

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

STREAM: Hawley Creek (N-371)
BASIN: Necanicum River
SURVEY TYPE: Pre-Tx
DATE: July 10, 2007
SURVEY CREW: Trevor Diemer, Nathan Wilson
REPORT PREPARED BY: Paul Jacobsen
BASIN AREA: 3.5 km²
USGS MAPS: Tillamook Head
ECOREGION: Coast Range Coastal Uplands

GENERAL DESCRIPTION:

The Hawley Creek habitat survey extended 680 meters. The channel was alternately constrained by hillslopes and terraces in a broad valley floor. The average valley width index was 6.3 (range: 4.0-8.0). Land use for the reach was second growth (15-30 cm dbh) and young (3-15 cm dbh) trees. The average unit gradient was 3.8 percent. Rapids (61%) dominated stream habitat. Cobble (42%) and gravel (41%) dominated stream substrate. Wood volume was low at 9.7 m³/100m.

COMMENTS:

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

REACH 1

T05N-R10W-S14NW

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 | 6.3 | VWI Range: | 4 - 8 |

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 | 680 | 1,650 | 0 |
| Secondary Channel | 8 | 4 | 0 |
| Off-Channel Units | 4 | 12 | 0 |

Channel Dimensions (m)

| <u>Wetted</u> | <u>Active</u> | <u>Floodprone</u> n = 4 | <u>First Terrace</u> n = 4 |
|---------------|---------------|-------------------------|----------------------------|
| Width: 2.5 | Width: 4.8 | 6.0 (3.25 - 7) | 7.6 (4 - 11) |
| Depth: 0.21 | Height: 0.3 | 0.6 (0.6 - 0.6) | 1.1 (0.9 - 1.3) |

W:D ratio: 15.8

Entrenchment (ACW:FPW ratio): 1.2

Stream Flow Type: LF

Habitat Units/100m (total channel length): 7.5

Average Unit Gradient: 3.8%

Habitat Units/100m (primary channel length): 7.6

Water temperature (°C): 13.0 - 13.0

Riparian, Bank, and Wood Summary

| | <u>Primary</u> | <u>Secondary</u> |
|----------------------|----------------|------------------|
| Land Use: | ST | YT |
| Riparian Vegetation: | M30 | D30 |

Bank Condition and Shade

| <u>Bank Status</u> | <u>Percent Reach Length</u> | <u>Shade (% of 180)</u> |
|--------------------|-----------------------------|-------------------------|
| Actively Eroding: | 3% | Reach avg: 97% |
| Undercut Banks: | 7% | Range: 61 - 100 |

Large Wood Debris

| | <u>Total</u> | <u>Total / 100m primary channel</u> |
|-----------------------------|--------------|-------------------------------------|
| All pieces (>=3m x 0.15m): | 44 | 6.5 |
| Volume (m ³): | 66 | 9.7 |
| Key pieces (>=12m x 0.60m): | 1 | 0.1 |

HABITAT INVENTORY

Report Date: 11/14/2007

Survey Date:

7/10/2007

| REACH 1 | | T05N-R10W-S14NW | | | | | 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 |
| CULVERT CROSSING | 2 | 31 | 1.9 | 0.20 | 59 | 0 | 3 | 10 | 38 | 49 | 0 | 0 |
| POOL-BACKWATER | 1 | 4 | 3.0 | 0.35 | 12 | 0 | 15 | 25 | 45 | 15 | 0 | 0 |
| POOL-LATERAL SCOUR | 11 | 60 | 2.4 | 0.40 | 151 | 2 | 5 | 9 | 40 | 41 | 4 | 1 |
| POOL-PLUNGE | 4 | 14 | 5.6 | 0.78 | 76 | 0 | 5 | 11 | 40 | 40 | 4 | 0 |
| RAPID/BOULDERS | 23 | 432 | 2.3 | 0.07 | 1,019 | 40 | 1 | 5 | 39 | 43 | 12 | 0 |
| RIFFLE | 8 | 149 | 2.4 | 0.10 | 345 | 5 | 1 | 4 | 44 | 41 | 9 | 0 |
| STEP/COBBLE | 1 | 2 | 2.0 | 0.05 | 4 | 0 | 0 | 0 | 50 | 50 | 0 | 0 |
| STEP/LOG | 1 | 1 | 0.7 | 0.05 | 0 | 0 | 10 | 5 | 55 | 30 | 0 | 0 |
| STEP/STRUCTURE | 1 | 0 | 0.6 | 0.05 | 0 | 0 | 0 | 15 | 40 | 40 | 5 | 0 |
| Total: | 52 | 692 | 2.5 | 0.21 | 1,666 | 47 | Avg: 2 | 7 | 41 | 42 | 8 | 0 |

| 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 | 1 | 4 | 3.0 | 0.35 | 12 | 0.72% | 0 | 0.0 | |
| Scour Pools | 15 | 74 | 3.3 | 0.50 | 227 | 13.60% | 2 | 0.9 | |
| Glides | 0 | 0 | | | 0 | 0.00% | 0 | 0.0 | |
| Riffles | 8 | 149 | 2.4 | 0.10 | 345 | 20.72% | 5 | 1.4 | |
| Rapids | 23 | 432 | 2.3 | 0.07 | 1,019 | 61.13% | 40 | 3.9 | |
| Cascades | 0 | 0 | | | 0 | 0.00% | 0 | 0.0 | |
| Step/Falls | 3 | 3 | 1.1 | 0.05 | 5 | 0.27% | 0 | 0.0 | |
| Dry | 0 | 0 | | | 0 | 0.00% | 0 | 0.0 | |
| Culverts | 2 | 31 | 1.9 | 0.20 | 59 | 3.56% | 0 | 0.0 | |

| POOL SUMMARY | | | |
|---------------------------------------|------------------------------|---------------|------------------------|
| | Total of all Channel Lengths | | Primary Channel Length |
| | <u>Total</u> | <u># / Km</u> | <u># / Km</u> |
| All Pools: | 16 | 23.1 | 23.5 |
| Pools >=1m deep: | 1 | 1.4 | 1.5 |
| Complex pools (LWD pieces>=3): | 0 | 0.0 | 0.0 |
| Pool frequency (channel widths/pool): | 9.1 | | |
| Residual pool depth (avg): | 0.44 | | |

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

HAWLEY CREEK PRE-TX
GCG: 1-NC SITE ID: 371

Survey Date 7/10/2007

RIPARIAN ZONE

Report Date: 11/7/2007

VEGETATION SUMMARY

REACH 1

Summary of Riparian Zone (0-30m) 4 transects

| | |
|---------------------------------|-----|
| Total hardwoods/1000 | 625 |
| Total conifers/1000 ft | 671 |
| Total conifers >20" dbh/1000 ft | 0 |
| 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 | 1.0 | 1.0 | 1.8 | 0.8 | 2.0 | 1.0 | 4.8 | 2.8 |
| 15-30cm | 0.8 | 1.8 | 0.8 | 1.3 | 1.3 | 1.5 | 2.8 | 4.5 |
| 30-50cm | 1.0 | 1.5 | 1.0 | 0.8 | 1.5 | 0.3 | 3.5 | 2.5 |
| 50-90cm | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.5 |
| >90cm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total/100m2 | 2.8 | 4.5 | 3.5 | 2.8 | 4.8 | 3.0 | 3.7 | 3.4 |

Canopy closure and ground cover

| | Zone 1 0-10 meters | | Zone 2 10 - 20 meters | | Zone 3 20 - 30 meters | |
|------------------|-----------------------|--|--------------------------|--|--------------------------|--|
| | (%) | | (%) | | (%) | |
| Canopy closure | 81 | | 71 | | 80 | |
| Shrub cover | 38 | | 29 | | 32 | |
| Grass/forb cover | 62 | | 58 | | 57 | |

Predominant landform in each zone

| | Zone 1 0-10 meters | | Zone 2 10 - 20 meters | | Zone 3 20 - 30 meters | |
|-------------------|-----------------------|--|--------------------------|--|--------------------------|--|
| | (%) | | (%) | | (%) | |
| Hillslope | 25 | | 25 | | 63 | |
| High terrace | 75 | | 75 | | 38 | |
| Low terrace | 0 | | 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 (%) | 9 | | 10 | | 23 | |

Summary of Riparian Zone (0-30m) for all reaches**4 transects****Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream**

| | |
|---------------------------------|-----|
| Total hardwoods/1000 | 625 |
| Total conifers/1000 ft | 671 |
| Total conifers >20" dbh/1000 ft | 0 |
| 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 | 4.8 | 2.8 |
| 15-30cm | 2.8 | 4.5 |
| 30-50cm | 3.5 | 2.5 |
| 50-90cm | 0.0 | 0.5 |
| >90cm | 0.0 | 0.0 |

RIPARIAN ZONE VEGETATION

Reach 1

Reach 1

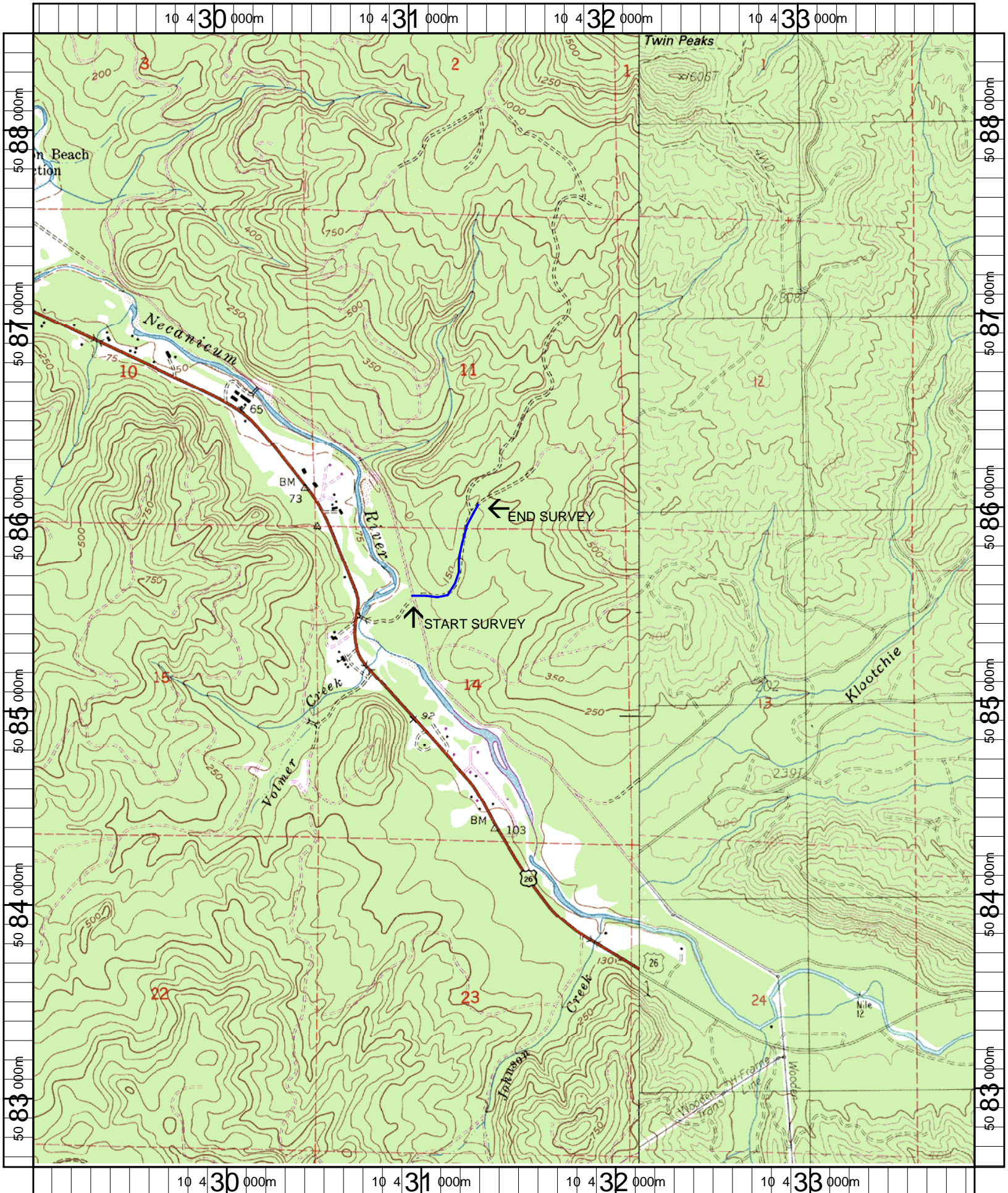
| Unit | Side | Zone | Surface | Slope | Cover (percent) | | | | Diameter class (cm) | | | | | Notes | |
|------|------|------|---------|-------|-----------------|-------|-------|----------|---------------------|-------|-------|-------|-----|-------|----------------|
| | | | | | Canopy | Shrub | Grass | | 3-15 | 15-30 | 30-50 | 50-90 | >90 | | |
| 1 | LT | 1 | HT | 0 | 100 | 10 | 90 | Conifer | | 1 | 2 | | | | GPS 0430918 |
| | | | | | | | | Hardwood | | 2 | | | | | 5085633 |
| 1 | LT | 2 | HT | 0 | 10 | 0 | 0 | Conifer | | | | | | | ROAD BED |
| | | | | | | | | Hardwood | | | | | | | |
| 1 | LT | 3 | HT | 0 | 90 | 75 | 25 | Conifer | | | | 1 | | | |
| | | | | | | | | Hardwood | 1 | 2 | | | | | |
| 1 | RT | 1 | HT | 0 | 90 | 80 | 20 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | 1 | 2 | | | | | |
| 1 | RT | 2 | HT | 0 | 90 | 50 | 50 | Conifer | 0 | 1 | | | | | |
| | | | | | | | | Hardwood | | 2 | 1 | | | | |
| 1 | RT | 3 | HT | 0 | 90 | 40 | 60 | Conifer | 1 | 2 | | | | | |
| | | | | | | | | Hardwood | | 1 | | | | | |
| 17 | LT | 1 | HT | 0 | 95 | 40 | 60 | Conifer | 1 | | | 1 | | | NO GPS |
| | | | | | | | | Hardwood | | 2 | | | | | |
| 17 | LT | 2 | HT | 0 | 95 | 70 | 30 | Conifer | 2 | 1 | | | | | ROAD BED |
| | | | | | | | | Hardwood | | | | | | | |
| 17 | LT | 3 | HS | 45 | 80 | 55 | 45 | Conifer | | | | 2 | | | |
| | | | | | | | | Hardwood | 1 | 1 | | | | | |
| 17 | RT | 1 | HT | 0 | 80 | 20 | 80 | Conifer | 2 | | | | | | |
| | | | | | | | | Hardwood | 2 | | 1 | 1 | | | |
| 17 | RT | 2 | HT | 0 | 90 | 15 | 85 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | 1 | 3 | 1 | | | | |
| 17 | RT | 3 | HS | 25 | 90 | 10 | 90 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | 2 | 1 | 1 | | | |
| 42 | LT | 1 | HS | 40 | 95 | 10 | 90 | Conifer | | 1 | | | | | 0431267 |
| | | | | | | | | Hardwood | 1 | | 1 | | | | 5085573 |
| 42 | LT | 2 | HS | 40 | 95 | 5 | 95 | Conifer | | 1 | 2 | | | | 2D |
| | | | | | | | | Hardwood | 1 | | | | | | |
| 42 | LT | 3 | HS | 40 | 95 | 5 | 95 | Conifer | | 2 | 1 | | | | |
| | | | | | | | | Hardwood | | | | | | | |
| 42 | RT | 1 | HT | 0 | 90 | 70 | 30 | Conifer | | | | | | | |
| | | | | | | | | Hardwood | | 1 | 2 | | | | |
| 42 | RT | 2 | HT | 0 | 90 | 75 | 25 | Conifer | 1 | | 2 | | | | |
| | | | | | | | | Hardwood | | | | | | | |
| 42 | RT | 3 | HT | 0 | 15 | 0 | 70 | Conifer | | | | | | | OLD ROAD |
| | | | | | | | | Hardwood | 1 | | | | | | BED |

| | | | | | | | | | | | | |
|----|----|---|----|----|----|----|-----|----------|---|---|---|----------|
| 52 | LT | 1 | HT | 0 | 80 | 25 | 75 | Conifer | 1 | 1 | 1 | 0431247 |
| | | | | | | | | Hardwood | | | | 5086304 |
| 52 | LT | 2 | HT | 0 | 10 | 0 | 100 | Conifer | | | | OLD ROAD |
| | | | | | | | | Hardwood | | | | BED |
| 52 | LT | 3 | HS | 30 | 85 | 50 | 50 | Conifer | | | 2 | |
| | | | | | | | | Hardwood | 1 | | | |
| 52 | RT | 1 | HS | 35 | 20 | 50 | 50 | Conifer | | | | ROAD BED |
| | | | | | | | | Hardwood | | | 2 | |
| 52 | RT | 2 | HS | 40 | 90 | 20 | 80 | Conifer | 4 | | | |
| | | | | | | | | Hardwood | 1 | | 1 | |
| 52 | RT | 3 | HS | 40 | 95 | 20 | 20 | Conifer | 7 | 1 | | |
| | | | | | | | | Hardwood | | | | |

COMMENT SUMMARY

MONITORING AREA: 1-NC SITE ID: 371 STREAM: HAWLEY CREEK PRE-TX

| UNIT# | TYPE | CHAN | DIST. (m) | COMMENTS | NOTES |
|-------|------|------|-----------|----------|--|
| 9 | SL | 00 | 128.5 | HS | NOTCHED HAB LOG. |
| 19 | RI | 01 | 278 | SS/ | |
| 34 | PP | 00 | 394.85 | /SS | |
| 35 | RB | 01 | 402.85 | /TJ | |
| 36 | RB | 00 | 407.85 | | TEMP. |
| 37 | CC | 00 | 424.85 | CC | 1.5 D, CORREGATED GALVANIZED |
| 42 | RB | 00 | 501.35 | | 10T 0431267 5085573, 2D |
| 48 | LP | 00 | 605.35 | LA/ | |
| 51 | CC | 00 | 662.35 | CC | |
| 52 | RB | 00 | 680.35 | | SPAWNING SURVEY SIGN AT BOTTOM, HAB. SIGN AT TOP |



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

Location: 10 431457 E 5085547 N
 Caption: HAWLEY CREEK RESTORATION SITE - NECANICUM BASIN