

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

STREAM: BEAR CREEK LOWER  
 GCG: 1-NC  
 SITE ID: 364  
 BASIN: NESTUCCA  
 TREATMENT DATE: 2007  
 SURVEY DATE: 8/28/2008  
 SURVEY CREW: Gwyn Woolley-Scott / Linda Campbell  
 USGS MAPS: BEAVER  
 ECOREGION: Coastal Uplands  
 REPORT PREPARED BY: Matt Strickland / Sharon Tippery / Charles Stein

**SURVEY DESCRIPTION:**

Channel morphology: Constrained by high terraces

Dominant landuse(s): Rural residential

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

Primary channel length (meters) and area (m<sup>2</sup>): 609 : 2,099

Secondary channel length (meters) and area (m<sup>2</sup>) 0 : 0

VWI average: 20.0 VWI Range: 20 - 20 Average Gradient: 1.9%

Pieces LWD per 100m: 14.1 Wood Volume (m<sup>3</sup>) per 100m: 13.1

Percent pools: 43% Complex pools (LWD pieces>=3): 9 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	6	12	27	20	3	33
Pool units	8	17	27	15	1	31
Fast water units	0	9	30	21	4	36

**COMMENTS:**

This is a post-treatment, restoration survey. The crew noted observing juvenile salmonids throughout the survey. They also noted several debris jams near the end of the survey. Evidence of wildlife during the survey included a pileated woodpecker.

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

**BEAR CREEK LOWER  
GCG: 1-NC SITE ID: 364**

**Survey Date: 8/28/2008**

**Report Date: 12/29/2008**

**T03S-R09W-S18NW**

**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	20.0	VWI Range:	20 - 20

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	609	2,099	0
Secondary	0	0	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 3.6	Width: 6.1	7.2 ( 6.2 - 8 )	9.8 ( 8.2 - 12.5 )
Depth: 0.31	Height: 0.6	1.1 ( 1 - 1.2 )	2.0 ( 1.5 - 2.5 )

W:D ratio: 10.8

Stream Flow Type: LF

Average Unit Gradient: 1.9%

Water temperature (°C): 12.0 - 12.0

Entrenchment (ACW:FPW ratio): 1.2

Habitat Units/100m (total channel length): 7.2

Habitat Units/100m (primary channel length): 7.2

**Riparian, Bank, and Wood Summary**

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

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	24%	Reach avg: 94%
Undercut Banks:	11%	Range: 47 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	86	14.1
Volume (m <sup>3</sup> ):	80	13.1
Key pieces (>=12m x 0.60m):	1	0.2

OREGON DEPARTMENT OF FISH AND WILDLIFE

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REACH 1

HABITAT DETAIL

Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m <sup>2</sup> )	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
POOL-LATERAL SCOUR	10	120	3.4	0.50	405	0	5	16	30	14	1	33
POOL-PLUNGE	3	41	5.0	0.72	205	0	12	18	22	13	3	32
POOL-STRAIGHT SCOUR	6	85	3.7	0.59	301	1	11	18	26	17	2	27
RAPID/BEDROCK	7	131	2.6	0.16	350	12	0	8	18	15	1	58
RAPID/BOULDERS	3	28	4.0	0.11	118	0	0	5	40	39	16	0
RIFFLE	9	183	3.6	0.12	641	1	0	11	35	20	3	31
STEP/BEDROCK	2	6	4.5	0.06	28	1	0	2	5	7	2	84
STEP/COBBLE	3	14	3.3	0.10	48	0	0	6	35	56	3	0
STEP/LOG	1	1	5.0	0.01	3	0	90	5	5	0	0	0
<b>Total:</b>	<b>44</b>	<b>609</b>	<b>3.6</b>	<b>0.31</b>	<b>2,099</b>	<b>15</b>	<b>Avg: 6</b>	<b>12</b>	<b>27</b>	<b>20</b>	<b>3</b>	<b>33</b>

HABITAT SUMMARY

Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m <sup>2</sup> )	Percent	Number	(# / 100m <sup>2</sup> )
Dammed & BW Pools	0	0			0	0.00%	0	0.0
Scour Pools	19	246	3.7	0.56	911	43.41%	1	0.1
Glides	0	0			0	0.00%	0	0.0
Riffles	9	183	3.6	0.12	641	30.55%	1	0.2
Rapids	10	159	3.0	0.14	468	22.30%	12	2.6
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	6	21	4.0	0.07	79	3.74%	1	1.3
Dry	0	0			0	0.00%	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:	19	31.2	31.2
Pools >=1m deep:	1	1.6	1.6
Complex pools (LWD pieces>=3):	9	14.8	14.8
Pool frequency (channel widths/pool):	5.3		
Residual pool depth (avg):	0.49		

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RIPARIAN ZONE  
VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000	366
Total conifers/1000 ft	366
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	0.7	0.0	2.3	1.0	1.0	1.7	4.0	2.7
15-30cm	0.0	1.0	0.7	0.0	1.3	1.3	2.0	2.3
30-50cm	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7
50-90cm	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.7	2.0	3.0	1.0	2.3	3.0	2.0	2.0

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	78		59		53	
Shrub cover	42		28		18	
Grass/forb cover	58		73		83	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		33		33	
High terrace	100		67		67	
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		13		7	

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	366
Total conifers/1000 ft	366
Total conifers >20" dbh/1000 ft	0
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	4.0	2.7
15-30cm	2.0	2.3
30-50cm	0.0	0.7
50-90cm	0.0	0.3
>90cm	0.0	0.0

**RIPARIAN ZONE VEGETATION**

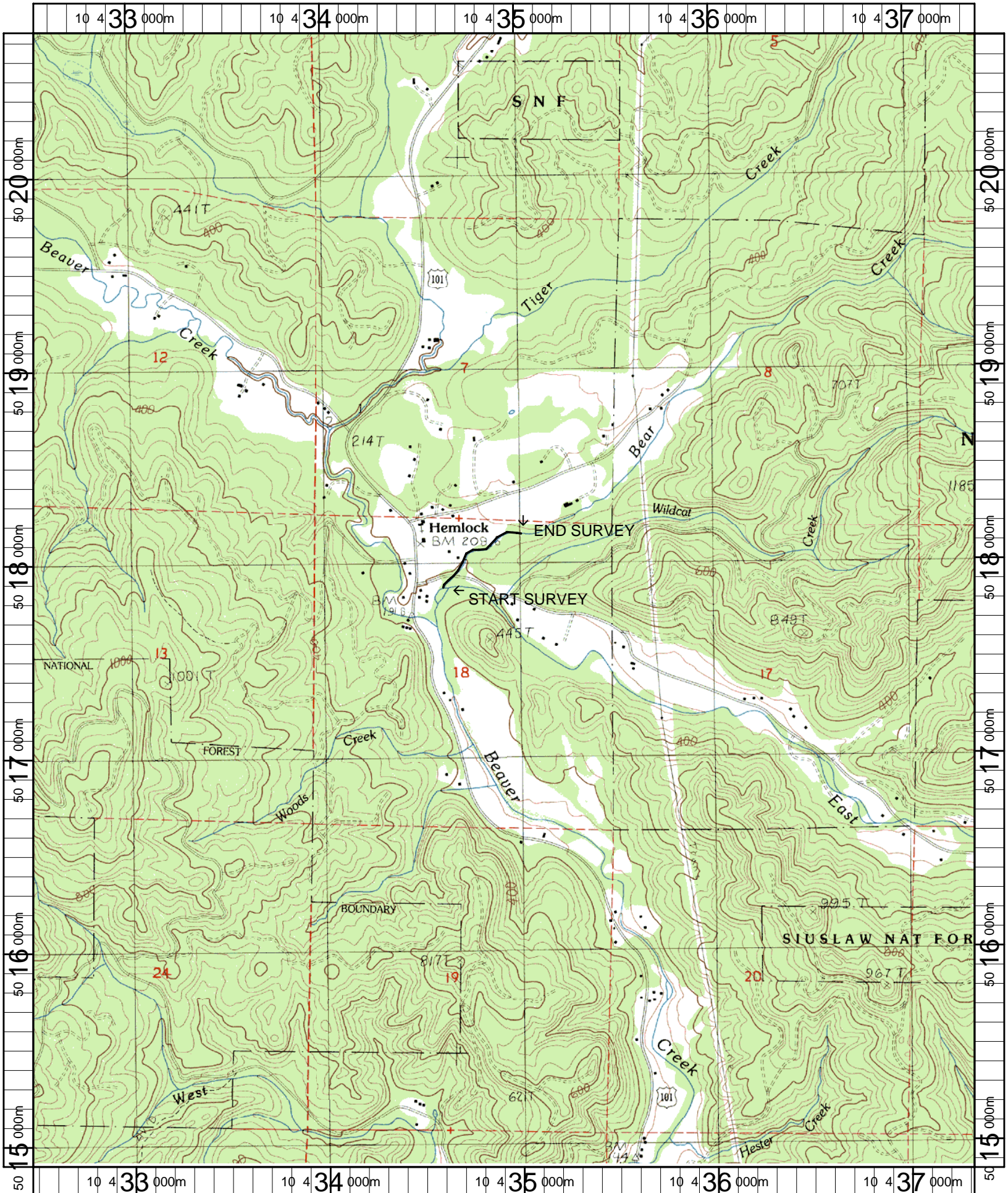
Reach 1 Reach 1

Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes	
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90		
14	LT	1	HT	26	60	30	70	Conifer							TRANSITION SLOPE
								Hardwood							
14	LT	2	HT	2	20	10	90	Conifer							
								Hardwood							
14	LT	3	HT	1	30	5	95	Conifer							ARTIFICIAL POND ACROSS TRANSITION SLOPE
								Hardwood		2					
14	RT	1	HT	12	80	60	40	Conifer							TRANSITION SLOPE
								Hardwood			1	1			
14	RT	2	HS	33	75	60	40	Conifer	1						
								Hardwood							
14	RT	3	HS	15	90	30	70	Conifer		1					RD HERE
								Hardwood							
24	LT	1	HT	12	75	10	90	Conifer							
								Hardwood		1					
24	LT	2	HT	1	5	0	100	Conifer	2						
								Hardwood							
24	LT	3	HT	5	15	10	90	Conifer							
								Hardwood		2					
24	RT	1	HT	23	75	60	40	Conifer							TRANSITION SLOPE
								Hardwood				1			
24	RT	2	HS	25	80	15	85	Conifer	2	2					
								Hardwood	1						
24	RT	3	HS	6	85	30	70	Conifer	2	2					
								Hardwood	2						
30	LT	1	HT	37	90	55	45	Conifer							TRANSITION SLOPE
								Hardwood				1			
30	LT	2	HT	6	85	75	25	Conifer							
								Hardwood	2						
30	LT	3	HT	4	15	15	85	Conifer							
								Hardwood							
30	RT	1	HT	18	90	35	65	Conifer	2						
								Hardwood			1				
30	RT	2	HT	12	90	5	95	Conifer	2						
								Hardwood							
30	RT	3	HT	8	80	15	85	Conifer	1	1					
								Hardwood	3						

**COMMENT SUMMARY**

MONITORING AREA: 1-NC      SITE ID: 364      STREAM: BEAR CREEK LOWER

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	RB	00	10	WL	PILEATED WOODPECKER, HUNG NEW HABITAT SIGN, PHOTO UPSTREAM
2	LP	00	22		JAPANESE KNOTWEED; (1) FISH 3CM
7	SP	00	72	CC	E. BEAVER CREEK RD
8	RI	00	83	CC	E. BEAVER CREEK RD
11	RI	00	158		INTAKE LEFT
13	SP	00	181		INTAKE LEFT
14	RI	00	206	DJ	WATER PASSES UNDER, BUT CHANNEL HAS BEEN WIDENED SIGNIFICANTLY
19	LP	00	276	SS/	(6) FISH 5-6CM
21	SP	00	306		(2) FISH 5-6CM; (1) TROUT 12CM
25	SP	00	393		(2) FISH 3-4CM
27	LP	00	426		(2) FISH 3-4CM
29	PP	00	437	DJ	
34	SL	00	476.5	DJ	H=0.20M
35	PP	00	505.5		(5) FISH 5CM
36	SR	00	507.5		H=0.40M
40	PP	00	562.5	SS/	
42	SP	00	588.5		(2) FISH 3CM
44	LP	00	608.5		RE-INKED END SIGN. 3 PHOTOS: UPSTREAM, DOWNSTREAM, FROM ROAD RIGHT



Name: BEAVER  
 Date: 4/25/2007  
 Scale: 1 inch equals 2000 feet

Location: 10 0434922 E 5017803 N  
 Caption: BEAR CREEK LOWER RESTORATION SITE - NESTUCCA BASIN



NC-364 Bear Creek Lower (Post-Treatment) 2008 Summer Habitat Survey Photographs



Reach photo