

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

STREAM: Bales Creek (MC-1)  
BASIN: Yaquina River  
SURVEY TYPE: Post-Tx  
DATE: February 13, 2006  
SURVEY CREW: Paul Jacobsen, Brian Bangs  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 8.3 km<sup>2</sup>  
USGS MAPS: Nortons  
ECOREGION: Coast Range Sedimentary

**GENERAL DESCRIPTION:**

The Bales Creek habitat survey extended 470 meters. The channel was unconstrained in a broad valley floor. The average valley width index was 6.9 (range: 5.0-11.0). Land use for the reach was large (30-50 cm dbh) and second growth (15-30 cm dbh) trees. The average unit gradient was 1.2 percent. Scour pools (59%) and riffles (32%) dominated stream habitat. Gravel (56%) and sand (22%) dominated stream substrate. Wood volume was high at 39.3 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.

Stream            Bales Creek (MC-1)  
 Basin             Yaquina River  
 Treatment        Large Wood

	ODFW Benchmark		Pre 1/20/00	Post 2/6/01	Post 2/13/06		
<b>Habitat Variable</b>	<b>Desirable</b>	<b>Undesirable</b>					
% Pool Area	>35%	<10%	56	54.4	59.6		
Number of Pools			18	19	19		
Deep Pools/km (>1.0 m)			16.4	<b>7.8</b>	<b>10.3</b>		
% Off-Channel			2.1	<b>.8</b>	<b>.5</b>		
LWD – Pieces/100m	>20	<10	7.6	<b>16.1</b>	<b>24.2</b>		
LWD – Volume/100m	>30	<20	17.4	<b>49</b>	<b>39.3</b>		
LWD – Key Pieces/100m	>3	<1	2.8	<b>5.8</b>	<b>1.7</b>		
Large Wood Jams/km			4.6	<b>14.1</b>	<b>19.1</b>		
% Riffle Fines	<10	>20	5	12	10		
% Riffle Gravel	>35	<15	85	85	72		
% Bedrock			13	1	7		

**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. What is important is that the large wood is being retained in the treated reach and is accumulating additional wood pieces. Deep pools were reduced, but that may be a symptom of stream flows rather than an actual change. Since the reach was pool-rich and had plenty of riffle gravel prior to treatment, it is unlikely that there will be significant increases in those characteristics.

REACH 1

T10S-R09W-S26SE

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	6.9	VWI Range:	5 - 11

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0%	Single Channel	100%
Bedrock	0%	Multiple Channel	0%
Terrace	0%	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	470	2,176	0
Secondary Channel	0	0	0
Off-Channel Units	16	10	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 1
Width: 4.5	Width: 8.7	45.3 ( 23 - 54 )	35.6 ( 35.6 - 35.6 )
Depth: 0.53	Height: 0.6	1.2 ( 1 - 1.4 )	1.5 ( 1.5 - 1.5 )

W:D ratio: 15.4  
 Stream Flow Type: MF  
 Average Unit Gradient: 1.2%  
 Water temperature (°C): 8.0 - 8.0

Entrenchment (ACW:FPW ratio): 5.7  
 Habitat Units/100m (total channel length): 7.4  
 Habitat Units/100m (primary channel length): 7.7

**Riparian, Bank, and Wood Summary**

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

Bank Condition and Shade

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

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	114	24.2
Volume (m <sup>3</sup> ):	185	39.3
Key pieces (>=12m x 0.60m):	8	1.7

OREGON DEPT OF FISH AND WILDLIFE

BALES CREEK POST-TX (2-MC, 1)

HABITAT INVENTORY

Report Date: 12/6/2006

Survey Date:

2/13/2006

REACH 1		T10S-R09W-S26SE					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
CASCADE/BOULDERS	1	8	0.7	0.08	6	0	0	0	0	0	0	100
POOL-ISOLATED	1	8	0.5	0.15	4	0	5	20	60	10	0	5
POOL-LATERAL SCOUR	18	250	5.3	0.87	1,298	0	5	34	43	9	1	7
RIFFLE	9	178	3.9	0.24	699	0	1	9	72	14	1	2
STEP/COBBLE	7	43	4.4	0.16	179	0	0	11	77	12	0	0
<b>Total:</b>	<b>36</b>	<b>486</b>	<b>4.5</b>	<b>0.53</b>	<b>2,186</b>	<b>0</b>	<b>Avg: 3</b>	<b>22</b>	<b>56</b>	<b>11</b>	<b>1</b>	<b>7</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	1	8	0.5	0.15	4	0.18%	0	0.0	
Scour Pools	18	250	5.3	0.87	1,298	59.39%	0	0.0	
Glides	0	0			0	0.00%	0	0.0	
Riffles	9	178	3.9	0.24	699	32.00%	0	0.0	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	1	8	0.7	0.08	6	0.26%	0	0.0	
Step/Falls	7	43	4.4	0.16	179	8.17%	0	0.0	
Dry	0	0			0	0.00%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

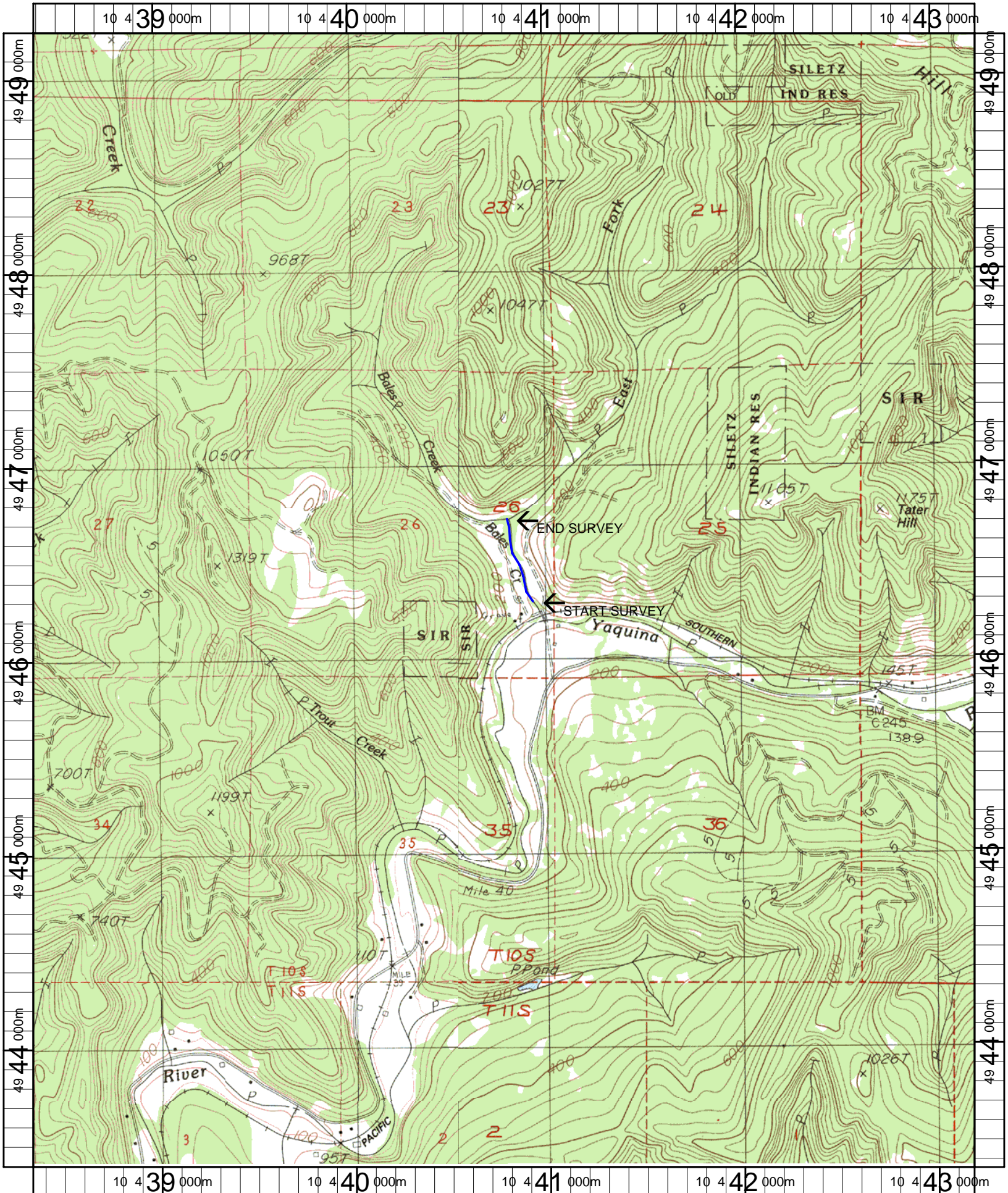
POOL SUMMARY			
	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	19	39.1	40.4
Pools >=1m deep:	5	10.3	10.6
Complex pools (LWD pieces>=3):	10	20.6	21.3
Pool frequency (channel widths/pool):	3.0		
Residual pool depth (avg):	0.61		

# Comment Summary

## Restoration Monitoring Sites 2006

MONITORING AREA: **2-MC**      SITE ID: **1**      **BALES CREEK POST-TX**

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	LP	01	10.7	BV, HS, TJ	T = 8.0	
2	CB	11	10.7		T = 9.0	
4	LP	00	24.4	HS		
5	RI	01	45.4	BV		
7	LP	00	66.9	HS		
9	LP	00	96.5	HS		
10	SC	00	99.5	BV		
11	LP	00	122.9	BV	SALMON CARCASS	
12	RI	00	141.3	BV		
13	LP	00	155.6	BV		
14	RI	00	185.7	/CE, BV, CE		
15	LP	00	196.5	/CS, BV		
17	LP	00	231.9	BV		
18	RI	00	244.2	BV		
21	LP	00	271.1	HS		
23	LP	00	295.7	HS		
33	RI	00	442.5		PLANTED CEDARS	



Name: NORTONS  
 Date: 1/24/2007  
 Scale: 1 inch equals 2000 feet

Location: 10 440783 E 4946303 N  
 Caption: BALES CREEK RESTORATION SITE - YAQUINA BASIN