

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

STREAM: Wessel Creek (MC-221)  
BASIN: Yaquina River  
SURVEY TYPE: Post-Tx  
DATE: February 9, 2004  
SURVEY CREW: April Waters, Jim Andrews  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 12.9 km<sup>2</sup>  
USGS MAPS: Toledo North  
ECOREGION: Coast Range Sitka Spruce

**GENERAL DESCRIPTION:**

The Wessel Creek habitat survey extended 762 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 14.6 (range: 9.6-20.0). Land use for the reach was young (3-15 cm dbh) and second growth (15-30 cm dbh) trees. The average unit gradient was 0.2 percent. Scour pools (82%) dominated stream habitat. Sand (77%) dominated stream substrate. Wood volume was moderate at 29.3 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.

REACH 1

T10S-R11W-S24SE

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	14.6	VWI Range:	9.6 - 20

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	762	4,269	0
Secondary	24	19	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 6	<u>First Terrace</u> n = 6
Width: 4.9	Width: 6.7	8.9 ( 7.1 - 11.7 )	11.3 ( 8.5 - 18.5 )
Depth: 0.90	Height: 0.8	1.6 ( 1.3 - 1.7 )	2.1 ( 1.85 - 2.5 )

W:D ratio: 8.7

Stream Flow Type: MF

Avg. Unit Gradient: 0.2%

Entrenchment (ACW:FPW ratio): 1.3

Water temp (°C): 6.5 - 6.5

Habitat Units/100m: 5.9

**Riparian, Bank, and Wood Summary**

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

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</u>
All pieces (>=3m x 0.15m):	186	24.4
Volume (m <sup>3</sup> ):	223	29.3
Key pieces (>=10m x 0.60m):	15	2.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

WESSEL CREEK POST-TX (MC-221)

HABITAT INVENTORY

Report Date: 6/16/2004

Survey Date:

2/9/2004

REACH 1

T10S-R11W-S24SE

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	4	0.5	0.05	2	0	19	76	5	0	0	0
POOL-LATERAL SCOUR	27	594	5.8	1.27	3,402	0	17	77	5	0	0	1
POOL-PLUNGE	1	17	5.5	1.40	96	0	10	85	5	0	0	0
RAPID/BOULDERS	1	3	0.4	0.10	1	0	40	60	0	0	0	0
RIFFLE	11	161	3.8	0.44	759	0	14	77	9	0	0	0
STEP/BEDROCK	1	2	0.5	0.10	1	0	19	76	5	0	0	0
STEP/LOG	3	4	6.2	0.23	26	0	18	79	3	0	0	0
STEP/STRUCTURE	1	1	0.5	0.10	0	0	10	80	10	0	0	0
<b>Total:</b>	<b>46</b>	<b>785</b>	<b>4.9</b>	<b>0.90</b>	<b>4,288</b>	<b>0</b>	<b>Avg: 17</b>	<b>77</b>	<b>6</b>	<b>0</b>	<b>0</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	0	0			0	0.00%	0	0.0
Scour Pools	28	611	5.8	1.28	3,498	81.58%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	11	161	3.8	0.44	759	17.71%	0	0.0
Rapids	1	3	0.4	0.10	1	0.03%	0	0.0
Cascades	1	4	0.5	0.05	2	0.05%	0	0.0
Step/Falls	5	7	3.9	0.18	27	0.64%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

POOL SUMMARY

	Total	# / Km	
All Pools:	28	35.7	24
Pools >=1m deep:	27	34.4	
Complex pools (LWD pieces>=3):	18	22.9	
Pool frequency (channel widths/pool):	4.2		
Residual pool depth (avg):	0.73		

**STREAM SUMMARY**

**WESSEL CREEK POST-TX (MC-221)**

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Substrate						Large Boulders (#>0.5m)
					Percent Wetted Area						
					S/O	Snd	Grvl	Cbl	Bldr	Bdrk	
46	785	4.9	0.90	4,288	17	77	6	0	0	1	

Habitat Group	Wetted Area	
	(m <sup>2</sup> )	Percent
Dammed & BW Pools	0	0.00%
Scour Pools	3,498	81.58%
Glides	0	0.00%
Riffles	759	17.71%
Rapids	1	0.03%
Cascades	2	0.05%
Step/Falls	27	0.64%
Dry	0	0.00%
Culverts	0	0.00%

# Comment Summary

## Oregon Plan Monitoring Sites 2002

MONITORING AREA: **2-MC**      SITE ID: **221**      **WESSEL CREEK POST-TX (MC-221)**

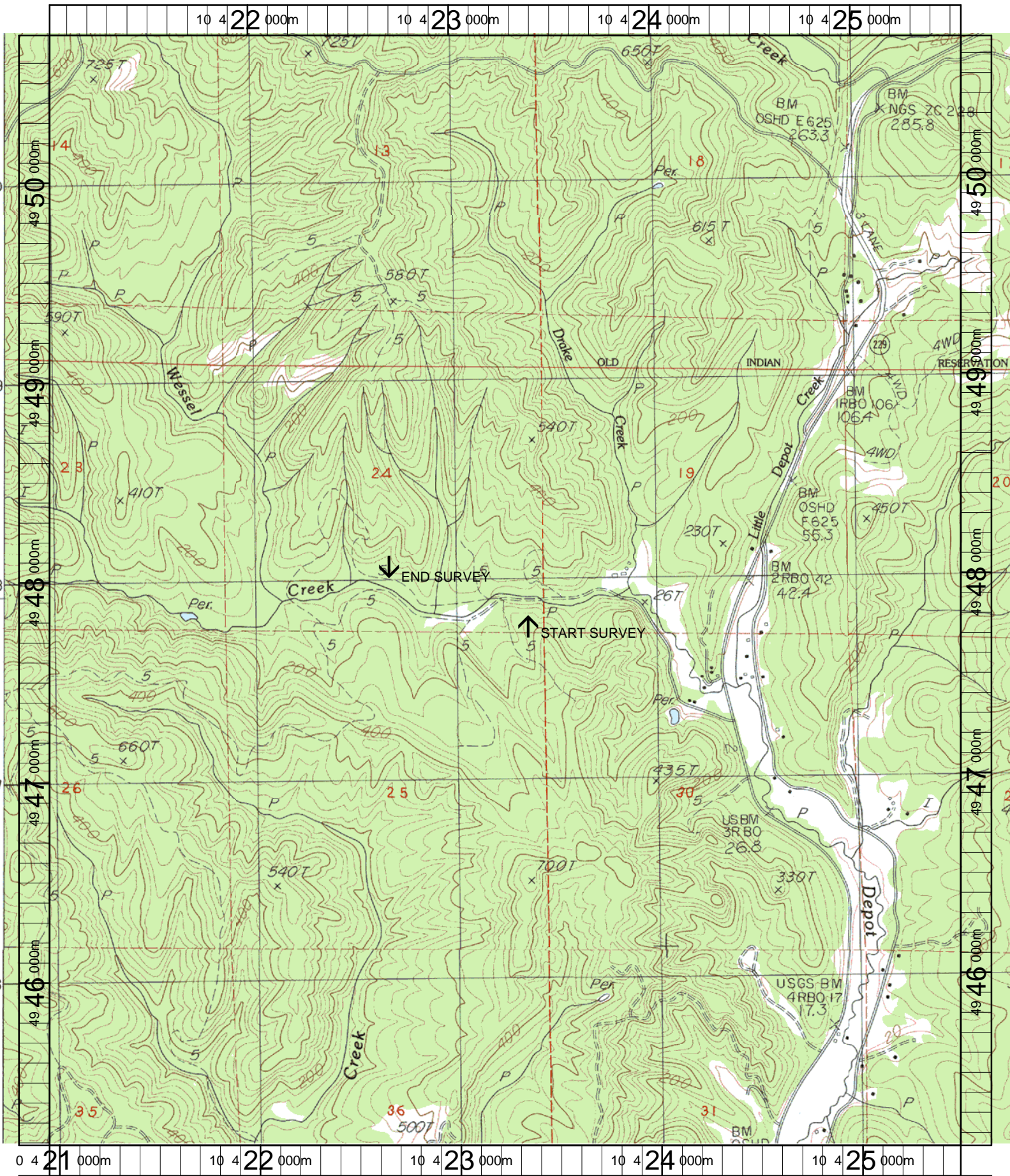
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	LP	01	48.5	TJ/	T=6C/0910	
2	RB	11	48.5		ACW=.55M, T=5.5C	
3	LP	01	73.4	HS,DJ,/TJ		
4	SR	11	73.4		ACW=.6M, T=5.8C, H=.8M	
5	LP	00	84.9		COHO CARCASS	
6	PP	00	102.3		5M TAILOUT	
7	SL	00	103.3	DJ	H=.2M	
8	LP	01	133.8	/TJ		
9	RI	11	133.8		ACW=.8, T=6.5C	
10	LP	01	198.8	TJ/,BV,CS	OLD BV	
11	SS	11	198.8	CE	H=.5M, .5*.5 CULVERT	
12	LP	00	244.3	HS, WL	COHO CARCASS, RACCO	
15	LP	00	288.3	HS		
16	LP	00	306.8	DJ, WL	BIRDS	
18	RI	00	342.6	WL	RACCOON TRACKS	
20	RI	00	377.3	WL	RACCOON TRACKS	
21	LP	01	401.2	BV,HS,TJ/		
22	CB	11	401.2		ACW=.6M, T=7.5C	
24	LP	00	427	DJ		
25	LP	01	456.4	HS,/TJ		
26	RI	11	456.4		ACW=1.5M, T=7.5C	

# Comment Summary

## Oregon Plan Monitoring Sites 2002

MONITORING AREA: **2-MC**      SITE ID: **221**      WESSEL CREEK POST-TX (MC-221)

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
28	LP	00	476.9		HARDPAN	
30	LP	00	519.2	HS		
31	RI	00	527.7		MALE COHO	
33	LP	00	557.7	DJ		
34	RI	01	570.2	TJ/		
35	RI	11	570.2	CE	ACW=1.3M, T=6C	
36	RI	00	593.6		HARDPAN	
38	LP	00	641.6	BV		
39	LP	00	658.7	HS	HARDPAN, HS LOG	
40	LP	00	668	HS	HARDPAN	
41	SL	00	670	DJ	H=.1M	
42	LP	00	702.2	HS	HARDPAN	
43	SL	00	703.2	DJ		
44	LP	00	719	HS	HARDPAN	
45	RI	00	749.6	DJ, BV		
46	LP	00	761.9	DJ, HS	EOS, T=5C	



Name: TOLEDO NORTH  
 Date: 1/21/2004  
 Scale: 1 inch equals 2000 feet

Location: 10 423246 E 4947940 N  
 Caption: WESSEL CREEK RESTORATION SITE - YAQUINA BASIN