**RIPARIAN ZONE  
VEGETATION SUMMARY**

REACH 1

**Summary of Riparian Zone (0-30m) 7 transects**

Total hardwoods/1000	723
Total conifers/1000 ft	78
Total conifers >20" dbh/1000 ft	17
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	0.3	0.0	0.0	0.0	1.3	0.0	1.6
15-30cm	0.0	1.0	0.3	0.4	0.3	1.0	0.6	2.4
30-50cm	0.0	2.3	0.3	0.7	0.1	1.1	0.4	4.1
50-90cm	0.0	0.1	0.3	0.1	0.0	3.1	0.3	3.4
>90cm	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.3
Total/100m2	0.0	3.7	0.9	1.4	0.4	6.7	0.4	4.0

**Canopy closure and ground cover**

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	68		68		74	
Shrub cover	35		37		34	
Grass/forb cover	60		52		50	

**Predominant landform in each zone**

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	50		57		57	
High terrace	50		36		29	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		7		14	
Riprap	0		0		0	
Surface slope (%)	16		24		33	

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

7 transects

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

Total hardwoods/1000	723
Total conifers/1000 ft	78
Total conifers >20" dbh/1000 ft	17
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	1.6
15-30cm	0.6	2.4
30-50cm	0.4	4.1
50-90cm	0.3	3.4
>90cm	0.0	0.3



112	LT	1	HS	9	80	25	75	Conifer						
								Hardwood						
112	LT	2	HS	15	85	15	85	Conifer						
								Hardwood			1	1		
112	LT	3	HS	75	85	25	75	Conifer						
								Hardwood	1	1	3			
112	RT	1	HS	35	20	50	50	Conifer						PHOTO #5.
								Hardwood						
112	RT	2	HS	40	25	35	60	Conifer						5% BAREGROUN D. BIG-LEAF
								Hardwood						5% BAREGROUN D.
112	RT	3	HS	20	75	15	80	Conifer						
								Hardwood			22			
141	LT	1	HT	0	85	55	45	Conifer						
								Hardwood						
141	LT	2	HS	24	80	65	35	Conifer						
								Hardwood					1	
141	LT	3	HS	72	85	60	40	Conifer						LARGE ALDER IN ZONE 2
								Hardwood						PHOTO #6
141	RT	1	HS	21	65	20	80	Conifer						
								Hardwood	1	2				
141	RT	2	HS	46	75	30	70	Conifer						
								Hardwood						
141	RT	3	RB	0	70	5	5	Conifer						ROAD 90%
								Hardwood						
165	LT	1	HS	46	80	10	60	Conifer						30% ROADBED (RB).
								Hardwood						20% RB
165	LT	2	HS	44	70	40	20	Conifer			2	1		
								Hardwood						
165	LT	3	HS	34	80	20	80	Conifer						
								Hardwood	3	2				
165	RT	1	HS	23	85	20	80	Conifer						PHOTO #7.
								Hardwood	1	1				
165	RT	2	HS	15	70	55	45	Conifer						
								Hardwood			2			
165	RT	3	HS	17	80	70	20	Conifer						
								Hardwood	4	2				
222	LT	1	HS	43	80	5	95	Conifer						
								Hardwood	1	1				
222	LT	2	HS	60	80	15	85	Conifer	1			1		5% BAREGROUN D.
								Hardwood	2					90% ROADBED.
222	LT	3	RB	0	75	0	10	Conifer						
								Hardwood						
222	RT	1	HT	0	80	35	65	Conifer						PHOTO #8.
								Hardwood	1	4				
222	RT	2	HT	0	80	45	55	Conifer						
								Hardwood						

222 RT 3 HS 43 70 35 65 **Conifer**  
**Hardwood**

1



**COMMENT SUMMARY**

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	SD	00	1.7	BD	BEGIN SURVEY.
2	BP	00	35.3	BV, HS, CO	BEAVER POND CONTINUES THROUGH DOUBLE CULVERT. NO DROP.
3	CC	00	58.3	CO, BV,CC	BEAVER POND CONTINUES THROUGH DOUBLE CULVERT. CULVERTS SAME SIZ
4	BP	00	120.1	CO, US, BV	
5	SD	00	120.8	BD	BV DAM.
6	BP	00	169.5	CO, BV	
7	SC	00	174.1		METRIC #1.
8	LP	00	229	CO, BV	
9	SD	00	230.6	BD	
10	BP	00	243.7	CO, WL	DEER TRACKS.
12	LP	00	266.2	CO, US, HS	
13	RI	00	275.2	CO	
14	LP	00	282.7	CO, US	
16	LP	00	305.8	WL, CO	
17	RI	00	320.6	WL	ELK TRACKS
18	LP	00	340.2	CO, HS, US	
19	BW	10	340.2	CO, US	
21	LP	00	359.4	CO	
23	LP	00	414.4	CO, US, CT	WL - ELK TRACKS.
24	SC	00	419.2	WL	ELK TRACKS.
25	LP	00	433.3	CO, US	
27	LP	01	515.4	CO, US	NEW (2007) SPAWNING SURVEY - START SIGN.

COMMENT SUMMARY

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
28	RI	11	515.4	CO	BUSH CRK. - T=13.5C. 10-T 0431304, UTM-4930694, 2D EPE-12 ELEV.-171.
30	LP	00	548.2	CO, HS, BV	WL - ELK TRACKS.
31	AL	10	548.2	CO	
34	LP	00	576.9	CO	
36	LP	00	601.5	CO, US, HS	
38	LP	00	643.7	CO, US	
40	LP	00	676.9	CO, US	
42	LP	00	708.2	CO, US	
43	SC	00	713.2		END SURVEY TODAY (7/26).
44	LP	00	742.8	BC, CO	BRIDGE CROSSING.
45	RI	00	751		METRIC #2.
46	LP	00	767.3	CO	
48	LP	00	780.3	CO	
50	LP	00	812.5	CO	
52	LP	00	838.4	CO, BV	
54	LP	00	865.4	CO	
55	RI	00	878.3	CO	
56	LP	00	894	CO	
57	RI	00	916.8	CO	
59	RI	00	949	CO	
60	LP	00	965.5	CO	
61	RI	00	984.2	CO, HS	

COMMENT SUMMARY

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
62	LP	00	1001.9	CO	
63	RI	00	1059.8	CO	METRIC #3
65	LP	00	1103.1	CO, HS	
66	RI	00	1141.1	CO	
67	LP	00	1175.1	CO, US	
69	LP	00	1212.2	CO, US, HS	
71	LP	00	1247.3	CO, US	
73	RI	00	1273.8	CO, US, WL	ELK, DEER TRACKS
75	LP	00	1302.8	CO	
77	LP	00	1317.7	CO	
78	RI	00	1328.9	CO	
79	LP	00	1361.1	CO, HS	
80	RI	00	1384	CO	
81	LP	00	1412.9	CO, BV	SILT AS HARDPAN.
82	RI	00	1430	CO	
83	LP	00	1449.1	CO	
85	LP	00	1502.6	CO, US, WL	BV, ELK TRACKS.
86	RI	01	1532.6		METRIC #4
88	LP	00	1577.5	CO, US	
90	RI	00	1602	CO	
91	LP	00	1629	CO, US	
93	LP	00	1669.3	CO, HS	POSSIBLE HS.

COMMENT SUMMARY

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
95	LP	00	1691.7	CO	
97	LP	00	1718.7	CO	
98	RI	00	1743.2	CO	
99	LP	00	1777.9	CO, US	
100	RI	00	1792.9	CO, HS	
101	LP	00	1816.1	CO	
102	RI	00	1828.5	CO, HS	
103	IP	10	1828.5	COT	
104	LP	00	1862	CO, HS	
105	RI	00	1882.5	CO	
106	RI	00	1917.9	CO	
107	LP	00	1987.8	CO, US	
109	LP	00	2015	CO, US	END DAY 2
110	SC	00	2017		BEGIN DAY #3.
111	LP	00	2033.8	CO	
112	RI	07	2033.8		METRIC #5
113	LP	00	2049.1	CO	
114	RB	00	2056.2		LARGE BOULDERS.
115	LP	00	2082.3	CO	
118	LP	01	2113.9	CO, US,TJ/	
119	RI	00	2125.9		10-T 0430458
120	RI	00	2163.5	CO	

COMMENT SUMMARY

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
121	LP	00	2185.4	CO	GRASS COVERS UNDERCUT BANKS.
123	LP	00	2220.8	CO, BV	THREE LARGE (2 X 4)
125	LP	00	2248.7	CO	THREE LARGE (4 X 5) BOULDERS NEXT TO STREAM. STREAM NEXT TO ROAD.
127	LP	00	2263.5	CO	
129	LP	00	2319.7	CO, US	LARGE BOULDERS.
131	LP	00	2343.9	CO	
133	LP	00	2367	CO, HS	
135	LP	01	2388	CO, TJ/	
136	RI	11	2388		10-T 0430375 UTM 4931094 ELEV 152 3D EPE 13M T = 12 C SPAWNING SURVEY
138	LP	00	2462	CS	STREAM ADJACENT TO ROAD.
140	LP	00	2488	CO	
141	RI	00	2507.5		METRIC #6, RIP #5.
142	LP	00	2546.4	CO	
143	RI	00	2571.7	CO	
144	LP	00	2615	CO, CS	
146	LP	00	2659.1	CO, US	
147	RB	00	2672.7	CS	
148	RI	00	2730.5	CO, CS	
149	LP	00	2744.6	CO, HS, CS	
151	LP	01	2767.1		/TJ 10T-0430106, UTM-4931243, 3D EPE 15M, ELEV. 168M., T=13C
152	CC	00	2779.1	CC	NO DROP. H=1.4M, W=2.8, DEER CREEK.
154	LP	00	2807.8	CO, CS	

COMMENT SUMMARY

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
156	LP	00	2853.3	CO, US	
157	RI	00	2870.7	CS	
158	LP	00	2885.5	CS, CO, CF	
159	RI	00	2905.6	CO, CS, HS	
160	LP	00	2916.2	CO, CS	
162	LP	00	2945.3	CO	CULVERT UPSTREAM.
163	CC	00	2960.3	CC	NO DROP.
164	RI	00	3010.3	CS, CO	
165	RI	00	3060.3	CS	METRIC #7, RIP #6.
166	RI	00	3090.1	CO	
167	RI	00	3118.8	CO, HS	
169	LP	00	3172.4	CO	
170	RI	00	3194.8	CO, HS	
171	LP	00	3212.2	CO, HS	
173	LP	00	3232.9	CO	
174	RI	00	3276.5	CO	
175	LP	01	3310.7	CO	
176	DU	11	3310.7		10-T 0429744, UTM 4931453 3D EPE 10M, ELEV. 187M.
178	LP	00	3329.5	CO	
180	LP	00	3349	CO	
182	LP	00	3365.6	CO, US	
183	SC	00	3370.8	BV	END DAY THREE.

COMMENT SUMMARY

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
184	SD	00	3371.3	BD	BD. BEGIN DAY FOUR.
185	BP	00	3421.1	BV, CO	
187	BP	00	3451.4	BV, CO	
188	SD	00	3452.9	BD	BD
189	BP	00	3500.2	BV, CO	BV
191	SD	00	3513	BD	BV
192	BP	00	3550.6	BV, CO	BV
193	SD	00	3552.8	BD	BV
194	BP	00	3590.9	BV,CO, RSN	
196	SD	00	3601.3	BD	BV
197	BP	01	3696.9	BV, CO, WL	BV, ELK TRACKS. /TJ
198	PD	10	3696.9		10-T 0429497, UTM 4931507, EPE 10, 3D, ELEV. 183M, T=13C
199	RI	00	3715.8	BV, WL	ELK
200	SD	00	3716.8	BD	BV
201	BP	00	3739.9	BV, CO, WL	ELK TRACKS.
202	SD	00	3742.5	BD	BV
203	BP	00	3860.1	BV, CO, HS	BV, ELK, GAME TRAILS. HS
204	RI	00	3875.6	BV, WL	ELK TRACKS.
205	SD	00	3876.7	BD	BV
206	BP	01	3934	BV, TJ/	
207	RI	11	3934	CO	10-T 0429254, UTM 4931410, EPE 7M, 3D, ELEV. 181M., T=12C
208	RI	00	3949.1	CO, WL	ELK TRACKS.

COMMENT SUMMARY

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

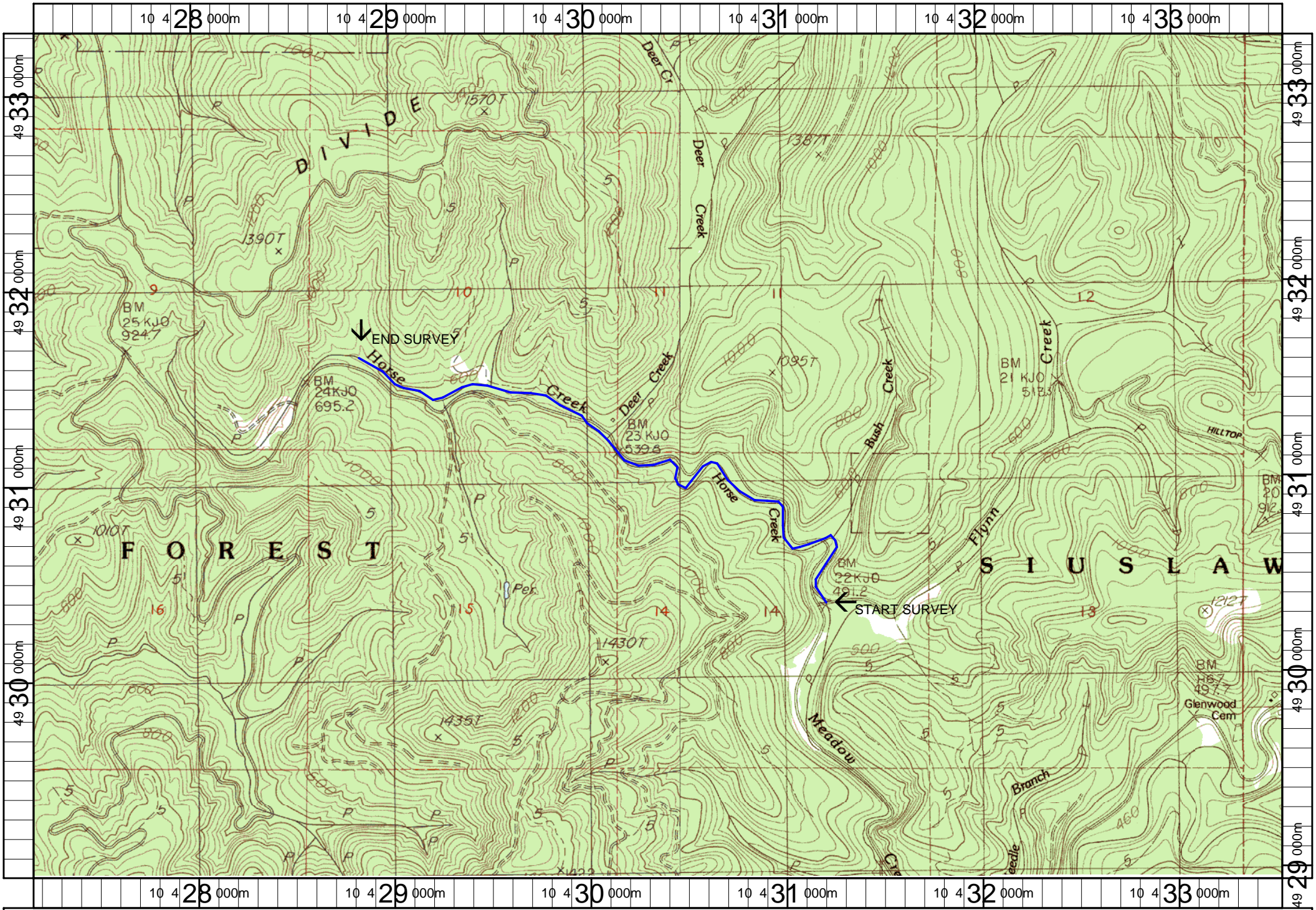
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
209	LP	00	3966.1	CO	
211	LP	00	3979	CO	
213	LP	00	4001.2	CO	
215	LP	00	4041.6	CO	
217	LP	00	4060.1	CO, WL	ELK TRACKS.
219	LP	00	4074.1	CO	
221	LP	00	4095.5	CO	
222	RI	00	4119.9		METRIC #8
223	LP	01	4133.1	TJ/, CO	
224	RI	00	4145.1		10-T 0429083, UTM 4931471, 3D EPE-15M, ELEV. 200M, T=12.5C
226	LP	00	4172	CO, COT	
228	LP	00	4187.6	CO, COT	
230	LP	00	4206.7	CO	
232	LP	00	4240.1	CO	
233	RI	01	4268.6	/TJ	SOME HYPOERIC FLOW
234	RI	00	4280.6		10-T 0429031, UTM 4931487, 3D EPE 12, ELEV. 204M. T=11.5C
235	LP	00	4286.7	CO	
237	LP	00	4322	CO	
239	PD	00	4419.5	CO	CO IN PUDDLES.
240	LP	00	4423.5	CO	
242	LP	00	4474.5	CO	
244	LP	01	4535.5	CO, /TJ	



**COMMENT SUMMARY**

MONITORING AREA: 2-MC      SITE ID: 336      STREAM: HORSE CREEK PRE-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
245	DU	00	4547.5		END SURVEY - ALDER RIGHT. 10-T 0428846, UTM 4931665, 2D EPE 17M., ELEV. 20



Name: TOLEDO SOUTH  
 Date: 5/22/2006  
 Scale: 1 inch equals 2000 feet

Location: 10 430362 E 4931129 N  
 Caption: HORSE CREEK RESTORATION SITE - ALSA BASIN