

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

STREAM: Johnson Creek (NC-38)
BASIN: Necanicum River
SURVEY TYPE: Pre-Tx
DATE: June 26, 2000
SURVEY CREW: Todd Boswell, Sean Allen
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 2.1 km²
USGS MAPS: Tillamook Head
ECOREGION: Coast Range Sitka Spruce

GENERAL DESCRIPTION:

The Johnson Creek habitat survey extended 473 meters. The channel was unconstrained with a multiple channel in a broad valley floor. The average valley width index was 4.1 (range: 2.5 – 7.0). Land use for the reach was second growth (15-30 cm dbh) trees. The average unit gradient was 2.6 percent. Riffles (78%) dominated stream habitat. Cobble (31%), gravel (29%) and sand (22%) dominated stream substrate. Wood volume was low at 12.4 m³/100m.

COMMENTS:

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

REACH 1

T5N-R10W-23SE

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	0
Moderate V-shape	0	Multiple Terraces	100
Open V-shape	0	Wide Floodplain	0

Valley Width Index avg: 4.1 range: 2.5-7.0

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0	Single Channel	0
Bedrock	0	Multiple Channel	100
Terrace	0	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	473	1,513	0
Secondary	154	238	1

Channel Dimensions (m)

<u>Wetted</u>		<u>Active</u>		<u>Floodprone</u>	<u>First Terrace</u>
Width	2.7	Width	5.2	18.4	7.6
Depth	0.26	Height	0.4	0.8	0.6
		W:D ratio	12.9	Entrenchment	3.7

Stream Flow Type: LF Water Temp: 12.0-12.0°C
Avg. Unit Gradient: 2.6% Habitat Units/100m: 9.4

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	
Riparian Vegetation:	M30	

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding	21%	Reach avg: 98%
Undercut Banks	7%	Range: 81-100

Large Woody Debris

	<u>Total</u>	<u>Total/100m</u>
All pieces ($\geq 3m \times 0.15m$)	82	17.3
Volume (m ³)	59	12.4
Key pieces ($\geq 10m \times 0.6m$)	0	0.0

REACH 1

T5N-R10W-23SE

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
POOL-BACKWATER	5	12	1.5	0.36	21	0	20	51	24	5	0	0
POOL-ISOLATED	1	5	3.5	0.50	18	0	20	65	15	0	0	0
POOL-LATERAL SCOUR	11	62	2.8	0.46	172	0	12	26	30	29	2	0
POOL-PLUNGE	2	9	3.3	0.50	29	0	15	20	23	28	3	13
POOL-STRAIGHT SCOUR	1	6	6.0	0.45	35	0	25	40	20	15	0	0
PUDDLED CHANNEL	1	6	3.1	0.10	18	0	5	5	5	20	30	35
RAPID/BOULDERS	2	50	2.1	0.18	80	0	5	10	20	45	20	0
RIFFLE	29	472	2.7	0.18	1,366	4	7	17	32	37	6	1
STEP/BEDROCK	1	2	1.6	0.25	2	0	0	0	20	30	0	50
STEP/COBBLE	2	1	1.6	0.13	3	0	3	10	20	48	20	0
STEP/LOG	4	2	3.8	0.11	8	0	10	19	34	28	10	0
Total:	59	627	2.7	0.26	1,752	4	Avg:10	22	29	31	6	2

HABITAT SUMMARY

Habitat Group	No. Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area (m ²)	Percent	Large Boulders Number	#/100m ²
Dammed & BW Pools	6	17	1.9	0.38	38	2.19	0	0.0
Scour Pools	14	77	3.1	0.47	236	13.47	0	0.0
Glides	0	0	-	-	0	0.00	0	0.0
Riffles	29	472	2.7	0.18	1,366	77.99	4	0.3
Rapids	2	50	2.1	0.18	80	4.58	0	0.0
Cascades	0	0	-	-	0	0.00	0	0.0
Step/Falls	7	5	2.8	0.13	13	0.76	0	0.0
Dry	1	6	3.1	0.10	18	1.01	0	0.0

POOL SUMMARY

All Pools	<u>Total</u>	<u>#/Km</u>
	20	31.9
Pools ≥1m deep:	0	0.0
Complex pools (LWD pieces ≥3):	3	4.8
Pool Frequency (channel widths/pool):	6.1	
Residual pool depth (avg)	0.34m	

STREAM SUMMARY

JOHNSON CREEK (PRE-TX)

Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Substrate Percent Wetted Area						Total Large Boulder
					S/O	Sand	Grvl	Cbbl	Bldr	Bdrk	
59	627	2.7	0.26	1,752	10	22	29	31	6	2	4

Wetted Area

Habitat Group	(m ²)	Percent
Scour Pool	236	13.5
Backwater Pools	38	2.2
Glide	0	0.0
Riffle	1,366	78.0
Rapid	80	4.6
Cascade	0	0.0
Step	13	0.8
Dry	18	1.0

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000 ft	386
Total conifers/1000 ft	671
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		Zone 2		Zone 3		Zones 1-3	
	0-10 meters		10-20 meters		20-30 meters		0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	2.3	0.3	1.0	0.7	0.3	1.0	3.7	2.0
15-30cm	0.0	1.3	0.3	0.7	2.3	0.0	2.7	2.0
30-50cm	1.3	1.7	1.7	0.3	1.7	0.3	4.7	2.3
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	0.0	0.0	0.0	0.0
Total/100m ²	3.7	3.3	3.0	1.7	4.3	1.3	3.7	2.1

Canopy closure and ground cover

	Zone 1		Zone 2		Zone 3	
	0-10 meters		10-20 meters		20-30 meters	
	(%)		(%)		(%)	
Canopy closure	68		57		69	
Shrub cover	23		20		32	
Grass/forb cover	77		50		48	

Predominant landform in each zone

	Zone 1		Zone 2		Zone 3	
	0-10 meters		10-20 meters		20-30 meters	
Hillslope	17		50		100	
High terrace	67		17		0	
Low terrace	17		0		0	
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 (%)	9		22		27	

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	386
Total conifers/1000 ft	671
Total conifers >20" dbh/1000 ft	0

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	3.7	2.0
15-30cm	2.7	2.0
30-50cm	4.7	2.3
50-90cm	0.0	0.0
>90cm	0.0	0.0

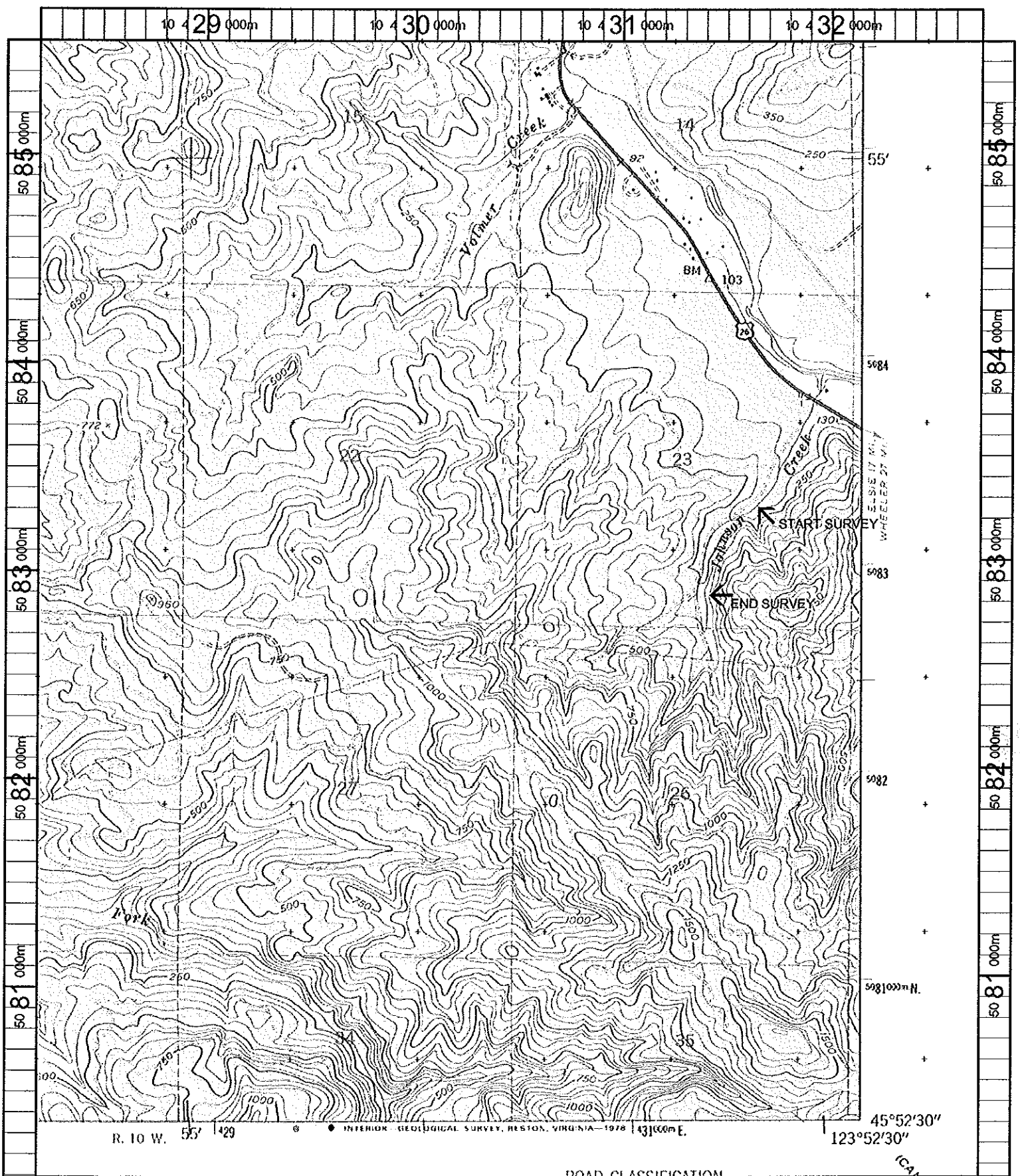
RIPARIAN ZONE VEGETATION

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	
25	LF	1	HT	6.0	40	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	2	0	0	
25	LF	2	HS	52.0	40	40	60	Conifer	0	0	3	0	0	
								Hardwood	0	0	0	0	0	
25	LF	3	HS	36.0	65	50	50	Conifer	0	2	0	0	0	
								Hardwood	0	0	0	0	0	
25	RT	1	HT	1.5	70	30	70	Conifer	0	0	0	0	0	
								Hardwood	1	1	3	0	0	
25	RT	2	HT	2.0	70	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	0	0	
25	RT	3	HS	15.0	70	40	50	Conifer	1	3	0	0	0	
								Hardwood	0	0	1	0	0	ROAD IN 3RD ZONE
39	LF	1	HT	12.0	70	30	70	Conifer	0	0	1	0	0	
								Hardwood	0	0	0	0	0	
39	LF	2	HS	30.0	85	0	30	Conifer	0	0	2	0	0	
								Hardwood	0	0	0	0	0	
39	LF	3	HS	28.0	85	0	30	Conifer	0	1	4	0	0	
								Hardwood	0	0	0	0	0	
39	RT	1	HT	8.0	65	10	90	Conifer	1	0	1	0	0	
								Hardwood	0	0	0	0	0	
39	RT	2	RB	11.0	50	0	40	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
39	RT	3	HS	35.0	75	30	50	Conifer	0	0	1	0	0	
								Hardwood	0	0	0	0	0	
53	LF	1	LT	4.0	80	0	100	Conifer	4	0	2	0	0	
								Hardwood	0	0	0	0	0	
53	LF	2	HS	35.0	75	40	60	Conifer	0	1	0	0	0	
								Hardwood	2	0	0	0	0	
53	LF	3	HS	35.0	75	50	50	Conifer	0	1	0	0	0	
								Hardwood	3	0	0	0	0	
53	RT	1	HS	21.0	80	40	60	Conifer	2	0	0	0	0	
								Hardwood	0	3	0	0	0	
53	RT	2	RB	4.0	20	10	40	Conifer	3	0	0	0	0	
								Hardwood	0	2	0	0	0	
53	RT	3	HS	15.0	45	20	60	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	



Name: TILLAMOOK HEAD
 Date: 10/17/100
 Scale: 1 inch equals 2000 feet

Location: 10 430328 E 5082776 N
 Caption: JOHNSON CREEK RESTORATION SITE - NECANICUM BASIN