

REACH 1

T5S-R10W-S23SE

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 avg: 16.0 range: 10.0-20.0

Channel Morphology (Percent Reach Length)

| <u>Constrained</u> | | <u>Unconstrained</u> | |
|--------------------|---|----------------------|-----|
| Hillslope | 0 | Single Channel | 100 |
| 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 | 549 | 2,277 | 0 |
| Secondary | 278 | 444 | 0 |

Channel Dimensions (m)

| <u>Wetted</u> | | <u>Active</u> | | <u>Floodprone</u> | <u>First Terrace</u> |
|---------------|------|---------------|--------------|-------------------|----------------------|
| Width | 3.5 | Width | 11.2 | 18.3 | 31.9 |
| Depth | 0.34 | Height | 0.5 | 1.0 | 2.1 |
| W:D ratio | | 25.0 | Entrenchment | 1.6 | |

Stream Flow Type: LF Water Temp: 12.0-12.0°C
 Avg. Unit Gradient: 2.9% Habitat Units/100m: 6.5

Riparian, Bank, and Wood Summary

| | <u>Primary</u> | <u>Secondary</u> |
|----------------------|----------------|------------------|
| Land Use: | ST | |
| Riparian Vegetation: | D30 | C30 |

Bank Condition and Shade

| <u>Bank Status</u> | <u>Percent Reach Length</u> | <u>Shade (% of 180)</u> |
|--------------------|-----------------------------|-------------------------|
| Actively Eroding | 6% | Reach avg: 87% |
| Undercut Banks | 3% | Range: 61-100 |

Large Woody Debris

| | <u>Total</u> | <u>Total/100m</u> |
|---------------------------------------|--------------|-------------------|
| All pieces ($\geq 3m \times 0.15m$) | 261 | 47.5 |
| Volume (m ³) | 272 | 49.5 |
| Key pieces ($\geq 10m \times 0.6m$) | 20 | 3.6 |

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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 | Cbbl | Bldr | Bdrk |
| CASCADE/BEDROCK | 1 | 14 | 2.2 | 0.20 | 30 | 2 | 5 | 0 | 0 | 0 | 0 | 95 |
| CASCADE/BOULDERS | 1 | 23 | 3.6 | 0.30 | 83 | 27 | 10 | 20 | 30 | 5 | 20 | 15 |
| POOL-LATERAL SCOUR | 12 | 126 | 5.1 | 0.64 | 638 | 30 | 13 | 25 | 34 | 9 | 0 | 20 |
| POOL-PLUNGE | 5 | 35 | 4.0 | 0.60 | 159 | 10 | 10 | 24 | 39 | 12 | 1 | 14 |
| RAPID/BOULDERS | 24 | 559 | 2.8 | 0.19 | 1,558 | 210 | 10 | 18 | 30 | 31 | 4 | 7 |
| RIFFLE | 2 | 33 | 3.9 | 0.25 | 126 | 20 | 10 | 20 | 49 | 20 | 2 | 0 |
| STEP/BEDROCK | 2 | 9 | 2.9 | 0.20 | 24 | 6 | 5 | 3 | 0 | 0 | 0 | 93 |
| STEP/COBBLE | 5 | 25 | 3.4 | 0.22 | 96 | 23 | 9 | 9 | 35 | 43 | 2 | 2 |
| STEP/LOG | 2 | 5 | 1.9 | 0.13 | 6 | 0 | 10 | 30 | 50 | 10 | 0 | 0 |
| Total: | 54 | 828 | 3.5 | 0.34 | 2,720 | 328 | Avg:10 | 19 | 32 | 22 | 3 | 14 |

HABITAT SUMMARY

| Habitat Group | No. Units | Total Length (m) | Avg Width (m) | Avg Depth (m) | Wetted Area (m ²) | Wetted Area Percent | Large Boulders Number | Boulders #/100m ² |
|-------------------|--------------|------------------------|---------------------|---------------------|----------------------------------|------------------------|-----------------------------|---------------------------------|
| Dammed & BW Pools | 0 | 0 | - | - | 0 | 0.00 | 0 | 0.0 |
| Scour Pools | 17 | 160 | 4.8 | 0.63 | 796 | 29.28 | 40 | 5.0 |
| Glides | 0 | 0 | - | - | 0 | 0.00 | 0 | 0.0 |
| Riffles | 2 | 33 | 3.9 | 0.25 | 126 | 4.64 | 20 | 15.8 |
| Rapids | 24 | 559 | 2.8 | 0.19 | 1,558 | 57.27 | 210 | 13.5 |
| Cascades | 2 | 37 | 2.9 | 0.25 | 113 | 4.16 | 29 | 25.6 |
| Step/Falls | 9 | 38 | 2.9 | 0.19 | 126 | 4.64 | 29 | 23.0 |
| Dry | 0 | 0 | - | - | 0 | 0.00 | 0 | 0.0 |

POOL SUMMARY

| | | |
|---------------------------------------|--------------|-------------|
| All Pools | <u>Total</u> | <u>#/Km</u> |
| | 17 | 20.5 |
| Pools ≥1m deep: | 1 | 1.2 |
| Complex pools (LWD pieces ≥3): | 7 | 8.5 |
| Pool Frequency (channel widths/pool): | 4.4 | |
| Residual pool depth (avg) | 0.39m | |

STREAM SUMMARY

BEAR CREEK - SUMM. REST.

| Number Units | Total Length (m) | Avg Width (m) | Avg Depth (m) | Total Area (m ²) | Substrate Percent Wetted Area | | | | | | Total Large Boulder |
|-----------------|------------------------|---------------------|---------------------|------------------------------------|----------------------------------|------|------|------|------|------|---------------------------|
| | | | | | S/O | Sand | Grvl | Cbbl | Bldr | Bdrk | |
| 54 | 828 | 3.5 | 0.34 | 2,720 | 10 | 19 | 32 | 22 | 3 | 14 | 328 |

Wetted Area

| Habitat Group | (m ²) | Percent |
|-----------------|-------------------|---------|
| Scour Pool | 796 | 29.3 |
| Backwater Pools | 0 | 0.0 |
| Glide | 0 | 0.0 |
| Riffle | 126 | 4.6 |
| Rapid | 1,558 | 57.3 |
| Cascade | 113 | 4.2 |
| Step | 126 | 4.6 |
| Dry | 0 | 0.0 |

REACH 1

RIPARIAN ZONE VEGETATION SUMMARY

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

| | |
|---------------------------------|-----|
| Total hardwoods/1000 ft | 447 |
| Total conifers/1000 ft | 142 |
| Total conifers >20" dbh/1000 ft | 81 |
| Total conifers >35" dbh/1000 ft | 20 |

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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15-30cm | 0.0 | 0.0 | 0.0 | 1.3 | 0.0 | 1.3 | 0.0 | 2.7 |
| 30-50cm | 1.0 | 0.0 | 0.0 | 0.3 | 0.0 | 1.0 | 1.0 | 1.3 |
| 50-90cm | 0.3 | 0.7 | 0.3 | 1.3 | 0.3 | 0.7 | 1.0 | 2.7 |
| >90cm | 0.0 | 0.0 | 0.3 | 0.7 | 0.0 | 0.0 | 0.3 | 0.7 |
| Total/100m ² | 1.3 | 0.7 | 0.7 | 3.7 | 0.3 | 3.0 | 0.8 | 2.4 |

Canopy closure and ground cover

| | Zone 1 0-10 meters | | Zone 2 10-20 meters | | Zone 3 20-30 meters | |
|------------------|-----------------------|--|------------------------|--|------------------------|--|
| | (%) | | (%) | | (%) | |
| Canopy closure | 58 | | 60 | | 58 | |
| Shrub cover | 48 | | 57 | | 52 | |
| Grass/forb cover | 27 | | 32 | | 20 | |

Predominant landform in each zone

| | Zone 1 0-10 meters | | Zone 2 10-20 meters | | Zone 3 20-30 meters | |
|-------------------|-----------------------|---|------------------------|----|------------------------|----|
| | Hillslope | 0 | | 17 | | 17 |
| High terrace | 100 | | 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 | | 33 | |
| Riprap | 0 | | 0 | | 0 | |
| Surface slope (%) | 9 | | 9 | | 18 | |

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

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

| | |
|---------------------------------|-----|
| Total hardwoods/1000 ft | 447 |
| Total conifers/1000 ft | 142 |
| Total conifers >20" dbh/1000 ft | 81 |

Average number of trees in a 5-meter wide band

| <u>Diameter</u> <u>class (cm)</u> | <u>Zones 1-3</u> | |
|--------------------------------------|------------------|-----------------|
| | <u>Conifer</u> | <u>Hardwood</u> |
| 3-15cm | 0.0 | 0.0 |
| 15-30cm | 0.0 | 2.7 |
| 30-50cm | 1.0 | 1.3 |
| 50-90cm | 1.0 | 2.7 |
| >90cm | 0.3 | 0.7 |

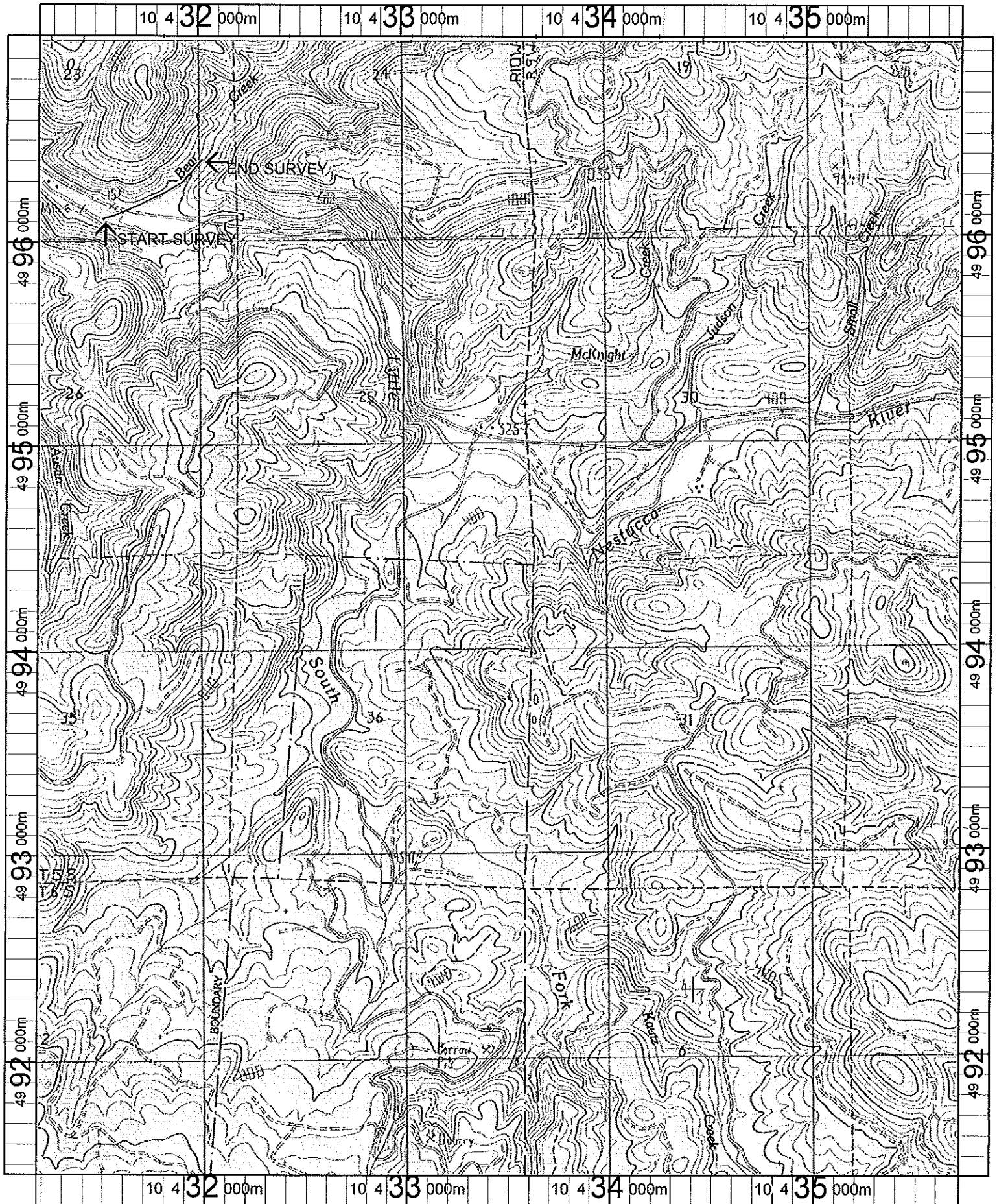
RIPARIAN ZONE VEGETATION

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VEGETATION DETAIL

| Unit | Side | Zone | Surface | Slope | Cover (percent) | | | | Diameter class (cm) | | | | | Notes |
|------|------|------|---------|-------|-----------------|-------|-------|----------|---------------------|-------|-------|-------|-----|---------------------|
| | | | | | Canopy | Shrub | Grass | | 3-15 | 15-30 | 30-50 | 50-90 | >90 | |
| 14 | LF | 1 | HT | 25.0 | 75 | 95 | 5 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 2 | 0 | |
| 14 | LF | 2 | HS | 45.0 | 80 | 95 | 5 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 1 | 1 | |
| 14 | LF | 3 | HS | 65.0 | 90 | 70 | 20 | Conifer | 0 | 0 | 0 | 1 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 14 | RT | 1 | HT | 5.0 | 70 | 100 | 0 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 14 | RT | 2 | HT | -2.0 | 85 | 90 | 10 | Conifer | 0 | 0 | 0 | 1 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 1 | 1 | |
| 14 | RT | 3 | RB | 2.0 | 50 | 30 | 10 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 30 | LF | 1 | HT | 4.0 | 80 | 70 | 15 | Conifer | 0 | 0 | 1 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 30 | LF | 2 | HT | 2.0 | 85 | 80 | 15 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 2 | 0 | |
| 30 | LF | 3 | HT | 7.0 | 75 | 95 | 5 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 30 | RT | 1 | HT | 7.0 | 15 | 20 | 40 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 30 | RT | 2 | RB | 2.0 | 10 | 5 | 50 | Conifer | 0 | 0 | 0 | 0 | 1 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 30 | RT | 3 | RB | 3.0 | 25 | 5 | 5 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 2 | 0 | 0 | 0 | |
| 42 | LF | 1 | HT | 9.0 | 40 | 0 | 100 | Conifer | 0 | 0 | 2 | 1 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 42 | LF | 2 | HT | 3.0 | 15 | 5 | 95 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 42 | LF | 3 | HT | 11.0 | 20 | 40 | 60 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 42 | RT | 1 | HT | 1.0 | 70 | 5 | 0 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 0 | 0 | 0 | 0 | |
| 42 | RT | 2 | HT | 5.0 | 85 | 65 | 15 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 4 | 1 | 0 | 0 | CROSSES 2ND CHANNEL |
| 42 | RT | 3 | HT | 20.0 | 85 | 70 | 20 | Conifer | 0 | 0 | 0 | 0 | 0 | |
| | | | | | | | | Hardwood | 0 | 2 | 3 | 2 | 0 | |



Name: DOLPH
 Date: 4/24/100
 Scale: 1 inch equals 2000 feet

Location: 10 433373 E 4994191 N
 Caption: BEAR CREEK
 RESTORATION SITE
 ODFW 1999