

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

STREAM: Byron Creek (U-10)  
 BASIN: South Umpqua River  
 SURVEY TYPE: Pre and Post-Tx  
 DATE: October 22, 2003  
 REPORT PREPARED BY: Paul Jacobsen

The Byron Creek restoration project extended approximately 1,000 meters, with about 500 meters of the project being monitored for pre- and post-treatment conditions. Twelve habitat structures were created and 45 key pieces (according to the ODF Large Wood Placement Guide) were placed. In addition, 30 large boulders were used to further add structure to the stream. The intended goals of the project included increasing stream complexity, gravel retention, improved over-wintering and summer habitat, and enhanced salmonids spawning habitat. In the first seasons after restoration activities, large wood pieces, volume, and key pieces are increased as expected. In addition, there are more complex pools.

	ODFW	Benchmark	Winter Pre	Summer Pre	Winter Post	Summer Post	
Habitat Variable	Desirable	Undesirable	3/8/00	7/14/00	2/13/01	7/9/01	
Reach #							
Pool Area	>35	<10	33.0	46.8	39.4	37.7	
Pool Frequency	5-8	>20	6.7	7.2	5.8	11.5	
Residual Pool Depth	>0.5-1.0m	<0.2-0.5m	.34	.29	.31	.18	
Complex Pools/km	>2.5	<1.0	1.9	0.0	10.0	5.1	
Width/Depth Ratio	<15	>30	9.8	10.8	10.1	8.6	
Riffle Gravel % area	>35	<15	25	74	45	36	
Silt-Sand-Organic %	<12	>25	17	16	17	15	
Shade %	>70	< 60		46		84	
LWD - pieces/100m	>20	<10	1.8	1.2	7.7	8.8	
LWD - Volume/100m	>30	<20	1.3	0.7	25.7	22.1	
LWD - Key pieces/ 100m	>3	<1	0.2	0.0	0.0	3.5	
Riparian Conifers>20" dbh/1000ft	>300	<150		81		20	
Riparian Conifers>35" dbh/1000ft	>200	<75		20		20	

**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.

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

STREAM: Byron Creek Post-Restoration

BASIN: South Umpqua River

DATES: July 9, 2001

SURVEY CREW: Doug Garletts, Andrea Mull

REPORT PREPARED BY: Paul Jacobsen

BASIN AREA: 11.8 km<sup>2</sup>

USGS MAPS: Tenmile

ECOREGION: Coast Range Sedimentary

**GENERAL DESCRIPTION:**

The Byron Creek habitat survey extended 543 m. The channel was constrained by terraces in a broad valley floor. The average valley width index was 25.0. Land uses for the reach were rural residential and light grazing. The average unit gradient was 2.3 percent. Dry units (39%), scour pools (38%), and riffles (23%) dominated stream habitat. Stream substrate was a mix of bedrock (26%), cobble (24%), and gravel (23%). Wood volume was moderate at 22.1 m<sup>3</sup>/100m. The trees found most frequently in the riparian zone were 3-15 cm dbh hardwoods.

**COMMENTS:**

The crew observed several recently placed habitat structures constructed of wood and boulders

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

REACH 1

T29S-R7W-S28NE

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 avg: 25.0 range: 25.0-25.0

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	543	1,136	10
Secondary	42	33	3

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u>	<u>First Terrace</u>
Width 1.8	Width 3.6	7.4	7.3
Depth 0.09	Height 0.5	0.9	1.5
	W:D ratio 8.6	Entrenchment 2.1	

Stream Flow Type: PD Water Temp: 18.0-18.0°C  
Avg. Unit Gradient: 2.3% Habitat Units/100m: 7.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	RR	LG
Riparian Vegetation:	G	M3

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	0%	Reach avg: 84%
Undercut Banks	3%	Range: 36-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ( $\geq 3m \times 0.15m$ )	48	8.8
Volume (m <sup>3</sup> )	120	22.1
Key pieces ( $\geq 10m \times 0.6m$ )	19	3.5

REACH 1

T29S-R7W-S28NE

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	Cbbl	Bldr	Bdrk
DRY UNITS	11	226	1.7	0.00	451	0	1	12	30	49	2	6
POOL-ISOLATED	1	1	0.9	0.10	1	0	20	30	0	0	0	50
POOL-LATERAL SCOUR	9	94	2.9	0.23	347	2	15	31	21	8	0	25
POOL-STRAIGHT SCOUR	4	46	2.0	0.19	92	1	15	19	19	5	0	43
PUDDLED CHANNEL	2	6	1.3	0.10	5	0	23	23	0	20	0	33
RIFFLE	8	91	0.9	0.03	85	2	0	15	36	34	0	16
RIFFLE W/ POCKETS	5	111	1.6	0.05	180	5	15	4	16	4	1	61
STEP/BEDROCK	1	9	0.8	0.01	7	3	0	0	0	30	10	60
<b>Total:</b>	<b>41</b>	<b>585</b>	<b>1.8</b>	<b>0.09</b>	<b>1,169</b>	<b>13</b>	<b>Avg: 9</b>	<b>17</b>	<b>23</b>	<b>24</b>	<b>1</b>	<b>26</b>

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m <sup>2</sup> )	Percent	Large Boulders Number	Boulders #/100m <sup>2</sup>
Dammed & BW Pools	1	1	0.9	0.10	1	0.09	0	0.0
Scour Pools	13	141	2.6	0.22	439	37.59	3	0.7
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	13	201	1.1	0.04	265	22.65	7	2.6
Rapids	0	0	-	-	0	0.00	0	0.0
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	1	9	0.8	0.01	7	0.63	3	40.5
Dry	13	232	1.7	0.02	456	39.04	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	14	24.0
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	3	5.1
Pool Frequency (channel widths/pool):	11.5	
Residual pool depth (avg)	0.18m	

STREAM SUMMARY

BYRON CREEK POST-TX (#10)

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Substrate Percent Wetted Area						Total Large Boulder
					S/O	Sand	Grvl	Cbbl	Bldr	Bdrk	
41	585	1.8	0.09	1,169	9	17	23	24	1	26	13

Wetted Area

Habitat Group	(m <sup>2</sup> )	Percent
Scour Pool	439	37.6
Backwater Pools	1	0.1
Glide	0	0.0
Riffle	265	22.7
Rapid	0	0.0
Cascade	0	0.0
Step	7	0.6
Dry	456	39.0

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REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	1,483
Total conifers/1000 ft	244
Total conifers >20" dbh/1000 ft	20
Total conifers >35" dbh/1000 ft	20

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	0.3	9.7	0.7	10.3	1.3	0.7	2.3	20.7
15-30cm	0.0	0.7	0.7	2.0	0.7	0.7	1.3	3.3
30-50cm	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3
50-90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>90cm	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0
Total/100m <sup>2</sup>	0.3	10.3	1.3	12.7	2.3	1.3	1.3	8.1

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	(%)		(%)		(%)	
Canopy closure	21		43		34	
Shrub cover	43		39		23	
Grass/forb cover	57		54		63	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10-20 meters		Zone 3 20-30 meters	
	Hillslope	0		33		50
High terrace	67		50		50	
Low terrace	0		0		0	
Floodplain	33		17		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	2		6		6	

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	1,483
Total conifers/1000 ft	244
Total conifers >20" dbh/1000 ft	20

Average number of trees in a 5-meter wide band

<u>Diameter</u> <u>class (cm)</u>	<u>Zones 1-3</u>	
	<u>Conifer</u>	<u>Hardwood</u>
3-15cm	2.3	20.7
15-30cm	1.3	3.3
30-50cm	0.0	0.3
50-90cm	0.0	0.0
>90cm	0.3	0.0

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RIPARIAN ZONE VEGETATION

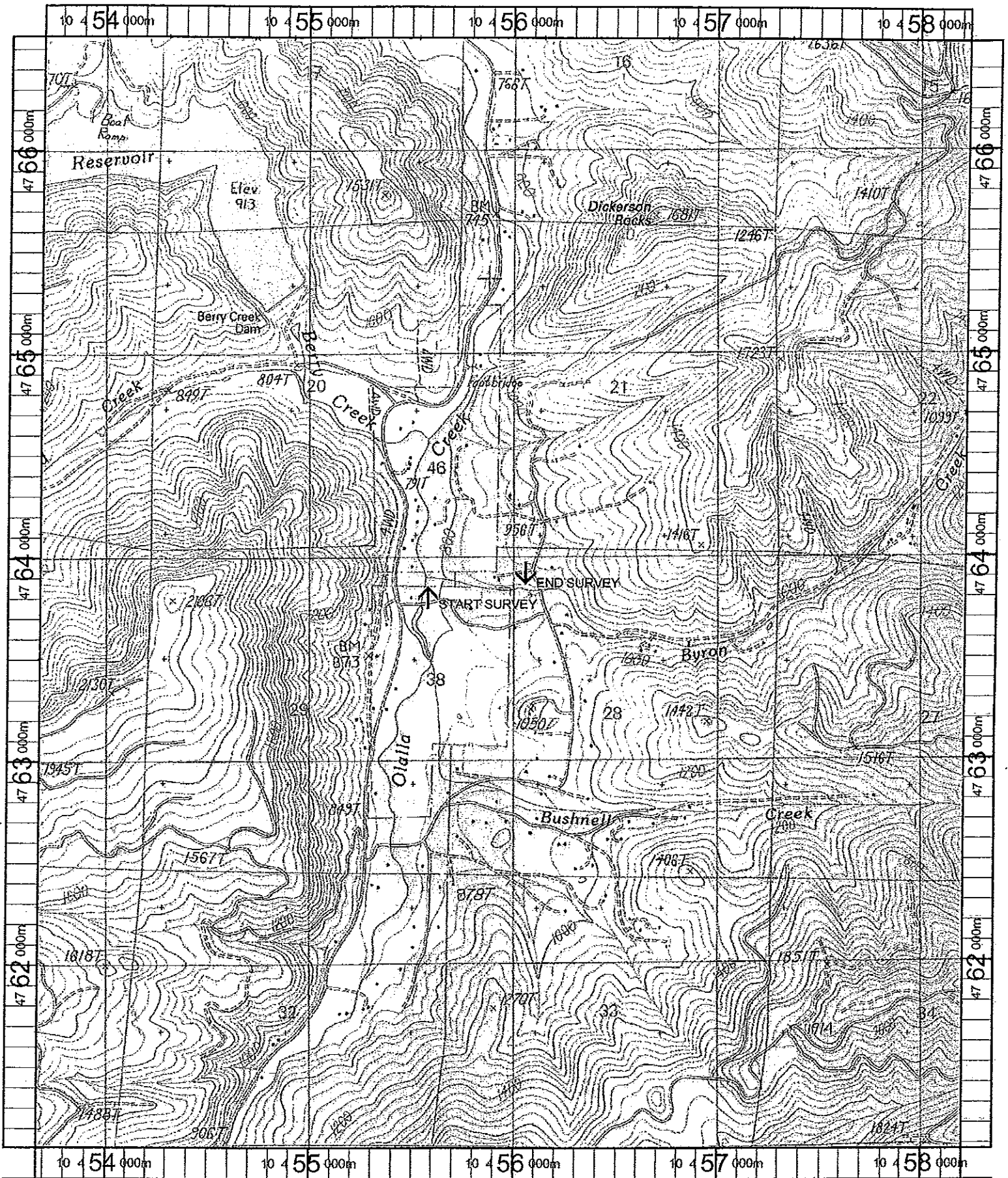
Reach 1

Reach 1

VEGETATION DETAIL

Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90	
12	LF	1	HT	2.0	10	60	40	Conifer	1	0	0	0	0	
								Hardwood	2	2	0	0	0	
12	LF	2	HS	20.0	80	40	20	Conifer	0	0	0	0	0	
								Hardwood	5	3	0	0	0	OAK
12	LF	3	HS	0.0	5	0	70	Conifer	4	0	0	0	0	
								Hardwood	0	0	0	0	0	D. FIR
12	RT	1	HT	2.0	5	5	95	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
12	RT	2	HT	2.0	20	5	95	Conifer	2	1	0	0	0	
								Hardwood	0	1	1	0	0	CEDAR, OAK
12	RT	3	HT	2.0	15	0	100	Conifer	0	0	0	0	1	
								Hardwood	0	0	0	0	0	HUGE OLD CEDAR
18	LF	1	FP	2.0	100	90	10	Conifer	0	0	0	0	0	
								Hardwood	27	0	0	0	0	WILLOW
18	LF	2	HS	10.0	100	90	10	Conifer	0	0	0	0	0	
								Hardwood	26	0	0	0	0	WILLOW
18	LF	3	HS	10.0	100	70	30	Conifer	0	0	0	0	0	
								Hardwood	2	1	0	0	0	OAK
18	RT	1	HT	2.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
18	RT	2	HT	2.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
18	RT	3	HT	2.0	0	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	LF	1	FP	2.0	10	100	0	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	LF	2	FP	2.0	60	100	0	Conifer	0	1	0	0	0	
								Hardwood	0	2	0	0	0	D. FIR, OAK
28	LF	3	HS	18.0	85	40	10	Conifer	0	2	0	0	0	
								Hardwood	0	1	0	0	0	PINE, D. FIR, OAK
28	RT	1	HT	2.0	0	1	99	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	RT	2	HT	2.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
28	RT	3	HT	2.0	0	0	100	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	





<p>Name: TENMILE  Date: 11/1/100  Scale: 1 inch equals 2000 feet</p>	<p>Location: 10 455854 E 4763804 N  Caption: BYRON CREEK RESTORATION SITE - SOUTH UMPQUA BASIN</p>
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