

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

STREAM: COAL CREEK
 GCG: 1-NC
 SITE ID: 444
 BASIN: NEHALEM
 TREATMENT DATE: 2011
 SURVEY DATE: 3/31/2011
 SURVEY CREW: Nick Chambers and Aaron McAlexander
 USGS MAPS: VERNONIA
 ECOREGION: Willapa Hills
 REPORT PREPARED BY: Matt Strickland / Charles Stein

REACH: 1 LOCATION: T04N-R04W-S21NE

SURVEY DESCRIPTION:

Channel morphology: Constrained by high terraces

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

Dominant riparian vegetation: Deciduous trees: size class 30-50cm dbh

Primary channel length (meters) and area (m²): 4,228 : 21,519

Secondary channel length (meters) and area (m²): 136 : 302

VWI average: 5.9 VWI Range: 2 - 15 Average Gradient: 0.4%

Pieces LWD per 100m: 18.9 Wood Volume (m³) per 100m: 21.0

Percent pools: 44% Complex pools (LWD pieces>=3): 40 Pools >=1m deep: 1

<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	6	45	38	5	1	6
Pool units	7	48	33	4	1	7
Fast water units	4	37	48	6	1	5

SURVEY COMMENTS:

This is a pre treatment restoration survey. The crew noted beaver activity throughout the surveyed length consisting primarily of chewed sticks and dens. The crew also noted observing numerous adult coho salmon carcasses.

Survey Date: 3/31/2011

Report Date: 9/14/2011

T04N-R04W-S21NE

REACH 1

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	0%
Moderate V-shape	0%	Multiple Terraces	100%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	5.9	VWI Range:	2 - 15

Channel Morphology (Percent Reach Length)

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

Channel Characteristics

Type	Length (m)	Area (m ²)	Dry Units
Primary	4,228	21,519	0
Secondary	136	302	0

Channel Dimensions (m)

Wetted	Active	Floodprone <i>n</i> = 18	First Terrace <i>n</i> = 17
Width: 4.9	Width: 8.6	15.5 (8 - 26.5)	17.6 (11 - 25.5)
Depth: 0.68	Height: 0.8	1.6 (1.1 - 2.2)	1.8 (1.3 - 2.6)

W:D ratio: 11.7

Stream Flow Type: MF

Average Unit Gradient: 0.4%

Water temperature (°C): 8.0 - 8.0

Entrenchment (ACW:FPW ratio): 1.8

Habitat Units/100m (total channel length): 2.7

Habitat Units/100m (primary channel length): 2.8

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	ST	YT
Riparian Vegetation:	D30	G

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	3%	Reach avg: 84%
Undercut Banks:	10%	Range: 56 - 100

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	801	18.9
Volume (m ³):	888	21.0
Key pieces (>=12m x 0.60m):	26	0.6

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

COAL CREEK
GCG: 1-NC SITE ID: 444

Survey Date: 3/31/2011

Report Date: 9/14/2011

T04N-R04W-S21NE

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-BACKWATER	2	17	2.0	0.35	32	0	13	73	15	0	0	0
POOL-DAMMED	1	45	4.2	1.20	189	0	5	32	53	11	0	0
POOL-ISOLATED	2	7	1.6	0.23	10	0	23	78	0	0	0	0
POOL-LATERAL SCOUR	58	1,852	5.0	1.03	9,280	10	7	49	32	4	0	7
POOL-PLUNGE	1	6	10.5	1.70	63	0	0	28	33	11	17	11
RAPID/BEDROCK	1	11	5.5	0.30	59	0	0	5	10	14	14	57
RIFFLE	51	2,420	4.8	0.32	12,135	5	4	37	49	6	0	4
STEP/BEAVER DAM	1	1	8.5	0.15	6	0	6	89	6	0	0	0
STEP/COBBLE	1	6	6.5	0.15	39	0	0	17	83	0	0	0
STEP/LOG	2	1	7.1	0.10	8	0	5	68	21	2	0	4
Total:	120	4,365	4.9	0.68	21,821	15	Avg: 6	45	38	5	1	6

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	69	2.3	0.47	231	1.06%	0	0.0
Scour Pools	59	1,858	5.1	1.04	9,343	42.82%	10	0.1
Glides	0	0			0	0.00%	0	0.0
Riffles	51	2,420	4.8	0.32	12,135	55.61%	5	0.0
Rapids	1	11	5.5	0.30	59	0.27%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	4	8	7.3	0.13	53	0.24%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

COAL CREEK
GCG: 1-NC SITE ID: 444

Survey Date: 3/31/2011

Report Date: 9/14/2011

T04N-R04W-S21NE

REACH 1

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	64	14.7	15.1
Pools >=1m deep:	31	7.1	7.3
Complex pools (LWD pieces>=3):	40	9.2	9.5
Pool frequency (channel widths/pool):	7.9		
Residual pool depth (avg):	0.78		

Survey Date 2/22/2011

RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

Report Date: 9/14/2011

Summary of Riparian Zone (0-30m) 16 transects

Total hardwoods/1000	522
Total conifers/1000 ft	160
Total conifers >20" dbh/1000 f	8
Total conifers >35" dbh/1000 f	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	0.8	0.1	1.5	0.2	1.0	0.3	3.3
15-30cm	0.1	1.1	0.7	0.7	0.8	1.1	1.6	2.9
30-50cm	0.1	1.0	0.1	0.7	0.4	0.6	0.6	2.3
50-90cm	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
>90cm	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Total/100m2	0.2	2.9	0.9	2.9	1.5	2.8	0.9	2.9

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	75		83		79	
Shrub cover	52		50		45	
Grass/forb cover	44		47		50	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	31		50		88	
High terrace	47		44		13	
Low terrace	22		6		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 (%)	9		16		31	

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

16 transects

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

Total hardwoods/1000	522
Total conifers/1000 ft	160
Total conifers >20" dbh/1000 f	8
Total conifers >35" dbh/1000 f	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	0.3	3.3
15-30cm	1.6	2.9
30-50cm	0.6	2.3
50-90cm	0.1	0.1
>90cm	0.0	0.1

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		
28	RT	1	HT	0	5	90	10	Conifer							
								Hardwood							
28	RT	2	HS	30	60	30	30	Conifer							40 IS ROAD
								Hardwood							
28	RT	2	HT	0	55	85	15	Conifer							
								Hardwood	1						
28	RT	3	HS	60	100	70	30	Conifer					1		
								Hardwood							
34	LT	1	HT	0	50	80	20	Conifer							
								Hardwood	1						
34	LT	2	HS	30	80	80	20	Conifer							
								Hardwood	1						
34	LT	3	HS	40	100	50	50	Conifer			2	2			
								Hardwood							
34	RT	1	HS	30	90	60	30	Conifer							
								Hardwood				1			
34	RT	2	HS	50	80	60	40	Conifer							
								Hardwood				1			
34	RT	3	HS	60	40	50	50	Conifer	1	1					
								Hardwood		1					
44	LT	1	HS	25	100	60	40	Conifer							
								Hardwood				2			
44	LT	2	HS	40	90	25	60	Conifer					1		
								Hardwood	1			1			
44	LT	3	HS	40	70	25	55	Conifer							
								Hardwood		2					
44	RT	1	HT	0	85	60	40	Conifer							
								Hardwood							
44	RT	2	HT	0	95	50	50	Conifer							
								Hardwood							
44	RT	3	HS	50	100	40	60	Conifer							
								Hardwood			1	3			
49	LT	1	HS	40	95	35	65	Conifer							
								Hardwood	2						
49	LT	2	HS	40	85	40	60	Conifer							
								Hardwood	1						
49	LT	3	HS	40	85	45	55	Conifer			1		1		
								Hardwood							
49	RT	1	HT	0	55	80	20	Conifer							
								Hardwood	2			1			

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		
49	RT	2	HT	0	80	70	30	Conifer							
								Hardwood	1						
49	RT	3	HT	0	90	70	30	Conifer							
								Hardwood		1					
55	LT	1	HT	0	60	60	40	Conifer							
								Hardwood		1	4				
55	LT	2	HT	0	90	50	50	Conifer							
								Hardwood	1		1				
55	LT	3	HS	20	100	25	75	Conifer			1				
								Hardwood		1					
55	RT	1	HT	0	60	70	30	Conifer							
								Hardwood							
55	RT	2	HT	0	75	70	30	Conifer							
								Hardwood	1						
55	RT	3	HS	50	100	50	50	Conifer							
								Hardwood	1	2	1				
62	LT	1	LT	0	100	60	40	Conifer							
								Hardwood		3	1				
62	LT	2	HT	0	95	70	30	Conifer							
								Hardwood		1	2				
62	LT	3	HS	30	95	50	50	Conifer							
								Hardwood		1	1				
62	RT	1	HS	45	80	80	20	Conifer							
								Hardwood							
62	RT	2	HS	45	100	40	60	Conifer							
								Hardwood	1						
62	RT	3	HS	45	100	35	65	Conifer					1		
								Hardwood					2		
66	LT	1	HT	0	50	30	70	Conifer							
								Hardwood							
66	LT	2	HS	20	100	15	85	Conifer	1	5					
								Hardwood							
66	LT	3	HS	25	100	25	55	Conifer			4				
								Hardwood							
66	RT	1	HT	0	80	50	40	Conifer							
								Hardwood					1		
66	RT	2	HT	5	80	50	50	Conifer							
								Hardwood	1	4	3				
66	RT	3	HS	20	65	60	40	Conifer							
								Hardwood		3					

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		
72	LT	1	LT	0	95	60	40	Conifer							
								Hardwood		2	1				
72	LT	2	LT	0	85	60	40	Conifer							
								Hardwood	1						
72	LT	3	HS	15	100	20	80	Conifer		1	2				
								Hardwood							
72	RT	1	HS	25	65	50	50	Conifer							
								Hardwood	1						
72	RT	2	HS	35	80	60	40	Conifer							
								Hardwood	3	1					
72	RT	3	HS	15	10	60	40	Conifer							
								Hardwood							
76	LT	1	LT	0	90	30	70	Conifer							
								Hardwood	3	9					
76	LT	2	HT	0	100	10	90	Conifer		1	1				
								Hardwood							
76	LT	3	HS	10	100	5	85	Conifer		2					
								Hardwood							
76	RT	1	HT	0	60	35	55	Conifer							
								Hardwood							
76	RT	2	HT	0	90	60	40	Conifer							
								Hardwood		1	1				
76	RT	3	HS	20	95	60	40	Conifer							
								Hardwood	1						
85	LT	1	HT	0	100	30	60	Conifer		1	1				
								Hardwood							
85	LT	2	HS	35	40	50	20	Conifer							
								Hardwood							
85	LT	3	HS	45	5	40	50	Conifer	2						
								Hardwood							
85	RT	1	HT	0	90	20	75	Conifer							
								Hardwood				1			
85	RT	2	HS	0	90	20	80	Conifer							
								Hardwood		1					
85	RT	3	HS	25	85	50	50	Conifer							
								Hardwood	1						
90	LT	1	HS	40	100	15	70	Conifer							
								Hardwood			2				
90	LT	2	HS	20	100	25	75	Conifer	1	4					
								Hardwood							

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		
90	LT	3	HS	20	65	60	40	Conifer							
								Hardwood							
90	RT	1	HT	0	100	50	45	Conifer							
								Hardwood							
90	RT	2	HT	0	100	55	45	Conifer							
								Hardwood	2						
90	RT	3	HT	0	95	55	45	Conifer							
								Hardwood	3						
102	LT	1	LT	0	100	60	40	Conifer							
								Hardwood		1					
102	LT	2	HT	0	100	70	30	Conifer							HARD TO TELL GRASS. LOTS OF
								Hardwood	1	1	1				
102	LT	3	HT	0	100	80	20	Conifer							
								Hardwood			1				
102	RT	1	HS	25	90	20	80	Conifer		1					
								Hardwood		2					
102	RT	2	HS	20	90	50	50	Conifer		1					
								Hardwood		1	1				
102	RT	3	HS	20	90	40	60	Conifer		1					
								Hardwood			1				
110	LT	1	LT	0	100	50	50	Conifer							
								Hardwood	1						
110	LT	2	HT	0	100	30	70	Conifer							
								Hardwood	1						
110	LT	3	HT	0	100	15	80	Conifer				1			
								Hardwood	1						
110	RT	1	LT	0	95	60	40	Conifer							
								Hardwood							
110	RT	2	HS	40	95	70	30	Conifer							
								Hardwood	3						
110	RT	3	HS	50	80	60	40	Conifer							
								Hardwood							

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 2/22/2011

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 444 STREAM: COAL CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	1	RI	00	29.7		START SIGN ON RB ALDER NEXT TO SPAWNING SURVEY START SIGN
1	2	SL	00	30.4		H=.70
1	3	LP	00	50.4		BEDROCK IS HARDPAN
1	4	RI	00	68	BC	PEBBLE CREEK MAINLINE ROAD CROSSES AT CONCRET BRIDGE
1	5	LP	01	146.7		COHO CARCASS
1	7	LP	00	167.4	BV	BV IS CHEWED TREES BEDROCK IS HARDPAN
1	10	RI	00	277.2	BV	BEDROCK IS HARDPAN
1	11	RI	00	319.7	/SS	
1	12	LP	00	384.7	SS/BV	BEDROCK IS HARDPAN BV IS CHEWED TREES AND STICKS
1	13	LP	00	420.1		BDRK IS HARDPAN
1	14	RI	00	551.3	/SS	RIFFLE CONTAINS DEEP POCKETS AROUND LWD
1	16	SL	00	570.2		H=.35

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 2/22/2011

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 444 STREAM: COAL CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	17	LP	00	620.2	/LA SS	
1	19	LP	01	688.4	DJ	UNDERCUT 1M
1	21	RI	00	728.6		BDRK IS HARDPAN
1	22	LP	00	801		BDRK IS HARDPAN METRIC AT TOP OF UNIT
1	23	RI	00	823.9		BDRK IS HARDPAN
1	24	LP	00	902.7	BV DJ	LOTS OF BV THROUGHOUT SURVEY COHO CARCASS
1	25	RI	00	962.7		CUTTHROAT IN UNIT
1	26	LP	00	978.9	/SS	
1	28	LP	00	1038.9	SS/	
1	33	LP	00	1193.6	/SS	
1	34	RI	00	1272.2	SS/	
1	36	RI	00	1333.7	/SS	

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 2/22/2011

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 444 STREAM: COAL CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	37	LP	00	1349.3	/LA	
1	39	SC	00	1373.3		H=.20
1	40	LP	00	1430.3	/SS DJ	BEDROCK IS HARDPAN
1	41	RI	00	1458.6		COHO BITS 'N PIECES
1	43	LP	00	1529.9	SS/	2 COHO CARCASSES
1	45	LP	00	1575.6		COHO CARCASS
1	46	RI	00	1608.5		BEDROCK IS HARDPAN
1	49	RI	00	1786.5	BV	
1	50	LP	00	1817		BDRK IS HARDPAN
1	51	RI	00	1862	BV	
1	57	RI	01	2166.5	TJ/	END SPAWNING SURVEY SIGN ON LB ALDER
1	66	RI	01	2695.7		THIS UNIT REALLY IS THIS LONG - NOT A TYPO

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 2/22/2011

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 444 STREAM: COAL CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	71	LP	01	2755.7	DJ	
1	74	RI	00	2892.4	BV	3 COHO CARCASSES
1	75	LP	00	2906.7	/SS	
1	77	LP	00	3061.2		COHO CARCASS
1	79	LP	01	3110.2	DJ BV	BEAVER DEN IN BANK
1	84	LP	00	3237.7	BV	
1	85	RI	00	3264.7	BV	
1	86	PP	00	3270.7		SLOPE IS ZERO
1	87	SD	00	3271.4	BV	H=.70 DAM BUILT AGAINST EXISTING LOGS
1	88	DP	00	3316.5	BV	
1	89	LP	00	3403.9	BV	2 CARCASSES POSSIBLE HS?
1	91	LP	00	3520.7	CS	CS IS RIP RAP 6 INCHES OF FRESH SNOW ON GROUND

OREGON DEPT OF FISH AND WILDLIFE
HABITAT INVENTORY

OREGON PLAN MONITORING SITE
SURVEY DATE: 2/22/2011

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 444 STREAM: COAL CREEK

REACH	UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTES
1	93	LP	00	3595.6		POSSIBLE HS
1	96	RI	01	3702.8	HS	HS IS WOOD
1	101	LP	00	3769.9	BV	
1	102	RI	00	3801.5	/LA	
1	105	LP	00	3850.6		BEDROCK IS HARDPAN
1	106		00	3895.5		PULLED ROAD CROSSING SNORKEL SURVEY 1999 END SIGN ON LB ALDER JUST AI CROSSING
1	107	LP	00	3909.9	HS	HS IS WOOD
1	108	RI	01	3955.9	HS	HS IS WOOD
1	112	LP	00	4065.4	BV	
1	116	LP	02	4134.9	HS	COHO CARCASS HS IS WOOD
1	117	RI	00	4183.9		DEEP POCKETS AROUND LWD
1	120	RI	01	4228.4	/TJ	END SURVEY AT RB TRIB JUST DOWNSTREAM OF CC, SI RB ALDER

1-NC 444 Coal Creek (Nehalem River Basin) 2011 Winter Restoration Survey Photographs



Unit 10 - Downstream view.



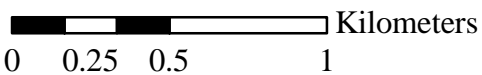
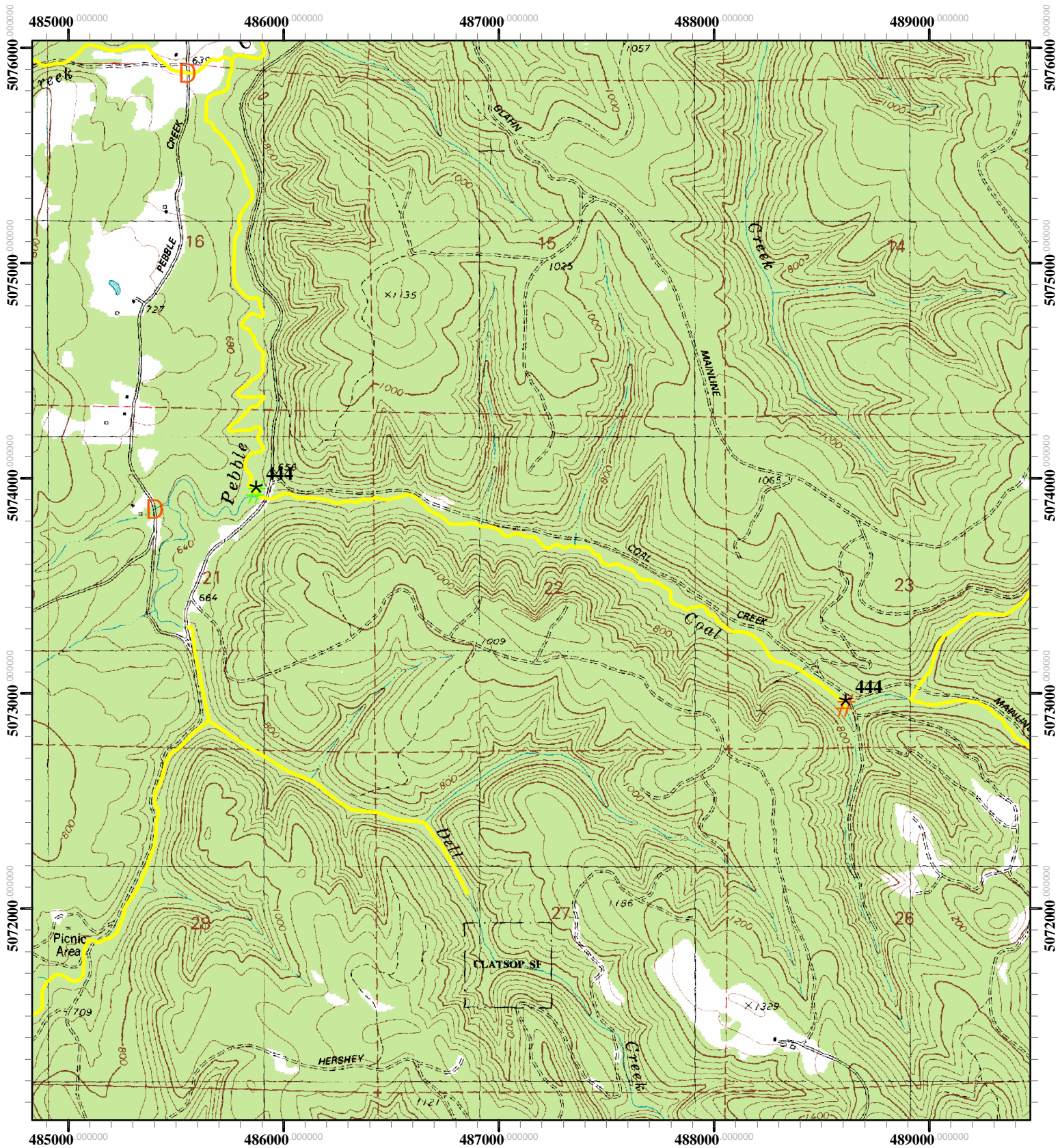
Unit 40 - Downstream view.







Unit 66 - Downstream view.
Nick Chambers in photo.



Unit 92 - Upstream view.
Nick Chambers in photo.



Restoration Site ID: 444
 Stream: Coal Creek
 T04N- R04W - S21
 USGS Map: Vernonia
 Basin: Nehalem

-  Proposed Pre-Tx REST Start Point
-  Proposed Pre-Tx REST End Point
-  Potential Barrier
-  Spawning Survey Segments

