

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

STREAM: Baxter Creek (NC-2)  
BASIN: Nestucca River  
SURVEY TYPE: Post -Tx  
DATE: 7/7/2006  
SURVEY CREW: Annette Garrigues, Jeff Snyder  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 3.11 km<sup>2</sup>  
USGS MAPS: Dolph  
ECOREGION: Coast Range Volcanic

**GENERAL DESCRIPTION:**

The Baxter Creek habitat survey extended 658 meters. The channel was constrained alternating hillslopes and terraces within a broad valley floor. The average valley width index was 9 (range: 4-11). Land uses for the reach were large timber (30-50 cm dbh) and second growth timber (15-30 cm dbh). The average unit gradient was 1.6 percent. Riffles (69%) and scour pools (28%) dominated stream habitat. Gravel (38%) and fines (38%) dominated stream substrate. Wood volume was low at 13.4 m<sup>3</sup>/100m.

**COMMENTS:**

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

The crew noted several habitat structures during the survey.

Coho fry were observed throughout the surveyed reach.

Stream            Baxter Creek (NC-2)  
 Basin             Nestucca River  
 Treatment        Large Wood

	ODFW Benchmark		Pre 7/20/99	Post 6/21/00	Post 7/7/06		
<b>Habitat Variable</b>	<b>Desirable</b>	<b>Undesirable</b>					
% Pool Area	>35%	<10%	33.8	31.2	28.8		
Number of Pools			28	28	<b>17</b>		
Deep Pools/km (>1.0 m)			0	0	0		
% Off-Channel			13.0	14.7	<b>1.0</b>		
LWD – Pieces/100m	>20	<10	33.1	<b>9.8</b>	<b>5.8</b>		
LWD – Volume/100m	>30	<20	24.4	22.2	<b>13.4</b>		
LWD – Key Pieces/100m	>3	<1	0.3	<b>2.1</b>	<b>2.0</b>		
Large Wood Jams/km			17.9	<b>11.8</b>	<b>4.6</b>		
% Riffle Fines	<10	>20	32	12	26		
% Riffle Gravel	>35	<15	50	32	42		
% Bedrock			2	3	3		

**Bold** is noticeable change

Comments: Since the treatment was large wood assembled in complex jams, it is surprising that there was a decrease in some of those variables. Large wood pieces decreased with treatment, and then again with time, while wood volume only decreased slightly with treatment and then has dropped off with time. Key pieces, however, increased as expected with treatment and have stayed the same over time. What I suspect actually happened is that the pre-treatment survey crew incorrectly tallied the number and volume of wood pieces. Since treatment, little additional large wood has been recruited and pieces have been moving out of the system. Deep pools were unchanged. The reach had a moderate amount of pool area, but that has tapered off slightly instead of increasing with the treatment. That may be a symptom of wood numbers decreasing or a result of treatments in an area of volcanic geology. Substrates have not significantly changed with time.

REACH 1

T06S-R09W-S28NE

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	9.0	VWI Range:	4 - 11

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 Channel	658	1,663	0
Secondary Channel	0	0	0
Off-Channel Units	13	16	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 5
Width: 2.5	Width: 4.3	5.1 ( 3.4 - 6.3 )	9.5 ( 5.3 - 15.9 )
Depth: 0.31	Height: 0.3	0.6 ( 0.5 - 0.7 )	1.3 ( 0.8 - 1.9 )

W:D ratio: 14.2

Entrenchment (ACW:FPW ratio): 1.2

Stream Flow Type: MF

Habitat Units/100m (total channel length): 6.6

Average Unit Gradient: 1.6%

Habitat Units/100m (primary channel length): 6.7

Water temperature (°C): 11.0 - 11.0

**Riparian, Bank, and Wood Summary**

	<u>Primary</u>	<u>Secondary</u>
Land Use:	LT	ST
Riparian Vegetation:	C30	M30

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:	14%	Reach avg: 97%
Undercut Banks:	25%	Range: 81 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	38	5.8
Volume (m <sup>3</sup> ):	88	13.4
Key pieces (>=12m x 0.60m):	13	2.0

HABITAT INVENTORY

Report Date: 3/5/2007

Survey Date:

7/7/2006

REACH 1		T06S-R09W-S28NE					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
GLIDE	1	12	3.0	0.25	37	0	0	45	45	10	0	0
POOL-BACKWATER	1	13	1.2	0.20	16	0	30	40	30	0	0	0
POOL-LATERAL SCOUR	15	161	2.8	0.53	453	2	19	41	32	4	0	3
POOL-TRENCH	1	8	1.8	0.45	15	0	0	40	0	0	0	60
RIFFLE	24	473	2.5	0.19	1,151	43	0	26	42	28	2	1
STEP/COBBLE	2	4	1.9	0.10	7	0	0	0	55	45	0	0
<b>Total:</b>	<b>44</b>	<b>671</b>	<b>2.5</b>	<b>0.31</b>	<b>1,678</b>	<b>45</b>	<b>Avg: 7</b>	<b>31</b>	<b>38</b>	<b>19</b>	<b>1</b>	<b>3</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	1	13	1.2	0.20	16	0.93%	0	0.0	
Scour Pools	16	169	2.8	0.52	468	27.89%	2	0.4	
Glides	1	12	3.0	0.25	37	2.22%	0	0.0	
Riffles	24	473	2.5	0.19	1,151	68.55%	43	3.7	
Rapids	0	0			0	0.00%	0	0.0	
Cascades	0	0			0	0.00%	0	0.0	
Step/Falls	2	4	1.9	0.10	7	0.41%	0	0.0	
Dry	0	0			0	0.00%	0	0.0	
Culverts	0	0			0	0.00%	0	0.0	

POOL SUMMARY			
	Total	Total of all Channel Lengths # / Km	Primary Channel Length # / Km
All Pools:	17	25.3	25.8
Pools >=1m deep:	0	0.0	0.0
Complex pools (LWD pieces>=3):	6	8.9	9.1
Pool frequency (channel widths/pool):	9.2		
Residual pool depth (avg):	0.49		

OREGON DEPARTMENT OF FISH AND WILDLIFE  
HABITAT INVENTORY

BAXTER CREEK POST-TX  
GCG: 1-NC SITE ID: 2

Survey Date 7/7/2006  
Report Date: 3/5/2007

RIPARIAN ZONE  
VEGETATION SUMMARY

REACH 1

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

Total hardwoods/1000	366
Total conifers/1000 ft	528
Total conifers >20" dbh/1000 ft	41
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	1.0	0.3	0.0	0.7	0.0	1.7	1.0
15-30cm	0.3	1.0	0.7	1.7	2.7	1.0	3.7	3.7
30-50cm	0.0	1.3	1.7	0.0	1.0	0.0	2.7	1.3
50-90cm	0.0	0.0	0.0	0.0	0.7	0.0	0.7	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	1.0	3.3	2.7	1.7	5.0	1.0	2.9	2.0

Canopy closure and ground cover

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Canopy closure	81	81	81
Shrub cover	22	8	13
Grass/forb cover	33	28	35

Predominant landform in each zone

	Zone 1 0-10 meters (%)	Zone 2 10 - 20 meters (%)	Zone 3 20 - 30 meters (%)
Hillslope	17	17	50
High terrace	83	67	50
Low terrace	0	0	0
Floodplain	0	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	17	0
Riprap	0	0	0
Surface slope (%)	17	17	24

**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	528
Total conifers >20" dbh/1000 ft	41
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	1.7	1.0
15-30cm	3.7	3.7
30-50cm	2.7	1.3
50-90cm	0.7	0.0
>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		
12	RT	1	HT	22	90	30	70	Conifer							TRANS
								Hardwood	1	2	1				
12	RT	2	RB	9	90	0	80	Conifer							HS/RB, PHOTOS #1-4
								Hardwood		1					
12	LF	3	HS	25	40	40	30	Conifer							HS/RB
								Hardwood							
12	LF	2	HT	20	70	20	40	Conifer							HT/RB
								Hardwood		4					
12	LF	1	HT	20	80	50	20	Conifer							TRANS, UTM 0437838- 4995509-2D
								Hardwood		1					
12	RT	3	HS	55	85	10	70	Conifer							
								Hardwood		3					
22	LF	1	HT	3	85	10	30	Conifer							UTM 0432900- 4995702-2D
								Hardwood							
22	RT	3	HT	0	90	0	10	Conifer		1	1	1			
								Hardwood							
22	RT	2	HT	2	85	10	10	Conifer			1				
								Hardwood							
22	RT	1	HT	10	80	10	20	Conifer							
								Hardwood			2				
22	LF	3	HT	6	90	0	0	Conifer		2		1		HS/HT	
								Hardwood							
22	LF	2	HT	4	90	0	0	Conifer		1	3				
								Hardwood							
40	RT	3	HS	57	90	10	60	Conifer		3					
								Hardwood							
40	LF	1	HT	10	75	20	20	Conifer	2	1				UTM 0438044- 4995705-3D	
								Hardwood							
40	LF	2	HT	15	80	10	0	Conifer	1	1					
								Hardwood							
40	LF	3	HT	0	90	20	40	Conifer	2	2	2				
								Hardwood							
40	RT	1	HS	39	75	10	40	Conifer						HS/HT, RED- LEGGED FROG	
								Hardwood	2		1				
40	RT	2	HS	54	70	10	40	Conifer			1				
								Hardwood							

# Comment Summary

## Restoration Monitoring Sites 2006

MONITORING AREA: 1-NC      SITE ID: 2      BAXTER CREEK POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RI	00	21.3			T=11.0C AT 1001 HRS
3	LP	00	59.3		CA,MT,VW=37M	COHO
7	RI	00	98.4		COHO FRY	COHO
8	LP	00	107	HS		COHO
10	LP	00	123.2	HS		COHO
12	LP	00	149		CT,CT, D15,C15	COHO, RIPARIAN #1
14	LP	00	187.5			COHO
16	LP	00	215	HS, DJ		COHO
18	LP	00	236.4			COHO
19	RI	01	263.9			COHO
20	BW	10	263.9		COHO	COHO
21	RI	00	289.3			COHO
22	RI	00	314.9		C30 80%, D15 20%, CA,MT	RIPARIAN #2
23	LP	00	327	HS		COHO
25	LP	00	364.2			COHO
26	SC	00	366.5		H=0.15M	H=0.15M
27	LP	00	371.8	HS, DJ	COHO	COHO
30	LP	00	437.3			COHO
31	GL	00	449.7		MORE SHRUBS	COHO
32	RI	00	466			COHO
33	LP	00	471.8			COHO

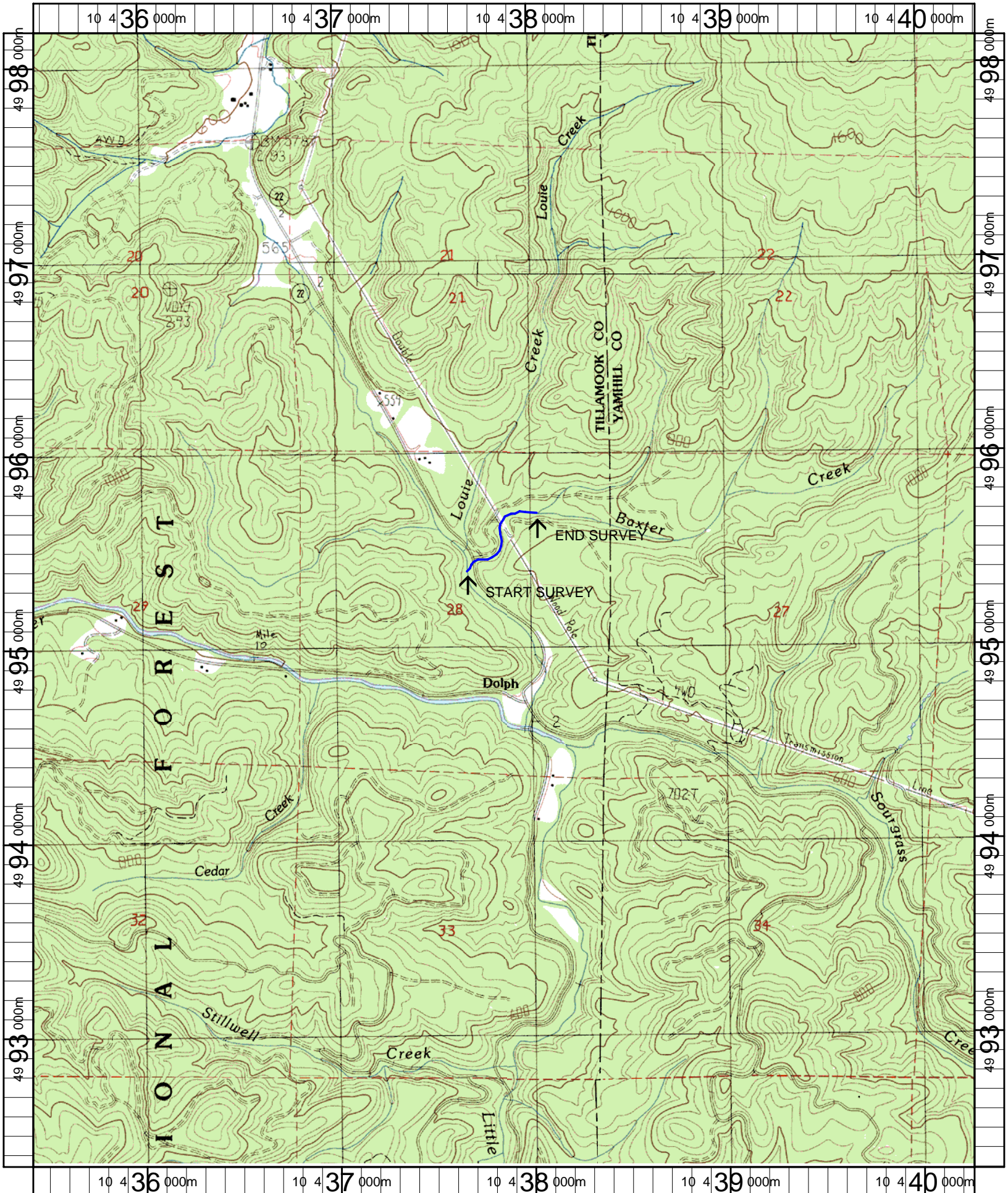


# Comment Summary

## Restoration Monitoring Sites 2006

MONITORING AREA: 1-NC      SITE ID: 2      BAXTER CREEK POST-TX

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
34	RI	00	489.5	SS/	SS/	
35	TP	00	497.6	SS/		COHO
36	SC	00	499		H=0.10M	H=0.15M
38	LP	00	531.4		DEER, ELK	COHO
40	RI	00	579.5		CA,MT,C30 60%, D15 40%	RIPARIAN #3
42	LP	00	626.7			COHO
44	LP	00	658.3		FROG, ELK	COHO, END JUST BEFOR



Name: DOLPH  
 Date: 2/27/2007  
 Scale: 1 inch equals 2000 feet

Location: 10 0437861 E 4995240 N  
 Caption: BAXTER CREEK RESTORATION SITE (NC-2) - NESTUCCA BASIN