

**ODFW AQUATIC INVENTORY PROJECT
RESTORATION MONITORING
STREAM HABITAT REPORT**

STREAM: HAWLEY CREEK
 GCG: 1-NC
 SITE ID: 371
 BASIN: NECANICUM
 TREATMENT DATE: 2007
 SURVEY DATE: 7/14/2008
 SURVEY CREW: Jitesh Pattni / Aaron Paloni
 USGS MAPS: TILLAMOOK HEAD
 ECOREGION: Coastal Uplands
 REPORT PREPARED BY: Matt Strickland / Sharon Tippery / Charles Stein

SURVEY DESCRIPTION:

Channel morphology: Constrained alternately by high terraces and hillslopes

Dominant landuse(s): Second growth timber (15-30 cm dbh)

Dominant riparian vegetation: Mixed conifer/deciduous: size class 30-50cm dbh

Primary channel length (meters) and area (m²): 707 : 2,147

Secondary channel length (meters) and area (m²) 212 : 328

VWI average: 8.4 VWI Range: 2 - 20 Average Gradient: 3.7%

Pieces LWD per 100m: 15.3 Wood Volume (m³) per 100m: 27.7

Percent pools: 11% Complex pools (LWD pieces \geq 3): 4 Pools \geq 1m deep: 0

Percent substrate (avg):	<u>Silt / organics</u>	<u>Sand</u>	<u>Gravel</u>	<u>Cobble</u>	<u>Boulder</u>	<u>Bedrock</u>
All units	10	11	38	38	3	0
Pool units	20	19	32	28	1	0
Fast water units	5	7	39	44	5	0

COMMENTS:

This is a post-treatment, restoration survey. The crew noted near the end of the survey a new tributary junction channel had been cut into the mainstem of Hawley Creek.

**OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY**

**HAWLEY CREEK
GCG: 1-NC SITE ID: 371**

Survey Date: 7/14/2008

Report Date: 12/29/2008

T05N-R10W-S14NW

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	8.4	VWI Range:	2 - 20

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	707	2,147	0
Secondary	212	328	4

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 3.3	Width: 5.4	11.4 (3.2 - 32.2)	13.0 (4.1 - 33)
Depth: 0.23	Height: 0.4	0.7 (0.6 - 0.9)	1.1 (0.65 - 1.9)

W:D ratio: 15.6

Stream Flow Type: LF

Average Unit Gradient: 3.7%

Water temperature (°C): 11.0 - 11.0

Entrenchment (ACW:FPW ratio): 1.8

Habitat Units/100m (total channel length): 4.6

Habitat Units/100m (primary channel length): 5.9

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	
Riparian Vegetation:	M30	D30

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	0%	Reach avg: 98%
Undercut Banks:	0%	Range: 83 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	108	15.3
Volume (m ³):	196	27.7
Key pieces (>=12m x 0.60m):	13	1.8

OREGON DEPARTMENT OF FISH AND WILDLIFE

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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-BACKWATER	1	2	2.0	0.50	4	0	24	24	38	14	0	0
POOL-LATERAL SCOUR	11	69	4.2	0.48	274	2	20	19	32	28	1	0
PUDDLED UNIT	4	178	1.7	0.01	296	0	6	10	47	36	0	0
RAPID/BOULDERS	17	528	2.8	0.15	1,432	13	4	6	40	43	6	0
RIFFLE	6	138	3.1	0.15	448	7	8	8	38	45	2	0
STEP/COBBLE	1	3	4.2	0.15	13	8	0	0	30	65	5	0
STEP/LOG	2	1	6.3	0.03	7	0	10	5	44	41	0	0
Total:	42	919	3.3	0.23	2,474	30	Avg: 10	11	38	38	3	0

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	2	2.0	0.50	4	0.18%	0	0.0
Scour Pools	11	69	4.2	0.48	274	11.07%	2	0.7
Glides	0	0			0	0.00%	0	0.0
Riffles	6	138	3.1	0.15	448	18.12%	7	1.6
Rapids	17	528	2.8	0.15	1,432	57.88%	13	0.9
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	3	4	5.6	0.07	20	0.79%	8	40.9
Dry	4	178	1.7	0.01	296	11.96%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

POOL SUMMARY

	Total of all Channel Lengths		Primary Channel Length
	<u>Total</u>	<u># / Km</u>	<u># / Km</u>
All Pools:	12	13.1	17.0
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	4	4.4	5.7
Pool frequency (channel widths/pool):	14.1		
Residual pool depth (avg):	0.38		

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RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000	650
Total conifers/1000 ft	386
Total conifers >20" dbh/1000 ft	20
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	1.3	0.7	2.3	0.7	3.7
15-30cm	0.3	0.0	1.7	0.0	1.7	2.7	3.7	2.7
30-50cm	0.3	2.7	0.3	0.3	1.0	1.3	1.7	4.3
50-90cm	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	1.0	2.7	2.0	1.7	3.3	6.3	2.1	3.6

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Canopy closure	71	63	64
Shrub cover	20	14	8
Grass/forb cover	44	31	37

Predominant landform in each zone

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Hillslope	33	17	50
High terrace	50	33	50
Low terrace	0	0	0
Floodplain	17	0	0
Wetland/meadow	0	0	0
Stream channel	0	17	0
Roadbed/Railroad	0	33	0
Riprap	0	0	0
Surface slope (%)	9	7	27

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

3 transects

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

Total hardwoods/1000	650
Total conifers/1000 ft	386
Total conifers >20" dbh/1000 ft	20
Total conifers >35" dbh/1000 ft	0

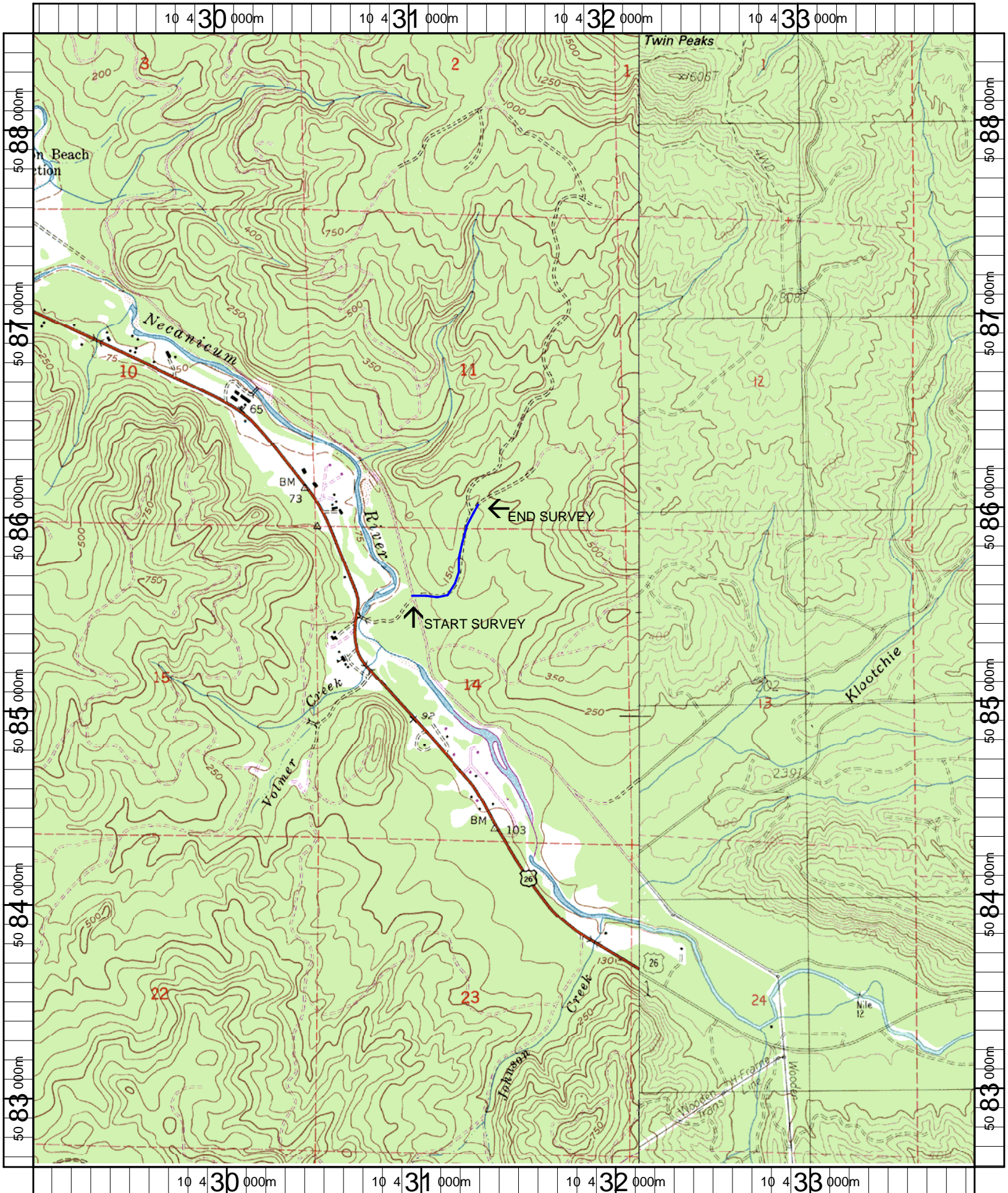
Average number of trees in a 5-m wide band

Diameter class (cm)	Zones 1-3	
	<u>0-30 meters</u>	
	<u>Conifer</u>	<u>Hardwood</u>
3-15cm	0.7	3.7
15-30cm	3.7	2.7
30-50cm	1.7	4.3
50-90cm	0.3	0.0
>90cm	0.0	0.0

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 371 STREAM: HAWLEY CREEK

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	RI	00	28		CT/CT M30/ST, TERRACE IS ROADBED
11	SL	00	129.7		H=0.35M
21	RI	00	327.7	/SS	
25	SL	00	400.1		H=0.60M
41	RB	01	666.1	/TJ	
42	RI	11	666.1		TRIB T=11.5C, NEW TJ SOUTH OF OLD TJ
43	RB	00	707.1	RF	MAINSTEM UPSTREAM OF TRIB T=12C



Name: TILLAMOOK HEAD
 Date: 1/3/2007
 Scale: 1 inch equals 2000 feet

Location: 10 431457 E 5085547 N
 Caption: HAWLEY CREEK RESTORATION SITE - NECANICUM BASIN

NC-371 Hawley Creek (Post-Treatment) 2008 Summer Habitat Survey Photographs



Culvert crossing



Dry channel



Old road



Red-legged frog



Riparian



Reach photo