

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

STREAM: Wolfe Creek (NC-367)  
BASIN: Nestucca River  
SURVEY TYPE: Pre-Tx  
DATE: March 22, 2007  
SURVEY CREW: Matthew Strickland, Sharon Tippery  
REPORT PREPARED BY: Paul Jacobsen  
BASIN AREA: 7.1 km<sup>2</sup>  
USGS MAPS: Beaver  
ECOREGION: Coast Range Volcanic

**GENERAL DESCRIPTION:**

The Wolfe Creek habitat survey extended 3,016 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 8.3 (range: 1-20). Land use for the reach was light grazing and rural residential. The average unit gradient was 2.3 percent. Riffles (58%) and scour pools (20%) dominated stream habitat. Gravel (46%), sand (23%) and cobble (18%) dominated stream substrate. Wood volume was very low at 7.1 m<sup>3</sup>/100m.

**COMMENTS:**

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

A metal culvert (2.8m x 3.2m) was noted at 35 meters into the survey reach.

Beaver activity, a Downy Woodpecker, an American Robin, elk trails and a deer were observed during the survey.

REACH 1

T03S-R09W-S28NW

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         | 8.3 | VWI Range:                | 1 - 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 Channel   | 3,016             | 13,988           | 0                |
| Secondary Channel | 195               | 424              | 0                |
| Off-Channel Units | 227               | 247              | 0                |

Channel Dimensions (m)

| <u>Wetted</u> | <u>Active</u> | <u>Floodprone</u> n = 13 | <u>First Terrace</u> n = 13 |
|---------------|---------------|--------------------------|-----------------------------|
| Width: 4.3    | Width: 7.0    | 11.4 ( 7 - 24 )          | 14.1 ( 7.5 - 28 )           |
| Depth: 0.40   | Height: 0.5   | 1.1 ( 1 - 1.2 )          | 1.3 ( 1.2 - 1.6 )           |

W:D ratio: 13.1  
 Stream Flow Type: MF  
 Average Unit Gradient: 2.3%  
 Water temperature (°C): 10.0 - 10.0

Entrenchment (ACW:FPW ratio): 1.6  
 Habitat Units/100m (total channel length): 4.7  
 Habitat Units/100m (primary channel length): 5.4

**Riparian, Bank, and Wood Summary**

|                      | <u>Primary</u> | <u>Secondary</u> |
|----------------------|----------------|------------------|
| Land Use:            | LG             | RR               |
| Riparian Vegetation: | D15            | 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):  | 273          | 9.1                                 |
| Volume (m <sup>3</sup> ):   | 213          | 7.1                                 |
| Key pieces (>=12m x 0.60m): | 6            | 0.2                                 |

OREGON DEPT OF FISH AND WILDLIFE

WOLFE CREEK PRE-TX (1-NC, 367)

HABITAT INVENTORY

Report Date: 4/25/2007

Survey Date:

3/26/2007

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HABITAT DETAIL

| Habitat Type        | Number<br>Units | Total<br>Length<br>(m) | Avg<br>Width<br>(m) | Avg<br>Depth<br>(m) | Total<br>Area<br>(m <sup>2</sup> ) | Large<br>Boulders<br>(#>0.5m) | Substrate<br>Percent Wetted Area |     |      |     |      |      |
|---------------------|-----------------|------------------------|---------------------|---------------------|------------------------------------|-------------------------------|----------------------------------|-----|------|-----|------|------|
|                     |                 |                        |                     |                     |                                    |                               | S/O                              | Snd | Grvl | Cbl | Bldr | Bdrk |
|                     |                 |                        |                     |                     |                                    |                               |                                  |     |      |     |      |      |
| CASCADE/BOULDERS    | 5               | 59                     | 0.9                 | 0.08                | 51                                 | 0                             | 8                                | 28  | 53   | 11  | 0    | 0    |
| CULVERT CROSSING    | 1               | 17                     | 1.5                 | 0.40                | 25                                 | 0                             | 5                                | 10  | 25   | 30  | 20   | 10   |
| POOL-BACKWATER      | 4               | 25                     | 1.9                 | 0.53                | 44                                 | 0                             | 17                               | 62  | 14   | 6   | 1    | 0    |
| POOL-DAMMED         | 2               | 28                     | 6.5                 | 0.75                | 184                                | 0                             | 15                               | 58  | 28   | 0   | 0    | 0    |
| POOL-ISOLATED       | 1               | 3                      | 1.3                 | 0.30                | 4                                  | 0                             | 10                               | 40  | 40   | 10  | 0    | 0    |
| POOL-LATERAL SCOUR  | 49              | 566                    | 5.0                 | 0.74                | 2,856                              | 0                             | 10                               | 31  | 40   | 14  | 3    | 2    |
| POOL-PLUNGE         | 3               | 17                     | 5.6                 | 0.92                | 98                                 | 0                             | 7                                | 26  | 42   | 13  | 5    | 8    |
| POOL-STRAIGHT SCOUR | 1               | 8                      | 5.2                 | 0.60                | 40                                 | 0                             | 10                               | 30  | 25   | 15  | 5    | 15   |
| RAPID/BEDROCK       | 1               | 60                     | 5.8                 | 0.35                | 348                                | 0                             | 0                                | 11  | 16   | 16  | 5    | 53   |
| RAPID/BOULDERS      | 18              | 545                    | 3.7                 | 0.21                | 2,200                              | 0                             | 4                                | 14  | 51   | 21  | 8    | 2    |
| RIFFLE              | 57              | 2,007                  | 4.2                 | 0.23                | 8,314                              | 0                             | 4                                | 16  | 53   | 22  | 4    | 1    |
| RIFFLE W/ POCKETS   | 1               | 46                     | 5.1                 | 0.25                | 235                                | 0                             | 0                                | 16  | 53   | 26  | 5    | 0    |
| STEP/BEDROCK        | 2               | 5                      | 2.3                 | 0.15                | 13                                 | 0                             | 0                                | 7   | 15   | 12  | 5    | 61   |
| STEP/COBBLE         | 10              | 47                     | 5.3                 | 0.22                | 231                                | 0                             | 1                                | 10  | 54   | 32  | 3    | 2    |
| STEP/LOG            | 5               | 3                      | 3.0                 | 0.14                | 10                                 | 0                             | 3                                | 30  | 57   | 10  | 0    | 0    |
| STEP/STRUCTURE      | 2               | 2                      | 5.2                 | 0.13                | 7                                  | 0                             | 5                                | 22  | 36   | 15  | 3    | 20   |
| <b>Total:</b>       | 162             | 3,438                  | 4.3                 | 0.40                | 14,658                             | 0                             | <b>Avg:</b> 6                    | 23  | 46   | 18  | 4    | 3    |

HABITAT SUMMARY

| Habitat Group     | Number<br>Units | Total<br>Length<br>(m) | Avg<br>Width<br>(m) | Avg<br>Depth<br>(m) | Wetted Area       |         | Large Boulders |                          |
|-------------------|-----------------|------------------------|---------------------|---------------------|-------------------|---------|----------------|--------------------------|
|                   |                 |                        |                     |                     | (m <sup>2</sup> ) | Percent | Number         | (# / 100m <sup>2</sup> ) |
| Dammed & BW Pools | 7               | 56                     | 3.1                 | 0.56                | 231               | 1.58%   | 0              | 0.0                      |
| Scour Pools       | 53              | 591                    | 5.0                 | 0.75                | 2,993             | 20.42%  | 0              | 0.0                      |
| Glides            | 0               | 0                      |                     |                     | 0                 | 0.00%   | 0              | 0.0                      |
| Riffles           | 58              | 2,053                  | 4.2                 | 0.23                | 8,548             | 58.32%  | 0              | 0.0                      |
| Rapids            | 19              | 605                    | 3.8                 | 0.22                | 2,548             | 17.39%  | 0              | 0.0                      |
| Cascades          | 5               | 59                     | 0.9                 | 0.08                | 51                | 0.35%   | 0              | 0.0                      |
| Step/Falls        | 19              | 57                     | 4.3                 | 0.18                | 261               | 1.78%   | 0              | 0.0                      |
| Dry               | 0               | 0                      |                     |                     | 0                 | 0.00%   | 0              | 0.0                      |
| Culverts          | 1               | 17                     | 1.5                 | 0.40                | 25                | 0.17%   | 0              | 0.0                      |

REACH 1

T03S-R09W-S28NW

REACH 1

**POOL SUMMARY**

|                                       | <u>Total</u> | Total of all Channel Lengths<br><u># / Km</u> | Primary Channel Length<br><u># / Km</u> |
|---------------------------------------|--------------|---|---|
| All Pools:                            | 60           | 17.5  | 19.9                                    |
| Pools >=1m deep:                      | 2            | 0.6   | 0.7                                     |
| Complex pools (LWD pieces>=3):        | 16           | 4.7   | 5.3                                     |
| Pool frequency (channel widths/pool): | 8.2          |   |   |
| Residual pool depth (avg):            | 0.50         |   |   |

# Comment Summary

## Restoration Monitoring Sites 2007

MONITORING AREA: 1-NC      SITE ID: 367      WOLFE CREEK PRE-TX

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS  | NOTE ESTIMATOR                 |
|-------|------|------|-----------|-----------|--------------------------------|
| 3     | SS   | 00   | 19        | CC        | CC DIA=2.8, METAL, 3.2m TALL   |
| 4     | CC   | 00   | 35.5      | CC        |                                |
| 15    | LP   | 00   | 287       | BV        |                                |
| 18    | LP   | 00   | 309.9     | BV        |                                |
| 19    | RI   | 01   | 361.1     | SS/       |                                |
| 25    | LP   | 00   | 438.1     | DJ, BV    |                                |
| 41    | SC   | 00   | 634.4     | CS/       | METAL CRATES FILLED WITH COBBL |
| 42    | LP   | 00   | 646.4     |           | DOWNY WOODPECKER, AMER ROBIN   |
| 43    | RI   | 00   | 663.4     | BV        |                                |
| 46    | LP   | 00   | 727.8     | BC, CS/CS | BOULDER CS UNDER BRIDGE        |
| 47    | RI   | 01   | 747.9     | TJ/       |                                |
| 48    | RI   | 11   | 747.9     |           | T=11.0, ACW=2.0                |
| 49    | RI   | 00   | 787.9     | WL        | ELK TRAIL                      |
| 50    | SS   | 00   | 788.6     |           | METAL CRATES FILLED WITH GRVL  |
| 52    | RI   | 00   | 815.1     |           | RIPARIAN SEEDLINGS PLANTED     |
| 54    | RI   | 00   | 880.8     |           | ROCK FILLED METAL CRATES       |
| 55    | RI   | 00   | 930.8     | BC        | RIPARIAN PLANTING, BRIDGE      |
| 59    | RI   | 01   | 1098.8    | SS/TJ     | SWAB CREEK                     |
| 60    | RB   | 11   | 1098.8    |           | ACW=3.8,T=10.5, SWAB CREEK     |
| 80    | RI   | 00   | 1511.1    | /SS       |                                |
| 81    | RI   | 00   | 1561.1    | /SS       |                                |

# Comment Summary

## Restoration Monitoring Sites 2007

MONITORING AREA: 1-NC      SITE ID: 367      WOLFE CREEK PRE-TX

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS | NOTE ESTIMATOR  |
|-------|------|------|-----------|----------|-----------------|
| 82    | RI   | 01   | 1621.1    | TJ/      |                 |
| 83    | RI   | 11   | 1621.1    |          | T=12, ACW=1.10  |
| 84    | RI   | 01   | 1660.1    | /TJ      |                 |
| 86    | RP   | 00   | 1706.1    |          | MAX DEPTH=0.6   |
| 91    | RB   | 01   | 1836      | TJ/      |                 |
| 92    | CB   | 00   | 1848      |          | T=11, ACW=1.2   |
| 100   | LP   | 01   | 1958.9    | BV, /TJ  |                 |
| 101   | CB   | 11   | 1958.9    |          | T=10.0, ACW=1.6 |
| 104   | RB   | 01   | 2026.5    | TJ/      |                 |
| 105   | RB   | 11   | 2026.5    |          | T=10.5, ACW=1.3 |
| 106   | PP   | 00   | 2032.9    | /SS      |                 |
| 110   | RB   | 01   | 2134.7    | /TJ      |                 |
| 111   | CB   | 11   | 2134.7    |          | T=11.0, ACW=1.1 |
| 131   | RI   | 01   | 2408.3    | WL, TJ/  | DEER IN CREEK   |
| 132   | RB   | 11   | 2408.3    |          | T=11.0, ACW=0.9 |
| 133   | RB   | 01   | 2430.3    | /SS      |                 |
| 139   | LP   | 00   | 2504.4    | /SS      |                 |
| 140   | RB   | 01   | 2531.4    | /TJ      |                 |
| 141   | RI   | 11   | 2531.4    |          | T=11.0, ACW=0.9 |
| 142   | LP   | 01   | 2546.9    | /TJ      |                 |
| 143   | RB   | 11   | 2546.9    |          | T=11.0, ACW=1.5 |

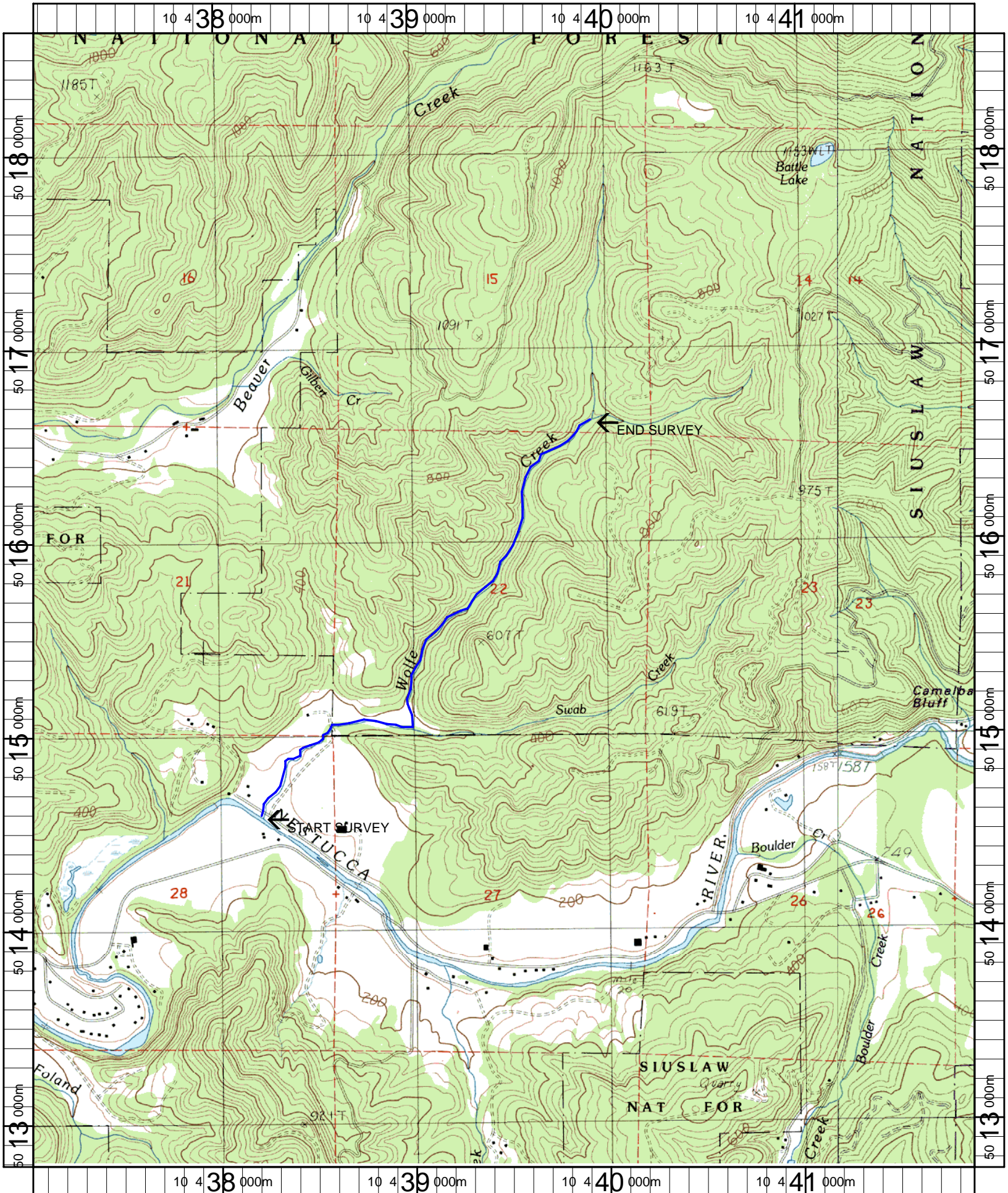
# Comment Summary

## Restoration Monitoring Sites 2007

MONITORING AREA: 1-NC      SITE ID: 367      WOLFE CREEK PRE-TX

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS | NOTE ESTIMATOR  |
|-------|------|------|-----------|----------|-----------------|
| 144   | RI   | 01   | 2592.9    | TJ/      |                 |
| 145   | CB   | 11   | 2592.9    |          | T=10.5, ACW=1.9 |
| 147   | RI   | 00   | 2625.4    | /SS      |                 |
| 157   | RI   | 01   | 2849      | TJ/      |                 |
| 158   | CB   | 11   | 2849      |          | T=10.5, ACW=1.5 |





Name: BEAVER  
 Date: 1/9/2007  
 Scale: 1 inch equals 2000 feet

Location: 10 439474 E 5015692 N  
 Caption: WOLFE CREEK RESTORATION SITE - NESTUCCA BASIN