

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

STREAM: LOST CREEK
 GCG: 1-NC
 SITE ID: 346
 BASIN: NF NEHALEM
 TREATMENT DATE: 2007
 SURVEY DATE: 4/7/2009
 SURVEY CREW: Ryan Jacobsen / Miles Johnson
 USGS MAPS: HAMLET
 ECOREGION: Volcanics
 REPORT PREPARED BY: Matt Strickland / Sharon Tippery / Charles Stein

REACH: 1 LOCATION: T04S-R08W-S19SW

SURVEY DESCRIPTION:

Channel morphology: Constrained by 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): 522 : 2,374
 Secondary channel length (meters) and area (m²) 56 : 111
 VWI average: 2.0 VWI Range: 1.5 - 2.5 Average Gradient: 2.7%
 Pieces LWD per 100m: 37.3 Wood Volume (m³) per 100m: 52.0
 Percent pools: 41% Complex pools (LWD pieces>=3): 11 Pools >=1m deep:1
 Percent substrate (avg):

	<u>Silt / organics</u>	<u>Sand</u>	<u>Gravel</u>	<u>Cobble</u>	<u>Boulder</u>	<u>Bedrock</u>
All units	13	14	51	6	2	14
Pool units	12	15	56	4	4	10
Fast water units	5	12	58	7	0	18

SURVEY COMMENTS:

Lost Creek reach 1 is a post-treatment, restoration site. Reach 1 ended at a tributary junction approximately 520 meters upstream from the start of the survey. The crew noted observations of juvenile coho salmon and resident trout throughout the survey reach. They also made note of habitat structures consisting of placed boulders. Evidence of amphibians included rough skinned newts and egg masses. There were no potential barriers to upstream fish migration observed within the survey reach.

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REACH: 2 LOCATION: T04S-R08W-S19SW

SURVEY DESCRIPTION:

Channel morphology: Constrained alternately by high terraces and hillslopes

Dominant landuse(s): Large timber (30-50 cm dbh)

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

Primary channel length (meters) and area (m²): 2,727 : 9,854

Secondary channel length (meters) and area (m²): 253 : 440

VWI average: 3.7 VWI Range: 1.5 - 10 Average Gradient: 3.8%

Pieces LWD per 100m: 27.6 Wood Volume (m³) per 100m: 43.9

Percent pools: 19% Complex pools (LWD pieces>=3): 34 Pools >=1m deep:0

<u>Percent substrate (avg):</u>	<u>Silt / organics</u>	<u>Sand</u>	<u>Gravel</u>	<u>Cobble</u>	<u>Boulder</u>	<u>Bedrock</u>
All units	10	16	40	28	1	5
Pool units	10	17	46	22	0	4
Fast water units	3	13	40	36	2	6

SURVEY COMMENTS:

Lost Creek reach 2 is a post-treatment, restoration site. Reach 2 started at a tributary junction approximately 520 meters upstream from the start of the survey and extended upstream approximately 2450 meters to the end of the survey. The crew noted habitat structures and juvenile coho salmon throughout the survey reach. There were no potential barriers to upstream fish migration observed within the survey reach.

Survey Date: 4/7/2009

Report Date: 2/16/2010

T04S-R08W-S19SW

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	100%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	2.0	VWI Range:	1.5 - 2.5

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	100%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
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	522	2,374	0
Secondary	56	111	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 3	<u>First Terrace</u> n = 0
Width: 4.3	Width: 5.1	7.0 (6.7 - 7.2)	(-)
Depth: 0.42	Height: 0.5	0.9 (0.8 - 1)	(-)

W:D ratio: 11.2

Stream Flow Type: MF

Average Unit Gradient: 2.7%

Water temperature (°C): 8.0 - 8.0

Entrenchment (ACW:FPW ratio): 1.5

Habitat Units/100m (total channel length): 7.8

Habitat Units/100m (primary channel length): 8.6

Riparian, Bank, and Wood Summary

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

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 primary channel</u>
All pieces (>=3m x 0.15m):	195	37.3
Volume (m ³):	272	52.0
Key pieces (>=12m x 0.60m):	5	1.0

Survey Date: 4/7/2009

Report Date: 2/16/2010 T04S-R08W-S19SW

REACH 2

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	3.7	VWI Range:	1.5 - 10

Channel Morphology (Percent Reach Length)

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

Channel Characteristics

Type	Length (m)	Area (m2)	Dry Units
Primary	2,727	9,854	0
Secondary	253	440	1

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 10	<u>First Terrace</u> n = 3
Width: 3.5	Width: 6.5	11.3 (4.2 - 32)	12.3 (12 - 13)
Depth: 0.36	Height: 0.4	0.9 (0.7 - 1.3)	1.1 (0.9 - 1.2)

W:D ratio: 15.5

Entrenchment (ACW:FPW ratio): 1.7

Stream Flow Type: MF

Habitat Units/100m (total channel length): 5.4

Average Unit Gradient: 3.8%

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

Water temperature (°C): 8.0 - 8.0

Riparian, Bank, and Wood Summary

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

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 primary channel</u>
All pieces (>=3m x 0.15m):	752	27.6
Volume (m ³):	1,196	43.9
Key pieces (>=12m x 0.60m):	42	1.5

Survey Date: 4/7/2009

Report Date: 2/16/2010

T04S-R08W-S19SW

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/BEDROCK	1	10	1.7	0.05	17	0	10	20	60	10	0	0
CASCADE/BOULDERS	1	27	3.4	0.25	92	0	0	10	10	0	0	80
POOL-BACKWATER	2	9	2.1	0.50	18	0	55	20	25	0	0	0
POOL-ISOLATED	3	17	1.9	0.38	34	0	63	20	10	7	0	0
POOL-LATERAL SCOUR	15	168	5.1	0.67	883	0	13	15	56	3	0	12
POOL-PLUNGE	3	20	6.0	0.78	124	0	5	12	55	5	23	0
RAPID/BEDROCK	2	46	4.3	0.33	198	0	3	10	8	0	0	80
RAPID/BOULDERS	2	75	3.6	0.30	267	0	0	10	45	15	0	30
RIFFLE	11	200	3.9	0.21	816	0	6	13	74	8	0	0
STEP/BEDROCK	2	4	4.4	0.16	15	0	0	8	8	0	0	85
STEP/COBBLE	1	3	5.7	0.20	14	0	0	10	60	30	0	0
STEP/LOG	2	1	5.0	0.10	6	0	5	15	62	19	0	0
Total:	45	578	4.3	0.42	2,485	0	Avg: 13	14	51	6	2	14

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	5	25	1.9	0.43	52	2.10%	0	0.0
Scour Pools	18	189	5.3	0.69	1,008	40.56%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	11	200	3.9	0.21	816	32.85%	0	0.0
Rapids	4	121	3.9	0.31	464	18.69%	0	0.0
Cascades	2	37	2.6	0.15	109	4.38%	0	0.0
Step/Falls	5	7	4.9	0.14	36	1.43%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

Survey Date: 4/7/2009

Report Date: 2/16/2010

T04S-R08W-S19SW

REACH 2

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/BEDROCK	3	101	3.4	0.16	482	0	3	8	8	0	0	80
CASCADE/BOULDERS	3	64	3.0	0.22	221	0	13	13	27	37	3	7
CULVERT CROSSING	1	14	2.2	0.15	31	0	0	10	20	70	0	0
POOL-BACKWATER	6	61	2.2	0.42	119	0	52	27	13	8	0	0
POOL-ISOLATED	7	30	2.4	0.46	77	0	57	27	11	4	0	0
POOL-LATERAL SCOUR	49	446	3.9	0.59	1,827	0	10	17	47	22	0	4
POOL-PLUNGE	6	28	4.9	0.72	116	0	10	21	42	24	0	3
PUDDLED UNIT	1	9	1.5	0.35	14	0	60	20	20	0	0	0
RAPID/BEDROCK	1	50	3.3	0.35	165	0	0	15	40	30	0	15
RAPID/BOULDERS	53	1,655	3.2	0.20	5,462	0	2	13	39	39	3	3
RIFFLE	20	489	3.2	0.19	1,651	0	4	13	49	33	1	0
STEP/BEDROCK	2	9	4.8	0.23	38	0	0	8	35	13	0	45
STEP/COBBLE	3	11	4.0	0.23	41	0	0	20	43	37	0	0
STEP/LOG	7	13	4.5	0.18	52	0	13	24	35	29	0	0
Total:		162	2,979	3.5	10,294	0	Avg: 10	16	40	28	1	5

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	13	91	2.3	0.44	196	1.90%	0	0.0
Scour Pools	55	474	4.0	0.61	1,943	18.87%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	20	489	3.2	0.19	1,651	16.04%	0	0.0
Rapids	54	1,705	3.2	0.21	5,627	54.66%	0	0.0
Cascades	6	165	3.2	0.19	703	6.83%	0	0.0
Step/Falls	12	33	4.5	0.20	131	1.27%	0	0.0
Dry	1	9	1.5	0.35	14	0.13%	0	0.0
Culverts	1	14	2.2	0.15	31	0.30%	0	0.0

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

LOST CREEK
GCG: 1-NC SITE ID: 346

Survey Date: 4/7/2009

Report Date: 2/16/2010

T04S-R08W-S19SW

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	23	39.8	44.0
Pools >=1m deep:	1	1.7	1.9
Complex pools (LWD pieces>=3):	11	19.0	21.1
Pool frequency (channel widths/pool):	4.9		
Residual pool depth (avg):	0.39		

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

LOST CREEK
GCG: 1-NC SITE ID: 346

Survey Date: 4/7/2009

Report Date: 2/16/2010

T04S-R08W-S19SW

REACH 2

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	68	22.8	24.9
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	34	11.4	12.5
Pool frequency (channel widths/pool):	6.7		
Residual pool depth (avg):	0.39		

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 4/7/2009

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 346 STREAM: LOST CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	1	RR	00	24		CHMV D15\S LT\ST, START T=7C
1	3	RR	00	57	\SS	
1	4	PP	00	64	\SS	
1	9	LP	00	133.2	SS\	
1	11	LP	00	181.2		(9) COHO FRY
1	17	RI	01	261.9	\TJ	CHMV D15\S STLT
1	18	CR	11	261.9		ACW=2M, T=9C
1	20	LP	02	261.9		(20) COHO FRY
1	21	LP	02	261.9		(10) COHO FRY
1	22	LP	02	261.9		(20) COHO FRY
1	23	IP	10	261.9	\SS	(5) COHO FRY
1	37	LP	00	391.7		(15) COHO FRY
1	39	LP	00	425.7		SALMONID=100MM
1	45	RB	01	522.2	TJ\	END REACH 1, CHMV D30\S STLT
2	46	RB	00	542.2		ACW=2.2M, T=8.5C
2	51	LP	00	615.7		(10) COHO FRY
2	63	BW	10	743.9		(10) COHO FRY
2	65	RB	01	785.9	\TJ	
2	66	CR	11	785.9		ACW=0.6M, T=9C
2	67	LP	00	795.9		CA\CT
2	84	RB	00	1035.1		CA\CT D15\S STLT
2	87	RB	00	1128.1	HS	
2	90	RB	00	1152.9	\SS	
2	93	RR	00	1258.9		CHMV D30\S STLT
2	94	CR	00	1310.9	SS\	

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 4/7/2009

COMMENT SUMMARY

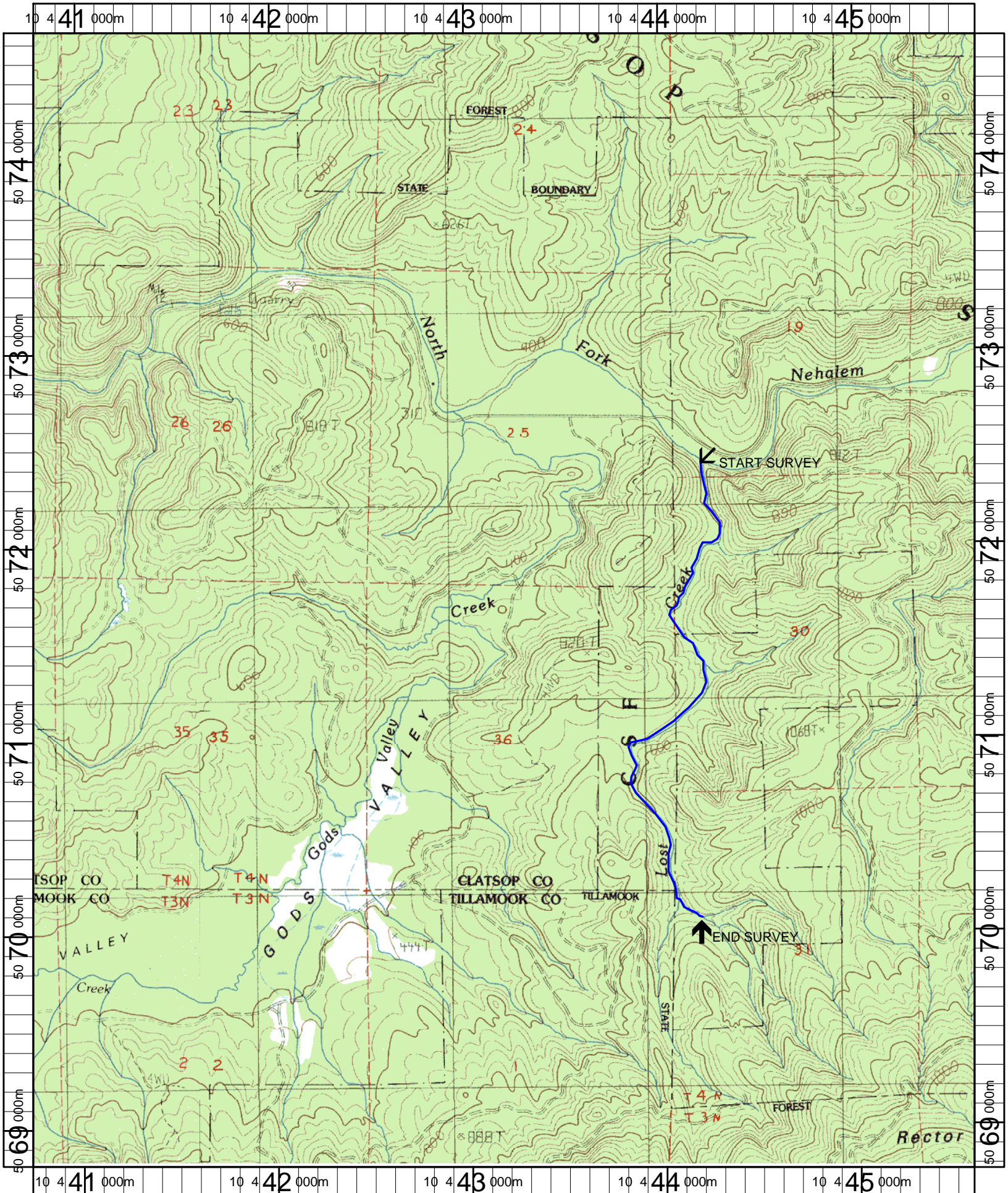
MONITORING AREA: 1-NC SITE ID: 346 STREAM: LOST CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
2	96	RI	01	1340.4	SS\	
2	101	RB	00	1442.6	\SS	
2	102	LP	01	1452.6	\SS	
2	104	RB	01	1504.6	TJ\	CHMV D30\S ST\LT
2	105	RB	11	1504.6		ACW=1.8M, T=7.5C
2	107	CB	00	1550.6	HS	BOULDER PLACEMENT
2	110	IP	10	1600.6	AM	(3) EGG MASSES
2	120	IP	10	1709.6	AM	(3) EGG MASSES
2	121	RB	01	1730.6	TJ\	
2	122	RB	11	1730.6		ACW=1M, T=8.5C
2	124	RB	00	1789.7		USWF-D30\S-LT\TH, WF EXTENDS TO BOTH HS
2	125	RI	01	1827.7	TJ\	
2	126	CB	00	1842.7		ACW=0.9M, T=8C
2	134	RB	00	1994.4	SS\	
2	137	RB	01	2025		CA\CT M30\S LT\TH
2	142	CB	01	2078.7	\TJ	
2	143	RB	00	2086.7		ACW=0.8M, T=7C
2	155	LP	02	2242.7		(15) COHO FRY
2	157	BW	10	2242.7	SS\	(20) COHO FRY
2	158	RI	00	2268.7	\SS	TROUT=100MM, CHMV D30\S LT\TH
2	164	RB	00	2361.2	\SS	
2	165	LP	01	2369.4	\TJ	
2	166	RI	11	2369.4		ACW=1M, T=8C
2	173	RB	00	2532.9		CHMV M30\S YT\LT
2	185	LP	00	2764.4	\SS	

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 346 STREAM: LOST CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
2	188	RB	00	2846.4		CHMV D15\S Y\LT
2	190	SC	01	2860.5	TJ\	
2	191	RB	11	2860.5		ACW=2M, T=7.5C
2	193	RB	01	2902.5	TJ\	
2	194	RB	11	2902.5		ACW=1.1M, T=7.5C
2	197	CC	00	2948.5	CC	HALF CULVERT, NO STEP, 3M WIDE
2	206	RB	00	3187	\SS	
2	207	RB	01	3249	\SS,\TJ	T=7C, CHMV D15\S ST\LT
2	208	RB	11	3249		ACW=4M, T=6.5C



Name: HAMLET
 Date: 4/29/2008
 Scale: 1 inch equals 2000 feet

Location: 10 443184 E 5071717 N
 Caption: LOST CREEK RESTORATION SITE - NEHALEM BASIN

Lost Creek (NC-346) 2009 Winter Habitat Survey Photographs



Unit 1 - A upstream view of the Lost Creek survey start.



Unit 33 - Looking downstream at large wood placement.



Unit 45 - Tributary confluence.



Unit 75 - A upstream view of the riparian area and large wood placement.



Unit 75 - Upstream view of stream and large wood placement.



Unit 93 - Downstream view of large wood placement.

Lost Creek (NC-346) 2009 Winter Habitat Survey Photographs



Unit 106 - Upstream view of riparian planting and large wood placement.



Unit 118 - Large wood placement of habitat structure.



Unit 125 - Small tributary.



Unit 189 - A upstream view of large wood placement.