

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

STREAM: KARL CREEK
 GCG: 3-MS
 SITE ID: 356
 BASIN: EF COQUILLE
 TREATMENT DATE: 2007
 SURVEY DATE: 6/4/2008
 SURVEY CREW: Peter Cole / Lisa Biggs
 USGS MAPS: DORA
 ECOREGION: Mid-Coastal Sedimentary
 REPORT PREPARED BY: Matt Strickland / Sharon Tippery / Charles Stein

SURVEY DESCRIPTION:

Channel morphology: Constrained by hillslopes
 Dominant landuse(s): Second growth timber (15-30 cm dbh)
 Dominant riparian vegetation: Deciduous trees: size class 15-30cm dbh
 Primary channel length (meters) and area (m²): 803 : 6,026
 Secondary channel length (meters) and area (m²) 61 : 94
 VWI average: 2.1 VWI Range: 1 - 4 Average Gradient: 2.5%
 Pieces LWD per 100m: 26.8 Wood Volume (m³) per 100m: 56.6
 Percent pools: 23% Complex pools (LWD pieces>=3): 3 Pools >=1m deep: 6
 Percent substrate (avg):

| | <u>Silt / organics</u> | <u>Sand</u> | <u>Gravel</u> | <u>Cobble</u> | <u>Boulder</u> | <u>Bedrock</u> |
|------------------|------------------------|-------------|---------------|---------------|----------------|----------------|
| All units | 4 | 17 | 32 | 21 | 22 | 4 |
| Pool units | 8 | 27 | 34 | 18 | 14 | 0 |
| Fast water units | 3 | 15 | 31 | 26 | 21 | 5 |

COMMENTS:

This is a post-treatment, restoration survey. The crew noted habitat structures throughout the surveyed length.

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

**KARL CREEK
GCG: 3-MS SITE ID: 356**

Survey Date: 6/4/2008

Report Date: 12/29/2008

T27S-R10W-S22SW

REACH 1

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

| <u>Narrow Valley Floor</u> | | <u>Broad Valley Floor</u> | |
|----------------------------|------|---------------------------|-------|
| Steep V-shape | 100% | Constraining Terraces | 0% |
| Moderate V-shape | 0% | Multiple Terraces | 0% |
| Open V-shape | 0% | Wide Floodplain | 0% |
| Valley Width Index | 2.1 | VWI Range: | 1 - 4 |

Channel Morphology (Percent Reach Length)

| <u>Constrained</u> | | <u>Unconstrained</u> | |
|--------------------|------|----------------------|----|
| Hillslope | 100% | Single Channel | 0% |
| Bedrock | 0% | Multiple Channel | 0% |
| Terrace | 0% | 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 | 803 | 6,026 | 0 |
| Secondary | 61 | 94 | 0 |

Channel Dimensions (m)

| <u>Wetted</u> | <u>Active</u> | <u>Floodprone</u> n = 5 | <u>First Terrace</u> n = 3 |
|---------------|---------------|-------------------------|----------------------------|
| Width: 6.6 | Width: 10.8 | 15.1 (6.5 - 27.1) | 20.5 (15.8 - 30) |
| Depth: 0.57 | Height: 0.7 | 1.4 (1.2 - 2) | 2.1 (1.9 - 2.2) |

W:D ratio: 16.0

Stream Flow Type: MF

Average Unit Gradient: 2.5%

Water temperature (°C): 8.5 - 8.5

Entrenchment (ACW:FPW ratio): 1.4

Habitat Units/100m (total channel length): 4.4

Habitat Units/100m (primary channel length): 4.7

Riparian, Bank, and Wood Summary

| | <u>Primary</u> | <u>Secondary</u> |
|----------------------|----------------|------------------|
| Land Use: | ST | LT |
| Riparian Vegetation: | D15 | S |

Bank Condition and Shade

| <u>Bank Status</u> | <u>Percent Reach Length</u> | <u>Shade (% of 180)</u> |
|--------------------|-----------------------------|-------------------------|
| Actively Eroding: | 1% | Reach avg: 90% |
| Undercut Banks: | 9% | Range: 50 - 100 |

Large Wood Debris

| | <u>Total</u> | <u>Total / 100m primary channel</u> |
|-----------------------------|--------------|-------------------------------------|
| All pieces (>=3m x 0.15m): | 215 | 26.8 |
| Volume (m ³): | 454 | 56.6 |
| Key pieces (>=12m x 0.60m): | 8 | 1.0 |

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 ²) | Large Boulders (#>0.5m) | Substrate Percent Wetted Area | | | | | |
|--------------------|-----------------|------------------------|---------------------|---------------------|------------------------------------|-------------------------------|----------------------------------|-----------|-----------|-----------|-----------|----------|
| | | | | | | | S/O | Snd | Grvl | Cbl | Bldr | Bdrk |
| CASCADE/BEDROCK | 1 | 25 | 0.7 | 0.08 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| CASCADE/BOULDERS | 7 | 211 | 6.9 | 0.39 | 1,587 | 486 | 4 | 14 | 16 | 32 | 34 | 0 |
| POOL-BACKWATER | 2 | 12 | 4.7 | 0.93 | 55 | 15 | 18 | 20 | 40 | 3 | 20 | 0 |
| POOL-LATERAL SCOUR | 6 | 128 | 7.7 | 1.02 | 1,019 | 23 | 8 | 27 | 38 | 17 | 10 | 0 |
| POOL-PLUNGE | 3 | 55 | 7.3 | 1.98 | 368 | 54 | 8 | 26 | 26 | 19 | 21 | 0 |
| RAPID/BOULDERS | 5 | 183 | 8.4 | 0.28 | 1,562 | 325 | 4 | 14 | 23 | 32 | 27 | 0 |
| RIFFLE | 6 | 147 | 4.7 | 0.23 | 776 | 69 | 2 | 17 | 51 | 21 | 10 | 0 |
| RIFFLE W/ POCKETS | 3 | 71 | 6.9 | 0.43 | 481 | 17 | 4 | 20 | 47 | 24 | 6 | 0 |
| STEP/BOULDERS | 2 | 16 | 3.0 | 0.25 | 67 | 32 | 0 | 0 | 2 | 5 | 74 | 19 |
| STEP/COBBLE | 2 | 17 | 10.9 | 0.14 | 185 | 25 | 0 | 13 | 65 | 13 | 10 | 0 |
| STEP/LOG | 1 | 1 | 7.2 | 0.10 | 4 | 2 | 0 | 15 | 30 | 15 | 40 | 0 |
| Total: | 38 | 863 | 6.6 | 0.57 | 6,120 | 1,048 | Avg: 4 | 17 | 32 | 21 | 22 | 4 |

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 | 2 | 12 | 4.7 | 0.93 | 55 | 0.89% | 15 | 27.4 |
| Scour Pools | 9 | 183 | 7.5 | 1.34 | 1,387 | 22.67% | 77 | 5.5 |
| Glides | 0 | 0 | | | 0 | 0.00% | 0 | 0.0 |
| Riffles | 9 | 217 | 5.4 | 0.29 | 1,257 | 20.53% | 86 | 6.8 |
| Rapids | 5 | 183 | 8.4 | 0.28 | 1,562 | 25.52% | 325 | 20.8 |
| Cascades | 8 | 236 | 6.1 | 0.35 | 1,604 | 26.21% | 486 | 30.3 |
| Step/Falls | 5 | 33 | 7.0 | 0.17 | 255 | 4.17% | 59 | 23.1 |
| 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: | 11 | 12.7 | 13.7 |
| Pools >=1m deep: | 6 | 7.0 | 7.5 |
| Complex pools (LWD pieces>=3): | 3 | 3.5 | 3.7 |
| Pool frequency (channel widths/pool): | 7.3 | | |
| Residual pool depth (avg): | 1.12 | | |

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

KARL CREEK
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RIPARIAN ZONE
VEGETATION SUMMARY

REACH 1

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

| | |
|---------------------------------|------|
| Total hardwoods/1000 | 1138 |
| Total conifers/1000 ft | 203 |
| Total conifers >20" dbh/1000 ft | 20 |
| 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 | 3.0 | 0.3 | 5.3 | 0.7 | 4.7 | 1.7 | 13.0 |
| 15-30cm | 0.3 | 1.3 | 0.0 | 0.7 | 0.3 | 2.0 | 0.7 | 4.0 |
| 30-50cm | 0.3 | 0.0 | 0.0 | 1.0 | 0.3 | 0.7 | 0.7 | 1.7 |
| 50-90cm | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 |
| >90cm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total/100m2 | 1.7 | 4.3 | 0.3 | 7.0 | 1.3 | 7.3 | 1.1 | 6.2 |

Canopy closure and ground cover

| | Zone 1 0-10 meters | | Zone 2 10 - 20 meters | | Zone 3 20 - 30 meters | |
|------------------|-----------------------|--|--------------------------|--|--------------------------|--|
| | (%) | | (%) | | (%) | |
| Canopy closure | 77 | | 77 | | 80 | |
| Shrub cover | 33 | | 56 | | 50 | |
| Grass/forb cover | 68 | | 44 | | 48 | |

Predominant landform in each zone

| | Zone 1 0-10 meters | | Zone 2 10 - 20 meters | | Zone 3 20 - 30 meters | |
|-------------------|-----------------------|--|--------------------------|--|--------------------------|--|
| | (%) | | (%) | | (%) | |
| Hillslope | 83 | | 83 | | 100 | |
| High terrace | 0 | | 17 | | 0 | |
| Low terrace | 17 | | 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 (%) | 84 | | 77 | | 96 | |

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 | 1138 |
| Total conifers/1000 ft | 203 |
| Total conifers >20" dbh/1000 ft | 20 |
| 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 | 13.0 |
| 15-30cm | 0.7 | 4.0 |
| 30-50cm | 0.7 | 1.7 |
| 50-90cm | 0.3 | 0.0 |
| >90cm | 0.0 | 0.0 |

RIPARIAN ZONE VEGETATION

Reach 1

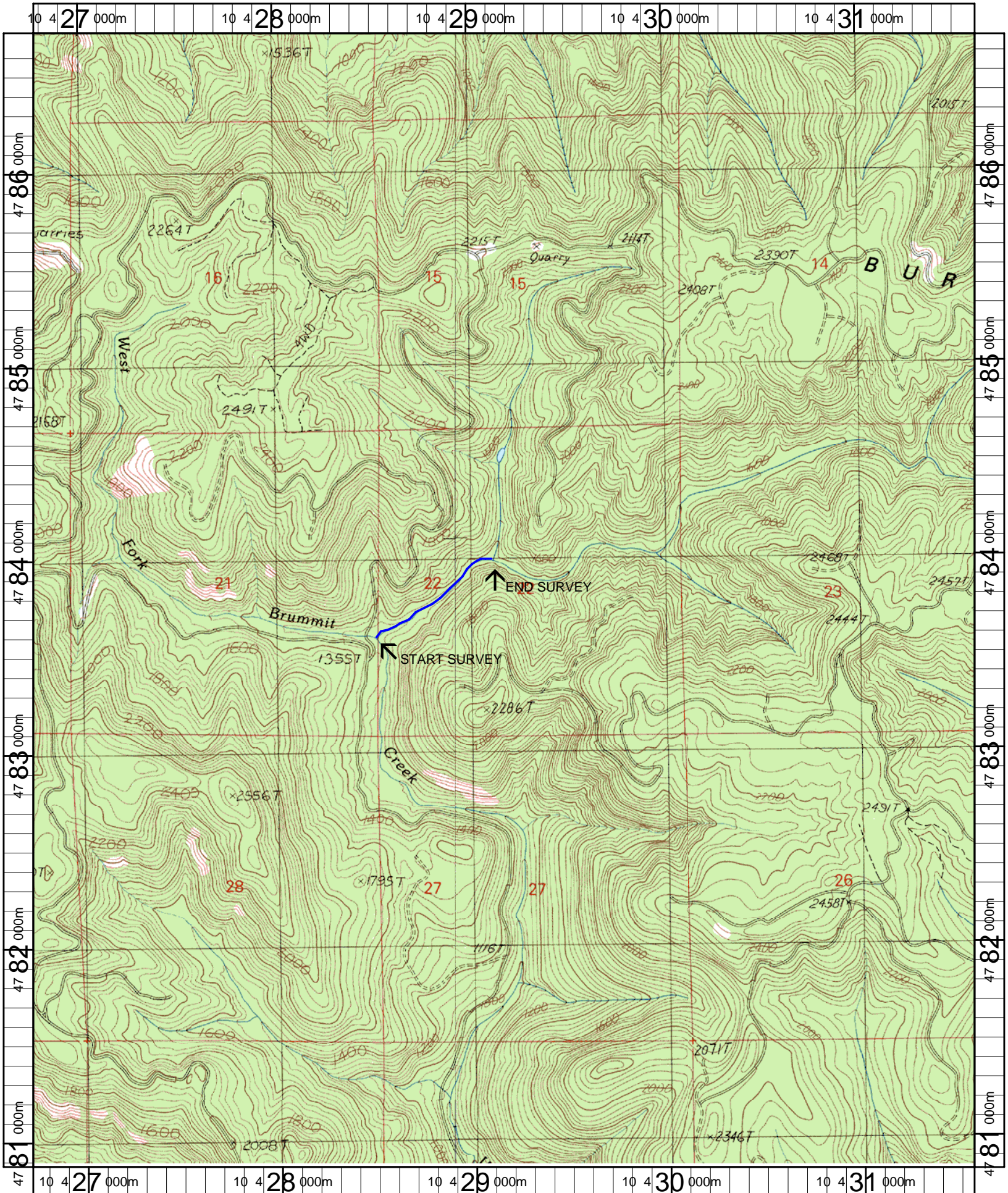
Reach 1

| Unit | Side | Zone | Surface | Slope | Cover (percent) | | | | Diameter class (cm) | | | | | Notes | |
|------|------|------|---------|-------|-----------------|-------|-------|----------|---------------------|-------|-------|-------|-----|-------|-------------------------|
| | | | | | Canopy | Shrub | Grass | | 3-15 | 15-30 | 30-50 | 50-90 | >90 | | |
| 13 | LF | 1 | LT | 0 | 85 | 50 | 50 | Conifer | | | | | | | MANY FALLEN TREES |
| | | | | | | | | Hardwood | 3 | 1 | | | | | |
| 13 | LF | 2 | HT | 0 | 95 | 80 | 20 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | | 2 | | | | |
| 13 | LF | 3 | HS | 110 | 95 | 75 | 35 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | 3 | 2 | | | | |
| 13 | RT | 1 | HS | 75 | 60 | 40 | 60 | Conifer | | | | 1 | | | |
| | | | | | | | | Hardwood | 1 | 2 | | | | | |
| 13 | RT | 2 | HS | 80 | 80 | 20 | 80 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | 2 | 1 | 1 | | | | |
| 13 | RT | 3 | HS | 100 | 95 | 5 | 80 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | 14 | 1 | | | | | |
| 22 | LF | 1 | HS | 130 | 90 | 25 | 75 | Conifer | | | | | 1 | | |
| | | | | | | | | Hardwood | 5 | 1 | | | | | |
| 22 | LF | 2 | HS | 100 | 90 | 50 | 50 | Conifer | 1 | | | | | | |
| | | | | | | | | Hardwood | 4 | | | | | | |
| 22 | LF | 3 | HS | 110 | 90 | 40 | 60 | Conifer | 1 | 1 | | | | | |
| | | | | | | | | Hardwood | | | | | | | |
| 22 | RT | 1 | HS | 50 | 75 | 30 | 70 | Conifer | | | | | | | ONE LG FALLEN TREE |
| | | | | | | | | Hardwood | | | | | | | |
| 22 | RT | 2 | HS | 45 | 40 | 85 | 15 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | | | | | | |
| 22 | RT | 3 | HS | 45 | 45 | 85 | 15 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | | | | | | |
| 30 | LF | 1 | HS | 120 | 80 | 25 | 75 | Conifer | 2 | 1 | | | | | |
| | | | | | | | | Hardwood | | | | | | | |
| 30 | LF | 2 | HS | 115 | 80 | 15 | 85 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | 10 | | | | | | |
| 30 | LF | 3 | HS | 110 | 70 | 15 | 85 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | 2 | | | | | |
| 30 | RT | 1 | HS | 130 | 70 | 25 | 75 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | | | | | | |
| 30 | RT | 2 | HS | 120 | 75 | 85 | 15 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | 1 | | | | | |
| 30 | RT | 3 | HS | 100 | 85 | 80 | 15 | Conifer | 1 | | 1 | | | | |
| | | | | | | | | Hardwood | | | | | | | |

COMMENT SUMMARY

MONITORING AREA: 3-MS SITE ID: 356 STREAM: KARL CREEK

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS | NOTES |
|-------|------|------|-----------|----------|--------------------------|
| 1 | RP | 00 | 23.2 | WL | CA/CT, M30/S ST/ |
| 3 | CB | 01 | 62 | DJ | |
| 6 | LP | 01 | 110.3 | TJ/, HS | |
| 7 | RI | 11 | 110.3 | | ACW=2.60M |
| 9 | LP | 00 | 141.5 | HS | |
| 10 | RP | 00 | 171.7 | HS | |
| 11 | LP | 00 | 190.4 | WL, HS | |
| 12 | RP | 00 | 207.6 | HS | |
| 13 | LP | 00 | 236.4 | | RIP-1; CA-CT, D15, S, ST |
| 16 | RI | 01 | 332.2 | HS, /TJ | |
| 22 | CB | 00 | 460.8 | | RIP-2, CH-SV, D15, S, ST |
| 23 | RB | 01 | 486.5 | TJ/ | |
| 24 | CB | 11 | 486.5 | | ACW=1.60M, T=9C/1100 |
| 26 | PP | 00 | 545.5 | | /SS |
| 30 | SB | 00 | 608.6 | | RIP-3 |
| 31 | CB | 00 | 643.8 | WL | |
| 37 | RB | 00 | 772 | | CH-SV, D30, S, ST |
| 38 | CB | 00 | 802.7 | HS | END OF SURVEY |



Name: DORA
 Date: 1/3/2007
 Scale: 1 inch equals 2000 feet

Location: 10 429167 E 4783779 N
 Caption: KARL CREEK RESTORATION SITE - COQUILLE BASIN