

**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: July 14, 2004
SURVEY CREW: Erin Richmond, Jeff Snyder, Paul Jacobsen
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 12.9 km²
USGS MAPS: Toledo North
ECOREGION: Coast Range Sitka Spruce

GENERAL DESCRIPTION:

The Wessel Creek habitat survey extended 709 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 9.2 (range: 8.0-10.0). Land use for the reach was young (3-15 cm dbh) and second growth (15-30 cm dbh) trees. The average unit gradient was 0.3 percent. Scour pools (75%) and riffles (14%) dominated stream habitat. Sand (45%) and fines (42%) dominated stream substrate. Wood volume was moderate at 32.9 m³/100m.

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	9.2	VWI Range:	8 - 10

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	709	2,452	0
Secondary	64	33	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 2.6	Width: 4.9	6.3 (5.5 - 7.4)	9.4 (6.5 - 12.6)
Depth: 0.44	Height: 0.6	1.1 (1.1 - 1.2)	2.1 (1.7 - 2.3)

W:D ratio: 8.6
Stream Flow Type: LF
Average Unit Gradient: 0.3%
Water temperature (°C): 15.0 - 15.0

Entrenchment (ACW:FPW ratio): 1.4
Habitat Units/100m (total channel length): 5.2
Habitat Units/100m (primary channel length): 5.6

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:	37%	Reach avg: 78%
Undercut Banks:	21%	Range: 50 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	240	33.9
Volume (m ³):	233	32.9
Key pieces (>=12m x 0.60m):	3	0.4

OREGON DEPARTMENT OF FISH AND WILDLIFE

WESSEL CREEK POST-TX (MC-221)

HABITAT INVENTORY

Report Date: 10/27/2004

Survey Date:

7/14/2004

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 ²)	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
CASCADE/BOULDERS	3	15	0.3	0.10	5	0	30	47	13	0	0	10
CULVERT CROSSING	2	35	0.5	0.10	17	0	30	20	0	0	0	50
GLIDE	1	13	5.0	0.20	65	0	10	80	10	0	0	0
POOL-DAMMED	1	36	4.5	1.10	162	0	65	35	0	0	0	0
POOL-LATERAL SCOUR	15	530	3.6	0.82	1,869	14	44	50	5	0	0	1
RIFFLE	13	139	2.5	0.24	358	0	32	50	18	0	0	0
STEP/LOG	3	3	1.6	0.04	9	0	77	23	0	0	0	0
STEP/STRUCTURE	2	1	0.3	0.20	0	0	80	20	0	0	0	0
Total:	40	773	2.6	0.44	2,485	14	Avg: 42	45	9	0	0	3

HABITAT SUMMARY

Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m ²)	Percent	Number	(# / 100m ²)
Dammed & BW Pools	1	36	4.5	1.10	162	6.52%	0	0.0
Scour Pools	15	530	3.6	0.82	1,869	75.22%	14	0.7
Glides	1	13	5.0	0.20	65	2.62%	0	0.0
Riffles	13	139	2.5	0.24	358	14.41%	0	0.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	3	15	0.3	0.10	5	0.20%	0	0.0
Step/Falls	5	4	1.0	0.10	9	0.35%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	2	35	0.5	0.10	17	0.68%	0	0.0

POOL SUMMARY

	Total of all Channel Lengths		Primary Channel Length
	<u>Total</u>	<u># / Km</u>	<u># / Km</u>
All Pools:	16	20.7	22.6
Pools >=1m deep:	5	6.5	7.1
Complex pools (LWD pieces>=3):	13	16.8	18.3
Pool frequency (channel widths/pool):	9.9		
Residual pool depth (avg):	0.67		

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

REACH 1

Summary of Riparian Zone (0-30m)

3 transects

Total hardwoods/1000	406
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

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	0.0	0.0	0.7	0.0	0.3	0.0	1.0
15-30cm	0.0	0.3	0.0	0.7	0.0	0.3	0.0	1.3
30-50cm	0.0	0.3	0.0	0.3	0.0	1.7	0.0	2.3
50-90cm	0.0	0.3	0.0	0.7	0.0	0.3	0.0	1.3
>90cm	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7
Total/100m2	0.0	1.7	0.0	2.3	0.0	2.7	0.0	2.2

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	78		72		63	
Shrub cover	60		43		40	
Grass/forb cover	33		52		58	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		0		17	
High terrace	100		83		67	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		17		17	
Riprap	0		0		0	
Surface slope (%)	35		4		4	

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
15	RT	3	HT	2	90	60	30	Conifer							
								Hardwood			2	1			
15	LF	1	HT	80	40	60	0	Conifer							
								Hardwood			1				
15	LF	3	HT	0	80	20	80	Conifer							
								Hardwood			1				
15	RT	1	HT	15	80	40	60	Conifer							
								Hardwood							
15	RT	2	HT	3	100	60	20	Conifer							
								Hardwood		1	1				
15	LF	2	HT	0	90	40	60	Conifer							
								Hardwood							
24	RT	3	HT	2	30	0	100	Conifer							
								Hardwood							
24	RT	2	HT	3.5	60	0	100	Conifer							
								Hardwood							
24	RT	1	HT	50	90	40	60	Conifer							
								Hardwood							2
24	LF	3	HS	15	0	60	40	Conifer							
								Hardwood							
24	LF	2	RB	0	0	20	80	Conifer							
								Hardwood							
24	LF	1	HT	0	80	80	20	Conifer							
								Hardwood							
35	LF	2	HT	15	90	60	30	Conifer							
								Hardwood					2		
35	RT	1	HT	35	90	80	20	Conifer							
								Hardwood							
35	RT	2	HT	2	90	80	20	Conifer							
								Hardwood	2	1					
35	LF	1	HT	30	90	60	40	Conifer							
								Hardwood			1		1		
35	LF	3	RB	2	90	40	60	Conifer							
								Hardwood							
35	RT	3	HT	3	90	60	40	Conifer							
								Hardwood	1	1	2				

Comment Summary

Oregon Plan Monitoring Sites 2002

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

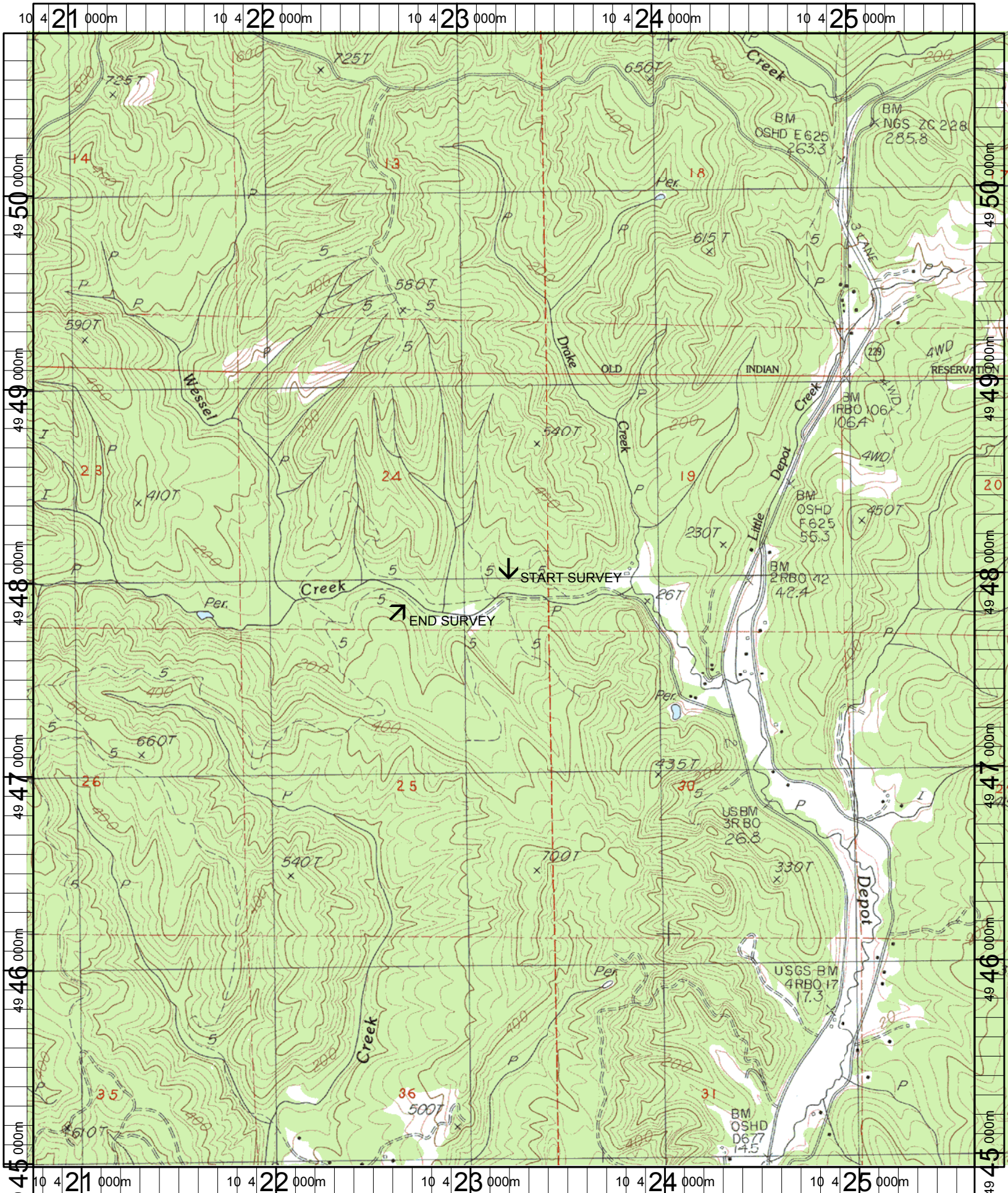
UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RI	00	13		T=15 DEG C	
2	LP	00	32			T=14 DEG C
3	LP	01	40.4	WL, TJ/	TJ/	DEER TRACKS
4	CB	11	40.4		ACW=.5 T=14 DEG C	
5	LP	01	65.4	HS, /TJ	/TJ	T = 14 DEG C
6	CB	11	65.4			CLAY HARDPAN
7	RI	00	74.4			DEEP POCKET .5M
8	LP	01	102.9		/TJ	
9	SL	11	102.9		T=14 DEG C, ACW=.8	H=.4M
11	LP	00	111.9		/TJ	
12	LP	01	161.9			CS- RIP RAP
13	SS	11	161.9		H=1.3M	H=1.3M T-14 DEG C
14	CC	11	161.9	CC		CLAY HARDPAN
15	RI	00	176.4			M/R AT 200 M
16	LP	00	207.4	HS		
17	RI	00	215.1	WL		FROG, GAME TRAIL
19	SL	00	226.7		H=.3	H=.3M
20	GL	00	239.7	WL		GAME TRACKS
21	LP	00	277.7	HS, WL		GAME TRACKS
22	RI	00	292.9	WL		GAME TRACKS
23	LP	00	317.4	WL		GAME TRACKS

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
24	RI	00	326.8	WL		GAME TRACKS/ MR
25	LP	01	407.8	WL, HS	HS X 2	PHOTO 0093 W/C SPARROW
26	RI	11	407.8	WL /TL	/TJ	
27	RI	00	420.8	WL	T=14 DEG C ACW=1.5	GAME TRAIL- ELK
28	LP	00	483.2	WL, HS		GAME TRAIL
29	RI	00	492	WL		GAME TRACKS
30	LP	01	520	WL	TJ/	
31	RI	11	520	TJ/	TJ/ ACW=3.0	TEMP=13 DEG C
32	SS	10	520		H=.6	H=0.6M
33	CC	10	520	CC		L=15M, CLAY HARDPAN
34	RI	00	535.6	WL		TRACKS
35	LP	00	635.6	WL, HS		GAME TRACKS
37	LP	00	658.6	HS, WL		GAME TRACKS
39	SL	00	672.5	DJ	H=.3	H=0.3M
40	DP	00	708.5	HS		END SURVEY



Name: TOLEDO NORTH
 Date: 6/14/2004
 Scale: 1 inch equals 2000 feet

Location: 10 423202 E 4947888 N
 Caption: WESSEL CREEK RESTORATION SITE - YAQUINA BASIN