

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

STREAM: Wolfe Creek (NC-367)  
BASIN: Nestucca River  
SURVEY TYPE: Post-Tx  
DATE: March 5, 2008  
SURVEY CREW: Matt Strickland, Ryan Jacobsen  
REPORT PREPARED BY: Sharon Tippery  
BASIN AREA: 7.1 km<sup>2</sup>  
USGS MAPS: Beaver  
ECOREGION: Coast Range Volcanic

**GENERAL DESCRIPTION:**

Reach 1 of the Wolfe Creek habitat survey extended 1,524 meters. The channel was constrained by terraces in a broad valley floor. The average valley width index was 18.8 (range: 16-20). Land use for the reach was rural residential area and agriculture. The average unit gradient was 2.4 percent. Riffles (60%) and scour pools (23%) dominated stream habitat. Gravel (33%) and cobble (28%) dominated stream substrate. Wood volume was 30.5m<sup>3</sup>/100m.

Reach 2 of the Wolfe Creek habitat survey extended 1,647 meters. The channel was alternately constrained by terrace and hillslope in a broad valley floor. The average valley width index was 5.1 (range: 4-7). Land use for the reach was second growth timber (15-30cm dbh) and large growth timber (30-50cm dbh). The average unit gradient was 3.0 percent. Riffles (48%) and rapids (31%) dominated stream habitat. Cobble (33%) and gravel (28%) dominated stream substrate. Wood volume was 35.0m<sup>3</sup>/100m.

**COMMENTS:**

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

The crew noted several habitat structures and a riparian planting during the survey. Five active water diversions were noted in the survey.

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

**WOLFE CREEK  
GCG: 1-NC SITE ID: 367**

**Survey Date: 3/4/2008**

**Report Date: 5/6/2008**

**T03S-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     | 100%    |
| Moderate V-shape           | 0%   | Multiple Terraces         | 0%      |
| Open V-shape               | 0%   | Wide Floodplain           | 0%      |
| Valley Width Index         | 18.8 | VWI Range:                | 16 - 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     | 1,524             | 6,131            | 0                |
| Secondary   | 301               | 558              | 1                |

Channel Dimensions (m)

| <u>Wetted</u> | <u>Active</u> | <u>Floodprone</u> n = 6 | <u>First Terrace</u> n = 6 |
|---------------|---------------|-------------------------|----------------------------|
| Width: 3.6    | Width: 5.6    | 13.0 ( 5.8 - 35 )       | 18.7 ( 10 - 38 )           |
| Depth: 0.40   | Height: 0.4   | 0.8 ( 0.8 - 0.9 )       | 1.5 ( 0.9 - 3.2 )          |

W:D ratio: 13.7

Stream Flow Type: MF

Average Unit Gradient: 2.4%

Water temperature (°C): 6.0 - 6.0

Entrenchment (ACW:FPW ratio): 2.2

Habitat Units/100m (total channel length): 5.3

Habitat Units/100m (primary channel length): 6.3

**Riparian, Bank, and Wood Summary**

|                      | <u>Primary</u> | <u>Secondary</u> |
|----------------------|----------------|------------------|
| Land Use:            | RR             | AG               |
| Riparian Vegetation: | D30            | G                |

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):  | 200          | 13.1                                |
| Volume (m <sup>3</sup> ):   | 465          | 30.5                                |
| Key pieces (>=12m x 0.60m): | 46           | 3.0                                 |

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

**WOLFE CREEK  
GCG: 1-NC SITE ID: 367**

**Survey Date: 3/4/2008**

**Report Date: 5/6/2008**

**T03S-R09W-S28NE**

**REACH 2**

**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         | 5.1 | VWI Range:                | 4 - 7 |

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     | 1,647             | 5,825            | 0                |
| Secondary   | 248               | 314              | 0                |

Channel Dimensions (m)

| <u>Wetted</u> | <u>Active</u> | <u>Floodprone</u> n = 7 | <u>First Terrace</u> n = 7 |
|---------------|---------------|-------------------------|----------------------------|
| Width: 3.3    | Width: 5.3    | 7.9 ( 6.3 - 11.9 )      | 9.9 ( 6.8 - 18 )           |
| Depth: 0.31   | Height: 0.3   | 0.6 ( 0.6 - 0.7 )       | 1.0 ( 0.8 - 1.3 )          |

W:D ratio: 16.6

Stream Flow Type: MF

Average Unit Gradient: 3.0%

Water temperature (°C): 8.0 - 8.0

Entrenchment (ACW:FPW ratio): 1.5

Habitat Units/100m (total channel length): 5.0

Habitat Units/100m (primary channel length): 5.8

**Riparian, Bank, and Wood Summary**

|                      | <u>Primary</u> | <u>Secondary</u> |
|----------------------|----------------|------------------|
| Land Use:            | ST             | LT               |
| Riparian Vegetation: | D30            | 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):  | 215          | 13.1                                |
| Volume (m <sup>3</sup> ):   | 577          | 35.0                                |
| Key pieces (>=12m x 0.60m): | 33           | 2.0                                 |

OREGON DEPT OF FISH AND WILDLIFE

WOLFE CREEK

HABITAT INVENTORY

GCG: 1-NC SITE ID: 367

Survey Date: 3/4/2008

Report Date: 5/6/2008

T03S-R09W-S28NE

REACH 1

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           |           |           |           |          |          |
|--------------------|-----------------|------------------------|---------------------|---------------------|------------------------------------|-------------------------------|---------------------|-----------|-----------|-----------|----------|----------|
|                    |                 |                        |                     |                     |                                    |                               | Percent Wetted Area |           |           |           |          |          |
|                    |                 |                        |                     |                     |                                    |                               | S/O                 | Snd       | Grvl      | Cbl       | Bldr     | Bdrk     |
| CASCADE/BEDROCK    | 1               | 16                     | 4.2                 | 0.20                | 67                                 | 0                             | 0                   | 5         | 19        | 29        | 14       | 33       |
| CULVERT CROSSING   | 1               | 23                     | 3.3                 | 0.30                | 76                                 | 0                             | 0                   | 15        | 20        | 40        | 25       | 0        |
| POOL-ALCOVE        | 1               | 4                      | 1.4                 | 0.25                | 5                                  | 0                             | 75                  | 15        | 10        | 0         | 0        | 0        |
| POOL-BACKWATER     | 11              | 59                     | 2.1                 | 0.42                | 123                                | 0                             | 21                  | 34        | 23        | 16        | 3        | 3        |
| POOL-DAMMED        | 3               | 30                     | 3.4                 | 0.67                | 103                                | 0                             | 10                  | 39        | 32        | 17        | 2        | 0        |
| POOL-LATERAL SCOUR | 29              | 350                    | 4.0                 | 0.64                | 1,421                              | 0                             | 6                   | 25        | 35        | 26        | 7        | 2        |
| POOL-PLUNGE        | 4               | 24                     | 5.8                 | 0.78                | 142                                | 0                             | 0                   | 37        | 30        | 22        | 11       | 0        |
| PUDDLED UNIT       | 1               | 16                     | 2.0                 | 0.05                | 32                                 | 0                             | 5                   | 19        | 52        | 19        | 5        | 0        |
| RAPID/BEDROCK      | 2               | 92                     | 4.1                 | 0.28                | 374                                | 0                             | 0                   | 7         | 14        | 24        | 17       | 38       |
| RAPID/BOULDERS     | 1               | 68                     | 3.6                 | 0.30                | 245                                | 0                             | 0                   | 11        | 16        | 37        | 21       | 16       |
| RIFFLE             | 30              | 1,085                  | 3.5                 | 0.20                | 3,840                              | 0                             | 2                   | 17        | 39        | 33        | 9        | 1        |
| RIFFLE W/ POCKETS  | 3               | 40                     | 4.4                 | 0.28                | 177                                | 0                             | 2                   | 22        | 33        | 35        | 8        | 0        |
| STEP/COBBLE        | 4               | 13                     | 5.4                 | 0.18                | 68                                 | 0                             | 0                   | 9         | 34        | 46        | 11       | 0        |
| STEP/LOG           | 5               | 6                      | 2.9                 | 0.22                | 18                                 | 0                             | 0                   | 29        | 33        | 31        | 6        | 0        |
| <b>Total:</b>      | <b>96</b>       | <b>1,825</b>           | <b>3.6</b>          | <b>0.40</b>         | <b>6,689</b>                       | <b>0</b>                      | <b>Avg: 6</b>       | <b>23</b> | <b>33</b> | <b>28</b> | <b>8</b> | <b>3</b> |

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 | 15              | 93                     | 2.3                 | 0.46                | 231               | 3.45%   | 0              | 0.0                      |
| Scour Pools       | 33              | 374                    | 4.2                 | 0.65                | 1,562             | 23.35%  | 0              | 0.0                      |
| Glides            | 0               | 0                      |                     |                     | 0                 | 0.00%   | 0              | 0.0                      |
| Riffles           | 33              | 1,125                  | 3.6                 | 0.21                | 4,016             | 60.04%  | 0              | 0.0                      |
| Rapids            | 3               | 160                    | 3.9                 | 0.28                | 619               | 9.25%   | 0              | 0.0                      |
| Cascades          | 1               | 16                     | 4.2                 | 0.20                | 67                | 1.00%   | 0              | 0.0                      |
| Step/Falls        | 9               | 19                     | 4.0                 | 0.20                | 86                | 1.29%   | 0              | 0.0                      |
| Dry               | 1               | 16                     | 2.0                 | 0.05                | 32                | 0.48%   | 0              | 0.0                      |
| Culverts          | 1               | 23                     | 3.3                 | 0.30                | 76                | 1.13%   | 0              | 0.0                      |

OREGON DEPT OF FISH AND WILDLIFE  
HABITAT INVENTORY

WOLFE CREEK  
GCG: 1-NC SITE ID: 367

Survey Date: 3/4/2008

Report Date: 5/6/2008

T03S-R09W-S28NE

REACH 1

POOL SUMMARY

|                                       | <u>Total</u> | <u>Total of all Channel Lengths<br/># / Km</u> | <u>Primary Channel Length<br/># / Km</u> |
|---------------------------------------|--------------|--|--|
| All Pools:                            | 48           | 26.3   | 31.5                                     |
| Pools >=1m deep:                      | 2            | 1.1  | 1.3                                      |
| Complex pools (LWD pieces>=3):        | 13           | 7.1  | 8.5                                      |
| Pool frequency (channel widths/pool): | 6.9          |  |  |
| Residual pool depth (avg):            | 0.42         |  |  |

**OREGON DEPARTMENT OF FISH AND WILDLIFE**

**WOLFE CREEK**

**HABITAT INVENTORY**

**GCG: 1-NC**

**SITE ID: 367**

**Survey Date: 3/4/2008**

**Report Date: 5/6/2008**

**T03S-R09W-S28NE**

**REACH 2**

**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   | 1               | 9                      | 0.5                 | 0.07                | 4                                  | 0                             | 15                               | 40        | 35        | 10        | 0         | 0        |
| POOL-BACKWATER     | 3               | 14                     | 2.2                 | 0.43                | 32                                 | 0                             | 40                               | 50        | 7         | 3         | 0         | 0        |
| POOL-DAMMED        | 1               | 9                      | 5.2                 | 0.60                | 47                                 | 0                             | 15                               | 40        | 35        | 10        | 0         | 0        |
| POOL-ISOLATED      | 1               | 4                      | 1.9                 | 0.40                | 7                                  | 0                             | 42                               | 32        | 26        | 0         | 0         | 0        |
| POOL-LATERAL SCOUR | 31              | 258                    | 3.9                 | 0.57                | 1,005                              | 0                             | 2                                | 22        | 29        | 29        | 10        | 9        |
| POOL-PLUNGE        | 2               | 10                     | 5.7                 | 0.68                | 64                                 | 0                             | 0                                | 28        | 33        | 25        | 10        | 5        |
| RAPID/BEDROCK      | 2               | 43                     | 4.2                 | 0.18                | 181                                | 0                             | 0                                | 8         | 18        | 30        | 13        | 33       |
| RAPID/BOULDERS     | 23              | 609                    | 2.6                 | 0.14                | 1,767                              | 0                             | 2                                | 15        | 27        | 40        | 13        | 3        |
| RIFFLE             | 24              | 898                    | 3.0                 | 0.16                | 2,876                              | 0                             | 1                                | 15        | 31        | 40        | 11        | 1        |
| RIFFLE W/ POCKETS  | 1               | 28                     | 2.9                 | 0.25                | 81                                 | 0                             | 0                                | 10        | 25        | 45        | 20        | 0        |
| STEP/BEDROCK       | 1               | 2                      | 4.0                 | 0.10                | 8                                  | 0                             | 0                                | 0         | 0         | 0         | 0         | 100      |
| STEP/COBBLE        | 3               | 11                     | 5.4                 | 0.13                | 61                                 | 0                             | 0                                | 8         | 26        | 45        | 11        | 10       |
| STEP/LOG           | 2               | 2                      | 3.9                 | 0.18                | 6                                  | 0                             | 0                                | 13        | 33        | 40        | 15        | 0        |
| <b>Total:</b>      | <b>95</b>       | <b>1,895</b>           | <b>3.3</b>          | <b>0.31</b>         | <b>6,139</b>                       | <b>0</b>                      | <b>Avg: 3</b>                    | <b>19</b> | <b>28</b> | <b>33</b> | <b>11</b> | <b>6</b> |

**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 | 5               | 27                     | 2.7                 | 0.46                | 85                | 1.39%   | 0              | 0.0                      |
| Scour Pools       | 33              | 268                    | 4.0                 | 0.58                | 1,069             | 17.42%  | 0              | 0.0                      |
| Glides            | 0               | 0                      |                     |                     | 0                 | 0.00%   | 0              | 0.0                      |
| Riffles           | 25              | 926                    | 3.0                 | 0.16                | 2,958             | 48.18%  | 0              | 0.0                      |
| Rapids            | 25              | 652                    | 2.7                 | 0.15                | 1,948             | 31.73%  | 0              | 0.0                      |
| Cascades          | 1               | 9                      | 0.5                 | 0.07                | 4                 | 0.07%   | 0              | 0.0                      |
| Step/Falls        | 6               | 15                     | 4.6                 | 0.14                | 74                | 1.21%   | 0              | 0.0                      |
| 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 |
|---------------------------------------|------------------------------|--------|------------------------|
|                                       | Total                        | # / Km | # / Km                 |
| All Pools:                            | 38                           | 20.0   | 23.1                   |
| Pools >=1m deep:                      | 0                            | 0.0    | 0.0                    |
| Complex pools (LWD pieces>=3):        | 12                           | 6.3    | 7.3                    |
| Pool frequency (channel widths/pool): | 9.4                          |        |                        |
| Residual pool depth (avg):            | 0.38                         |        |                        |

**COMMENT SUMMARY**

MONITORING AREA: 1-NC      SITE ID: 367      STREAM: WOLFE CREEK

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS   | NOTES   |
|-------|------|------|-----------|------------|---|
| 2     | CC   | 00   | 39        | CC         | WOLF CR. RD. 2 BOULDER WEIRS INSIDE CC. CC= 3.5M HIGH, 6.5M WIDE. |
| 3     | RR   | 00   | 74        | CS         | BOTH BANKS, RIPARIAN NETTING WITH SOD PLANTING.                   |
| 12    | RI   | 01   | 290.5     | HS,SS/,SS/ | LOGS.   |
| 14    | LP   | 00   | 300.5     | HS         | LOGS.   |
| 17    | RI   | 01   | 359.4     | HS,SS/     | LOGS.   |
| 20    | LP   | 00   | 369       |            | ACTIVE WATER WITHDRAWAL DEVICE.                                   |
| 21    | SC   | 00   | 373.1     | HS         | LOGS.   |
| 23    | RI   | 00   | 414.1     | HS         | LOGS. ACTIVE WATER WITHDRAWAL DEVICE.                             |
| 27    | PP   | 01   | 438.3     | HS         | LOGS.   |
| 36    | RI   | 01   | 520.7     | HS         | LOGS.   |
| 41    | LP   | 00   | 552.3     | HS         | LOG. ACTIVE WATER WITHDRAWAL DEVICE FOR IRRIGATION.               |
| 42    | RI   | 00   | 582.3     | HS         | LOGS.   |
| 43    | LP   | 00   | 599.3     | CS         | ALDER STEMS.  |
| 45    | DP   | 00   | 626.3     | HS         | LOGS.   |
| 46    | SC   | 00   | 628.8     | HS         | LOGS.   |
| 47    | LP   | 00   | 640.8     | HS         | LOGS.   |
| 48    | RI   | 01   | 674.8     | HS         | LOGS.   |
| 49    | BW   | 10   | 674.8     | HS         | LOGS.   |
| 50    | LP   | 00   | 688.8     | HS         | LOGS.   |
| 52    | LP   | 00   | 735.8     | BC, CS     | PRIVATE BRIDGE. STABILITY BOULDERS.                               |
| 53    | RI   | 01   | 767.8     | TJ/        |   |
| 54    | RI   | 11   | 767.8     | RF         | FARM ROAD FORD. ACW=3M, TEMPERATURE=9C                            |

**COMMENT SUMMARY**

MONITORING AREA: 1-NC      SITE ID: 367      STREAM: WOLFE CREEK

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS | NOTES  |
|-------|------|------|-----------|----------|--|
| 55    | RI   | 01   | 782.8     |          | COW CARCASS IN STREAM.                                     |
| 57    | RI   | 01   | 807.3     | HS       | LOGS.  |
| 60    | LP   | 00   | 827.3     | HS       | ACTIVE WATER WITHDRAWAL DEVICE FOR IRRIGATION. LOGS.       |
| 62    | LP   | 00   | 859.3     | HS       | LOGS.  |
| 63    | RI   | 00   | 933.3     | HS,BC,CS | LOGS. PRIVATE FARM BRIDGE. CEDAR/SPRUCE SAPLING PLANTINGS. |
| 65    | RI   | 00   | 1013.5    | CS       | CEDAR/SPRUCE SAPLING PLANTINGS.                            |
| 67    | RI   | 01   | 1085.5    | HS       | LOGS. END WORP SITE 919.                                   |
| 68    | BW   | 10   | 1085.5    |          | ACTIVE WATER WITHDRAWAL DEVICE FOR IRRIGATION.             |
| 69    | RR   | 01   | 1142.5    | /TJ, HS  | SWAB CREEK AT TOP OF RR. LOGS.                             |
| 70    | BW   | 10   | 1142.5    | SS/      |  |
| 72    | RI   | 11   | 1142.5    |          | ACW=4.5M, TEMPERATURE=8.5C                                 |
| 73    | RP   | 00   | 1159.5    | HS       | LOGS.  |
| 75    | RI   | 00   | 1181.5    | HS       | LOGS.  |
| 83    | LP   | 00   | 1304.3    | HS       | LOGS.  |
| 84    | RI   | 00   | 1344.3    | BC,CS    | PRIVATE FARM BRIDGE. LOGS/BOULDERS.                        |
| 86    | RI   | 01   | 1377.4    | HS       | LOGS.  |
| 90    | RI   | 01   | 1496.4    | LA/      |  |
| 93    | RI   | 02   | 1496.4    | HS       | LOGS.  |
| 94    | RI   | 03   | 1496.4    | HS       | LOGS.  |
| 101   | RI   | 00   | 1757.9    | SS/, /SS |  |
| 105   | RI   | 00   | 1848      | HS       | LOGS.  |
| 110   | RB   | 01   | 1934.8    | TJ/      |  |



**COMMENT SUMMARY**

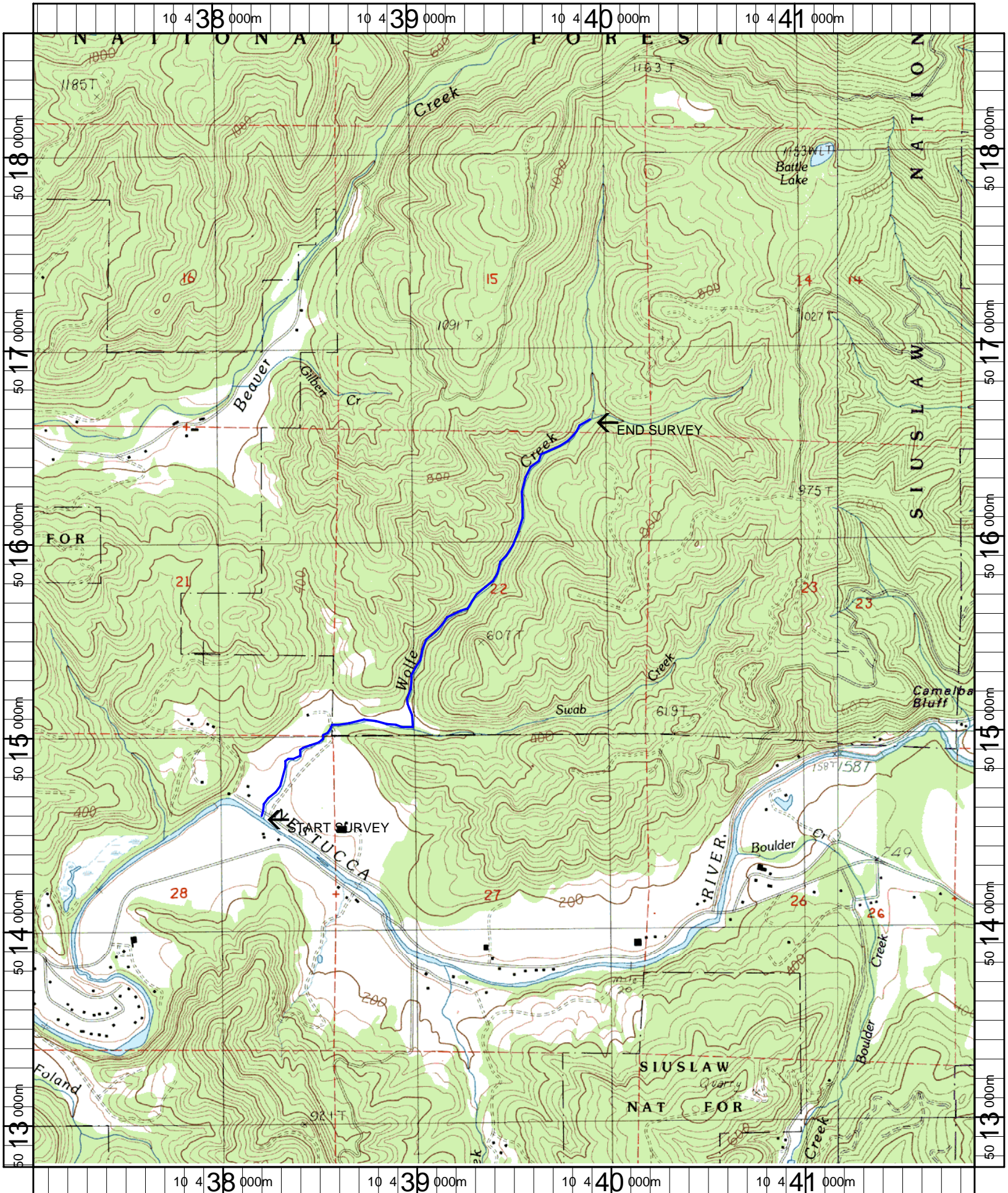
MONITORING AREA: 1-NC      SITE ID: 367      STREAM: WOLFE CREEK

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS | NOTES                    |
|-------|------|------|-----------|----------|--------------------------|
| 111   | RB   | 11   | 1934.8    |          | ACW=2.5M, TEMPERATURE=6C |
| 114   | RR   | 00   | 1980.8    | HS       | LOGS.                    |
| 118   | RI   | 01   | 2039.6    | HS       | LOGS.                    |
| 119   | BW   | 10   | 2039.6    | HS       | LOGS.                    |
| 123   | RI   | 01   | 2113.6    | TJ/, HS  | LOGS.                    |
| 124   | RI   | 11   | 2113.6    |          | ACW=1.5M, TEMPERATURE=7C |
| 129   | RI   | 00   | 2152.3    | HS       | LOGS.                    |
| 131   | RI   | 01   | 2212.3    | HS       | LOGS.                    |
| 132   | RB   | 01   | 2233.3    | /TJ      |                          |
| 134   | RB   | 11   | 2233.3    |          | ACW=0.7M, TEMPERATURE=7C |
| 141   | RI   | 00   | 2362.3    | HS       | LOGS.                    |
| 152   | RI   | 00   | 2471      | HS       | LOGS.                    |
| 155   | RB   | 01   | 2564      | HS       | LOGS.                    |
| 160   | RI   | 00   | 2632      | HS       | LOGS                     |
| 162   | RB   | 01   | 2670      | HS,/TJ   | LOGS/HEAVY BLOWDOWN.     |
| 163   | RB   | 11   | 2670      |          | ACW=1.8M, TEMPERATURE=8C |
| 165   | RI   | 01   | 2739      | HS, TJ/  | LOGS                     |
| 166   | CB   | 11   | 2739      |          | ACW=0.9M, TEMPERATURE=8C |
| 168   | RI   | 01   | 2787      | HS, /LA  | LOGS.                    |
| 183   | RI   | 01   | 2994.7    | TJ/      |                          |
| 184   | RB   | 11   | 2994.7    |          | ACW=1.2M, TEMPERATURE=8C |
| 188   | RI   | 00   | 3083.4    |          | HEAVY BLOWDOWN.          |

**COMMENT SUMMARY**

MONITORING AREA: 1-NC      SITE ID: 367      STREAM: WOLFE CREEK

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS | NOTES   |
|-------|------|------|-----------|----------|---|
| 191   | RB   | 00   | 3171.7    |          | END SURVEY. NO GPS, USE LAST YEARS COORDINATES. |



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