

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

STREAM: Johnson Creek (N-38)
BASIN: Necanicum River
SURVEY TYPE: Post-Tx
DATE: August 30, 2007
SURVEY CREW: Trevor Diemer, Nathan Wilson
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 2.1 km²
USGS MAPS: Tillamook Head
ECOREGION: Coast Range Coastal Uplands

GENERAL DESCRIPTION:

The Johnson Creek habitat survey extended 512 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 2.8 (range: 1.0-6.0). Land use for the reach was timber harvest and young (3-15 cm dbh) trees. The average unit gradient was 3.8 percent. Rapids (40%) and scour pools (36%) dominated stream habitat. Gravel (48%) and cobble (36%) dominated stream substrate. Wood volume was moderate at 23.8 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

T05N-R10W-S23SE

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	2.8	VWI Range:	1 - 6

Channel Morphology (Percent Reach Length)

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

Channel Characteristics

<u>Type</u>	<u>Length (m)</u>	<u>Area (m2)</u>	<u>Dry Units</u>
Primary Channel	512	1,096	0
Secondary Channel	96	52	1
Off-Channel Units	0	0	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 4
Width: 2.5	Width: 4.2	4.9 (4.75 - 5)	6.8 (5.5 - 8)
Depth: 0.21	Height: 0.2	0.4 (0.4 - 0.5)	1.0 (0.75 - 1.3)

W:D ratio: 19.9

Entrenchment (ACW:FPW ratio): 1.2

Stream Flow Type: LF

Habitat Units/100m (total channel length): 7.6

Average Unit Gradient: 3.8%

Habitat Units/100m (primary channel length): 9.0

Water temperature (°C): 14.0 - 14.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	TH	YT
Riparian Vegetation:	M30	S

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	2%	Reach avg: 76%
Undercut Banks:	13%	Range: 42 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	108	21.1
Volume (m ³):	122	23.8
Key pieces (>=12m x 0.60m):	4	0.8

HABITAT INVENTORY

Report Date: 11/14/2007

Survey Date:

8/30/2007

REACH 1		T05N-R10W-S23SE					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
POOL-LATERAL SCOUR	14	110	2.7	0.42	303	4	5	16	49	27	2	1
POOL-PLUNGE	4	20	5.1	0.65	107	1	3	13	51	31	3	0
PUDDLED UNIT	1	45	0.5	0.02	23	0	10	25	30	30	5	0
RAPID/BOULDERS	15	298	1.6	0.05	464	16	0	4	46	42	7	1
RIFFLE	7	129	1.8	0.06	224	13	0	7	47	40	6	0
STEP/COBBLE	2	3	5.0	0.02	18	3	0	0	50	45	5	0
STEP/LOG	3	4	2.5	0.02	11	0	0	3	57	40	0	0
Total:	46	608	2.5	0.21	1,148	37	Avg: 2	9	48	36	4	1

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	0	0			0	0.00%	0	0.0	
Scour Pools	18	130	3.3	0.47	409	35.66%	5	1.2	
Glides	0	0			0	0.00%	0	0.0	
Riffles	7	129	1.8	0.06	224	19.50%	13	5.8	
Rapids	15	298	1.6	0.05	464	40.40%	16	3.4	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	5	7	3.5	0.02	29	2.48%	3	10.5	
Dry	1	45	0.5	0.02	23	1.96%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY			
	Total of all Channel Lengths		Primary Channel Length
	Total	# / Km	# / Km
All Pools:	18	29.6	35.1
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	5	8.2	9.8
Pool frequency (channel widths/pool):	8.1		
Residual pool depth (avg):	0.43		

Survey Date 8/30/2007
Report Date: 11/7/2007

**RIPARIAN ZONE
VEGETATION SUMMARY**

REACH 1

Summary of Riparian Zone (0-30m) 5 transects

Total hardwoods/1000	439
Total conifers/1000 ft	439
Total conifers >20" dbh/1000 ft	12
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	1.4	0.8	0.6	1.4	0.4	0.4	2.4	2.6
15-30cm	0.4	2.0	2.2	0.4	0.4	0.2	3.0	2.6
30-50cm	0.2	2.0	0.6	0.0	0.8	0.0	1.6	2.0
50-90cm	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	2.0	4.8	3.4	1.8	1.8	0.6	2.4	2.4

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Canopy closure	61	42	20
Shrub cover	44	55	42
Grass/forb cover	56	39	28

Predominant landform in each zone

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Hillslope	60	90	90
High terrace	40	10	10
Low terrace	0	0	0
Floodplain	0	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	0
Riprap	0	0	0
Surface slope (%)	21	40	46

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

5 transects

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

Total hardwoods/1000	439
Total conifers/1000 ft	439
Total conifers >20" dbh/1000 ft	12
Total conifers >35" dbh/1000 ft	0

Average number of trees in a 5-m wide band

Diameter class (cm)	Zones 1-3	
	<u>0-30 meters</u>	
	<u>Conifer</u>	<u>Hardwood</u>
3-15cm	2.4	2.6
15-30cm	3.0	2.6
30-50cm	1.6	2.0
50-90cm	0.2	0.0
>90cm	0.0	0.0

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

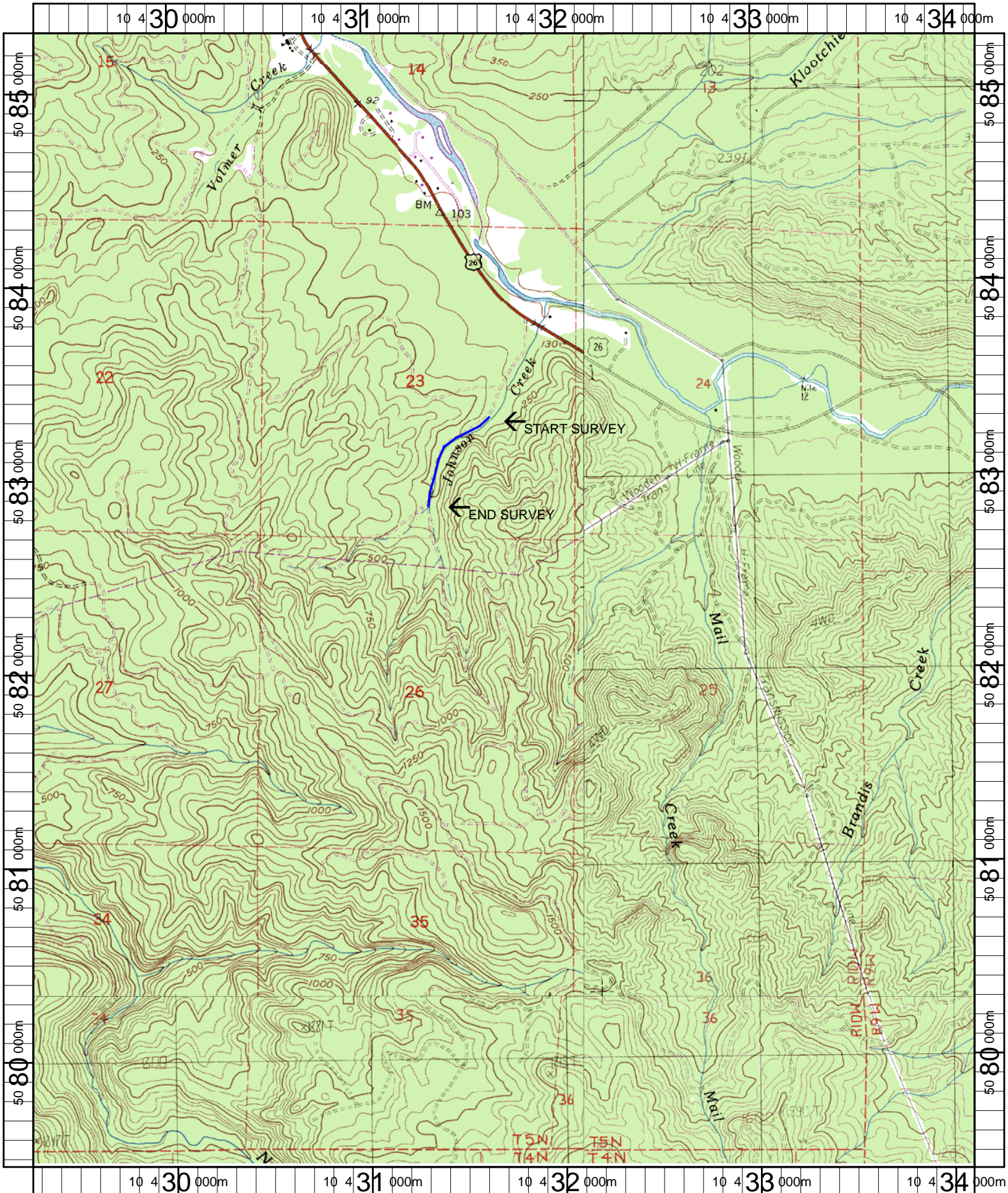
Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
1	LT	1	HS	50	85	85	15	Conifer	2						
								Hardwood							
1	LT	2	HS	35	95	80	20	Conifer	2	2					
								Hardwood							
1	LT	3	HS	35	95	55	45	Conifer		1	3				
								Hardwood							
1	RT	1	HT	0	80	40	60	Conifer							
								Hardwood		1	2				
1	RT	2	HT	0	75	30	70	Conifer	1	3					
								Hardwood							
1	RT	3	HT	0	75	30	70	Conifer	1	1					
								Hardwood		1					
12	LT	1	HT	0	80	60	40	Conifer	1						
								Hardwood		3					
12	LT	2	HS	25	55	70	30	Conifer		1					
								Hardwood	1	2					
12	LT	3	HS	65	5	30	30	Conifer	1						40%DUFF CLEAR CUT
								Hardwood							
12	RT	1	HS	30	20	35	65	Conifer			1				RB 0431557 5083262 CLEAR CUT
								Hardwood							
12	RT	2	HS	65	0	70	30	Conifer							
								Hardwood							
12	RT	3	HS	65	0	75	25	Conifer							CLEAR CUT
								Hardwood							
21	LT	1	HS	35	50	80	20	Conifer	1						
								Hardwood			1				
21	LT	2	HS	45	40	10	30	Conifer							60%DUFF AND DIRT
								Hardwood							
21	LT	3	HS	55	20	5	10	Conifer			1	1			HEAVILY THINNED
								Hardwood							85%DUFF RB
21	RT	1	HS	30	50	35	65	Conifer		2					
								Hardwood		1	3				
21	RT	2	HS	30	0	70	30	Conifer							CLEAR CUT
								Hardwood	1						
21	RT	3	HS	25	0	75	25	Conifer							CLEAR CUT
								Hardwood							

30	LT	1	HT	0	75	30	70	Conifer	1		
								Hardwood		1	3
30	LT	2	HS	65	80	40	60	Conifer		4	
								Hardwood			
30	LT	3	HS	45	0	5	5	Conifer			90%DUFF AND DIRT CLEAR CUT RB
								Hardwood			
30	RT	1	HS	35	70	40	60	Conifer			
								Hardwood	1	2	
30	RT	2	HS	65	0	75	25	Conifer			0431391 CLEAR CUT
								Hardwood	1		
30	RT	3	HS	70	0	55	45	Conifer			CLEAR CUT
								Hardwood			
47	LT	1	HT	0	90	10	90	Conifer	2		
								Hardwood		2	1
47	LT	2	HS	40	75	30	70	Conifer		1	3
								Hardwood			
47	LT	3	HS	75	0	5	5	Conifer			90%DUFF AND DIRT CLEAR CUT
								Hardwood			
47	RT	1	HS	30	5	25	75	Conifer			
								Hardwood	3		
47	RT	2	HS	25	0	75	25	Conifer			CLEAR CUT
								Hardwood	4		
47	RT	3	HS	20	0	80	20	Conifer			
								Hardwood	2		

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 38 STREAM: JOHNSON CREEK POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	RI	00	9	HS	
2	LP	00	19	HS	
3	RB	00	29	HS	
4	PP	00	36	HS	
5	SL	00	37	HS	
6	LP	00	41.5	HS	
7	RI	00	61.5	HS	
10	RI	00	102.5	HS	
11	LP	00	109.5	HS	
17	LP	00	173.8	HS	
18	RB	00	182.3	HS	
19	LP	00	187.3	HS	
21	RI	00	258.3		RIP @ TOP, 10T 0431443 5083201, 2D
28	RI	00	308.8	WL	DEER
30	RB	01	371.8	HS	
32	SL	00	375.8	DJ, HS	
47	RB	00	512.3	/TJ	SMALL TRIB VALLEY LESS THAN 5%



Name: TILLAMOOK HEAD
 Date: 5/9/2007
 Scale: 1 inch equals 2000 feet

Location: 10 431706 E 5082362 N
 Caption: JOHNSON CREEK RESTORATION SITE - NECANICUM BASIN