ODFW AQUATIC INVENTORY PROJECT

OREGON PLAN FOR SALMON & WATERSHEDS

STREAM RESTORATION HABITAT REPORT

STREAM: Bales Creek (MC-1)
BASIN: Yaquina River
SURVEY TYPE: Pre and Post-Tx
DATE: October 21, 2003
REPORT PREPARED BY: Paul Jacobsen

The Bales Creek restoration project extended approximately 800 meters, with about 500 meters of the project being monitored for pre- and post-treatment conditions. Six habitat structures were constructed and 38 key pieces (according to the ODF Large Wood Placement Guide) were placed. The intended goals of the project included increasing stream complexity, improved interaction with the floodplain, gravel retention, increased pool area and enhanced salmonid rearing habitat. In the first seasons after restoration activities, large wood pieces, volume, and key pieces are increased as expected. In addition, there is greater pool area and riffle gravel during summer flow conditions, and more complex pools.

	ODFW	Benchmark	Winter Pre	Summer Pre	Winter Post	Summer Post	
Habitat Variable	**Desirable**	**Undesirable**	**1/20/00**	**7/17/00**	**2/6/01**	**7/18/01**	
Reach #							
Pool Area	>35	<10	56.0	67.8	54.4	79.0	
Pool Frequency	5-8	>20	2.9	2.8	3.1	4.0	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.74	.54	.50	.64	
Complex Pools/km	>2.5	<1.0	6.2	8.3	9.8	16.5	
Width/Depth Ratio	<15	>30	11.7	14.1	13.6	13.3	
Riffle Gravel % area	>35	<15	85	69	85	83	
Silt-Sand-Organic %	<12	>25	5	3	12	13	
Shade %	>70	< 60		55		75	
LWD - pieces/100m	>20	<10	7.6	6.2	16.1	16.4	
LWD - Volume/100m	>30	<20	17.4	21.4	49.0	37.9	
LWD - Key pieces/ 100m	>3	<1	0.7	1.1	5.8	1.1	
Riparian Conifers>20" dbh/1000ft	>300	<150		0		0	
Riparian Conifers>35" dbh/1000ft	>200	<75		0		0	

COMMENTS:

There were no potential barriers to upstream fish migration in the surveyed length.

The crew noted evidence of beaver activity during the survey. Eleven habitat structures were also recorded.

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OREGON PLAN FOR SALMON & WATERSHEDS

STREAM RESTORATION HABITAT REPORT

STREAM:	Bales Creek (MC-1)
BASIN:	Yaquina River
SURVEY TYPE:	Post-Tx
DATE:	July 18, 2001
SURVEY CREW:	Justin Gerding, Russ Macal
REPORT PREPARED BY:	Paul Jacobsen
BASIN AREA:	8.3 km^2
USGS MAPS:	Nortons
ECOREGION:	Coast Range Sedimentary

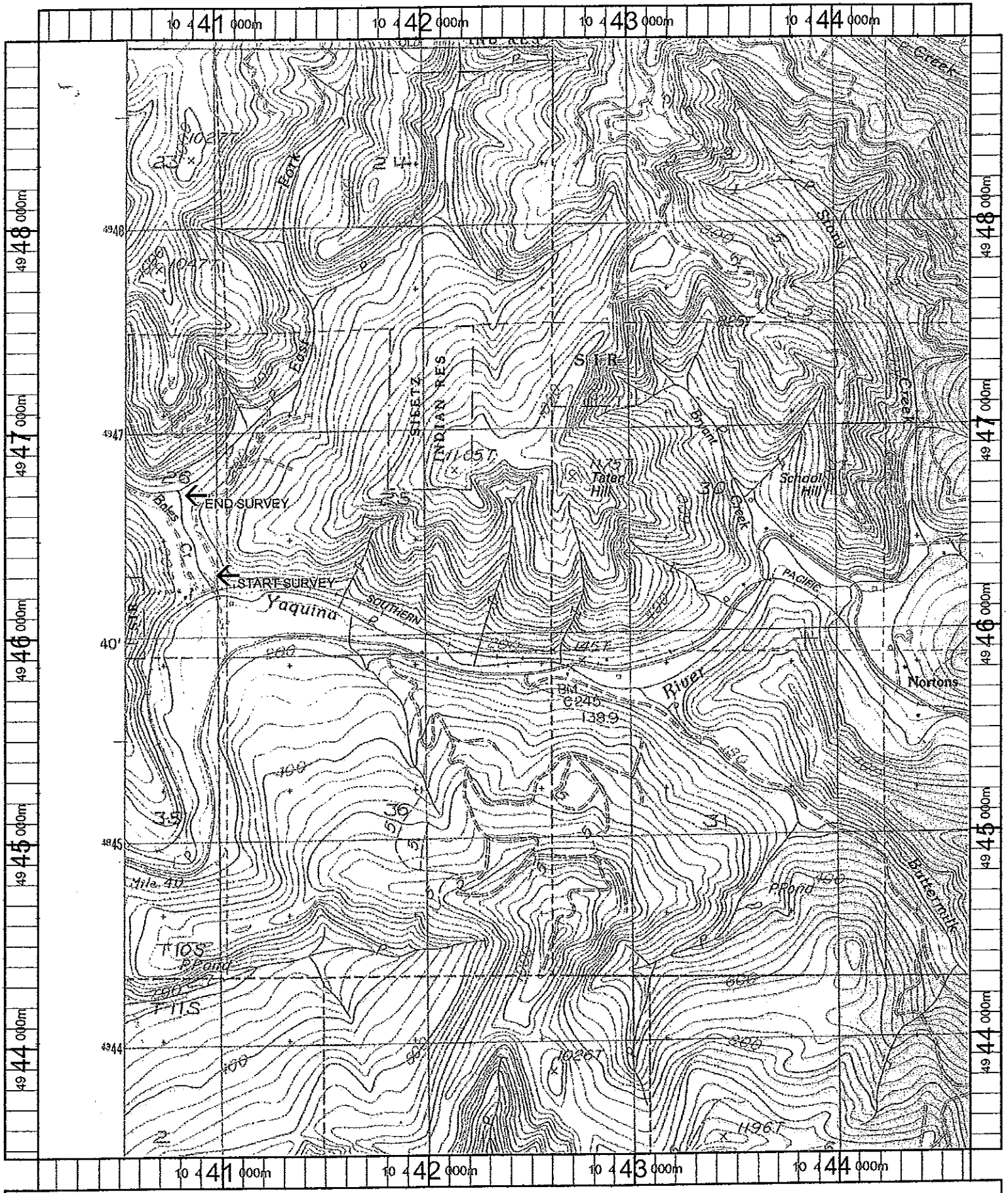
GENERAL DESCRIPTION:

The Bales Creek habitat survey extended 535 meters. The channel was single channel unconstrained in a broad valley floor. The average valley width index was 6.8 (range: 5.0 – 9.0). Land use for the reach was second growth (15-30 cm dbh) trees and light grazing. The average unit gradient was 0.9 percent. Slackwater pools (53%) and scour pools (26%) dominated stream habitat. Gravel (68%) and sand (21%) dominated stream substrate. Wood volume was high at 37.9 m^3/100m.

COMMENTS:

There were no potential barriers to upstream fish migration in the surveyed length.

The crew noted several habitat structures during the survey.



Name: NORTONS
Date: 10/23/100
Scale: 1 inch equals 2000 feet

Location: 10 442293 E 4946159 N
Caption: BALES CREEK RESTORATION SITE - YAQUINA BASIN

REACH 1 T10S-R9W-S26SE REACH 1

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0	Constraining Terraces	0
Moderate V-shape	0	Multiple Terraces	100
Open V-shape	0	Wide Floodplain	0

Valley Width Index avg: 6.8 range: 5.0-9.0

Channel Morphology (Percent Reach Length)

Constrained		Unconstrained	
Hillslope	0	Single Channel	100
Bedrock	0	Multiple Channel	0
Terrace	0	Braided Channel	0
Alt. Terrace/Hill	0		
Landuse	0		

Channel Characteristics

Type	Length(m)	Area (m2)	Dry Units
Primary	535	2,530	0
Secondary	10	4	0

Channel Dimensions(m)

Wetted		Active		Floodprone	First Terrace
Width	4.1	Width	8.5	33.1	13.1
Depth	0.39	Height	0.7	1.3	1.7
		W:D ratio	13.3	Entrenchment 3.8	

Stream Flow Type: LF Water Temp: 13.5-13.5°C
Avg. Unit Gradient: 0.9% Habitat Units/100m: 5.9

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	ST	LG
Riparian Vegetation:	D30	G

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding	11%	Reach avg: 75%
Undercut Banks	13%	Range: 31-100

Large Woody Debris

	Total	Total/100m
All pieces (≥3m x 0.15m)	88	16.4
Volume (m^3)	203	37.9
Key pieces (≥10m x 0.6m)	6	1.1

OREGON DEPT. FISH AND WILDLIFE
HABITAT INVENTORY Report Date: 10/08/01

BALES CREEK POST-TX (#1)
Survey Date: 07/18/01

REACH 1 T10S-R9W-S26SE 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	Cbbl	Bldr	Bdrk
GLIDE	1	40	3.6	0.20	143	0	5	15	80	0	0	0
POOL-BEAVER DAM	5	223	5.7	0.91	1,343	9	17	26	51	2	0	3
POOL-LATERAL SCOUR	11	146	4.4	0.61	660	0	7	31	59	2	0	1
RIFFLE	11	135	2.7	0.08	378	0	0	13	83	5	0	0
STEP/BEAVER DAM	4	2	5.4	0.01	11	0	0	15	71	14	0	0
Total:	32	545	4.1	0.39	2,534	9	**Avg:** 5	21	68	4	0	1

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m^2)	Wetted Area Percent	Large Boulders Number	Large Boulders #/100m^2
Dammed & BW Pools	5	223	5.7	0.91	1,343	52.97	9	0.7
Scour Pools	11	146	4.4	0.61	660	26.04	0	0.0
Glides	1	40	3.6	0.20	143	5.64	0	0.0
Riffles	11	135	2.7	0.08	378	14.90	0	0.0
Rapids	0	0	-	-	0	0.00	0	0.0
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	4	2	5.4	0.01	11	0.45	0	0.0
Dry	0	0	-	-	0	0.00	0	0.0

POOL SUMMARY

	Total	#/Km
All Pools	16	29.3
Pools ≥1m deep:	1	1.8
Complex pools (LWD pieces≥3):	9	16.5
Pool Frequency (channel widths/pool):	4.0	
Residual pool depth (avg)	0.64m	

STREAM SUMMARY **BALES CREEK POST-TX (#1)**

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m^2)	Substrate Percent Wetted Area S/O	Sand	Grvl	Cbbl	Bldr	Bdrk	Total Large Boulder
32	545	4.1	0.39	2,534	5	21	68	4	0	1	9

Habitat Group	Wetted Area (m^2)	Percent
Scour Pool	660	26.0
Backwater Pools	1,343	53.0
Glide	143	5.6
Riffle	378	14.9
Rapid	0	0.0
Cascade	0	0.0
Step	11	0.4
Dry	0	0.0

REACH 1 RIPARIAN ZONE VEGETATION SUMMARY REACH 1

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

Total hardwoods/1000 ft	711
Total conifers/1000 ft	0
Total conifers >20" dbh/1000 ft	0
Total conifers >35" dbh/1000 ft	0

Average number of trees in a 5-meter wide band

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters		Zones 1-3 0-30 meters	
Diameter class (cm)	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	3.7	0.0	0.3	0.0	2.0	0.0	6.0
15-30cm	0.0	1.0	0.0	0.0	0.0	0.7	0.0	1.7
30-50cm	0.0	1.7	0.0	0.7	0.0	0.3	0.0	2.7
50-90cm	0.0	1.0	0.0	0.3	0.0	0.0	0.0	1.3
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m^2	0.0	7.3	0.0	1.3	0.0	3.0	0.0	3.9

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10-20 meters (%)	Zone 3 20-30 meters (%)
Canopy closure	41	13	28
Shrub cover	13	1	5
Grass/forb cover	87	99	95

Predominant landform in each zone

	Zone 1 0-10 meters	Zone 2 10-20 meters	Zone 3 20-30 meters
Hillslope	17	17	67
High terrace	67	33	17
Low terrace	17	17	17
Floodplain	0	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	33	0
Riprap	0	0	0
Surface slope (%)	3	4	20

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

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

Total hardwoods/1000 ft	711
Total conifers/1000 ft	
Total conifers >20" dbh/1000 ft	0

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zones 1-3 Conifer	Hardwood
3-15cm	0.0	6.0
15-30cm	0.0	1.7
30-50cm	0.0	2.7
50-90cm	0.0	1.3
>90cm	0.0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE
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RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

VEGETATION DETAIL

					Cover (percent)				Diameter class (cm)					
Unit	Side	Zone	Surface	Slope	Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90	Notes
13	LF	1	HT	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
13	LF	2	HT	0.0	0	5	95	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	ALDER
13	LF	3	HT	0.0	30	15	85	Conifer	0	0	0	0	0	
								Hardwood	2	1	0	0	0	ALDER
13	RT	1	HS	20.0	30	10	90	Conifer	0	0	0	0	0	
								Hardwood	3	1	0	0	0	ALDER
13	RT	2	RB	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
13	RT	3	HS	45.0	75	15	85	Conifer	0	0	0	0	0	
								Hardwood	4	1	0	0	0	ALDER
16	LF	1	HT	0.0	25	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
16	LF	2	HT	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
16	LF	3	HS	20.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
16	RT	1	HT	0.0	75	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	2	1	0	0	ALDER
16	RT	2	RB	0.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
16	RT	3	HS	30.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
27	LF	1	HT	0.0	40	70	30	Conifer	0	0	0	0	0	
								Hardwood	8	0	0	0	0	RED ELDERBERRY, PLA
27	LF	2	HS	25.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
27	LF	3	HS	25.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
27	RT	1	LT	0.0	75	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	4	3	0	CEDAR & HEMLOCK ARE
27	RT	2	LT	0.0	75	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	2	1	0	
27	RT	3	LT	0.0	65	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	0	0	