

# **Culvert Assessment and Prioritization Plan for Fish Passage in the Tillamook Bay Watershed, Tillamook County, Oregon – Version 1.1**



**Tillamook  
Estuaries  
Partnership**

*A National Estuary Project*



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## **1.0. Introduction**

### **1.1. Background**

Improperly designed, constructed, or damaged culverts and other stream crossing structures can impede passage for migratory fishes and other aquatic wildlife; fragment and disconnect aquatic habitats; impair water quality; and compromise movement of stream bed materials, organic matter, and nutrients. Such structures have been implicated in dramatic reductions in accessible suitable habitats and associated with localized population declines, increased mortality and predation, decreased egg production, and other problems for many different fish species (Meehan 2005). The Tillamook Bay Watershed (the Watershed) consists of numerous stream systems and an extensive road network. As a result there are numerous road crossings within the Watershed, many of which use culverts to convey stream flows.

In the past, the Tillamook Estuaries Partnership (TEP) and partners have pursued opportunistic projects to upgrade culverts known to impede fish passage or impair habitat quality. Fish passage issues also have been addressed during crossing replacement projects where the primary goal was transportation safety or road corridor upkeep. However, until now, we have had insufficient information to develop a more systematic approach and prioritize passage barrier culverts for replacement throughout the Watershed.

In 2006, TEP and several partners completed a project in the Nestucca and Neskowin basins, Tillamook County, Oregon, during which existing and gathered data was used to identify barrier culverts and prioritize them for replacement (based primarily on their potential to impede fish passage and the quantity and quality of upstream habitats [Hoffman 2006]). The information generated during that project has facilitated cooperative efforts in strategically addressing fish passage issues in those watersheds. TEP and our partners regularly consult the final report for that project during work planning and project implementation efforts. Several barrier culvert replacement projects have been implemented in those watersheds as a result of the study. The study reported in this document utilized and built upon techniques and analyses developed during the Nestucca-Neskowin study.

A considerable amount of information on fish distribution and culverts and other potential barriers in the Watershed existed prior to this study. However, much of the information on culverts was outdated or insufficient to compare and contrast culverts and develop a strategic plan to replace fish passage barrier culverts. In addition, these existing data were insufficient to understand the general condition of culverts as needed by agencies responsible for transportation infrastructure.

With the above facts in mind, TEP undertook a project to identify, characterize and prioritize culverts for replacement throughout the Watershed. This document reports on the methods used to accomplish the study and it provides detailed information on culverts throughout the Watershed. Also included are the results of the process used to prioritize these culverts for replacement based primarily on their potential to impede fish passage and the quantity and quality of upstream habitats.

### **1.2. Study Area**

This project investigated road-stream crossings throughout the Tillamook Bay Watershed, Tillamook County, Oregon (Figure 1). Five 5th Field Watersheds contribute freshwater to the bay: Kilchis River

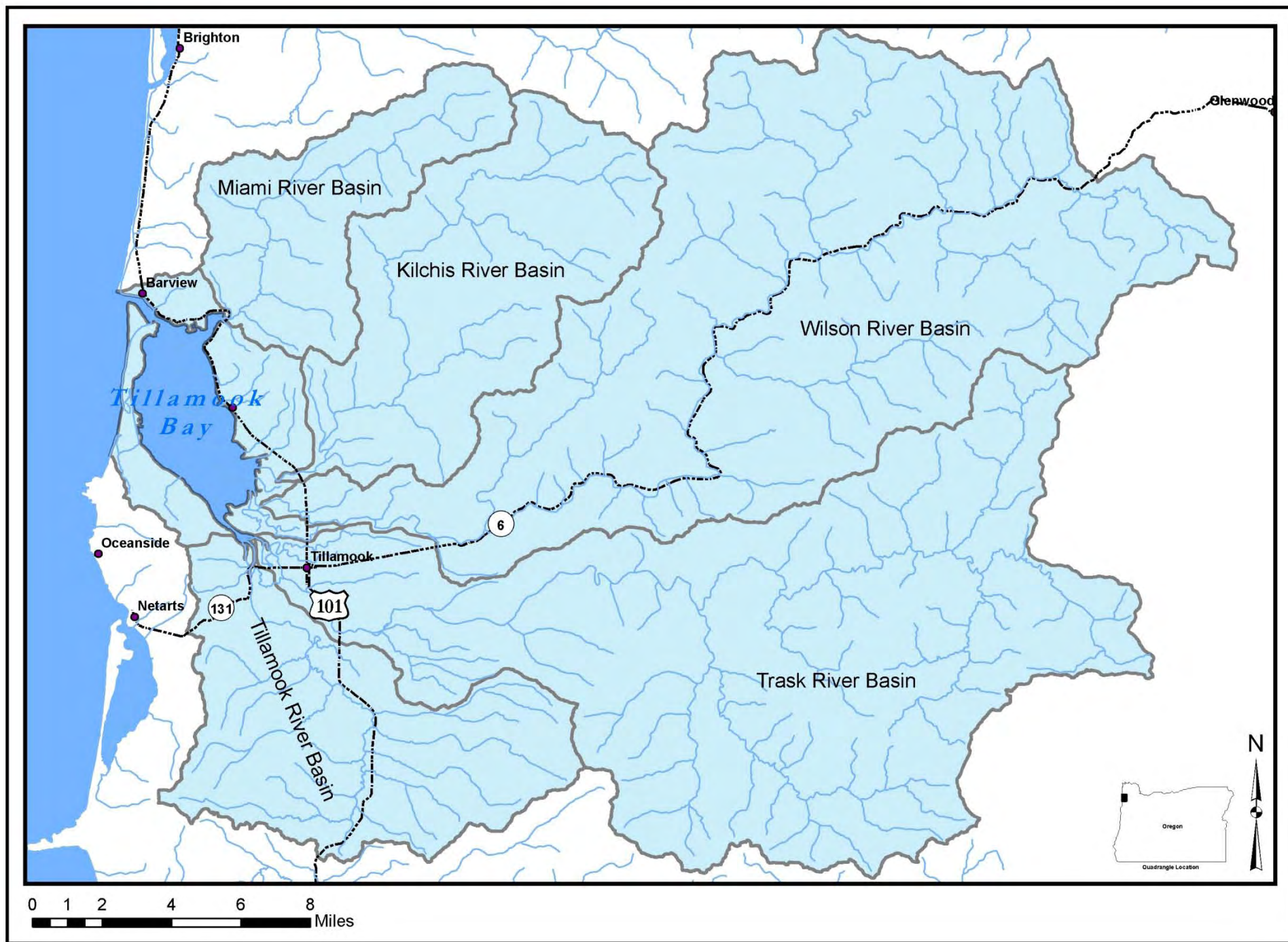


Figure 1. General overview map of Tillamook Bay Watershed.

Basin (Figure 2), Miami River Basin (Figure 3), Tillamook River Basin (Figure 4), Trask River Basin (Figure 5), and Wilson River Basin (Figure 6). In addition, there are several small tributaries that outlet directly into the Bay and are not included in these larger watersheds (Figure 7).

## **2.0. Methods**

### **2.1. Preliminary Analyses**

We used an ArcGIS (ESRI, Inc.) analysis to preliminarily identify road-stream crossings throughout the Watershed. Two data layers were critical to this automated analysis: a road layer and a stream layer that included stream gradient as one of its data fields. We used this analysis to identify potential crossings anywhere a mapped road intersected a mapped stream segment with a gradient of less than 15 percent slope. We used 15 percent as our cut off to minimize the potential that stream reaches occupied by anadromous fishes would be excluded from our analysis. Anadromous salmonids that regularly occur in the Watershed (Cutthroat trout [*Oncorhynchus clarki*], Steelhead trout [*O. mykiss*], Chum salmon [*O. keta*], Coho salmon [*O. kisutch*], and Chinook salmon [*O. tshawytscha*]) do not typically occupy stream reaches where gradients exceed 15 percent. This initial analysis did not attempt to differentiate between fish-bearing and non fish-bearing streams. We acknowledge that this analysis may not identify all crossings that may affect fish passage within the Watershed, but we believe that it was sufficient to identify a majority of crossings capable of affecting passage.

Using the above GIS analysis, we identified 1,529 potential crossings throughout the Watershed. These potential crossings occurred on roads administered by federal, state, and local governments and private roads owned by industrial and non-industrial land owners. Adjacent lands also were under varied ownership: federal-, state- and county-owned public lands, private industrial forest lands, and private agricultural, commercial and residential properties.

Before beginning field work, we used a Tillamook County taxlot data layer for an additional GIS analysis to identify owners of properties where the GIS-identified crossings occurred. We contacted all private property owners identified during this analysis by mail to request permission to access their property and investigate the crossings. We did not visit crossings that required crossing private lands where access was not provided. Most crossings on public roads were inspected. Access to the adjacent private property was not provided for some public road crossings. When this occurred, we were generally able to collect specific information about the crossing itself (e.g., crossing type, culvert dimensions, culvert gradient, etc.) but sometimes could not directly measure other variables if collecting that information required access outside of the public road right-of-way (e.g., bankfull width, upstream gradient, etc.). In these situations, we recorded visual estimates for such data (if possible). In some instances, the crossing inlet and outlet were outside of the road right-of-way and we were unable to collect most data on the crossing. We include two culverts in this report that meet this description.

### **2.2. Field Methods**

#### **2.2.1. Field Training**

We hired six college student interns to complete the bulk of field work for this project. Interns completed an approximately two week orientation and training session before they began independent site visits.







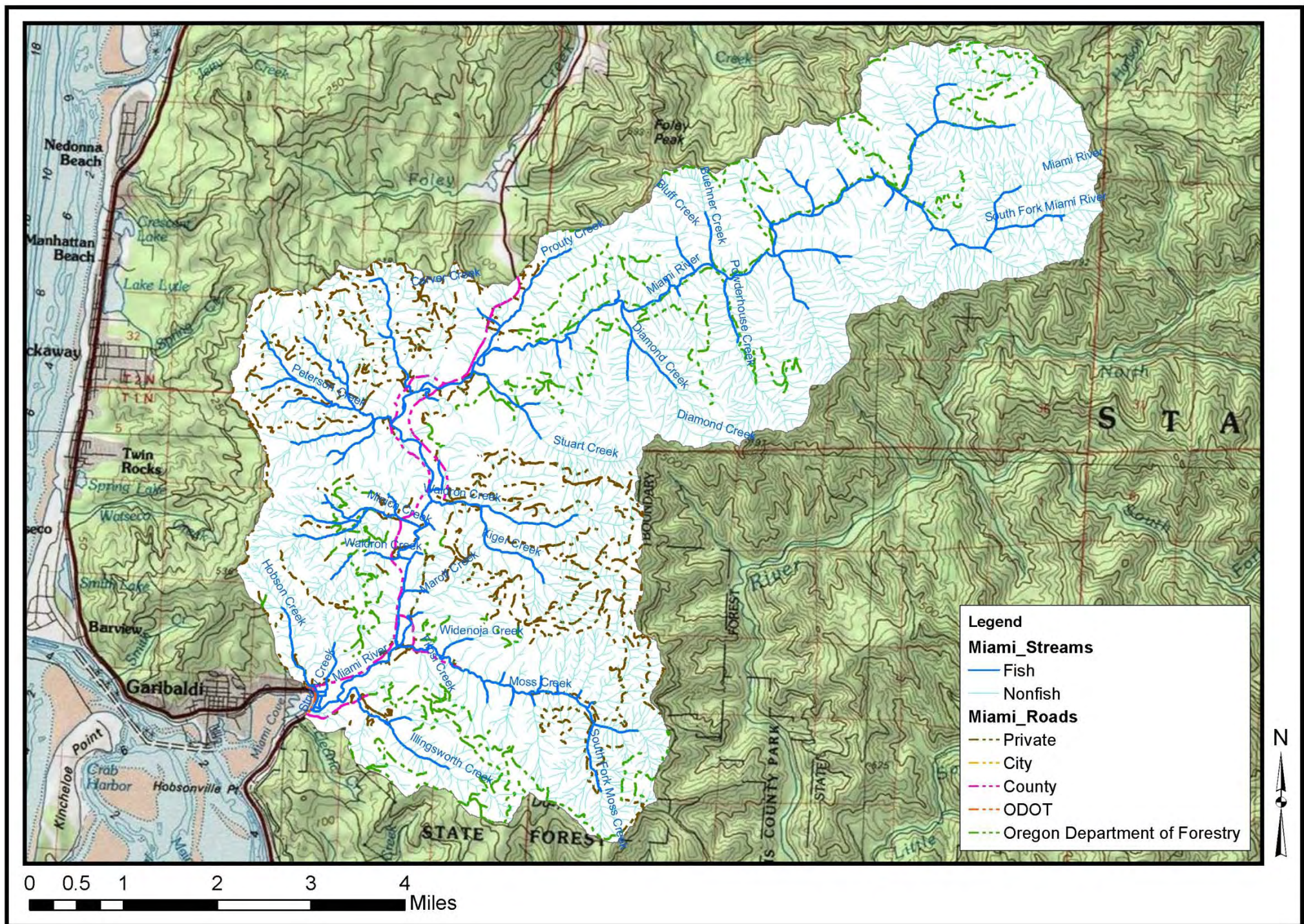


Figure 3. Map of Miami River Basin.







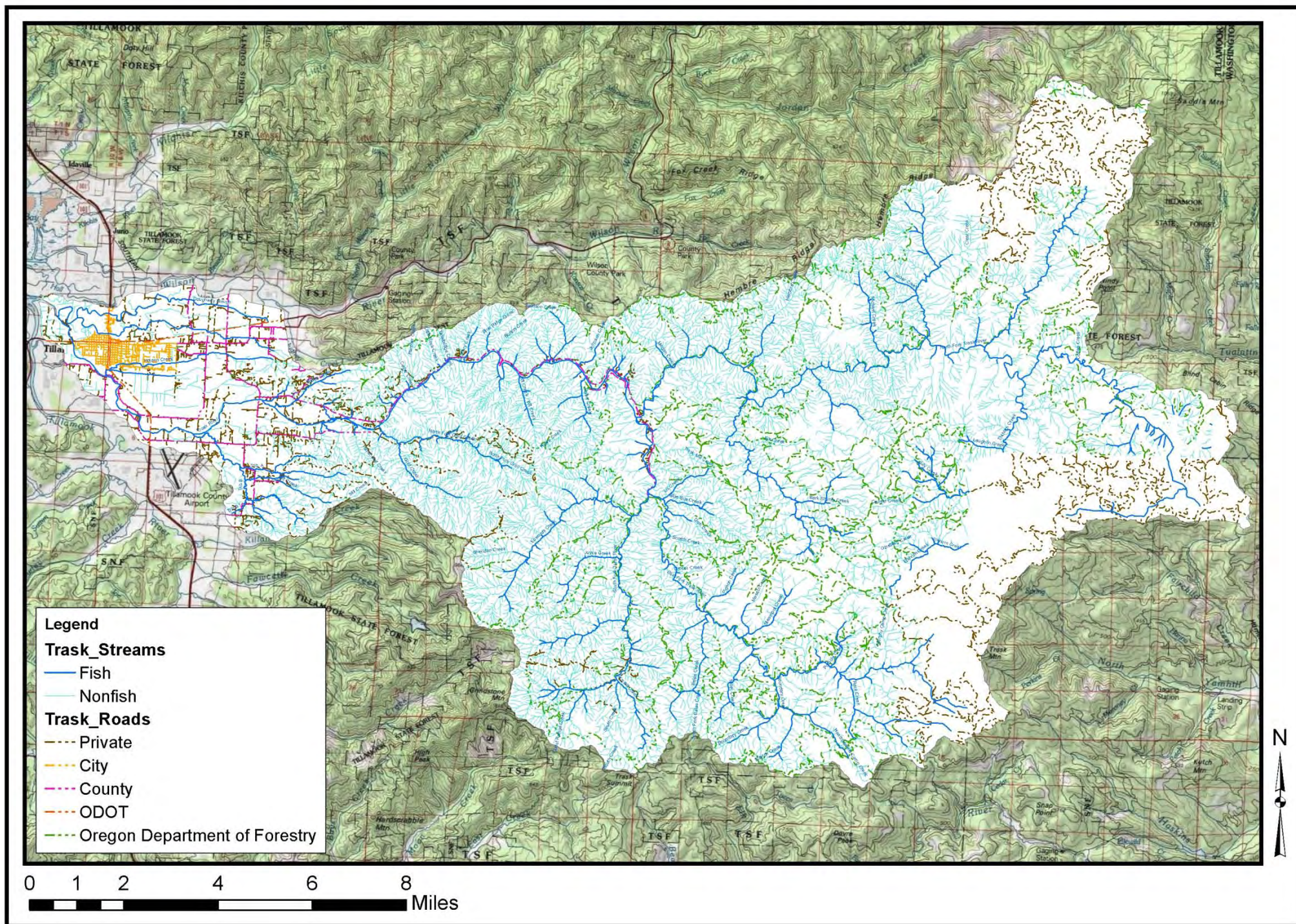
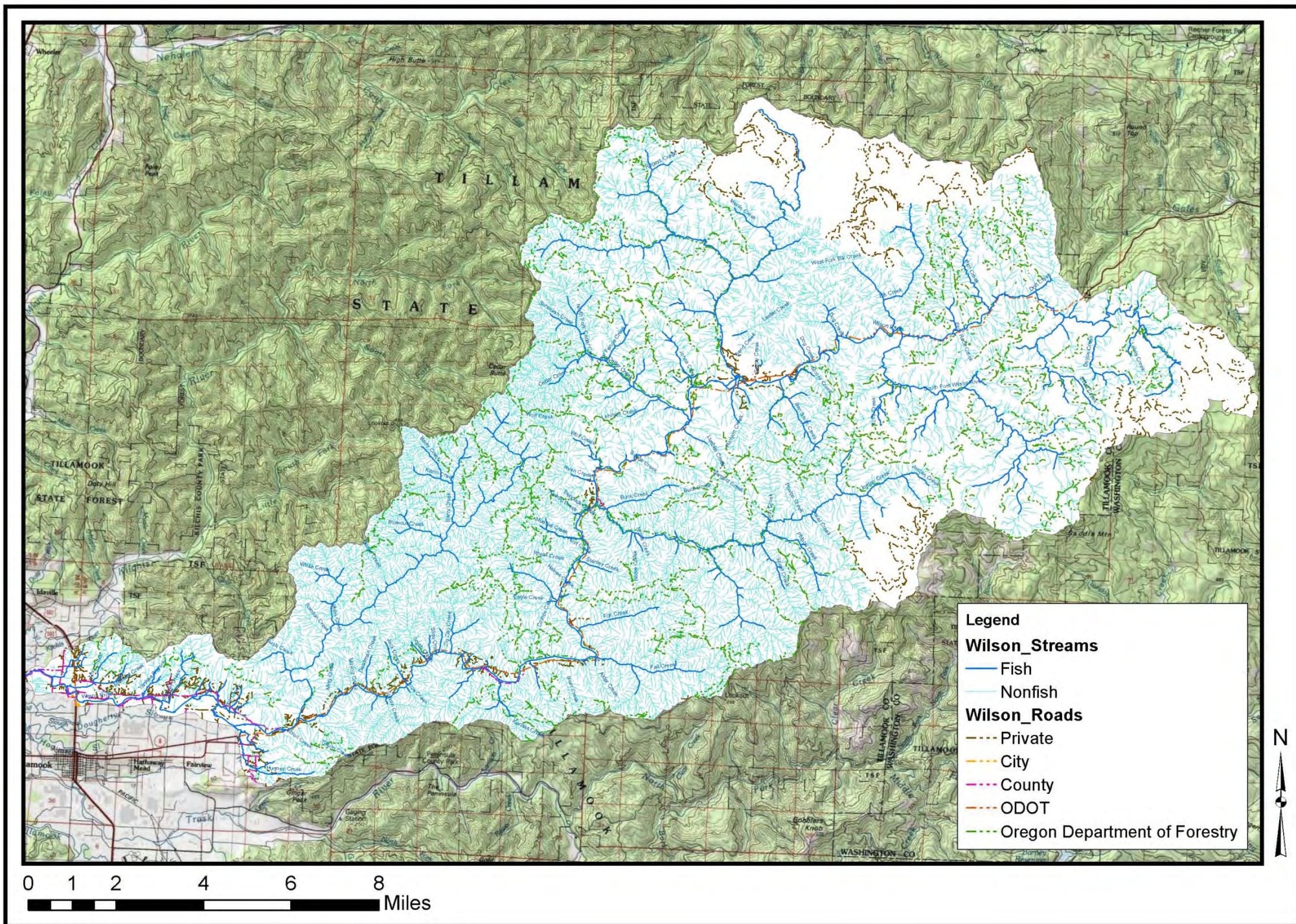


Figure 5. Map of Trask River Basin.







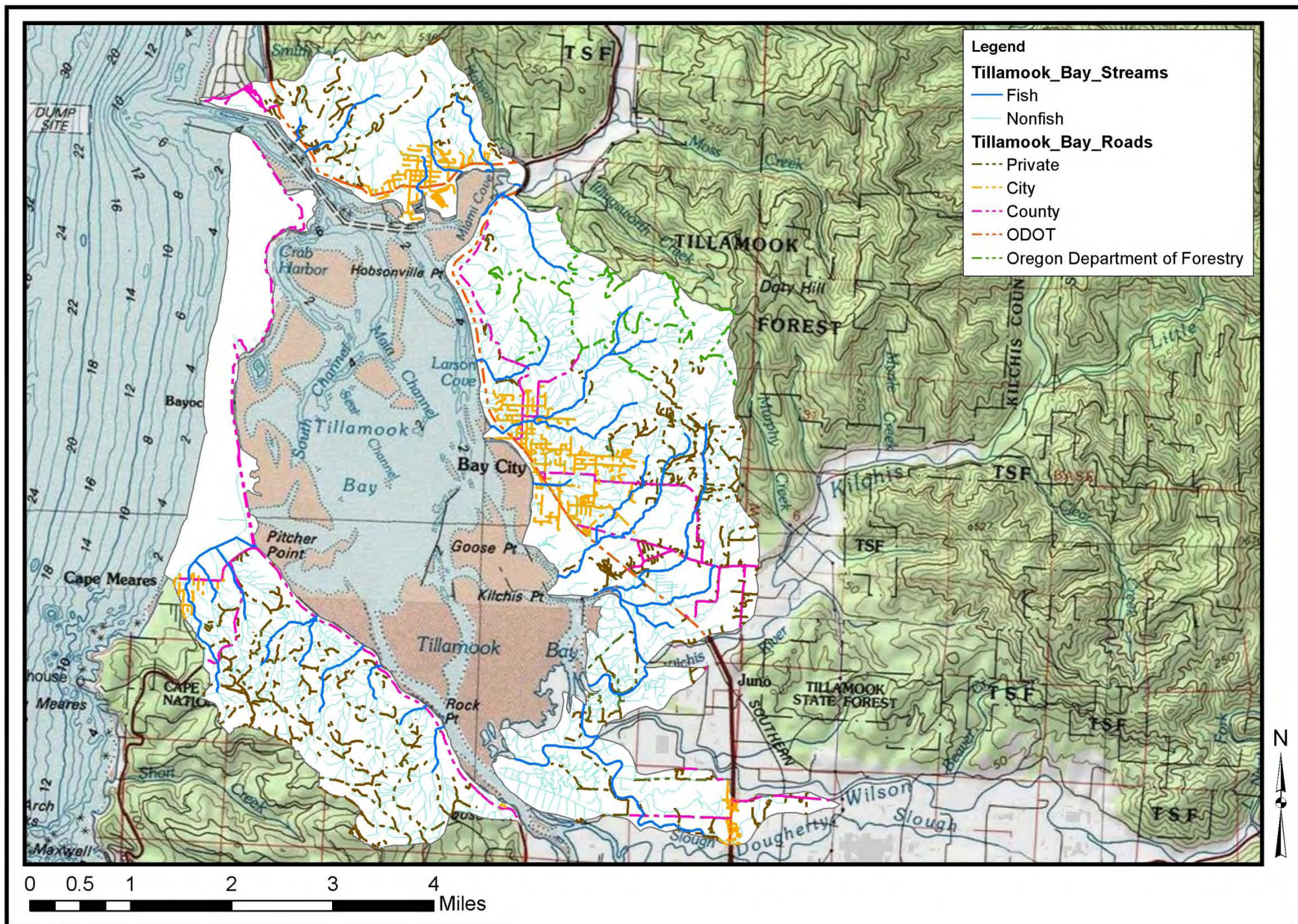


Figure 7. Map of Tillamook Bay Tributaries.



This consisted of two days of classroom training followed by field training. Classroom presentations covered a variety of topics including the Watershed, anadromous fish and their ecology, crossing structure classification and condition assessment, work safety, field methods, data management, etc. Interns spent the remainder of the training period working directly with the Project Manager conducting actual culvert surveys (see below). Together, we surveyed several GIS-identified crossings. This group field effort assured that each intern performed and became familiar with all aspects of the data collection and management process and were collecting data in a similar manner before they worked independently.

### ***2.2.2. Preliminary Classification and Data Collection at Culverts***

After the training, we established three, two-person field crews. Between late June and mid-September, 2011, these crews visited (or attempted to visit) each of the GIS-identified crossings that we had permission to access.<sup>1</sup>

At each crossing, we completed an initial screening process to establish whether the crossing was a “Fish Culvert” or “Not a Fish Culvert” (NFC). This process was the first step of our assessment and prioritization scheme and determined the appropriate data collection effort that the crew would need to complete for each crossing.

Crossings classified as “Fish Culverts” consisted of a culvert crossing structure on a known or potentially fish-bearing stream. The results section of this report primarily addresses these crossings. Crossings classified as NFC were crossings where (a) the crossing structure was something other than a culvert (e.g., a ford or a bridge)<sup>2</sup>, and/or (b) the stream reach was identified as Nonfish and/or appeared to lack suitable habitats for fishes (based on field observations). Although field crews had access to Oregon Department of Forestry (ODF) stream information as presented in figures 2-7 (and discussed in greater detail later in this report), they also made field determinations. The crews assessed whether a stream appeared fish-bearing or non fish-bearing based on a review of in-stream habitats and the surrounding riparian and upland communities (coupled with review of mapped information). This could be a challenging decision and often involved repeat visits and/or post-fieldwork review of additional data sources (e.g., RBA and fish distribution data). It is important to note that these determinations were made outside of the normal period for ODF fish presence/absence surveys and did not follow ODF protocols (ODF 2009).

In a few cases, we made determinations that differed from the ODF designation. There was a single instance, where we made an NFC determination on a stream verified as supporting fish. This culvert (#280) occurs on a small tributary of Elliot Creek in the upper Wilson River Basin. Our crew felt that the stream above this crossing was too small to support fish. The Fish-Verified reach of this stream extends approximately 0.1 miles above culvert #280. Because the segment above the culvert was so short and only resident fish occupy this portion of the Wilson River Basin, we did not return to the crossing to resample. We made a few NFC determinations for crossings on modeled fish streams. This decision was typically made when the stream was very small with marginal instream habitats and highly disturbed riparian and upland communities. There also were instances where the stream appeared capable of supporting fishes (upstream and/or downstream of the culvert), but where topographic and geophysical conditions at or near the culvert seemed to preclude upstream passage regardless of whether a culvert was present (e.g., culvert

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<sup>1</sup> Between Fall 2011 and Summer 2012 we completed additional field work to clarify questions regarding previously surveyed pipes and to collect information on crossings not visited while field crews were employed.

<sup>2</sup> These structures were not necessarily on stream reaches that were “non-fish.” In fact, bridges were often on larger streams known to support fish.

built on or near bedrock falls or in other extremely steep gradient conditions).<sup>3</sup> Conversely, we made a few Fish Culvert determinations for crossings on stream reaches designated Nonfish (verified and modeled – see below). These were generally situations where the crossing was located on a stream that appeared capable of supporting fish (at least seasonally) and flowed through naturally vegetated upland and riparian communities. In addition, these crossings also were typically in close proximity to stream reaches known to support salmonids.

During site visits at each fish culvert, crews collected a variety of data to characterize both the culvert and its adjacent stream reach and provide for subsequent analyses (Appendix 1-Crossing Assessment Form). We collected much of this data along a longitudinal profile that extended from above the culvert downstream to below the culvert and included all pertinent points needed to fully characterize the culvert and adjacent stream reach (Figure 8).<sup>4</sup> We used an optical surveyor's level, levelling rod and fiberglass tape measure to collect elevational data along the longitudinal profile. Units for all our levelling rods and fiberglass tapes were decimal feet (i.e., feet, tenths, and hundredths).

We initially established a Temporary Bench Mark (TBM), selected a location for the surveyor's level, and stretched the fiberglass tape measure from upstream to downstream along the stream centerline. The TBM was typically established on the top of the culvert on the inlet side and was given an arbitrary elevation of 100.00 ft (Figure 8). All other elevations were recorded relative to this 100.00 ft TBM. Crews attempted to set up the surveyor's level in a location with a line-of-sight view of all data points depicted on Figure 8. In a few instances, this was not possible and the crew moved the level partway through data collection and followed standard surveying procedures to re-establish Height-of-Instrument (relative to TBM) before continuing collection of elevational data. Elevational data was used for several different calculations needed to characterize fish culverts (see Figure 8 and Section 2.3). In several cases site topography or other obstacles made it impossible to collect longitudinal profile data using surveying equipment. In such instances, crews measured gradients directly using an Abney level and measured perch height directly using the tape measure or levelling rod (if an outlet perch was present).

Crews also collected other data needed to fully characterize each fish culvert in addition to the aforementioned longitudinal profile data (Appendix 1-Crossing Assessment Form). These included:

- several stream attributes (e.g., bankfull width [generally based on an average of three upstream measurements] and substrate conditions),
- culvert location (UTM coordinates, Public Land Survey System coordinates [i.e., Township and Range coordinates], and mile post),
- culvert type (shape and material),
- culvert dimensions (horizontal and vertical measurements),

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<sup>3</sup> Resident cutthroat trout populations regularly occur upstream of both natural and anthropogenic barriers. However, in these situations, a resident fish passing downstream of these points would likely be incapable of returning upstream whether the culvert was there or not.

<sup>4</sup> Data collection points along the longitudinal profile and methodologies used to measure and analyze these data generally follow Clarkin et al. (2005).



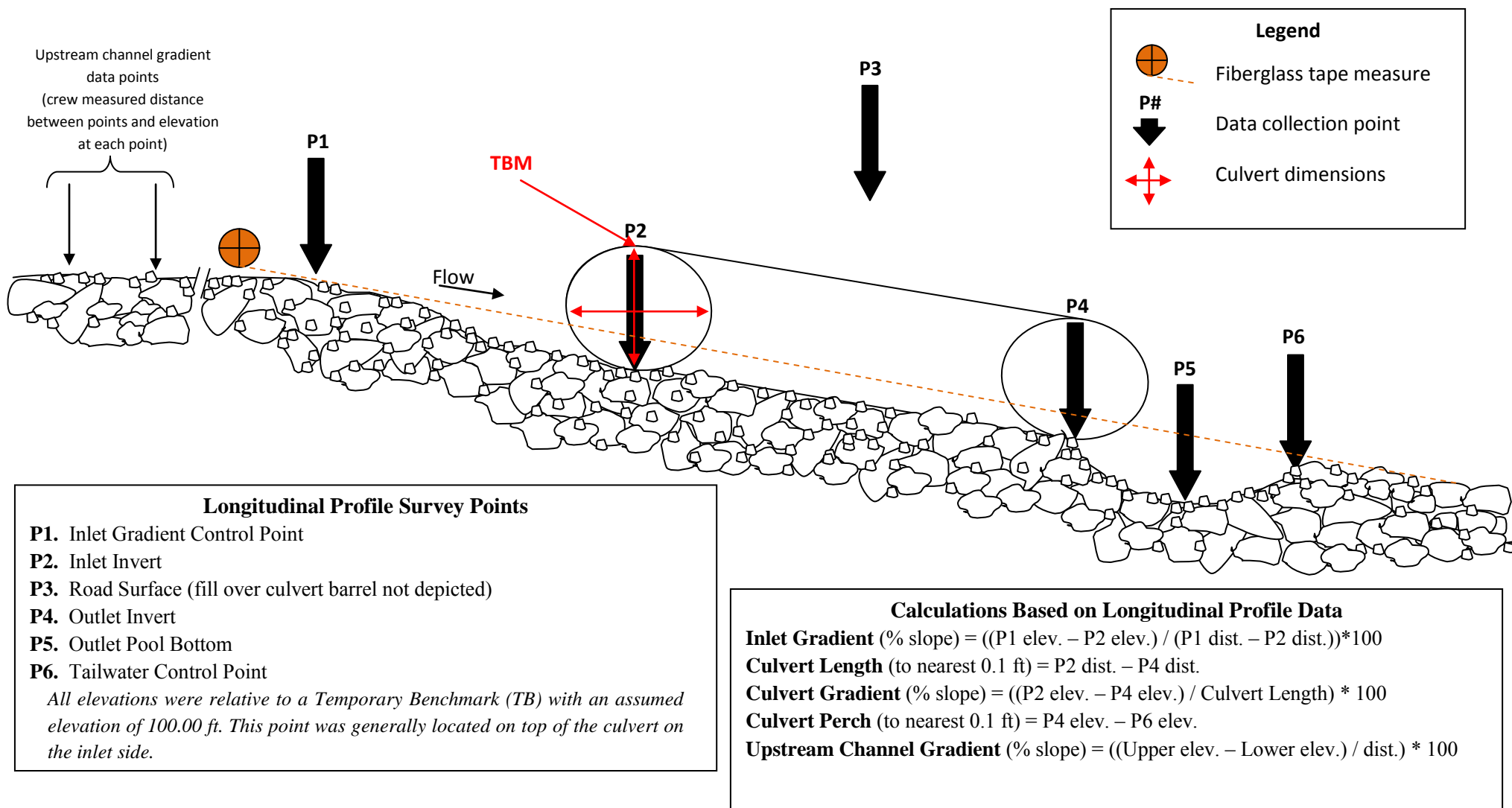


Figure 8. Illustration depicting typical points where longitudinal profile data was collected at road-stream crossings in the Tillamook Bay Watershed, Tillamook County, Oregon. At each of the points indicated, crews recorded both distance along the fiberglass tape and the elevation of the point relative to the Temporary Benchmark (TBM = 100.00 ft) elevation. Drawing also depicts culvert dimensions recorded during field work. Below the drawing are descriptions of longitudinal profile points and the calculations made with these data used to further characterize each culvert.

- culvert condition (problems that could cause the culvert to plug or fail and affect resources [Clarkin et al. 2005] and condition categories developed and used by transportation agencies to assess the condition and performance of culverts [Hunt et al. 2010]), and
- inlet rust line height<sup>5</sup>,

In addition, crews took a series of photographs to better illustrate culvert conditions (inlet, outlet, upstream from inlet, downstream from outlet, and sometimes special condition photos [e.g., excessive corrosion or other damages]). They also drew a site sketch that depicted the culvert relative to the road corridor; locations of the surveyor's level, longitudinal profile data points, photo points; and other pertinent details regarding the crossing (e.g., aprons, wingwalls, riprap, boulders, large wood, etc.).

Crews did not collect the same level of information at crossings initially identified as NFC. For these crossings the crew simply recorded the coordinates of the crossing and noted the type of crossing present (e.g., bridge, culvert, etc.). In a few instances where an NFC culvert was in very poor condition, the crews also noted the condition of the culvert and took photographs.

## **2.3. Post-Field Work Analyses**

Following field work, we performed additional analyses to assess the potential for culverts to impede fish passage and determine the amount of potentially suitable habitat upstream of each culvert. We also convened a group of local fisheries biologists and others familiar with the Watershed to classify the quality of habitats upstream of each culvert. We incorporated all of this information into a Prioritization Model, which forms the basis for our recommended replacement strategy. We discuss the above analyses and models in detail below. The scoring strategy for each variable in the Prioritization Model is discussed in Section 2.3.6.

### **2.3.1 Longitudinal Profile Data Analyses**

We used longitudinal profile data to calculate several pieces of pertinent information: culvert length, inlet gradient, culvert gradient, upstream channel gradient, and culvert perch height. The formulas for these calculations are shown on Figure 8. We used average bankfull width and the horizontal dimension of the culvert to calculate a Bankfull Width:Culvert Width Ratio. The results of the above calculations for each of the assessed culverts were used in analyses discussed below and are incorporated into tables later in this report.

### **2.3.2. Barrier Determination Model**

We used the results of the above calculations and additional information collected in the field in a model that assesses the potential for a culvert to impede fish passage. The result of the barrier determination model is one of the parameters considered in our Prioritization Model (see below).

We selected the BLM Coarse Screen Filter, Version 2.2 as our barrier determination model. (Table 1). This model is based on juvenile salmonid passage potential and was used for a previous TEP culvert

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<sup>5</sup> Rust lines typically form at the level of persistent high flows on steel culverts (similar staining can occur on concrete pipes). Rust line height is a good indicator of culvert capacity relative to stream flow. Rustline height exceeding 1/3 to 1/2 of the culvert diameter is a good indication that the pipe is undersized for the stream channel and its flows.

Table 1. U.S. Bureau of Land Management Coarse screen filter for juvenile salmonid passage assessment, Version 2.2.

	Structure	Green	Gray	Red
1	Bottomless pipe arch or countersunk pipe arch, Substrate 100% coverage through pipe and invert depth greater than 20% of culvert rise.	Culvert installed at channel grade (+/- 1%), culvert span to bankfull width ratio greater than 0.9, no blockage.	Culvert installed at channel grade (+/- 1%), culvert span to bankfull width ratio greater than 0.5, less than or equal to 10% blockage.	Culvert not installed at channel grade (+/- 1%), culvert span to bankfull width ratio less than 0.5, greater than 10% blockage.
2	Pipe arches (1x3 corrugation and larger). Substrate less than 100% coverage through pipe or invert depth less than 20% of culvert rise.	Culvert gradient less than 0.5%, no perch, no blockage, culvert span to bankfull width ratio greater than 0.75.	Culvert gradient between 0.5 to 2.0%, less than 4" perch, less than or equal to 10% blockage, culvert span to bankfull width ratio greater than 0.5.	Culvert gradient greater than 2.0%, greater than 4" perch, greater than 10% blockage, culvert span to bankfull width ratio less than 0.5.
3	Circular CMP or ABS, 48 inch span and smaller, spiral or annular (CMP) corrugations, regardless of substrate coverage.	Culvert gradient less than 0.5%, no perch, no blockage, culvert span to bankfull width ratio greater than 0.75	Culvert gradient 0.5 to 1.0%, perch less than 4 inches, less than or equal to 10% blockage, culvert span to bankfull width ratio greater than 0.5.	Culvert gradient greater than 1.0%, perch greater than 4 inches, blockage greater than 10%, span to bankfull width ratio less than 0.5.
4	Circular CMPs with annular corrugations larger than 1x3 and 1x3 spiral corrugations (>48" span), substrate less than 100% coverage through pipe or invert depth less than 20% culvert rise.	Culvert gradient less than 0.5%, no perch, no blockage, culvert span to bankfull width ratio greater than 0.75.	Culvert gradient between 0.5 to 2.0%, less than 4" perch, less than or equal to 10% blockage, culvert span to bankfull width ratio greater than 0.5.	Culvert gradient greater than 2.0%, greater than 4" perch, greater than 10% blockage, culvert span to bankfull width ratio less than 0.5.
5	Circular CMPs with 1x3 or smaller annular corrugations (all spans) and 1x3 spiral corrugations (>48" span), 100% substrate coverage through pipe and invert depth greater than 20% of culvert rise.	Culvert gradient less than 1%, no perch, no blockage, culvert span to bankfull width ratio greater than 0.75	Culvert gradient 1.0 to 3.0%, perch less than 4 inches, less than or equal to 10% blockage, culvert span to bankfull width ratio greater than 0.5.	Culvert gradient greater than 3.0%, perch greater than 4 inches, blockage greater than 10%, culvert span to bankfull width ratio less than 0.5.
6	Circular CMPs with 2x6 annular corrugations (all spans), 100% substrate coverage through pipe and invert depth greater than 20% of culvert rise.	Culvert gradient less than 2.0%, no perch, no blockage, culvert span to bankfull width ratio greater than 0.75	Culvert gradient 2.0 to 4.0%, less than 4" perch, less than or equal to 10% blockage, culvert span to bankfull width ratio greater than 0.5.	Culvert gradient greater than 4.0%, greater than 4 inch perch, greater than 10% blockage, culvert span to bankfull width ratio less than 0.5.
7	Special items; log stringer or modular bridge,	No encroachment on bankfull width.	Encroachment on bankfull width (either streambank).	Structural collapse.
8	Baffled structure installations (all culvert sizes and configurations).	No perch, no blockage. Culvert span to bankfull width ratio greater than 0.75. 100% substrate in pipe but baffles protruding.	Outlet with less than 6 inch perch, less than or equal to 10% blockage, culvert span to bankfull width ratio greater than 0.5. Less than 100% substrate.	Perch greater than 6 inches, greater than 10% blockage, culvert span to bankfull width ratio less than 0.5. Less than 100% substrate.
9	Weir installations (all culvert sizes and configurations).	No perch, no blockage. Culvert span to bankfull width ratio greater than 0.75. Weirs provide 6 inch minimum pool depth and no jumps exceed 4 inches.	Outlet with less than 6 inch perch, less than or equal to 10% blockage, culvert span to bankfull width ratio greater than 0.5. Weirs with pool depths less than 6 inches. Jumps over weirs greater than 4 inches.	Perch greater than 6 inches, greater than 10% blockage, culvert span to bankfull width ratio less than 0.5. Weirs without pools, no resting areas. Weir Jumps> 4 inches
10	Concrete Box Culverts	Culvert backwatered or mostly backwatered w/100% substrate. Culvert span to bankfull width ratio greater than 0.75. No blockage.	Culvert gradient up to 2%. Outlet with less than 4 inch perch. 100% substrate in pipe. Culvert span to bankfull ratio greater than 0.5.	Perch greater than 4 inches. Culvert span to bankfull ratio less than 0.5. Laminar flow. Less than 100% substrate in pipe.
11	Circular concrete and smooth wall ABS culverts.	100% substrate in pipe. Slope less than .5%. No Perch	Less than 100% substrate in pipe. Slope .5-1%. Perch less than 4 inches	No substrate. Slope greater than 1% Perch greater than 4 inches.

assessment for the Nestucca and Neskowin watersheds (Hoffman 2006).<sup>6</sup> During preparation of that report, the author and her technical advisory committee evaluated this and two other commonly used barrier determination models. They selected this model because it is very conservative in determining whether a culvert is a barrier and it differentiates culverts based on the degree to which juvenile fish passage is impeded.

Based on the type of culvert and a suite of characteristics, the model places culverts into one of three passage categories: Green = Not a Barrier (juveniles are able to move past the culvert under all conditions), Gray = Partial Barrier (under some conditions the culvert may preclude juvenile passage), and Red = Complete Barrier (the culvert may block juvenile passage under all conditions). Within the prioritization model, culverts classified as Green received 1 point, Gray culverts received 2 points, and Red culverts received 3 points.

As also stressed by Hoffman (2006), no barrier model is flawless and the determinations made by employing a model are not absolute (juveniles may occasionally get past a culvert classified as a complete barrier and under some conditions a green culvert may preclude juvenile passage). However, we have confidence in the results of the model. We believe that it provides a good approximation of real-world conditions and is sufficiently rigorous to allow comparisons among culverts.

### ***2.3.3. Upstream Habitat Length***

We used GIS to estimate the linear amount of potentially suitable habitat upstream of each culvert. This is one of the variables in the Culvert Prioritization Model and is termed Upstream Habitat Length (see below). For the prioritization model, upstream habitat lengths were divided into four classes (each encompassing a range of upstream habitat lengths): 0.0 – 0.5 miles, 0.6 – 1.0 miles, 1.1 – 1.5 miles, and > 1.6 miles. Each culvert was placed in one of these four classes based on the total linear amount of suitable habitat upstream of the culvert and scored accordingly (0.0 – 0.5 miles = 1 point, 0.6 – 1.0 miles = 2 points, 1.1 – 1.5 miles = 3 points, > 1.6 miles = 4 points).

We based our decisions for this parameter on a composite of fields in the attribute table of the ODF Stream Layer mentioned previously. These fields are: Fishpres (Fish Presence = Fish, Nonfish, or Unknown), Verfish (Fish Presence Verified? = Verified or Assumed) and Modfish (Fish Presence Modeled = Fish, Nonfish, or Not Modeled<sup>7</sup>). For presentation purposes, we considered six potential categories that result from this composite: Fish-Verified, Fish-Assumed, Fish-Modeled, Nonfish-Verified, Nonfish-Assumed, and Nonfish-Modeled. Figures 2-7 depict these different stream designations. Although we differentiated reaches based on these designations on maps provided in this report, we did not differentiate between the -Verified, -Assumed and -Modeled classifications for our analyses.

The vast majority of crossings we identified as fish culverts, were located on Fish-Verified, Fish-Assumed or Fish-Modeled stream reaches. For these crossings, we consider the amount of potentially

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<sup>6</sup> Adult salmonids are much more capable swimmers than juveniles and can move past obstacles that would preclude juvenile passage. Using juvenile passage potential results in a more conservative assessment and minimizes the potential for problem culverts to be overlooked. Our model considered a drop of  $\geq 4$  inches to be a juvenile barrier.

<sup>7</sup> Only reaches designated Unknown in the Fishpres field are modeled.

suitable habitat to be the combined length of all reaches designated Fish-Verified, Fish-Assumed and Fish-Modeled upstream of the given culvert.

We used an alternative approach for the few crossings we classified as fish culverts, but which occurred on streams classified as Nonfish-Verified, Nonfish-Assumed and Nonfish-Modeled. For these culverts, the length of upstream habitat was subjective and based on review of stream gradients, intrinsic potential model outputs and other variables. We reviewed this suite of information and used professional opinion to define the upstream limit (generally where stream gradient became excessively steep and intrinsic potential fell to very low values).

We assumed no upstream barriers (anthropogenic or natural) for the upstream habitat length analysis. In other words, we assumed that the entire length of Fish-Verified, Fish-Assumed and Fish-Modeled reaches upstream of the subject culvert were accessible to juvenile salmonids. We acknowledge that this assumption is an oversimplified view of the watershed. There are known and possibly unknown barrier culverts above many of the culverts analyzed for this report (known culverts are included in this prioritization process). Other anthropogenic barriers also may occur. In addition, permanent and temporary natural barriers occur throughout the Watershed. Some of these barriers are known, while others may be unknown. The degree to which many natural obstacles (and unknown anthropogenic features) may impede fish passage also is largely unknown. Some may mark the end of fish distribution altogether, some may only preclude passage under certain conditions, while others may preclude anadromous passage, but may not mark the end of resident fish use.

We also acknowledge that our method places an enormous amount of faith in the data and model outputs used by ODF and Oregon Department of Fish and Wildlife (ODFW) to classify streams throughout the Watershed. The stream classifications are used for regulatory and management decisions, however, so we assume that they are suitably robust for the purpose of our analysis (ODF 2009).

There are a vast number of variables to consider and a great amount of uncertainty is inherent in obtaining results for the Upstream Habitat Length parameter. We believe the method we chose is an objective and data-driven approach to identifying and comparing upstream habitats for the culverts we analyzed and are confident in the results of this analysis.

#### ***2.3.4. Upstream Habitat Quality***

We ranked the quality of habitats upstream of each subject culvert. This also is one of the variables in the Culvert Prioritization Model and is termed Upstream Habitat Quality (see below). Within the prioritization model there are three potential responses for this variable: Poor (1 point), Fair (2 points) and Good (3 points).

To populate this variable for each culvert, we convened a one-day meeting of local fisheries biologists and other technical specialists familiar with streams in the study area and GIS data sets with attributes that imply habitat quality. During this meeting, participants reviewed data for each individual fish culvert evaluated in this study and formulated a consensus opinion on the quality of habitats upstream of each culvert. If a participant had first-hand knowledge regarding a stream (typically information on water quality, in-stream and adjacent habitats, fish survey results, etc.) they provided that information to the group. The group also reviewed a variety of GIS data including mapped fish distributions (ODFW data layers for coho and winter steelhead distributions), juvenile snorkel survey results (Rapid Bio Assessment

[RBA] data – Bio-Surveys, LLC. 2005, 2006 and 2007), output from intrinsic potential models (Burnett et al. 2003 and 2007)<sup>8</sup>, and stream gradients. The group considered this suite of information in its entirety in formulating its consensus opinion for each assessed culvert.

We rated upstream habitat quality as Poor when the following attributes were predominant upstream of the subject culvert: very small streams with limited flows, steep stream gradients (generally > 8 percent gradient), compromised adjacent upland and riparian habitats (adjacent land primarily supporting agricultural, commercial or residential development or subject to recent and ongoing timber harvests, etc.), low intrinsic potential scores (scores generally < 0.300 for both coho and steelhead), and RBA data indicating low numbers of juvenile salmonids upstream of the subject culvert or in nearby reaches if no RBA data exists for reaches upstream of the subject culvert (juvenile coho, cutthroat and steelhead densities generally less than 0.3 fish per square meter of pool surface).

We rated upstream habitat quality as Fair when the following attributes were predominant upstream of the subject culvert: moderate gradients (generally 4-8 percent gradient), forested upland habitats and intact riparian habitats, moderate intrinsic potential scores (intrinsic potential scores generally between 0.300 and 0.600 for coho or steelhead), and RBA data indicating moderate numbers of juvenile salmonids upstream of the subject culvert or in nearby reaches if no RBA data exists for reaches upstream of the subject culvert (juvenile coho, cutthroat or steelhead densities generally ranging from 0.3-1.0 fish per square meter of pool surface).

We rated upstream habitat quality as Good when the following attributes were predominant upstream of the subject culvert: low to moderate gradients (generally < 6 percent gradient), forested upland habitats and intact riparian habitats, moderate to high intrinsic potential scores (intrinsic potential scores generally above 0.500 for coho or steelhead), and RBA data indicating moderate to high numbers of juvenile salmonids upstream of the subject culvert or in nearby reaches if no RBA data exists for reaches upstream of the subject culvert (juvenile coho, cutthroat or steelhead densities generally > 0.8 fish per square meter of pool surface).

In the tables that provide data on each individual culvert we analyzed for this report (see below), we also included a + or – modifier for some culverts. We included this modifier when the evaluation team felt that habitat conditions were somewhat better or somewhat worse than the Poor or Fair classification would otherwise suggest. In a situation where multiple culverts may have the same overall prioritization score and similar habitat quality scores, this qualifier may be used as a “tie breaker” to facilitate strategic planning of culvert replacements.

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<sup>8</sup> These models are based on physical landscape characteristics that have been positively correlated with productive habitats for coho and steelhead (valley width, channel gradient and mean annual flow). Intrinsic potential scores range from 0.0 to 1.0 (low to high). The models are not a perfect measure of habitat quality because they do not account for actual present conditions that affect habitat quality (e.g. condition of adjacent riparian and upland habitats, water quality and other in-stream conditions, etc.). However, they are one of the few tools that objectively evaluate the habitat potential of individual stream reaches across large geographic areas.

### ***2.3.5. Fish Species Present***

We included the type of fish likely to be affected by a given culvert as one of the parameters in our prioritization model. There were three potential responses for this variable: No Fish (1 point), Resident Fish (2 points) and Anadromous Fish (3 points).

By definition, all culverts identified as fish culverts are likely to affect fishes, so we did not apply the “No Fish” category to any culverts evaluated for this report. For the few culverts that we identified as Fish Culverts, but which occurred on Nonfish designated stream reaches (see explanation above), we used the fish classification for the adjacent downstream reaches for that variable in our model. For example, if the adjacent downstream reaches supported anadromous fish, we populated the Fish Presence variable of the model with the value for anadromous fishes (we feel it is reasonable to assume that if a barrier culvert did not exist that the fish using the adjacent downstream reaches would have access to reaches above the subject culvert).

Most culverts in our assessment occurred on streams that are known or potentially occupied by anadromous fishes. As a result, most culverts we analyzed received a full score (3 points) for fish presence. There are a few notable exceptions.

Within the Watershed, there are a few large natural barriers (e.g., University Falls on Elliot Creek in the upper Wilson River Watershed) and anthropogenic barriers (e.g., the dam that forms Barney Reservoir on the Middle Fork North Fork Trask River) that prevent upstream migration of anadromous fishes. A few culverts assessed for this report are located on designated fish streams above these known anadromous barriers. These streams support resident cutthroat trout populations and the culverts on these reaches received scores for resident fish (2 points) within the prioritization model.

### ***2.3.6. Prioritization Model***

Results from the above analyses were incorporated into a Prioritization Model which yields a composite score for each culvert (Table 2). We used the model developed and used by Hoffman (2006) for this analysis.

Hoffman’s model essentially compares culverts against one another by giving each a composite score based upon the severity of the barrier, the quantity and quality of upstream habitats, and the types of fish affected (resident or anadromous). The results of this model form the basis of our prioritization plan and are incorporated into tables later in this report.

## **2.4. Prioritization Action Plan**

The final step in this culvert assessment project was to develop a plan to facilitate and guide replacement of fish passage barrier culverts in the Watershed based primarily on the outcomes of the above analyses. Our goal was to collect up-to-date information on as many potential barrier culverts as possible, make objective comparisons among these culverts, and facilitate development and implementation of projects to replace barrier culverts in a fashion that maximizes benefits to fishes.



Table 2. Culvert Prioritization Model used to compare and prioritize culverts in the Tillamook Bay Watershed for replacement.

Parameter	Points	Criteria	Criteria Based on
Barrier Severity	1	Not a Barrier (Green)	Juvenile Barrier Determination Model (BLM Coarse Screen Filter Version 2.2).
	2	Partial Barrier (Gray)	
	3	Complete Barrier (Red)	
Upstream Habitat Length	1	0.0 – 0.5 miles	Fish presence fields in Oregon Department of Forestry GIS stream layer.
	2	0.6 – 1.0 miles	
	3	1.1 – 1.5 miles	
	4	>1.6 miles	
Upstream Habitat Quality	1	Poor	Professional judgment of advisory committee. Supported by review of several GIS data layers and firsthand knowledge.
	2	Fair	
	3	Good	
Fish Species Present	1	No Fish	Review of GIS fish distribution data.
	2	Resident	
	3	Anadromous	

As noted above, the Tillamook Bay Watershed is quite large and is composed of five river basins and numerous tributaries that outlet directly to the bay. Larger basins (e.g., Trask and Wilson basins) have greater numbers of larger (longer) streams than the smaller basins (e.g., Miami and Kilchis basins). Thus, more culverts in the larger basins are likely to receive the maximum score for the Upstream Habitat Length parameter of the prioritization model than in smaller basins. As a result, comparing culverts across all basins would disproportionally bias our results towards the larger basins. To make our prioritization scheme more user-friendly, facilitate its use by partners that may work more in one portion of the Watershed than others, and remove the aforementioned potential source of bias we based our prioritization recommendations and present our findings below using a basin-by-basin format (rather than lumping culverts across all basins).

We ranked culverts with higher prioritization model scores as higher priority for replacement than those with lower scores. However, many culverts scored equally and the spread between the lowest and highest ranking culverts in some basins was only a few points. When end users use this document for planning replacement projects, we suggest that they use differences in ecological factors discussed above (e.g., + or – “tie breaker” modifier for habitat quality, actual Upstream Habitat Length values, etc.) and overall culvert condition scores to further inform their decision making processes.

Our goal was to prioritize culverts based on objective and measurable variables and facilitate an efficient and effective replacement strategy to improve conditions for fish populations in the Watershed. We recognize that some potential replacements may be easier to implement than others based on potential

willingness of landowners to participate, potential to obtain funding, and other factors. However, it is beyond the scope of this project to consider such factors associated with replacement projects and, thus, they were not incorporated into our ranking process.

### **3.0. Results**

We identified 1,526 potential crossings through the initial GIS-based identification effort discussed above.<sup>9</sup> We did not receive permission to access 362 of the GIS-identified crossing locations that occurred on private lands or required travel on private roadways. In addition, we determined that 311 of the GIS-identified crossings do not exist (DNE). We identified a crossing as DNE for one of two reasons: (1) the road on which the crossing was expected to occur did not exist (typically these roads had been decommissioned by the land owner), or (2) the GIS-identified crossing was what our field crews referred to as a “Phantom Crossing.” We believe phantom crossings were identified in GIS due to errors in the spatial data sets used for the analysis or errors associated with the geospatial analysis used to identify intersections of road and stream polylines. Phantom crossings occurred primarily where road and stream polylines ran parallel, and in very close proximity, to one another. In these situations, a slight alignment error in one or both polylines (as compared to “real world” conditions) could cause GIS to identify an intersection between road and stream polylines where none actually existed. Conversely, GIS could identify an intersection in error if the distance between the road and stream polylines was less than the tolerance level setting used for the ArcGIS intersect analysis (e.g., if the tolerance level for the ArcGIS intersect analysis is set at one meter and the polylines are less than one meter apart, the application would identify a crossing). In either of these circumstances, GIS could identify a crossing where none occurred.

We visited 853 of the 1,526 GIS-identified crossings during field work for this report. In addition, we collected information on 20 crossings not identified by GIS, but which appeared notable to field crews when observed in the field. Therefore, we surveyed a total of 873 crossings for this report. We identified 658 NFC crossings (465 culverts, 190 bridges, two fords, and one hatchery diversion structure) and 215 Fish Culverts: 21 (10 percent) were not barriers to juvenile fish passage (Green), 36 (17 percent) were partial barriers to juvenile fish passage (Gray) and 156 (73 percent) were complete barriers to juvenile fish passage (Red). We lacked sufficient information for two culverts to determine a barrier rating (2 unknown – 1 percent).

The sections that follow summarize our results and provide detailed information on the 215 fish culverts we surveyed (including maps and photos) and replacement prioritization recommendations for each basin in the Tillamook Bay Watershed.

#### **3.1. Prioritization Analysis**

As noted above, a majority of culverts included in this report were rated as complete barriers to fish passage. In addition, most culverts in this report also were on streams that should be accessible to anadromous fishes (if not for these anthropogenic barriers). As a result, the variables that most affected our prioritization rankings were habitat quantity and habitat quality.

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<sup>9</sup> GIS-identified crossings numbers 453 and 454 turned out to be a single long crossing that passed under several roads and city lots before terminating at Tillamook Bay. The number of culverts reported from this point forward treats these as a single crossing.

In general, culverts ranked as High Priority affected a considerable amount of potentially suitable habitat and/or affected relatively high quality habitats. Medium Priority culverts typically impeded passage to lesser amounts of potentially suitable habitat or somewhat lower quality habitats than those ranked as High Priority. Culverts ranked as Low Priority generally affected only small amounts of habitat and often these habitats were of relatively low quality. When using this report as a guide to identify and plan potential culvert replacement projects, culverts with higher priority ratings should take precedence over lower ranked culverts whenever possible.

We feel it is important to stress that although we rank many culverts as Low Priority for replacement in the following sections, this does not imply that these culverts are unimportant and should not be targeted for replacement. On the contrary, figures 2-7 graphically demonstrate that most streams in the Watershed are not fish-bearing. As a result, all anthropogenic barriers on fish-bearing streams are important with respect to the conservation and long-term viability of native fish populations in the Watershed. However, under most circumstances, culverts receiving Low Priority scores should be targeted for replacement to improve fish passage only after higher ranked culverts have been replaced.

We also include information below on several culverts that at the time of our surveys did not appear to be barriers to fish passage (Barrier Severity Rating = Not a Barrier). Based on their overall prioritization model scores, several of these culverts ranked as High or Medium Priority (despite scoring very low in one of the model parameters). These culverts occurred on streams with large amounts of upstream habitat and/or high-quality habitats and occupied by multiple anadromous species. Although these culverts didn't appear to impede upstream passage at the time of our survey, this may not always be the case. Culverts wear out and stream conditions change, so we recommend regular monitoring visits to verify that these pipes continue to allow access to the streams systems on which they occur.

As noted earlier, we implemented our prioritization process basin-by-basin to facilitate its use by end users and minimize potential bias. The following paragraphs summarize our findings for each basin.

*Kilchis River Basin* - We surveyed 24 fish culverts in the Kilchis River Basin (Table 3). These crossings affected a total of approximately 12.4 miles of upstream habitats (Table 9). There were 10 High Priority culverts in this basin. We rated four culverts in the Kilchis Basin as Medium Priority. Six culverts in this basin received scores that placed them in the Low Priority range. In addition, four culverts in this basin received scores that would have placed them in the Low Priority range, but these did not appear to be barriers to fish passage at the time of our survey.

*Miami River Basin* - We surveyed 21 fish culverts in the Miami River Basin (Table 4). These crossings affected a total of approximately 13.8 miles of upstream habitats (Table 9). There were seven High Priority culverts in this basin. We rated six culverts in the Miami Basin as Medium Priority. Six culverts in this basin received scores that placed them in the Low Priority range. In addition, two culverts in this basin received scores that would have placed them in the Low Priority range, but these did not appear barriers to fish passage at the time of our survey.

*Tillamook Bay Tributaries* - We surveyed 35 fish culverts on streams that outlet directly into Tillamook Bay or Cape Meares Lake (Table 5). These crossings affected a total of approximately 13.8 miles of upstream habitats (Table 9). There were 13 High Priority culverts on these streams. Notably, 10 of these 13 crossings occur on two streams in the Bay City area: Patterson Creek and Doty Creek. We rated 13

culverts on Tillamook Bay tributaries as Medium Priority. Nine culverts in this basin received scores that placed them in the Low Priority range.

*Tillamook River Basin* - We surveyed 15 fish culverts in the Tillamook River Basin (Table 6). These crossings affected a total of approximately 35.6 miles of upstream habitats (Table 9). There were five High Priority culverts in this basin. We rated three culverts in the Tillamook Basin as Medium Priority. Two culverts in this basin received Low Priority ratings. Additionally, we surveyed two culverts in this basin that did not appear to be barriers to fish passage at the time of our survey, but received scores that would have placed them in the High Priority range (due primarily to the quality and quantity of upstream habitats). There were three similar culverts that received scores that would have placed them in the Medium Priority range.

*Trask River Basin* - We surveyed 64 fish culverts in the Trask River Basin (Table 7). These crossings affected a total of approximately 35.8 miles of upstream habitats (Table 9). There were 17 High Priority culverts in this basin. We rated 11 culverts in the Trask Basin as Medium Priority. Thirty (30) culverts in this basin received Low Priority ratings. Additionally, we surveyed one culvert in this basin that did not appear to be a barrier to fish passage at the time of our survey, but received a score that would have placed it in the High Priority range (due primarily to the quality and quantity of upstream habitats). There were three similar culverts that received scores that would have placed them in the Medium Priority range and two that scored in the Low Priority range.

*Wilson River Basin* - We surveyed 56 fish culverts in the Wilson River Basin (Table 8). These crossings affected a total of approximately 30.9 miles of upstream habitats (Table 9). There were 12 High Priority culverts in this basin. We rated 10 culverts in the Wilson Basin as Medium Priority. Twenty-eight (28) culverts in this basin received Low Priority ratings. Additionally, we surveyed one culvert in this basin that did not appear to be a barrier to fish passage at the time of our survey, but received a score that would have placed it in the Medium Priority range (due primarily to the quality and quantity of upstream habitats). There are three similar culverts that received scores that would have placed them in the Low Priority range. Finally, two culverts in this basin were on public roads, but we were unable to collect any data on them because we did not have access to the adjacent private property. As a result, we were unable to calculate a prioritization score for these culverts.

Table 9 summarizes priority rankings and total miles of affected upstream habitat for each basin. It also includes the sum total of upstream habitat in the Tillamook Bay Watershed affected by the 215 fish culverts reported on in this document.

Table 3. Prioritization table for Kilchis Basin.

Crossing ID	Watershed	Stream Name	Road Name	Easting	Northing	Barrel Shape	Length (feet)	Width (inches)	Overall Condition	Culvert Slope (%)	Perch Height (feet)	Barrier Rating	Upstream Habitat (miles)	Prioritization Model Score	Priority
649	Kilchis	Murphy Creek	Curl Road	434654	5039811	Circular	40	48	Fair	-0.4	none	Gray	2.0	11	H
640	Kilchis	Murphy Creek	Kilchis River Road	434871	5040218	Circular	40	66	Fair	1.6	none	Gray	1.7	11	H
663	Kilchis	Unnamed trib, Kilchis River	Curl Road	435082	5039482	Circular	38	48	Fair	1.4	none	Gray	1.8	11	H
262	Kilchis	Whitney Creek	Kilchis Forest Road	440298	5049327	Circular	100	84	Poor	7.0	4.5	Red	1.1	11	H
603	Kilchis	Mapes Creek	Kilchis River Road	435239	5041132	Circular	50	54	Poor	2.5	none	Red	0.7	10	H
591	Kilchis	Myrtle Creek	Kilchis River Road	436198	5041562	Circular	41	66	Poor	3.3	3.7	Red	1.0	10	H
629	Kilchis	Vaughn Creek	Doughty Road	433319	5040431	Circular	35	29	Poor	1.9	0.1	Red	0.9	10	H
620	Kilchis	Vaughn Creek	Private Drive	433396	5040789	Circular	30	48	Fair	1.9	0.7	Red	0.7	10	H
608	Kilchis	Vaughn Creek	Pike Road	433409	5040853	Circular	34	48	Fair	5.9	0.8	Red	0.6	10	H
621	Kilchis	Vaughn Creek	Private Drive	433393	5040779	Pipe Arch	23	74	Fair	1.7	0.4	Red	0.7	10	H
327	Kilchis	Blue Star Creek	Kilchis Forest Road	438990	5048635	Circular	100	60	Fair	4.0	2.5	Red	0.5	9	M
472	Kilchis	Un. trib, Little S.F. Kilchis R.	Unnamed	441782	5045388	Pipe Arch	60	156	Fair	7.1	7.1	Red	0.6	9	M
674	Kilchis	Unnamed trib, Coal Creek	Private Drive	435604	5039169	Circular	40	30	Poor	5.5	4.5	Red	0.2	9	M
181	Kilchis	unnamed trib, N. Fk. Kilchis R.	Kilchis River Road	448643	5050834	Circular	50.5	66	Good	0.1	0.1	Red	0.5	9	M
292	Kilchis	Aiken Creek	Tilden Bluffs Road	438574	5048715	Circular	54	66	Poor	1.9	6.2	Red	0.1	8	L
673	Kilchis	Hathaway Slough	Alderbrook Loop Road	433617	5039600	Circular	38	24	Poor	1.0	0.1	Red	0.3	8	L
573	Kilchis	Tank Creek	Kilchis Forest Road	438509	5041958	Circular	69	30	Fair	5.6	3.1	Red	0.1	8	L
589	Kilchis	Thomas Creek	Kilchis River Road	437077	5041645	Circular	43	48	Poor	1.8	3.4	Red	0.5	8	L
120	Kilchis	Unnamed trib, Schroeder Ck	Miami Divide Road	444731	5052521	Circular	46	48	Fair	6.8	9.8	Red	0.3	8	L
329	Kilchis	White Star Creek	Kilchis Forest Road	439526	5048697	Circular	65	66	Poor	3.2	6.7	Red	0.5	8	L
658	Kilchis	Vaughn Creek	Alderbrook Loop Road	433158	5039725	Box	35	100	Fair	0.5	0.2	Green	1.4	8	N/A
514	Kilchis	Unnamed trib, Sam Downs Ck	Sans Down Road	444479	5044396	Pipe Arch	95	144	Good	6.7	none	Green	0.4	7	N/A
505	Kilchis	Unnamed trib, Sam Downs Ck	Sam Downs Road	444916	5044416	Pipe Arch	82	144	Fair	4.9	none	Green	0.4	7	N/A
510	Kilchis	Sam Downs Creek	Sam Down Road	445122	5044237	Pipe Arch	52	96	Good	6.7	none	Green	0.1	6	N/A

Table 4. Prioritization table for Miami Basin.

Crossing ID	Watershed	Stream Name	Road Name	Easting	Northing	Barrel Shape	Length (feet)	Width (inches)	Overall Condition	Culvert Slope (%)	Perch Height (feet)	Barrier Rating	Upstream Habitat (miles)	Prioritization Model Score	Priority
462	Miami	Illingsworth Creek	Ekroth Road	431174	5045718	Pipe Arch	37	72	Fair	0.1	none	Gray	1.3	12	H
189	Miami	Peterson Creek	Miami Foley Road	431586	5050520	Circular	46	96	Poor	1.0	0.2	Gray	6.2	12	H
138	Miami	Prouty Creek	Miami Forest River Rd	433364	5052149	Pipe Arch	45	110	Fair	3.8	0.2	Red	1.1	12	H
448	Miami	Hobson Creek	Hobson Creek Road	430234	5046127	Circular	27	42	Poor	2.7	0.3	Red	0.8	10	H
432	Miami	Hobson Creek	Hobson Creek Road	430115	5046264	Circular	24	40	Poor	1.3	3.6	Red	0.7	10	H
352	Miami	Waldron Creek	Miami Foley Road	431665	5048197	Circular	52	36	Fair	2.5	none	Red	0.7	10	H
320	Miami	Minich Creek	Minich Creek Road	431133	5048601	Circular	68	18	Poor	7.0	6.8	Red	0.6	10	H
450	Miami	Hobson Creek	Miami Foley Road	430417	5045916	Pipe Arch	140	78	Unk	4.2	none	Gray	1.0	9	M
449	Miami	Hobson Creek	Private Drive	430308	5045955	Circular	26	36	Poor	-1.0	none	Gray	0.9	9	M
444	Miami	Struby Creek	Miami Foley Road	430542	5045965	Circular	43	24	Poor	4.6	none	Red	0.5	9	M
273	Miami	Unnamed trib, Minich Creek	Minich Creek Road	430996	5048047	Circular	61	24	Fair	7.0	1.8	Red	0.2	9	M
278	Miami	Unnamed trib, Minich Creek	Minich Creek Road	430917	5048132	Pipe Arch	75	60	Poor	4.0	3.0	Red	0.3	9	M
126	Miami	Carver Creek	Miami Foley Road	433224	5052341	Circular	91	36	Poor	3.1	2.2	Red	0.2	9	M
230	Miami	Unnamed trib, Miami River	Private Drive	432506	5049559	Circular	20	36	Poor	0.1	none	Gray	0.6	8	L
225	Miami	Unnamed trib, Miami River	New Miami River Rd	432423	5049870	Circular	93	48	Poor	4.7	0.9	Red	0.2	8	L
115	Miami	Unnamed trib, Miami River	Miami Forest River Rd	436328	5052920	Circular	30	36	Fair	4.4	1.6	Red	0.1	8	L
84	Miami	Unnamed trib, Miami River	Miami River Forest Rd	439281	5054779	Pipe Arch	55	120	Fair	3.6	10.3	Red	0.2	8	L
5101	Miami	Unnamed trib, Miami River	Miami River Forest Rd	439759	5054992	Circular	42	60	Fair	1.8	7.2	Red	0.1	8	L
87	Miami	Unnamed trib, Miami River	Miami River Forest Rd	440590	5054528	Pipe Arch	61	104	Good	3.3	0.4	Red	0.1	8	L
279	Miami	Unnamed trib, Minich Creek	Minich Creek Road	431186	5048972	Pipe Arch	60	97	Fair	2.0	none	Green	0.6	8	N/A
93	Miami	Unnamed trib, Miami River	Miami River Forest Rd	438027	5054143	Pipe Arch	55	120	Good	4.5	none	Green	0.2	6	N/A

Table 5. Prioritization table for Tillamook Bay tributaries.

Crossing ID	Watershed	Stream Name	Road Name	Easting	Northing	Barrel Shape	Length (feet)	Width (inches)	Overall Condition	Culvert Slope (%)	Perch Height (feet)	Barrier Rating	Upstream Habitat (miles)	Prioritization Model Score	Priority
647	Till. Bay	Doty Creek	Highway 101	431728	5039890	Pipe Arch	75	66	Fair	0.7	0.5	Red	1.7	12	H
578	Till. Bay	Patterson Creek	5th Street	430568	5041806	Box	71	96	Fair	0.5	1.8	Red	3.6	12	H
575	Till. Bay	Patterson Creek	Unnamed	430727	5041881	Circular	36	60	Critical	3.4	0.8	Red	2.3	12	H
5555	Till. Bay	Patterson Creek	8th Street	430799	5041890	Circular	41	56	Critical	-0.2	none	Red	2.3	12	H
572	Till. Bay	Patterson Creek	9th Street	430901	5041865	Pipe Arch	42	48	Fair	unk	unk	Red	2.2	12	H
636	Till. Bay	Doty Creek	Vaughn Road	432285	5040153	Circular	37	36	Fair	0.3	0.1	Red	1.2	11	H
581	Till. Bay	Patterson Creek	Highway 101	430242	5041650	Box	105	96	Fair	0.2	none	Gray	3.8	11	H
579	Till. Bay	Patterson Creek	4th Street	430484	5041795	Circular	97	72	Fair	1.6	none	Gray	3.7	11	H
637	Till. Bay	Doty Creek	Alderbrook Loop Road	432147	5040015	Circular	41	36	Fair	0.1	0.1	Gray	1.4	10	H
622	Till. Bay	Doty Creek	Private Drive	432654	5040550	Circular	19	45	Poor	8.0	0.6	Red	0.8	10	H
689	Till. Bay	Flower Pot Creek	Bayocean Road	427301	5038583	Circular	56	48	Fair	0.7	unk	Gray	1.4	10	H
441	Till. Bay	Smith Creek	Highway 101	426950	5046015	Box	81	48	Poor	1.0	7.7	Red	1.0	10	H
440	Till. Bay	Smith Creek	Harbor View Drive	427105	5046081	Circular	52	56	Critical	11.9	1.9	Red	0.9	10	H
686	Cape Meares Lk.	Coleman Creek	Pacific Avenue	425312	5038726	Circular	39	36	Fair	3.1	2.1	Red	0.7	9	M
613	Till. Bay	Doty Creek	Doughty Road	432729	5040868	Circular	36	46	Fair	-1.1	none	Gray	0.7	9	M
605	Till. Bay	Doty Creek	Private Drive	432768	5041048	Circular	31	48	Fair	3.4	none	Red	0.5	9	M
599	Till. Bay	Doty Creek	Timberline Drive	432833	5041204	Circular	40	48	Good	1.2	0.9	Red	0.4	9	M
593	Till. Bay	Doty Creek	Private Drive	432915	5041390	Circular	44	24	Fair	6.3	4.2	Red	0.3	9	M
476	Till. Bay	Electric Creek	Highway 101	430186	5045387	Circular	~160	48	Critical	variable	none	Red	1.0	9	M
559	Till. Bay	Larson Creek	Old Bay City Road	430546	5042675	Circular	55	36	Poor	1.8	1.5	Red	0.4	9	M
542	Till. Bay	Patterson Creek	Unnamed	431891	5042999	Circular	43	36	Poor	5.0	1.6	Red	0.5	9	M
5304	Till. Bay	School Creek	Parking Lot	429112	5045771	Circular	~125	36	Poor	1.0	none	Red	0.7	9	M
453/454	Till. Bay	School Creek	Several in Garibaldi	429205	5045779	Circular	~700	36	Unk	2.0	none	Red	0.9	9	M
413	Till. Bay	Smith Creek	Barview Forest Rd	427659	5046723	Circular	45	36	Poor	3.0	7.5	Red	0.3	9	M
702	Till. Bay	Unnamed trib, McCoy Cove	Bayocean Road	428043	5038123	Circular	48	48	Fair	0.2	unk	Gray	0.9	9	M
543	Till. Bay	Unnamed trib, Patterson Creek	Unnamed	431979	5042920	Circular	41	42	Poor	4.2	3.1	Red	0.4	9	M
675	Cape Meares Lk.	Coleman Creek	5th Street	425267	5039131	Circular	50	42	Fair	6.1	unk	Gray	1.0	8	L
778	Till. Bay	Dick Creek	Bayocean Road	429330	5036881	Pipe Arch	44	72	Poor	2.1	unk	Gray	0.5	8	L
528	Till. Bay	Patterson Creek	Patterson Creek Road	432101	5043624	Circular	74	36	Poor	2.0	2.2	Red	0.1	8	L
452	Till. Bay	School Creek	Driftwood Avenue	429064	5045799	Pipe Arch	82	96	Fair	3.0	none	Gray	0.8	8	L
757	Till. Bay	Unnamed trib, Bock Point	Bayocean Road	429068	5037210	Circular	59	36	Fair	0.0	unk	Gray	0.3	8	L
725	Till. Bay	Unnamed trib, Boulder Point	Bayocean Road	428308	5037848	Circular	52	72	Poor	2.8	unk	Gray	0.4	8	L
5302	Till. Bay	Whitney Creek	Highway 101	429847	5045882	Circular	55	36	Poor	1.0	none	Red	0.5	8	L
5301	Till. Bay	Whitney Creek	Arizona Way	429817	5045895	Pipe Arch	61	42	Fair	1.0	none	Gray	0.4	8	L
5303	Till. Bay	Whitney Creek	Martin Smith Lane	429760	5045944	Circular	55	36	Critical	3.5	0.7	Red	0.4	8	L



Table 6. Prioritization table for Tillamook Basin.

Crossing ID	Watershed	Stream Name	Road Name	Easting	Northing	Barrel Shape	Length (feet)	Width (inches)	Overall Condition	Culvert Slope (%)	Perch Height (feet)	Barrier Rating	Upstream Habitat (miles)	Prioritization Model Score	Priority
1234	Tillamook	Killam Creek	Highway 101	437142	5022712	Box	109	96	Fair	0.4	4.4	Red	8.4	13	H
1381	Tillamook	Munson Creek	Highway 101	437008	5024593	Box	69	144	Fair	0.1	1.0	Red	4.3	13	H
908	Tillamook	Esther Creek	Highway 131	431197	5033781	Circular	155	66	Poor	1.0	none	Gray	3.9	12	H
931	Tillamook	Esther Creek	Tomlinson Road	430928	5033563	Circular	25	60	Poor	1.2	0.1	Gray	2.9	12	H
1438	Tillamook	Unnamed trib, Tillamook River	Private Drive	434395	5022847	Circular	17	60	Critical	1.6	none	Gray	2.4	12	H
1330	Tillamook	Simmons Creek	Highway 101	437043	5025427	Open Arch	113	240	Fair	0.4	0.2	Green	6.5	11	N/A
1457	Tillamook	Mills Creek	Highway 101	436581	5022611	Box	134	120	Fair	0.2	none	Green	2.3	11	N/A
893	Tillamook	Tomlinson Creek	Private Drive	430943	5033987	Circular	19	60	Critical	-1.2	0.4	Red	0.5	10	M
932	Tillamook	Unnamed trib, Esther Creek	Private Drive	430845	5033558	Circular	34	30	Fair	-0.4	none	Gray	0.8	10	M
6666	Tillamook	Unnamed trib, Tillamook River	Highway 101	435587	5028596	Circular	109	56	Fair	3.5	none	Gray	1.6	10	M
1102	Tillamook	Unnaned trib, Beaver Creek	Private Drive	431060	5029663	Circular	40	90	Poor	-1.2	none	Green	1.5	10	N/A
1404	Tillamook	Unnamed trib, Munson Creek	Munson Creek Road	438611	5023756	Open Arch	61	156	Fair	4.2	0.2	Green	1.4	10	N/A
1401	Tillamook	Pleasant Valley Creek	Highway 101	437013	5023817	Box	80	96	Fair	0.5	0.3	Green	1.1	10	N/A
848	Tillamook	Memaloose Creek	Bayocean Road	430623	5035363	Pipe Arch	48	66	Poor	1.2	0.3	Red	0.5	9	L
985	Tillamook	Unnamed trib, Fagan Creek	Highway 131	429888	5032065	Circular	104	48	Fair	3.9	0.3	Red	0.3	9	L

Table 7. Prioritization table for Trask Basin.

Crossing ID	Watershed	Stream Name	Road Name	Easting	Northing	Barrel Shape	Length (feet)	Width (inches)	Overall Condition	Culvert Slope (%)	Perch Height (feet)	Barrier Rating	Upstream Habitat (miles)	Prioritization Model Score	Priority
1127	Trask	Mill Creek	Private Drive	440016	5029440	Circular	22	42	Poor	1.5	0.7	Red	1.8	13	H
1106	Trask	Mill Creek	Brickyard Road	439145	5029501	Circular	56	32	Poor	1.1	unk	Red	2.4	12	H
1107	Trask	Mill Creek	Private Drive	439439	5029531	Circular	26	48	Poor	0.1	1.2	Red	2.2	12	H
1105	Trask	Mill Creek	Private Drive	439636	5029535	Circular	27	29	Poor	1.0	0.4	Red	2.1	12	H
987	Trask	Green Creek	Trask River Road	440497	5032236	Circular	50	53	Poor	5.6	1.0	Red	1.7	12	H
1128	Trask	Mill Creek	Private Drive	439929	5029449	Circular	27	37	Poor	2.4	0.8	Red	1.9	12	H
902	Trask	Samson Creek	Trask River Road	449229	5033876	Circular	46	84	Poor	5.5	1.1	Red	1.5	12	H
1094	Trask	Unnamed trib, Mill Creek	Brickyard Road	438771	5029891	Circular	67	48	Poor	0.9	0.1	Red	3.5	12	H
1120	Trask	Edwards Creek	Edwards Creek Road	450857	5029214	Pipe Arch	45	96	Fair	0.1	3.8	Red	0.8	11	H
942	Trask	Holden Creek	Lumber mill road	434837	5033295	Circular	199	78	Poor	unk	unk	Red	3.2	11	H
945	Trask	Holden Creek	Lumber mill road	435013	5033315	Circular	41	60	Critical	1.5	0.6	Red	3.1	11	H
948	Trask	Holden Creek	Murray Way	435550	5033273	Circular	20	48	Poor	5.8	none	Red	2.7	11	H
1342	Trask	Pothole Creek	Murphy Camp Road	459224	5024799	Circular	53	60	Fair	6.6	1.3	Red	0.4	11	H
1134	Trask	Unnamed trib, Mill Creek	Magnolia Drive	438891	5028837	Pipe Arch	37	144	Fair	0.3	0.3	Gray	3.8	11	H
1137	Trask	Unnamed trib, Mill Creek	Brickyard Road	439127	5028736	Circular	43	36	Poor	0.9	0.4	Red	1.9	11	H
1136	Trask	Unnamed trib, Mill Creek	Private Drive	439203	5028756	Circular	22	36	Fair	2.3	0.2	Red	1.8	11	H
1402	Trask	Unnamed trib, S. F. Trask River	South Fork Trask Road	452161	5023649	Circular	45	48	Poor	6.2	none	Red	0.7	11	H
1476	Trask	Headquarters Camp Creek	East Fork Road	457836	5022036	Open Arch	50	114	Fair	0.0	none	Green	1.6	11	N/A
1448	Trask	Bales Creek	East Fork Bypass	454053	5022706	Pipe Arch	47	150	Fair	1.2	0.3	Gray	1.0	10	M
952	Trask	Holden Creek	Miller Road	434445	5033277	Circular	95	66	Poor	unk	none	Gray	3.4	10	M
946	Trask	Holden Creek	Evergreen Road	435218	5033198	Box	39	96	Fair	2.4	0.3	Gray	2.9	10	M
947	Trask	Holden Creek	Marolf Loop Road	436344	5033372	Box	28	78	Fair	0.3	none	Gray	2.2	10	M
930	Trask	Holden Creek	McCormick Loop Rd.	437353	5033678	Circular	46	60	Poor	1.7	0.1	Red	1.5	10	M
1099	Trask	Unnamed trib, Bark Shanty Ck	Bark Shanty Road	458843	5029888	Circular	40	66	Fair	9.2	1.4	Red	0.6	10	M
1455	Trask	Unnamed trib, E.F. S.F. Trask R.	Headquarters Grade	462635	5022586	Circular	45	54	Fair	1.4	0.9	Red	0.5	10	M
955	Trask	Unnamed trib, Holden Creek	Private Drive	434496	5032993	Circular	30	36	Critical	-1.6	none	Red	1.1	10	M
918	Trask	Unnamed trib, Trask River	Trask River Road	446257	5033862	Circular	50	66	Poor	6.0	5.0	Red	0.7	10	M
915	Trask	Unnamed trib, Trask River	Trask River Road	450088	5033724	Pipe Arch	59	91	Fair	0.2	2.9	Red	0.8	10	M
864	Trask	Unnammed trib, N.F. Trask R.	N.F. Trask R. Road	463625	5034818	Circular	60	90	Fair	8.4	2.4	Red	0.6	10	M
1058	Trask	Unnamed trib, July Creek	Cruiser Creek Road	462266	5030364	Pipe Arch	78	126	Fair	3.0	none	Green	1.3	10	N/A
1095	Trask	Unnamed trib, Mill Creek	Private Drive	439674	5029747	Pipe Arch	44	126	Fair	0.1	none	Green	2.9	10	N/A
1447	Trask	East Fork South Fork Trask R.	Headquarters Grade	462642	5022621	Pipe Arch	40	138	Poor	-0.7	none	Green	0.8	10	N/A
1021	Trask	Harenkrat Creek	Chance Road	442541	5031175	Circular	35	36	Poor	22.0	2.5	Red	0.1	9	L
1516	Trask	Headquarters Camp Creek	East Fork Road	459354	5021000	Circular	33	48	Fair	2.2	1.2	Red	0.7	9	L
929	Trask	Holden Creek	Trask River Road	438068	5033726	Circular	34	36	Fair	2.9	none	Red	1.0	9	L
1059	Trask	July Creek	July Creek Road	461780	5030780	Circular	72	50	Fair	6.4	4.3	Red	0.7	9	L
1113	Trask	M.F. North Fork Trask R.	Flora Mainline	468438	5029260	Circular	105	64	Poor	7.0	1.5	Red	1.0	9	L
1483	Trask	Rock Creek	Headquarters Grade	461513	5021915	Circular	32	30	Poor	5.7	none	Red	1.0	9	L
1453	Trask	Unnamed trib, Bales Creek	East Fork Bypass	454482	5022650	Pipe Arch	79	120	Fair	1.9	none	Gray	0.1	9	L
1431	Trask	Unnamed trib, Boundary Creek	East Fork Trask	457106	5023017	Circular	41	36	Fair	3.9	2.3	Red	0.3	9	L
1472	Trask	Unnamed trib, Headquarters Camp Ck	East Fork Road	457721	5022175	Circular	50	54	Fair	2.3	2.3	Red	0.3	9	L

Table 7. Prioritization table for Trask Basin.

Crossing ID	Watershed	Stream Name	Road Name	Easting	Northing	Barrel Shape	Length (feet)	Width (inches)	Overall Condition	Culvert Slope (%)	Perch Height (feet)	Barrier Rating	Upstream Habitat (miles)	Prioritization Model Score	Priority
965	Trask	Unnamed trib, M.F. N.F. Trask R.	Unnamed	468598	5032837	Circular	60	36	Fair	5.0	6.0	Red	0.7	9	L
1378	Trask	Unnamed trib, S. F. Trask River	South Fork Trask Road	452218	5024301	Circular	61	56	Fair	5.9	1.6	Red	0.2	9	L
1027	Trask	Unnamed trib, Trask River	Long Prairie Road	439161	5031219	Circular	59	54	Poor	0.3	0.5	Red	0.6	9	L
999	Trask	Unnamed trib, Trask River	Trask River Road	441421	5032051	Circular	80	24	Poor	6.2	1.5	Red	0.3	9	L
907	Trask	Unnamed trib, Trask River	Trask River Road	448996	5033853	Circular	70	60	Poor	7.0	0.6	Red	0.6	9	L
889	Trask	Burton Creek	Trask River Road	447331	5034084	Circular	57	90	Critical	5.5	unk	Red	0.1	8	L
1520	Trask	Headquarters Camp Creek	Headquarters Grade	459744	5020580	Circular	90	98	Fair	3.7	2.0	Red	0.4	8	L
1487	Trask	Rock Creek	Unnamed private road	462517	5021876	Circular	55	30	Fair	5.0	1.3	Red	0.5	8	L
1499	Trask	South Fork Rock Creek	Headquarters Grade	460004	5021270	Circular	67	36	Poor	1.4	6.6	Red	0.1	8	L
1109	Trask	Unnamed trib, Cruiser Creek	Cruiser Creek Road	461704	5029778	Circular	44	48	Fair	4.6	none	Red	0.3	8	L
1146	Trask	Unnamed trib, Mill Creek	Brickyard Road	438824	5028627	Circular	46	36	Poor	1.2	none	Red	0.4	8	L
1156	Trask	Unnamed trib, Mill Creek	Brickyard Road	438728	5028449	Circular	43	30	Poor	0.7	0.3	Red	0.2	8	L
5001	Trask	Unnamed trib, S. F. Trask River	South Fork Trask Road	452240	5024299	Circular	61	55	Poor	9.9	2.7	Red	0.2	8	L
1039	Trask	Unnamed trib, Trask River	Chance Road	439686	5031041	Circular	40	54	Fair	2.5	0.6	Red	0.2	8	L
925	Trask	Unnamed trib, Trask River	Trask River Road	447854	5033645	Circular	70	36	Fair	7.5	2.6	Red	0.3	8	L
903	Trask	Unnamed trib, Trask River	Trask River Road	449111	5033866	Circular	56	36	Fair	4.9	1.9	Red	0.4	8	L
944	Trask	Unnamed trib, Trask River	Private Drive	450089	5033396	Circular	30	36	Good	4.0	3.0	Red	0.1	8	L
927	Trask	Unnamed trib, Trask River	Trask River Road	451247	5033597	Circular	44	36	Poor	9.2	0.6	Red	0.3	8	L
1010	Trask	Unnamed trib, Trask River	Trask River Road	452667	5031535	Circular	64	48	Critical	3.0	4.5	Red	0.1	8	L
962	Trask	Unnammed trib, N.F. Trask R.	Reiner Road	468476	5033151	Circular	57	30	Critical	6.4	9.5	Red	0.2	8	L
1112	Trask	Unnamed trib, M.F. N.F. Trask R.	Unnamed	468510	5029400	Circular	100	42	Poor	12.0	3.0	Red	0.1	7	L
1060	Trask	July Creek	Cruiser Creek Road	462101	5030429	Pipe Arch	51	120	Fair	7.3	none	Green	0.4	7	N/A
1068	Trask	Whirlwind Creek	Cruiser Creek Road	461662	5030154	Pipe Arch	43	120	Fair	3.1	none	Green	0.3	7	N/A

Table 8. Prioritization table for Wilson Basin.

Crossing ID	Watershed	Stream Name	Road Name	Easting	Northing	Barrel Shape	Length (feet)	Width (inches)	Overall Condition	Culvert Slope (%)	Perch Height (feet)	Barrier Rating	Upstream Habitat (miles)	Prioritization Model Score	Priority
249	Wilson	Deyoe Creek	Unnamed	471310	5049236	Pipe Arch	50	76	Poor	0.6	0.6	Red	1.7	13	H
667	Wilson	Fox Creek	Highway 6	452405	5039358	Box	94	120	Poor	5.2	4.0	Red	2.0	13	H
697	Wilson	Zig Zag Creek	Highway 6	447732	5038310	Box	150	126	Poor	8.0	13.0	Red	1.6	13	H
199	Wilson	Dog Creek	Highway 6	461602	5050380	Box	116	96	Fair	3.7	unk	Red	1.1	12	H
231	Wilson	Elliot Creek	Univ. Falls Road	469275	5049565	Circular	80	76	Poor	1.0	1.5	Red	3.3	12	H
910	Wilson	Hughey Creek	Marvin Lane	440715	5033783	Pipe Arch	45	96	Fair	6.7	none	Red	1.8	12	H
792	Wilson	Juno Creek	Boquest Road	433660	5036608	Circular	unk	48	Fair	6.0	unk	Red	2.3	11.5	H
814	Wilson	Beaver Creek	Sollie Smith Road	437528	5036405	Circular	104	48	Fair	2.6	none	Gray	1.6	11	H
202	Wilson	Lewis Creek	Scoggins Creek Road	472642	5050895	Pipe Arch	54	94	Good	1.8	none	Gray	0.8	11	H
333	Wilson	Runyon Creek	Highway 6	457794	5048327	Circular	42	51	Poor	1.0	8.0	Red	0.9	11	H
305	Wilson	Scotty Creek	Highway 6	458912	5048759	Circular	100	42	Poor	5.0	1.1	Red	0.5	11	H
178	Wilson	Unnamed trib, Devils Lake Fork	Powerhouse Rd	473094	5050767	Circular	29	36	Poor	2.3	1.3	Red	0.6	11	H
266	Wilson	Elliot Creek	Unnamed	470343	5049056	Pipe Arch	66	120	Poor	2.7	1.1	Red	1.0	10	M
775	Wilson	Hatchery Creek	Highway 6	444613	5036903	Box	75	60	Fair	5.0	unk	Red	0.8	10	M
901	Wilson	Hughey Creek	Hughey Lane	440230	5034296	Circular	70	72	Fair	3.5	none	Gray	2.3	10	M
760	Wilson	Jack Creek	Highway 6	446088	5037216	Box	97	60	Poor	7.0	unk	Red	1.0	10	M
405	Wilson	Luebke Creek	Highway 6	456036	5046768	Circular	51	54	Poor	10.8	1.1	Red	0.7	10	M
713	Wilson	Smith Creek	Highway 6	446846	5037955	Box	143	120	Poor	8.0	1.5	Red	0.6	10	M
584	Wilson	Stanley Creek	Highway 6	452383	5041793	Box	115	60	Poor	12.0	4.0	Red	0.8	10	M
176	Wilson	Unnamed trib, Devils Lake Fork	#7 Clyde's Trail	473526	5050908	Circular	34	48	Critical	8.3	none	Red	0.3	10	M
222	Wilson	Unnamed trib, Devils Lake Fork	Scoggins Creek Road	474112	5049754	Pipe Arch	50	108	Poor	-0.2	2.0	Red	0.5	10	M
5306	Wilson	Yankee Branch	Latimer Road	436467	5036370	Circular	87	36	Fair	-1.0	none	Gray	1.1	10	M
781	Wilson	Unnamed trib, Juno Creek	Latimer Road	434655	5036763	Circular	84	108	Fair	2.3	0.1	Green	1.6	10	N/A
877	Wilson	Donaldson Creek	Fairview Road	440491	5034773	Circular	69	36	Poor	4.4	2.1	Red	0.3	9	L
696	Wilson	Fern Creek	Highway 6	447331	5038383	Box	100	48	Poor	9.3	3.5	Red	0.5	9	L
447	Wilson	Hoskins Creek	Highway 6	455519	5045832	Circular	66	72	Fair	3.6	2.2	Red	0.1	9	L
755	Wilson	Juno Creek	Juno Hill Road	434841	5037351	Circular	50	42	Poor	3.2	0.1	Red	0.5	9	L
268	Wilson	Moore Creek	East Ben Smith Road	460473	5049046	Pipe Arch	43	78	Poor	3.5	2.6	Red	0.2	9	L
693	Wilson	Smith Creek	Smith Creek Road	446299	5038612	Circular	27	72	Fair	9.3	2.7	Red	0.3	9	L
150	Wilson	Unnamed trib, Devils Lake Fork	Powderhouse Loop Rd	472570	5051758	Pipe Arch	68	78	Good	4.7	2.4	Red	0.2	9	L
304	Wilson	Unnamed trib, Jones Creek	Jones Creek Road	456150	5048626	Pipe Arch	45	100	Fair	1.8	1.0	Red	0.4	9	L
780	Wilson	Unnamed trib, Juno Creek	Juno Hill Road	434906	5036782	Circular	29	30	Critical	6.1	0.8	Red	0.9	9	L
300	Wilson	Unnamed trib, S.F. Wilson R.	Prison Camp Road	463422	5048729	Pipe Arch	43	94	Good	4.5	2.2	Red	0.2	9	L
240	Wilson	Unnamed trib, Wilson River	Highway 6	460589	5049407	Circular	80	24	Poor	9.0	1.0	Red	0.6	9	L
227	Wilson	Unnamed trib, Wilson River	Highway 6	460951	5049662	Circular	61	36	Fair	4.3	1.8	Red	0.2	9	L
265	Wilson	Elliott Creek	Unnamed	470043	5049124	Pipe Arch	41	102	Good	2.6	0.2	Green	1.2	9	N/A
881	Wilson	Donaldson Creek	Private Drive	440956	5034462	Circular	34	18	Fair	4.4	5.7	Red	0.1	8	L
735	Wilson	Unnamed trib, Beaver Creek	Beaver Creek Road	437842	5037849	Circular	86	42	Poor	11.0	4.0	Red	0.1	8	L
388	Wilson	Unnamed trib, Ben Smith Creek	Ben Smith Creek Road	459298	5047224	Pipe Arch	63	96	Good	6.3	none	Gray	0.3	8	L
246	Wilson	Unnamed trib, Devils Lake Fork	Unnamed	473811	5049357	Circular	34	18	Poor	4.2	2.6	Red	0.1	8	L
356	Wilson	Unnamed trib, S.F. Wilson R.	C-Line Road	465646	5048242	Pipe Arch	67	126	Fair	9.2	4.3	Red	0.3	8	L

Table 8. Prioritization table for Wilson Basin.

[illegible]

Table 9. Summary of replacement prioritization scores and miles of affected upstream habitats for fish culverts in the Tillamook Bay Watershed.

Basin	No. Culverts in Priority Rating Class					Total Miles of Affected Upstream Habitat <sup>1</sup>
	High	Medium	Low	Unknown	Not Barriers	
Kilchis River Basin	10	4	6		4	12.4
Miami River Basin	7	6	6		2	13.8
Tillamook Bay Tributaries	13	13	9			13.8
Tillamook River Basin	5	3	2		5	35.6
Trask River Basin	17	11	30		6	35.8
Wilson River Basin	12	10	28	2	4	30.9
<b>Totals</b>	<b>64</b>	<b>47</b>	<b>81</b>	<b>2</b>	<b>21</b>	<b>144.6</b>

<sup>1</sup> These values reflect the actual amount of potentially suitable habitat affected by fish culverts surveyed for this study. On stream systems affected by multiple culverts, it includes only the total length of habitat upstream of the lower-most culvert in the system. For example, the Patterson Creek sub-basin (a Tillamook Bay tributary) includes nine fish culverts. The lower-most culvert in the system is located near the mouth of the creek and all other culverts in this system are along reaches included in the upstream habitat length reported for the lower-most culvert. The total value reported for the Tillamook Bay Tributaries in this table includes the 3.8 miles of potentially suitable habitat upstream of the lowest culvert. The habitat length values reported in the tables in Appendix 2 for the other eight culverts in this system are not included in the total reported in this table because they are already captured by including the lower culvert.

### 3.2. Road Ownership Patterns

Several governmental entities and private parties own/administer the roads on which the culverts identified in this report occur. Ownership patterns vary somewhat by basin (Table 10).

Table 10. Summary of road ownership for fish culverts in the Tillamook Bay Watershed.

Road Owner	Basin					
	Kilchis	Miami <sup>1</sup>	Till. Bay <sup>2</sup>	Tillamook	Trask	Wilson
<b>City</b>	0	0	10	0	4	0
<b>County</b>	9	6	10	3	21	10
<b>ODOT</b>	0	1	5	5	0	18
<b>ODF</b>	11	9	4	3	25	26
<b>Private</b>	4	4	8	4	14	2

<sup>1</sup> Miami Basin culvert 138 is on a road segment with disputed ownership. It is not included in this table, because it is unclear who is responsible for this section of road.

<sup>2</sup> Culvert 453/454 in the Tillamook Bay Tributaries Basin includes city, private, and ODOT ownership. This mixed ownership is reflected in the table.

A majority of fish culverts included in this report (64 percent) are on Tillamook County and ODF roads. These entities own culverts in all six analysis units (i.e., all five river basins and the Tillamook Bay

tributaries) and, when combined, have majority ownership of fish culverts in the Kilchis (83 percent), Miami (72 percent), Trask (72 percent) and Wilson (64 percent) basins.

Culverts on private roads also occur in all six analysis units. Ownership of these culverts includes agricultural, industrial forest and residential landowners. The Trask Basin has the greatest number of private culverts surveyed for this report (14 culverts). These are located primarily in the lower portion of the basin and many are within the Mill Creek and Holden Creek sub-basins. Private road culverts account for over a quarter of the fish culverts we surveyed in the Tillamook Basin (27 percent). Land ownership within this basin is predominantly private and industrial forest and agricultural landowners account for a majority of the private holdings within the basin. It is important to note that we did not have permission to access a majority of the crossings on private roads within the Tillamook Basin. Many of these crossings were on lands owned by Stimson Lumber Company. This company has an active and ongoing culvert assessment and replacement program that is regulated by ODF under provisions set forth in the Oregon Forest Practices Act (OAR 629-625).

Oregon Department of Transportation (ODOT) culverts occur in four of the six analysis units. A high percentage of crossings we surveyed in the Tillamook (33 percent) and Wilson (32 percent) basins occur on ODOT roads. The greatest number of ODOT culverts is in the Wilson Basin (18 culverts). These primarily occur on Highway 6. Many of these Highway 6 culverts are fairly large box culverts that will likely be replaced with bridges or much larger box culverts, so costs for these replacement projects will be high. Many of these Highway 6 culverts also include trash racks that have dramatically and adversely affected the streams on which they occur (see culvert 697 as an example). This fact also will complicate replacement efforts for these crossings.

Several culverts in this report also occur on roads owned by one of several city governments. City-owned culverts occur in two of the six analysis units (Tillamook Bay Tributaries – City of Bay City and City of Garibaldi; Trask Basin – City of Tillamook). One third of the city-owned barrier culverts on streams that are direct tributaries to Tillamook Bay occur on a single stream, Patterson Creek. Salmonids continue to spawn on a portion of this stream despite the fact that eight barrier culverts occur along its length. Half of the barrier culverts on this stream (4 culverts), are on roads owned by the City of Bay City. The remaining barrier culverts on this stream are owned by ODOT, ODF, and Tillamook County.

### **3.3. Clustering**

Earlier we noted that we prioritized culverts in this report basin-by-basin, in part to facilitate use of the document. In Appendix 2 below, we provide detailed information for each surveyed fish culvert (tabular information, photographs and maps). We present this information basin-by-basin (alphabetically). In addition, we have further refined our presentation based on geography and proximity. Specifically, the tables and maps for each basin begin with the lowermost culverts in the basin and end with culverts in the upper basin. The tables are further grouped by proximity – culverts in close proximity to one another (e.g., near one another along the same stream or road) are grouped and identified by headings. Each of these culvert groups or “clusters” are depicted on a single map and the map titles correspond to the headings that accompany the tables. We incorporated these refinements not only to make the document easier to use, but to facilitate project development, planning and implementation.

The information provided in Appendix 2 includes a matrix and a map for each culvert. The tables include detailed location information, characteristics of both the culvert and the stream channel, and the data used for the prioritization analysis. Each matrix also includes one or more photographs of the culvert and/or adjacent stream channel. Some also include additional notable information to further describe the culvert or adjacent stream conditions or clarify peculiarities in the tabular information. Appendix 2 also includes a table summarizing clusters for each basin.

The legend below is applicable for all maps in Appendix 2. Each map depicts crossings (symbology based on prioritization rating or other characteristics), roads (symbology based on ownership), streams (symbology based on ODF fish presence information), and land ownership (symbology based on ownership).

<b>Legend</b>			
<b>Road-Stream Crossings</b>	<b>Roads</b>	<b>Streams</b>	<b>Land Ownership</b>
▲ RED	— Private	— Fish-Verified	■ US Bureau of Land Management
▲ GRAY	— City	- - - Fish-Assumed	■ US Forest Service
▲ GREEN	— County	- - - Fish-Modeled	■ Local Government
✗ No Access	— ODOT	— Nonfish-Verified	■ State of Oregon
★ Hatchery Diversion	— Oregon Department of Forestry	- - - Nonfish-Assumed	■ Private
✗ Bridge		- - - Nonfish-Modeled	
■ NFC			
◇ Does Not Exist			



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- Bio-Surveys, LLC. 2007. Tillamook Bay Rapid Bio-Assessment. Unpublished report prepared for Tillamook Estuaries Partnership, Garibaldi, Oregon. 90 pp. plus electronic data sets. Available electronically at [http://www.tbnep.org/images/stories/documents/resource\\_center\\_docs/salmonids/Tillamook%20RBA%20Final%202007.pdf](http://www.tbnep.org/images/stories/documents/resource_center_docs/salmonids/Tillamook%20RBA%20Final%202007.pdf)
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## **Appendix 1**

Tillamook Bay Culvert Prioritization Field Data Sheet

---

Date: \_\_\_\_\_

## Crossing Assessment Form

Crossing ID: \_\_\_\_\_

### SITE INFORMATION

NFC: \_\_\_\_\_

Watershed: \_\_\_\_\_

Stream: \_\_\_\_\_

Road : \_\_\_\_\_

Ownership: \_\_\_\_\_

Mile Post: \_\_\_\_\_

7.5-minute Quad: \_\_\_\_\_

UTM: Zone: 10 East \_\_\_\_\_ North \_\_\_\_\_ NAD 83

Legal Description: T. \_\_\_\_\_, R. \_\_\_\_\_, Sec. \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4 Surveyors: \_\_\_\_\_

### CULVERT STRUCTURE

Multiple Structures at Site: yes no

Barrel Shape	Corrugations	Culvert Condition	Longitudinal Profile	Dist. (ft)	BS (+)	HI	FS (-)	Elev. (ft)
<input type="checkbox"/> Box	<input type="checkbox"/> 2 2/3x1/2 in.	<b>(Check all that apply)</b>	Temp. Bench Mark	N/A				100.00
<input type="checkbox"/> Circular	<input type="checkbox"/> 3x1 in.	<input type="checkbox"/> Bent inlet	Inlet Gradient Control Pt (P1)					
<input type="checkbox"/> Open Bottom Arch	<input type="checkbox"/> 5x1 in.	<input type="checkbox"/> Debris plugging inlet	Inlet Invert (P2)					
<input type="checkbox"/> Pipe-Arch	<input type="checkbox"/> SSP 6x2 in.	<input type="checkbox"/> Bottom worn thru	Road Surface (P3)					
	<input type="checkbox"/> Smooth	<input type="checkbox"/> Water under culvert	Outlet Invert (P4)					
<b>Dimensions</b>		<input type="checkbox"/> Fill eroding	Outlet Pool Bottom (P5)					
_____ (ft) Horizontal	<b>Culvert Material</b>	<input type="checkbox"/> Other:	Water Surface at P5 (add water depth to P5 elev.) →					
		<input type="checkbox"/> None	Tailwater Control Point (P6)					
_____ (ft) Vertical	<input type="checkbox"/> CMP	<input type="checkbox"/> Steel <input type="checkbox"/> spiral						
		<input type="checkbox"/> Alum <input type="checkbox"/> annular						
	<input type="checkbox"/> SSP (Steel)	<b>Overall Condition</b>	<b>Culvert Length (P2 Dist – P4 Dist)</b>					
<b>Inlet Blockage</b>	<input type="checkbox"/> Plastic	<input type="checkbox"/> Good	<b>Culvert Slope*</b>					
<input type="checkbox"/> Not Blocked	<input type="checkbox"/> Concrete	<input type="checkbox"/> Fair	* Calculate: ( P2 – P4 elev / Culvert Length ) x100 /					
<input type="checkbox"/> <10% Blockage	<input type="checkbox"/> Wood	<input type="checkbox"/> Poor	<b>Inlet Rustline Height</b>					
<input type="checkbox"/> >10% Blockage	<input type="checkbox"/> Other	<input type="checkbox"/> Critical	<b>Road Surface:</b>					
		(lowest of all rating assignments for feature-see back)	<b>Road Fill Index:</b>					
			P3 - Elev. top of inlet (often TBM)					

**Inlet Type (circle):** projecting    mitered    wingwall 10-30°    wingwall 30-70°    headwall    apron    trashrack    Other

**Comments** (include outlet type and any other notable conditions):

### Substrate Particle Sizes (rank 1-3 in order of contribution to substrate)

	Bedrock	Boulder	Cobble	Gravel	Sand	Silt/Clay	Organics	Aquatic macrophytes
In Culvert								
Stream Channel								

**Natural Substrate in Culvert** (i.e., rock, wood, etc.) ☐ None ☐ Continuous ☐ Discontinuous (approx. % \_\_\_\_\_)



### CHANNEL DESCRIPTION

<b>Inlet Gradient:</b> Calculate ((P1-P2 elev) / (P1-P2 dist)) * 100	(( _____ - _____ ) / ( _____ - _____ )) * 100 = _____ %	
<b>Channel Gradient:</b> Beyond culvert influence	Upstream	((Upper Elev _____ - Lower Elev _____) / Dist _____) * 100 = _____ %
	Downstream	((Upper Elev _____ - Lower Elev _____) / Dist _____) * 100 = _____ %
<b>Bankfull Width:</b> Beyond culvert influence (min. of 3 measurements)	Upstream widths	1) _____, 2) _____, 3) _____, 4) _____, 5) _____ AVG. = _____
	Downstream widths	1) _____, 2) _____, 3) _____, 4) _____, 5) _____ AVG. = _____
<b>Inlet Width to Bankfull Width:</b> _____ ft (Inlet Width) / _____ ft (Avg upstream BFW) → _____		

### PHOTOGRAPHS (Take whiteboard photo as first/last photos – record number of photos for each photo-point and order taken— depict points on site drawing)

<b>Inlet Photo Numbers:</b> _____	<b>Outlet Photo Numbers:</b> _____
<b>Upstream Photo Numbers:</b> _____	<b>Downstream Photo Numbers:</b> _____
<b>Other Photo Numbers:</b> _____	

**DRAWINGS** Overall view from **Upstream** of culvert to **Downstream** of culvert

Include: P1-P6, Temporary Bench Mark (TBM), Instrument Location (  ), North arrow, Stream flow direction, wingwalls/headwall, apron, debris piles, photo points (  ), etc.

**ADDITIONAL COMMENTS**

-----

**Condition Assessment** (Circle one for each appropriate category based on pipe material - *categories in FHWA Culvert Assessment Guide*)

CMP					Concrete				
Corrosion (above Invert):	Good	Fair	Poor	Critical	Cracking/Spalling:	Good	Fair	Poor	Critical
Cross-section Deformation:	Good	Fair	Poor	Critical	Cross-section Deformation:	Good	Fair	Poor	Critical
Invert Deterioration:	Good	Fair	Poor	Critical	Invert Deterioration:	Good	Fair	Poor	Critical
Joints and seams:	Good	Fair	Poor	Critical	Joints:	Good	Fair	Poor	Critical
Plastic Pipe					Appurtenances				
Wall Condition:	Good	Fair	Poor	Critical	Headwall/Wingwall:	Good	Fair	Poor	Critical
Cross-section Deformation:	Good	Fair	Poor	Critical	Apron:	Good	Fair	Poor	Critical
Invert Deterioration:	Good	Fair	Poor	Critical	Pipe End:	Good	Fair	Poor	Critical
Joints:	Good	Fair	Poor	Critical	Scour Protection:	Good	Fair	Poor	Critical

**HABITAT INFORMATION**

	Upstream	Downstream
Number of Culverts (list)		
Number of Known Barriers (list)		
Distance to Known Barriers		
Length of Upstream Habitat		

**FISH PASSAGE EVALUATION**

COARSE SCREEN FILTER EVALUATION:	GREEN	GREY	RED
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## Appendix 2

Culvert tables and cluster maps for each basin in the Tillamook Bay Watershed

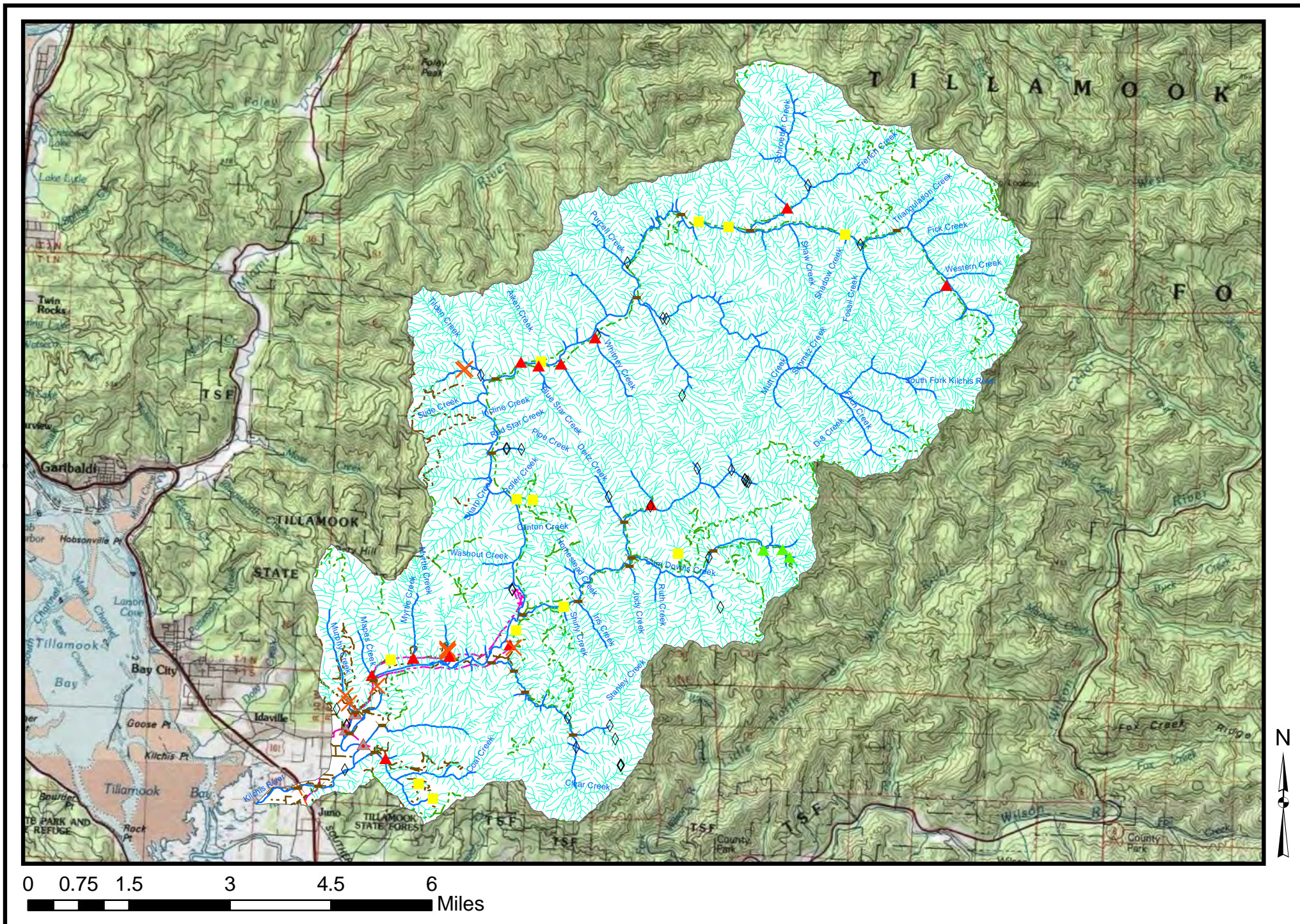
Legend			
Road-Stream Crossings	Roads	Streams	Land Ownership
▲ RED	--- Private	— Fish-Verified	■ US Bureau of Land Management
▲ GRAY	--- City	- - - Fish-Assumed	■ US Forest Service
▲ GREEN	--- County	- - - Fish-Modeled	■ Local Government
✗ No Access	--- ODOT	— Nonfish-Verified	■ State of Oregon
★ Hatchery Diversion	--- Oregon Department of Forestry	- - - Nonfish-Assumed	■ Private
⌵ Bridge		- - - Nonfish-Modeled	
■ NFC			
◇ Does Not Exist			

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## **Kilchis River Basin Culverts**

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Kilchis Basin Crossings





### Kilchis River Basin Clusters


Cluster	Culvert Numbers	Priority	Stream	Upstream Habitat
Vaughn Creek/ Hathaway Slough	658	L	Vaughn Creek	1.7
	629	H	Vaughn Creek	
	621	H	Vaughn Creek	
	620	H	Vaughn Creek	
	608	H	Vaughn Creek	
	673	L	Hathaway Slough	
Coal Creek/Murphy Creek Area	674	M	Coal Creek	4.0
	663	H	Unnamed tributary	
	649	H	Murphy Creek	
	640	H	Murphy Creek	
Mape, Myrtle, Thomas, Tank	603	H	Mapes Creek	2.3
	591	H	Myrtle Creek	
	589	L	Thomas Creek	
	573	L	Tank Creek	
Little South Fork Kilchis	472	M	Unnamed tributary	0.6
Sam Downs Creek	514	N/A	Unnamed tributary	0.8
	505	N/A	Sam Downs Creek	
	510	N/A	Sam Downs Creek	
Tilden Bluffs Road Area	292	L	Aiken Creek	2.2
	327	M	Blue Star Creek	
	329	L	White Star Creek	
	262	H	Whitney Creek	
North Fork Kilchis Area	120	L	Unnamed tributary	0.8
	181	M	Unnamed tributary	

## VAUGHN CREEK AND HATHAWAY SLOUGH CULVERTS


LOCATION INFO				Culvert #	658	Priority	L
Watershed				Kilchis River			
Stream Name				Vaughn Creek			
Township-Range-Section-1/4				T1S, R10W, Sec. 1, SE¼ of SE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				433158/5039725			
Road Name				Alderbrook Loop Road			
Road/Culvert Owner				Tillamook County			
Adjacent Landowners				G. Prince and Laviolette Holdings, LLC.			
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)		3.2			
Material	Concrete	Upstream Gradient (%)		Unable to measure			
Length (ft)	35	Bankfull Width (ft)		6.0			
Width (in)	100	Bankfull:Culvert Ratio		1.4			
Height (in)	52						
Outlet Perch (ft)	0.2						
Slope (%)	0.5						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.4	Habitat Points	3				
Habitat Quality	Poor(+)	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Green	Barrier Points	1				
		Prioritization Total Points	8				
<b>Notes:</b> Upstream of this crossing Vaughn Creek passes through a golf course. Riparian and upland habitats are low-quality for fish and wildlife.							

LOCATION INFO				Culvert #	629	Priority	H
Watershed				Kilchis River			
Stream Name				Vaughn Creek			
Township-Range-Section-1/4				T1S, R10W, Sec. 1, SW¼ of NE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				433319/5040431			
Road Name				Doughty Road			
Road/Culvert Owner				Tillamook County			
Adjacent Landowners				R. Rasmussen and R. Carver			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	8.7(7.4)				
Material	Concrete	Upstream Gradient (%)	1.0				
Length (ft)	35(31)	Bankfull Width (ft)	8.1				
Width (in)	29(29)	Bankfull:Culvert Ratio	0.6*				
Height (in)	29(29)						
Outlet Perch (ft)	0.1(0.2)						
Slope (%)	1.9(1.4)						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.9	Habitat Points	2				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	10				
<b>Notes:</b> Twin concrete pipes at this crossing. * bankfull:culvert ratio based on combined pipe diameters. Water backed up at inlet and flowed over Doughty Road during most of the winter of 2011-12. This adversely affects road condition and water quality.							




**Inlet**




**Outlet**

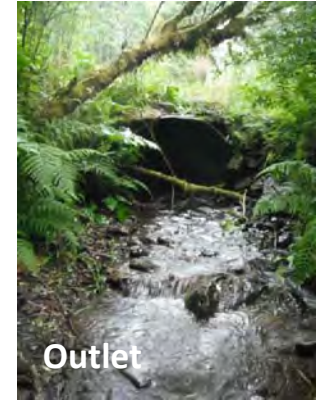
LOCATION INFO				Culvert #	621	Priority	H
Watershed			Kilchis River				
Stream Name			Vaughn Creek				
Township-Range-Section-1/4			T1S, R10W, Sec. 36, SW¼ of SE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			433393/5040779				
Road Name			Private driveway off Pike Road				
Road/Culvert Owner			J. Bender				
Adjacent Landowners		J. Bender, M. & L. McClaskey, and R. & C. Watt					
CULVERT INFO			CHANNEL INFO				
Shape	Pipe arch		Inlet Gradient (%)	5.0			
Material	Corrugated metal		Upstream Gradient (%)	2.0			
Length (ft)	23		Bankfull Width (ft)	7.4			
Width (in)	74		Bankfull:Culvert Ratio	0.9			
Height (in)	52						
Outlet Perch (ft)	0.4						
Slope (%)	1.7						
Rustline Height (in)	3						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7		Habitat Points	2			
Habitat Quality	Fair(-)		Habitat Quality Points	2			
Fish Species	Anad.		Fish Points	3			
Barrier Type	Red		Barrier Points	3			
			Prioritization Total Points	10			
<b>Notes:</b> Pipe 628 is between this pipe and 629. We did not have landowner permission to survey pipe 628, but it was likely a barrier culvert as well based on remote observation. The degree to which 628 may impede passage was unknown at the time of this report.							




Inlet




Outlet



LOCATION INFO				Culvert #	620	Priority	H
Watershed		Kilchis River					
Stream Name		Vaughn Creek					
Township-Range-Section-1/4		T1S, R10W, Sec. 36, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		433396/5040789					
Road Name		Private driveway off Pike Road					
Road/Culvert Owner		R. & C. Watt					
Adjacent Landowners		R. & C. Watt					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	11.5				
Material	Corrugated metal	Upstream Gradient (%)	2.2				
Length (ft)	30	Bankfull Width (ft)	6.3				
Width (in)	48	Bankfull:Culvert Ratio	0.6				
Height (in)	48						
Outlet Perch (ft)	0.7						
Slope (%)	1.9						
Rustline Height (in)	19						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes:							




Inlet





Outlet



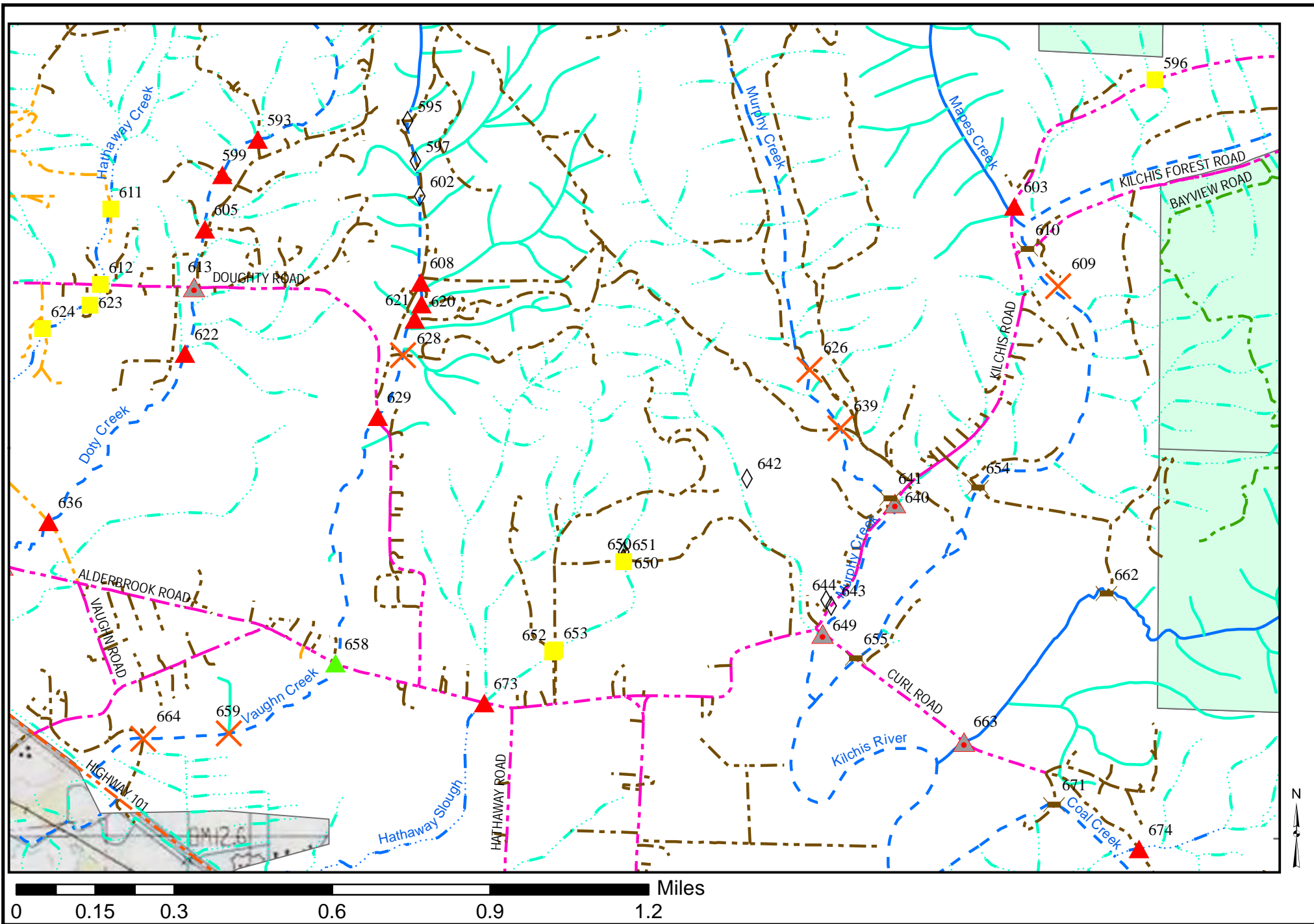


LOCATION INFO				Culvert #	608	Priority	H
Watershed				Kilchis River			
Stream Name				Vaughn Creek			
Township-Range-Section-1/4				T1S, R10W, Sec. 36, SW¼ of SE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				433409/5040853			
Road Name				Pike Road			
Road/Culvert Owner				Private Drive			
Adjacent Landowners				R. & C. Watt			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	12.7				
Material	Concrete	Upstream Gradient (%)	7.2				
Length (ft)	34	Bankfull Width (ft)	7.4				
Width (in)	48	Bankfull:Culvert Ratio	0.5				
Height (in)	48						
Outlet Perch (ft)	0.8						
Slope (%)	5.9						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.6	Habitat Points	2				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes:							

LOCATION INFO				Culvert #	673	Priority	L
Watershed				Kilchis River			
Stream Name				Hathaway Slough			
Township-Range-Section-1/4				T1S, R10W, Sec. 12, NW¼ of NE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				433617/5039600			
Road Name				Alderbrook Road			
Road/Culvert Owner				Tillamook County			
Adjacent Landowners				T. Gienger, S. & E. Vermilyea, and J. Smith			
CULVERT INFO			CHANNEL INFO				
Shape	Circular	Inlet Gradient (%)	3.5				
Material	Concrete	Upstream Gradient (%)	<1.0				
Length (ft)	38	Bankfull Width (ft)	6.1				
Width (in)	24	Bankfull:Culvert Ratio	0.3				
Height (in)	24						
Outlet Perch (ft)	0.1						
Slope (%)	1.0						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	8				


**Notes:** Upstream listed as nonfish. However, although low-quality habitat, technical reviewers suggested that a short segment of the upstream west channel remains suitable for fish use if access issues are addressed.




Vaughn Creek and Hathaway Slough Culverts, Kilchis River Basin

## COAL CREEK AND MURPHY CREEK AREA CULVERTS



LOCATION INFO				Culvert #	674	Priority	M
Watershed		Kilchis River					
Stream Name		Unnamed tributary of Coal Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 8, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		435604/5039169					
Road Name		Private road off of Curl Road					
Road/Culvert Owner		R. & K. Downs					
Adjacent Landowners		R. & K. Downs					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	2.3				
Material	Corrugated metal	Upstream Gradient (%)	1.0				
Length (ft)	40	Bankfull Width (ft)	5.3				
Width (in)	30	Bankfull:Culvert Ratio	0.5				
Height (in)	30						
Outlet Perch (ft)	4.5						
Slope (%)	5.5						
Rustline Height (in)	24						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							





Inlet




Outlet

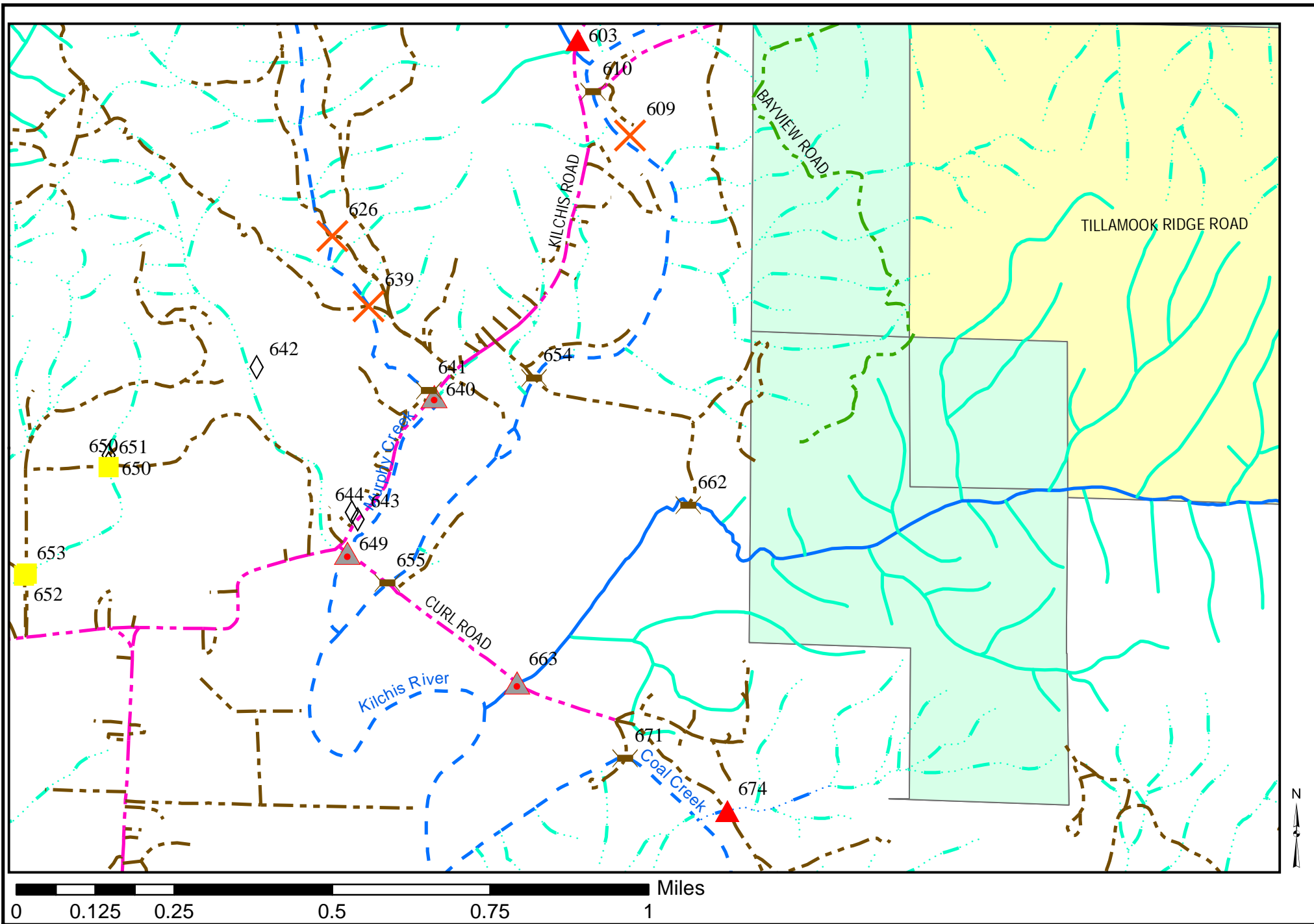
LOCATION INFO				Culvert #	663	Priority	H
Watershed		Kilchis River					
Stream Name		Unnamed tributary of Kilchis River					
Township-Range-Section-1/4		T1S, R9W, Sec. 7, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		435082/5039482					
Road Name		Curl Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		C. Bosch and G. & S. Petty					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	3.1				
Material	Concrete	Upstream Gradient (%)	3.1				
Length (ft)	38	Bankfull Width (ft)	4.6				
Width (in)	48	Bankfull:Culvert Ratio	0.9				
Height (in)	48	Two pipes at this location. One is an overflow pipe that conveys water only during high water events.					
Outlet Perch (ft)	None						
Slope (%)	1.4						
Rustline Height (in)	34						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	1.8	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Gray	Barrier Points	2				
		Prioritization Total Points	11				
<b>Notes:</b> Barrel of concrete pipe is approximately 40 percent full of stream bed substrate.							



LOCATION INFO				Culvert #	649	Priority	H
Watershed		Kilchis River					
Stream Name		Murphy Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 6, SE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		434654/5039811					
Road Name		Curl Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		G. & S. Petty					
CULVERT INFO		CHANNEL INFO				 <div>Inlet</div>	
Shape	Circular	Inlet Gradient (%)	4.75				
Material	Concrete	Upstream Gradient (%)	0.2				
Length (ft)	40	Bankfull Width (ft)	6.0				
Width (in)	48	Bankfull:Culvert Ratio	0.7				
Height (in)	48						
Outlet Perch (ft)	None						
Slope (%)	-0.4						
Rustline Height (in)	n/a						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <div>Outlet</div>	
Upstream Habitat Length (mi)	2.0	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Gray	Barrier Points	2				
		Prioritization Total Points	11				
Notes:							



LOCATION INFO				Culvert #	640	Priority	H
Watershed		Kilchis River					
Stream Name		Murphy Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 6, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		434871/5040218					
Road Name		Kilchis River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		E. & K. Gomes					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	3.7				
Material	Corrugated metal	Upstream Gradient (%)	2.1				
Length (ft)	40	Bankfull Width (ft)	6.0				
Width (in)	66	Bankfull:Culvert Ratio	0.9				
Height (in)	66						
Outlet Perch (ft)	None						
Slope (%)	1.6						
Rustline Height (in)	n/a						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.7	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Gray	Barrier Points	2				
		Prioritization Total Points	11				
<b>Notes:</b> Barrel of pipe is approximately 50 percent filled with stream bed substrate. Crossing 641 immediately upstream of this crossing, is a livestock bridge.							










Murphy Creek and Coal Creek Area Culverts, Kilchis River Basin

## MAPES, MYRTLE AND THOMAS CREEKS CULVERTS


LOCATION INFO				Culvert #	603	Priority	H
Watershed		Kilchis River					
Stream Name		Mapes Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 6, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		435239/5041132					
Road Name		Kilchis River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		S. Schafer					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Circular	Inlet Gradient (%)	13.4				
Material	Corrugated metal	Upstream Gradient (%)	1.2				
Length (ft)	50	Bankfull Width (ft)	15.4				
Width (in)	54	Bankfull:Culvert Ratio	0.3				
Height (in)	54						
Outlet Perch (ft)	Outlet submerged						
Slope (%)	2.5						
Rustline Height (in)	Entire pipe rusted						
Overall Condition	Poor					 Outlet	
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes: Barrel of pipe is approximately 60 percent filled with stream bed substrate.							

LOCATION INFO				Culvert #	591	Priority	H
Watershed		Kilchis River					
Stream Name		Myrtle Creek					
Township-Range-Section-1/4		T1N, R9W, Sec. 32, SE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		436198/5041562					
Road Name		Kilchis River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		P. & M. Zweifel, Christensen Rock LLC					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	13.3				
Material	Corrugated metal	Upstream Gradient (%)	3.5				
Length (ft)	41	Bankfull Width (ft)	12.8				
Width (in)	66	Bankfull:Culvert Ratio	0.4				
Height (in)	66						
Outlet Perch (ft)	3.7						
Slope (%)	3.3						
Rustline Height (in)	Entire pipe rusted						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0	Habitat Points	2				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes:							

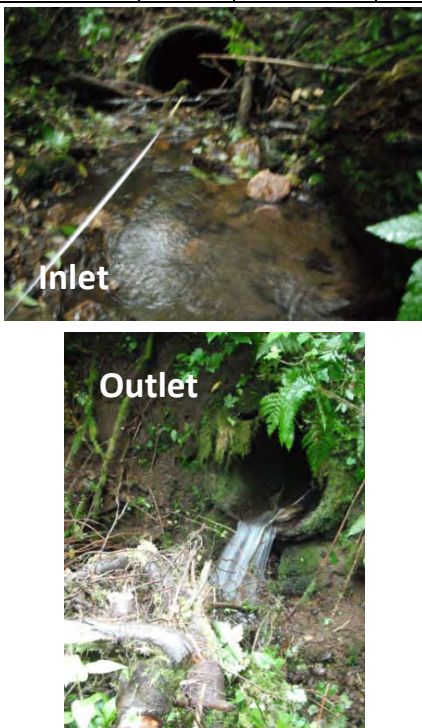
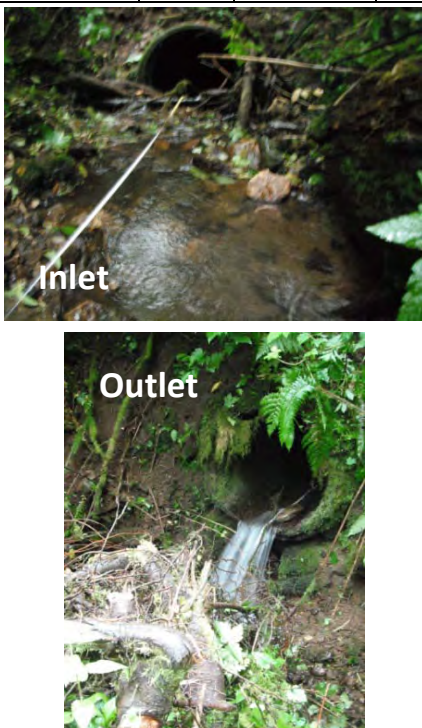
LOCATION INFO				Culvert #	589	Priority	L
Watershed		Kilchis River					
Stream Name		Thomas Creek					
Township-Range-Section-1/4		T1N, R9W, Sec. 32, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		437077/5041645					
Road Name		Kilchis River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		R. & S. Deloe, A. Bell					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	24.0				
Material	Corrugated metal	Upstream Gradient (%)	8.1				
Length (ft)	43	Bankfull Width (ft)	12.6				
Width (in)	48	Bankfull:Culvert Ratio	0.6*				
Height (in)	48	Two pipes side-by-side at this crossing. This section includes information on the left pipe in inlet photo. This pipe appears to carry most flows through this crossing. Both pipes are 4 ft. circular CMP and both are perched.					
Outlet Perch (ft)	3.4						
Slope (%)	1.8						
Rustline Height (in)	Entire pipe rusted						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Poor(+)	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes: *used combined width of both pipes for this calculation. Right pipe appears to only flow periodically due to thalweg alignment and rocks blocking inlet.							



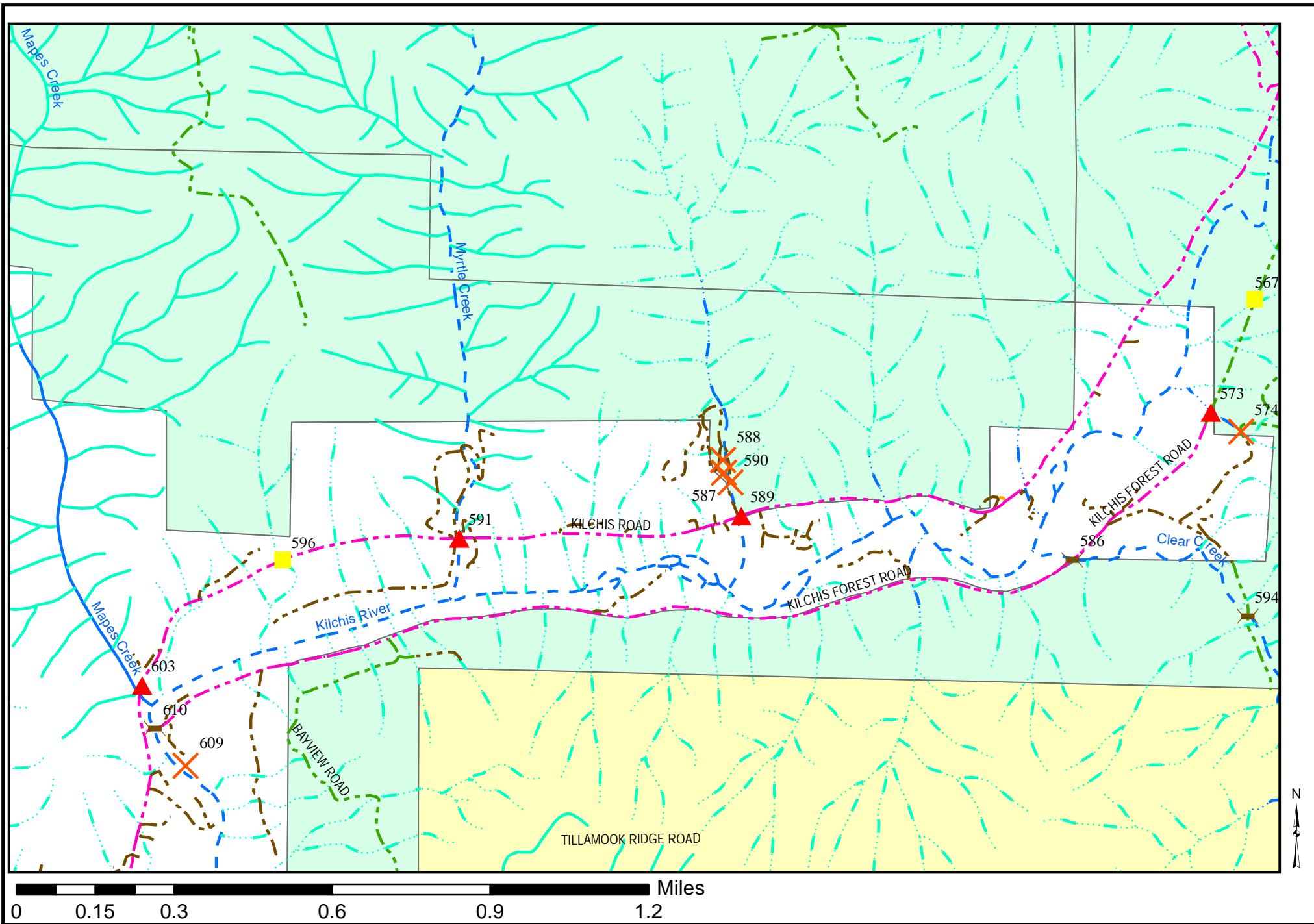
Inlet



Outlet



LOCATION INFO				Culvert #	573	Priority	L
Watershed		Kilchis River					
Stream Name		Tank Creek					
Township-Range-Section-1/4		T1N, R9W, Sec. 33, SW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		438509/5041958					
Road Name		Kilchis Forest Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Tillamook Co. and T. Budelman					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	11.1				
Material	Concrete	Upstream Gradient (%)	12.3				
Length (ft)	69	Bankfull Width (ft)	7.3				
Width (in)	30	Bankfull:Culvert Ratio	0.3				
Height (in)	30						
Outlet Perch (ft)	3.1						
Slope (%)	5.6						
Rustline Height (in)	none						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							










Mapes, Myrtle, Thomas and Tank creeks Culverts, Kilchis River Basin




# LITTLE SOUTH FORK KILCHIS CULVERT

LOCATION INFO				Culvert #	472	Priority	M
Watershed		Kilchis River					
Stream Name		Unnamed trib. to Little S. Fork Kilchis R. (Trib. D)					
Township-Range-Section-1/4		T1N, R9W, Sec. 14, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		441782/5045388					
Road Name		Unnamed Forest Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe Arch	Inlet Gradient (%)	13.8				
Material	Corrugated metal	Upstream Gradient (%)	13.5				
Length (ft)	60	Bankfull Width (ft)	12.6				
Width (in)	156	Bankfull:Culvert Ratio	1.0				
Height (in)	108						
Outlet Perch (ft)	7.1						
Slope (%)	7.1						
Rustline Height (in)	18						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.6	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							

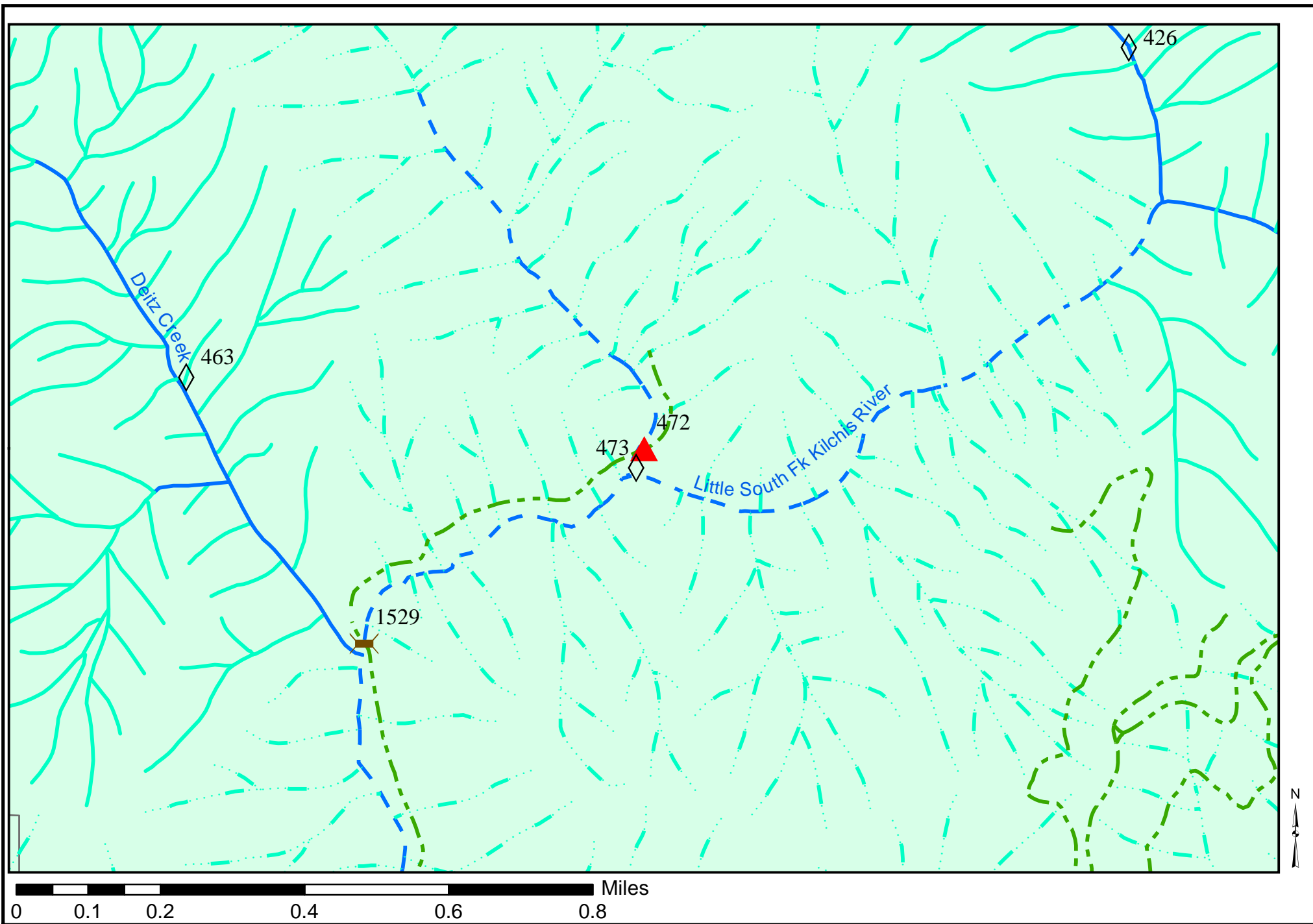
# SAM DOWNS CREEK CULVERTS

LOCATION INFO				Culvert #	514	Priority	NA
Watershed		Kilchis River					
Stream Name		Unnamed tributary to Sam Downs Creek					
Township-Range-Section-1/4		T1N, R8W, Sec. 19, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		444479/5044396					
Road Name		Sam Downs Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Pipe Arch	Inlet Gradient (%)	4.5				
Material	Corrugated metal	Upstream Gradient (%)	3.6				
Length (ft)	95	Bankfull Width (ft)	9.6				
Width (in)	144	Bankfull:Culvert Ratio	1.25				
Height (in)	90						
Outlet Perch (ft)	None						
Slope (%)	6.7						
Rustline Height (in)	N/A						
Overall Condition	Good						
PRIORITIZATION ANALYSIS						 Outlet	
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Green	Barrier Points	1				
		Prioritization Total Points	7				
Notes:							

LOCATION INFO				Culvert #	505	Priority	NA
Watershed			Kilchis River				
Stream Name			Sam Downs Creek				
Township-Range-Section-1/4			T1N, R8W, Sec. 19, SE¼ of SE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			444916/5044416				
Road Name			Sam Downs Road				
Road/Culvert Owner			Oregon Department of Forestry				
Adjacent Landowners			Oregon Department of Forestry				
CULVERT INFO			CHANNEL INFO			 	
Shape	Pipe Arch	Inlet Gradient (%)	11.4				
Material	Corrugated metal	Upstream Gradient (%)	4.5				
Length (ft)	82	Bankfull Width (ft)	10.3				
Width (in)	144	Bankfull:Culvert Ratio	1.5				
Height (in)	90						
Outlet Perch (ft)	None						
Slope (%)	4.9						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Green	Barrier Points	1				
		Prioritization Total Points	7				
Notes:							

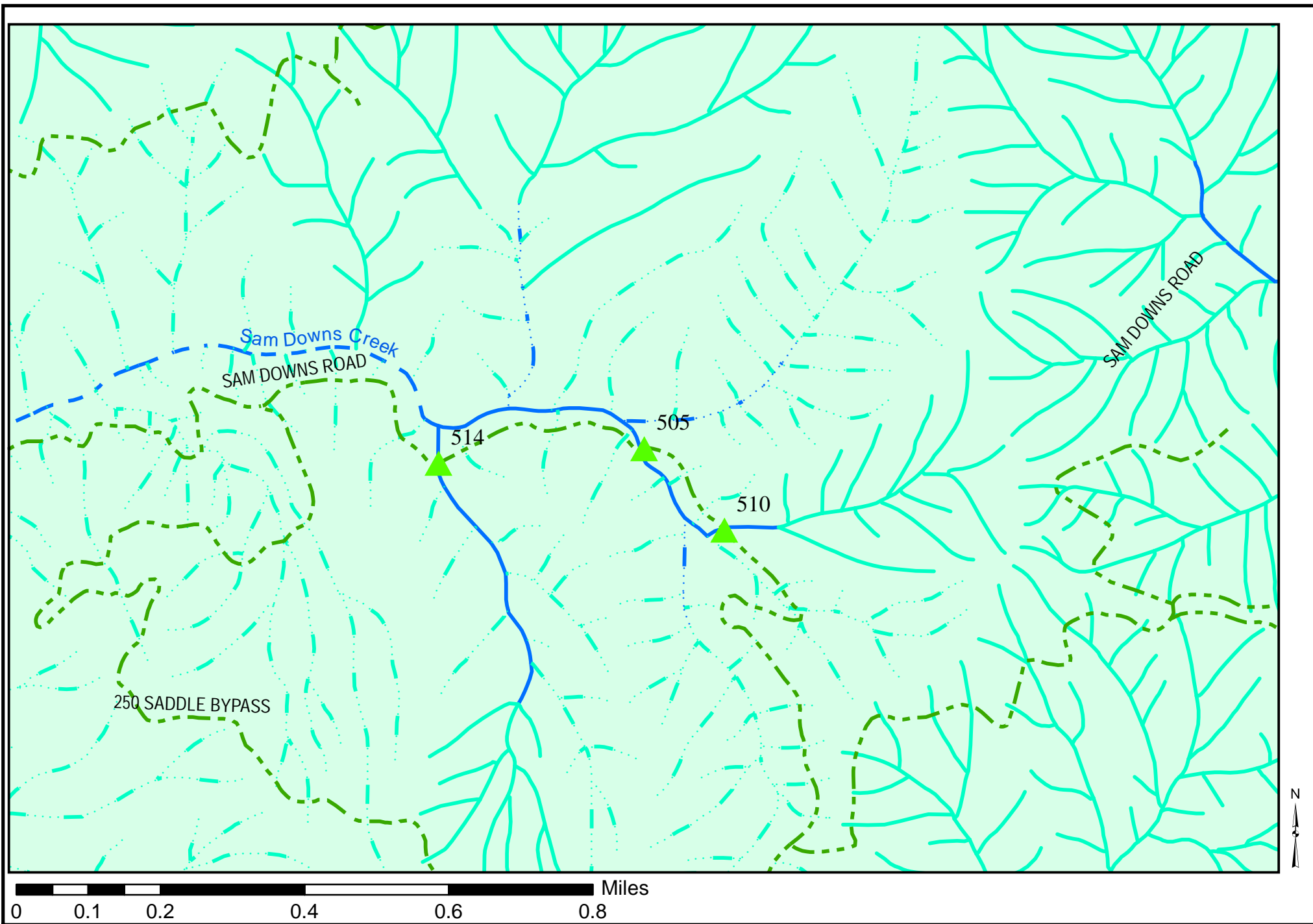
LOCATION INFO				Culvert #	510	Priority	NA
Watershed		Kilchis River					
Stream Name		Sam Downs Creek					
Township-Range-Section-1/4		T1N, R8W, Sec. 20, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		445122/5044237					
Road Name		Sam Downs Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 	
Shape	Pipe Arch	Inlet Gradient (%)	2.0				
Material	Corrugated metal	Upstream Gradient (%)	10.2				
Length (ft)	52	Bankfull Width (ft)	4.0				
Width (in)	96	Bankfull:Culvert Ratio	2.0				
Height (in)	72						
Outlet Perch (ft)	None						
Slope (%)	6.7						
Rustline Height (in)	6						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Green	Barrier Points	1				
		Prioritization Total Points	6				
Notes:							






Little South Fork Kilchis River Area Culverts, Kilchis River Basin










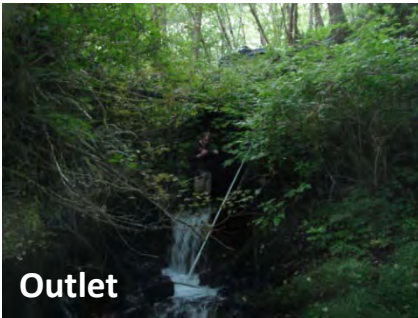
Sam Downs Road Culverts, Kilchis River Basin

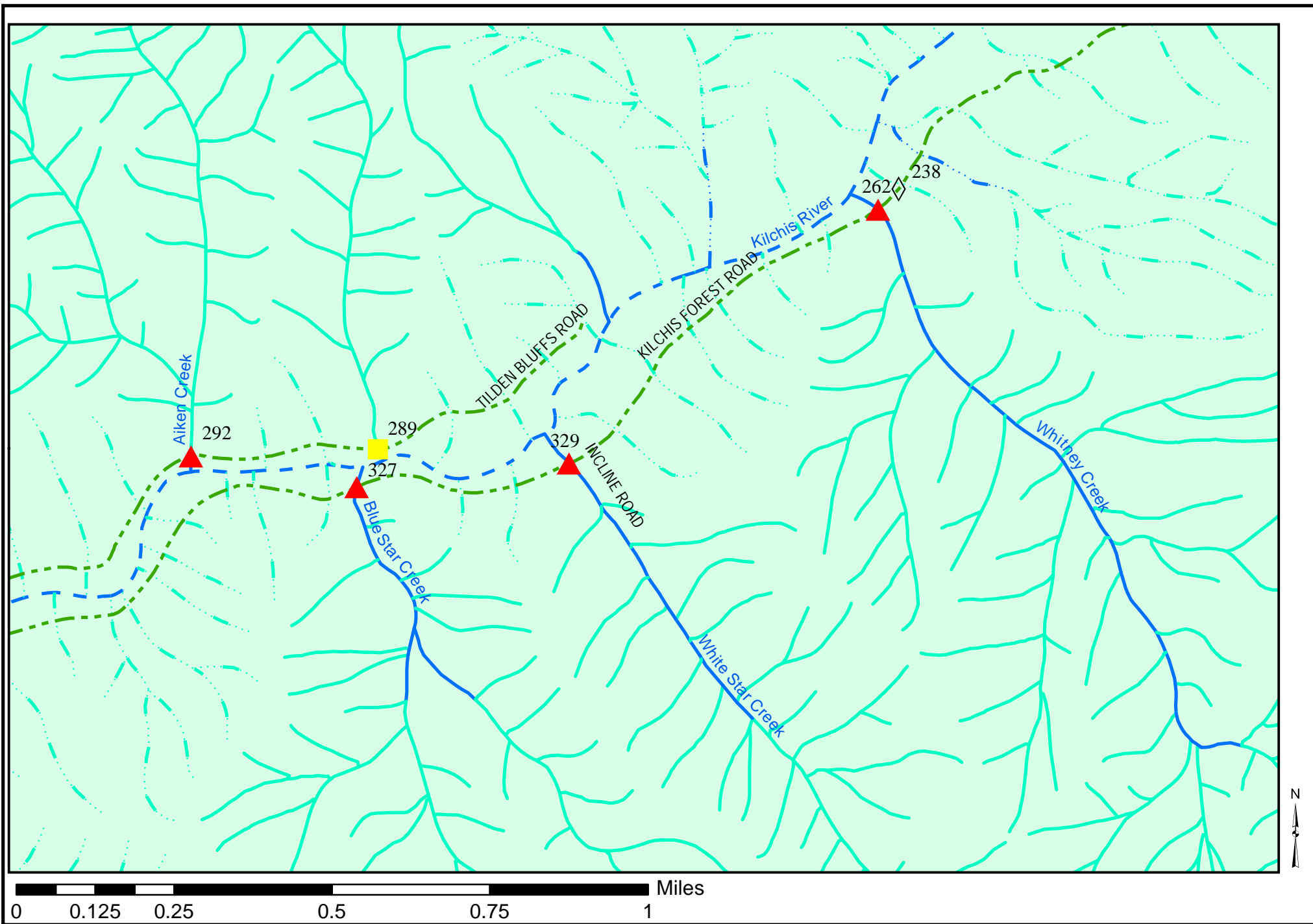
## TILDEN BLUFFS ROAD AREA CULVERTS

LOCATION INFO				Culvert #	292	Priority	L
Watershed		Kilchis River					
Stream Name		Aiken Creek					
Township-Range-Section-1/4		T1N, R9W, Sec. 16, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		438574/5048715					
Road Name		Tilden Bluffs Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	18.2				
Material	Corrugated metal	Upstream Gradient (%)	16.2				
Length (ft)	54	Bankfull Width (ft)	9.7				
Width (in)	66	Bankfull:Culvert Ratio	0.6				
Height (in)	66						
Outlet Perch (ft)	6.2						
Slope (%)	1.9						
Rustline Height (in)	42						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
<b>Notes:</b> Although designated a nonfish stream, technical reviewers felt that a short reach of this stream would be suitable for fish use if passage were not prevented by this culvert.							

LOCATION INFO				Culvert #	327	Priority	M
Watershed		Kilchis River					
Stream Name		Blue Star Creek					
Township-Range-Section-1/4		T1N, R9W, Sec. 4, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		438990/5048635					
Road Name		Kilchis Forest Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	20.2				
Material	Corrugated metal	Upstream Gradient (%)	13.3				
Length (ft)	100	Bankfull Width (ft)	10.3				
Width (in)	60	Bankfull:Culvert Ratio	0.5				
Height (in)	60						
Outlet Perch (ft)	2.5						
Slope (%)	4.0						
Rustline Height (in)	42						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							

LOCATION INFO				Culvert #	329	Priority	L
Watershed		Kilchis River					
Stream Name		White Star Creek					
Township-Range-Section-1/4		T1N, R9W, Sec. 3, SE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439526/5048697					
Road Name		Kilchis Forest Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Circular	Inlet Gradient (%)	15.1				
Material	Corrugated metal	Upstream Gradient (%)	3.1				
Length (ft)	65	Bankfull Width (ft)	10.0				
Width (in)	66	Bankfull:Culvert Ratio	0.6				
Height (in)	66						
Outlet Perch (ft)	6.7						
Slope (%)	3.2						
Rustline Height (in)	30						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 Outlet	
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

LOCATION INFO				Culvert #	262	Priority	H
Watershed		Kilchis River					
Stream Name		Whitney Creek					
Township-Range-Section-1/4		T1N, R9W, Sec. 4, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		440298/5049327					
Road Name		Kilchis Forest Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	12.0				
Material	Corrugated metal	Upstream Gradient (%)	8.0				
Length (ft)	100	Bankfull Width (ft)	13.4				
Width (in)	84	Bankfull:Culvert Ratio	0.5				
Height (in)	96	Outlet cascades onto bedrock.					
Outlet Perch (ft)	4.5						
Slope (%)	7.0						
Rustline Height (in)	36						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	1.1	Habitat Points	3				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	11				
<b>Notes:</b> Water entering through holes in side of pipe. 4-6” holes in invert. Water flows under and alongside pipe. This pipe appears to sit on bedrock and it is unclear whether an accessible crossing can be created without considerable earthwork. Closer inspection of this location is in order.							




Tilden Bluffs Road Area Culverts, Kilchis River Basin

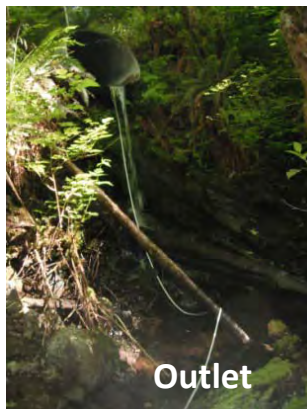


# NORTH FORK KILCHIS AREA CULVERTS



LOCATION INFO				Culvert #	120	Priority	L
Watershed		Kilchis River					
Stream Name		Tributary of Schroeder Creek					
Township-Range-Section-1/4		T2N, R8W, Sec. 30, NW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		444731/5052521					
Road Name		Miami Divide Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	15.8				
Material	Corrugated Metal	Upstream Gradient (%)	6.9				
Length (ft)	46	Bankfull Width (ft)	4				
Width (in)	48	Bankfull:Culvert Ratio	1.0				
Height (in)	48						
Outlet Perch (ft)	9.8						
Slope (%)	6.8						
Rustline Height (in)	16						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

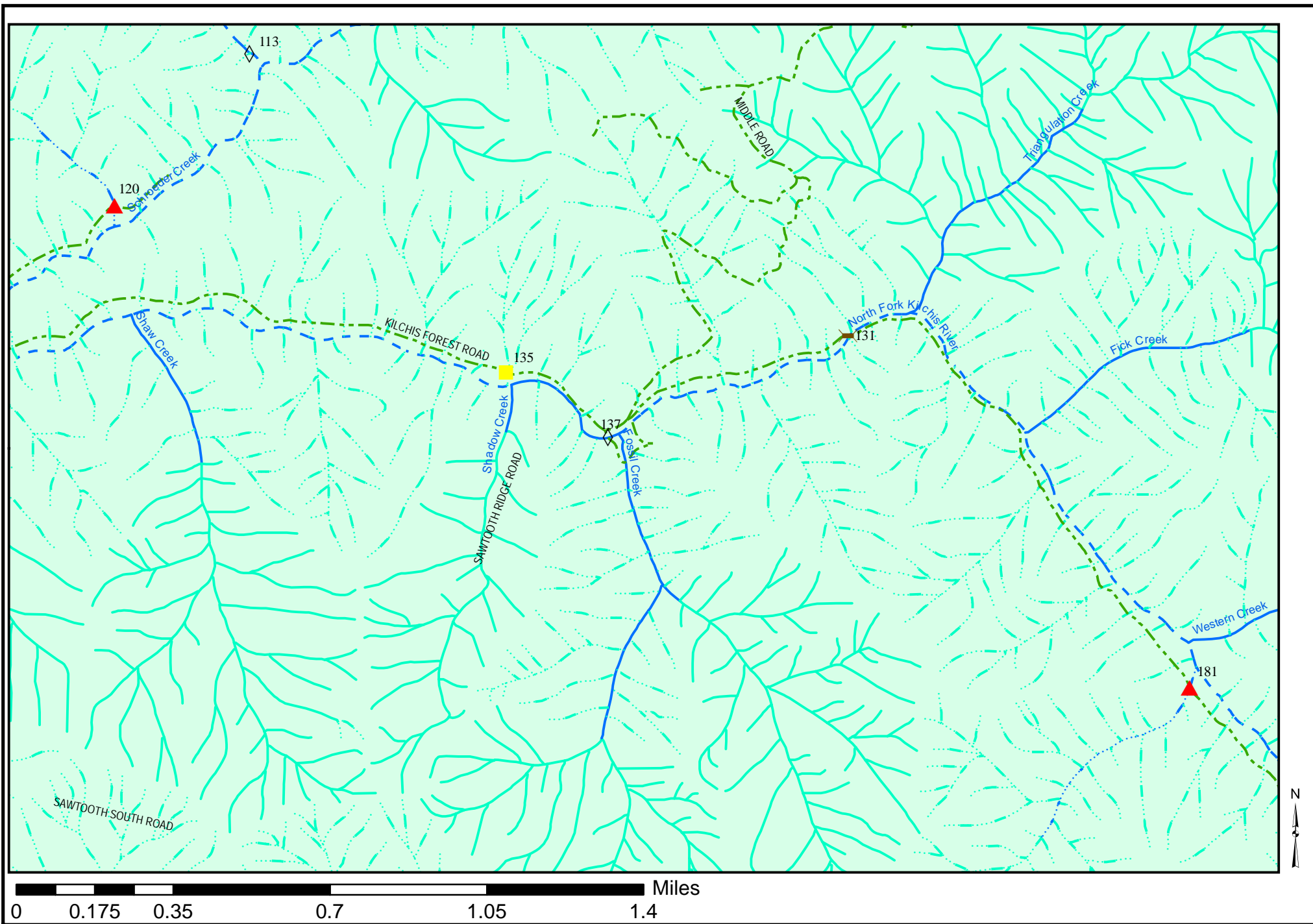


Inlet



Outlet

LOCATION INFO				Culvert #	181	Priority	M
Watershed		Tillamook Bay					
Stream Name		Unnamed tributary of N. Fork Kilchis River					
Township-Range-Section-1/4		T2N, R8W, Sec. 34, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		448643/ 5050834					
Road Name		Kilchis Forest Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <div>Inlet</div>	
Shape	Circular	Inlet Gradient (%)	23.5				
Material	Corrugated Metal	Upstream Gradient (%)	5.3				
Length (ft)	51	Bankfull Width (ft)	8.2				
Width (in)	66	Bankfull:Culvert Ratio	0.7				
Height (in)	66						
Outlet Perch (ft)	0.1						
Slope (%)	7.1						
Rustline Height (in)	18						
Overall Condition	Good						
PRIORITIZATION ANALYSIS						 <div>Outlet</div>	
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							



North Fork Kilchis River Area Culverts, Kilchis River Basin

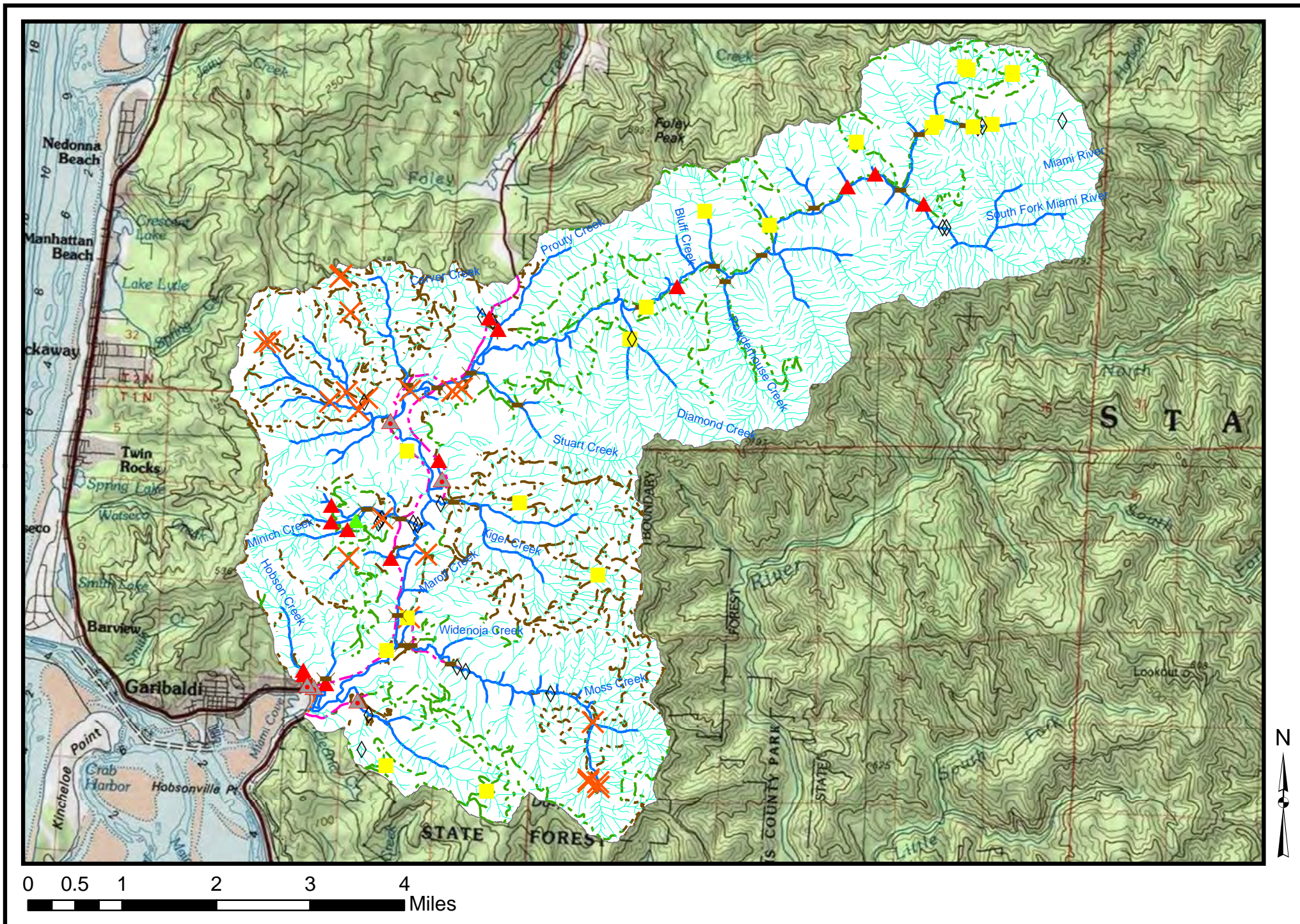


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## **Miami River Basin Culverts**

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Miami Basin Crossings










### Miami River Basin Clusters

Cluster	Culvert Numbers	Priority	Stream	Upstream Habitat
Lower Miami River Area	450	M	Hobson Creek	3.1
	449	M	Hobson Creek	
	448	H	Hobson Creek	
	432	H	Hobson Creek	
	444	M	Struby Creek	
	462	H	Illingsworth Creek	
Waldron and Minich	352	H	Waldron Creek	2.1
	273	M	Unnamed tributary	
	279	L	Unnamed tributary	
	278	M	Unnamed tributary	
	320	H	Minich Creek	
New Miami River Road Area	230	L	Unnamed tributary	0.6
	225	L	Unnamed tributary	
Peterson Creek	189	H	Peterson Creek	6.2
Prouty and Carver Creeks	138	H	Prouty Creek	1.1
	126	M	Carver Creek	
Miami River Road	115	L	Unnamed tributary	0.7
	93	N/A	Unnamed tributary	
	84	L	Unnamed tributary	
	5101	L	Unnamed tributary	
	87	L	Unnamed tributary	



## LOWER MIAMI RIVER AREA CULVERTS

LOCATION INFO				Culvert #	450	Priority	M
Watershed		Miami River					
Stream Name		Hobson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 22, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430417/5045916					
Road Name		Miami Foley Road					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		TNC, Tillamook County, and D. Schechter					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe Arch	Inlet Gradient (%)	10.0				
Material	Corrugated metal	Upstream Gradient (%)	6.5				
Length (ft)	140	Bankfull Width (ft)	6.7				
Width (in)	78	Bankfull:Culvert Ratio	1.0				
Height (in)	54	Condition unknown due to being submerged and full, but we suspect that the pipe is in poor condition based on the condition of the inlet and outlet.					
Outlet Perch (ft)	None						
Slope (%)	4.2						
Rustline Height (in)	unknown						
Overall Condition	unknown						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	9				
<b>Notes:</b> Culvert is almost entirely submerged under all flows. Beaver dams in the downstream wetland are likely the primary contributing factor. Upstream bankfull width impacted by adjacent land use which has largely constrained the channel.							

LOCATION INFO				Culvert #	449	Priority	M
Watershed				Miami River			
Stream Name				Hobson Creek			
Township-Range-Section-1/4				T1N, R10W, Sec. 22, NE ¼ of NW ¼			
UTM Easting/Northing (Zone 10, NAD 1983)				430308/5045955			
Road Name				Private Drive			
Road/Culvert Owner				D. Schecter			
Adjacent Landowners				Tillamook County and ODOT			
CULVERT INFO		CHANNEL INFO		 Inlet			
Shape	Circular	Inlet Gradient (%)	10.0				
Material	Concrete	Upstream Gradient (%)	1.8				
Length (ft)	26	Bankfull Width (ft)	6.1				
Width (in)	36	Bankfull:Culvert Ratio	0.5				
Height (in)	36						
Outlet Perch (ft)	None						
Slope (%)	-1.0						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS				 Outlet			
Upstream Habitat Length (mi)	0.9	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	9				
<b>Notes:</b> Pipe is approximately 1/3 full of stream bed substrate.							




Inlet

**Outlet**



**Outlet**





LOCATION INFO				Culvert #	444	Priority	M
Watershed		Miami River					
Stream Name		Struby Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 22, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430542/5045965					
Road Name		Miami Foley Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		G. Merritt, L. Parks, and TNC					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)			11.0		
Material	Concrete	Upstream Gradient (%)			5.3		
Length (ft)	43	Bankfull Width (ft)			4.1		
Width (in)	24	Bankfull:Culvert Ratio			0.5		
Height (in)	24						
Outlet Perch (ft)	None						
Slope (%)	4.6						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points			1		
Habitat Quality	Fair	Habitat Quality Points			2		
Fish Species	Anad.	Fish Points			3		
Barrier Class	Red	Barrier Points			3		
		Prioritization Total Points			9		
Notes: Culvert was segmented and had begun to separate. Water was flowing alongside the pipe and entering the pipe from one of the separations under the road bed.							



Outlet

LOCATION INFO				Culvert #	462	Priority	H
Watershed			Miami River				
Stream Name			Illingsworth Creek				
Township-Range-Section-1/4			T1N, R10W, Sec. 23, NW¼ of NW¼				
UTM Easting/Northing (Zone 10, NAD 1983)			431174/5045718				
Road Name			Ekroth Road				
Road/Culvert Owner			Tillamook County				
Adjacent Landowners		State of Oregon, F. Underhill, and T. & K. Roach					
CULVERT INFO			CHANNEL INFO				
Shape	Pipe Arch		Inlet Gradient (%)	7.0			
Material	Corrugated metal		Upstream Gradient (%)	0.6			
Length (ft)	37		Bankfull Width (ft)	13.2			
Width (in)	72		Bankfull:Culvert Ratio	0.5			
Height (in)	50						
Outlet Perch (ft)	None						
Slope (%)	0.1						
Rustline Height (in)	22						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.6		Habitat Points	4			
Habitat Quality	Good		Habitat Quality Points	3			
Fish Species	Anad.		Fish Points	3			
Barrier Class	Gray		Barrier Points	2			
			Prioritization Total Points	12			
Notes:							

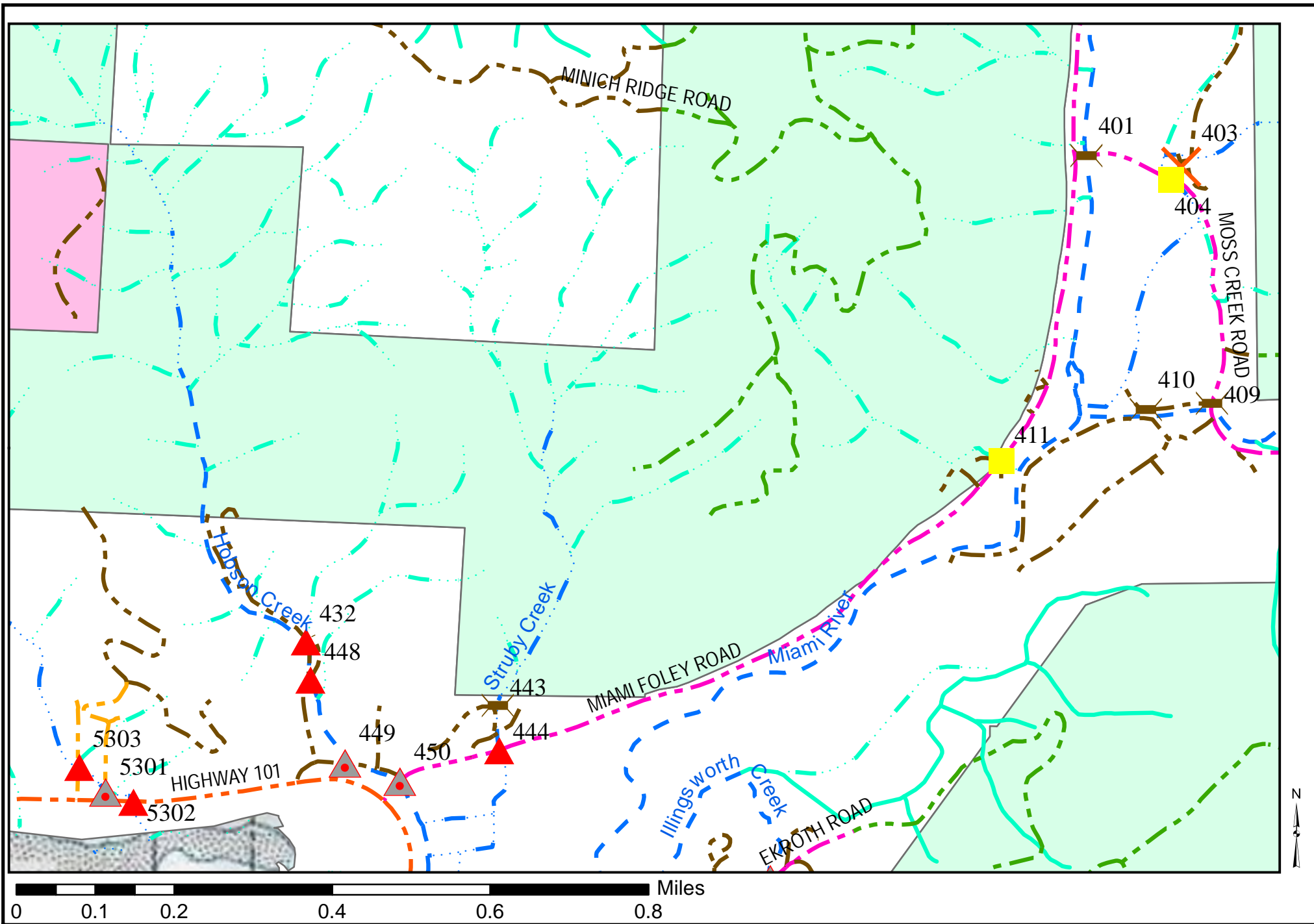




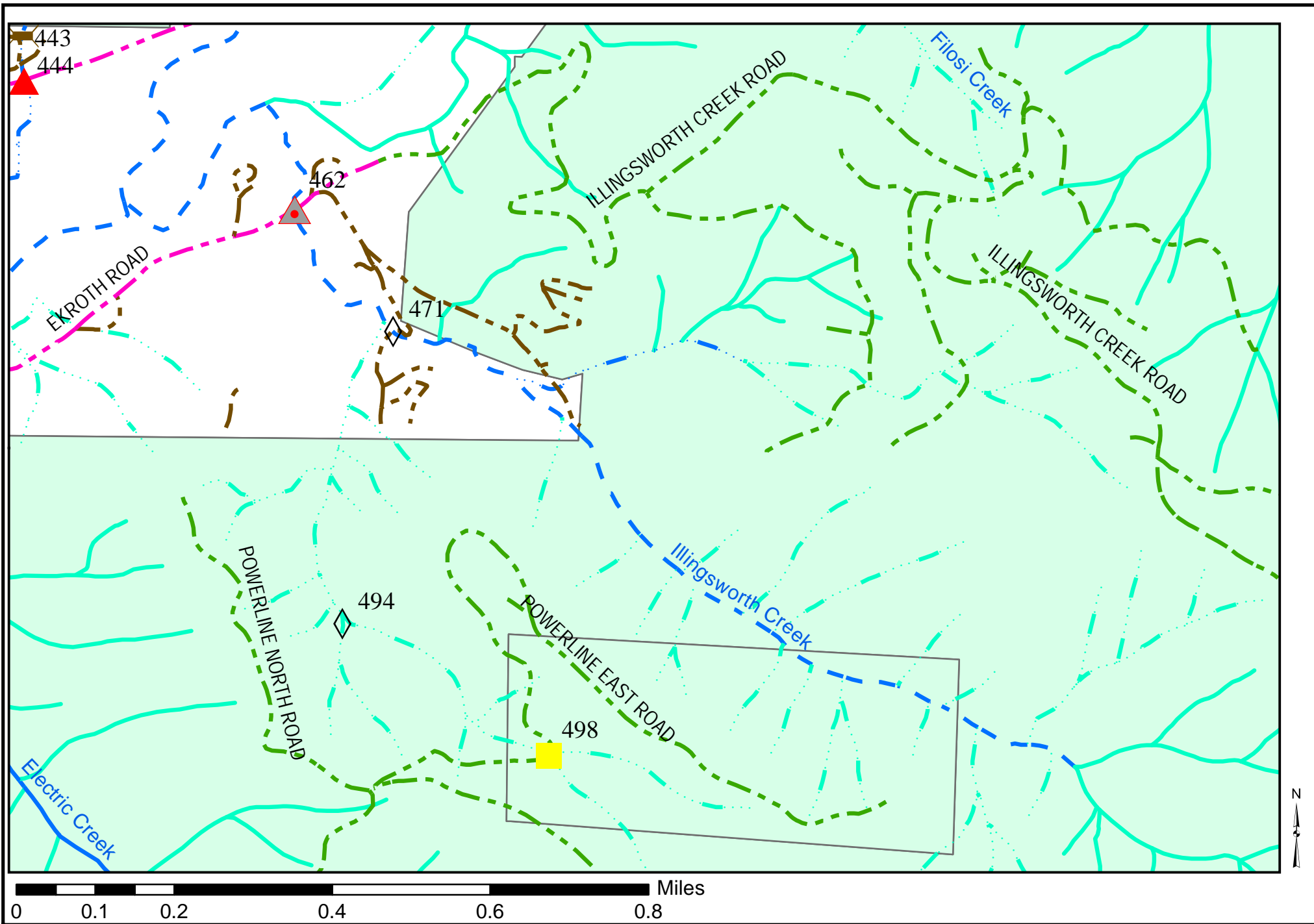


**Outlet**






Hobson Creek and Struby Creek Culverts, Miami River Basin



Illingsworth Creek Culvert, Miami River Basin


# WALDRON AND MINICH CREEK CULVERTS


LOCATION INFO				Culvert #	352	Priority	H
Watershed		Miami River					
Stream Name		Waldron Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 11, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		431665/5048197					
Road Name		Miami Foley Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		E. Waldron					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	8.7				
Material	Concrete	Upstream Gradient (%)	3.4				
Length (ft)	52	Bankfull Width (ft)	8.5				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36						
Outlet Perch (ft)	None						
Slope (%)	2.5						
Rustline Height (in)	18						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes:							



Outlet

LOCATION INFO				Culvert #	273	Priority	M
Watershed			Miami River				
Stream Name			Unnamed tributary of Minich Creek				
Township-Range-Section-1/4			T1N, R10W, Sec. 10, NE¼ of NE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			430996/5048047				
Road Name			Minich Creek Road				
Road/Culvert Owner			Oregon Department of Forestry				
Adjacent Landowners		Stimson Lumber Company					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)	7.0			
Material	Corrugated metal		Upstream Gradient (%)	9.0			
Length (ft)	61		Bankfull Width (ft)	9.6			
Width (in)	24		Bankfull:Culvert Ratio	0.2			
Height (in)	24						
Outlet Perch (ft)	1.8						
Slope (%)	7.0						
Rustline Height (in)	14						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.2	Habitat Points		1		
Habitat Quality		Fair	Habitat Quality Points		2		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		9		
Notes:							







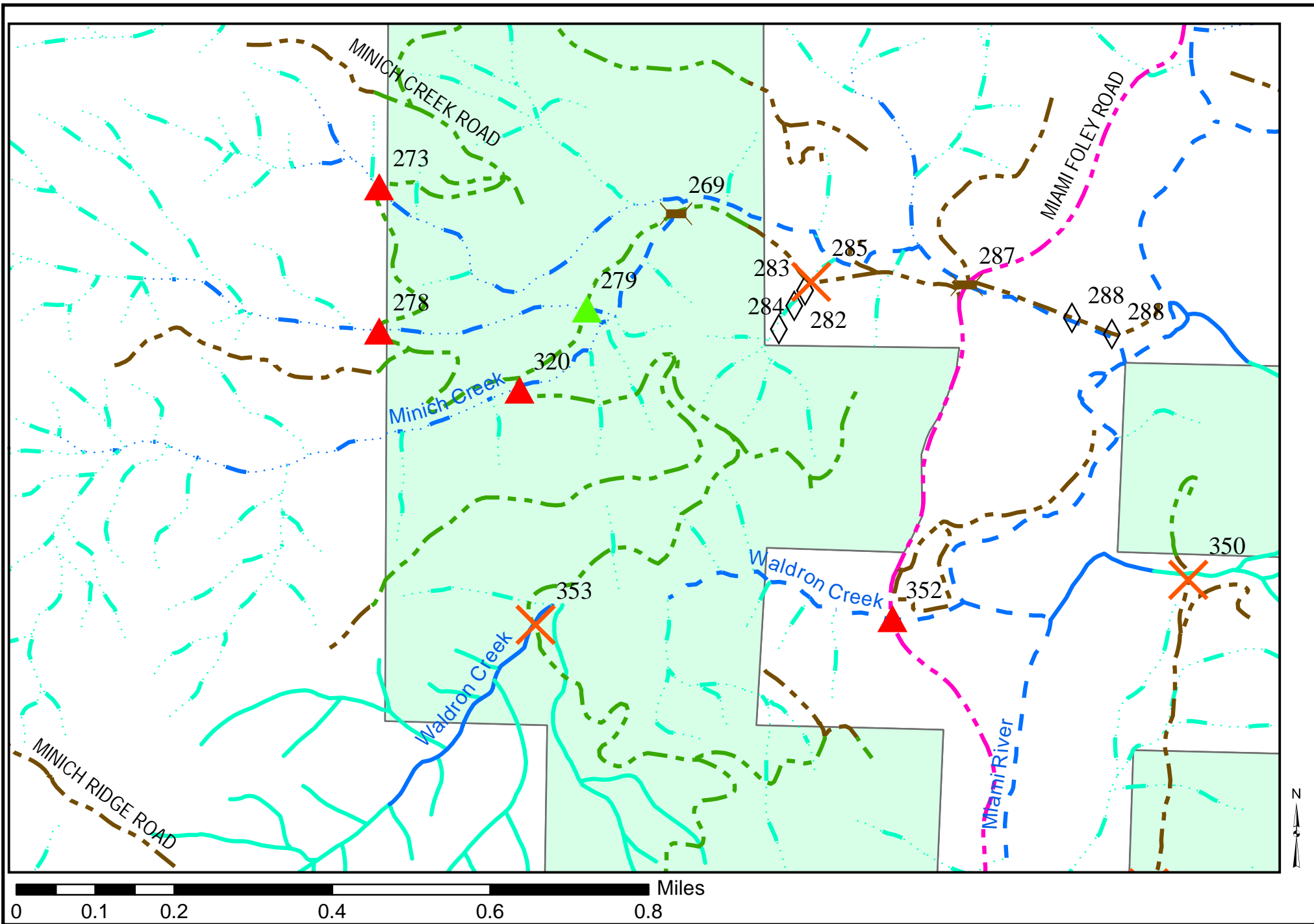


**Outlet**



**Outlet**


LOCATION INFO				Culvert #	320	Priority	H
Watershed				 Inlet			
Stream Name		Miami River					
Township-Range-Section-1/4		Minich Creek					
UTM Easting/Northing (Zone 10, NAD 1983)		T1N, R11W, Sec. 10, SE¼ of NE¼					
Road Name		431133/5048601					
Road/Culvert Owner		Minich Creek Road					
Adjacent Landowners		Oregon Department of Forestry					
Overall Condition		Poor					
CULVERT INFO		CHANNEL INFO		 Outlet			
Shape	Circular	Inlet Gradient (%)	2.0				
Material	Corrugated metal	Upstream Gradient (%)	2.5				
Length (ft)	68	Bankfull Width (ft)	6.6				
Width (in)	18	Bankfull:Culvert Ratio	0.2				
Height (in)	18						
Outlet Perch (ft)	6.8						
Slope (%)	7.0						
Rustline Height (in)	N/A						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.6	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes:							




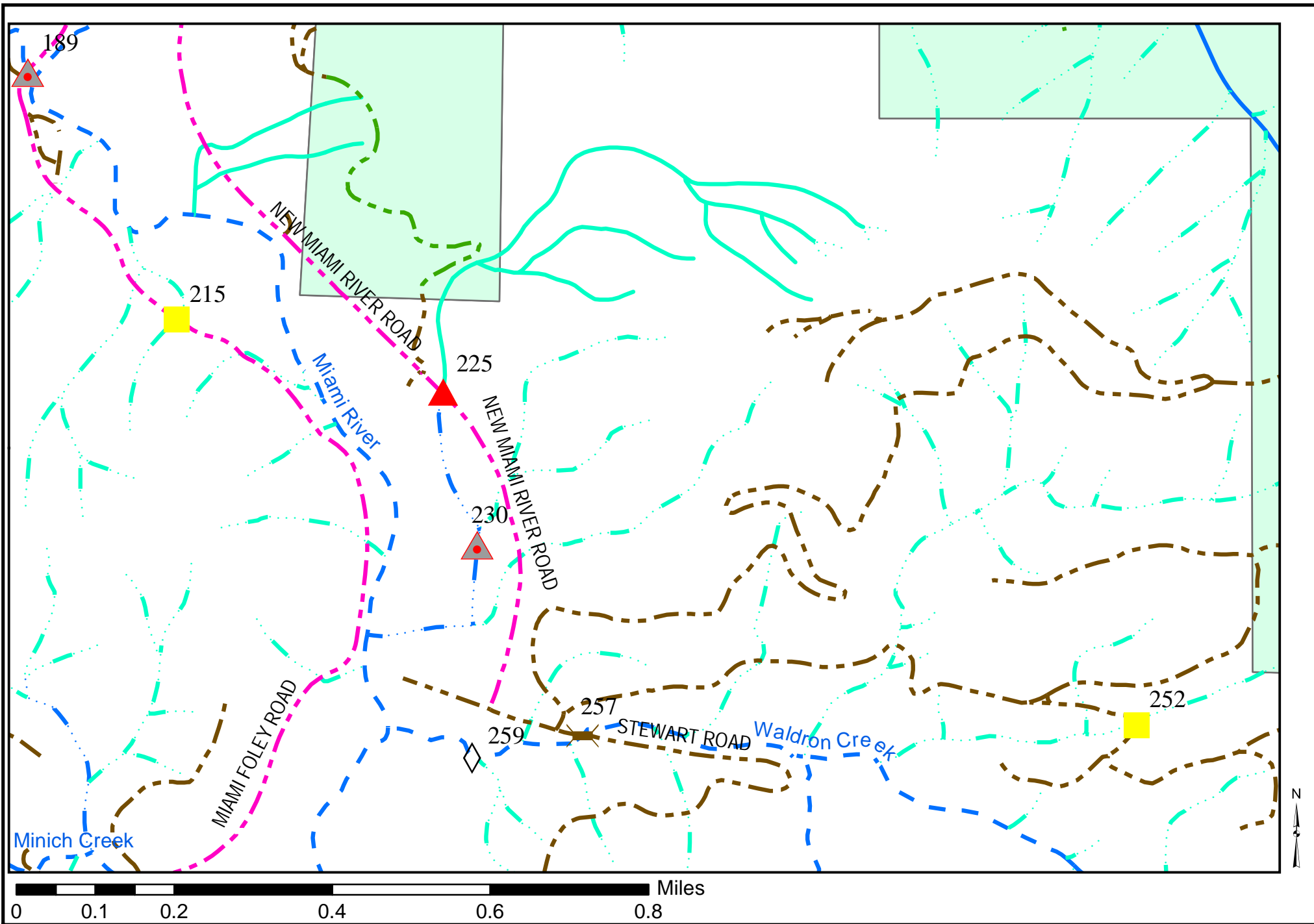
Waldron Creek and Minich Creek Culverts, Miami River Basin



## NEW MIAMI RIVER ROAD AREA CULVERTS



LOCATION INFO				Culvert #	230	Priority	L
Watershed				Miami River			
Stream Name				Unnamed tributary of Miami River			
Township-Range-Section-1/4				T1N, R10W, Sec. 2, NE¼ of SE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				432506/5049559			
Road Name				Private driveway off New Miami River Road			
Road/Culvert Owner				M. & M. Faye			
Adjacent Landowners				M. & M. Faye			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	42.7				
Material	Corrugated metal	Upstream Gradient (%)	0.1				
Length (ft)	20	Bankfull Width (ft)	4.3				
Width (in)	36	Bankfull:Culvert Ratio	0.7				
Height (in)	36						
Outlet Perch (ft)	None						
Slope (%)	0.1						
Rustline Height (in)	24						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.6	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	8				
Notes:							

LOCATION INFO				Culvert #	225	Priority	L
Watershed		Miami River					
Stream Name		Unnamed tributary of Miami River					
Township-Range-Section-1/4		T1N, R10W, Sec. 2, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		432423/5049870					
Road Name		New Miami River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		R. Wald, L. Wilcox					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	11.0				
Material	Corrugated metal	Upstream Gradient (%)	10.2				
Length (ft)	93	Bankfull Width (ft)	9.0				
Width (in)	48	Bankfull:Culvert Ratio	0.4				
Height (in)	48						
Outlet Perch (ft)	0.9						
Slope (%)	4.7						
Rustline Height (in)	11						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

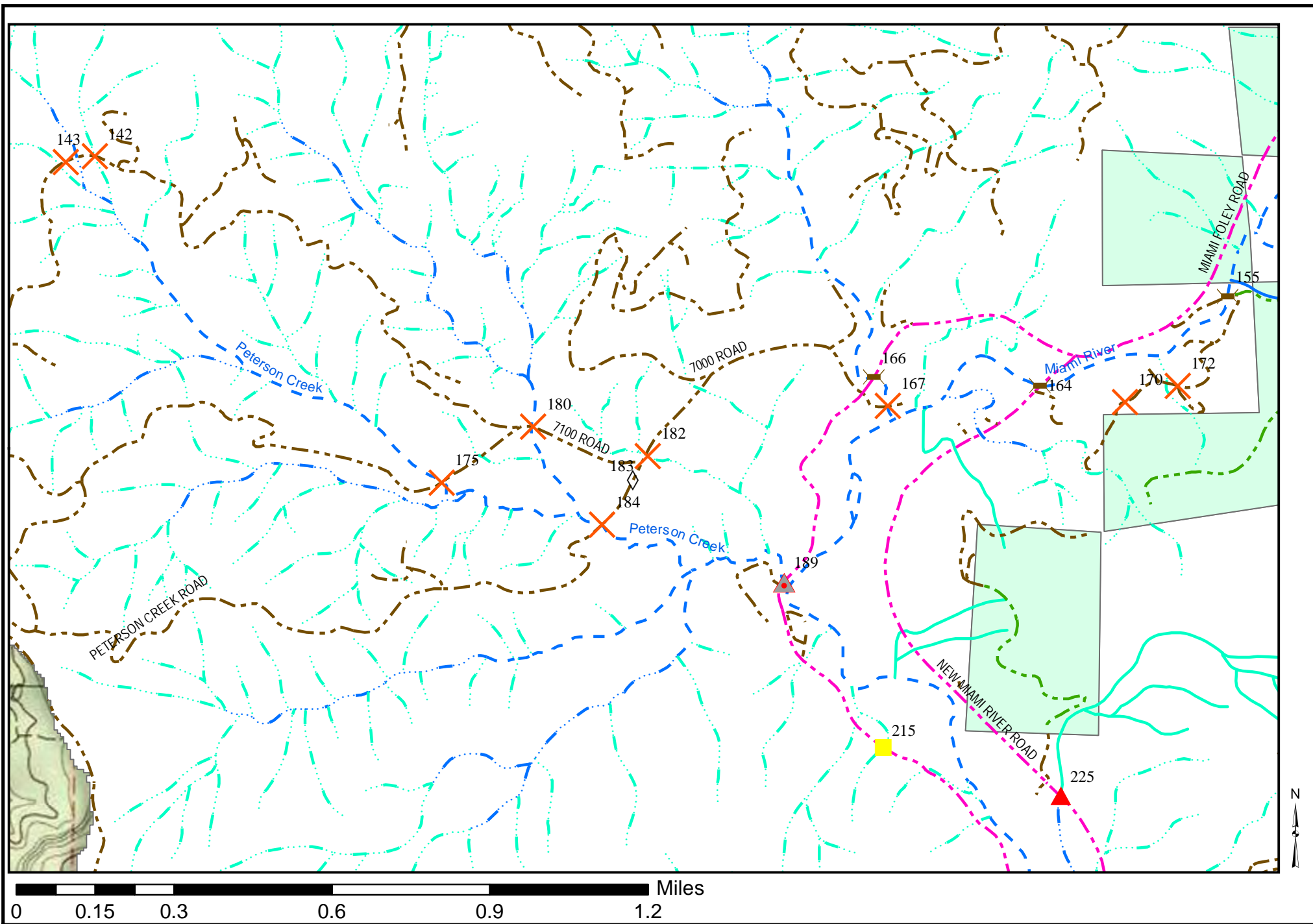


New Miami River Road Area Culverts, Miami River Basin

## PETERSON CREEK CULVERT

LOCATION INFO				Culvert #	189	Priority	H
Watershed		Miami River					
Stream Name		Peterson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 2, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		431586/5030520					
Road Name		Miami Foley Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		A. Waldron					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	4.1				
Material	Corrugated metal	Upstream Gradient (%)	1.4				
Length (ft)	46	Bankfull Width (ft)	15.4				
Width (in)	96	Bankfull:Culvert Ratio	0.5				
Height (in)	96						
Outlet Perch (ft)	0.2*						
Slope (%)	1.0						
Rustline Height (in)	30						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	6.2	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	12				
<b>Notes:</b> *Outlets into Miami River mainstem. Tailwater control point not measurable so perch height was estimated.							







Peterson Creek Culverts, Miami River Basin

# CARVER AND PROUTY CREEK CULVERTS

LOCATION INFO				Culvert #	138	Priority	H
Watershed			Miami River				
Stream Name			Prouty Creek				
Township-Range-Section-1/4			T2N, R10W, Sec. 36, NW¼ of NE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			433364/5032149				
Road Name			Miami Forest River Road				
Road/Culvert Owner		Private Drive with Oregon Dept. of Forestry Easement					
Adjacent Landowners		State of Oregon and E. Frantz					
CULVERT INFO			CHANNEL INFO				
Shape	Pipe Arch		Inlet Gradient (%)	7.3			
Material	Corrugated metal		Upstream Gradient (%)	1.8			
Length (ft)	45		Bankfull Width (ft)	9.5			
Width (in)	110		Bankfull:Culvert Ratio	1.0			
Height (in)	82						
Outlet Perch (ft)	0.2						
Slope (%)	3.8						
Rustline Height (in)	18						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		1.1	Habitat Points	3			
Habitat Quality		Good	Habitat Quality Points	3			
Fish Species		Anad.	Fish Points	3			
Barrier Class		Red	Barrier Points	3			
			Prioritization Total Points	12			
Notes:							





Inlet

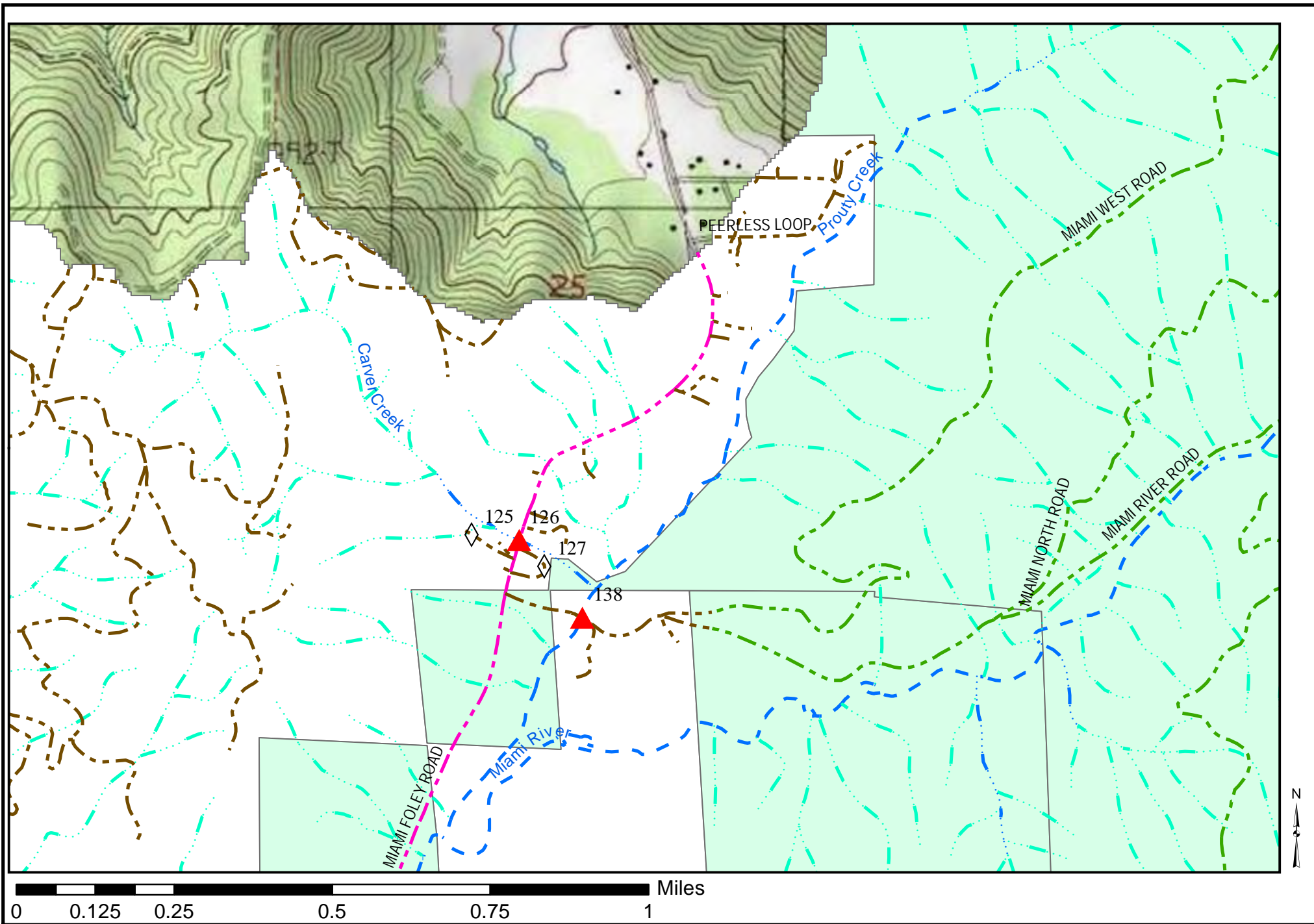


Outlet

LOCATION INFO				Culvert #	126	Priority	M
Watershed		Miami River					
Stream Name		Carver Creek					
Township-Range-Section-1/4		T2N, R10W, Sec. 25, SE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		433224/5052341					
Road Name		Miami Foley Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		N. Carver, W. Scholerman, W. Staben					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	18.6				
Material	Concrete	Upstream Gradient (%)	4.2				
Length (ft)	91	Bankfull Width (ft)	7.4				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36						
Outlet Perch (ft)	2.2						
Slope (%)	3.1						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							










Prouty Creek and Carver Creek Culverts, Miami River Basin




# MIAMI RIVER ROAD CULVERTS

LOCATION INFO				Culvert #	115	Priority	L
Watershed		Miami River					
Stream Name		Unnamed tributary of Miami River					
Township-Range-Section-1/4		T2N, R9W, Sec. 29, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		436328/5052920					
Road Name		Miami Forest River Road					
Road/Culvert Owner		Oregon Dept. of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	9.2				
Material	Corrugated metal	Upstream Gradient (%)	6.9				
Length (ft)	30	Bankfull Width (ft)	7.6				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36						
Outlet Perch (ft)	1.6						
Slope (%)	4.4						
Rustline Height (in)	14						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

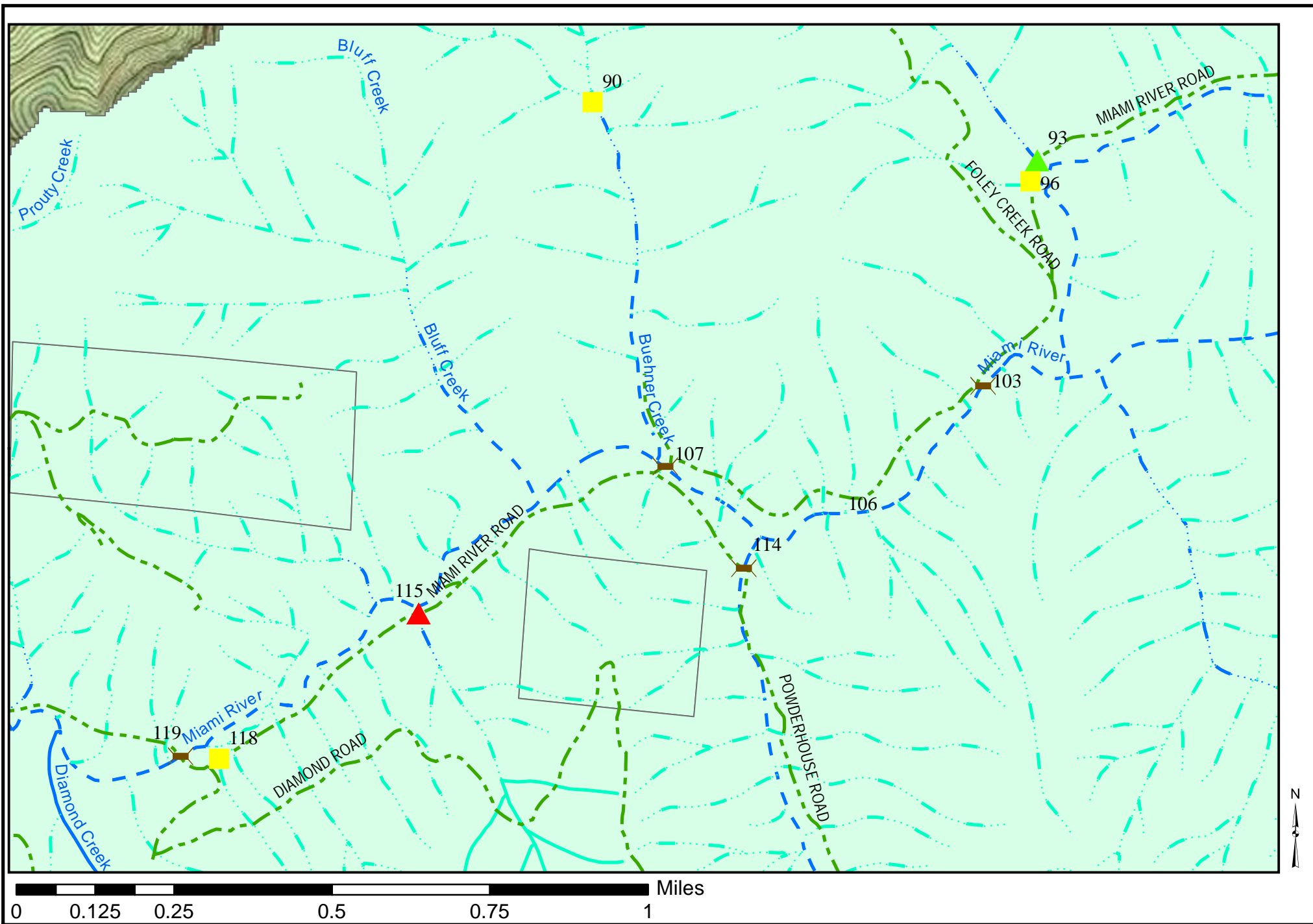
LOCATION INFO				Culvert #	93	Priority	NA
Watershed			Miami River				
Stream Name			Unnamed tributary to Miami River				
Township-Range-Section-1/4			T2N, R9W, Sec. 21, NW¼ of SW¼				
UTM Easting/Northing (Zone 10, NAD 1983)			438027/5054143				
Road Name			Miami Forest River Road				
Road/Culvert Owner			Oregon Dept. of Forestry				
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO			CHANNEL INFO				
Shape	Pipe Arch		Inlet Gradient (%)	0.1			
Material	Corrugated metal		Upstream Gradient (%)	15.6			
Length (ft)	55		Bankfull Width (ft)	9.4			
Width (in)	120		Bankfull:Culvert Ratio	1.3			
Height (in)	96						
Outlet Perch (ft)	None						
Slope (%)	4.5						
Rustline Height (in)	N/A						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2		Habitat Points	1			
Habitat Quality	Poor		Habitat Quality Points	1			
Fish Species	Anad.		Fish Points	3			
Barrier Class	Green		Barrier Points	1			
			Prioritization Total Points	6			
Notes:							



Inlet




Outlet




Middle Miami River Road Area Culverts, Miami River Basin


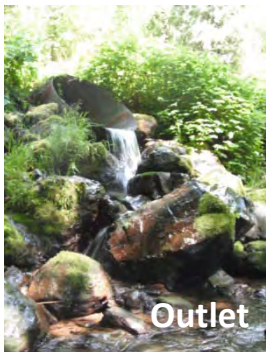
LOCATION INFO				Culvert #	84	Priority	L
Watershed		Miami River					
Stream Name		Unnamed tributary to Miami River					
Township-Range-Section-1/4		T2N, R9W, Sec. 21, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439281/5054779					
Road Name		Miami Forest River Road					
Road/Culvert Owner		Oregon Dept. of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe Arch	Inlet Gradient (%)	12.5				
Material	Corrugated metal	Upstream Gradient (%)	10.1				
Length (ft)	55	Bankfull Width (ft)	9.7				
Width (in)	120	Bankfull:Culvert Ratio	1.2				
Height (in)	96	Stream dry during summer 2011 site visit.					
Outlet Perch (ft)	10.3*						
Slope (%)	3.6						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
<b>Notes:</b> *Stream cascades over steep boulders and cobbles into the mainstem Miami River shortly after exiting this culvert. Barrier class and outlet perch based on this fact.							





**Inlet**

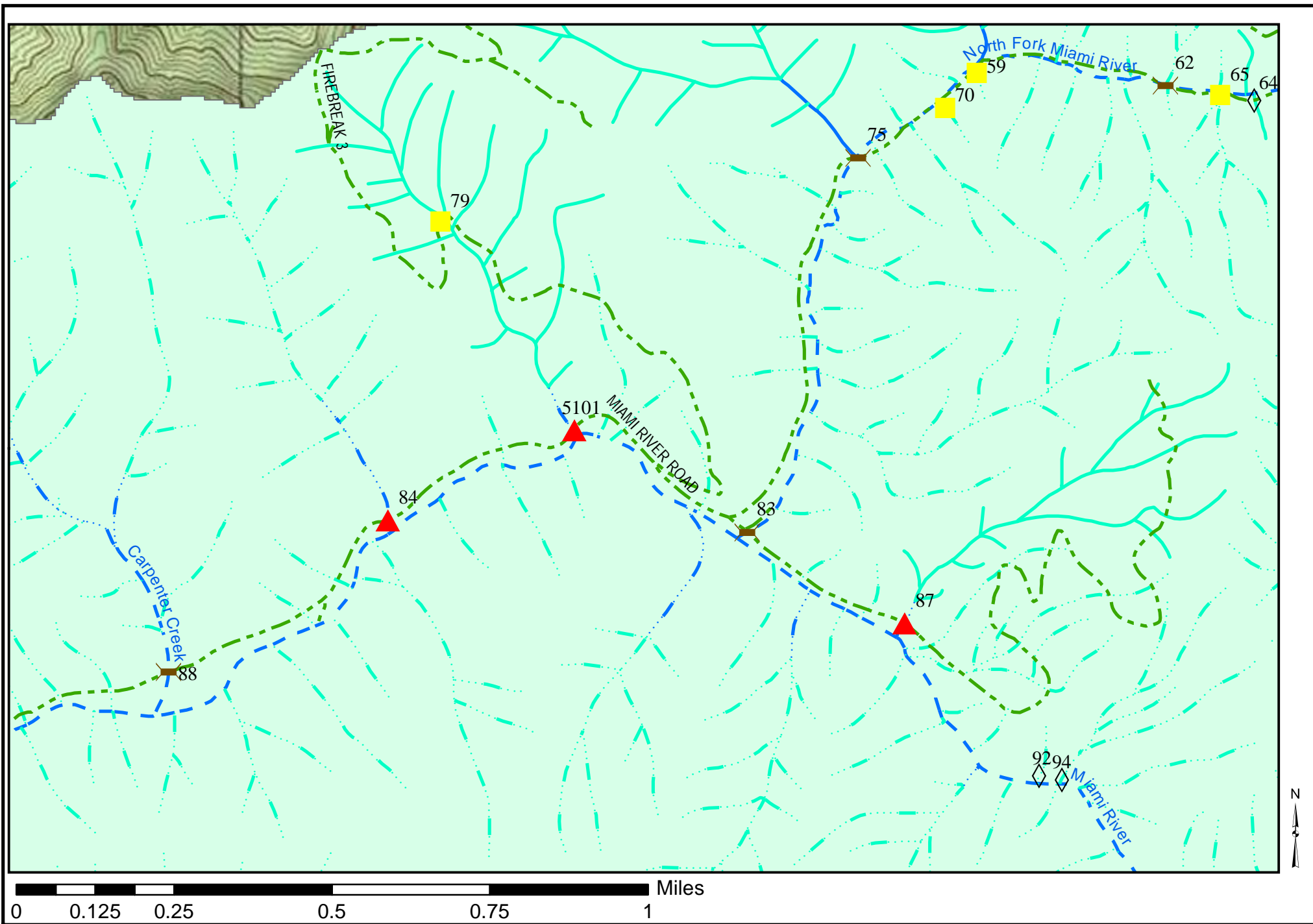


**Outlet**

LOCATION INFO				Culvert #	5101	Priority	L
Watershed		Miami River					
Stream Name		Unnamed tributary to Miami River					
Township-Range-Section-1/4		T2N, R9W, Sec. 15, SE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439759/5054992					
Road Name		Miami Forest River Road					
Road/Culvert Owner		Oregon Dept. of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 	
Shape	Circular	Inlet Gradient (%)	12.5				
Material	Corrugated metal	Upstream Gradient (%)	14.3				
Length (ft)	42	Bankfull Width (ft)	9.0				
Width (in)	60	Bankfull:Culvert Ratio	0.6				
Height (in)	60						
Outlet Perch (ft)	7.2						
Slope (%)	1.8						
Rustline Height (in)	24						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							



LOCATION INFO				Culvert #	87	Priority	L
Watershed		Miami River		 Inlet			
Stream Name		Unnamed tributary to Miami River					
Township-Range-Section-1/4		T2N, R9W, Sec. 21, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		440590/5054528					
Road Name		Miami Forest River Road					
Road/Culvert Owner		Oregon Dept. of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe Arch	Inlet Gradient (%)	34.1	 Outlet			
Material	Corrugated metal	Upstream Gradient (%)	19.4				
Length (ft)	61	Bankfull Width (ft)	5.2				
Width (in)	104	Bankfull:Culvert Ratio	1.7				
Height (in)	66						
Outlet Perch (ft)	0.4						
Slope (%)	3.3						
Rustline Height (in)	4						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							



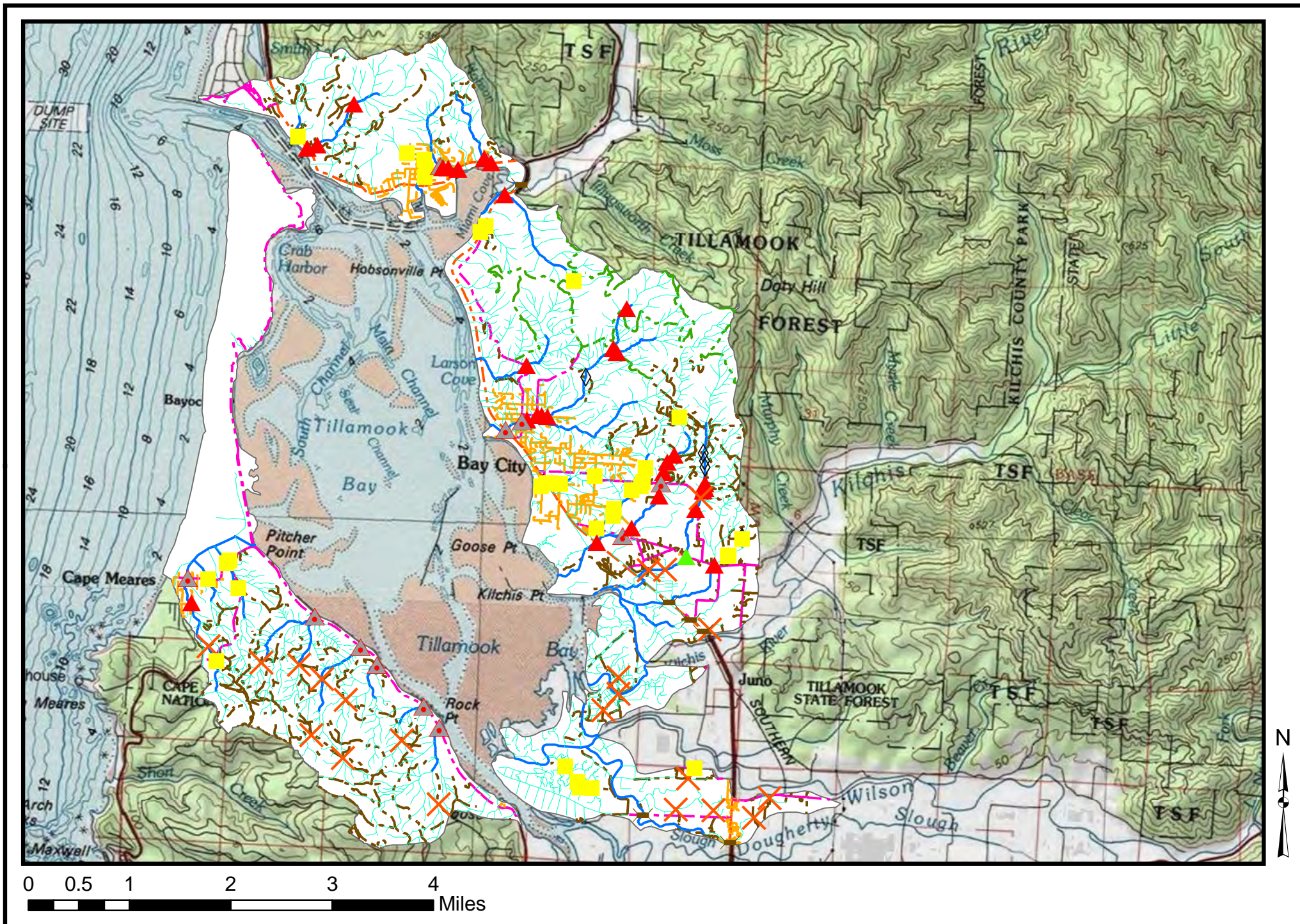
Upper Miami River Road Area Culverts, Miami River Basin

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## **Tillamook Bay Tributaries Culverts**

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Tillamook Bay Tributaries Crossings



### Tillamook Bay Tributaries Clusters

Cluster	Culvert Numbers	Priority	Stream	Upstream Habitat
Smith Creek	441	H	Smith Creek	1.0
	440	H	Smith Creek	
	413	M	Smith Creek	
School Creek	453/454	M	School Creek	0.9
	5304	M	School Creek	
	452	L	School Creek	
Whitney Creek	5302	L	Whitney Creek	0.5
	5301	L	Whitney Creek	
	5303	L	Whitney Creek	
Electric Creek	476	L	Electric Creek	1.0
Larson Creek	559	M	Larson Creek	0.4
Patterson Creek	581	H	Patterson Creek	3.8
	579	H	Patterson Creek	
	578	H	Patterson Creek	
	575	H	Patterson Creek	
	5555	H	Patterson Creek	
	572	H	Patterson Creek	
	542	M	Patterson Creek	
	528	L	Patterson Creek	
	543	M	Unnamed tributary	
Doty Creek	647	H	Doty Creek	1.7
	637	H	Doty Creek	
	636	H	Doty Creek	
	622	H	Doty Creek	
	613	M	Doty Creek	
	605	M	Doty Creek	
	599	M	Doty Creek	
	593	M	Doty Creek	
Bayocean Road	778	L	Dick Creek	3.5
	757	L	Unnamed tributary	
	725	L	Unnamed tributary	
	702	M	Unnamed tributary	
	689	H	Flower Pot Creek	
Cape Meares Area	675	L	Coleman Creek	1.0
	686	M	Coleman Creek	


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## **North Tillamook Bay Tributaries Culverts**

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# SMITH CREEK CULVERTS

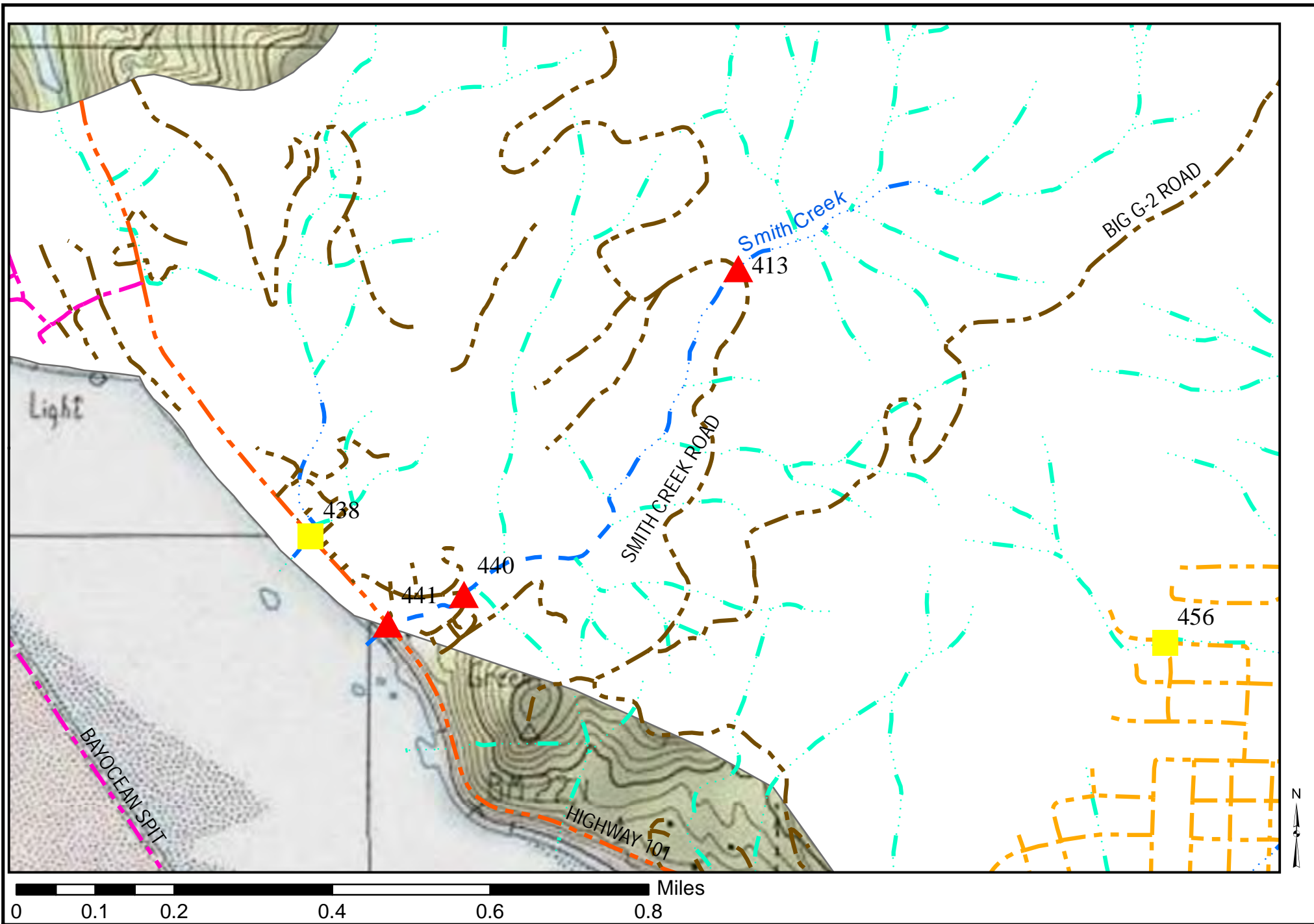
LOCATION INFO				Culvert #	441	Priority	H
Watershed				Tillamook Bay			
Stream Name				Smith Creek			
Township-Range-Section-1/4				T1N, R10W, Sec. 20, NW¼ of NE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				426950/5046015			
Road Name				Highway 101			
Road/Culvert Owner				Oregon Department of Transportation			
Adjacent Landowners				Compass Rose Properties			
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	8.1				
Material	Concrete	Upstream Gradient (%)	7.1				
Length (ft)	81	Bankfull Width (ft)	8.5				
Width (in)	48	Bankfull:Culvert Ratio	0.5				
Height (in)	48						
Outlet Perch (ft)	7.7						
Slope (%)	1.0						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	10				
<b>Notes:</b> Stream flows cascade over rip-rap into Tillamook Bay. Fish can only access culvert during very high tide events.							

LOCATION INFO				Culvert #	440	Priority	H
Watershed				Tillamook Bay			
Stream Name				Smith Creek			
Township-Range-Section-1/4				T1N, R10W, Sec. 20, NW¼ of NE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				427105/5046081			
Road Name				Harbor View Drive			
Road/Culvert Owner				Private Drive			
Adjacent Landowners				B. & D. Hubbard, G. Howe			
CULVERT INFO		CHANNEL INFO		 			
Shape	Box	Inlet Gradient (%)	13.4				
Material	Concrete	Upstream Gradient (%)	5.6				
Length (ft)	52	Bankfull Width (ft)	8.8				
Width (in)	56	Bankfull:Culvert Ratio	0.5				
Height (in)	56						
Outlet Perch (ft)	1.9						
Slope (%)	11.9						
Rustline Height (in)	22						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.9	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	10				
<b>Notes:</b> Large holes in invert, pipe barrel is also deformed. Water running under pipe.							

LOCATION INFO				Culvert #	413	Priority	M
Watershed		Tillamook Bay					
Stream Name		Smith Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 20, NE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		427659/5046723					
Road Name		Barview Forest Road					
Road/Culvert Owner		Private Drive – ORM Timber					
Adjacent Landowners		ORM Timber					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	12.0(N/A)				
Material	Corrugated metal	Upstream Gradient (%)	1.1				
Length (ft)	45(45)	Bankfull Width (ft)	10.1				
Width (in)	36(36)	Bankfull:Culvert Ratio	0.6*				
Height (in)	36(36)	Two pipes at this location. The outlet picture depicts pipe 2 in the foreground and the outfall of pipe 1 in the background (upper right corner of photo).					
Outlet Perch (ft)	7.5(0.8)						
Slope (%)	3.0(N/A)						
Rustline Height (in)	16(N/A)						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> *Bankfull:Culvert Ratio is based on both pipes. Both are 3 ft circular pipes and both were conveying flows during summer 2011 field visit. We were unable to locate the inlet for pipe 2 and it was unclear how flows were entering the pipe. Pipe 2 was perched 0.8 ft.							








Smith Creek Culverts, Tillamook Bay Tributaries




## SCHOOL CREEK CULVERTS

LOCATION INFO				Culvert #	453/454	Priority	?
Watershed		Tillamook Bay					
Stream Name		School Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 21, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		429205/5045779 (inlet)					
Road Name		Several within Garibaldi Town Limits					
Road/Culvert Owner		City of Garibaldi					
Adjacent Landowners		Numerous private properties in Garibaldi					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	1.0				
Material (at inlet)	Corrugated Metal	Upstream Gradient (%)	1.0				
Length (ft)	~700*	Bankfull Width (ft)	5.0				
Width (in)	36	Bankfull:Culvert Ratio	0.6				
Height (in)	36	*Slope and length estimated from aerial photograph and GIS data. A board across stream creates an ~1ft step in stream ~5ft above inlet.					
Outlet Perch (ft)	None						
Slope (%)	~2.0*						
Rustline Height (in)	20						
Overall Condition	unknown						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.9	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Originally identified as two crossings. Stream enters culvert at crossing location 453 and flows underground to crossing location 454, where it passes under Highway 101 before flowing into the bay. Pipe either passes under buildings or is not routed in a straight line (probably the latter, but unknown). The outlet end of this culvert is constructed entirely from treated timbers.							

LOCATION INFO				Culvert #	5304	Priority	M
Watershed		Tillamook Bay					
Stream Name		School Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 20, SW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		429112/5045771					
Road Name		Church Parking Lot					
Road/Culvert Owner		Private Drive					
Adjacent Landowners		Garibaldi Faith Church					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	7.0				
Material	Corrugated Metal	Upstream Gradient (%)	4.0				
Length (ft)	125	Bankfull Width (ft)	8.0				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36	Natural substrate throughout pipe.					
Outlet Perch (ft)	None						
Slope (%)	1.0						
Rustline Height (in)	18						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Barrel of pipe is deformed. In addition, the outlet is wider (42 inch width) and a different shape than the inlet (it is a pipe arch). Two different pipes may have been joined to allow construction of the church parking lot. Barrier rating based on BFW:Culvert ratio, but during low flows (e.g., when we observed the pipe during summer 2012) it appears that juvenile fish could pass through the culvert.							




Inlet




Outlet

LOCATION INFO				Culvert #	452	Priority	L
Watershed			Tillamook Bay				
Stream Name			School Creek				
Township-Range-Section-1/4			T1N, R10W, Sec. 20, SW¼ of NE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			429064/5045799				
Road Name			Driftwood Avenue, Garibaldi				
Road/Culvert Owner			Private Drive				
Adjacent Landowners		J.&D. McGeever, B. Merrill, Garibaldi Faith Church					
CULVERT INFO			CHANNEL INFO				
Shape	Pipe Arch		Inlet Gradient (%)	8.0			
Material	Corrugated Metal		Upstream Gradient (%)	5.0			
Length (ft)	82		Bankfull Width (ft)	9.5			
Width (in)	96		Bankfull:Culvert Ratio	0.8			
Height (in)	48		Natural substrate through entire pipe.				
Outlet Perch (ft)	None						
Slope (%)	3.0						
Rustline Height (in)	6						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7		Habitat Points	2			
Habitat Quality	Poor		Habitat Quality Points	1			
Fish Species	Anad.		Fish Points	3			
Barrier Type	Gray		Barrier Points	2			
			Prioritization Total Points	8			
Notes:							





Inlet



Outlet

### WHITNEY CREEK CULVERTS

LOCATION INFO				Culvert #	5302	Priority	L
Watershed		Tillamook Bay					
Stream Name		Whitney Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 22, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		429847/5045882					
Road Name		Highway 101					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		B. Merrill and L. Godfrey					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	17.0				
Material	Concrete	Upstream Gradient (%)	2.0				
Length (ft)	55	Bankfull Width (ft)	7.2				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36						
Outlet Perch (ft)	None						
Slope (%)	1.0						
Rustline Height (in)	14						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	8				
<b>Notes:</b> This pipe outlets approximately 10 ft upstream of another culvert (under railroad tracks) that is constructed entirely of treated timbers. The inlet dimensions of the timber pipe a 3 ft wide x 2 ft high. We did not have access to the outlet end of the timber pipe. In addition, there is yet another pipe downstream of the timber pipe, under a drive on private property. We did not have permission to enter the property, so we have no information on it.							



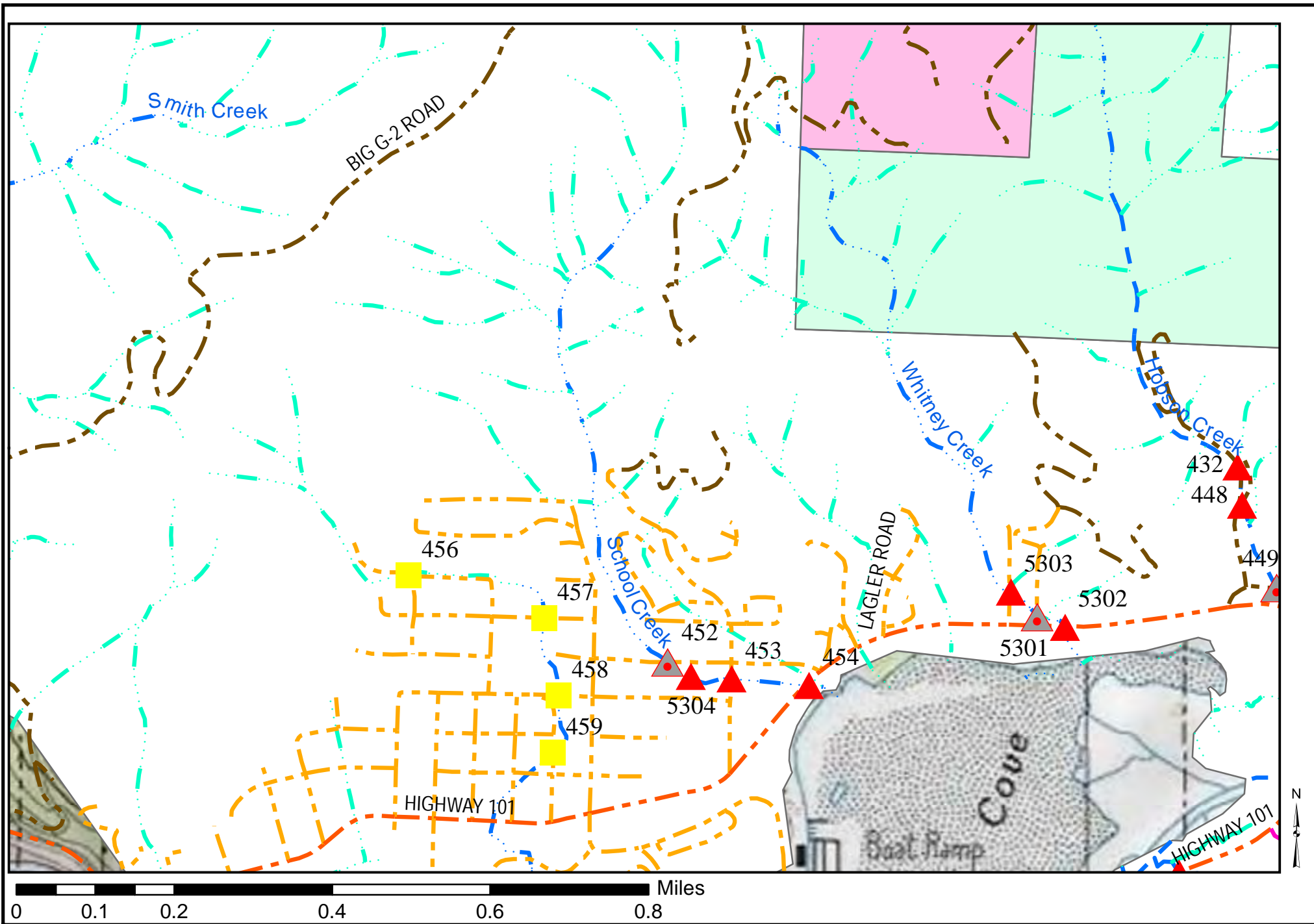


**Outlet**




**Outlet**

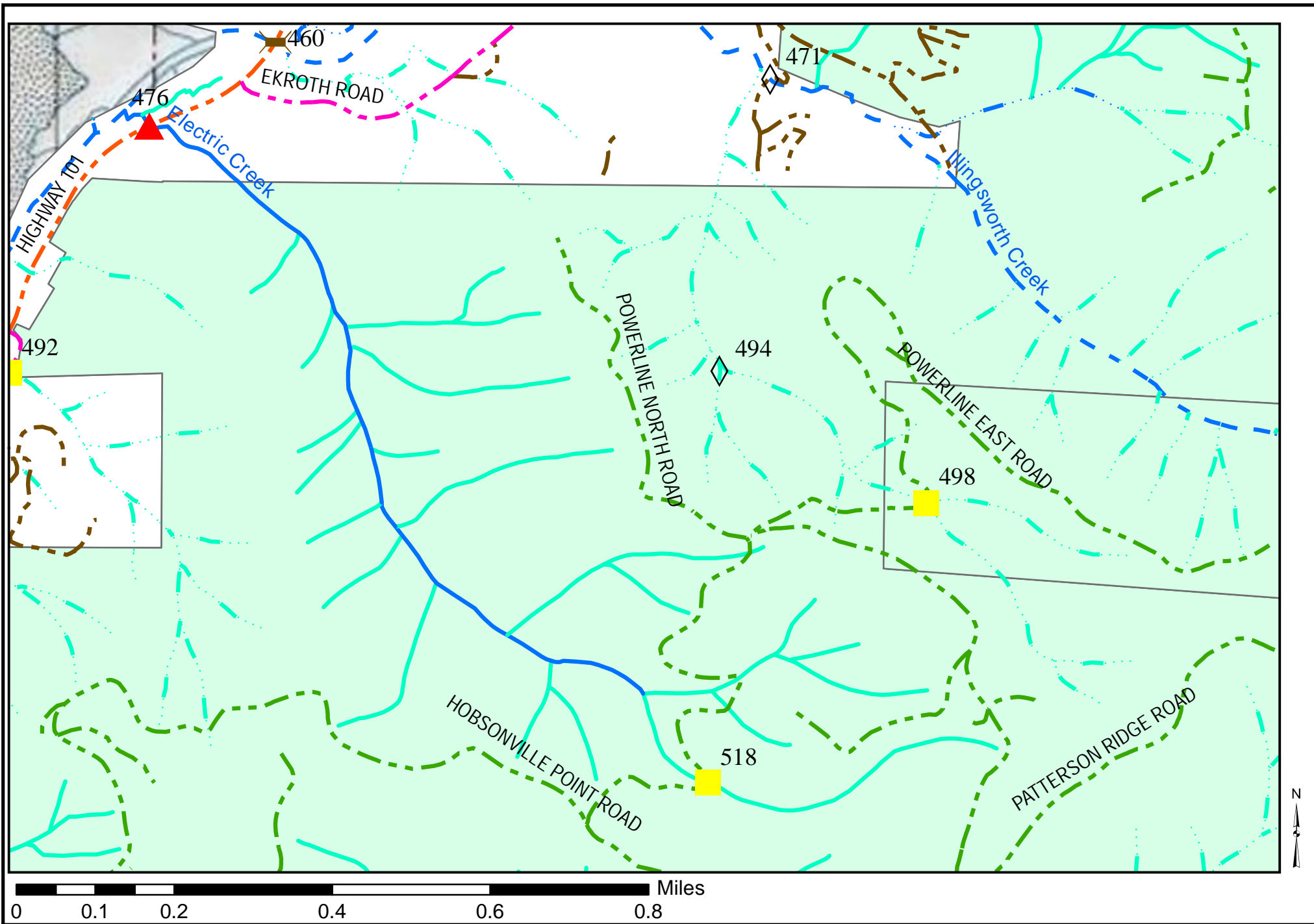




Garibaldi Town Limits Culverts, Tillamook Bay Tributaries

# ELECTRIC CREEK CULVERT



LOCATION INFO				Culvert #	476	Priority	M
Watershed		Tillamook Bay					
Stream Name		Electric Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 22, SW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430186/5045387					
Road Name		Highway 101					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		B. Green					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)	1.1			
Material	Corrugated metal		Upstream Gradient (%)	1.1			
Length (ft)	~160		Bankfull Width (ft)	5.2			
Width (in)	48 (inlet) 60 (outlet)		Bankfull:Culvert Ratio	1.0			
Height (in)	48 (inlet) 60 (outlet)						
Outlet Perch (ft)	None						
Slope (%)	Variable						
Rustline Height (in)	30						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0		Habitat Points	2			
Habitat Quality	Poor		Habitat Quality Points	1			
Fish Species	Anad.		Fish Points	3			
Barrier Type	Red		Barrier Points	3			
			Prioritization Total Points	9			
<b>Notes:</b> Inlet and outlet are corrugated metal, but a portion of the middle of the pipe is concrete. Corrugated sections are highly corroded and severe cross sectional deformation was noted for portions of the pipe. Unable to survey or use Abney level to obtain several pieces of data used to characterize culverts. Gradient of the inlet section of pipe was extremely steep (~20 %), outlet section was much less steep.							

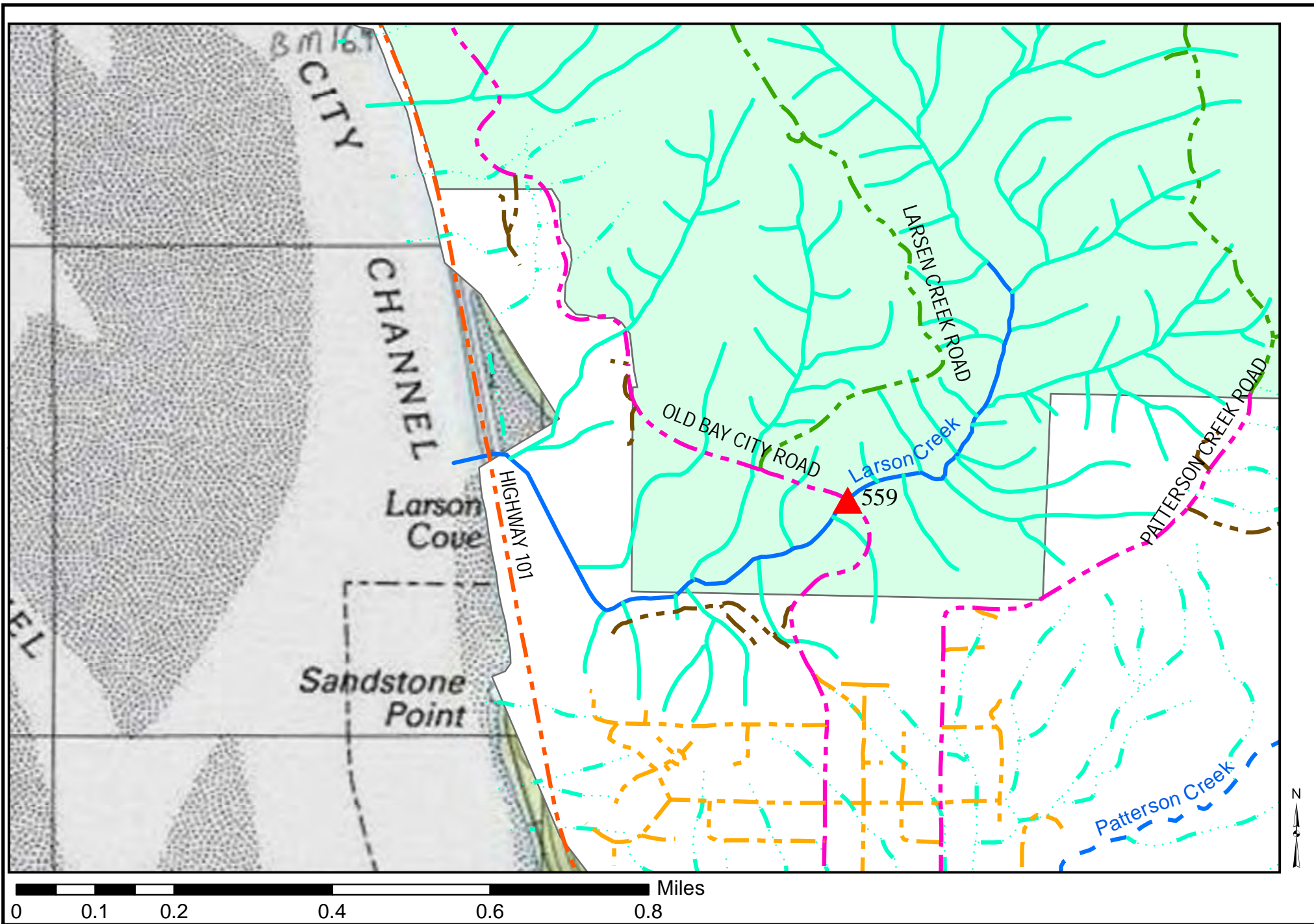


Electric Creek Culverts, Tillamook Bay Tributaries




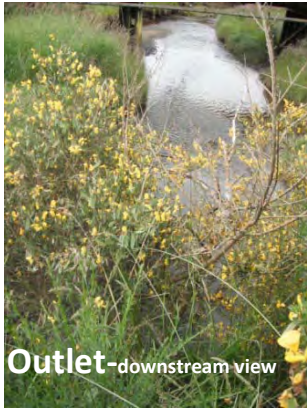
# LARSON CREEK CULVERT



LOCATION INFO				Culvert #	559	Priority	M
Watershed		Tillamook Bay					
Stream Name		Larson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 34, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430546/5042675					
Road Name		Old Bay City Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	1.4				
Material	Concrete	Upstream Gradient (%)	0.4				
Length (ft)	55	Bankfull Width (ft)	3.6				
Width (in)	36	Bankfull:Culvert Ratio	0.8				
Height (in)	36						
Outlet Perch (ft)	1.5						
Slope (%)	1.8						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							



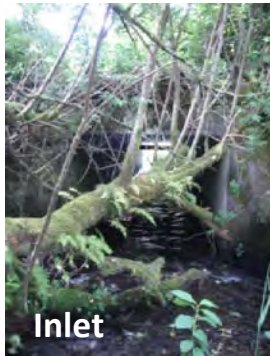

Larson Creek Culvert, Tillamook Bay Tributaries



## PATTERSON CREEK CULVERTS



LOCATION INFO				Culvert #	581	Priority	H
Watershed		Tillamook Bay					
Stream Name		Patterson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 34, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430242/5041650					
Road Name		Highway 101					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		ODOT, Port of Garibaldi					
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	0.1				
Material	Concrete	Upstream Gradient (%)	0.2				
Length (ft)	105	Bankfull Width (ft)	22.0				
Width (in)	96	Bankfull:Culvert Ratio	0.4				
Height (in)	96						
Outlet Perch (ft)	None						
Slope (%)	0.2						
Rustline Height (in)	48						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	3.8	Habitat Points	4				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	11				
<b>Notes:</b> Although classified as Gray, this culvert likely passes fish under most conditions. Classification is based on BFW:Width Ratio, but because culvert is tidally influence and completely backwatered under most conditions, it seems likely that passage is rarely inhibited by this crossing. That being said, the culvert is undersized and almost certainly impairs tidal processes.							


LOCATION INFO				Culvert #	579	Priority	H
Watershed		Tillamook Bay					
Stream Name		Patterson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 22, NW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430484/5041795					
Road Name		4 <sup>th</sup> Street					
Road/Culvert Owner		City of Bay City					
Adjacent Landowners		City of Bay City, B.&C. Scovel					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	7.6				
Material	Corrugated Metal	Upstream Gradient (%)	1.9				
Length (ft)	97	Bankfull Width (ft)	11.4				
Width (in)	72	Bankfull:Culvert Ratio	0.5				
Height (in)	72						
Outlet Perch (ft)	None						
Slope (%)	1.6						
Rustline Height (in)	33						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	3.7	Habitat Points	4				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	11				
Notes:							



LOCATION INFO				Culvert #	578	Priority	H
Watershed		Tillamook Bay					
Stream Name		Patterson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 35, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430568/5041806					
Road Name		5 <sup>th</sup> Street					
Road/Culvert Owner		City of Bay City					
Adjacent Landowners		A & E. Troyer, A. Harris, J. Fullan					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>   <b>Outlet</b>	
Shape	Box	Inlet Gradient (%)	4.2				
Material	Concrete	Upstream Gradient (%)	10				
Length (ft)	71	Bankfull Width (ft)	15.0				
Width (in)	96	Bankfull:Culvert Ratio	0.5				
Height (in)	72						
Outlet Perch (ft)	1.8						
Slope (%)	0.5						
Rustline Height (in)	24						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	3.6	Habitat Points	4				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
Notes:							

LOCATION INFO				Culvert #	575	Priority	H
Watershed		Tillamook Bay					
Stream Name		Patterson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 35, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430727/5041881					
Road Name		Unnamed drive off Main Ave.					
Road/Culvert Owner		City of Bay City					
Adjacent Landowners		D. Buxton, R. & S. Blodget					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	2.8				
Material	Corrugated metal	Upstream Gradient (%)	2.2				
Length (ft)	36	Bankfull Width (ft)	11.6				
Width (in)	60	Bankfull:Culvert Ratio	0.4				
Height (in)	60						
Outlet Perch (ft)	0.8						
Slope (%)	3.4						
Rustline Height (in)	18						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	2.3	Habitat Points	4				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	12				
Notes: Bottom and side of culvert completely worn through.							


LOCATION INFO				Culvert #	5555	Priority	H
Watershed		Tillamook Bay					
Stream Name		Patterson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 35, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430799/5041890					
Road Name		8 <sup>th</sup> Street					
Road/Culvert Owner		City of Bay City					
Adjacent Landowners		D. & C. McBride and C. & N. Ek					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	12.9				
Material	CMP	Upstream Gradient (%)	8.5				
Length (ft)	41	Bankfull Width (ft)	11.2				
Width (in)	56	Bankfull:Culvert Ratio	0.4				
Height (in)	56						
Outlet Perch (ft)	None						
Slope (%)	-0.2						
Rustline Height (in)	30						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	2.3	Habitat Points	4				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
<b>Notes:</b> Bottom worn through at inlet and outlet and probably along much of the length of the pipe (substrate obscure view of entire invert)..							

LOCATION INFO				Culvert #	572	Priority	H
Watershed		Tillamook Bay					
Stream Name		Patterson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 35, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430901/5041865					
Road Name		9 <sup>th</sup> Street					
Road/Culvert Owner		City of Bay City					
Adjacent Landowners		C. Bosch and G. & S. Petty					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	15.3				
Material	Corrugated metal	Upstream Gradient (%)	4.6				
Length (ft)	42	Bankfull Width (ft)	6.0				
Width (in)	48	Bankfull:Culvert Ratio	0.7				
Height (in)	48	Couldn't access downstream end of pipe. Area is fenced and includes a fish ladder.					
Outlet Perch (ft)	Unknown						
Slope (%)	Unknown						
Rustline Height (in)	17						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.2	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	12				
<b>Notes:</b> Fish ladder at downstream end of pipe.							



LOCATION INFO				Culvert #	542	Priority	M
Watershed				Tillamook Bay			
Stream Name				Patterson Creek			
Township-Range-Section-1/4				T1N, R10W, Sec. 26, SE¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				431891/5042999			
Road Name				Unnamed Forest Road			
Road/Culvert Owner				Oregon Department of Forestry			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	28.8				
Material	Corrugated metal	Upstream Gradient (%)	3.6				
Length (ft)	43	Bankfull Width (ft)	8.7				
Width (in)	36	Bankfull:Culvert Ratio	0.3				
Height (in)	36						
Outlet Perch (ft)	1.6						
Slope (%)	5.0						
Rustline Height (in)	7						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Large amount of sediment and debris in inlet. Water overflowing pipe inlet during early summer survey visit.							

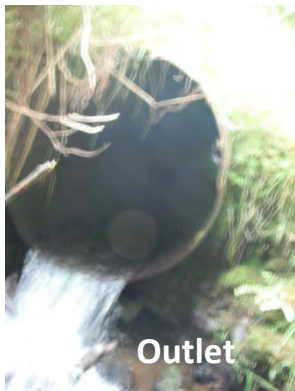

**Notes:** Large amount of sediment and debris in inlet. Water overflowing pipe inlet during early summer survey visit.

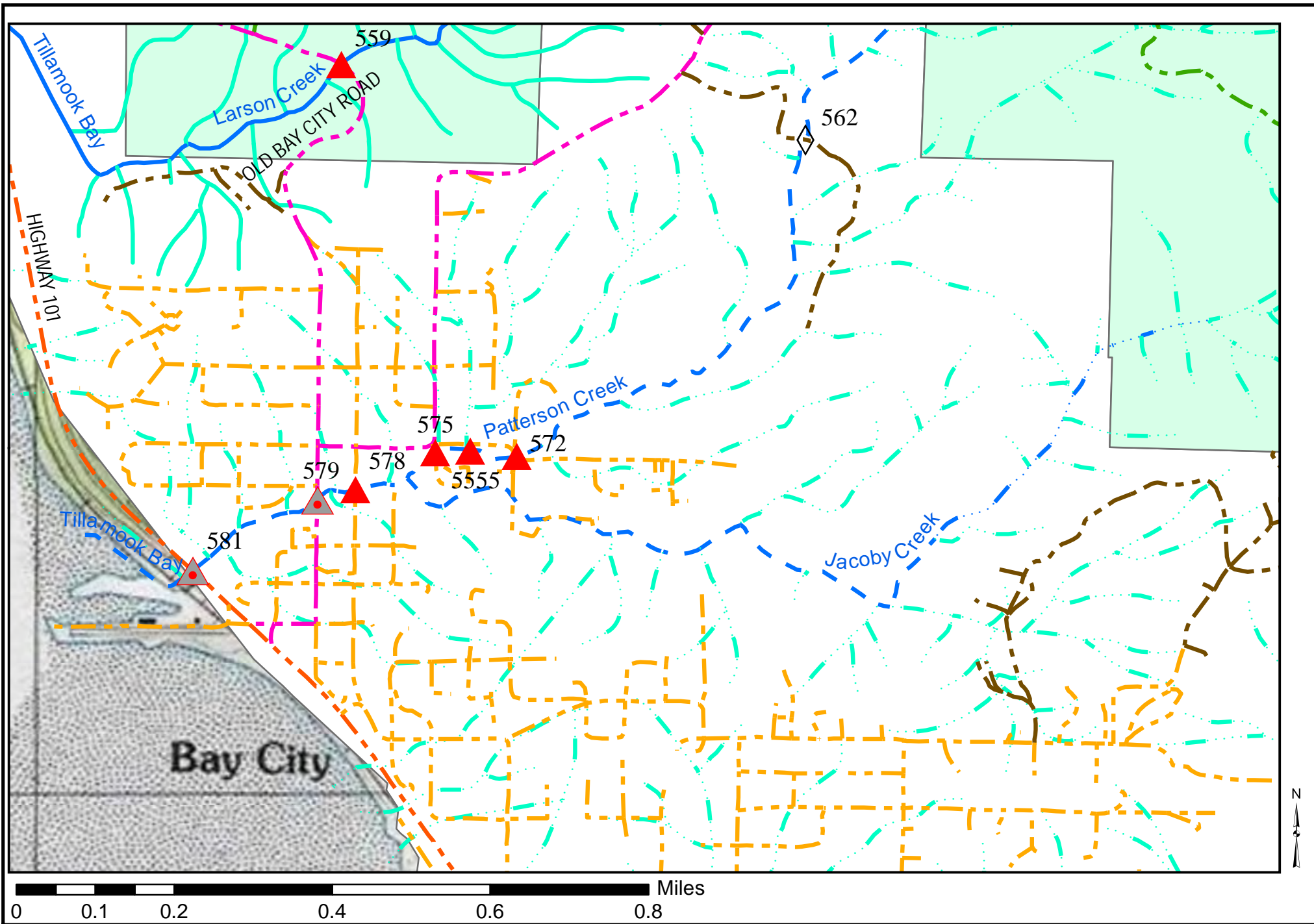
LOCATION INFO				Culvert #	528	Priority	L
Watershed				Tillamook Bay			
Stream Name				Patterson Creek			
Township-Range-Section-1/4				T1N, R10W, Sec. 26, NW¼ of SE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				432101/5043624			
Road Name				Patterson Creek Road			
Road/Culvert Owner				Oregon Department of Forestry			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	4.0				
Material	Corrugated metal	Upstream Gradient (%)	3.5				
Length (ft)	74	Bankfull Width (ft)	6.9				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36						
Outlet Perch (ft)	2.2						
Slope (%)	2.0						
Rustline Height (in)	16						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

**Notes:**

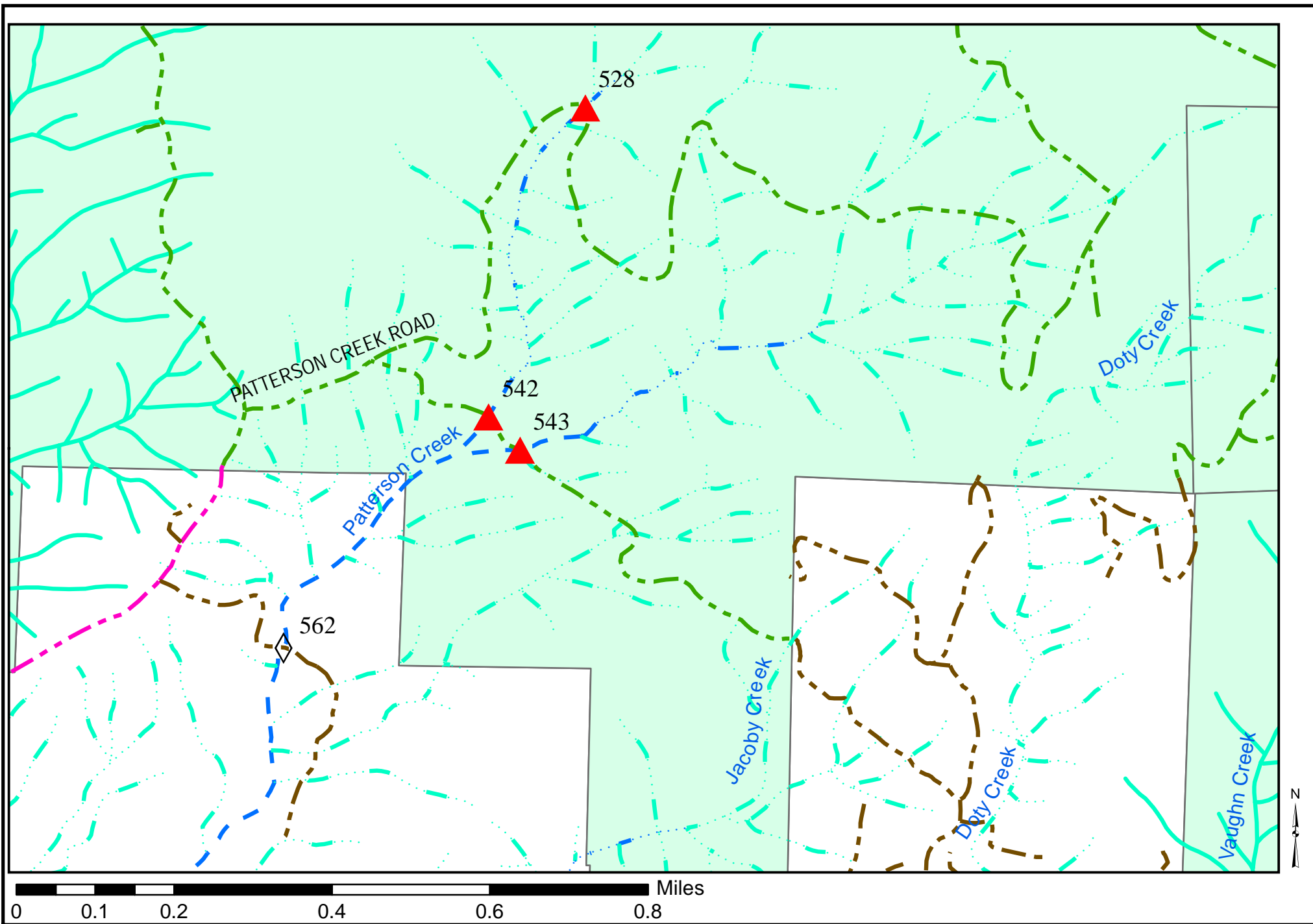


LOCATION INFO				Culvert #	543	Priority	M
Watershed		Tillamook Bay					
Stream Name		Unnamed tributary to Patterson Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 25, NW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		431979/5042920					
Road Name		Unnamed Forest Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	66.3				
Material	Corrugated metal	Upstream Gradient (%)	7.3				
Length (ft)	41	Bankfull Width (ft)	5.7				
Width (in)	42	Bankfull:Culvert Ratio	0.6				
Height (in)	42						
Outlet Perch (ft)	3.1						
Slope (%)	4.2						
Rustline Height (in)	23						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes: Large amount of debris in inlet.							







Lower Patterson Creek Culverts, Tillamook Bay Tributaries





Upper Patterson Creek Culverts, Tillamook Bay Tributaries



## DOTY CREEK CULVERTS

LOCATION INFO				Culvert #	647	Priority	H
Watershed		Kilchis River					
Stream Name		Doty Creek					
Township-Range-Section-1/4		T1S, R10W, Sec. 2, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		431728/5039890					
Road Name		Highway 101					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		M. Farrington, F. & L. Adkins					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe Arch	Inlet Gradient (%)			2.7		
Material	Corrugated metal	Upstream Gradient (%)			13.2		
Length (ft)	75	Bankfull Width (ft)			5.8		
Width (in)	66	Bankfull:Culvert Ratio			0.9		
Height (in)	36						
Outlet Perch (ft)	0.5						
Slope (%)	0.7						
Rustline Height (in)	10						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.7	Habitat Points			4		
Habitat Quality	Fair	Habitat Quality Points			2		
Fish Species	Anad.	Fish Points			3		
Barrier Type	Red	Barrier Points			3		
		Prioritization Total Points			12		
Notes: Integrated apron on outlet.							

LOCATION INFO				Culvert #	637	Priority	H
Watershed			Kilchis River				
Stream Name			Doty Creek				
Township-Range-Section-1/4			T1S, R10W, Sec. 2, SE¼ of SE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			432147/5040015				
Road Name			Alderbrook Loop Road				
Road/Culvert Owner			Tillamook County				
Adjacent Landowners		L.&C. Oswald, D.&C. Phillips, and J. Johnson					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)	13.6			
Material	Concrete		Upstream Gradient (%)	0.15			
Length (ft)	41		Bankfull Width (ft)	6.8			
Width (in)	36		Bankfull:Culvert Ratio	0.4			
Height (in)	36						
Outlet Perch (ft)	0.1						
Slope (%)	0.1						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.4		Habitat Points	3			
Habitat Quality	Fair		Habitat Quality Points	2			
Fish Species	Anad.		Fish Points	3			
Barrier Type	Gray		Barrier Points	2			
			Prioritization Total Points	10			
Notes:							



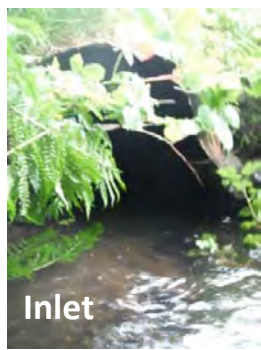


Outlet

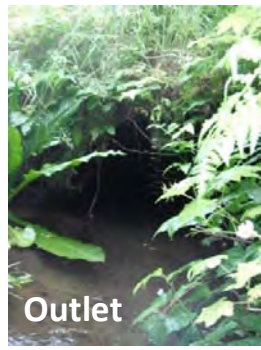
**Outlet**



LOCATION INFO				Culvert #	613	Priority	M
Watershed			Tillamook Bay				
Stream Name			Doty Creek				
Township-Range-Section-1/4			T1S, R10W, Sec. 1, NW¼ of NW¼				
UTM Easting/Northing (Zone 10, NAD 1983)			432729/5040868				
Road Name			Doughty Road				
Road/Culvert Owner			Tillamook County				
Adjacent Landowners		R. Rasmussen, Alderbrook Hills, W.&D. Collum					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)	10.8			
Material	Corrugated metal		Upstream Gradient (%)	3.5			
Length (ft)	36		Bankfull Width (ft)	6.5			
Width (in)	46		Bankfull:Culvert Ratio	0.6			
Height (in)	46						
Outlet Perch (ft)	None						
Slope (%)	-1.1						
Rustline Height (in)	17						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7		Habitat Points	2			
Habitat Quality	Fair		Habitat Quality Points	2			
Fish Species	Anad.		Fish Points	3			
Barrier Type	Gray		Barrier Points	2			
			Prioritization Total Points	9			
Notes:							




Inlet




Outlet

LOCATION INFO				Culvert #	605	Priority	M
Watershed		Tillamook Bay					
Stream Name		Doty Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 36, SE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		432768/5041048					
Road Name		Private Drive off Doughty Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	12.0				
Material	Corrugated metal	Upstream Gradient (%)	0.58				
Length (ft)	31	Bankfull Width (ft)	7.6				
Width (in)	48	Bankfull:Culvert Ratio	0.5				
Height (in)	48						
Outlet Perch (ft)	None						
Slope (%)	3.4						
Rustline Height (in)	20.4						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							









Inlet

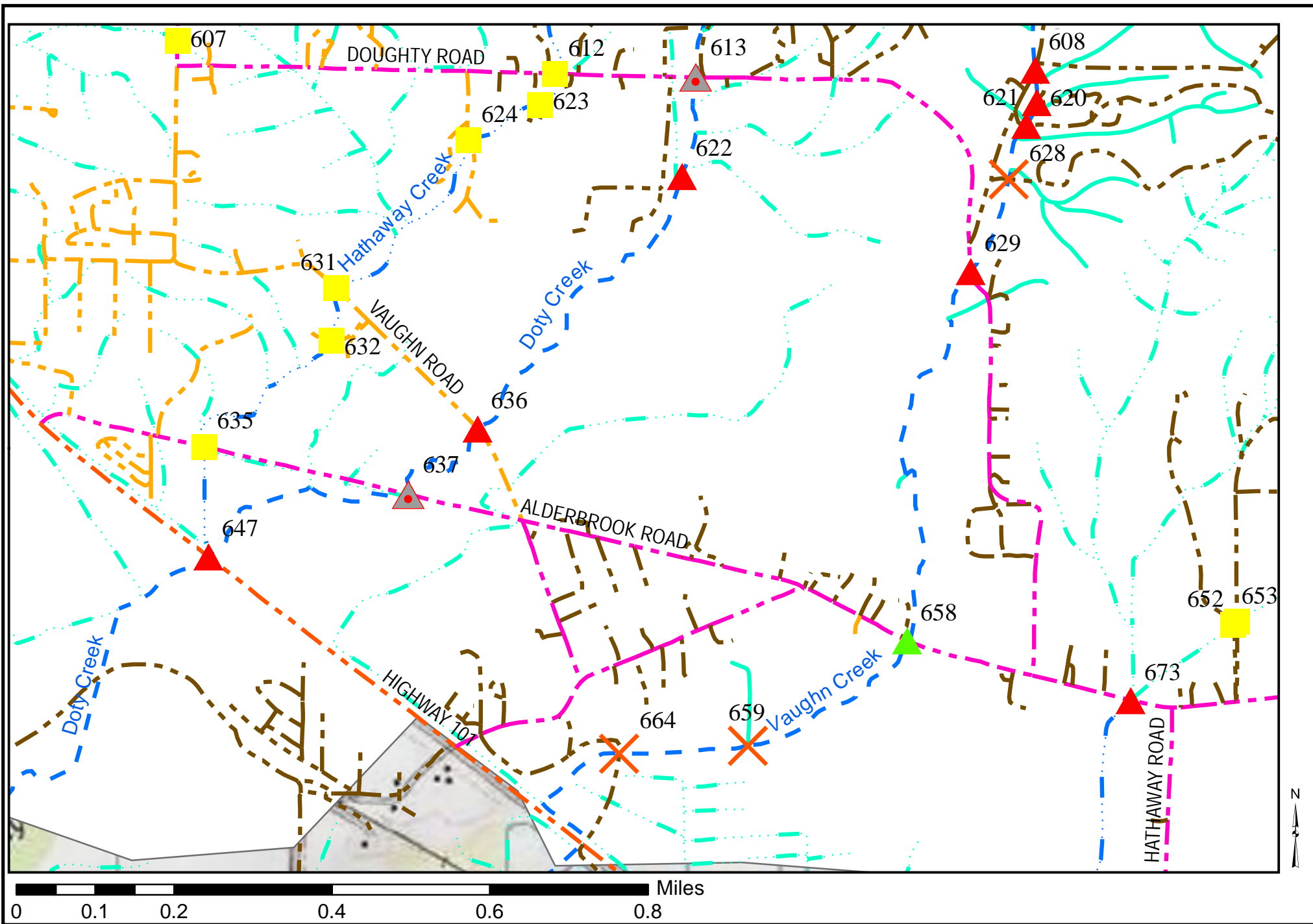


Outlet

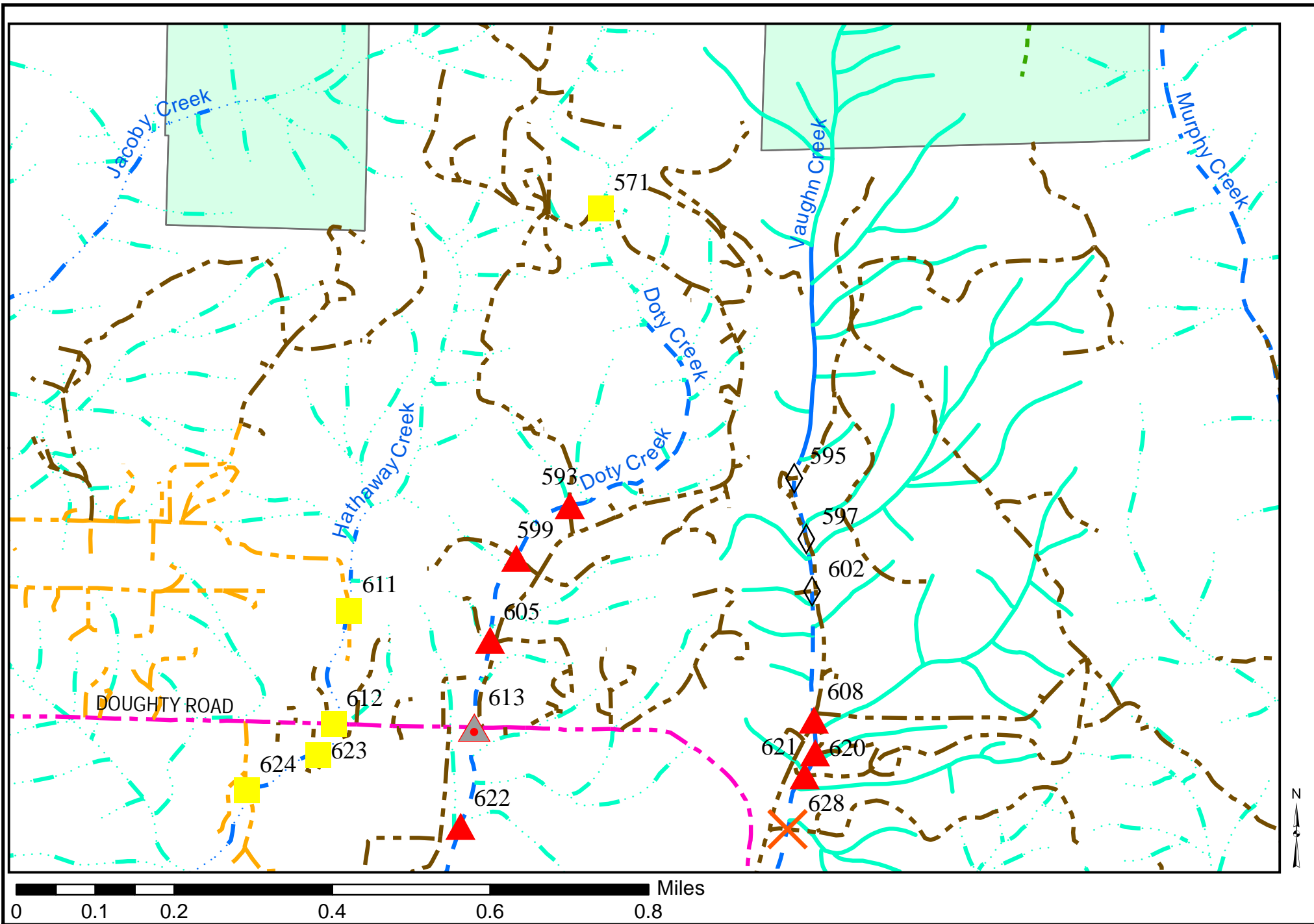


LOCATION INFO				Culvert #	599	Priority	M
Watershed		Tillamook Bay					
Stream Name		Doty Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 36, SE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		432833/5041204					
Road Name		Timberline Drive					
Road/Culvert Owner		J.&S. Smith					
Adjacent Landowners		J.&S. Smith and P. Early					
CULVERT INFO		CHANNEL INFO				 	
Shape	Circular	Inlet Gradient (%)	18.1				
Material	Corrugated metal	Upstream Gradient (%)	3.1				
Length (ft)	40	Bankfull Width (ft)	9.0				
Width (in)	48	Bankfull:Culvert Ratio	0.4				
Height (in)	48						
Outlet Perch (ft)	0.9						
Slope (%)	1.2						
Rustline Height (in)	18						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							

LOCATION INFO				Culvert #	593	Priority	
Watershed		Tillamook Bay					
Stream Name		Doty Creek					
Township-Range-Section-1/4		T1N, R10W, Sec. 36, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		432915/5041390					
Road Name		Private drive off Willowbrook Drive					
Road/Culvert Owner		Alderbrook Hills Road & Maintenance					
Adjacent Landowners		E.&K. Heuberger, B. Germond					
CULVERT INFO		CHANNEL INFO				  	
Shape	Circular	Inlet Gradient (%)	5.6				
Material	Corrugated metal	Upstream Gradient (%)	1.9				
Length (ft)	44	Bankfull Width (ft)	5.2				
Width (in)	24	Bankfull:Culvert Ratio	0.4				
Height (in)	24						
Outlet Perch (ft)	4.2						
Slope (%)	6.3						
Rustline Height (in)	unknown						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes: Small PVC “apron” on outlet							



Lower Doty Creek Culverts, Tillamook Bay Tributaries



Upper Doty Creek Culverts, Tillamook Bay Tributaries






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**South Tillamook Bay Tributaries  
and  
Cape Meares Area  
Culverts**

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## BAYOCEAN ROAD CULVERTS

LOCATION INFO				Culvert #	778	Priority	L
Watershed		Tillamook Bay					
Stream Name		Dick Creek					
Township-Range-Section-1/4		T1S, R10W, Sec. 15, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		429330/5036881					
Road Name		Bayocean Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		J. Winter.					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe Arch	Inlet Gradient (%)	1.5				
Material	Corrugated metal	Upstream Gradient (%)	3.8				
Length (ft)	44	Bankfull Width (ft)	11.4				
Width (in)	72	Bankfull:Culvert Ratio	0.5				
Height (in)	42						
Outlet Perch (ft)	Not measurable						
Slope (%)	2.1						
Rustline Height (in)	6						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Gray	Barrier Points	2				
		Prioritization Total Points	8				
Notes: Outlets directly into bay.							

LOCATION INFO				Culvert #	757	Priority	L
Watershed				Tillamook Bay			
Stream Name				Unnamed Tributary near Bock Point			
Township-Range-Section-1/4				T1S, R10W, Sec. 16, SE¼ of NE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				429068/5037210			
Road Name				Bayocean Road			
Road/Culvert Owner				Tillamook County			
Adjacent Landowners				Stimson Lumber Co.			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	15.3				
Material	Concrete	Upstream Gradient (%)	1.1				
Length (ft)	59	Bankfull Width (ft)	5.8				
Width (in)	36	Bankfull:Culvert Ratio	0.5				
Height (in)	36						
Outlet Perch (ft)	Not measurable						
Slope (%)	0.0						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Type	Gray	Barrier Points	2				
		Prioritization Total Points	8				
Notes: Outlets directly into bay.							



LOCATION INFO				Culvert #	725	Priority	L
Watershed		Tillamook Bay		 <p>Outlet</p>			
Stream Name		Unnamed Tributary at Boulder Point					
Township-Range-Section-1/4		T1S, R10W, Sec. 16, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		428308/5037848					
Road Name		Bayocean Road					
Road/Culvert Owner		Tillamook County		 <p>Outlet-downstream</p>			
Adjacent Landowners		J. A. Johnson					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	1.8				
Material	Corrugated metal	Upstream Gradient (%)	3.7				
Length (ft)	52	Bankfull Width (ft)	6.7				
Width (in)	72	Bankfull:Culvert Ratio	0.9				
Height (in)	72						
Outlet Perch (ft)	Not measurable						
Slope (%)	2.8						
Rustline Height (in)	30						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	8				
Notes: Outlets directly into bay.							

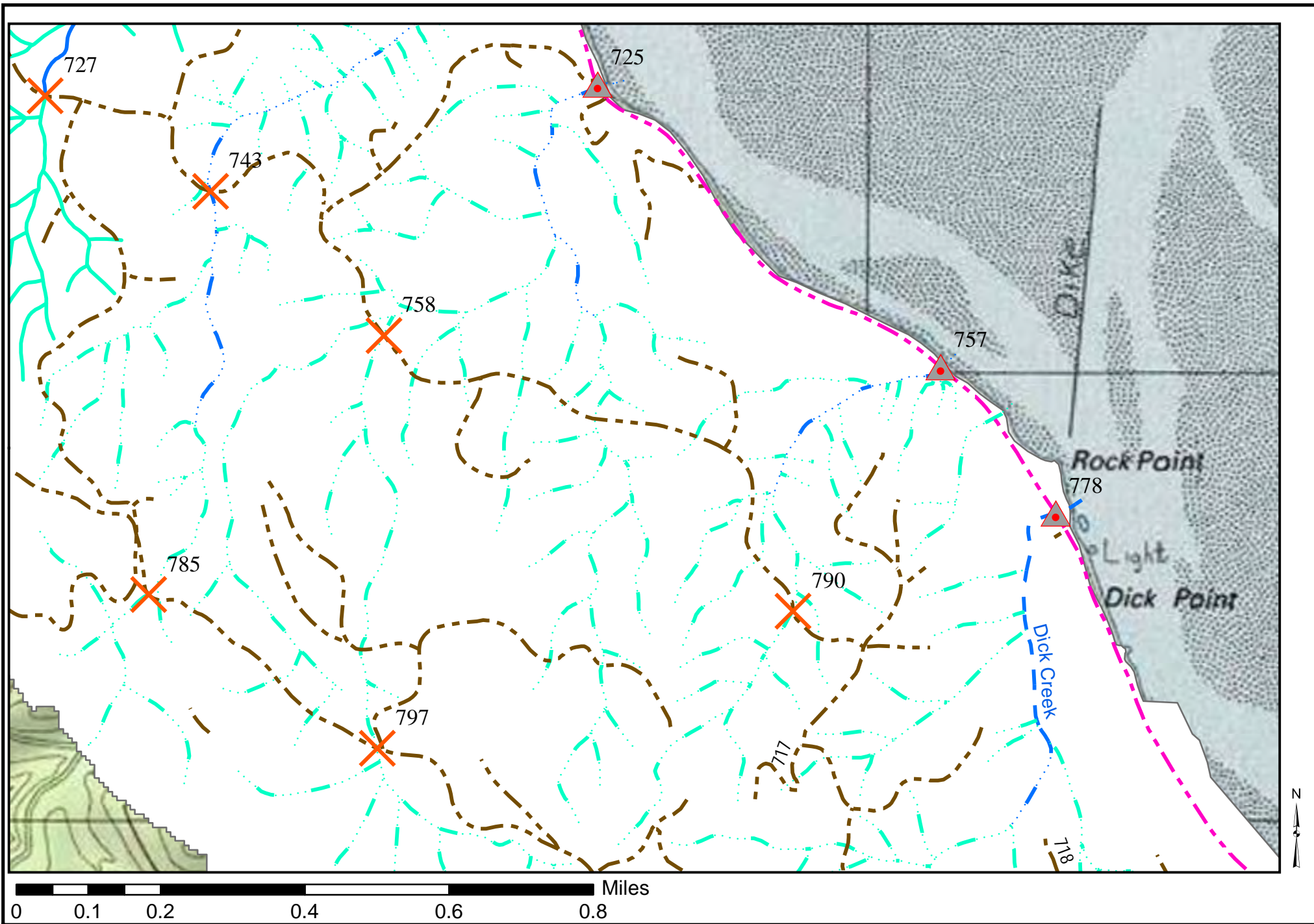


LOCATION INFO				Culvert #	702	Priority	M
Watershed		Tillamook Bay					
Stream Name		Unnamed tributary at McCoy Cove					
Township-Range-Section-1/4		T1S, R10W, Sec. 9, SE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		428043/5038123					
Road Name		Bayocean Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		J. A. Johnson					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	1.0				
Material	Concrete	Upstream Gradient (%)	0.5				
Length (ft)	48	Bankfull Width (ft)	9.3				
Width (in)	48	Bankfull:Culvert Ratio	0.4				
Height (in)	48						
Outlet Perch (ft)	Not measurable						
Slope (%)	0.2						
Rustline Height (in)	34						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.9	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	9				
Notes: Outlets directly into bay.							

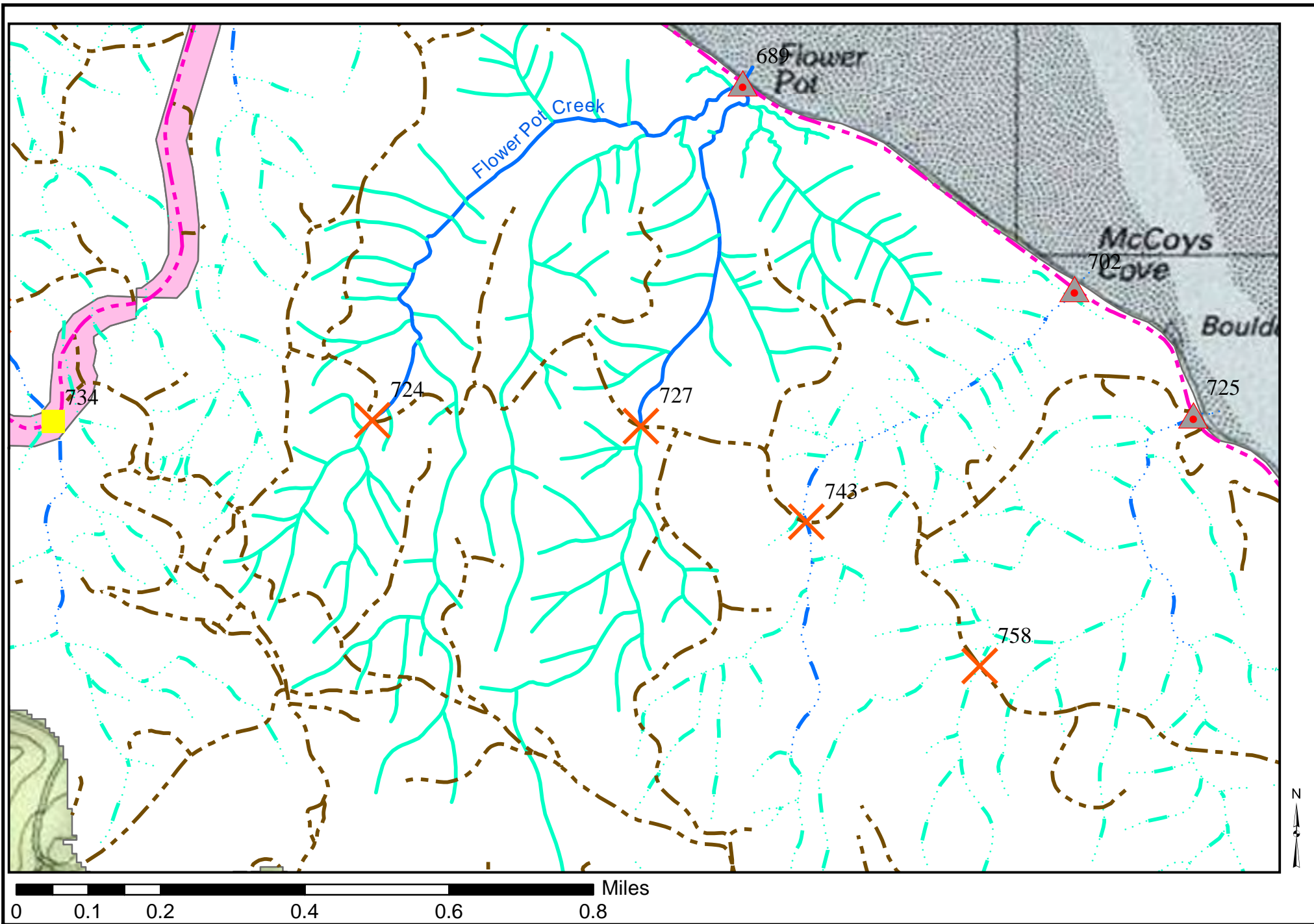




LOCATION INFO				Culvert #	689	Priority	H
Watershed		Tillamook Bay					
Stream Name		Flower Pot Creek					
Township-Range-Section-1/4		T1S, R10W, Sec. 8, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		427301/5038583					
Road Name		Bayocean Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		Tillamook County					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Circular	Inlet Gradient (%)	0.2				
Material	Concrete	Upstream Gradient (%)	0.5				
Length (ft)	56	Bankfull Width (ft)	12.7				
Width (in)	48	Bankfull:Culvert Ratio	0.3				
Height (in)	48						
Outlet Perch (ft)	Not measurable						
Slope (%)	0.7						
Rustline Height (in)	36						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 Outlet	
Upstream Habitat Length (mi)	1.4	Habitat Points	3				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	10				
Notes: Outlets directly into bay.							



Southeast Bayocean Road Culverts, Tillamook Bay Tributaries




Northwest Bayocean Road Culverts, Tillamook Bay Tributaries




## CAPE MEARES AREA CULVERTS


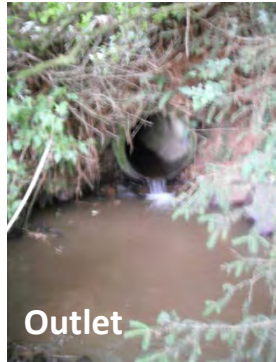

LOCATION INFO				Culvert #	675	Priority	L
Watershed		Tillamook Bay					
Stream Name		Coleman Creek					
Township-Range-Section-1/4		T1S, R10W, Sec. 7, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		425267/5039131					
Road Name		5 <sup>th</sup> Street					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		Tillamook County					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	---				
Material	Plastic	Upstream Gradient (%)	---				
Length (ft)	50	Bankfull Width (ft)	---				
Width (in)	42	Bankfull:Culvert Ratio	---				
Height (in)	42	--- = Not Measurable					
Outlet Perch (ft)	Not measurable						
Slope (%)	6.1						
Rustline Height (in)	Unknown						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Resident	Fish Points	2				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	8				
Notes: Outlets directly into Cape Meares Lake.							

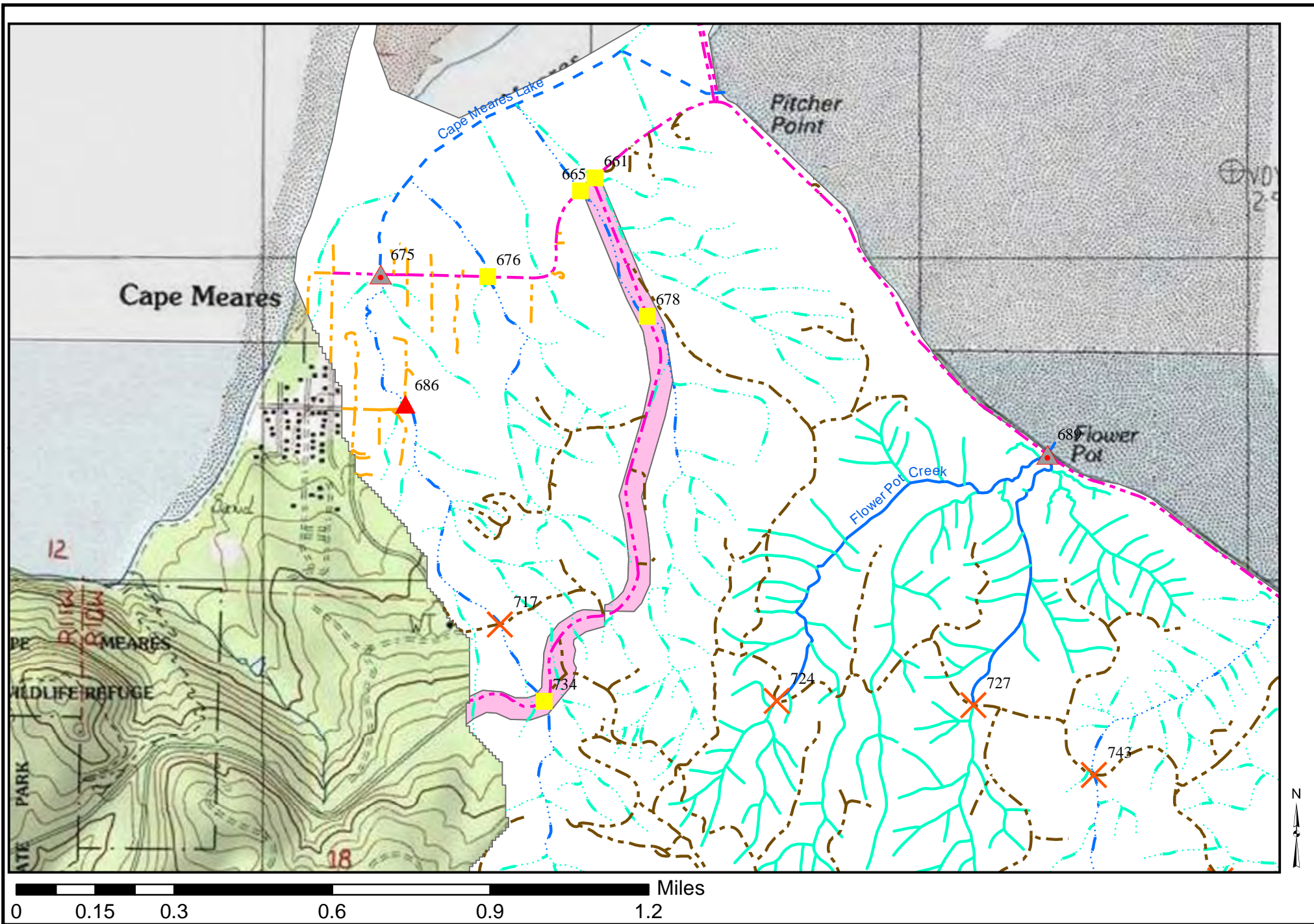


Inlet-upstream



Outlet-downstream

LOCATION INFO				Culvert #	686	Priority	M		
Watershed		Tillamook Bay							
Stream Name		Coleman Creek							
Township-Range-Section-1/4		T1S, R10W, Sec. 7, NW¼ of SE¼							
UTM Easting/Northing (Zone 10, NAD 1983)		425312/5038726							
Road Name		Pacific Avenue							
Road/Culvert Owner		Cape Meares							
Adjacent Landowners		C.&S. Overstreet and C. Friedman							
CULVERT INFO		CHANNEL INFO				 			
Shape	Circular	Inlet Gradient (%)	14.1						
Material	Concrete	Upstream Gradient (%)	7.3						
Length (ft)	39	Bankfull Width (ft)	6.4						
Width (in)	36	Bankfull:Culvert Ratio	0.5						
Height (in)	36								
Outlet Perch (ft)	2.1								
Slope (%)	3.1								
Rustline Height (in)	6								
Overall Condition	Fair								
PRIORITIZATION ANALYSIS									
Upstream Habitat Length (mi)	0.7	Habitat Points	2						
Habitat Quality	Fair	Habitat Quality Points	2						
Fish Species	Resident	Fish Points	2						
Barrier Class	Red	Barrier Points	3						
		Prioritization Total Points	9						
Notes:									



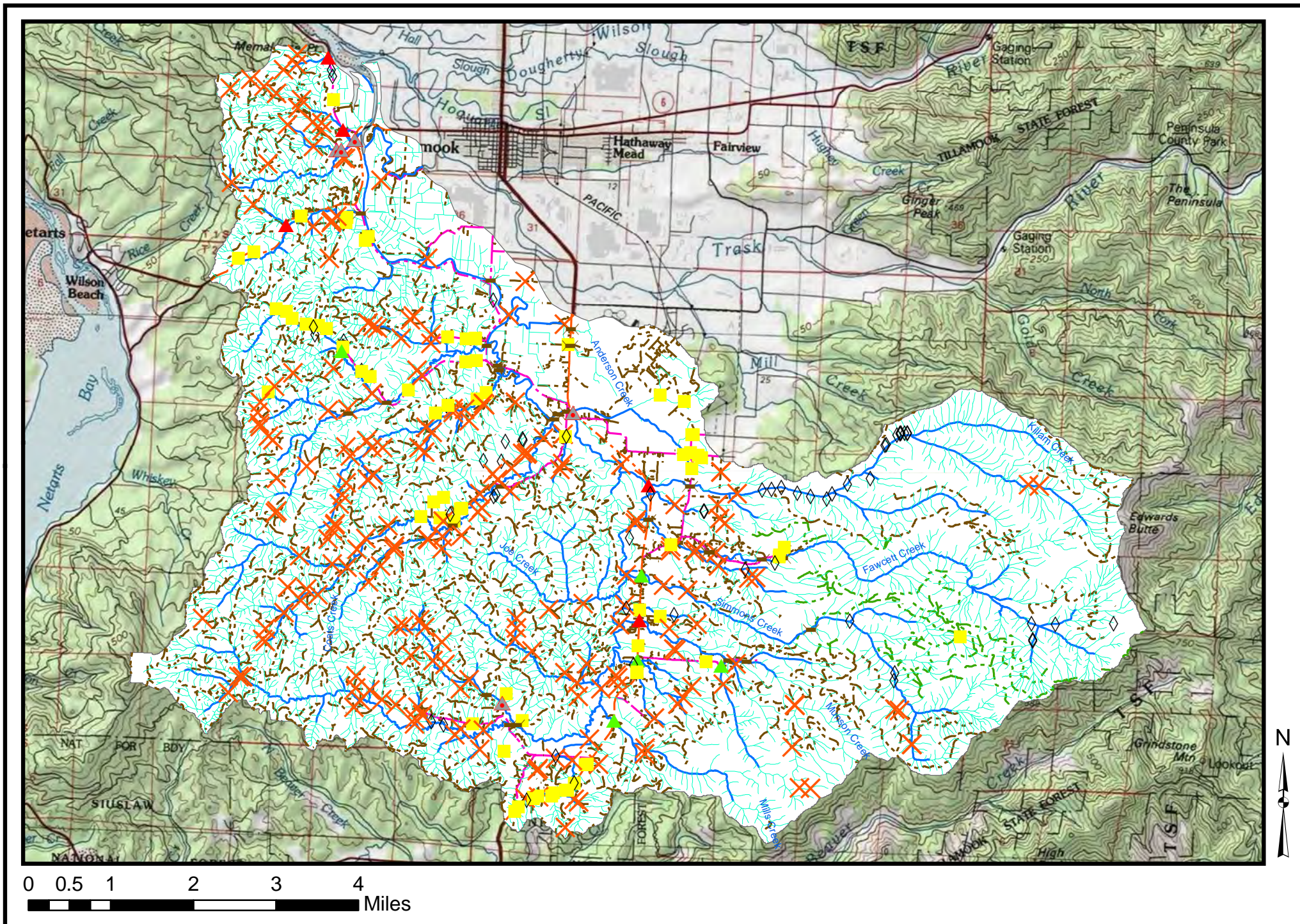
Cape Meares Area Culverts, Tillamook Bay Tributaries

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# **Tillamook River Basin Culverts**

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Tillamook Basin Crossings





### Tillamook River Basin Clusters

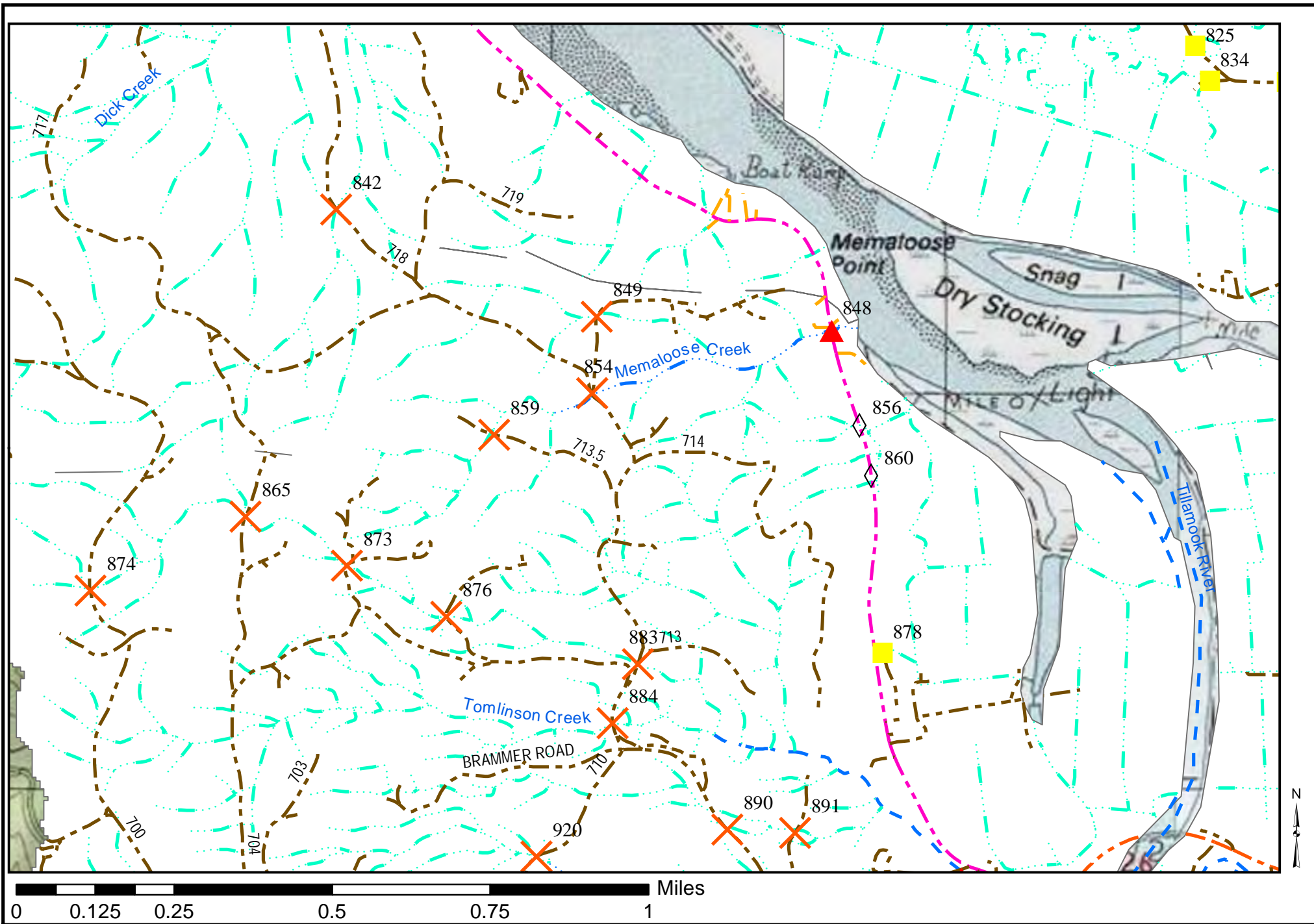
Cluster	Culvert Numbers	Priority	Stream	Upstream Habitat
Memaloose Creek	848	L	Memaloose Creek	0.5
Tomlinson and Esther Creeks	908	H	Tomlinson/Esther Creek	3.9
	893	H	Tomlinson Creek	
	931	H	Esther Creek	
	932	H	Unnamed tributary	
Fagan Creek	985	L	Fagan Creek	0.3
Beaver Creek	1102	N/A	Beaver Creek	1.9
Hwy. 101 near Port of Tillamook	6666	H	Unnamed tributary	12.4
	1234	H	Killam Creek	
Munson and Simmons	1330	N/A	Simmons Creek	11.9
	1381	H	Munson Creek	
	1404	H	Munson Creek	
	1401	N/A	Pleasant Valley Creek	
Upper Watershed	1457	N/A	Mills Creek	4.7
	1438	H	Unnamed tributary	

## MEMALOOSE CREEK CULVERT

LOCATION INFO				Culvert #	848	Priority	L
Watershed				Tillamook River			
Stream Name				Memaloose Creek			
Township-Range-Section-1/4				T1S, R10W, Sec. 22, NE¼ of SE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				430623/5035363			
Road Name				Bayocean Road			
Road/Culvert Owner				Tillamook County			
Adjacent Landowners				H. Hinck, T. Holgate, and R. Biggs			
CULVERT INFO			CHANNEL INFO				
Shape	Pipe arch and Box			Inlet Gradient (%)	1.8		
Material	Corrugated metal & Concrete			Upstream Gradient (%)	5.4		
Length (ft)	48			Bankfull Width (ft)	6.3		
Width (in)	66			Culvert:Bankfull Ratio	0.9		
Height (in)	42						
Outlet Perch (ft)	0.3						
Slope (%)	1.2						
Rustline Height (in)	18						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5		Habitat Points	1			
Habitat Quality	Fair		Habitat Quality Points	2			
Fish Species	Anad.		Fish Points	3			
Barrier Class	Red		Barrier Points	3			
			Prioritization Total Points	9			
<b>Notes:</b> Mixed construction crossing: inlet and outlet were corrugated metal pipe arches and central portion of crossing was a concrete box. Dimensions above are for the pipe arch portions.							











Memaloose Creek Culverts, Tillamook River Basin

## TOMLINSON AND ESTHER CREEKS CULVERTS


LOCATION INFO				Culvert #	908	Priority	H
Watershed		Tillamook River					
Stream Name		Tomlinson/Esther Creek					
Township-Range-Section-1/4		T1S, R10W, Sec. 26, NE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		431197/5033781					
Road Name		Highway 131					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		P. & S. Reeder					
CULVERT INFO		CHANNEL INFO				<div></div> <div></div>	
Shape	Circular	Inlet Gradient (%)	1.5				
Material	Corrugated metal	Upstream Gradient (%)	1.5				
Length (ft)	155	Bankfull Width (ft)	17.1				
Width (in)	66	Culvert:Bankfull Ratio	0.3				
Height (in)	78	Seam separation and culvert barrel deformation noted. Also, there was a dike and system of tidegates that was not surveyed as part of this study approximately 100 m upstream of this culvert.					
Outlet Perch (ft)	None						
Slope (%)	1.0						
Rustline Height (in)	Entirely rusted						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	3.9	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	12				
<b>Notes:</b> Classification is based on BFW:Width Ratio. Because culvert is tidally influenced and completely backwatered under most conditions, it seems likely that passage is rarely inhibited by this crossing. However, the culvert is undersized and almost certainly impairs tidal processes.							

LOCATION INFO				Culvert #	893	Priority	H
Watershed				Tillamook River			
Stream Name				Tomlinson Creek			
Township-Range-Section-1/4				T1S, R10W, Sec. 26, NW¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				430943/5033987			
Road Name				Private Drive off Bayocean Road			
Road/Culvert Owner				D. & D. Mast			
Adjacent Landowners				D. & D. Mast, and M. & L. Blair			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)		-			
Material	Corrugated metal	Upstream Gradient (%)		4.6			
Length (ft)	19	Bankfull Width (ft)		8.9			
Width (in)	60	Culvert:Bankfull Ratio		0.6			
Height (in)	48*	*Logs placed on top of pipe on inlet and outlet. Top of pipe bent down flat to accommodate logs (hence the 48" vertical dimension). Invert was very corroded and in critical condition.					
Outlet Perch (ft)	0.4						
Slope (%)	-1.2						
Rustline Height (in)	30						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points		1			
Habitat Quality	Good	Habitat Quality Points		3			
Fish Species	Anad.	Fish Points		3			
Barrier Class	Red	Barrier Points		3			
		Prioritization Total Points		10			

**Notes:** Based on review of RBA data, it appears that a second pipe also occurs along this stream that we were unable to survey. That report indicates that that pipe was perched >1.0 ft and impassable for juvenile fish.







Inlet



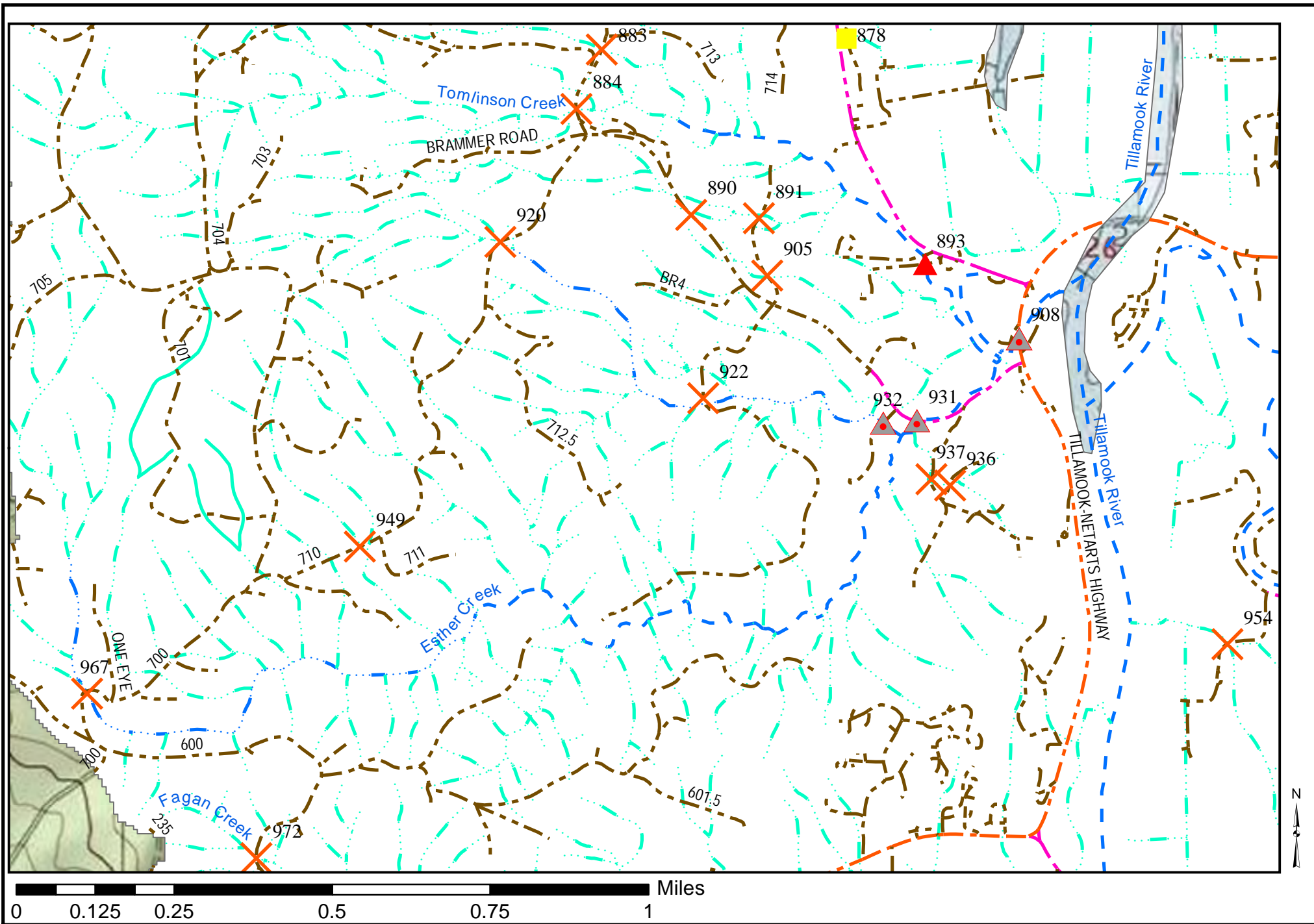
Outlet



LOCATION INFO				Culvert #	931	Priority	H
Watershed		Tillamook River					
Stream Name		Esther Creek					
Township-Range-Section-1/4		T1S, R10W, Sec. 26, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430928/503563					
Road Name		Tomlinson Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		R. Peterson					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b> –upstream	
Shape	Circular	Inlet Gradient (%)*	1.0				
Material	Corrugated metal	Upstream Gradient (%)*	1.0				
Length (ft)	25	Bankfull Width (ft)*	6.0				
Width (in)	60	Culvert:Bankfull Ratio*	0.8				
Height (in)	60	*Unable to access area upstream of culvert for these measurements. Measurements used to report these fields were visual estimates.					
Outlet Perch (ft)	0.1						
Slope (%)	1.2						
Rustline Height (in)	48						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	2.9	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	12				
<b>Notes:</b> A substantial portion of this stream flows through pastures and has highly impaired riparian habitats. Nervertheless, this system is well-used by juvenile salmonids.							

LOCATION INFO				Culvert #	932	Priority	H
Watershed		Tillamook River					
Stream Name		Unnamed tributary of Esther Creek					
Township-Range-Section-1/4		T1S, R10W, Sec. 26, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		430845/5033558					
Road Name		Private Drive off Tomlinson Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		R. Peterson					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	8.8				
Material	Concrete	Upstream Gradient (%)	4.6				
Length (ft)	34	Bankfull Width (ft)	4.5				
Width (in)	30	Culvert:Bankfull Ratio	0.6				
Height (in)	30						
Outlet Perch (ft)	None						
Slope (%)	-0.4						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.8	Habitat Points	2				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	10				
<b>Notes:</b> A portion of this stream flows through pastures and has highly impaired riparian habitats.							







Tomlinson Creek and Esther Creek Culverts, Tillamook River Basin

## FAGAN CREEK CULVERTS

LOCATION INFO				Culvert #	985	Priority	L
Watershed			Tillamook River				
Stream Name			Unnamed tributary of Fagan Creek (Trib. A)				
Township-Range-Section-1/4			T1S, R10W, Sec. 34, NE¼ of SW¼				
UTM Easting/Northing (Zone 10, NAD 1983)			429888/5032065				
Road Name			Highway 131 (Netarts Highway)				
Road/Culvert Owner			Oregon Department of Transportation				
Adjacent Landowners			K. & M. Oleman and D. & T. Johnson				
CULVERT INFO			CHANNEL INFO				
Shape		Circular	Inlet Gradient (%)		0.5		
Material	Concrete/Corrugated Metal		Upstream Gradient (%)		4.5		
Length (ft)		104	Bankfull Width (ft)		4.7		
Width (in)		48	Culvert:Bankfull Ratio		0.9		
Height (in)		48					
Outlet Perch (ft)		0.3					
Slope (%)		3.9					
Rustline Height (in)		48					
Overall Condition		Fair					
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.3	Habitat Points		1		
Habitat Quality		Fair	Habitat Quality Points		2		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		9		

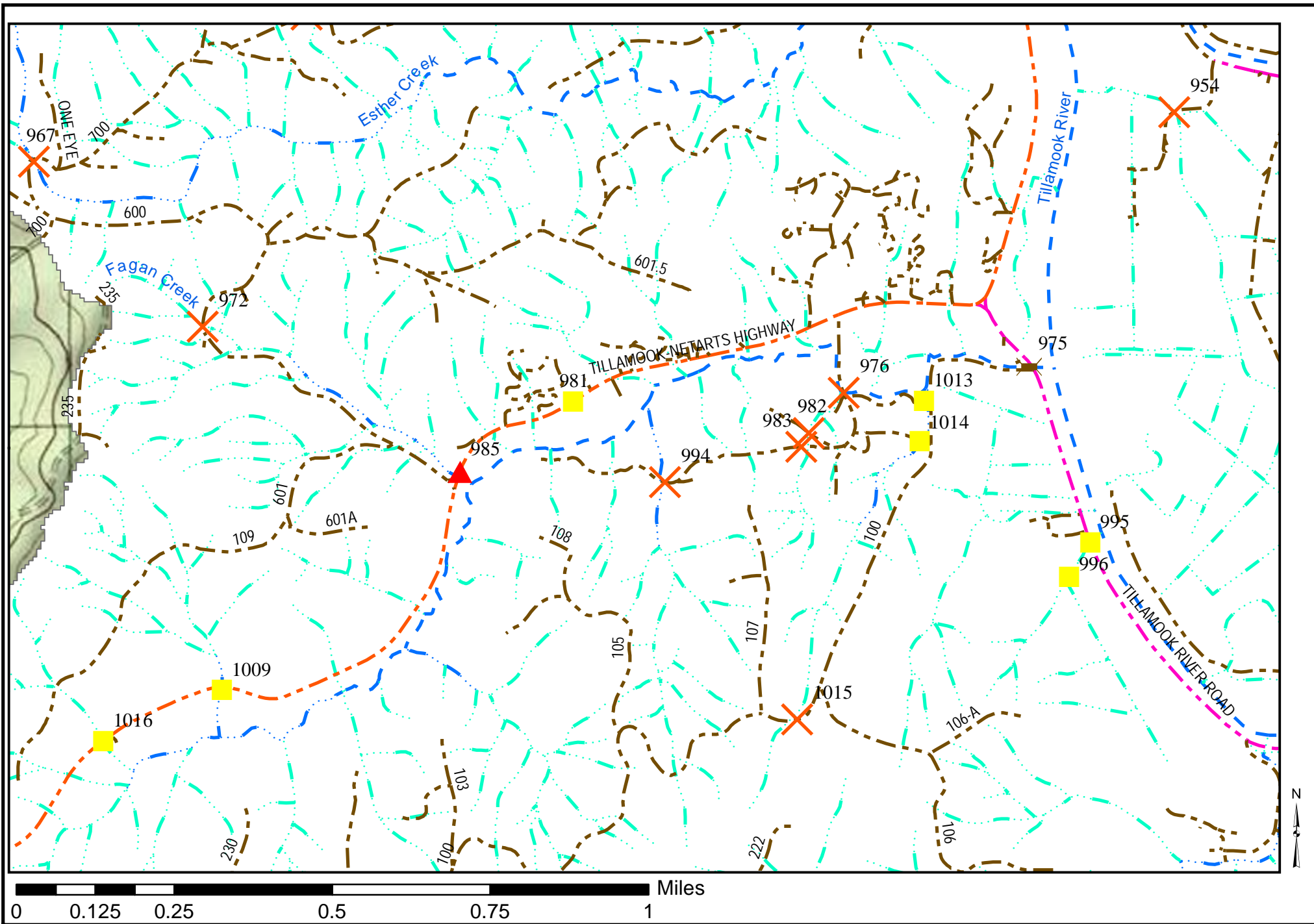


**Inlet**



**Outlet** - downstream



**Notes:** Inlet is a circular metal pipe that is approximately 75% blocked by sediment. Outlet was mostly submerged and concrete. The pipes appear to connect at a manhole near the intersection of Hwy 131 and a private drive. These two pipes appear to run approximately perpendicular to one another. Length of pipe estimated. In May 2012, we observed spawning Western Brook Lamprey immediately above this culvert.



Fagan Creek Area Culverts, Tillamook River Basin







## BEAVER CREEK CULVERTS

LOCATION INFO				Culvert #	1102	Priority	NA
Watershed		Tillamook River					
Stream Name		Unnamed tributary to Beaver Creek (Trib. C)					
Township-Range-Section-1/4		T2S, R10W, Sec. 11, NW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		431060/5029663					
Road Name		Private Drive off Eckloff Road					
Road/Culvert Owner		F. Johnston					
Adjacent Landowners		F. Johnston					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	9.8				
Material	Corrugated metal	Upstream Gradient (%)	1.0				
Length (ft)	40	Bankfull Width (ft)	4.5				
Width (in)	90	Culvert:Bankfull Ratio	1.7				
Height (in)	90						
Outlet Perch (ft)	None						
Slope (%)	-1.2						
Rustline Height (in)	42						
Overall Condition	Poor					 <b>Outlet</b>	
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.9	Habitat Points	4				
Habitat Quality	Fair(+)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	10				
<b>Notes:</b> Although, based on most factors, this culvert does not appear to be a barrier; it is included here due to its poor condition assessment which indicates it should be replaced in the near future.							

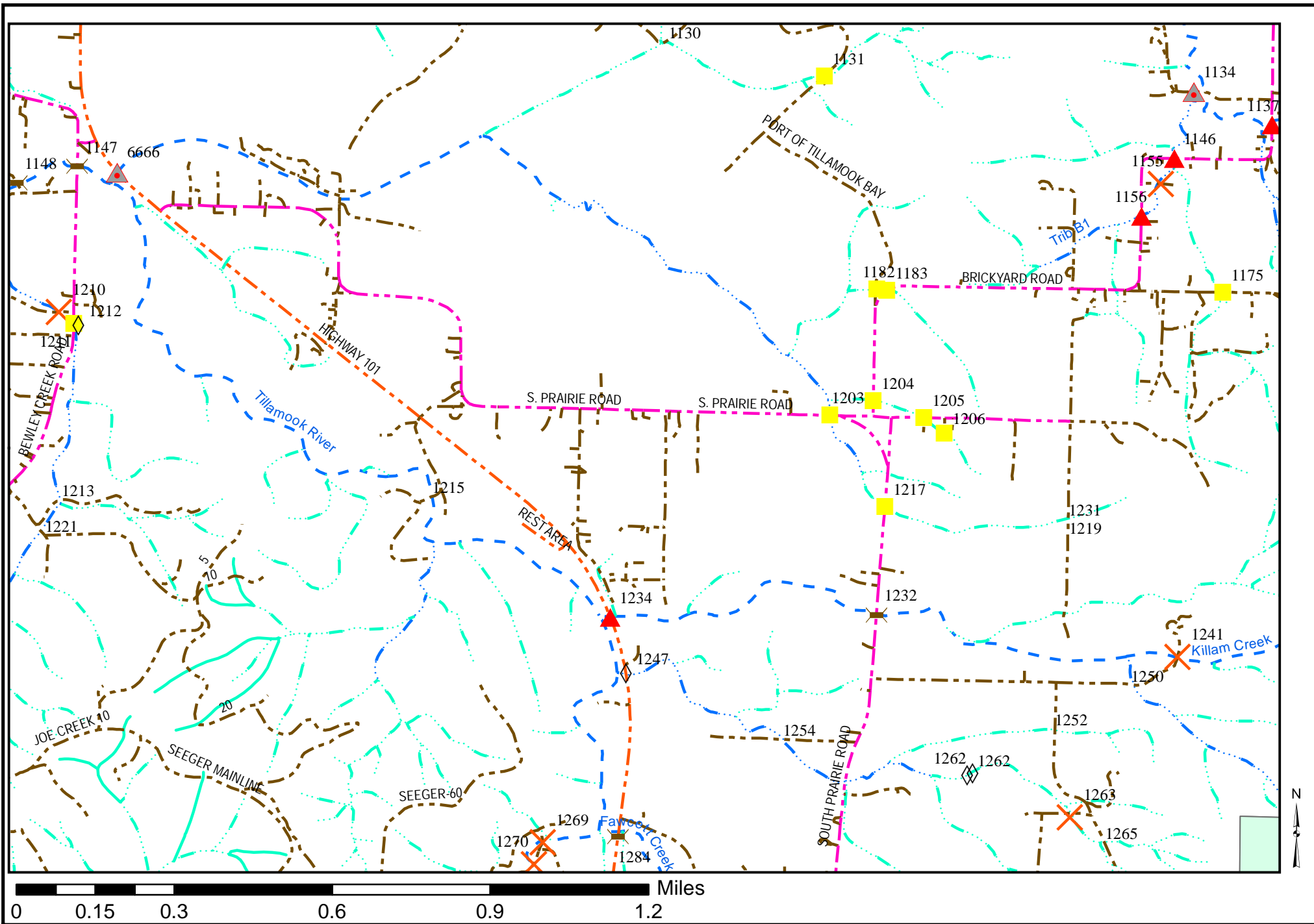


## HIGHWAY 101 NEAR PORT OF TILLAMOOK

LOCATION INFO				Culvert #	6666	Priority	H
Watershed		Tillamook River					
Stream Name		Unnamed tributary to Tillamook River					
Township-Range-Section-1/4		T2S, R9W, Sec. 16, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		435587/5028596					
Road Name		Highway 101					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Transportation					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Circular	Inlet Gradient (%)	unknown				
Material	Corrugated metal	Upstream Gradient (%)	unknown				
Length (ft)	109	Bankfull Width (ft)	~15.0 *				
Width (in)	56	Culvert:Bankfull Ratio	0.3				
Height (in)	56	*Unable to access upstream. BFW based on visual estimate.					
Outlet Perch (ft)	Not perched						
Slope (%)	3.5						
Rustline Height (in)	30						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 Outlet	
Upstream Habitat Length (mi)	1.6	Habitat Points	4				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	10				
Notes:							


LOCATION INFO				Culvert #	1234	Priority	H
Watershed		Tillamook River					
Stream Name		Killam Creek					
Township-Range-Section-1/4		T2S, R9W, Sec. 16, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		437142/5022712					
Road Name		Highway 101					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		G. Stevens and Stimson Lumber Co.					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Box	Inlet Gradient (%)	2.4				
Material	Concrete	Upstream Gradient (%)	2.8				
Length (ft)	109	Bankfull Width (ft)	11.2				
Width (in)	96	Culvert:Bankfull Ratio	0.7				
Height (in)	96	Three ~1ft baffles inside pipe. Also includes a fish ladder where culvert outlets into Tillamook River mainstem. Ladder has two ~3ft sills. An ~1ft jump is required to clear each sill and enter the culvert.					
Outlet Perch (ft)	4.4						
Slope (%)	0.4						
Rustline Height (in)	36						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 Outlet	
Upstream Habitat Length (mi)	10.8	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	13				
<b>Notes:</b> Perch based on elevation difference between outlet invert and outlet pool tailwater control point below fish ladder. Fish surveys indicate that adults are able to pass this culvert, but the ladder is clearly a barrier to juvenile passage.							








Highway 101 Near Port of Tillamook Bay Culverts, Tillamook River Basin

## MUNSON AND SIMMONS CREEKS AREA CULVERTS


LOCATION INFO				Culvert #	1330	Priority	NA
Watershed				Tillamook River			
Stream Name				Simmons Creek			
Township-Range-Section-1/4				T2S, R9W, Sec. 21, SW¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				437043/5025427			
Road Name				Highway 101			
Road/Culvert Owner				Oregon Department of Transportation			
Adjacent Landowners				P. & M. Hankins and R. & D. Maddox			
CULVERT INFO		CHANNEL INFO					
Shape	Open Bottom Arch	Inlet Gradient (%)	8.9				
Material	Corrugated metal	Upstream Gradient (%)	2.6				
Length (ft)	113	Bankfull Width (ft)	18.6				
Width (in)	240	Culvert:Bankfull Ratio	1.1				
Height (in)	108						
Outlet Perch (ft)	0.2						
Slope (%)	0.4						
Rustline Height (in)	6						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	6.5	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	11				
<b>Notes:</b> Pipe barrel is not straight. It bends in the middle, but it is unclear whether it was constructed this way or has become deformed over time.							

LOCATION INFO				Culvert #	1381	Priority	H
Watershed				Tillamook River			
Stream Name				Munson Creek			
Township-Range-Section-1/4				T2S, R9W, Sec. 28, SW¼ of NW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				437008/5024593			
Road Name				Highway 101			
Road/Culvert Owner				Oregon Department of Transportation			
Adjacent Landowners				J. & J. Sheldon and T. & S. Marlin			
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	1.4	 <p>Inlet</p>			
Material	Concrete	Upstream Gradient (%)	2.4				
Length (ft)	69	Bankfull Width (ft)	14.1				
Width (in)	144	Culvert:Bankfull Ratio	0.9				
Height (in)	72						
Outlet Perch (ft)	1.0						
Slope (%)	0.1						
Rustline Height (in)	21						
Overall Condition	Fair			 <p>Outlet - upstream</p>			
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	4.3	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	13				
<b>Notes:</b> Rating based on perch and laminar flows across pipe invert (no natural substrate on culvert invert).							



LOCATION INFO				Culvert #	1404	Priority	H
Watershed		Tillamook River					
Stream Name		Munson Creek					
Township-Range-Section-1/4		T2S, R9W, Sec. 27, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		438611/5023756					
Road Name		Munson Creek Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		Stimson Lumber Co.					
CULVERT INFO		CHANNEL INFO					
Shape	Open bottom arch	Inlet Gradient (%)	19.3				
Material	Concrete	Upstream Gradient (%)	7.8				
Length (ft)	61	Bankfull Width (ft)	11.4				
Width (in)	156	Culvert:Bankfull Ratio	1.2				
Height (in)	90						
Outlet Perch (ft)	0.2						
Slope (%)	4.2						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.4	Habitat Points	3				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	10				
Notes: A crossing we were unable to access to survey was located approximately ¼ mile upstream of this crossing.							



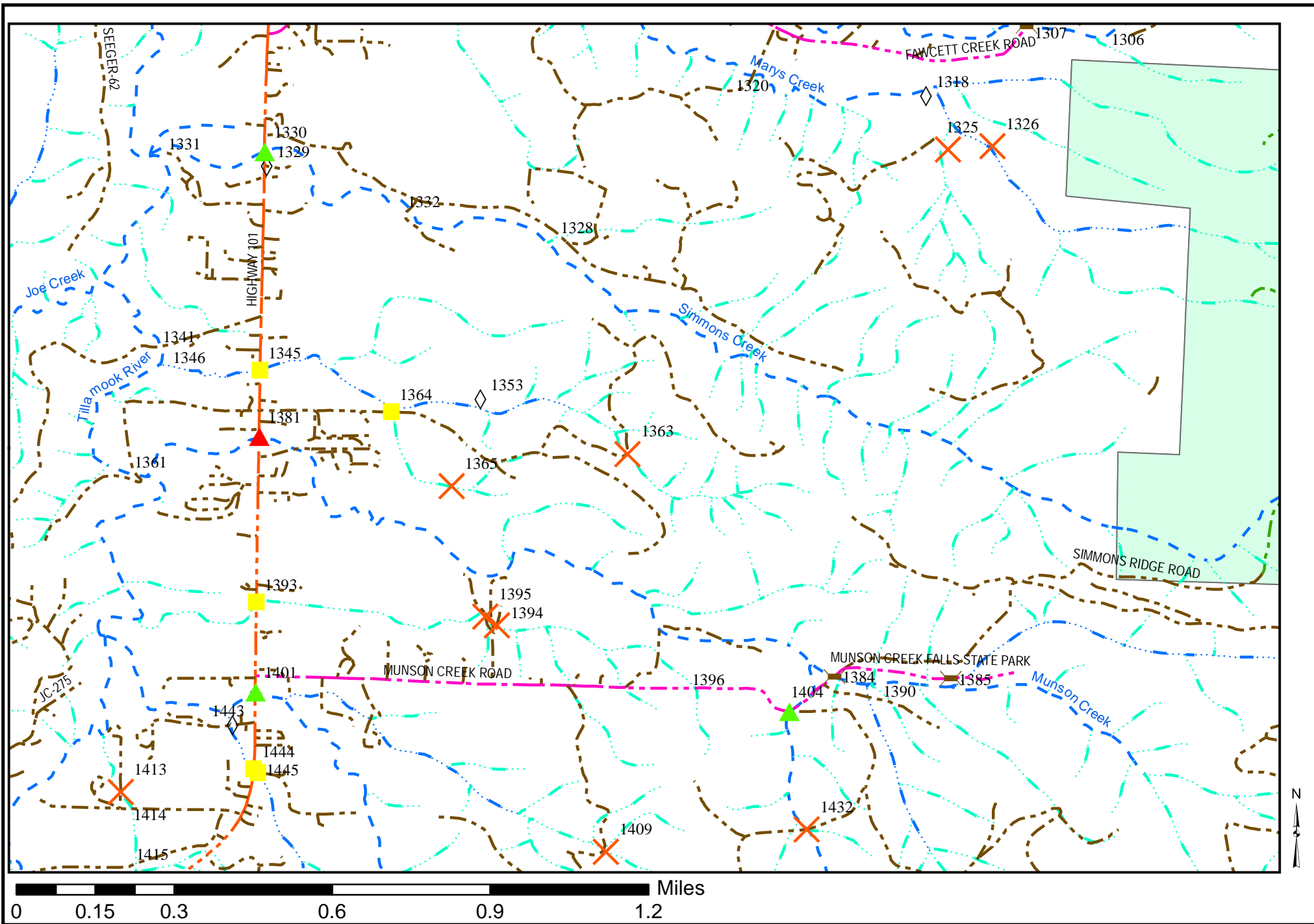
Inlet



Outlet



LOCATION INFO				Culvert #	1401	Priority	NA
Watershed		Tillamook River					
Stream Name		Pleasant Valley Creek					
Township-Range-Section-1/4		T2S, R9W, Sec. 28, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		437013/5023817					
Road Name		Highway 101					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		M. Upshaw and P. Myers					
CULVERT INFO		CHANNEL INFO				<div>Inlet</div>  <div>Outlet</div> 	
Shape	Box	Inlet Gradient (%)	7.4				
Material	Concrete	Upstream Gradient (%)					
Length (ft)	80	Bankfull Width (ft)	~8.0				
Width (in)	96	Culvert:Bankfull Ratio	1.0				
Height (in)	60	No upstream access. Upstream gradient and bankfull width not measurable.					
Outlet Perch (ft)	0.3						
Slope (%)	0.5						
Rustline Height (in)	21						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.1	Habitat Points	3				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	10				
Notes: A crossing we were unable to access to survey was located approximately ¼ mile upstream of this crossing.							





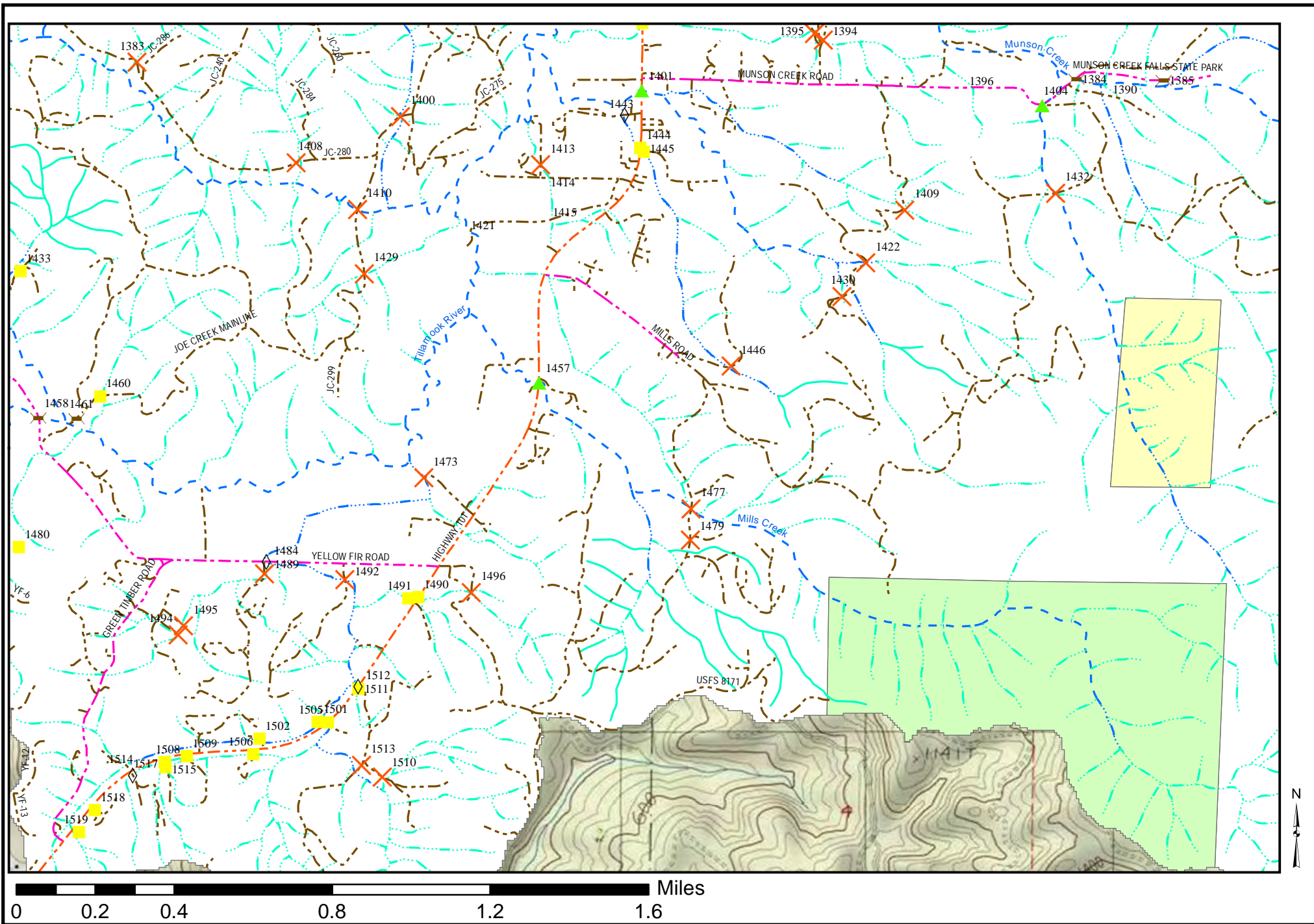


Munson Creek and Simmons Creek Area Culverts, Tillamook River Basin

## UPPER TILLAMOOK RIVER WATERSHED CULVERTS

LOCATION INFO				Culvert #	1457	Priority	NA
Watershed				Tillamook River			
Stream Name				Mills Creek			
Township-Range-Section-1/4				T2S, R9W, Sec. 28, SW¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				436581/5022611			
Road Name				Highway 101			
Road/Culvert Owner				Oregon Department of Transportation			
Adjacent Landowners				M. Upshaw and P. Myers			
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	8.2				
Material	Concrete	Upstream Gradient (%)	0.8				
Length (ft)	134	Bankfull Width (ft)	9.1				
Width (in)	120	Culvert:Bankfull Ratio	1.1				
Height (in)	48						
Outlet Perch (ft)	None						
Slope (%)	0.2						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.3	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	11				
Notes:							

LOCATION INFO				Culvert #	1438	Priority	H
Watershed		Tillamook River					
Stream Name		Unnamed tributary of Tillamook River (Trib. E)					
Township-Range-Section-1/4		T2S, R9W, Sec. 31, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		434395/5022847					
Road Name		Private Drive off Yellow Fir Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		M. Walker					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	-3.2				
Material	Corrugated metal	Upstream Gradient (%)	1.8				
Length (ft)	17	Bankfull Width (ft)	8.9				
Width (in)	60	Culvert:Bankfull Ratio	0.6				
Height (in)	60						
Outlet Perch (ft)	None						
Slope (%)	1.6						
Rustline Height (in)	48						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.4	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	12				
Notes: Invert and sides very corroded. Numerous holes in pipe noted.							



Upper Tillamook River Watershed Culverts, Tillamook River Basin



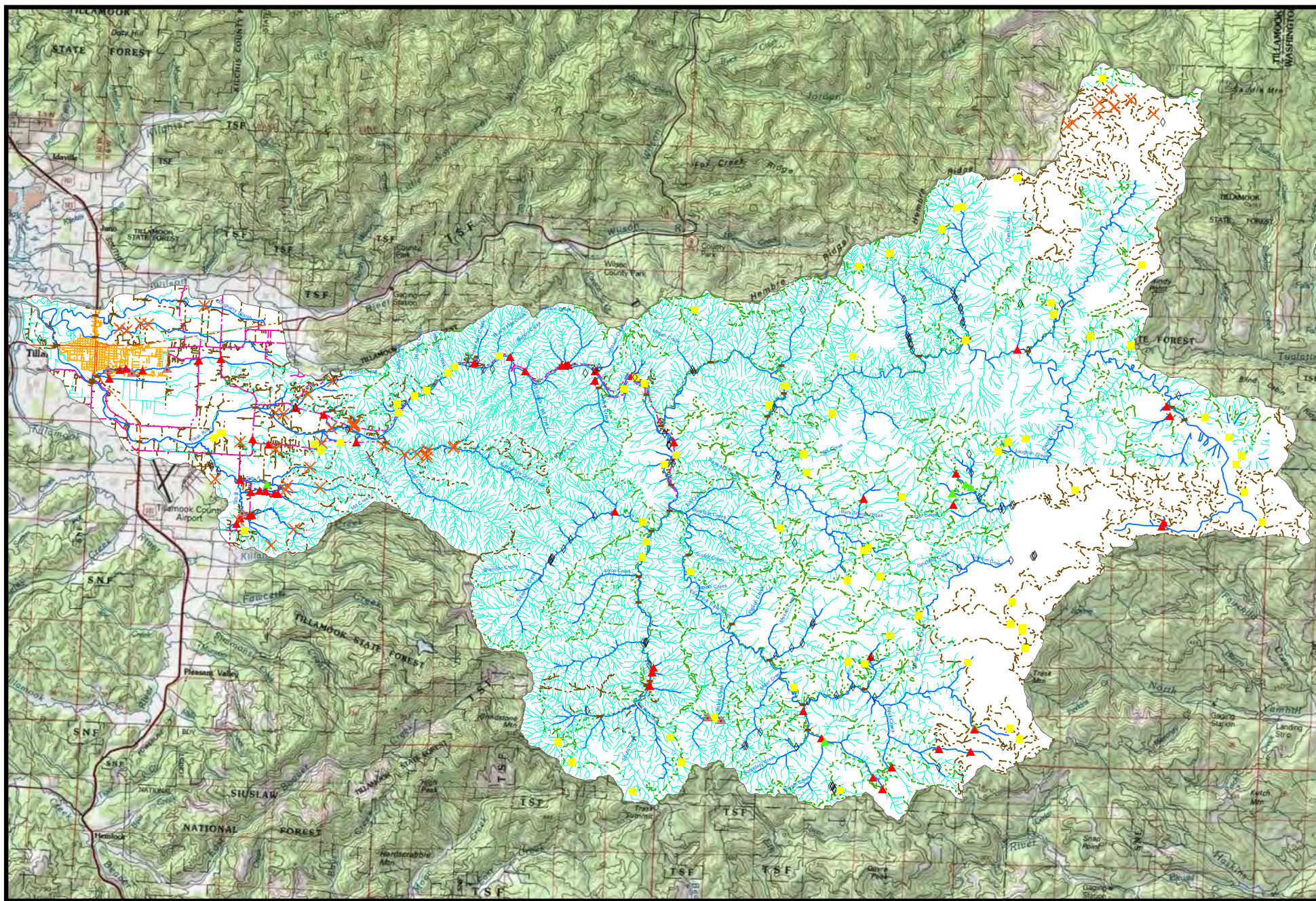


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## **Trask River Basin Culverts**

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0 1 2 4 6 8 Miles

Trask Basin Crossings




### Trask River Basin Clusters

Cluster	Culvert Numbers	Priority	Stream	Upstream Habitat
Holden Creek	955	M	Unnamed tributary	4.5
	952	M	Holden Creek	
	942	H	Holden Creek	
	945	H	Holden Creek	
	946	M	Holden Creek	
	948	H	Holden Creek	
	947	M	Holden Creek	
	930	M	Holden Creek	
	929	L	Holden Creek	
Mill Creek	1094	H	Unnamed tributary A	9.7
	1095	N/A	Unnamed tributary A	
	1106	H	Mill Creek	
	1107	H	Mill Creek	
	1105	H	Mill Creek	
	1128	H	Mill Creek	
	1127	H	Mill Creek	
	1134	H	Unnamed tributary B	
	1137	H	Unnamed tributary B	
	1136	H	Unnamed tributary B	
	1146	L	Unnamed tributary B1	
	1156	L	Unnamed tributary B1	
Chance Road Area	1027	L	Unnamed tributary	0.7
	1039	L	Unnamed tributary	
	1021	L	Hanenkrat Creek	
Lower Trask River Road Area	987	H	Green Creek	2.0
	999	L	Unnamed tributary	
Peninsula Area	918	M	Hatchery Creek	1.1
	889	L	Burton Creek	
	925	L	Unnamed tributary	
Samson and Johnson creeks Area	907	L	Unnamed tributary	3.5
	903	L	Unnamed tributary	
	902	H	Samson Creek	
	915	H	Johnson Creek	
	944	L	Unnamed tributary	
	927	L	Unnamed tributary	
Lower South Fork Trask R. Area	1010	L	Unnamed tributary	0.1


Edwards Creek Area	1120	H	Unnamed tributary	0.8
Upper S.F. Trask River Area	5001	L	Unnamed tributary	1.1
	1378	L	Unnamed tributary	
	1402	H	Unnamed tributary	
Bales Creek Area	1448	M	Bales Creek	1.1
	1453	L	S.F. Bales Creek	
Boundary Creek and HQ Camp	1431	L	Unnamed tributary	2.2
	1472	L	Unnamed tributary	
	1476	N/A	Headquarters Camp Creek	
Upper HQ Camp Creek Area	1516	L	Headquarters Camp Creek	0.8
	1520	L	Headquarters Camp Creek	
	1499	L	S.F. Rock Creek	
E.F. Trask and Rock Creek Area	1483	L	Rock Creek	2.3
	1487	L	Rock Creek	
	1447	N/A	E.F.S.F. Trask River	
	1455	H	Unnamed tributary	
Pothole Creek	1342	H	Pothole Creek	0.4
Bark Shanty Creek Area	1099	H	Unnamed tributary	0.6
Cruiser Creek Area	1058	N/A	Unnamed tributary	2.3
	1060	N/A	July Creek	
	1059	L	July Creek	
	1068	N/A	Whirlwind Creek	
	1109	L	Unnamed tributary	
Upper N.F. Trask Area	864	M	Unnamed tributary	0.6
Upper M.F.N.F. Trask Area	962	L	Unnamed tributary	0.9
	965	L	Unnamed tributary	
Flora Mainline Road Area	1113	L	M.F.N.F. Trask River	1.1
	1112	L	Unnamed tributary	

## HOLDEN CREEK CULVERTS

LOCATION INFO				Culvert #	955	Priority	M
Watershed				Trask River			
Stream Name				Unnamed tributary of Holden Creek			
Township-Range-Section-1/4				T1S, R9W, Sec. 31, NW¼ of NW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				434496/5032993			
Road Name				Private farm road off Miller Avenue			
Road/Culvert Owner				C. & P. Tohl			
Adjacent Landowners				School Dist. #9 and C. & P. Tohl			
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)			-3.4	
Material	Corrugated metal		Upstream Gradient (%)			1.4	
Length (ft)	30		Bankfull Width (ft)			15.0	
Width (in)	36		Bankfull:Culvert Ratio			0.4*	
Height (in)	36		Both pipes were identical.				
Outlet Perch (ft)	None						
Slope (%)	-1.6						
Rustline Height (in)	Entirely rusted						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.1		Habitat Points			3	
Habitat Quality	Poor		Habitat Quality Points			1	
Fish Species	Anad.		Fish Points			3	
Barrier Class	Red		Barrier Points			3	
			Prioritization Total Points			10	



Inlet



Outlet

**Notes:** Dual pipes at this location. \*Based on combined inlet widths. Water quality in channel appeared very poor.

LOCATION INFO				Culvert #	952	Priority	M
Watershed		Trask River					
Stream Name		Holden Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 30, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		434445/5035277					
Road Name		Miller Road					
Road/Culvert Owner		City of Tillamook					
Adjacent Landowners	School Dist. #9, Hampton Lumber, City of Tillamook						
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	6.1				
Material	Corrugated metal	Upstream Gradient (%)	3.6				
Length (ft)	95	Bankfull Width (ft)	8.7				
Width (in)	66	Bankfull:Culvert Ratio	1.26**				
Height (in)	66*	Both pipes were identical. Pipe inverts have 1.5 to 2 ft sediment and so neither pipe was capable of conveying their designed volume. *We were unable to measure the full vertical dimensions of either pipe inlet (probably due to sedimentation).					
Outlet Perch (ft)	None						
Slope (%)	unknown						
Rustline Height (in)	52						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	3.4	Habitat Points	4				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	10				
<b>Notes:</b> Dual pipes at this location. Both outlets submerged and not accessible for measuring outlet invert elevation. As a result, we were unable to calculate the gradient of the pipes. **Based on combined inlet widths.							

This photograph shows the inlet of the culvert. Two large, dark, circular pipes are visible, partially submerged in a stream. The water is calm, reflecting the surrounding greenery and the sky. The banks are covered with dense vegetation and some bare soil is visible near the pipes.


This photograph shows the outlet of the culvert. A small stream flows over a bed of rocks and debris. The water is clear, and the surrounding area is heavily vegetated with trees and shrubs. The stream appears to be a natural feature, possibly a tributary or a continuation of the main waterway.




LOCATION INFO				Culvert #	942	Priority	H
Watershed				Trask River			
Stream Name				Holden Creek			
Township-Range-Section-1/4				T1S, R9W, Sec. 30, SW¼ of SE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				434837/5033295			
Road Name				Hampton Lumber Mill internal road			
Road/Culvert Owner				Hampton Lumber Co.			
Adjacent Landowners				Hampton Lumber Co.			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)		10.0			
Material	Corrugated metal	Upstream Gradient (%)		7.8			
Length (ft)	~199	Bankfull Width (ft)		12.9			
Width (in)	78	Bankfull:Culvert Ratio		1.1**			
Height (in)	78*	Pipe length approximate because pipe barrel bends under roadway.					
Outlet Perch (ft)	Unknown*						
Slope (%)	Unknown*						
Rustline Height (in)	Entirely rusted						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	3.2	Habitat Points		4			
Habitat Quality	Poor	Habitat Quality Points		1			
Fish Species	Anad.	Fish Points		3			
Barrier Class	Red	Barrier Points		3			
		Prioritization Total Points		11			
<b>Notes:</b> Dual pipes at this location. * Heavy sedimentation in pipes, unable to find inverts on either end. **Based on combined inlet widths.							

Inlet


Outlet

LOCATION INFO				Culvert #	945	Priority	H
Watershed		Trask River					
Stream Name		Holden Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 30, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		435013/5033315					
Road Name		Hampton Lumber Mill internal road					
Road/Culvert Owner		Hampton Lumber Co.					
Adjacent Landowners		Hampton Lumber Co.					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	3.0				
Material	Corrugated metal	Upstream Gradient (%)	2.0				
Length (ft)	41	Bankfull Width (ft)	12.5				
Width (in)	60(48)	Bankfull:Culvert Ratio	0.7*				
Height (in)	60 (48)						
Outlet Perch (ft)	0.6 (none)						
Slope (%)	1.5(0.1)						
Rustline Height (in)	entirely rusted						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	3.1	Habitat Points	4				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11				
Notes: Dual pipes at this location. *Based on combined inlet widths. Both inlets very damaged.							



LOCATION INFO				Culvert #	946	Priority	M
Watershed			Trask River				
Stream Name			Holden Creek				
Township-Range-Section-1/4			T1S, R9W, Sec. 30, SW¼ of SE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			435218/5033198				
Road Name			Evergreen Road				
Road/Culvert Owner			City of Tillamook				
Adjacent Landowners		Five Rivers Assisted Living and R. & H. Obrist					
CULVERT INFO			CHANNEL INFO				
Shape	Box	Inlet Gradient (%)	6.7				
Material	Concrete	Upstream Gradient (%)	1.2				
Length (ft)	39	Bankfull Width (ft)	8.3				
Width (in)	96	Bankfull:Culvert Ratio	1.0				
Height (in)	72						
Outlet Perch (ft)	0.3						
Slope (%)	2.4						
Rustline Height (in)	18						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.9	Habitat Points	4				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	10				
Notes: Continuous stream substrate through culvert.							



Inlet





Outlet

LOCATION INFO				Culvert #	948	Priority	H
Watershed		Trask River					
Stream Name		Holden Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 29, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		435550/5033273					
Road Name		Murray Way					
Road/Culvert Owner		City of Tillamook					
Adjacent Landowners		J. Hercher, L. Beyer, D. & C. Brown, and D. & P. Helmick					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	1.9(1.3)				
Material	Corrugated metal	Upstream Gradient (%)	0.9				
Length (ft)	20	Bankfull Width (ft)	10.0				
Width (in)	48(48)	Bankfull:Culvert Ratio	0.8*				
Height (in)	48(48)						
Outlet Perch (ft)	None						
Slope (%)	5.8(4.6)						
Rustline Height (in)	entirely rusted						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.7	Habitat Points			4		
Habitat Quality	Poor	Habitat Quality Points			1		
Fish Species	Anad.	Fish Points			3		
Barrier Class	Red	Barrier Points			3		
		Prioritization Total Points			11		
Notes: Dual pipes at this location. *Based on combined inlet widths.							





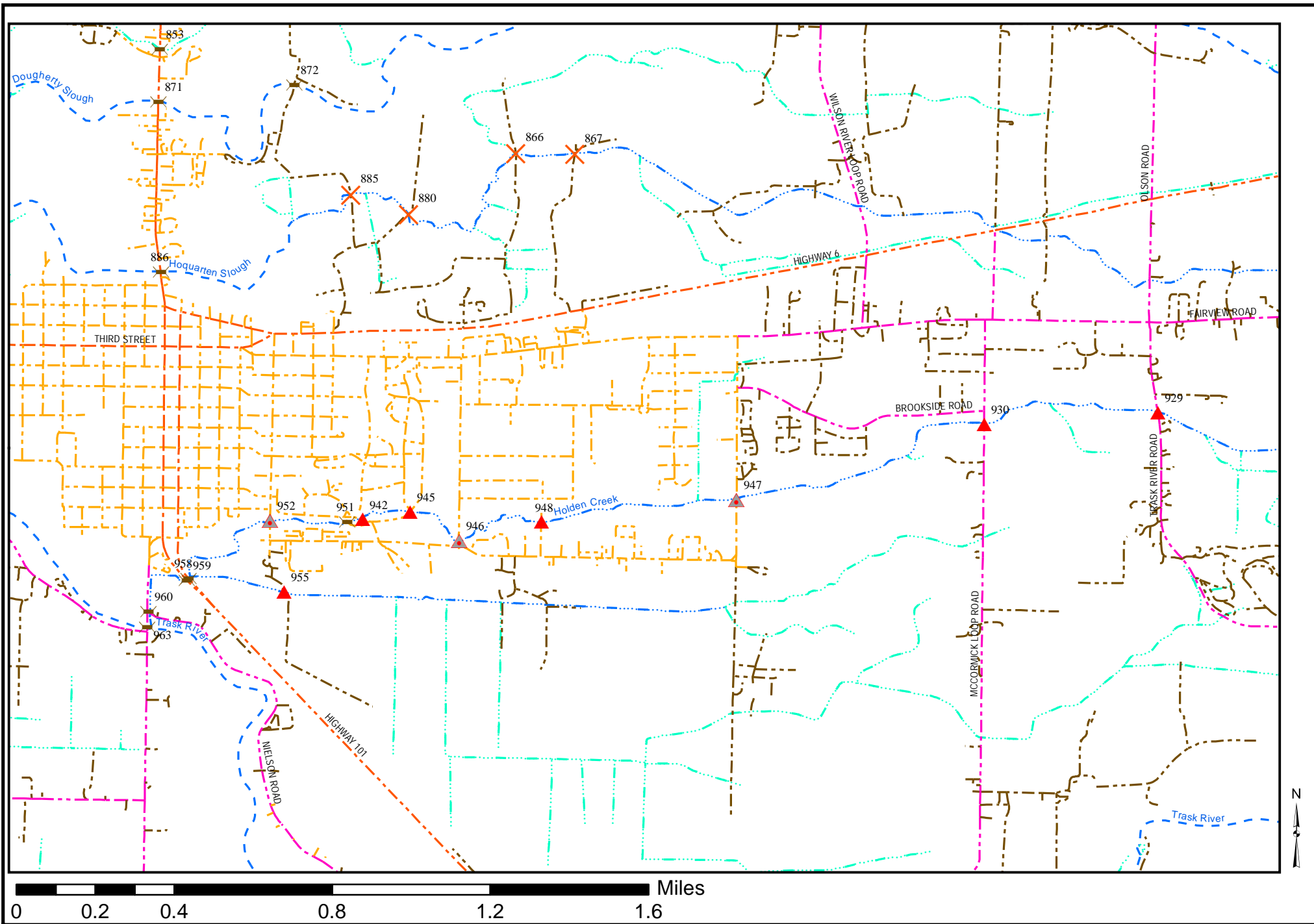
LOCATION INFO				Culvert #	947	Priority	M
Watershed				Trask River			
Stream Name				Holden Creek			
Township-Range-Section-1/4				T1S, R9W, Sec. 29, SE¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				436344/5033372			
Road Name				Marolf Loop Road			
Road/Culvert Owner				City of Tillamook			
Adjacent Landowners	W. & J. Krake, AoG Church, K. Dillenburg, and K. Haltiner						
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	21.7				
Material	Concrete	Upstream Gradient (%)	0.4				
Length (ft)	28	Bankfull Width (ft)	8.9				
Width (in)	78	Bankfull:Culvert Ratio	0.7				
Height (in)	54						
Outlet Perch (ft)	None						
Slope (%)	0.3						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.2	Habitat Points	4				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	10				
<b>Notes:</b> Continuous stream substrate through culvert.							

LOCATION INFO				Culvert #	930	Priority	M
Watershed			Trask River				
Stream Name			Holden Creek				
Township-Range-Section-1/4			T1S, R9W, Sec. 28, NW¼ of SW¼				
UTM Easting/Northing (Zone 10, NAD 1983)			437353/5033678				
Road Name			McCormick Loop Road				
Road/Culvert Owner			Tillamook County				
Adjacent Landowners		O. Rowe, T. & M. Jacob, and R. Montgomery-Boge					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)		6.3		
Material	Corrugated metal		Upstream Gradient (%)		2.1		
Length (ft)	46		Bankfull Width (ft)		11.4		
Width (in)	60		Bankfull:Culvert Ratio		0.4		
Height (in)	48*		*substrate covering invert				
Outlet Perch (ft)	0.1						
Slope (%)	1.7						
Rustline Height (in)	23						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		1.5	Habitat Points		3		
Habitat Quality		Poor	Habitat Quality Points		1		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		10		
Notes:							




LOCATION INFO				Culvert #	929	Priority	L
Watershed		Trask River					
Stream Name		Holden Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 28, NW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		438068/5033726					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		Fairview Acres Dairy and R. & J. Penberthy					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	10.0				
Material	Concrete (Corrugated metal)	Upstream Gradient (%)	0.7				
Length (ft)	34	Bankfull Width (ft)	8.3				
Width (in)	36(42)	Bankfull:Culvert Ratio	0.8*				
Height (in)	36(42)						
Outlet Perch (ft)	None						
Slope (%)	2.9(1.6)						
Rustline Height (in)	N/A(20)						
Overall Condition	Fair(Poor)						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Dual pipes at this crossing. *Bankfull:Culvert Ratio based on combined width of pipes. Channel was dry during summer 2011 site visit.							




Holden Creek Culverts, Trask River Basin

## MILL CREEK CULVERTS

LOCATION INFO				Culvert #	1094	Priority	H
Watershed		Trask River					
Stream Name		Unnamed tributary of Mill Creek (Trib. A)					
Township-Range-Section-1/4		T2S, R9W, Sec. 3, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		438771/5029891					
Road Name		Brickyard Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		Tillamook County and W. Hancock					
CULVERT INFO			CHANNEL INFO				
Shape	Circular	Inlet Gradient (%)	40.0				
Material	Corrugated metal	Upstream Gradient (%)	4.9				
Length (ft)	67	Bankfull Width (ft)	4.6				
Width (in)	48	Bankfull:Culvert Ratio	0.9				
Height (in)	48						
Outlet Perch (ft)	0.5						
Slope (%)	0.9						
Rustline Height (in)	entirely rusted						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	3.5	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
Notes: Pipe is in very poor condition. Invert worn through along a considerable portion of the pipe.							




Inlet




Outlet

LOCATION INFO				Culvert #	1095	Priority	NA
Watershed		Trask River					
Stream Name		Unnamed tributary of Mill Creek (Trib. A)					
Township-Range-Section-1/4		T2S, R9W, Sec. 10, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439674/5029747					
Road Name		Private Drive off Mill Creek Road					
Road/Culvert Owner		R. Coppini					
Adjacent Landowners		R. Coppini					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe Arch	Inlet Gradient (%)	6.8				
Material	Corrugated metal	Upstream Gradient (%)	2.9				
Length (ft)	44	Bankfull Width (ft)	8.1				
Width (in)	126	Bankfull:Culvert Ratio	1.3				
Height (in)	84						
Outlet Perch (ft)	None						
Slope (%)	0.1						
Rustline Height (in)	21						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		2.9	Habitat Points	4			
Habitat Quality		Fair	Habitat Quality Points	2			
Fish Species		Anad.	Fish Points	3			
Barrier Class		Green	Barrier Points	1			
			Prioritization Total Points	10			
Notes:							



Inlet



Outlet






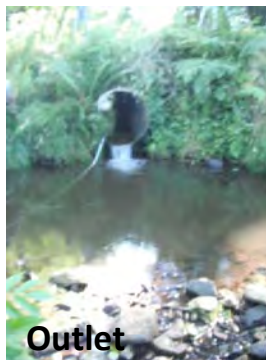


**Outlet**





Outlet



LOCATION INFO				Culvert #	1105	Priority	H
Watershed		Trask River					
Stream Name		Mill Creek					
Township-Range-Section-1/4		T2S, R9W, Sec. 10, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439636/5029535					
Road Name		Private drive off Mill Creek Road					
Road/Culvert Owner		R. Coppini					
Adjacent Landowners		G. & A. Petersen and D. & M. Sexton					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Circular	Inlet Gradient (%)	10.6				
Material	Corrugated metal	Upstream Gradient (%)	2.4				
Length (ft)	27	Bankfull Width (ft)	6.4				
Width (in)	29(29)	Bankfull:Culvert Ratio	0.8*				
Height (in)	29(29)	*Bankfull:Culvert Ratio based on combined width of both pipes.					
Outlet Perch (ft)	0.4(0.4)						
Slope (%)	1.0(1.1)						
Rustline Height (in)	13(17)						
Overall Condition	Poor					 Outlet	
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.1	Habitat Points	4				
Habitat Quality	Fair(+)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
Notes: Two pipes at this location.							

LOCATION INFO				Culvert #	1128	Priority	H
Watershed		Trask River					
Stream Name		Mill Creek					
Township-Range-Section-1/4		T2S, R9W, Sec. 10, SW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439929/5029449					
Road Name		Private drive off Mill Creek Road					
Road/Culvert Owner		R. Coppini					
Adjacent Landowners		G. & A. Petersen and D. & M. Sexton					
CULVERT INFO		CHANNEL INFO				 Inlet   Outlet	
Shape	Circular	Inlet Gradient (%)	13.6				
Material	Corrugated metal	Upstream Gradient (%)	5.3				
Length (ft)	27	Bankfull Width (ft)	6.3				
Width (in)	37	Bankfull:Culvert Ratio	0.5				
Height (in)	37						
Outlet Perch (ft)	0.8						
Slope (%)	2.4						
Rustline Height (in)	23						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.9	Habitat Points				4	
Habitat Quality	Fair(+)	Habitat Quality Points				2	
Fish Species	Anad.	Fish Points				3	
Barrier Class	Red	Barrier Points				3	
		Prioritization Total Points				12	
<b>Notes:</b> Two pipes at this location. The second was a 19 in dia. CMP that was located ~4 ft to one side of the main pipe and ~2ft higher elevation. Because this pipe likely only conveys flows during very high flows, it was not used for the Bankfull:Culvert ratio.							

**Outlet**



LOCATION INFO				Culvert #	1137	Priority	H
Watershed		Trask River					
Stream Name		Unnamed tributary of Mill Creek (Trib. B)					
Township-Range-Section-1/4		T2S, R9W, Sec. 10, NE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439127/5028736					
Road Name		Brickyard Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		M. & V. Gabel, G. & M. Kominoth, M. Barber, and R. & J. Christie					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	7.8(6.1)				
Material	Concrete	Upstream Gradient (%)	14.5				
Length (ft)	43	Bankfull Width (ft)	14.6				
Width (in)	36(36)	Bankfull:Culvert Ratio	0.4*				
Height (in)	36(36)	*Bankfull:Culvert ratio based on combined width of both pipes.					
Outlet Perch (ft)	0.4(0.1)						
Slope (%)	0.9(1.3)						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.9	Habitat Points	4				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11				
Notes: Dual pipes at this location. Trash rack at inlet had not been maintained and had a considerable amount of debris built up.							

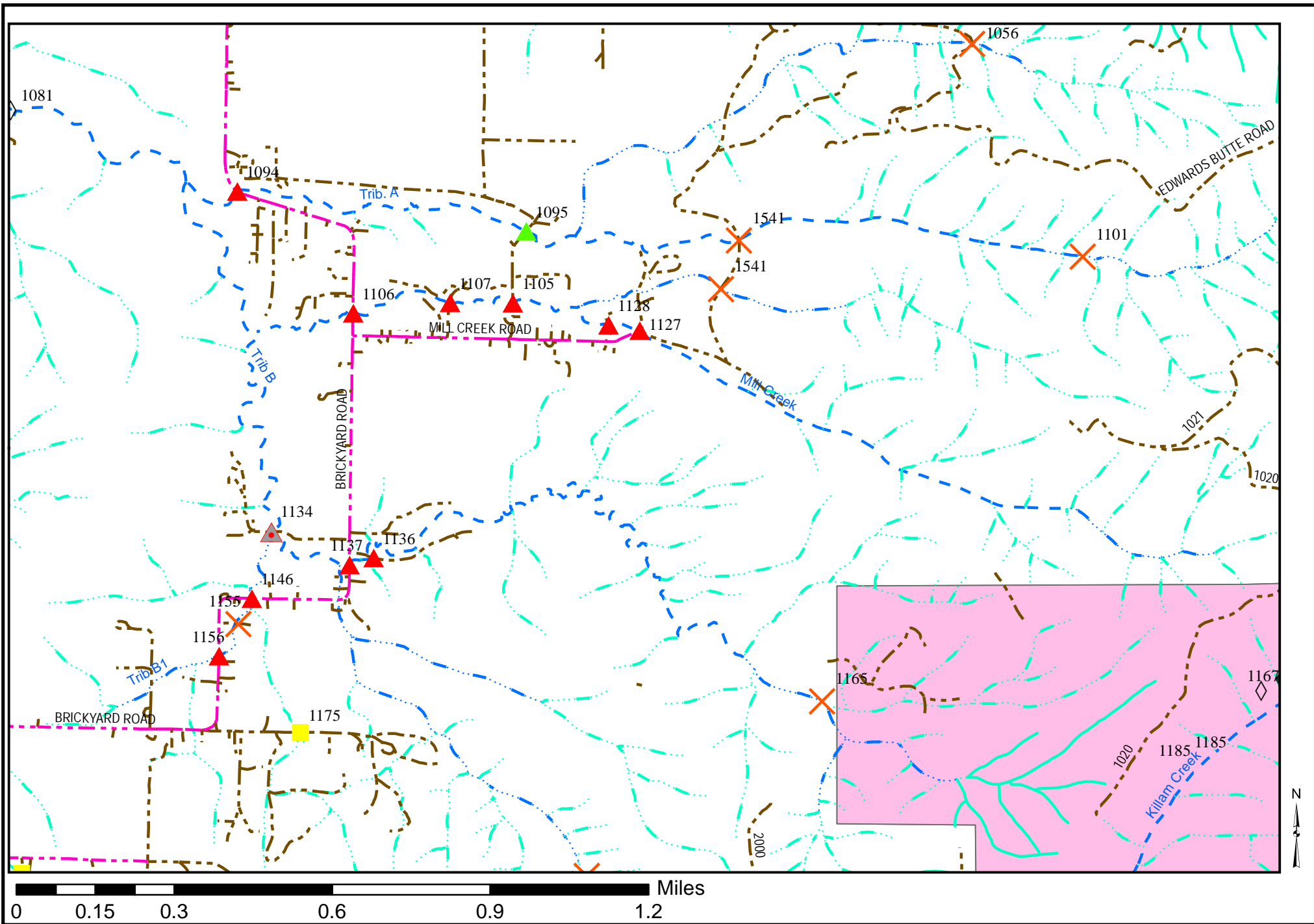
LOCATION INFO				Culvert #	1136	Priority	H
Watershed		Trask River					
Stream Name		Unnamed tributary of Mill Creek (Trib. B)					
Township-Range-Section-1/4		T2S, R9W, Sec. 10, NE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439203/5028756					
Road Name		Private Drive off Brickyard Road					
Road/Culvert Owner		R. & J. Christie					
Adjacent Landowners		M. Barber and R. & J. Christie					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	1.2(4.6)				
Material	Plastic	Upstream Gradient (%)	1.6				
Length (ft)	22	Bankfull Width (ft)	10.0				
Width (in)	36(36)	Bankfull:Culvert Ratio	0.6*				
Height (in)	36(36)	*Bankfull:Culvert ratio based on combined width of both pipes.					
Outlet Perch (ft)	0.2(1.0)						
Slope (%)	2.3(0.4)						
Rustline Height (in)	N/A						
Overall Condition	Fair					 <b>Outlet</b>	
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.8	Habitat Points	4				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11				
<b>Notes:</b> Dual pipes at this location. RBA data indicates numerous beaver impoundments, low flows and limited anadromous potential above this crossing. Culverts were not conveying water during summer 2011 field visit.							



Outlet





**Outlet**






Mill Creek Culverts, Trask River Basin

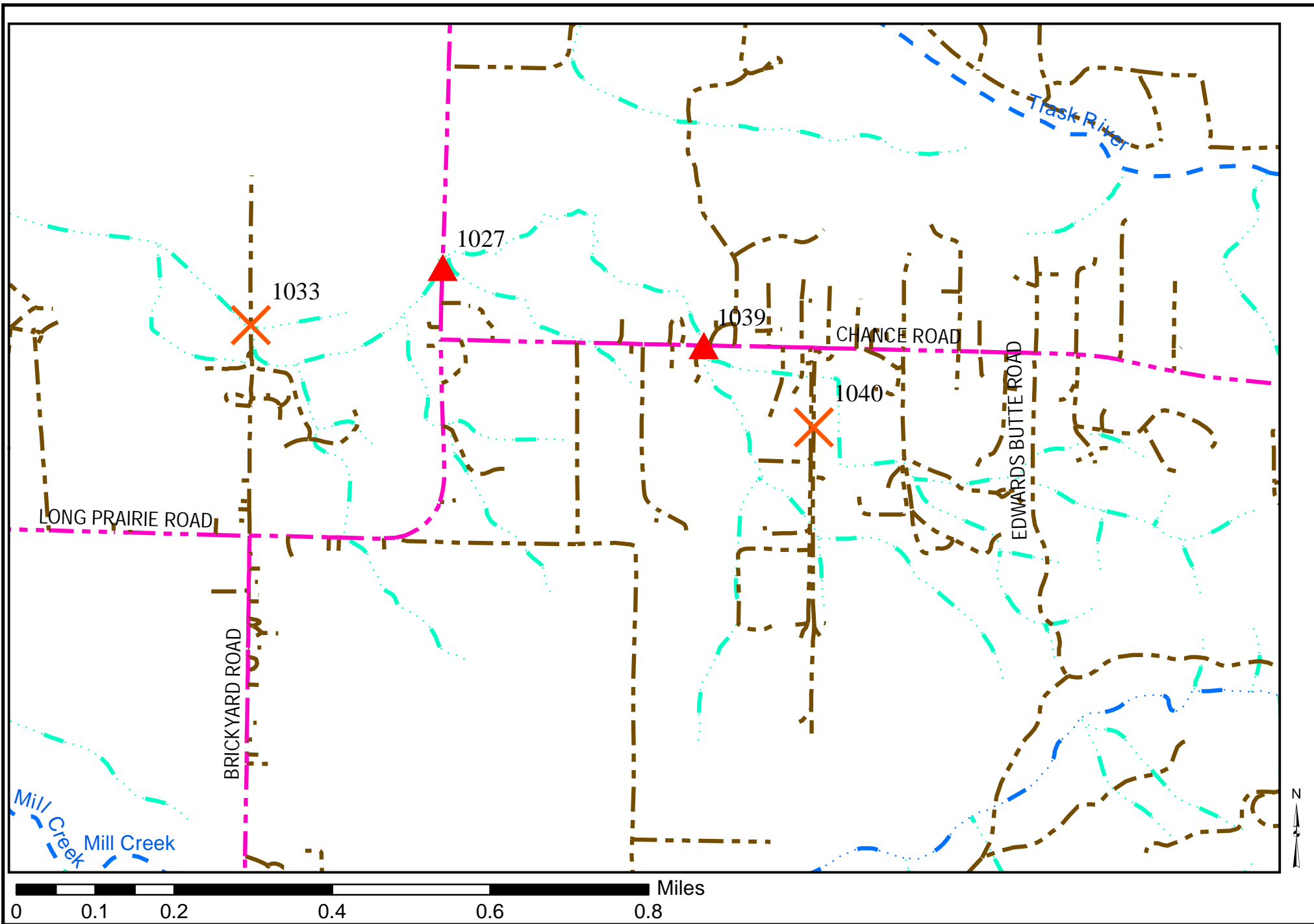


## CHANCE ROAD AREA CULVERTS

LOCATION INFO				Culvert #	1027	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Trask River					
Township-Range-Section-1/4		T2S, R9W, Sec. 3, NW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439161/5031219					
Road Name		Long Prairie Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		R.&W. Landolt, S.&J. Lourenzo, and B. Knowlton					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	-4.0				
Material	Corrugated metal	Upstream Gradient (%)	1.2				
Length (ft)	59	Bankfull Width (ft)	9.2				
Width (in)	54	Bankfull:Culvert Ratio	0.5				
Height (in)	54						
Outlet Perch (ft)	0.5						
Slope (%)	0.3						
Rustline Height (in)	48						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.6	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
<p><b>Notes:</b> Stream listed as Nonfish-modeled. However, a member of our advisory team has observed juvenile salmon in this stream above culvert 1039. As a result, we considered this stream as suitable habitat for salmonids up to a short distance above culvert 1039.</p>							

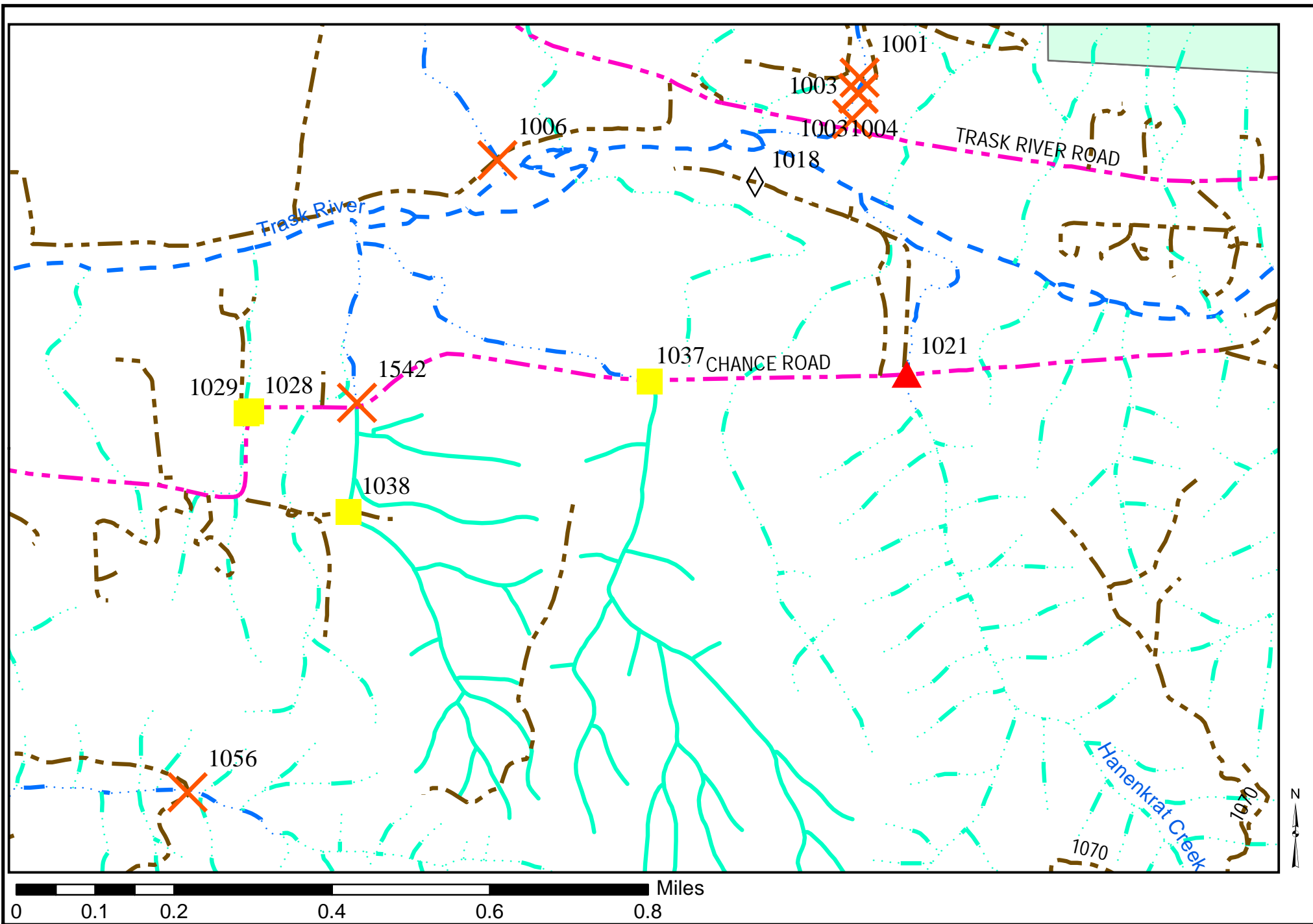
LOCATION INFO				Culvert #	1039	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Trask River					
Township-Range-Section-1/4		T2S, R9W, Sec. 3, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439686/5031041					
Road Name		Chance Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		L. Vogt, P. Wirfs, and C. McClure					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	~7.0				
Material	Concrete	Downstream Gradient (%)	3.3				
Length (ft)	40	Bankfull Width (ft)	3.1				
Width (in)	54	Bankfull:Culvert Ratio	1.5				
Height (in)	54	Inlet inaccessible due to dense blackberry plants and a fence					
Outlet Perch (ft)	0.6						
Slope (%)	2.5						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

LOCATION INFO				Culvert #	1021	Priority	L
Watershed		Trask River		 			
Stream Name		Hanenkrat Creek					
Township-Range-Section-1/4		T2S, R9W, Sec. 1, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		442541/5031175					
Road Name		Chance Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		J. & D. Hanenkrat, R. & R. Kneeland and Stimson Lumber Co.					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	11.5				
Material	Concrete	Upstream Gradient (%)	13.0				
Length (ft)	35	Bankfull Width (ft)	7.1				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36	Topography precluded use of surveying equipment to gather longitudinal profile data.					
Outlet Perch (ft)	2.5						
Slope (%)	22.0						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							





West Chance Road Culverts, Trask River Basin





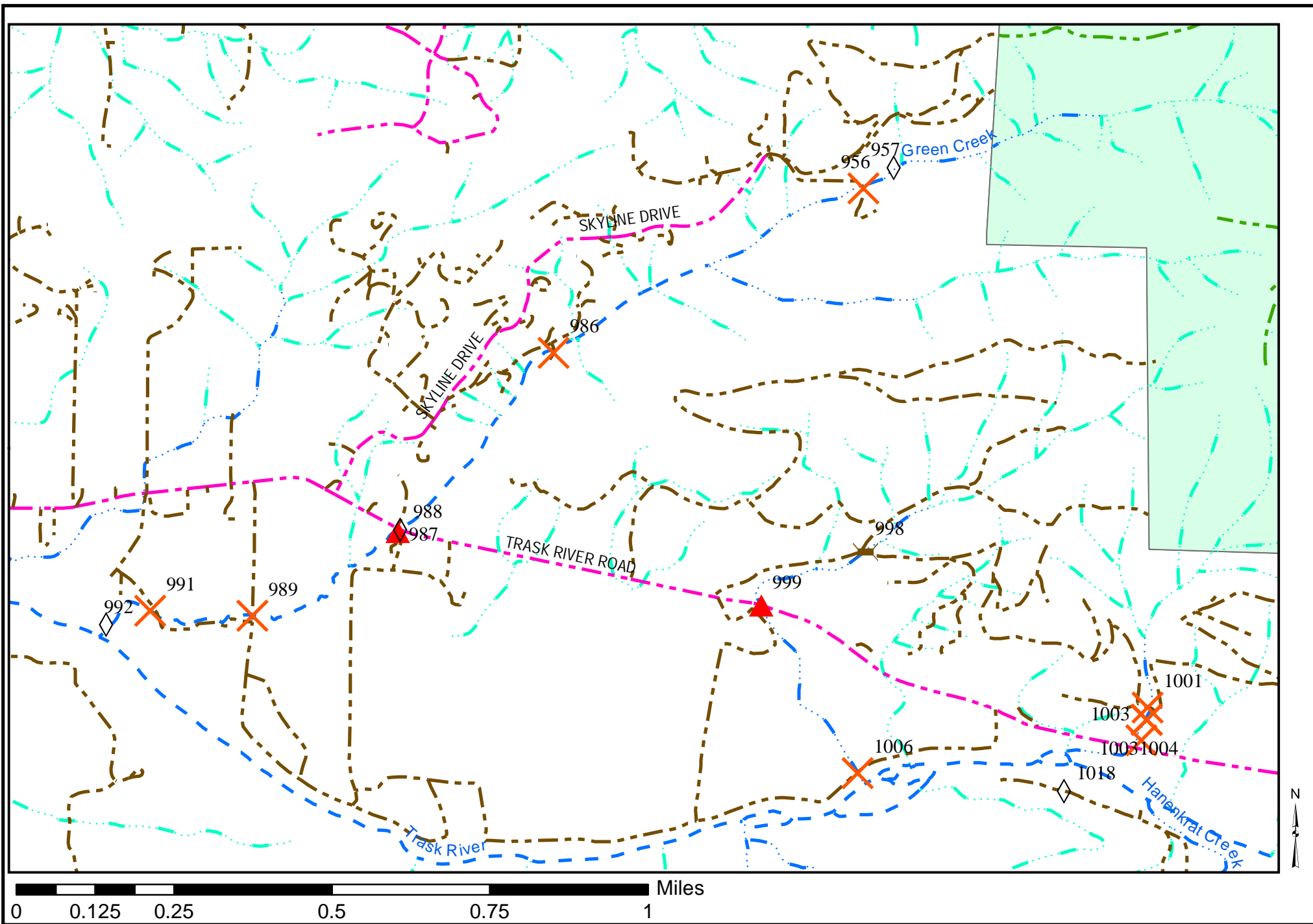


East Chance Road Culverts, Trask River Basin

## LOWER TRASK RIVER ROAD AREA CULVERTS

LOCATION INFO				Culvert #	987	Priority	H
Watershed		Trask River					
Stream Name		Green Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 35, SW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		440497/5032236					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		S-C Paving, Inc. and R.&K. Huffman					
CULVERT INFO		CHANNEL INFO				 	
Shape	Circular	Inlet Gradient (%)	1.0				
Material	Corrugated metal	Upstream Gradient (%)	5.6				
Length (ft)	50	Bankfull Width (ft)	7.7				
Width (in)	53	Bankfull:Culvert Ratio	0.6				
Height (in)	53						
Outlet Perch (ft)	1.0						
Slope (%)	5.6						
Rustline Height (in)	35						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.7	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
<b>Notes:</b> Configuration of culvert inlet apron and substrate created turbulent flows at inlet. One crossing occurred below this culvert. We were unable to access this crossing to complete an assessment.							

LOCATION INFO				Culvert #	999	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Trask River					
Township-Range-Section-1/4		T1S, R9W, Sec. 35, SW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		441421/5032051					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		C. & S. Katen and J. Deswart					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	3.8				
Material	Concrete	Upstream Gradient (%)	13.1				
Length (ft)	80	Bankfull Width (ft)	4.6				
Width (in)	24	Bankfull:Culvert Ratio	0.4				
Height (in)	24						
Outlet Perch (ft)	1.5						
Slope (%)	6.2						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes: Pipe barrel was not straight – its trajectory changed direction under the road bed.							




Lower Trask River Road Culverts, Trask River Basin




## PENINSULA AREA CULVERTS

LOCATION INFO				Culvert #	918	Priority	M
Watershed		Trask River					
Stream Name		Hatchery Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 29, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		446257/5033862					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		D. Wilks and C. Ballenger					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	9.0				
Material	Corrugated metal	Upstream Gradient (%)	12.0				
Length (ft)	50	Bankfull Width (ft)	6.2				
Width (in)	66	Bankfull:Culvert Ratio	0.9				
Height (in)	66						
Outlet Perch (ft)	~5.0						
Slope (%)	6.0						
Rustline Height (in)	12						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes: Unable to access the downstream side of the pipe. Perch height is approximate.							




Inlet




Outlet downstream


LOCATION INFO				Culvert #	892	Priority	NA
Watershed				Trask River			
Stream Name				Blue Ridge Creek			
Township-Range-Section-1/4				T1S, R8W, Sec. 21, SW¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				447004/5034087			
Road Name				Trask River Road			
Road/Culvert Owner				Tillamook County			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)	Not collected			
Material	Corrugated metal		Upstream Gradient (%)	Not collected			
Length (ft)	Not collected		Bankfull Width (ft)	Not collected			
Width (in)	Not collected		Bankfull:Culvert Ratio	Not collected			
Height (in)	Not collected		Several other crossings along this reach of the Trask River are similarly situated including 924, 941, 980, 7777, and 8888 (see map). We also designated these crossings NFC, but do not provide similar tabular information for these crossings.				
Outlet Perch (ft)	Not collected						
Slope (%)	Not collected						
Rustline Height (in)	Not collected						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.5	Habitat Points				
Habitat Quality			Habitat Quality Points				
Fish Species		Resident	Fish Points				
Barrier Class		Red	Barrier Points				
			Prioritization Total Points				
<p><b>Notes:</b> Pipe classified as NFC. Although it occurs on a designated fish stream, it was constructed on a natural bedrock waterfall that, historically, was almost certainly a barrier to anadromous fish passage. As a result, we did not consider this culvert as a barrier to fish passage, but elected to include it in this document to answer the inevitable questions that would arise in the minds of careful reviewers.</p>							



LOCATION INFO				Culvert #	889	Priority	L
Watershed				Trask River			
Stream Name				Burton Creek			
Township-Range-Section-1/4				T1S, R8W, Sec. 21, SE¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				447331/5034084			
Road Name				Trask River Road			
Road/Culvert Owner				Tillamook County			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	26.5				
Material	Corrugated metal	Upstream Gradient (%)	4.1				
Length (ft)	57	Bankfull Width (ft)	12.2				
Width (in)	90	Bankfull:Culvert Ratio	0.6				
Height (in)	90						
Outlet Perch (ft)	Unknown						
Slope (%)	5.5						
Rustline Height (in)	26						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
<p><b>Notes:</b> Pipe in extremely poor condition. Invert worn through nearly continuously from inlet to outlet, a seam was coming apart (resulting in deformation of barrel), and fill on outlet side badly eroding. Debris jamb on upstream side of culvert. Severity of fill erosion, prevented field crew from obtaining downstream channel measurements. As a result, we were unable to calculate perch height. However, the culvert did not appear to have a perched outlet. field crew observed small salmonids upstream of pipe.</p>							




**Inlet**




**Outlet** -downstream

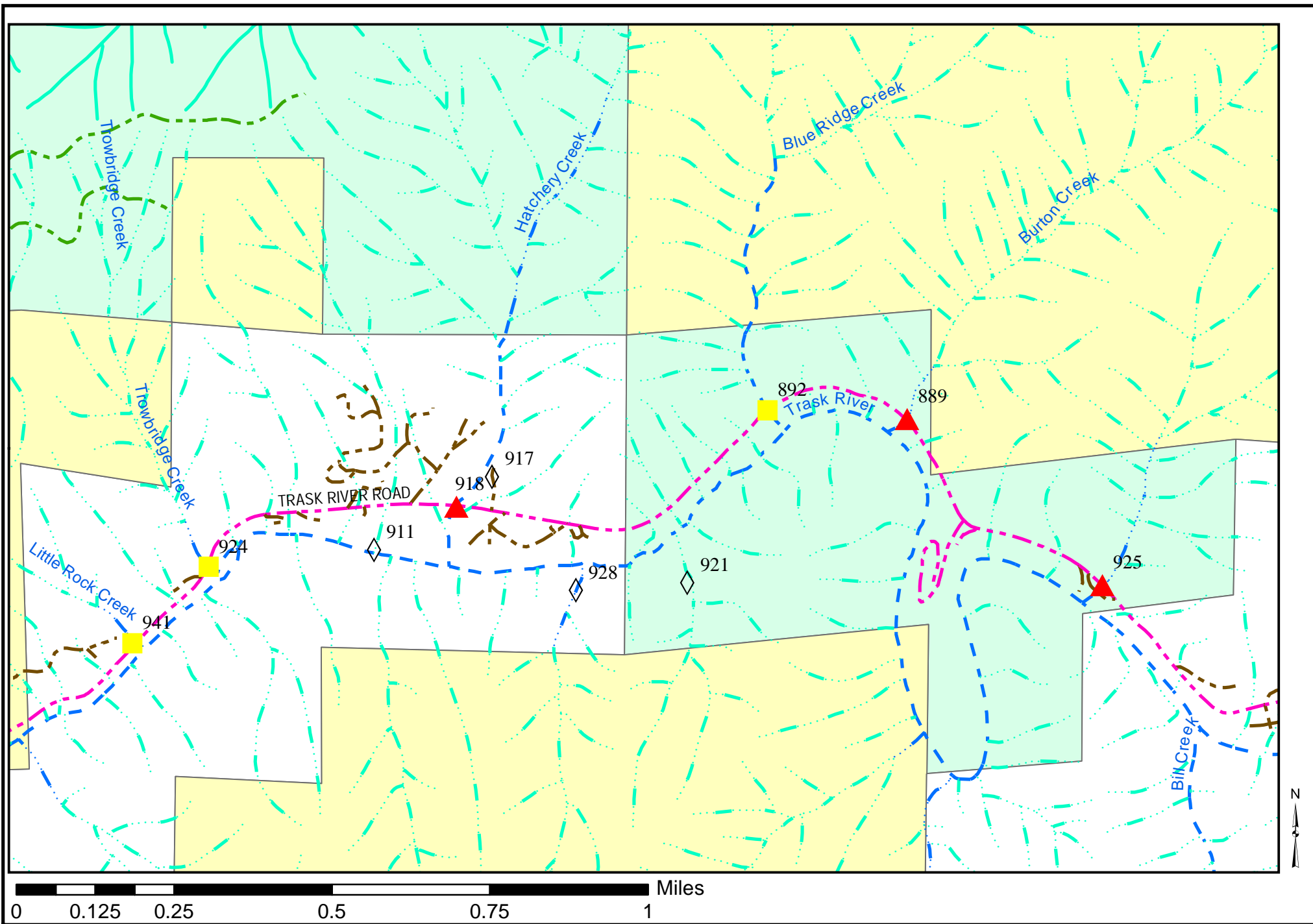
LOCATION INFO				Culvert #	925	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Trask River					
Township-Range-Section-1/4		T1S, R8W, Sec. 28, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		447854/5033645					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	19.2				
Material	Concrete	Upstream Gradient (%)	8.2				
Length (ft)	70	Bankfull Width (ft)	6.6				
Width (in)	36	Bankfull:Culvert Ratio	0.5				
Height (in)	36						
Outlet Perch (ft)	2.6						
Slope (%)	7.5						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							



Inlet




Outlet




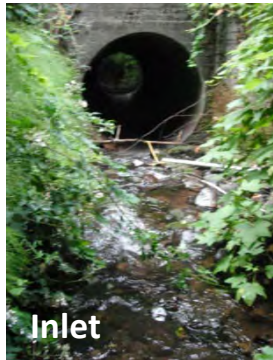
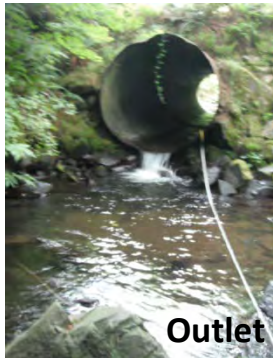
Peninsula Area Culverts, Trask River Basin





## SAMSON CREEK AND JOHNSON CREEK AREA CULVERTS


LOCATION INFO				Culvert #	907	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Trask River					
Township-Range-Section-1/4		T1S, R8W, Sec. 27, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		448996/5033853					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		J. & D. Bedford and L. Chu					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	11.0				
Material	Corrugated metal	Downstream Gradient (%)	8.0				
Length (ft)	70	Bankfull Width (ft)	8.4				
Width (in)	60	Bankfull:Culvert Ratio	0.6				
Height (in)	60	*Topography and vegetation precluded use of survey equipment to obtain longitudinal profile data.					
Outlet Perch (ft)	~0.6*						
Slope (%)	7.0						
Rustline Height (in)	29						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.6	Habitat Points				2	
Habitat Quality	Poor	Habitat Quality Points				1	
Fish Species	Anad.	Fish Points				3	
Barrier Class	Red	Barrier Points				3	
		Prioritization Total Points				9	
Notes: Multiple seams separating and beginning to deform the pipe barrel.							



LOCATION INFO				Culvert #	903	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Trask River					
Township-Range-Section-1/4		T1S, R8W, Sec. 27, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		449111/5033866					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		J. & D. Bedford, D. Stout and J. & S. Smith					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	13.8				
Material	Concrete	Upstream Gradient (%)	8.4				
Length (ft)	56	Bankfull Width (ft)	7.8				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36						
Outlet Perch (ft)	1.9						
Slope (%)	4.9						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
<b>Notes:</b> Another culvert is located several feet lateral to this pipe. It appears that that metal pipe was abandoned in place, because it looks to have been deliberately plugged and the upstream channel course appears to have been re-directed into the concrete culvert reported above.							

LOCATION INFO				Culvert #	902	Priority	H
Watershed		Trask River					
Stream Name		Samson Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 27, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		449229/5033876					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		D. & E. Kujak and H. Johnson					
CULVERT INFO		CHANNEL INFO				 	
Shape	Circular	Inlet Gradient (%)	8.5				
Material	Corrugated metal	Upstream Gradient (%)	4.3				
Length (ft)	46	Bankfull Width (ft)	10.8				
Width (in)	84	Bankfull:Culvert Ratio	0.7				
Height (in)	84						
Outlet Perch (ft)	1.1						
Slope (%)	5.5						
Rustline Height (in)	37						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.5	Habitat Points	3				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
<b>Notes:</b> Several seams beginning to separate. One has separated across the invert and has resulted in an approximately 6 inch step within the barrel of the pipe.							

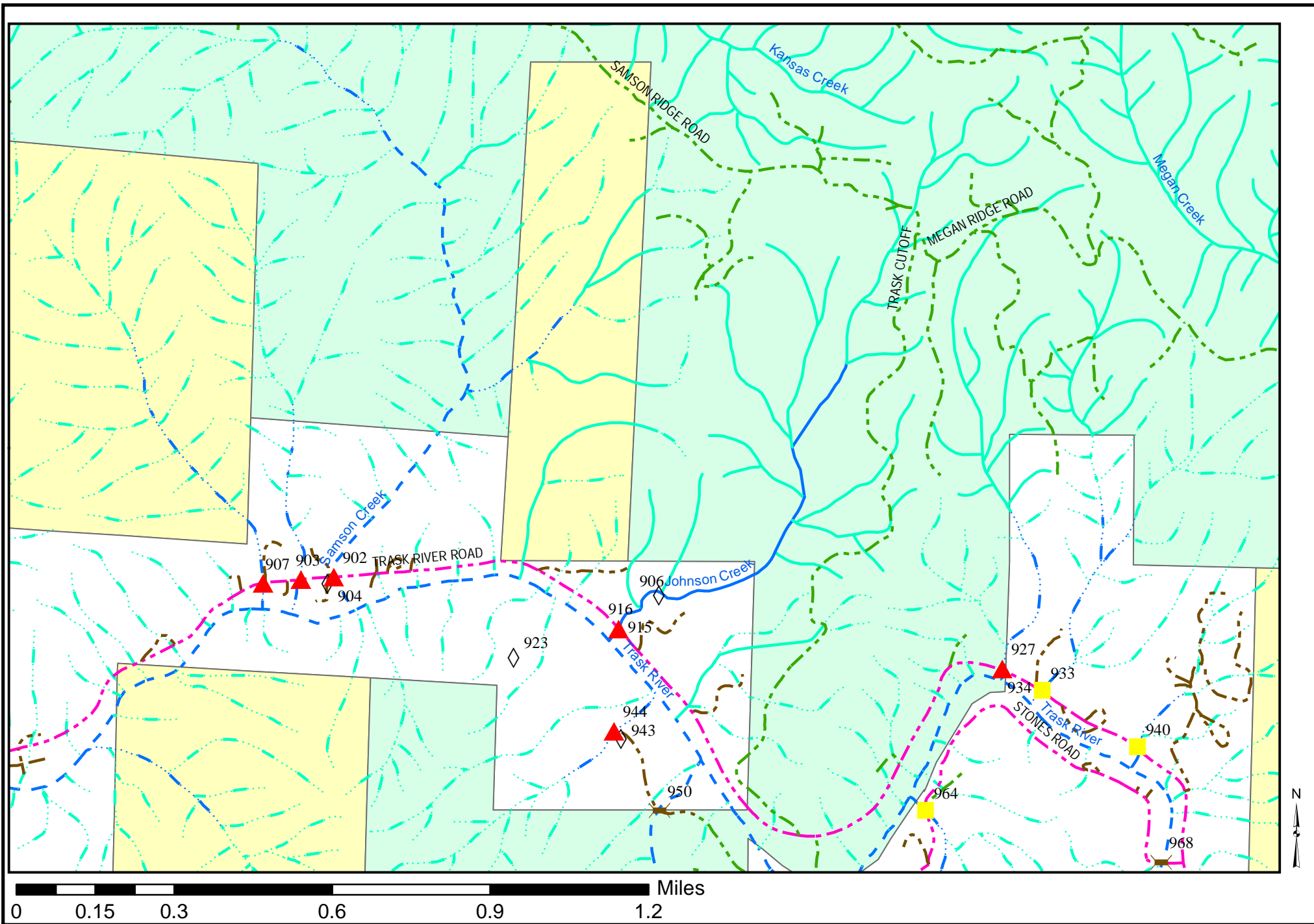
LOCATION INFO				Culvert #	915	Priority	H
Watershed		Trask River					
Stream Name		Johnson Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 26, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		450088/5033724					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Pipe arch	Inlet Gradient (%)	5.2				
Material	Corrugated metal	Upstream Gradient (%)	3.0				
Length (ft)	59	Bankfull Width (ft)	5.0				
Width (in)	91	Bankfull:Culvert Ratio	1.5				
Height (in)	68						
Outlet Perch (ft)	2.9						
Slope (%)	0.2						
Rustline Height (in)	6						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 Outlet	
Upstream Habitat Length (mi)	0.8	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
<b>Notes:</b> One seam separating, but repaired with a rubber strip. field crew noted that the strip appeared to seal the seam, but looked as if it “won’t last long.” Cascade over boulders at outlet. Culvert is appropriately sized, but apparently wasn’t sufficiently countersunk.							



LOCATION INFO				Culvert #	944	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Trask River					
Township-Range-Section-1/4		T1S, R8W, Sec. 26, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		450089/5033396					
Road Name		Private Drive					
Road/Culvert Owner		Lincoln Trust Co.					
Adjacent Landowners		Lincoln Trust Co.					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)	4.0			
Material	Plastic		Upstream Gradient (%)	11.0			
Length (ft)	30		Bankfull Width (ft)	2.5			
Width (in)	36		Bankfull:Culvert Ratio	1.2			
Height (in)	36		*Topography precluded use of surveying level to obtain longitudinal profile data.				
Outlet Perch (ft)	~3.0*						
Slope (%)	4.0						
Rustline Height (in)	N/A						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1		Habitat Points	1			
Habitat Quality	Poor		Habitat Quality Points	1			
Fish Species	Anad.		Fish Points	3			
Barrier Class	Red		Barrier Points	3			
			Prioritization Total Points	8			
Notes: Inlet perched at low flows. Pipe barrel bent under road bed.							



LOCATION INFO				Culvert #	927	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Trask River					
Township-Range-Section-1/4		T1S, R8W, Sec. 26, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		451247/5033597					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		W.H. Bess					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>   <b>Outlet</b>	
Shape	Circular	Inlet Gradient (%)	21.1				
Material	Concrete	Upstream Gradient (%)	4.7				
Length (ft)	44	Bankfull Width (ft)	4.5				
Width (in)	36	Bankfull:Culvert Ratio	0.7				
Height (in)	36						
Outlet Perch (ft)	0.6						
Slope (%)	9.2						
Rustline Height (in)	n/a						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

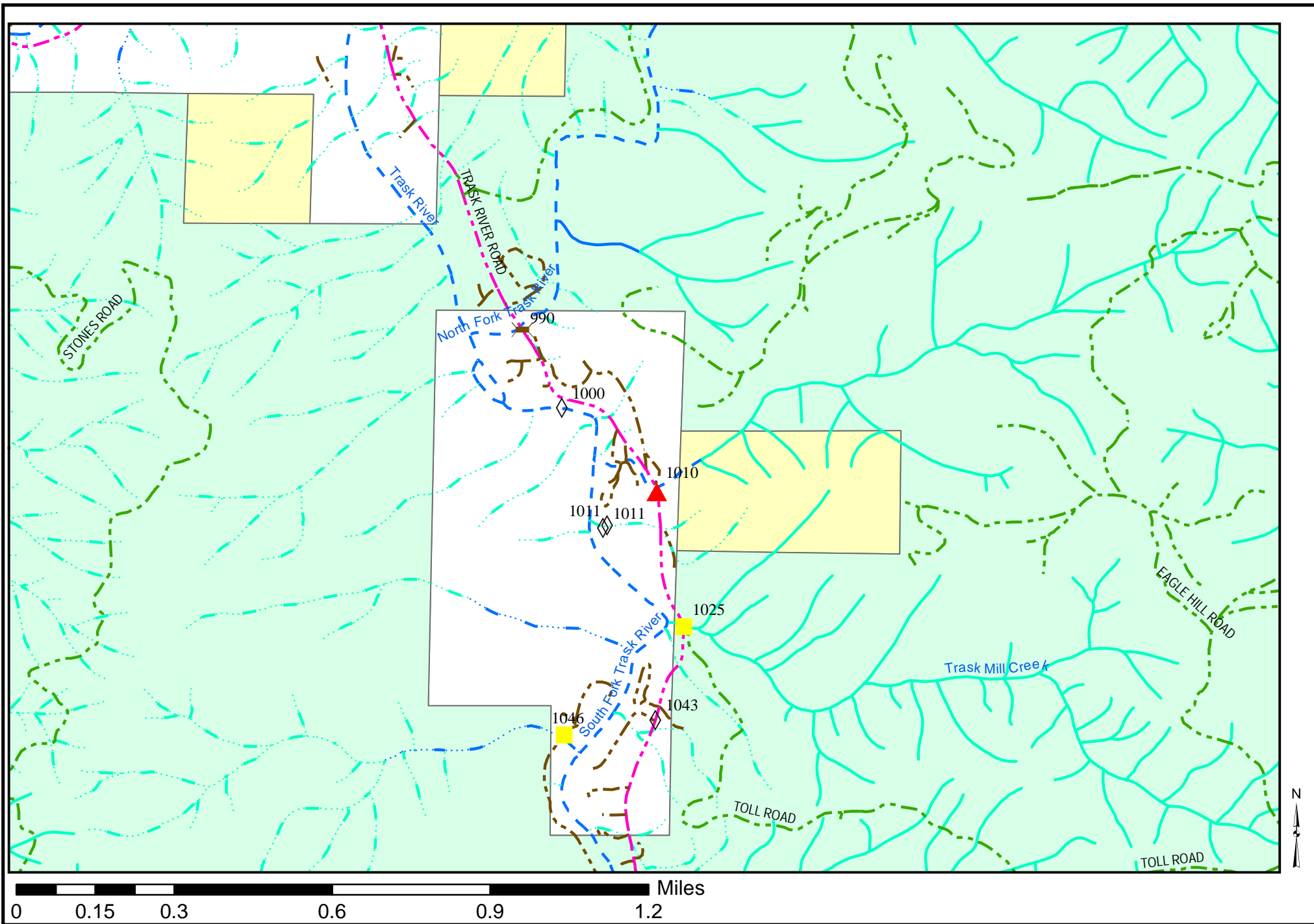




Samson Creek and Johnson Creek Area Culverts, Trask River Basin

## LOWER SOUTH FORK TRASK RIVER AREA CULVERT

LOCATION INFO				Culvert #	1010	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of S. Fork Trask River					
Township-Range-Section-1/4		T1S, R8W, Sec. 36, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		452667/5031535					
Road Name		Trask River Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		B. Green and E. Nice					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	1.8				
Material	Corrugated metal	Upstream Gradient (%)	12.5				
Length (ft)	64	Bankfull Width (ft)	9.0				
Width (in)	48	Bankfull:Culvert Ratio	0.5				
Height (in)	48						
Outlet Perch (ft)	4.5						
Slope (%)	3.0						
Rustline Height (in)	22						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
<b>Notes:</b> Invert almost entirely rusted through from inlet to outlet. Remainder of pipe also very corroded and unstable.							




Lower South Fork Trask River Area Culverts, Trask River Basin




# EDWARDS CREEK AREA CULVERT

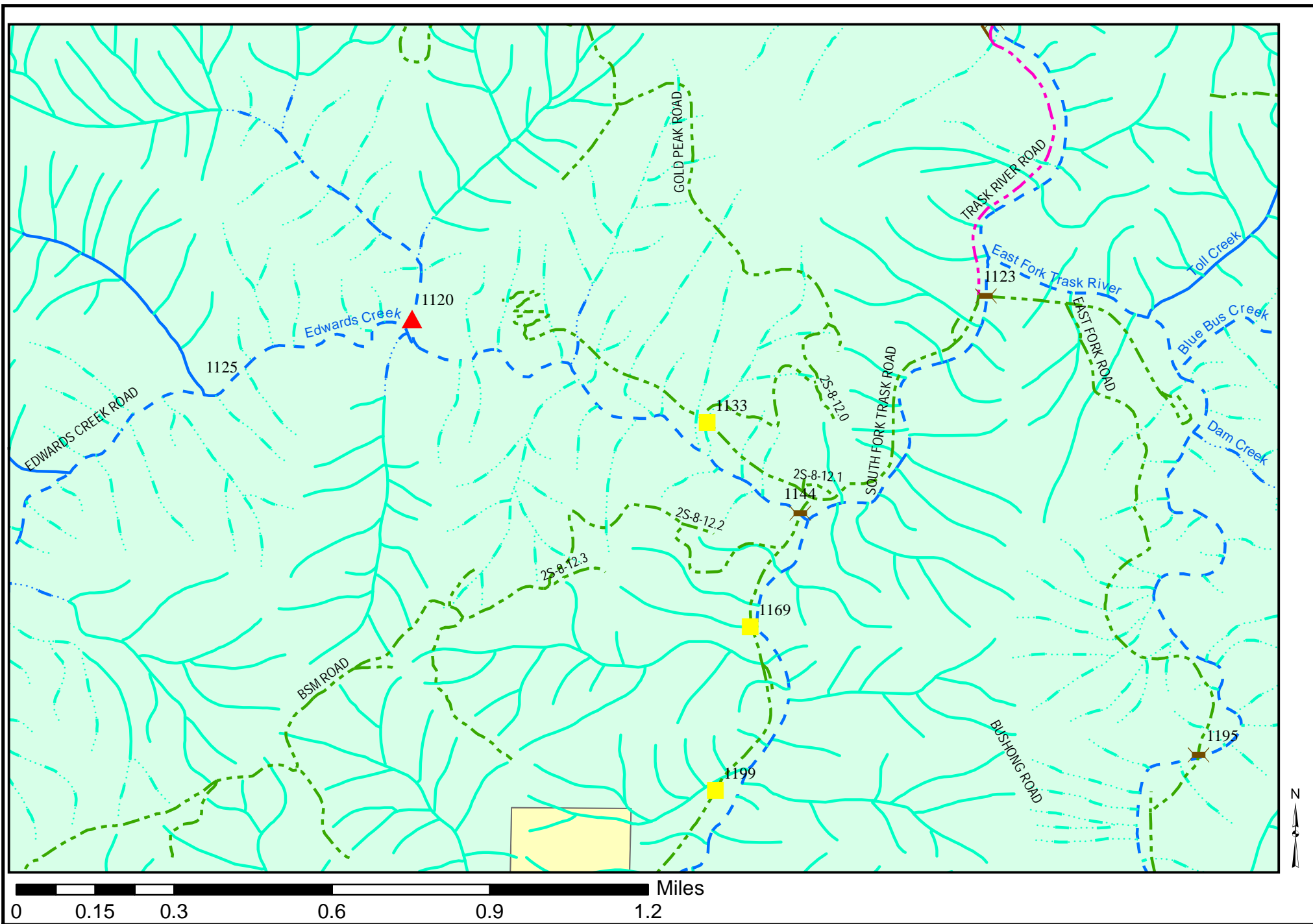
LOCATION INFO				Culvert #	1120	Priority	H
Watershed		Trask River					
Stream Name		Unnamed tributary of Edwards Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 11, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		450857/5029214					
Road Name		Edwards Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	10.4				
Material	Corrugated metal	Upstream Gradient (%)	8.9				
Length (ft)	45	Bankfull Width (ft)	10.9				
Width (in)	96	Bankfull:Culvert Ratio	0.7				
Height (in)	72						
Outlet Perch (ft)	3.8						
Slope (%)	0.1						
Rustline Height (in)	24						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.8	Habitat Points	2				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11				
<b>Notes:</b> Inlet was partially blocked by large log during summer 2011. It is our understanding that ODF intends to block this road and replace this culvert with a small bridge to facilitate foot and motorcycle traffic.							



Inlet





Outlet





Edwards Creek Area Culverts, Trask River Basin

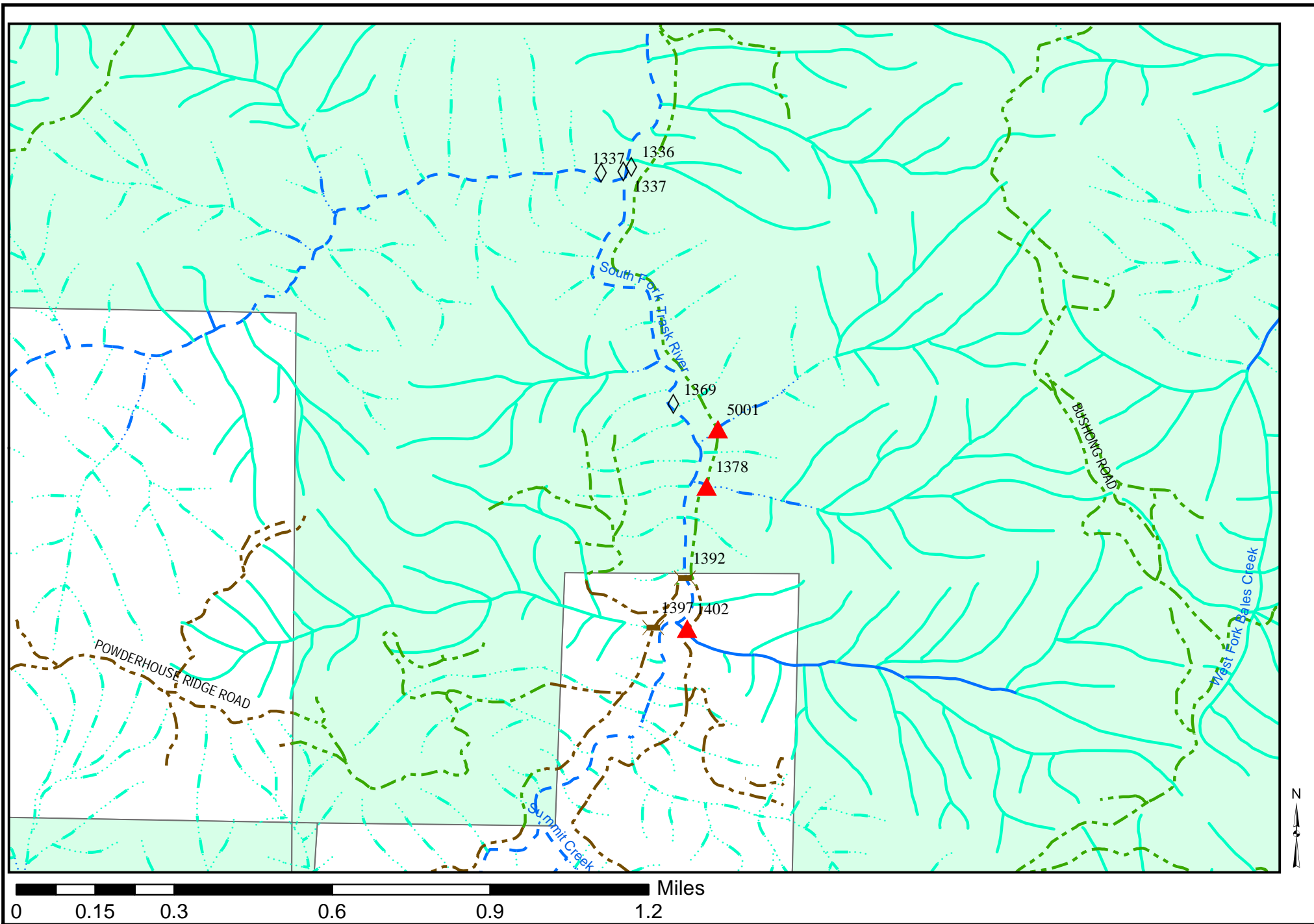
## UPPER SOUTH FORK TRASK RIVER AREA CULVERTS

LOCATION INFO				Culvert #	5001	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of South Fork Trask River					
Township-Range-Section-1/4		T2S, R8W, Sec. 25, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		452240/5024299					
Road Name		South Fork Trask Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)			14.7		
Material	Corrugated metal (SSP)	Upstream Gradient (%)			4.4		
Length (ft)	61	Bankfull Width (ft)			5.9		
Width (in)	55	Bankfull:Culvert Ratio			0.8		
Height (in)	64						
Outlet Perch (ft)	2.7						
Slope (%)	9.9						
Rustline Height (in)	18						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points			1		
Habitat Quality	Poor	Habitat Quality Points			1		
Fish Species	Anad.	Fish Points			3		
Barrier Class	Red	Barrier Points			3		
		Prioritization Total Points			8		
<b>Notes:</b> A few seams were separating causing cross-sectional deformation of pipe and allowing water to move along outside of pipe. Also the top of the portion of the pipe under the road bed was “sagging”							

LOCATION INFO				Culvert #	1378	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of South Fork Trask River					
Township-Range-Section-1/4		T2S, R8W, Sec. 25, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		452218/5024301					
Road Name		South Fork Trask Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	10.3				
Material	Corrugated metal	Upstream Gradient (%)	5.9				
Length (ft)	61	Bankfull Width (ft)	7.1				
Width (in)	56	Bankfull:Culvert Ratio	0.7				
Height (in)	56						
Outlet Perch (ft)	1.6						
Slope (%)	5.9						
Rustline Height (in)	11						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							





LOCATION INFO				Culvert #	1402	Priority	H
Watershed		Trask River		 Inlet			
Stream Name		Unnamed tributary of South Fork Trask River					
Township-Range-Section-1/4		T2S, R8W, Sec. 25, NE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		452161/5023649					
Road Name		South Fork Trask Road					
Road/Culvert Owner		Stimson Lumber Co.					
Adjacent Landowners		Stimson Lumber Co.					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	21.3	 Outlet			
Material	Corrugated metal	Upstream Gradient (%)	4.1				
Length (ft)	45	Bankfull Width (ft)	8.0				
Width (in)	48	Bankfull:Culvert Ratio	0.5				
Height (in)	48						
Outlet Perch (ft)	None						
Slope (%)	6.2						
Rustline Height (in)	16						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11				
Notes:							



Upper South Fork Trask River Area Culverts, Trask River Basin


## BALES CREEK AREA CULVERTS

LOCATION INFO				Culvert #	1448	Priority	M
Watershed			Trask River				
Stream Name			Bales Creek				
Township-Range-Section-1/4			T2S, R7W, Sec. 31, NE¼ of NE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			454053/5022706				
Road Name			East Fork Bypass Road				
Road/Culvert Owner			Oregon Department of Forestry				
Adjacent Landowners			Oregon Department of Forestry				
CULVERT INFO			CHANNEL INFO				
Shape	Pipe arch		Inlet Gradient (%)	2.5			
Material	Corrugated metal		Upstream Gradient (%)	9.1			
Length (ft)	47		Bankfull Width (ft)	8.2			
Width (in)	150		Bankfull:Culvert Ratio	1.5			
Height (in)	102						
Outlet Perch (ft)	0.3						
Slope (%)	1.2						
Rustline Height (in)	4						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0		Habitat Points	2			
Habitat Quality	Good		Habitat Quality Points	3			
Fish Species	Anad.		Fish Points	3			
Barrier Class	Gray		Barrier Points	2			
			Prioritization Total Points	10			





**Notes:** Water flowing under inlet invert. Culvert is appropriately sized, but apparently wasn't sufficiently countersunk when initially installed (which allows a portion of stream flow to run under pipe. Boulders at inlet also appear to have ability to impede passage.

LOCATION INFO				Culvert #	1453	Priority	L
Watershed		Trask River					
Stream Name		South Fork Bales Creek					
Township-Range-Section-1/4		T2S, R7W, Sec. 32, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		454482/5022650					
Road Name		Bales Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	11.8				
Material	Corrugated metal	Upstream Gradient (%)	5.8				
Length (ft)	79	Bankfull Width (ft)	8.3				
Width (in)	120	Bankfull:Culvert Ratio	1.2				
Height (in)	91						
Outlet Perch (ft)	None						
Slope (%)	1.9						
Rustline Height (in)	6						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	9				
<b>Notes:</b> Inlet substantially blocked by wood and boulders. Outlet end becoming undercut. Culvert is appropriately sized, but apparently wasn't sufficiently countersunk when initially installed.							

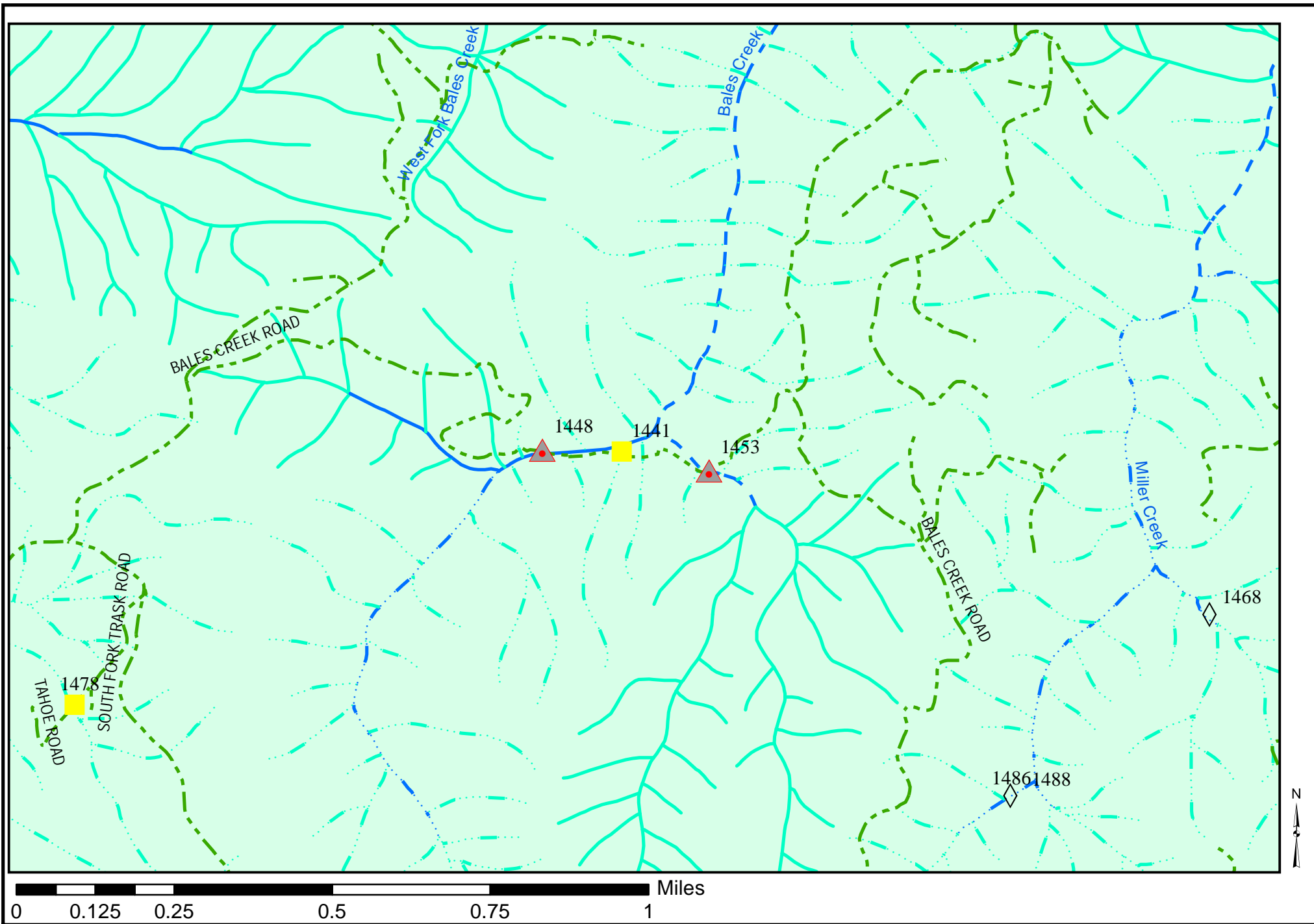


Inlet



Outlet







Bales Creek Area Culverts, Trask River Basin

## BOUNDARY CREEK AND LOWER HEADQUARTERS CAMP CREEK AREA CULVERTS

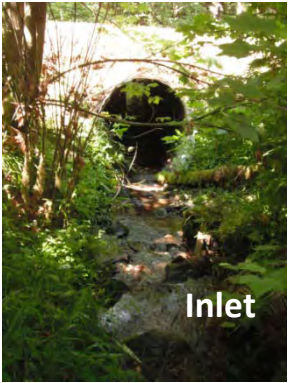

LOCATION INFO				Culvert #	1431	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Boundary Creek					
Township-Range-Section-1/4		T2S, R7W, Sec. 33, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		457106/5023017					
Road Name		East Fork Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	21.0				
Material	Corrugated metal	Upstream Gradient (%)	0.8				
Length (ft)	41	Bankfull Width (ft)	3.9				
Width (in)	36	Bankfull:Culvert Ratio	0.8				
Height (in)	36						
Outlet Perch (ft)	2.3						
Slope (%)	3.9						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Stream listed as Nonfish. However, field crew thought it looked suitable, it is low-gradient, and it is a tributary to a good-quality stream so we elected to include this pipe in our assessment.							





Inlet

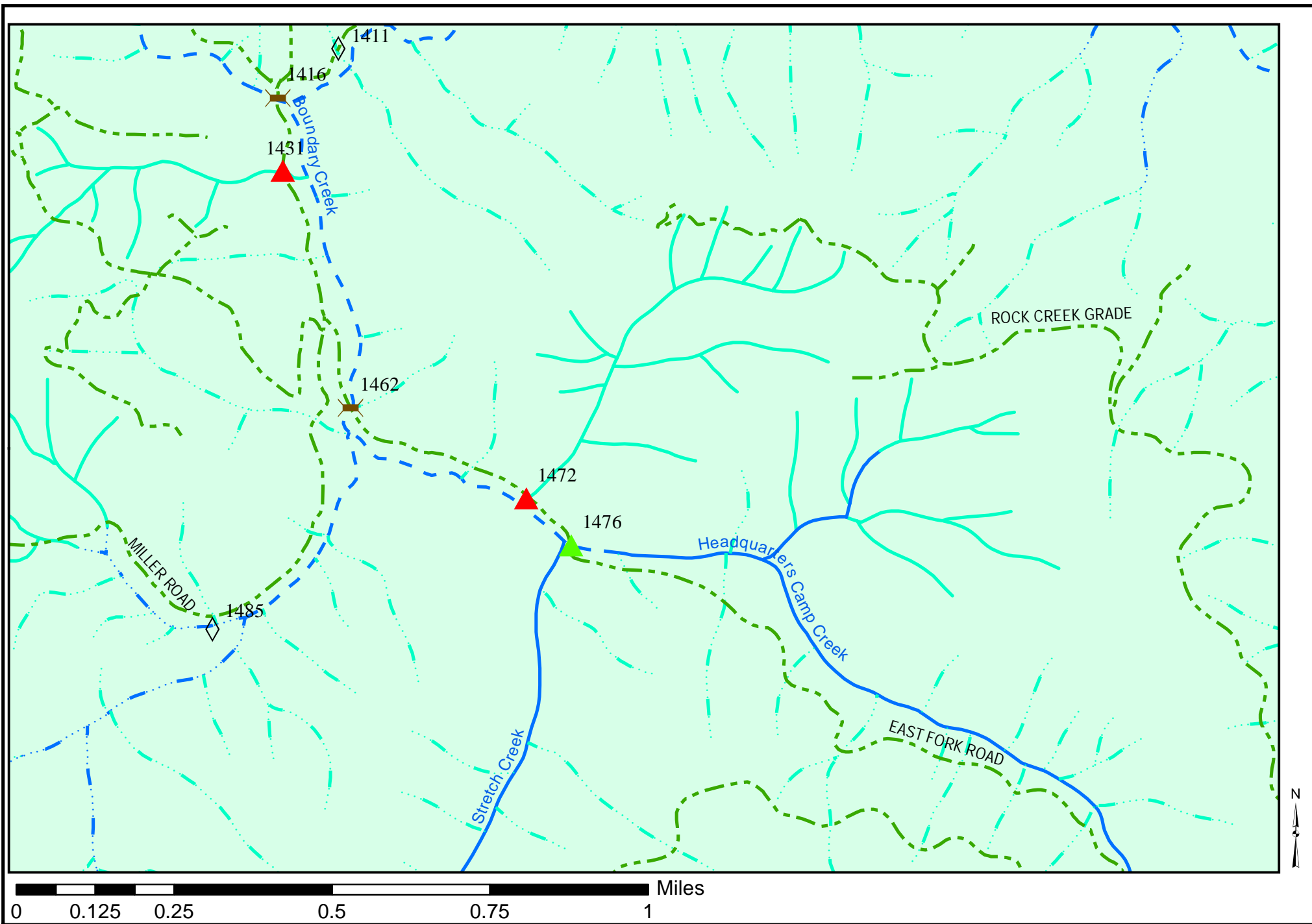


Outlet

LOCATION INFO				Culvert #	1472	Priority	L
Watershed				Trask River			
Stream Name				Unnamed tributary of Headquarters Camp Creek			
Township-Range-Section-1/4				T2S, R7W, Sec. 34, NE¼ of NW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				457721/5022175			
Road Name				East Fork Road			
Road/Culvert Owner				Oregon Department of Forestry			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	1.3				
Material	Corrugated metal	Upstream Gradient (%)	3.6				
Length (ft)	50	Bankfull Width (ft)	4.9				
Width (in)	54	Bankfull:Culvert Ratio	0.9				
Height (in)	54						
Outlet Perch (ft)	2.3						
Slope (%)	2.3						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Stream listed as Nonfish. However, field crew thought it looked suitable, it is low-gradient, it has a moderate intrinsic potential rating, and it is a tributary to a good-quality stream so we elected to include this pipe in our assessment.							





LOCATION INFO				Culvert #	1476	Priority	NA
Watershed		Trask River					
Stream Name		Headquarters Camp Creek					
Township-Range-Section-1/4		T2S, R7W, Sec. 34, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		457836/5022036					
Road Name		East Fork Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Open bottomed arch	Inlet Gradient (%)	27.2				
Material	Corrugated metal	Upstream Gradient (%)	5.5				
Length (ft)	50	Bankfull Width (ft)	9.1				
Width (in)	114	Bankfull:Culvert Ratio	1.0				
Height (in)	48						
Outlet Perch (ft)	None						
Slope (%)	0						
Rustline Height (in)	30						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.6	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	11				
Notes: Extensive pooling on both side of pipe.							



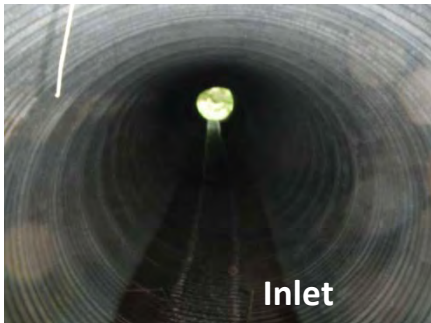


Boundary Creek and Lower Headquarters Camp Creek Area Culverts, Trask River Basin


## UPPER HEADQUARTERS CAMP CREEK AREA CULVERTS

LOCATION INFO				Culvert #	1516	Priority	L
Watershed		Trask River					
Stream Name		Headquarters Camp Creek					
Township-Range-Section-1/4		T3S, R7W, Sec. 2, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		459354/5021000					
Road Name		East Fork Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	21.1				
Material	Corrugated metal	Upstream Gradient (%)	10.4				
Length (ft)	33	Bankfull Width (ft)	7.6				
Width (in)	48	Bankfull:Culvert Ratio	0.5				
Height (in)	48						
Outlet Perch (ft)	1.2						
Slope (%)	2.2						
Rustline Height (in)	24						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							



LOCATION INFO				Culvert #	1520	Priority	L
Watershed		Trask River					
Stream Name		Headquarters Camp Creek					
Township-Range-Section-1/4		T3S, R7W, Sec. 2, NW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		459744/5020580					
Road Name		Headquarters Grade					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)	50.0			
Material	Corrugated metal		Upstream Gradient (%)	6.2			
Length (ft)	90		Bankfull Width (ft)	3.8			
Width (in)	78		Bankfull:Culvert Ratio	1.7			
Height (in)	78						
Outlet Perch (ft)	2.0						
Slope (%)	3.7						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4		Habitat Points	1			
Habitat Quality	Poor		Habitat Quality Points	1			
Fish Species	Anad.		Fish Points	3			
Barrier Class	Red		Barrier Points	3			
			Prioritization Total Points	8			
<b>Notes:</b> Above this culvert stream listed as Nonfish. However, field crew thought it looked suitable, the stream has suitable gradient for fish use and it is mapped as suitable for coho spawning. As a result, we included this pipe in our assessment.							



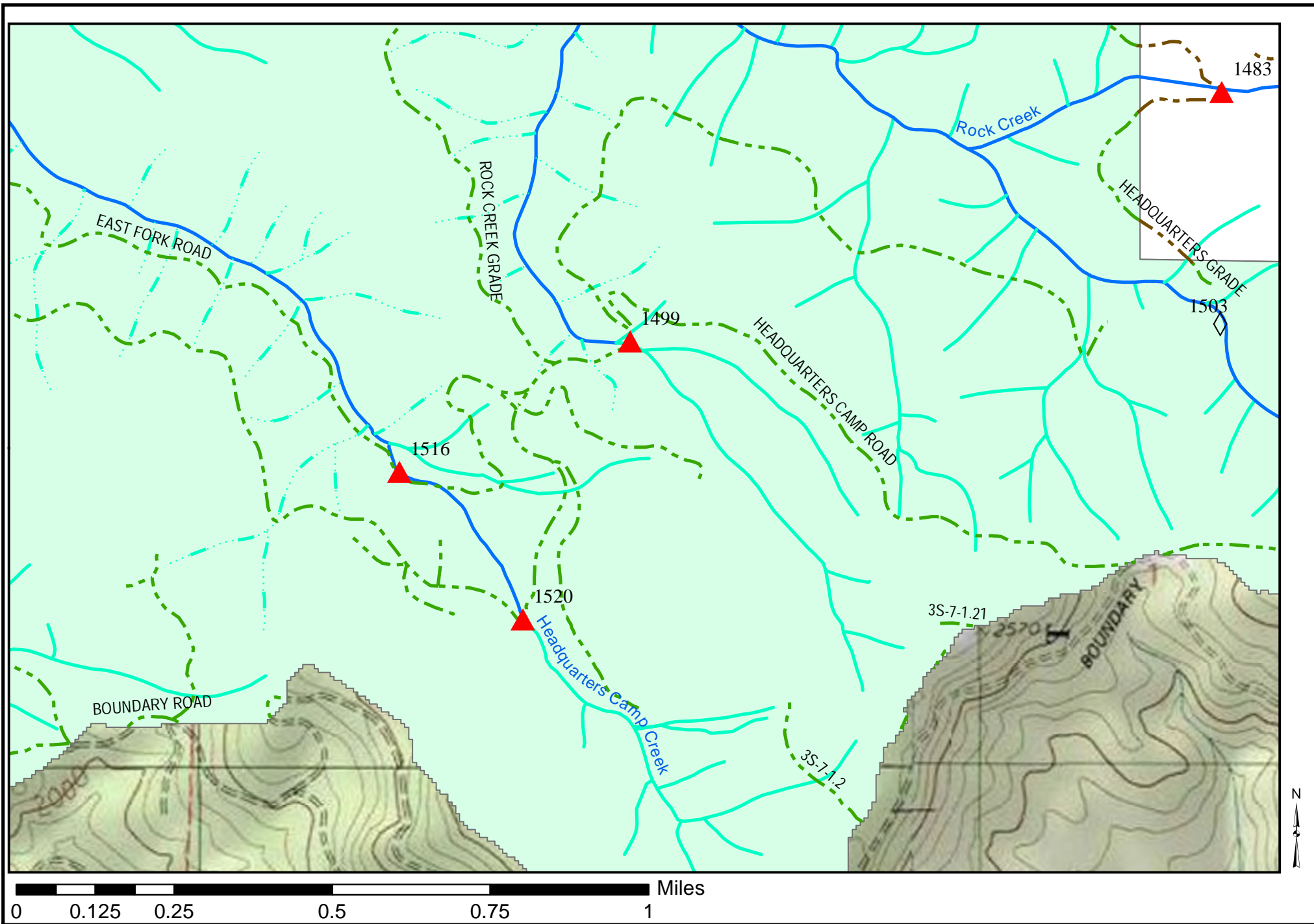
Inlet



Outlet - downstream



LOCATION INFO				Culvert #	1499	Priority	L	
Watershed		Trask River						
Stream Name		South Fork Rock Creek						
Township-Range-Section-1/4		T3S, R7W, Sec. 2, NW¼ of NE¼						
UTM Easting/Northing (Zone 10, NAD 1983)		460004/5021270						
Road Name		Headquarters Grade						
Road/Culvert Owner		Oregon Department of Forestry						
Adjacent Landowners		Oregon Department of Forestry						
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>		
Shape	Circular	Inlet Gradient (%)						7.5
Material	Corrugated metal	Upstream Gradient (%)						0.5
Length (ft)	67	Bankfull Width (ft)						4.9
Width (in)	36	Bankfull:Culvert Ratio						0.6
Height (in)	36							
Outlet Perch (ft)	6.6							
Slope (%)	1.4							
Rustline Height (in)	20							
Overall Condition	Poor							
PRIORITIZATION ANALYSIS								
Upstream Habitat Length (mi)	0.1	Habitat Points				1	 <b>Outlet</b>	
Habitat Quality	Poor	Habitat Quality Points				1		
Fish Species	Anad.	Fish Points				3		
Barrier Class	Red	Barrier Points				3		
		Prioritization Total Points				8		
<b>Notes:</b> Above this culvert stream listed as Nonfish. However, field crew thought it looked suitable in the field and the reach is low-gradient. As a result, we included this pipe in our assessment.								


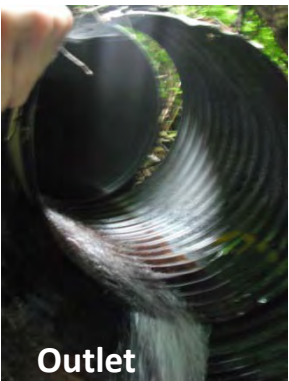




Upper Headquarters Camp Creek Area Culverts, Trask River Basin

# EAST FORK TRASK RIVER AND ROCK CREEK AREA CULVERTS

LOCATION INFO				Culvert #	1483	Priority	L
Watershed				Trask River			
Stream Name				Rock Creek			
Township-Range-Section-1/4				T2S, R7W, Sec. 36, NW¼ of SE¼			
UTM Easting/Northing (Zone 10, NAD 1983)				461513/5021915			
Road Name				Headquarters Grade			
Road/Culvert Owner				Weyerhaeuser Company			
Adjacent Landowners				Weyerhaeuser Company			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	21.9				
Material	Corrugated metal	Upstream Gradient (%)	3.4				
Length (ft)	32	Bankfull Width (ft)	8.5				
Width (in)	30	Bankfull:Culvert Ratio	0.3				
Height (in)	30						
Outlet Perch (ft)	None						
Slope (%)	5.7						
Rustline Height (in)	entirely rusted						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0	Habitat Points	2				
Habitat Quality	Poor(+)	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							

LOCATION INFO				Culvert #	1487	Priority	L
Watershed				Trask River			
Stream Name				Rock Creek			
Township-Range-Section-1/4				T2S, R6W, Sec. 31, NE¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				462517/5021876			
Road Name				Unnamed private road			
Road/Culvert Owner				Weyerhaeuser Company			
Adjacent Landowners				Weyerhaeuser Company			
CULVERT INFO		CHANNEL INFO		 <b>Inlet</b>			
Shape	Circular	Inlet Gradient (%)	4.0				
Material	Corrugated metal	Upstream Gradient (%)	12.5				
Length (ft)	55	Bankfull Width (ft)	3.4				
Width (in)	30	Bankfull:Culvert Ratio	0.9				
Height (in)	30	Topography and obstructions precluded the use of surveying equipment to obtain longitudinal profile data.					
Outlet Perch (ft)	1.0 to 1.5						
Slope (%)	5.0						
Rustline Height (in)	13						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1	 <b>Outlet</b>			
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				

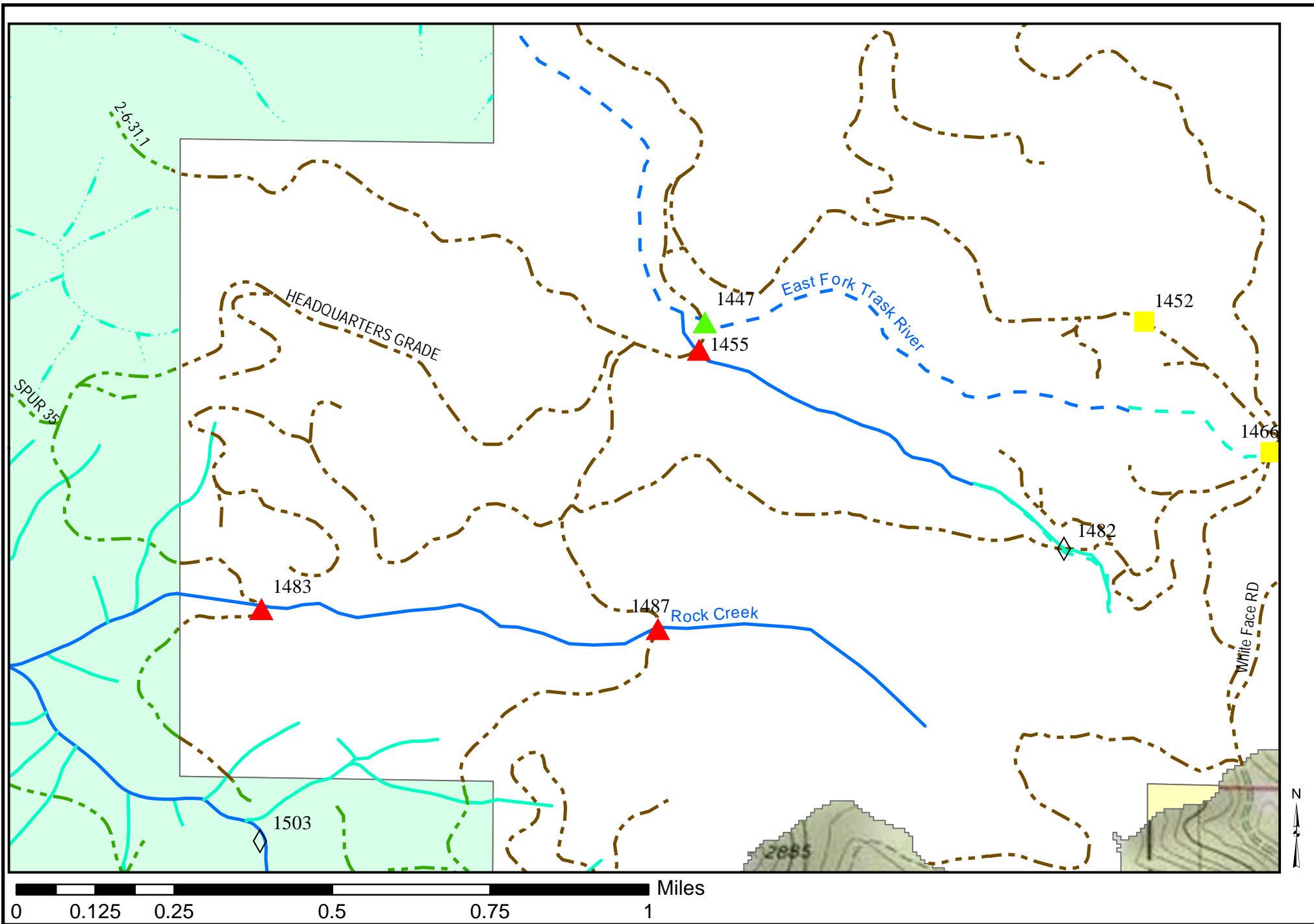
**Notes:** At outlet, an ~3' section of pipe was detached from the pipe barrel at the top but remained attached at the invert. This segment was angled down towards the stream channel. Water cascaded approximately 6" from the outlet of this segment onto an ~12' long chute constructed of half-round corrugated pipe. Water flowed down this chute and into the stream channel. The end of this chute was perched above the stream channel by 6-12". The configuration resulted in the outlet being perched a total of 12 to 18". In addition, there was an in-channel water measuring device a short distance upstream of this culvert that also created a 6-12" step at its outlet.

Outlet





**Outlet**

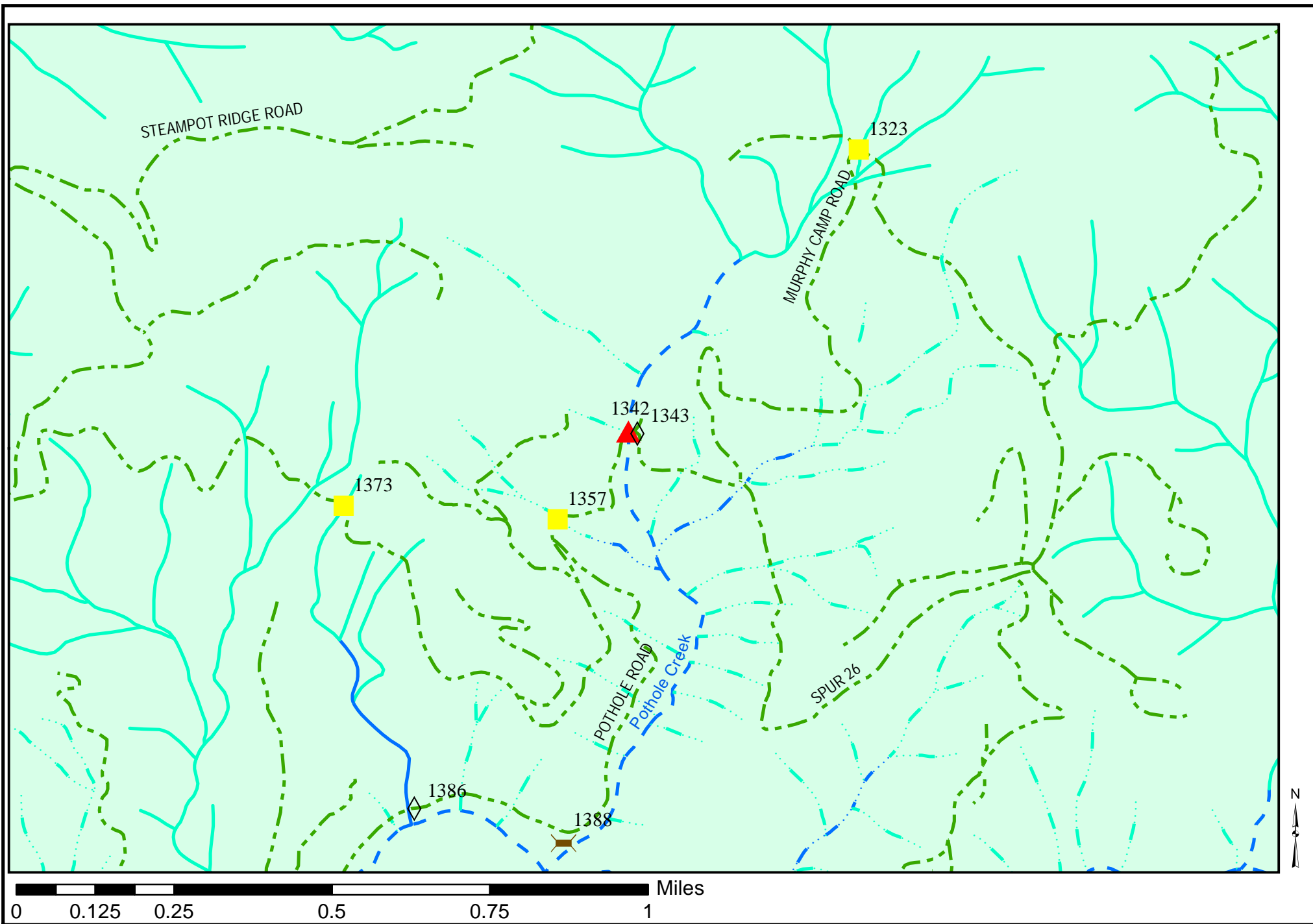




East Fork Trask River and Rock Creek Area Culverts, Trask River Basin

# POTHOLE CREEK CULVERT

LOCATION INFO				Culvert #	1342	Priority	H
Watershed		Trask River		 <p style="font-weight: bold; font-size: 1.2em;">Inlet</p>			
Stream Name		Pothole Creek					
Township-Range-Section-1/4		T1S, R7W, Sec. 23, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		459224/5024799					
Road Name		Murphy Camp Road					
Road/Culvert Owner		Oregon Department of Forestry		 <p style="font-weight: bold; font-size: 1.2em;">Outlet</p>			
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	11.5				
Material	steel lined with plastic	Upstream Gradient (%)	5.1				
Length (ft)	53	Bankfull Width (ft)	9.3				
Width (in)	60	Bankfull:Culvert Ratio	0.5				
Height (in)	60						
Outlet Perch (ft)	1.3						
Slope (%)	6.6						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	2				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11				
Notes:							




Pothole Creek Area Culverts, Trask River Basin

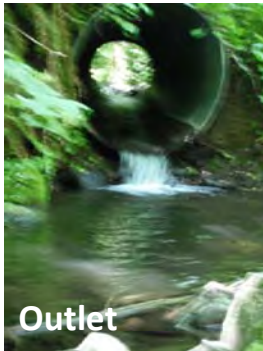


# BARK SHANTY CREEK AREA CULVERT

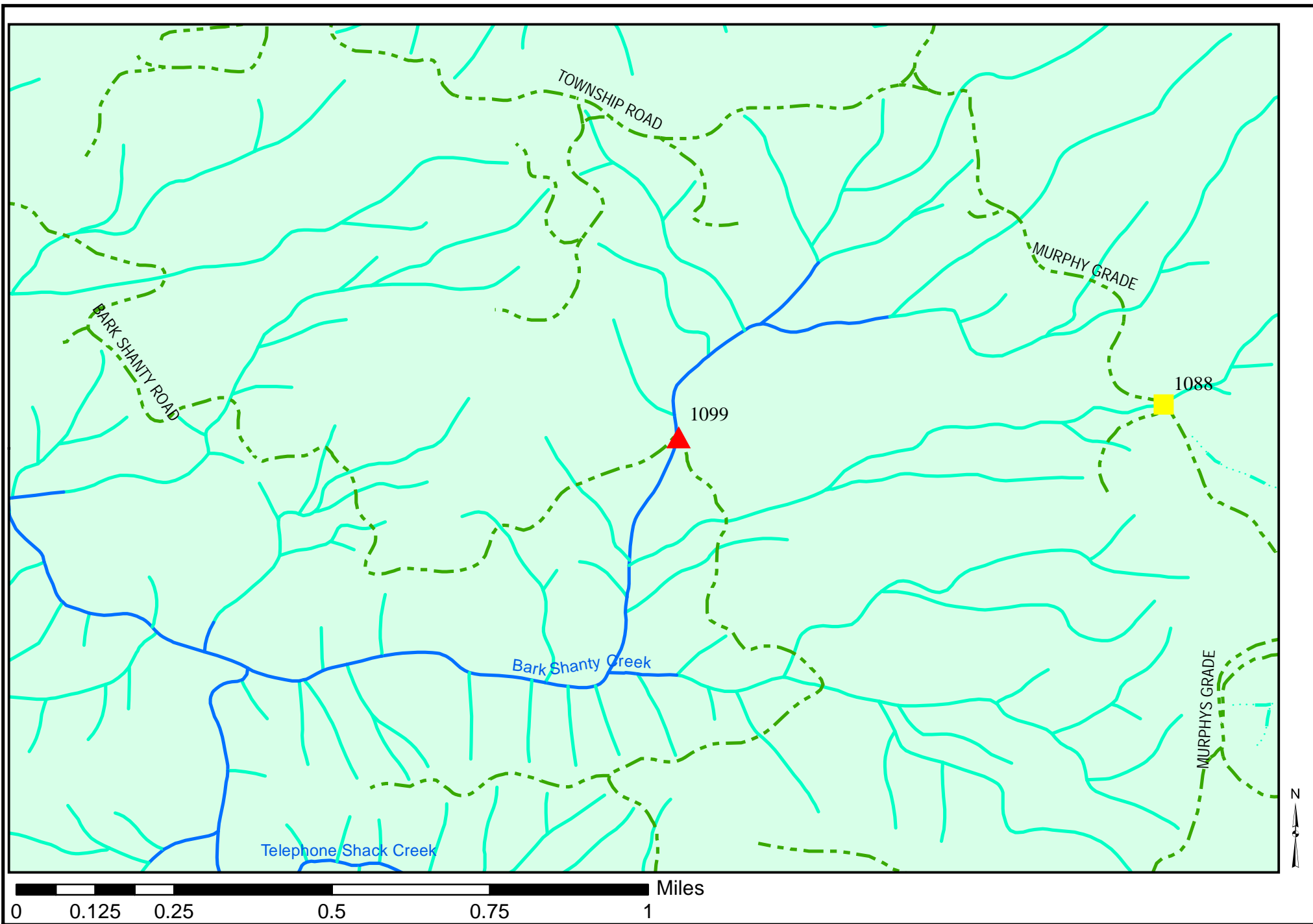
LOCATION INFO				Culvert #	1099	Priority	H
Watershed			Trask River				
Stream Name			Unnamed tributary to Bark Shanty Creek				
Township-Range-Section-1/4			T2S, R7W, Sec. 3, NE¼ of SE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			458843/5029888				
Road Name			Bark Shanty Road				
Road/Culvert Owner			Oregon Department of Forestry				
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)		17.5		
Material	Corrugated metal		Upstream Gradient (%)		9.5		
Length (ft)	40		Bankfull Width (ft)		11.6		
Width (in)	66		Bankfull:Culvert Ratio		0.5		
Height (in)	66						
Outlet Perch (ft)	1.4						
Slope (%)	9.2						
Rustline Height (in)	19						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.6	Habitat Points		2		
Habitat Quality		Fair	Habitat Quality Points		2		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		10		
Notes:							



Inlet




Outlet




Bark Shanty Creek Area Culverts, Trask River Basin

# CRUISER CREEK AREA CULVERTS

LOCATION INFO				Culvert #	1058	Priority	NA
Watershed		Trask River					
Stream Name		Unnamed tributary of July Creek					
Township-Range-Section-1/4		T2S, R6W, Sec. 6, SW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		462266/5030364					
Road Name		Cruiser Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	8.0				
Material	Corrugated metal	Upstream Gradient (%)	7.0				
Length (ft)	78	Bankfull Width (ft)	10.5				
Width (in)	126	Bankfull:Culvert Ratio	1.0				
Height (in)	84	An active wasp nest at inlet precluded use of survey equipment to collect longitudinal profile data.					
Outlet Perch (ft)	None						
Slope (%)	3.0						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.3	Habitat Points	3				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	10				
Notes:							




Inlet




Outlet

LOCATION INFO				Culvert #	1060	Priority	NA
Watershed			Trask River				
Stream Name		July Creek					
Township-Range-Section-1/4			T2S, R6W, Sec. 6, SW¼ of NW¼				
UTM Easting/Northing (Zone 10, NAD 1983)			462101/5030429				
Road Name			Cruiser Creek Road				
Road/Culvert Owner			Oregon Department of Forestry				
Adjacent Landowners			Oregon Department of Forestry				
CULVERT INFO			CHANNEL INFO				
Shape	Pipe arch		Inlet Gradient (%)	3.8			
Material	Corrugated metal		Upstream Gradient (%)	7.6			
Length (ft)	51		Bankfull Width (ft)	6.2			
Width (in)	120		Bankfull:Culvert Ratio	1.6			
Height (in)	78						
Outlet Perch (ft)	None						
Slope (%)	7.3						
Rustline Height (in)	None						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.4	Habitat Points	1			
Habitat Quality		Fair	Habitat Quality Points	2			
Fish Species		Anad.	Fish Points	3			
Barrier Class		Green	Barrier Points	1			
			Prioritization Total Points	7			
Notes:							







Inlet



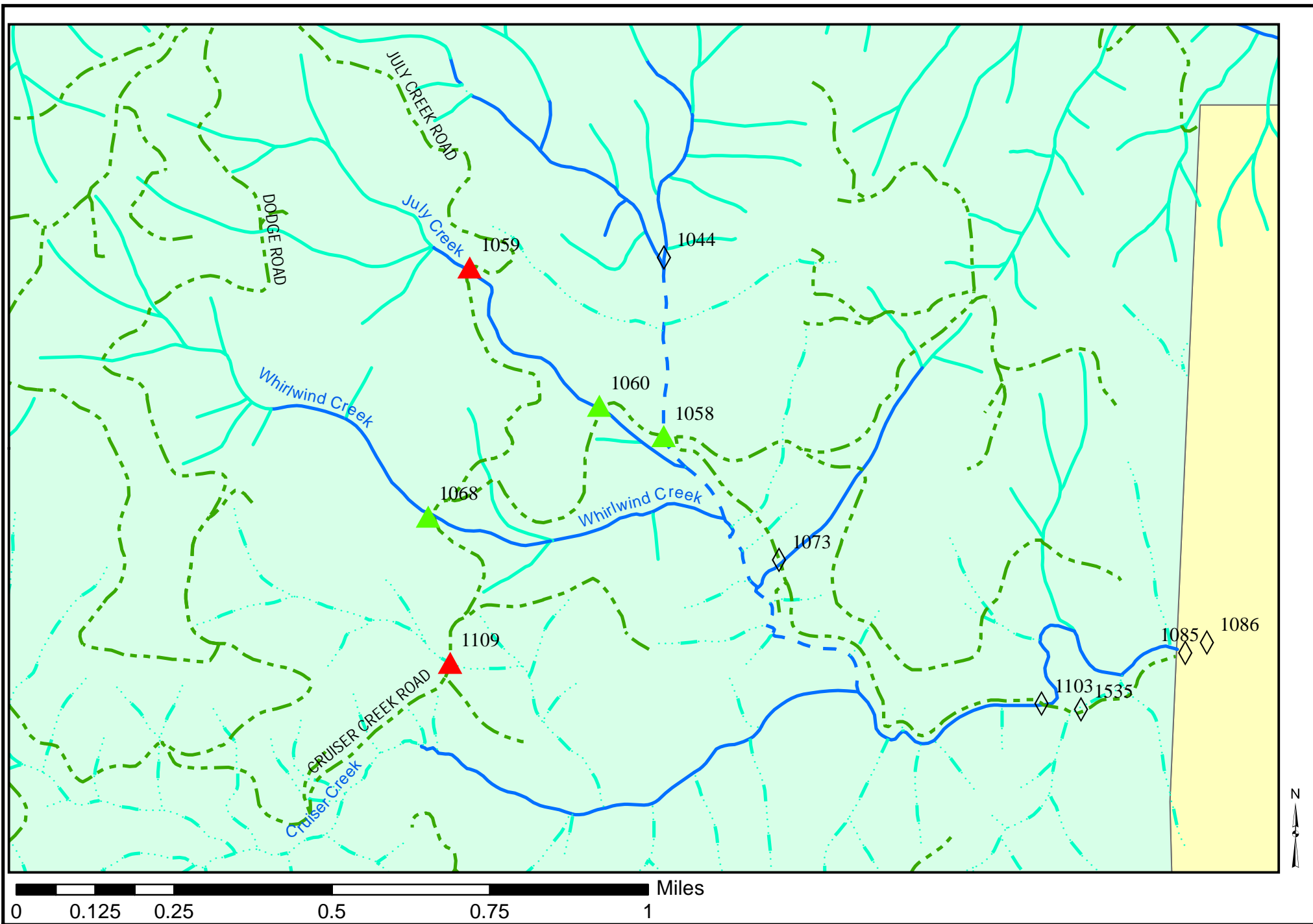
Outlet



LOCATION INFO				Culvert #	1059	Priority	L
Watershed		Trask River					
Stream Name		July Creek					
Township-Range-Section-1/4		T2S, R7W, Sec. 1, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		461780/5030780					
Road Name		July Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)			28.3		
Material	Corrugated metal	Upstream Gradient (%)			4.0		
Length (ft)	72	Bankfull Width (ft)			4.3		
Width (in)	50	Bankfull:Culvert Ratio			1.0		
Height (in)	50						
Outlet Perch (ft)	4.3						
Slope (%)	6.4						
Rustline Height (in)	14						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points			1		
Habitat Quality	Poor	Habitat Quality Points			1		
Fish Species	Anad.	Fish Points			3		
Barrier Class	Red	Barrier Points			3		
		Prioritization Total Points			8		
Notes: Stream channel dry during summer 2011 survey effort.							

LOCATION INFO				Culvert #	1068	Priority	NA
Watershed		Trask River					
Stream Name		Whirlwind Creek					
Township-Range-Section-1/4		T2S, R7W, Sec. 1, NE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		461662/5030154					
Road Name		Cruiser Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	7.7				
Material	Corrugated metal	Upstream Gradient (%)	1.8				
Length (ft)	43	Bankfull Width (ft)	4.9				
Width (in)	120	Bankfull:Culvert Ratio	2.0				
Height (in)	84						
Outlet Perch (ft)	None						
Slope (%)	3.1						
Rustline Height (in)	None						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	7				
Notes:							



LOCATION INFO				Culvert #	1109	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Cruiser Creek					
Township-Range-Section-1/4		T2S, R7W, Sec. 1, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		461704/5029778					
Road Name		Cruiser Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	4.9				
Material	Corrugated metal	Upstream Gradient (%)	4.9				
Length (ft)	44	Bankfull Width (ft)	5.9				
Width (in)	48	Bankfull:Culvert Ratio	0.7				
Height (in)	48						
Outlet Perch (ft)	None						
Slope (%)	4.6						
Rustline Height (in)	22						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
<b>Notes:</b> This crossing was located on a stream designated as Nonfish-modeled. However, because this stream is a tributary of Cruiser Creek, one of the more productive coho streams in the Trask Basin, we elected to include this culvert in this report. There are bedrock falls that appear to limit the distribution of coho on Cruiser Creek. However, based on GIS data it is unclear to us exactly where this tributary lies relative to these falls. Habitat quality was based primarily on stream gradient, bankfull width, and intrinsic potential modeling.							

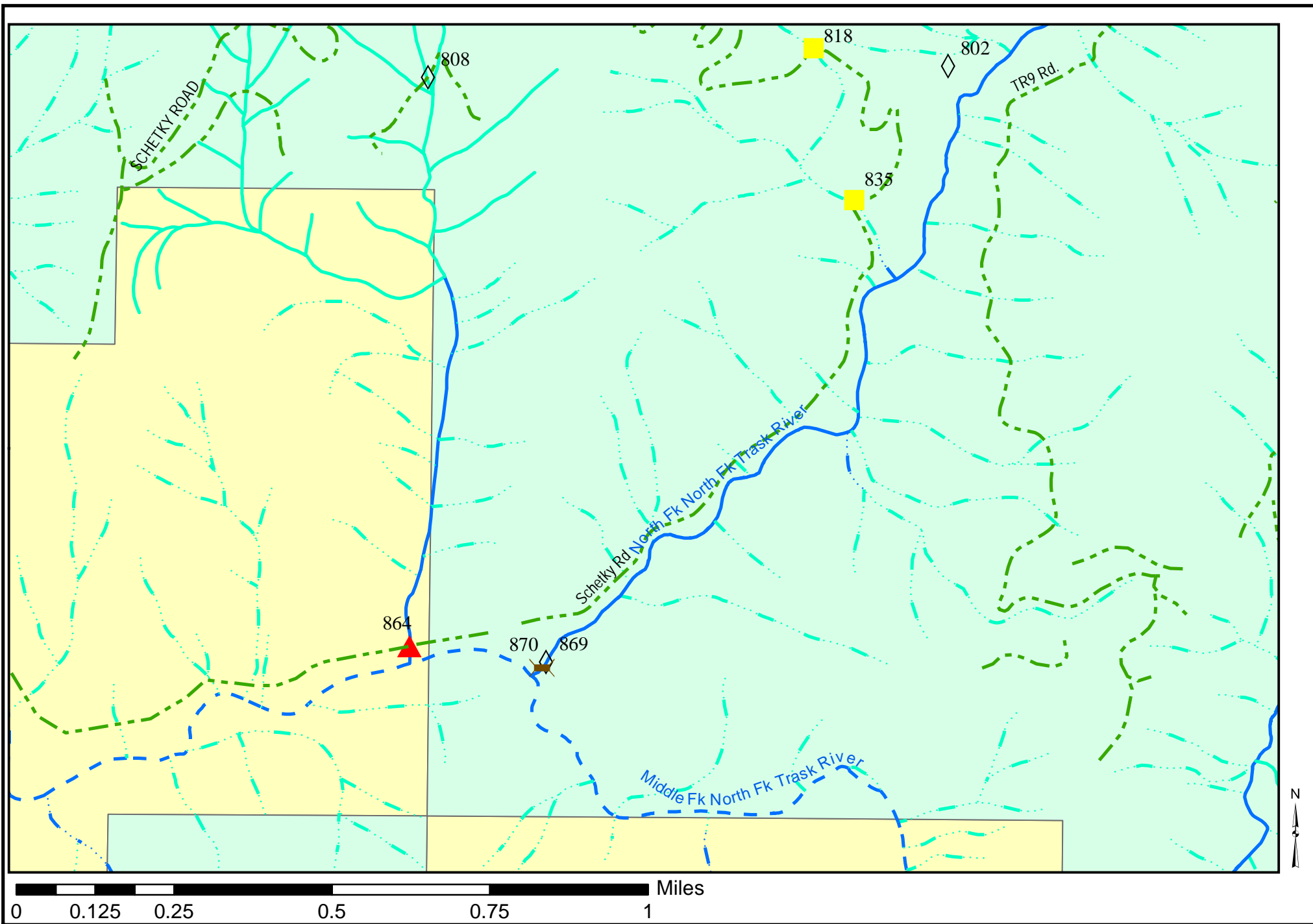


Cruiser Creek Area Culverts, Trask River Basin



# UPPER NORTH FORK TRASK RIVER AREA CULVERT

LOCATION INFO				Culvert #	864	Priority	M
Watershed		Trask River					
Stream Name		Unnamed tributary of North Fork Trask River					
Township-Range-Section-1/4		T1S, R6W, Sec. 19, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		463625/5034818					
Road Name		North Fork Trask River Road					
Road/Culvert Owner		US Bureau of Land Management					
Adjacent Landowners		US Bureau of Land Management					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	6.6				
Material	Corrugated metal	Upstream Gradient (%)	6.4				
Length (ft)	60	Bankfull Width (ft)	11.9				
Width (in)	90	Bankfull:Culvert Ratio	0.7				
Height (in)	90						
Outlet Perch (ft)	2.4						
Slope (%)	8.4						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.6	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes:							




Upper North Fork Trask River Area Culverts, Trask River Basin


## UPPER MIDDLE FORK NORTH FORK TRASK RIVER AREA CULVERTS

LOCATION INFO				Culvert #	962	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Middle Fork North Fork Trask River					
Township-Range-Section-1/4		T1S, R6W, Sec. 27, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		468476/5033151					
Road Name		Reimer Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)	3.0			
Material	Corrugated metal		Upstream Gradient (%)	3.5			
Length (ft)	57		Bankfull Width (ft)	2.5			
Width (in)	30		Bankfull:Culvert Ratio	1.0			
Height (in)	30						
Outlet Perch (ft)	9.5						
Slope (%)	6.4						
Rustline Height (in)	18						
Overall Condition	Very Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2		Habitat Points	1			
Habitat Quality	Poor		Habitat Quality Points	1			
Fish Species	Anad.		Fish Points	3			
Barrier Class	Red		Barrier Points	3			
			Prioritization Total Points	8			
<b>Notes:</b> Invert was worn completely through for a substantial length of the pipe. Also, the inlet was partially blocked with debris and badly damaged.							

LOCATION INFO				Culvert #	965	Priority	L
Watershed				Trask River			
Stream Name				Unnamed tributary of Middle Fork North Fork Trask River			
Township-Range-Section-1/4				T1S, R6W, Sec. 26, SW¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				468598/5032837			
Road Name				Unnamed Forest Road (ODF ID = REIMO25B)			
Road/Culvert Owner				Oregon Department of Forestry			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	9.0				
Material	Corrugated metal	Upstream Gradient (%)	7.5				
Length (ft)	60	Bankfull Width (ft)	6.5				
Width (in)	36	Bankfull:Culvert Ratio	0.5				
Height (in)	36	Topography precluded use of surveying equipment to collect longitudinal profile data.					
Outlet Perch (ft)	~6.0						
Slope (%)	5.0						
Rustline Height (in)	18						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							

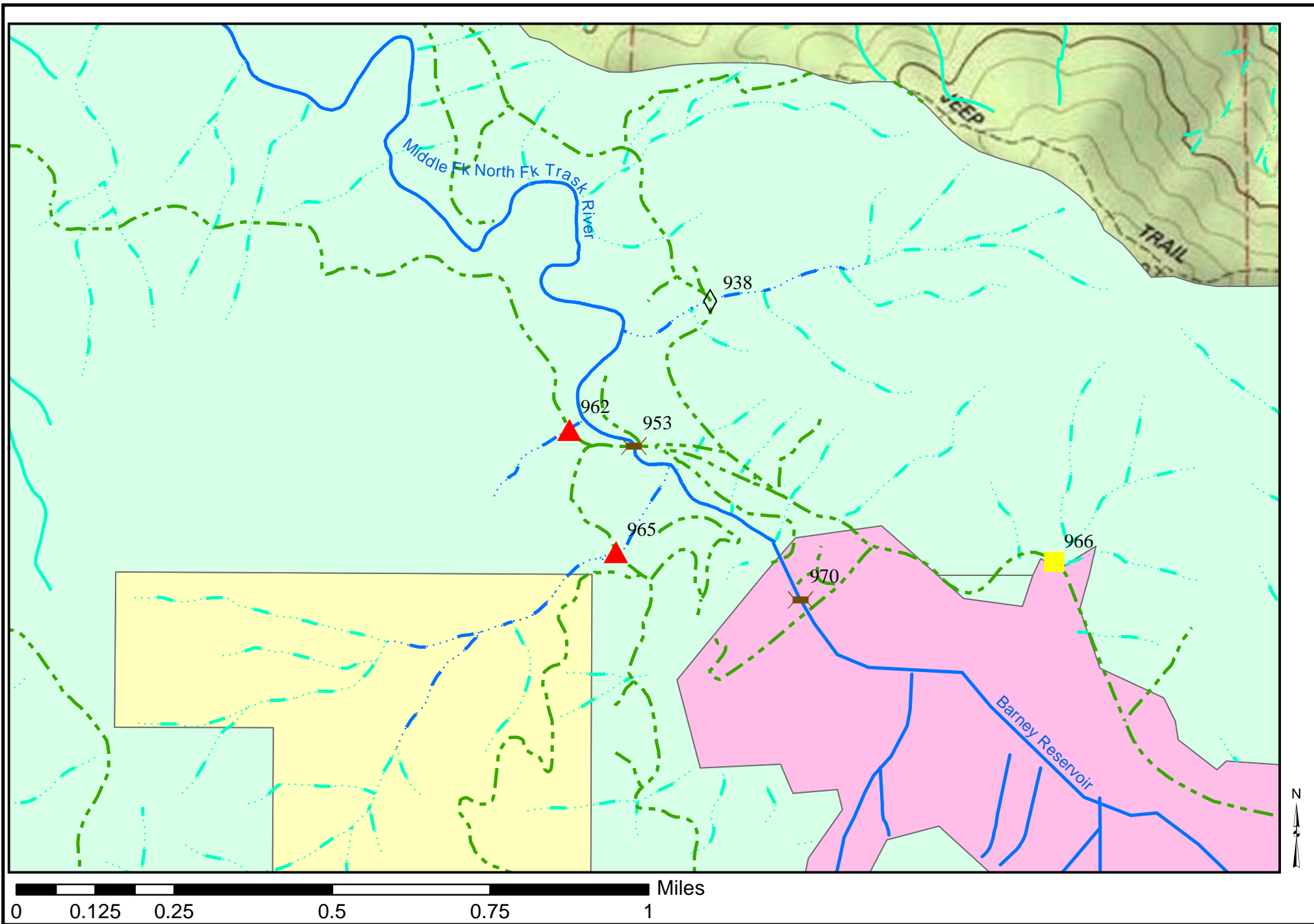


Inlet



Outlet







Upper Middle Fork North Fork Trask River Area Culverts, Trask River Basin

# FLORA MAINLINE ROAD AREA CULVERTS



LOCATION INFO				Culvert #	1113	Priority	L
Watershed			Trask River				
Stream Name		Middle Fork North Fork Trask River					
Township-Range-Section-1/4			T2S, R6W, Sec. 10, NE¼ of NE¼				
UTM Easting/Northing (Zone 10, NAD 1983)			468438/5029260				
Road Name			Flora Mainline Road				
Road/Culvert Owner			Weyerhaeuser Company				
Adjacent Landowners			Weyerhaeuser Company				
CULVERT INFO			CHANNEL INFO				
Shape	Circular		Inlet Gradient (%)		10.0		
Material	Corrugated metal		Upstream Gradient (%)		5.0		
Length (ft)	105		Bankfull Width (ft)		8.3		
Width (in)	64		Bankfull:Culvert Ratio		0.6		
Height (in)	64		Topography precluded use of survey equipment to collect longitudinal profile data				
Outlet Perch (ft)	1.5						
Slope (%)	7.0						
Rustline Height (in)	24						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		1.0	Habitat Points		2		
Habitat Quality		Fair	Habitat Quality Points		2		
Fish Species		Resident	Fish Points		2		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		9		
Notes:							

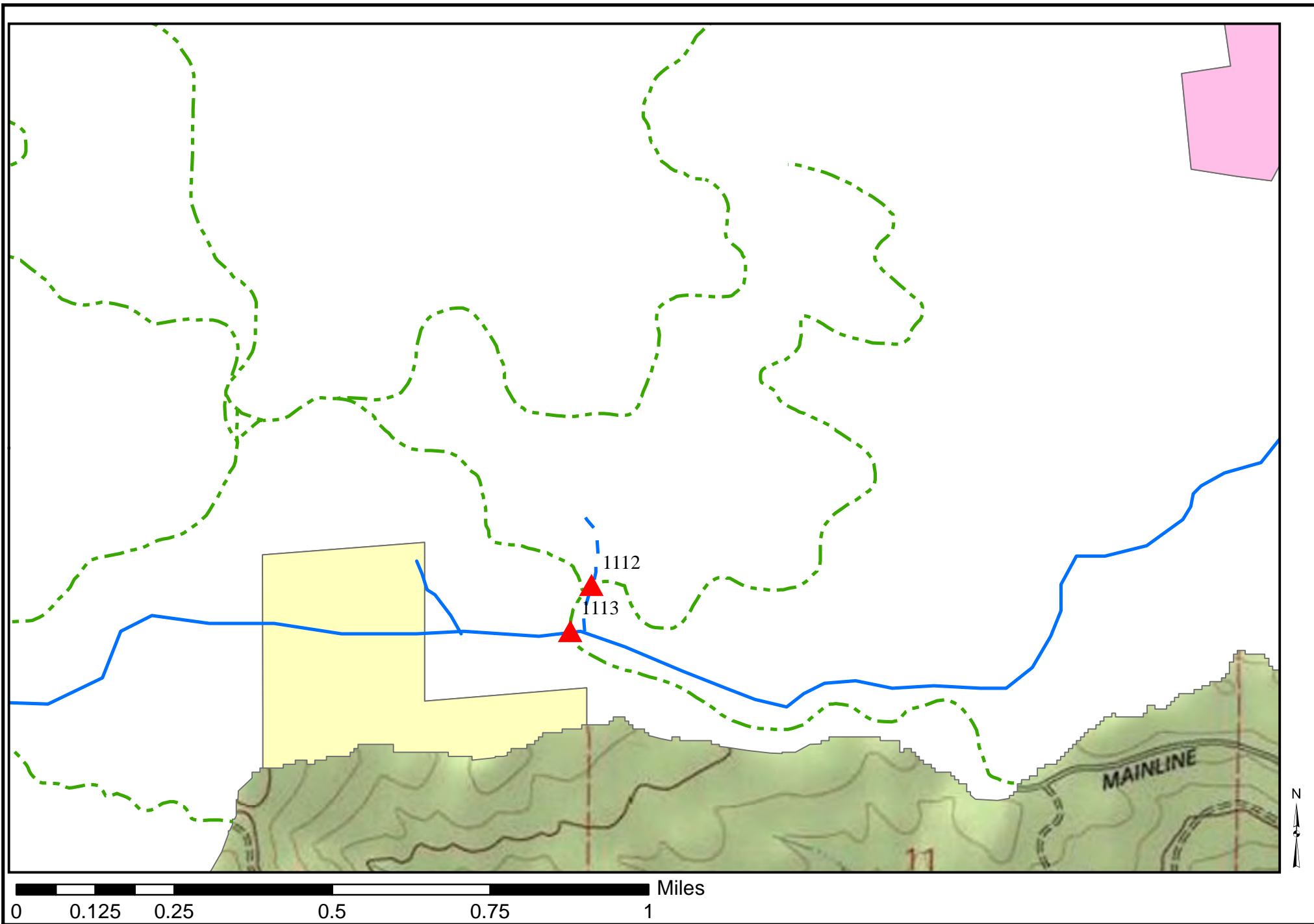


Inlet



Outlet

LOCATION INFO				Culvert #	1112	Priority	L
Watershed		Trask River					
Stream Name		Unnamed tributary of Middle Fork North Fork Trask River					
Township-Range-Section-1/4		T2S, R6W, Sec. 11, NW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		468510/5029400					
Road Name		Unnamed off of Flora Mainline Road					
Road/Culvert Owner		Weyerhaeuser Company					
Adjacent Landowners		Weyerhaeuser Company					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	2.0				
Material	Corrugated metal	Upstream Gradient (%)	10.2				
Length (ft)	100	Bankfull Width (ft)	5.0				
Width (in)	42	Bankfull:Culvert Ratio	0.7				
Height (in)	42	Topography precluded use of survey equipment to collect longitudinal profile data					
Outlet Perch (ft)	3.0						
Slope (%)	12.0						
Rustline Height (in)	14						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.1	Habitat Points		1		
Habitat Quality		Poor	Habitat Quality Points		1		
Fish Species		Resident	Fish Points		2		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		7		
Notes:							



Flora Mainline Road Area Culverts, Trask River Basin

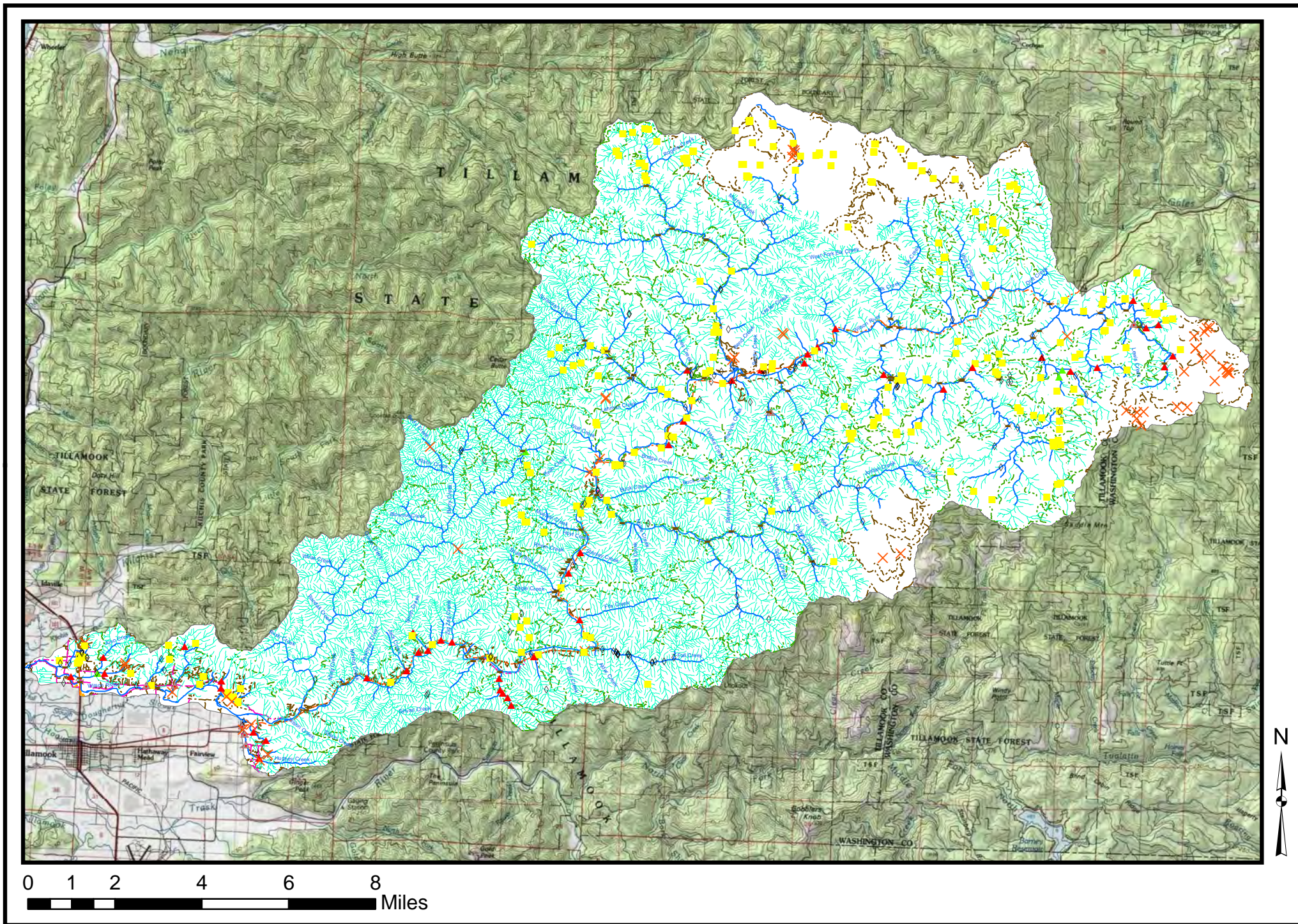


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**Wilson River Basin  
Culverts**

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Wilson Basin Crossings





### Wilson River Basin Clusters



Cluster	Culvert Numbers	Priority	Stream	Upstream Habitat
Juno Creek	792	H	Juno Creek	2.3
	781	N/A	Juno Creek	
	755	L	Juno Creek	
	780	L	Unnamed tributary	
Sollie Smith Area	5306	M	Yankee Branch	3.2
	814	H	Beaver Creek	
	735	L	Unnamed tributary	
	803	L	Unnamed tributary	
	788	L	Unnamed tributary	
Hughey Creek	898	?	Hughey Creek	2.8
	900	?	Hughey Creek	
	901	M	Hughey Creek	
	910	H	Hughey Creek	
Donaldson Creek	877	L	Donaldson Creek	0.3
	881	L	Donaldson Creek	
Little N.F. Wilson River Area	465	N/A	Unnamed tributary	0.5
Jack Creek Area	775	M	Hatchery Creek	1.8
	760	M	Jack Creek	
Smith Creek Area	722	L	Unnamed tributary	2.9
	713	M	Smith Creek	
	693	L	Smith Creek	
	696	L	Fern Creek	
	697	H	Zig Zag Creek	
Kansas Creek Area	762	L	Unnamed tributary	0.9
	799	L	Unnamed tributary	
	798	L	Kansas Creek	
	822	L	Kansas Creek	
	823	L	Kansas Creek	
Bear Creek Area	723	L	Unnamed tributary	0.5
Fox Creek	667	H	Fox Creek	2.0
Stanley Creek Area	604	L	Unnamed tributary	0.9
	584	M	Stanley Creek	
Hoskin and Luebke creeks	447	L	Hoskins Creek	0.8
	405	M	Luebke Creek	



Lees Camp Area	304	L	Unnamed tributary	2.1
	333	H	Runyon Creek	
	305	H	Scotty Creek	
	388	L	Unnamed tributary	
Dog Creek Area	268	L	Moore Creek	2.1
	240	L	Unnamed tributary	
	227	L	Unnamed tributary	
	199	H	Dog Creek	
S.F. Wilson River Tributaries	300	L	Unnamed tributary	0.6
	356	L	Unnamed tributary	
	261	L	Unnamed tributary	
Elliot Creek Area	231	H	Elliot Creek	3.3
	265	L	Elliot Creek	
	266	M	Elliot Creek	
	299	L	Unnamed tributary	
Devils Lake Fork Tributaries	249	H	Deyoe Creek	3.9
	202	H	Lewis Creek	
	150	L	Unnamed tributary	
	178	H	Unnamed tributary	
	176	M	Unnamed tributary	
	222	M	Unnamed tributary	
	246	L	Unnamed tributary	

## JUNO CREEK CULVERTS

LOCATION INFO				Culvert #	792	Priority	H
Watershed		Wilson River					
Stream Name		Juno Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 13, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		433660/5036608					
Road Name		Boquist Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		L. & G. Edwards					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>   <b>Barrel</b>	
Shape	Circular	Inlet Gradient (%)	7.0				
Material	Concrete	Upstream Gradient (%)	4.0				
Length (ft)	Unable to measure	Bankfull Width (ft)	8.8				
Width (in)	48	Bankfull:Culvert Ratio	0.5				
Height (in)	48	This culvert has a tidegate on its outlet. It is visible in the barrel photo.					
Outlet Perch (ft)	Unable to measure						
Gradient (%)	6.0						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.3	Habitat Points	4				
Habitat Quality	Poor/Fair	Habitat Quality Points	1.5				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11.5				
<b>Notes:</b> Culvert outlets into mainstem Wilson River. The reach between this pipe and 781 is poor quality habitat passing through agricultural land and a golf course. Above 781, conditions improve. The habitat quality score for this culvert reflects this dichotomy.							

LOCATION INFO				Culvert #	781	Priority	NA
Watershed				Wilson River			
Stream Name				Juno Creek			
Township-Range-Section-1/4				T1S, R9W, Sec. 18, NE¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				434655/5036763			
Road Name				Latimer Road			
Road/Culvert Owner				Tillamook County			
Adjacent Landowners				Tillamook Co., Victor Dairy, TCCA			
CULVERT INFO		CHANNEL INFO		<div> Inlet</div> <div> Outlet</div>			
Shape	Circular	Inlet Gradient (%)	28.3				
Material	Corrugated metal	Upstream Gradient (%)	2.5				
Length (ft)	84	Bankfull Width (ft)	5.0				
Width (in)	108	Bankfull:Culvert Ratio	1.8				
Height (in)	108						
Outlet Perch (ft)	0.1						
Gradient (%)	2.3						
Rustline Height (in)	48						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.6	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	10				
<b>Notes:</b> Although the channel immediately upstream of this pipe is rather narrow, this is somewhat misleading because the upstream side of this pipe is a several acre wetland area with numerous small channels and other open water areas. As a result, the amount of water conveyed by this pipe is often greater than what one would expect from a 5 ft channel.							

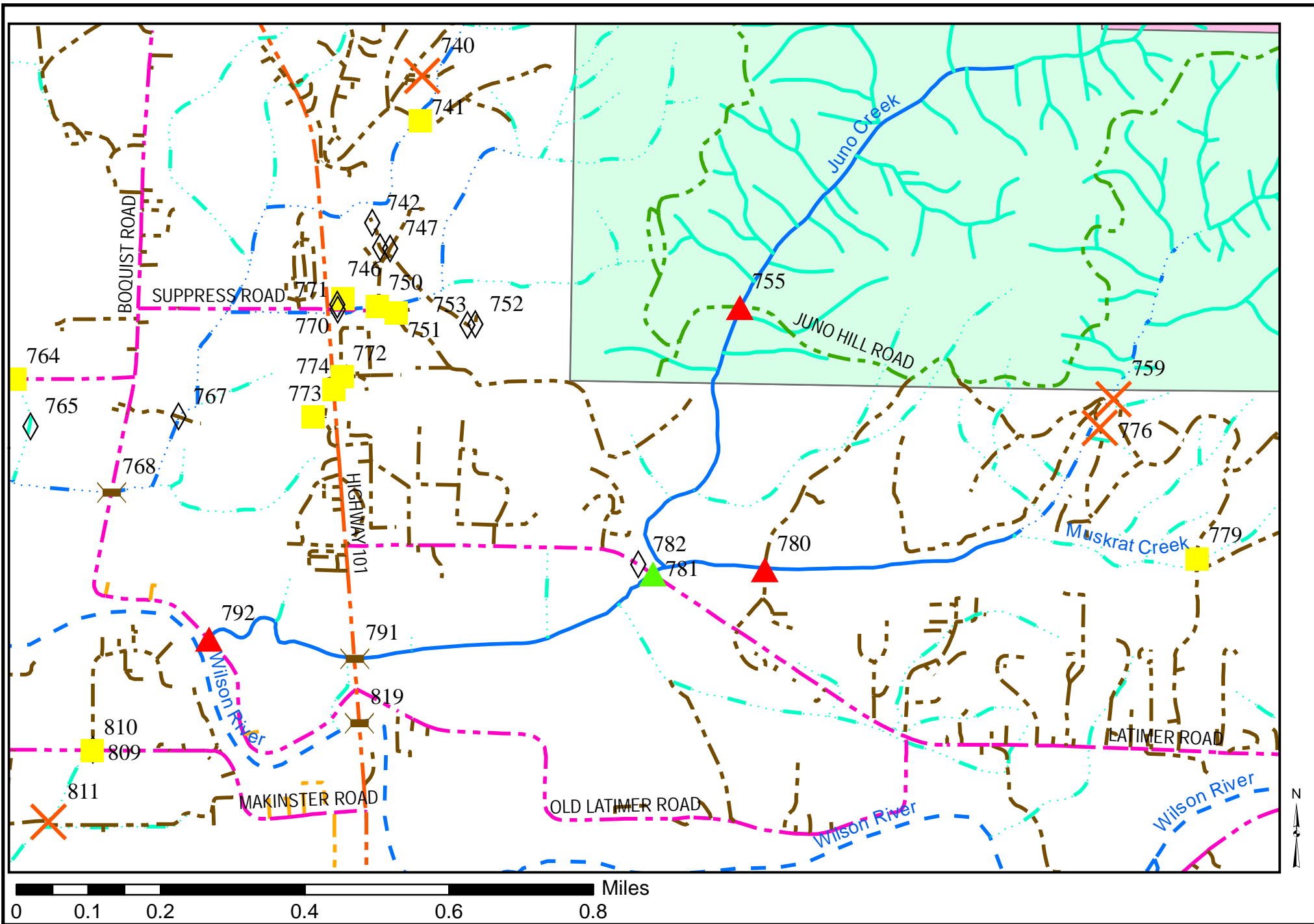


**Outlet**

**Outlet** – looking downstream


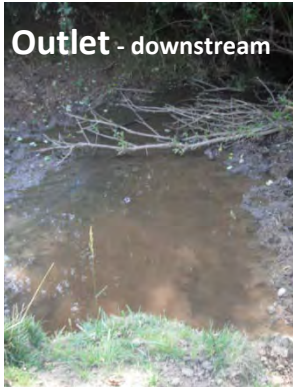






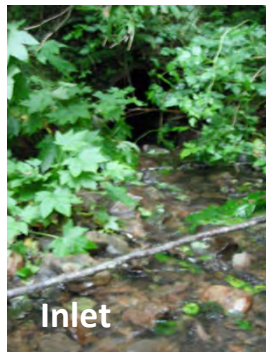



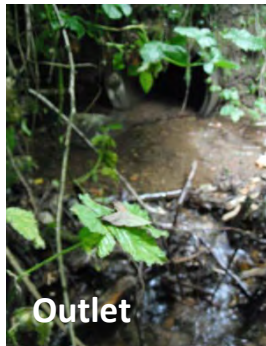

Juno Creek Culverts, Wilson River Basin

## SOLLIE SMITH ROAD AREA CULVERTS



LOCATION INFO				Culvert #	5306	Priority	M
Watershed		Wilson River					
Stream Name		Yankee Branch					
Township-Range-Section-1/4		T1S, R9W, Sec. 20, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		436467/5036370					
Road Name		Latimer Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>   <b>Outlet - downstream</b>	
Shape	Circular	Inlet Gradient (%)	21.6				
Material	Corrugated metal	Upstream Gradient (%)	1.1				
Length (ft)	87	Bankfull Width (ft)	3.8				
Width (in)	36	Bankfull:Culvert Ratio	0.8				
Height (in)	36						
Outlet Perch (ft)	None						
Gradient (%)	-1.0						
Rustline Height (in)	Entire pipe rusted						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.1	Habitat Points	3				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	10				
<b>Notes:</b> Outlet area heavily impacted by livestock use. A small overflow pipe was approx. 2 ft above this pipe. The overflow pipe appears to occasionally carry flows, suggesting that the main pipe is inadequately sized for fish passage and stream processes (despite being rated green by the barrier model). Based on this additional information, we rated this pipe a partial barrier to juvenile passage.							

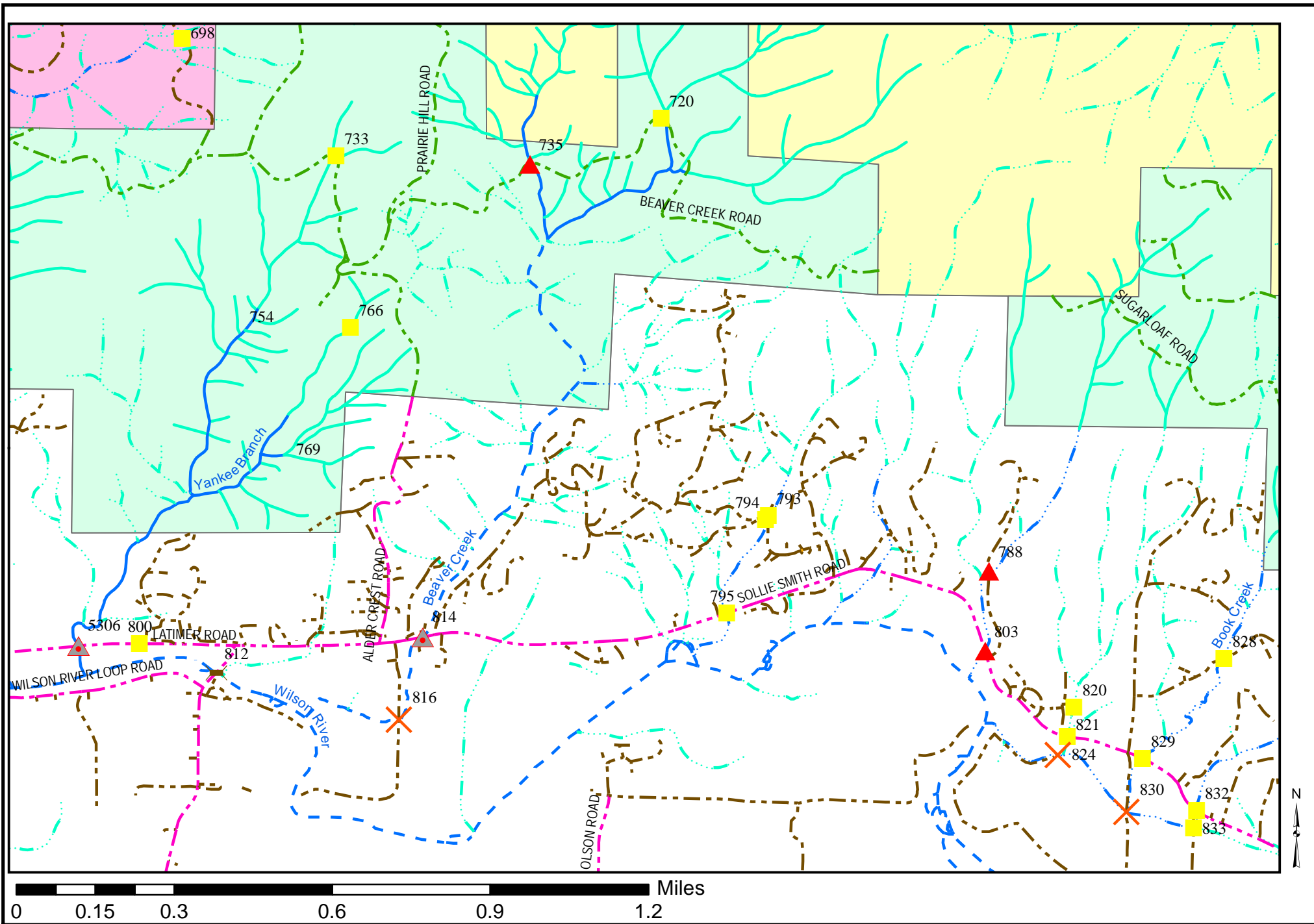
LOCATION INFO				Culvert #	814	Priority	H
Watershed		Wilson River					
Stream Name		Beaver Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 16, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		437528/5036405					
Road Name		Sollie Smith Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		D. Barker and L. Maynock					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	19.6				
Material	Concrete	Upstream Gradient (%)	4.4				
Length (ft)	104	Bankfull Width (ft)	8.0				
Width (in)	48	Bankfull:Culvert Ratio	0.5				
Height (in)	48						
Outlet Perch (ft)	None						
Gradient (%)	2.6						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	1.6	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	11				
Notes:							

LOCATION INFO				Culvert #	735	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Beaver Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 16, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		437842/5037849					
Road Name		Beaver Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				<div> Inlet</div> <div> Outlet</div>	
Shape	Circular	Inlet Gradient (%)	8.0				
Material	Corrugated metal	Upstream Gradient (%)	7.0				
Length (ft)	86	Bankfull Width (ft)	8.1				
Width (in)	42	Bankfull:Culvert Ratio	0.4				
Height (in)	42						
Outlet Perch (ft)	4.0						
Gradient (%)	11.0						
Rustline Height (in)	19						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

LOCATION INFO				Culvert #	803	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Wilson River					
Township-Range-Section-1/4		T1S, R9W, Sec. 22, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439248/5036338					
Road Name		Sollie Smith Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		J. & G. Ficher					
CULVERT INFO		CHANNEL INFO				 <b>Outlet</b>  <b>Outlet - downstream</b>	
Shape	Circular	Inlet Gradient (%)	13.0				
Material	Concrete	Upstream Gradient (%)	11.0				
Length (ft)	60	Bankfull Width (ft)	10.9				
Width (in)	36	Bankfull:Culvert Ratio	0.3				
Height (in)	36						
Outlet Perch (ft)	0.2						
Gradient (%)	14.0						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							







LOCATION INFO				Culvert #	788	Priority	L
Watershed		Wilson River		 Inlet			
Stream Name		Unnamed tributary of Wilson River					
Township-Range-Section-1/4		T1S, R9W, Sec. 22, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		439249/5036600					
Road Name		Sollie Smith Road					
Road/Culvert Owner		Shirhar Farms					
Adjacent Landowners		Shirhar Farms					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	17.0				
Material	Corrugated metal	Upstream Gradient (%)	6.0				
Length (ft)	63	Bankfull Width (ft)	4.8				
Width (in)	24	Bankfull:Culvert Ratio	0.4				
Height (in)	24						
Outlet Perch (ft)	0.8						
Gradient (%)	7.0						
Rustline Height (in)	4						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS				 Outlet - downstream			
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							





Sollie Smith Road Area Culverts, Wilson River Basin



## HUGHEY CREEK CULVERTS

LOCATION INFO				Culvert #	898	Priority	?	
Watershed		Wilson River						
Stream Name		Hughey Creek						
Township-Range-Section-1/4		T1S, R9W, Sec. 22, SE¼ of SE¼						
UTM Easting/Northing (Zone 10, NAD 1983)		440083/5034989						
Road Name		Highway 6						
Road/Culvert Owner		Oregon Department of Transportation						
Adjacent Landowners		V. Lucas and D. Lucas						
CULVERT INFO		CHANNEL INFO				 <p>Inlet - upstream</p>		
Shape	Box	Inlet Gradient (%)						unk
Material	Concrete	Upstream Gradient (%)						unk
Length (ft)	unknown	Bankfull Width (ft)						unk
Width (in)	unknown	Bankfull:Culvert Ratio						unk
Height (in)	unknown	Unable to access private property where inlet and outlet were located. As a result, no data was collected and only upstream and downstream photos were taken.						
Outlet Perch (ft)	unknown							
Gradient (%)	unknown							
Rustline Height (in)	unknown							
Overall Condition	unknown							
PRIORITIZATION ANALYSIS							 <p>Outlet - downstream</p>	
Upstream Habitat Length (mi)	2.8	Habitat Points				4		
Habitat Quality	Poor(+)	Habitat Quality Points				1		
Fish Species	Anad.	Fish Points				3		
Barrier Class	Unk.	Barrier Points				?		
		Prioritization Total Points				8+		
<b>Notes:</b> Culvert appears to be an adequately sized concrete box. For analysis purposes, we assumed a partial barrier for Barrier Class Points.								


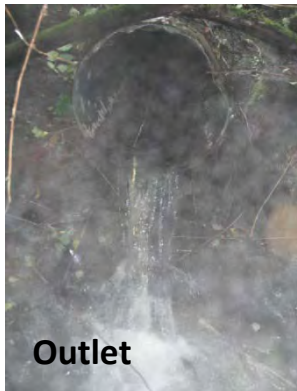
LOCATION INFO				Culvert #	900	Priority	?
Watershed		Wilson River		 <p><b>Inlet</b> - upstream</p>			
Stream Name		Hughey Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 22, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		440177/5034672					
Road Name		Fairview Road					
Road/Culvert Owner		Tillamook County		 <p><b>Outlet</b> - downstream</p>			
Adjacent Landowners		V. Lucas and D. Lucas					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	unk				
Material	Corrugated metal	Upstream Gradient (%)	unk				
Length (ft)	unknown	Bankfull Width (ft)	unk	<p>Unable to access private property where inlet and outlet were located. As a result, no data was collected and only upstream and downstream photos were taken.</p>			
Width (in)	unknown	Bankfull:Culvert Ratio	unk				
Height (in)	unknown						
Outlet Perch (ft)	unknown						
Gradient (%)	unknown						
Rustline Height (in)	unknown						
Overall Condition	unknown						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.6	Habitat Points	4				
Habitat Quality	Poor(+)	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Unk.	Barrier Points	?				
		Prioritization Total Points	8+				
<p><b>Notes:</b> Crossing 899 is located between 898 and 900. We were denied permission to access 899 and were unable to observe the crossing remotely.</p>							




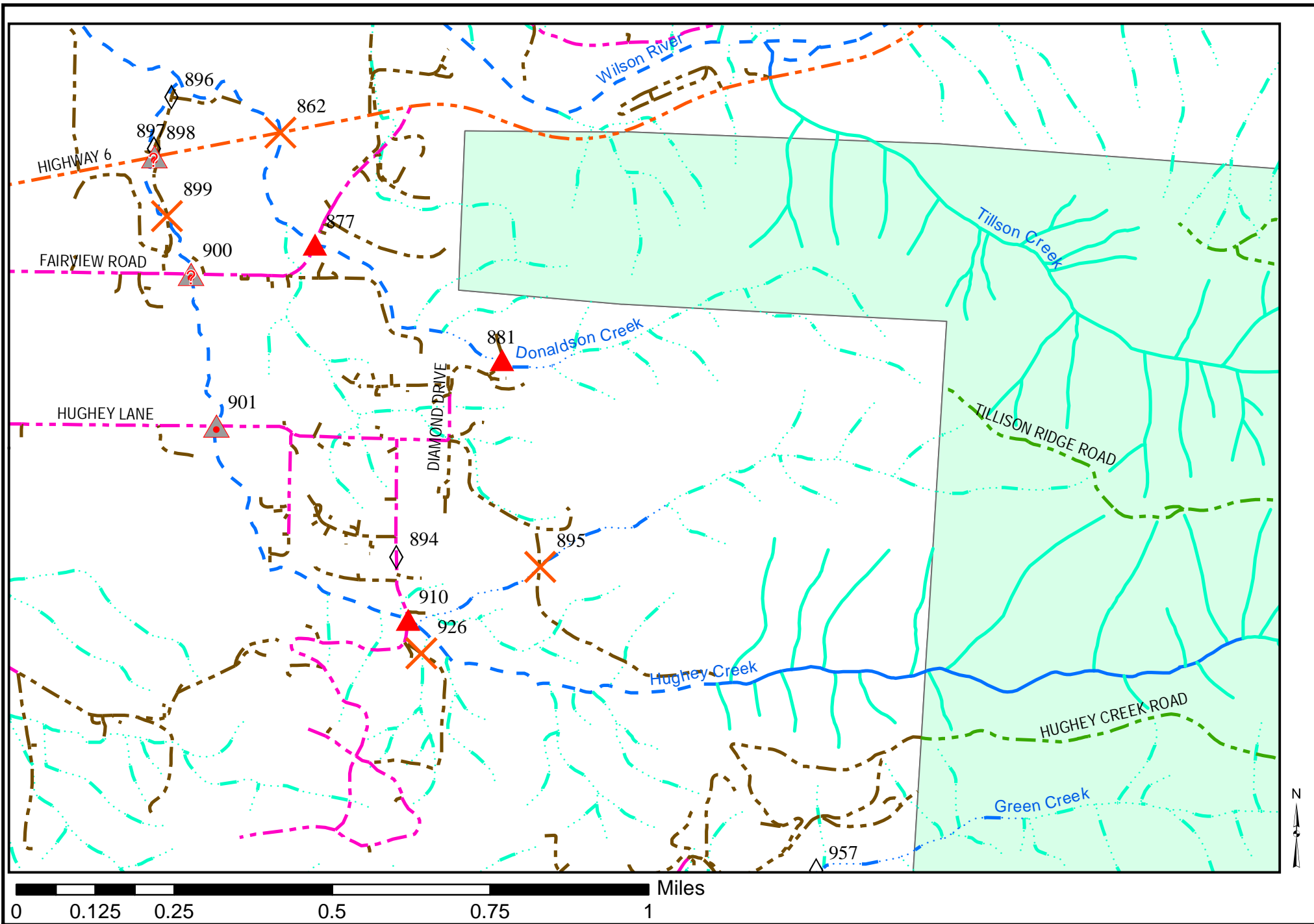
LOCATION INFO				Culvert #	901	Priority	M
Watershed		Wilson River					
Stream Name		Hughey Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 27, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		440230/5034296					
Road Name		Hughey Lane					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		A. & J. Widmer and G. Hodgdon					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b> – looking upstream	
Shape	Circular	Inlet Gradient (%)	5.5				
Material	Corrugated metal	Upstream Gradient (%)	5.5				
Length (ft)	70	Bankfull Width (ft)	7.0				
Width (in)	72	Bankfull:Culvert Ratio	0.9				
Height (in)	48*	*Couldn't find bottom of pipe under sediment.					
Outlet Perch (ft)	None						
Gradient (%)	3.5						
Rustline Height (in)	18						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	2.3	Habitat Points	4				
Habitat Quality	Poor(+)	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	10				
Notes: Culvert approximately 1/3 full of sediment.							

LOCATION INFO				Culvert #	910	Priority	H
Watershed		Wilson River					
Stream Name		Hughey Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 26, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		440715/5033783					
Road Name		Marvin Lane					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		E. & W. Meyer, J. Main, R. & D. Steel					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	15.5				
Material	Corrugated metal	Upstream Gradient (%)	4.9				
Length (ft)	45	Bankfull Width (ft)	7.2	<p>A large slab of concrete was located in the stream channel at inlet. This resulted in an ~ 2 ft cascade into pipe.</p>			
Width (in)	96	Bankfull:Culvert Ratio	1.1				
Height (in)	72						
Outlet Perch (ft)	None						
Gradient (%)	6.7						
Rustline Height (in)	12						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.8	Habitat Points	4				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
<p><b>Notes:</b> Barrier rating based on concrete blocking inlet and the steep pipe gradient and lack of natural substrate through pipe.</p>							

## DONALDSON CREEK CULVERTS

LOCATION INFO				Culvert #	877	Priority	L
Watershed		Wilson River					
Stream Name		Donaldson Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 23, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		440491/5034773					
Road Name		Fairview Road					
Road/Culvert Owner		Tillamook County					
Adjacent Landowners		D. Neal, A. & J. Widmer, and J. & E. Cummings					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	61.5				
Material	Corrugated metal	Upstream Gradient (%)	2.6				
Length (ft)	69	Bankfull Width (ft)	6.5				
Width (in)	36	Bankfull:Culvert Ratio	0.5				
Height (in)	36						
Outlet Perch (ft)	2.1						
Gradient (%)	4.4						
Rustline Height (in)	18						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Crossing 862 was located downstream of this crossing. We did not have permission to access 862 and could not adequately observe it from Highway 6 to determine what type of pipe occurs there, its condition, or its potential to impede passage.							

LOCATION INFO				Culvert #	881	Priority	L
Watershed		Wilson River					
Stream Name		Donaldson Creek					
Township-Range-Section-1/4		T1S, R9W, Sec. 23, SW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		440956/5034462					
Road Name		Private Drive					
Road/Culvert Owner		H. & J. Gollon					
Adjacent Landowners		H. & J. Gollon					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	3.1				
Material	Plastic	Upstream Gradient (%)	4.1				
Length (ft)	34	Bankfull Width (ft)	5.1				
Width (in)	18	Bankfull:Culvert Ratio	0.3				
Height (in)	18						
Outlet Perch (ft)	5.7						
Gradient (%)	4.4						
Rustline Height (in)	18						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							




Hughey Creek and Donaldson Creek Culverts, Wilson River Basin




# LITTLE NORTH FORK WILSON RIVER AREA CULVERT

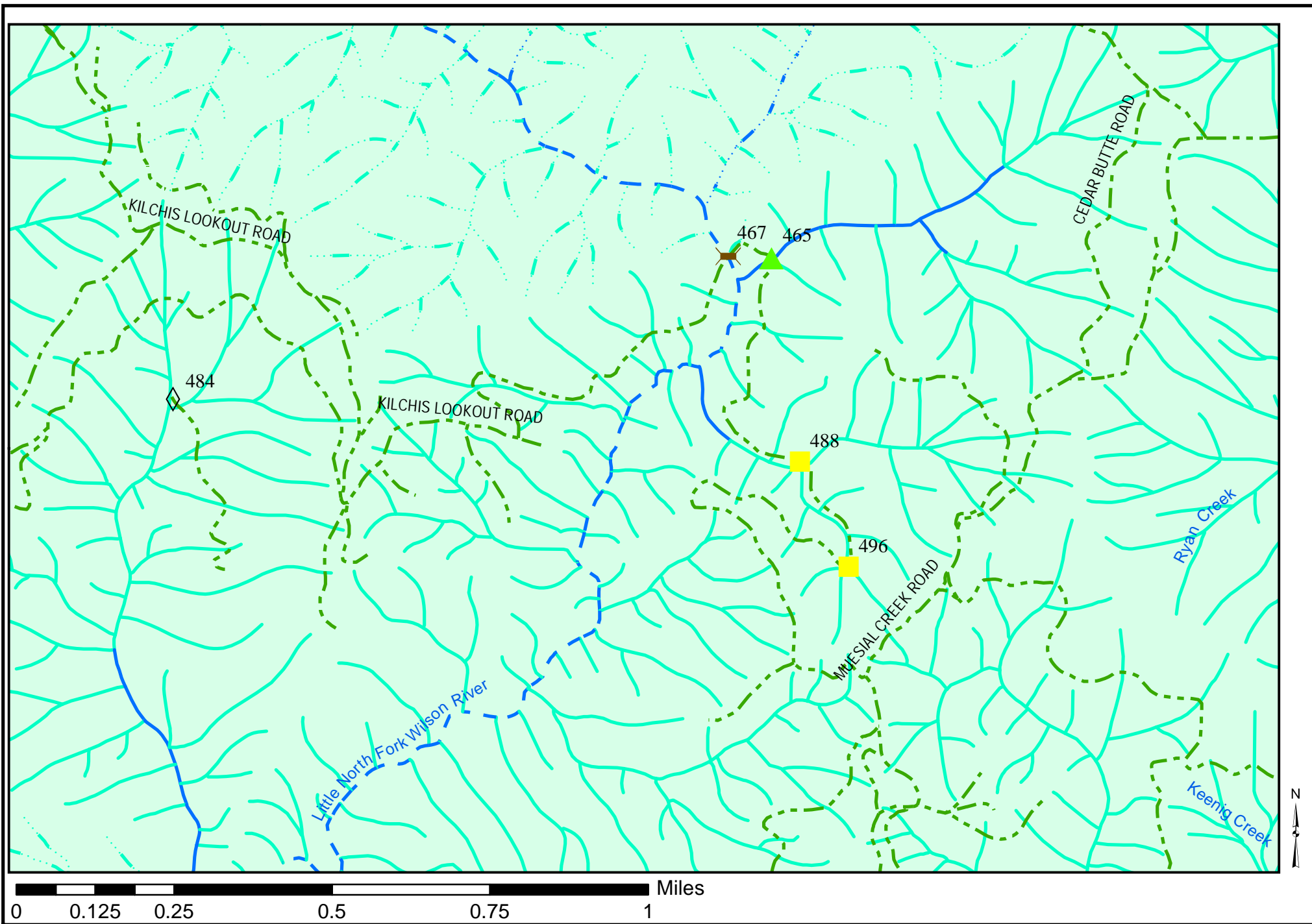
LOCATION INFO				Culvert #	465	Priority	NA
Watershed		Wilson River					
Stream Name		Unnamed tributary of Little N. Fork Wilson River					
Township-Range-Section-1/4		T1N, R8W, Sec. 23, NW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		450253/5045470					
Road Name		Kilchis Lookout Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	3.1				
Material	Corrugated metal	Upstream Gradient (%)	6.2				
Length (ft)	74	Bankfull Width (ft)	8.3				
Width (in)	162	Bankfull:Culvert Ratio	1.6				
Height (in)	102						
Outlet Perch (ft)	None						
Gradient (%)	2.4						
Rustline Height (in)	10						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	7				
<b>Notes:</b> It is possible that anadromous fish cannot make it to this point due to natural barriers. However, based on juvenile survey data, it appears that steelhead are capable of negotiating most known barriers below this point, so we elected to consider this reach as having anadromous potential.							



Inlet







Outlet



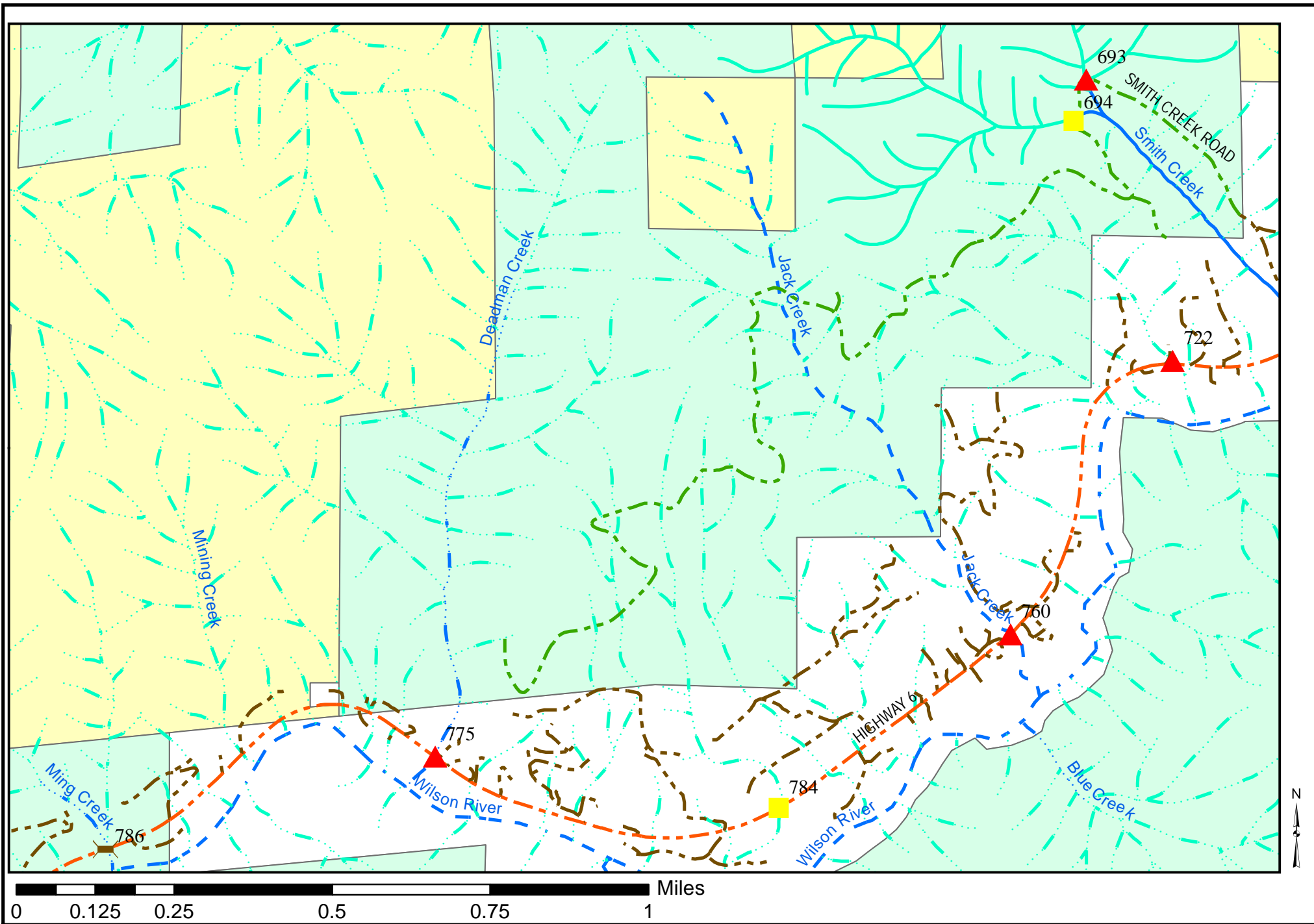
Upper Little North Fork Wilson River Area Culverts, Wilson River Basin

## JACK CREEK AREA CULVERTS

LOCATION INFO				Culvert #	775	Priority	M
Watershed		Wilson River					
Stream Name		Hatchery Creek (also listed as Deadman Creek)					
Township-Range-Section-1/4		T1S, R8W, Sec. 18, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		444613/5036903					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		J.&L. Tolbert, R. Hildebrant, N.&J. Keister					
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)			7.0		
Material	Concrete	Upstream Gradient (%)			6.0		
Length (ft)	75	Bankfull Width (ft)			6.3		
Width (in)	60	Bankfull:Culvert Ratio			0.8		
Height (in)	60						
Outlet Perch (ft)	None						
Gradient (%)	5.0						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.8	Habitat Points			2		
Habitat Quality	Fair	Habitat Quality Points			2		
Fish Species	Anad.	Fish Points			3		
Barrier Class	Red	Barrier Points			3		
		Prioritization Total Points			10		
<b>Notes:</b> Topography and obstacles precluded use of surveying level on this culvert. Unable to determine if outlet is perched. Trash rack at inlet. Culvert overly steep and lacks natural substrate.							

LOCATION INFO				Culvert #	760	Priority	M
Watershed		Wilson River					
Stream Name		Jack Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 8, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		446088/5037216					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		P.J. Sager					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>  <b>Outlet</b>	
Shape	Box	Inlet Gradient (%)	12.0				
Material	Concrete	Upstream Gradient (%)	11.0				
Length (ft)	97	Bankfull Width (ft)	6.4				
Width (in)	60	Bankfull:Culvert Ratio	0.8				
Height (in)	60						
Outlet Perch (ft)	Unknown						
Gradient (%)	7.0						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
<b>Notes:</b> Topography and obstacles precluded use of surveying level on this culvert. Unable to determine if outlet is perched. Trash rack at inlet. Culvert overly steep and lacks natural substrate.							







Jack Creek Area Culverts, Wilson River Basin

## SMITH CREEK AREA CULVERTS

LOCATION INFO				Culvert #	722	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Wilson River					
Township-Range-Section-1/4		T1S, R8W, Sec. 8, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		446487/5037891					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Wilson River Properties, LLC. and J. Vandyke					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	9.8				
Material	Concrete	Upstream Gradient (%)	12.3				
Length (ft)	50	Bankfull Width (ft)	4.9				
Width (in)	24	Bankfull:Culvert Ratio	0.4				
Height (in)	24						
Outlet Perch (ft)	None						
Gradient (%)	4.8						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
<b>Notes:</b> Stream depicted as nonfish-modeled. However, technical review team suggested including this culvert in the analysis and ending fish use where stream gradient exceeds 15 percent grade.							

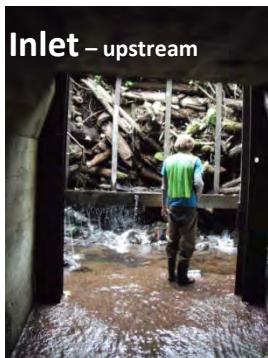


Inlet




Outlet



LOCATION INFO				Culvert #	713	Priority	M
Watershed		Wilson River					
Stream Name		Smith Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 9, SW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		446846/5037955					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Stimson Lumber Company					
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)		Not measured			
Material	Concrete	Upstream Gradient (%)		4.0			
Length (ft)	143	Bankfull Width (ft)		6.2			
Width (in)	120	Bankfull:Culvert Ratio		1.6			
Height (in)	90	Use of surveying equipment precluded by terrain and obstacles.					
Outlet Perch (ft)	~1.5						
Gradient (%)	8.0						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.6	Habitat Points		2		
Habitat Quality		Fair	Habitat Quality Points		2		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		10		
<b>Notes:</b> Water was observed entering the pipe from holes in the side walls and flowing around the outside of one of the wing walls at outlet. This suggests that water was flowing alongside the entire outer wall of the pipe. An approx. 20 ft wall of debris was trapped upstream of the trash rack and had aggraded the upstream channel an equivalent amount.							





Inlet – upstream



Outlet

LOCATION INFO				Culvert #	693	Priority	L	
Watershed		Wilson River						
Stream Name		Smith Creek						
Township-Range-Section-1/4		T1S, R8W, Sec. 5, SE¼ of SE¼						
UTM Easting/Northing (Zone 10, NAD 1983)		446299/5038612						
Road Name		Smith Creek Road						
Road/Culvert Owner		Oregon Department of Forestry						
Adjacent Landowners		Oregon Department of Forestry						
CULVERT INFO		CHANNEL INFO				 Inlet		
Shape	Circular	Inlet Gradient (%)						12.8
Material	Corrugated metal	Upstream Gradient (%)						11.2
Length (ft)	27	Bankfull Width (ft)						4.5
Width (in)	72	Bankfull:Culvert Ratio						1.3
Height (in)	72							
Outlet Perch (ft)	2.7							
Gradient (%)	9.3							
Rustline Height (in)	12							
Overall Condition	Fair							
PRIORITIZATION ANALYSIS							 Outlet	
Upstream Habitat Length (mi)	0.3	Habitat Points				1		
Habitat Quality	Fair(-)	Habitat Quality Points				2		
Fish Species	Anad.	Fish Points				3		
Barrier Class	Red	Barrier Points				3		
		Prioritization Total Points				9		
<b>Notes:</b> Stream intermittently subterranean during survey (summer 2011). Depicted as nonfish. Technical team suggested including this culvert and stopping fish use where gradient exceeds 15 percent. Cutthroat observed in watered areas upstream of pipe during 2011 survey work.								



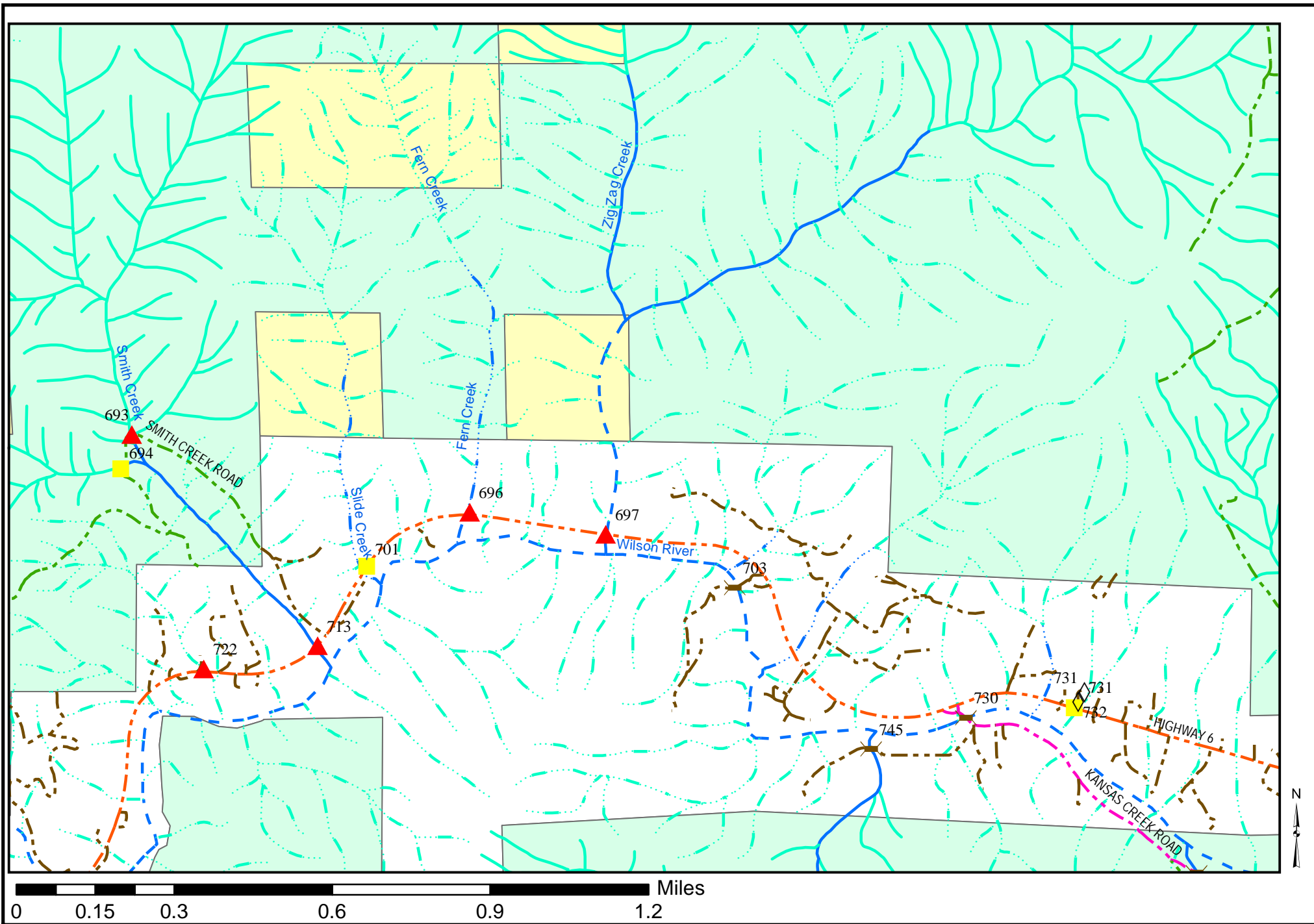
LOCATION INFO				Culvert #	696	Priority	L
Watershed		Wilson River					
Stream Name		Fern Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 9, NE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		447331/5038383					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		R. & B. Stacks and DH Kim, LLC.					
CULVERT INFO		CHANNEL INFO				 	
Shape	Box	Inlet Gradient (%)	16.0				
Material	Concrete	Upstream Gradient (%)	9.5				
Length (ft)	100	Bankfull Width (ft)	6.6				
Width (in)	48	Bankfull:Culvert Ratio	0.6				
Height (in)	60	Use of surveying equipment precluded by terrain and obstacles.					
Outlet Perch (ft)	~3.5						
Gradient (%)	9.3						
Rustline Height (in)	12						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Fair(-)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Outlet cascades over boulders and additional cascades over boulders are located a short distance downstream of outlet. Exposed rebar observed on invert of pipe.							







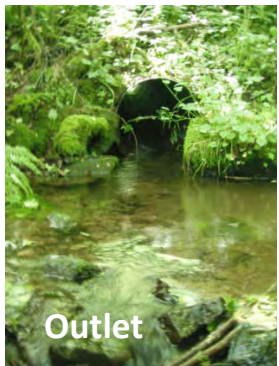

**Outlet**





Smith Creek Area Culverts, Wilson River Basin



## KANSAS CREEK CULVERTS



LOCATION INFO				Culvert #	762	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Kansas Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 15, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		449522/5037009					
Road Name		Kansas Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	14.9				
Material	Corrugated metal	Upstream Gradient (%)	4.3				
Length (ft)	39	Bankfull Width (ft)	5.5				
Width (in)	30	Bankfull:Culvert Ratio	0.5				
Height (in)	30						
Outlet Perch (ft)	0.7						
Gradient (%)	6.5						
Rustline Height (in)	12						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Resident	Fish Points	2				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	7				
Notes:							




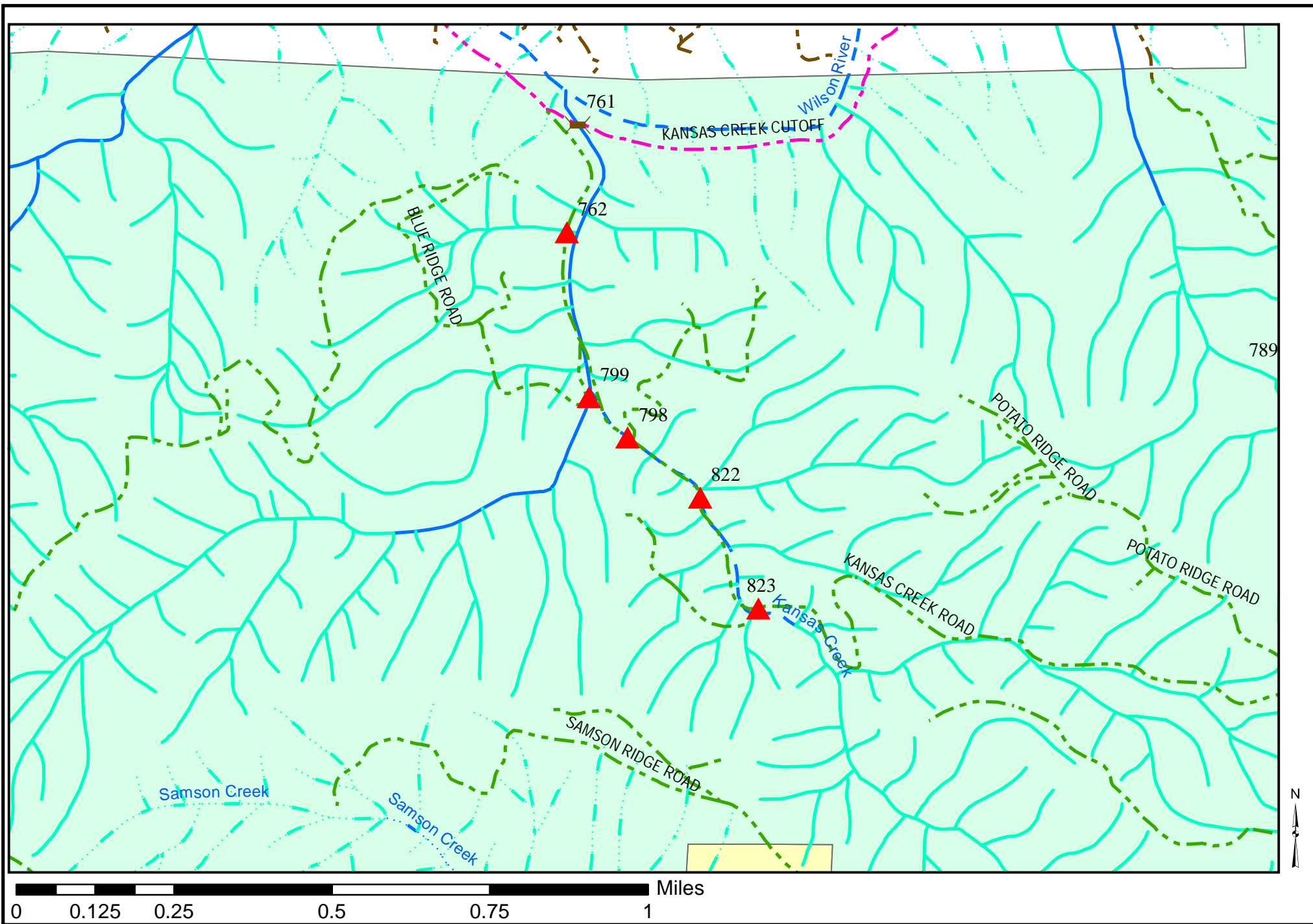
LOCATION INFO				Culvert #	799	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Kansas Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 14, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		449598/5036566					
Road Name		Kansas Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	11.3				
Material	Corrugated metal	Upstream Gradient (%)	11.3				
Length (ft)	69	Bankfull Width (ft)	11.9				
Width (in)	156	Bankfull:Culvert Ratio	1.1				
Height (in)	108						
Outlet Perch (ft)	0.4						
Gradient (%)	1.6						
Rustline Height (in)	None						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Resident	Fish Points	2				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	7				
Notes:							



LOCATION INFO				Culvert #	798	Priority	L
Watershed		Wilson River					
Stream Name		Kansas Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 14, SW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		449687/5036465					
Road Name		Kansas Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	 <b>Outlet</b>
Shape	Pipe arch	Inlet Gradient (%)	23.8				
Material	Corrugated metal	Upstream Gradient (%)	5.6				
Length (ft)	71	Bankfull Width (ft)	14.7				
Width (in)	66	Bankfull:Culvert Ratio	0.4				
Height (in)	42						
Outlet Perch (ft)	1.6						
Gradient (%)	3.1						
Rustline Height (in)	22						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Resident	Fish Points	2				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	7				
Notes:							

LOCATION INFO				Culvert #	822	Priority	L
Watershed		Wilson River					
Stream Name		Kansas Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 14, SW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		449858/5036361					
Road Name		Kansas Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	11.5				
Material	Corrugated metal	Upstream Gradient (%)	11.8				
Length (ft)	56	Bankfull Width (ft)	11.0				
Width (in)	55	Bankfull:Culvert Ratio	0.4				
Height (in)	41						
Outlet Perch (ft)	1.4						
Gradient (%)	9.9						
Rustline Height (in)	10						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Resident	Fish Points	2				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	7				
Notes:							


LOCATION INFO				Culvert #	823	Priority	L
Watershed		Wilson River					
Stream Name		Kansas Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 14, NW¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		449997/5036035					
Road Name		Kansas Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	14.2				
Material	Circular	Upstream Gradient (%)	6.7				
Length (ft)	79	Bankfull Width (ft)	15.4				
Width (in)	90	Bankfull:Culvert Ratio	0.5				
Height (in)	90						
Outlet Perch (ft)	4.1						
Gradient (%)	4.2						
Rustline Height (in)	13						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Resident	Fish Points	2				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	7				
Notes: Seams in culvert were separating and water was flowing under pipe.							

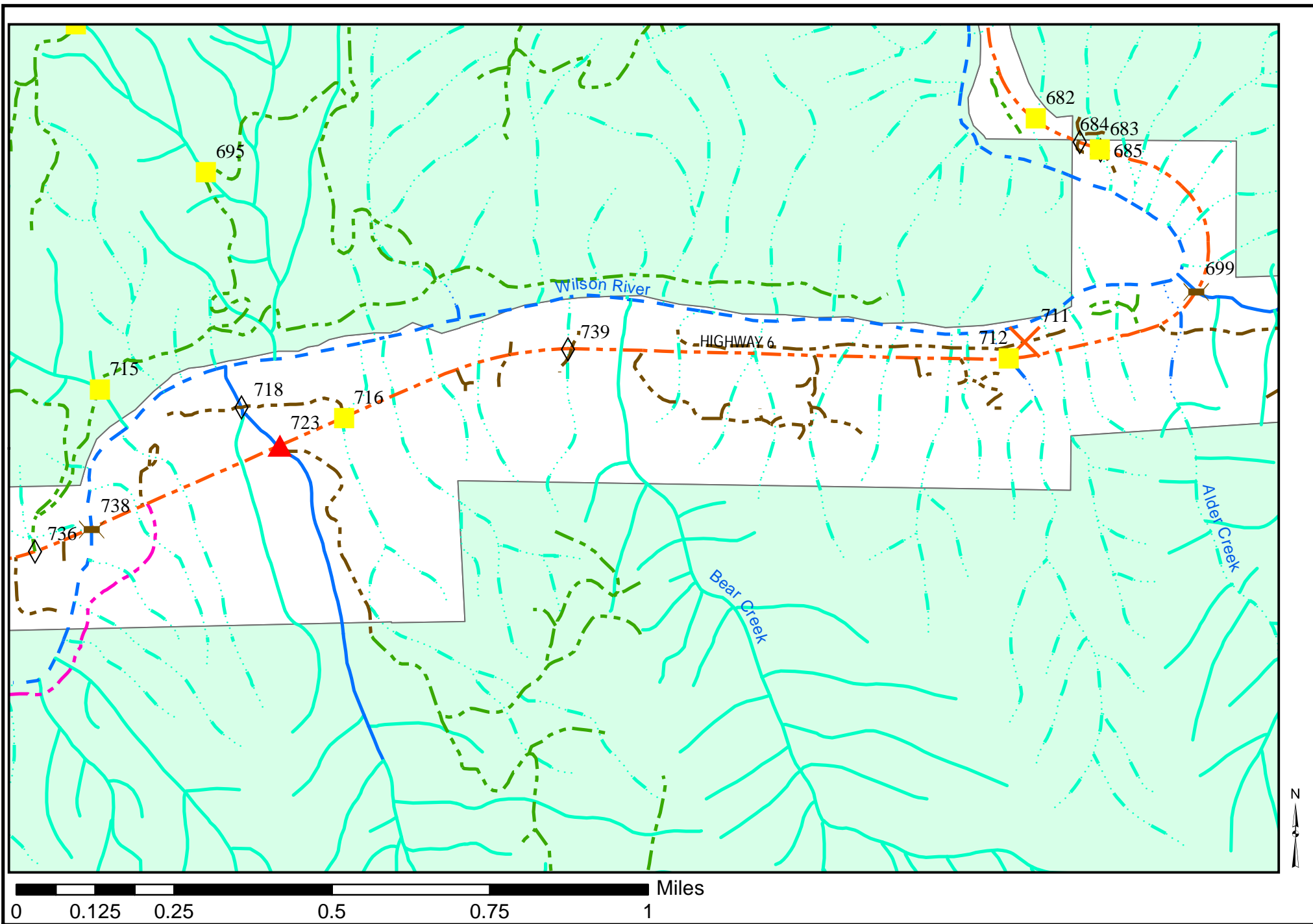


Kansas Creek Culverts, Wilson River Basin





# BEAR CREEK AREA CULVERT

LOCATION INFO				Culvert #	723	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Wilson River					
Township-Range-Section-1/4		T1S, R8W, Sec. 11, SW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		450762/5037876					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Tillamook County					
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	8.2				
Material	Concrete	Upstream Gradient (%)	3.1				
Length (ft)	39	Bankfull Width (ft)	9.2				
Width (in)	60	Bankfull:Culvert Ratio	0.5				
Height (in)	60						
Outlet Perch (ft)	0.2						
Gradient (%)	3.5						
Rustline Height (in)	30						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							

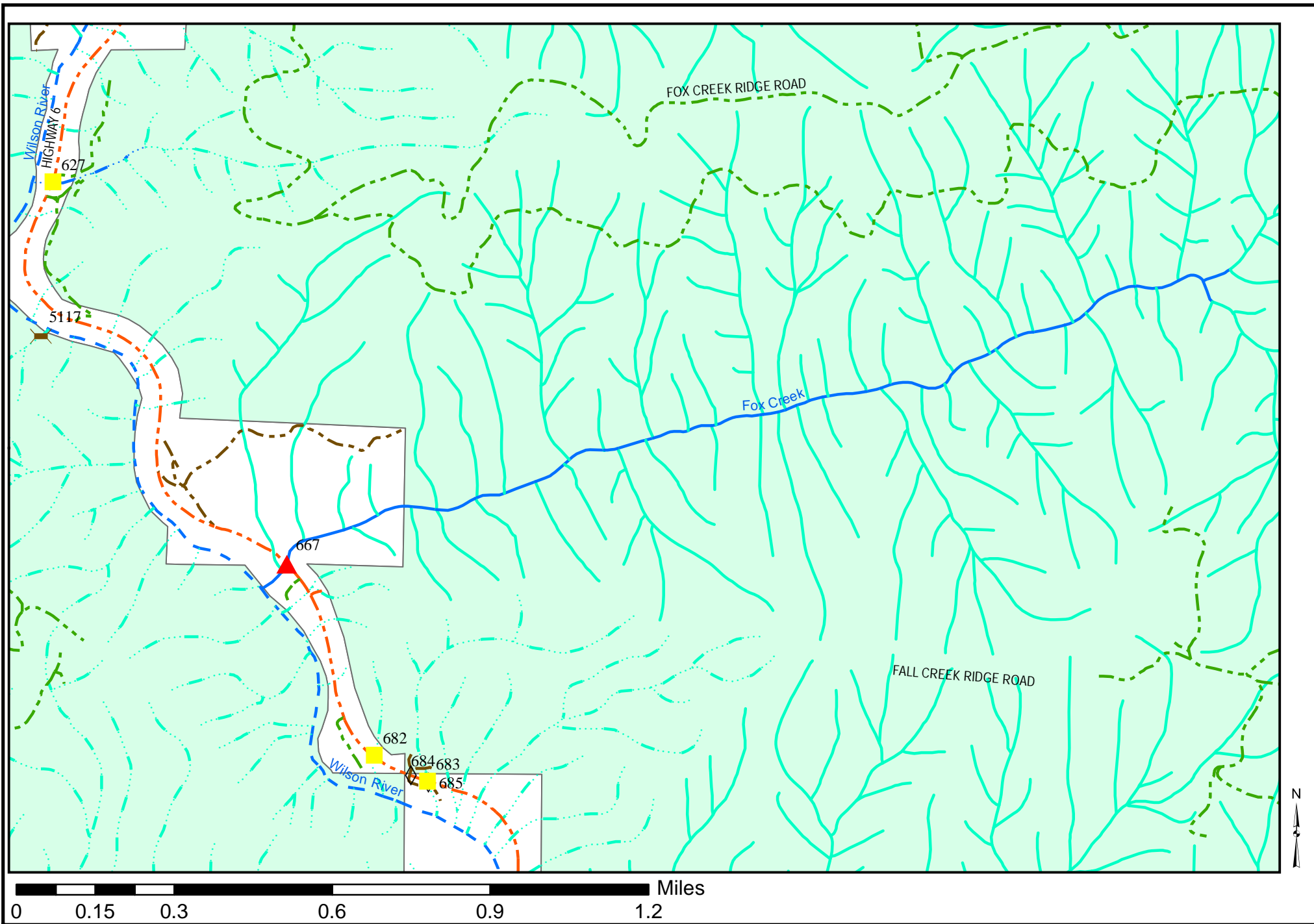


Bear Creek Area Culverts, Wilson River Basin

## FOX CREEK CULVERT

LOCATION INFO				Culvert #	667	Priority	H
Watershed		Wilson River					
Stream Name		Fox Creek					
Township-Range-Section-1/4		T1S, R8W, Sec. 1, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		452405/5039358					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	15.7				
Material	Concrete	Upstream Gradient (%)	7.0				
Length (ft)	94	Bankfull Width (ft)	16.9				
Width (in)	120	Bankfull:Culvert Ratio	0.6				
Height (in)	120	Water observed flowing from around outside of culvert on outlet side. Rubber baffles inside pipe. Many were damaged or missing.					
Outlet Perch (ft)	4.0						
Gradient (%)	5.2						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	2.0	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	13				
Notes: Outlet fish ladder substantially blocked with debris, in poor condition, and conveyed only a small fraction of the total stream flow.							







Fox Creek Culvert, Wilson River Basin

## STANLEY CREEK AREA CULVERTS

LOCATION INFO				Culvert #	604	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Wilson River					
Township-Range-Section-1/4		T1S, R8W, Sec. 1, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		451998/5041075					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	35.3				
Material	Corrugated metal	Upstream Gradient (%)	14.9				
Length (ft)	99	Bankfull Width (ft)	6.7				
Width (in)	60	Bankfull:Culvert Ratio	0.8				
Height (in)	60	Stream dry during summer 2011 data collection effort.					
Outlet Perch (ft)	0.1						
Gradient (%)	7.3						
Rustline Height (in)	None						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							




Inlet




Outlet

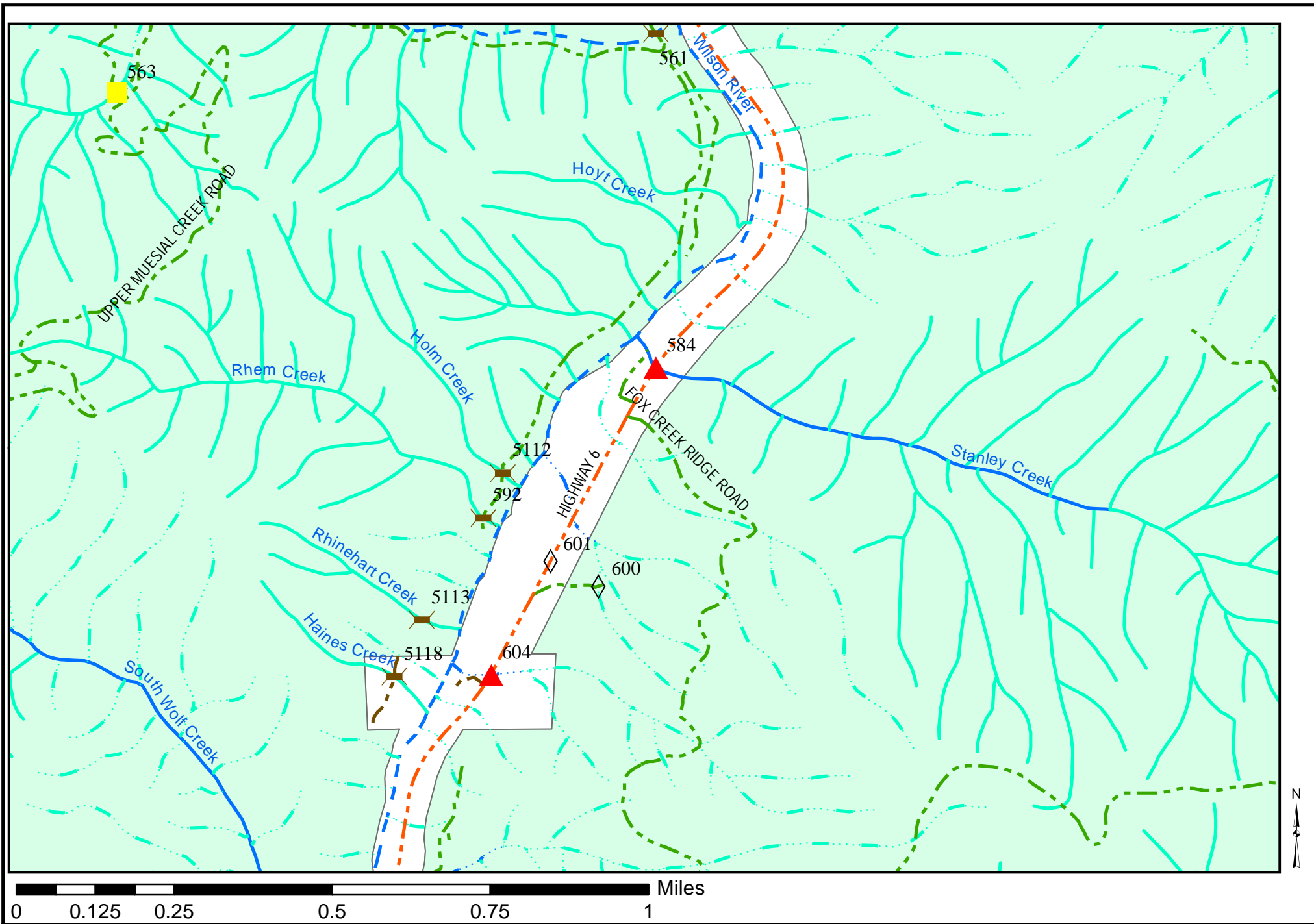
LOCATION INFO				Culvert #	584	Priority	M
Watershed		Wilson River					
Stream Name		Stanley Creek					
Township-Range-Section-1/4		T1N, R8W, Sec. 36, NW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		452383/5041793					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	Falls-trash rack				
Material	Concrete	Upstream Gradient (%)	8.5				
Length (ft)	115	Bankfull Width (ft)	9.6				
Width (in)	60	Bankfull:Culvert Ratio	0.5				
Height (in)	60	Use of surveying equipment precluded by terrain and obstacles.					
Outlet Perch (ft)	4.0						
Gradient (%)	12.0						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.8	Habitat Points	2				
Habitat Quality	Fair(+)	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
<b>Notes:</b> An approx. 5 ft wall of debris was trapped upstream of the trash rack and aggraded the upstream channel an equivalent amount. Water cascaded over debris wall. Additional loose woody debris was trapped against trash rack above stream bed.							



Inlet





Outlet — downstream





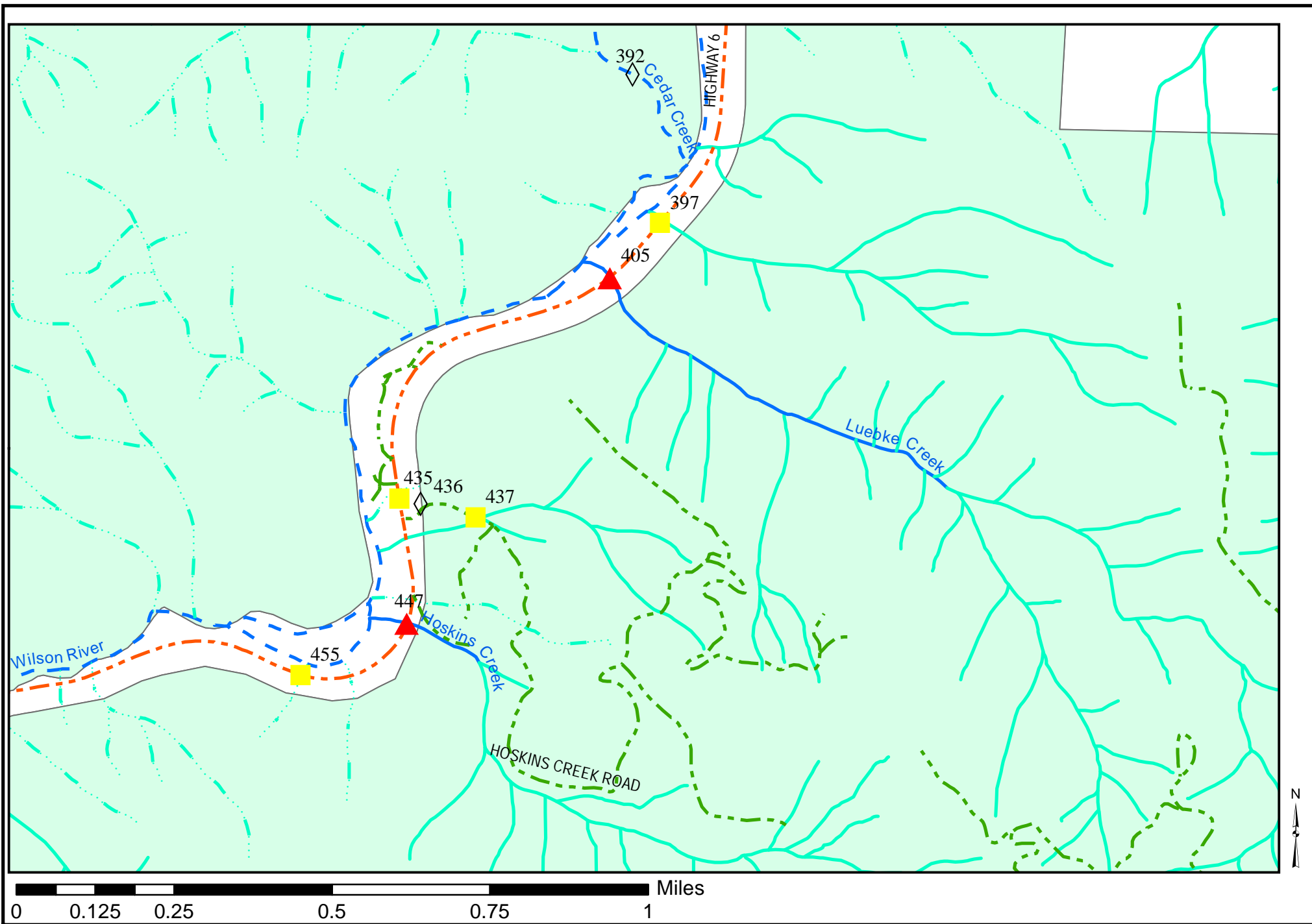
Stanley Creek Area Culverts, Wilson River Basin



## HOSKINS CREEK AND LUEBKE CREEK CULVERTS



LOCATION INFO				Culvert #	447	Priority	L
Watershed		Wilson River					
Stream Name		Hoskins Creek					
Township-Range-Section-1/4		T1N, R7W, Sec. 17, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		455519/5045832					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	20.7				
Material	Corrugated metal	Upstream Gradient (%)	10.1				
Length (ft)	66	Bankfull Width (ft)	8.5				
Width (in)	72	Bankfull:Culvert Ratio	0.7				
Height (in)	72						
Outlet Perch (ft)	2.2						
Gradient (%)	3.6						
Rustline Height (in)	18						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Stream was dry during summer 2011 survey visit.							



LOCATION INFO				Culvert #	405	Priority	M
Watershed		Wilson River					
Stream Name		Luebke Creek					
Township-Range-Section-1/4		T1N, R7W, Sec. 17, SE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		456036/5046768					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	26.5				
Material	Corrugated metal	Upstream Gradient (%)	15.5				
Length (ft)	51	Bankfull Width (ft)	6.7				
Width (in)	54	Bankfull:Culvert Ratio	0.7				
Height (in)	54						
Outlet Perch (ft)	1.1						
Gradient (%)	10.8						
Rustline Height (in)	30						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.7	Habitat Points	2				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
<p><b>Notes:</b> This culvert has rock headwalls and wingwalls that may have been constructed by the Civilian Conservation Corps. The Oregon State Historical Preservation Office should be consulted regarding these features. Replacement of this culvert will likely require compliance with applicable cultural resources protection laws.</p>							





Hoskins Creek and Luebke Creek Culverts, Wilson River Basin

## LEES CAMP AREA CULVERTS


LOCATION INFO				Culvert #	304	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Jones Creek					
Township-Range-Section-1/4		T1N, R7W, Sec. 8, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		456150/5048626					
Road Name		Jones Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	2.5				
Material	Corrugated metal	Upstream Gradient (%)	5.4				
Length (ft)	45	Bankfull Width (ft)	6.2				
Width (in)	100	Bankfull:Culvert Ratio	1.4				
Height (in)	68						
Outlet Perch (ft)	1.0						
Gradient (%)	1.8						
Rustline Height (in)	None						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.4	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							

LOCATION INFO				Culvert #	333	Priority	H
Watershed		Wilson River		 <p><b>Inlet</b></p>			
Stream Name		Runyon Creek					
Township-Range-Section-1/4		T1N, R7W, Sec. 8, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		457794/5048327					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation		 <p><b>Outlet</b></p>			
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	4.0				
Material	Corrugated metal	Upstream Gradient (%)	3.0				
Length (ft)	42	Bankfull Width (ft)	11.2	<p>*Used Abney Level to determine gradients.</p>			
Width (in)	51	Bankfull:Culvert Ratio	1.4				
Height (in)	51						
Outlet Perch (ft)	8.0						
Gradient (%)	1.0						
Rustline Height (in)	22						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.9	Habitat Points	2				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11				
<p><b>Notes:</b> This culvert has rock headwalls, wingwalls, and an outlet apron that may have been constructed by the Civilian Conservation Corps. The Oregon State Historical Preservation Office should be consulted regarding these features. Replacement of this culvert will likely require compliance with applicable cultural resources protection laws.</p>							




LOCATION INFO				Culvert #	305	Priority	H
Watershed		Wilson River					
Stream Name		ScottyCreek					
Township-Range-Section-1/4		T1N, R7W, Sec. 3, SW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		458912/5048759					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	14.0				
Material	Corrugated metal	Upstream Gradient (%)	3.0				
Length (ft)	100	Bankfull Width (ft)	4.3				
Width (in)	42	Bankfull:Culvert Ratio	0.8				
Height (in)	42	Use of surveying equipment precluded by terrain and obstacles.					
Outlet Perch (ft)	1.1						
Gradient (%)	5.0						
Rustline Height (in)	26						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.5	Habitat Points	2				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	11				
<b>Notes:</b> Tech. team noted that, based on their experience, an unidentified barrier culvert occurs on a utility Right-of-Way across private land approximately 0.1 miles upstream of this crossing.							

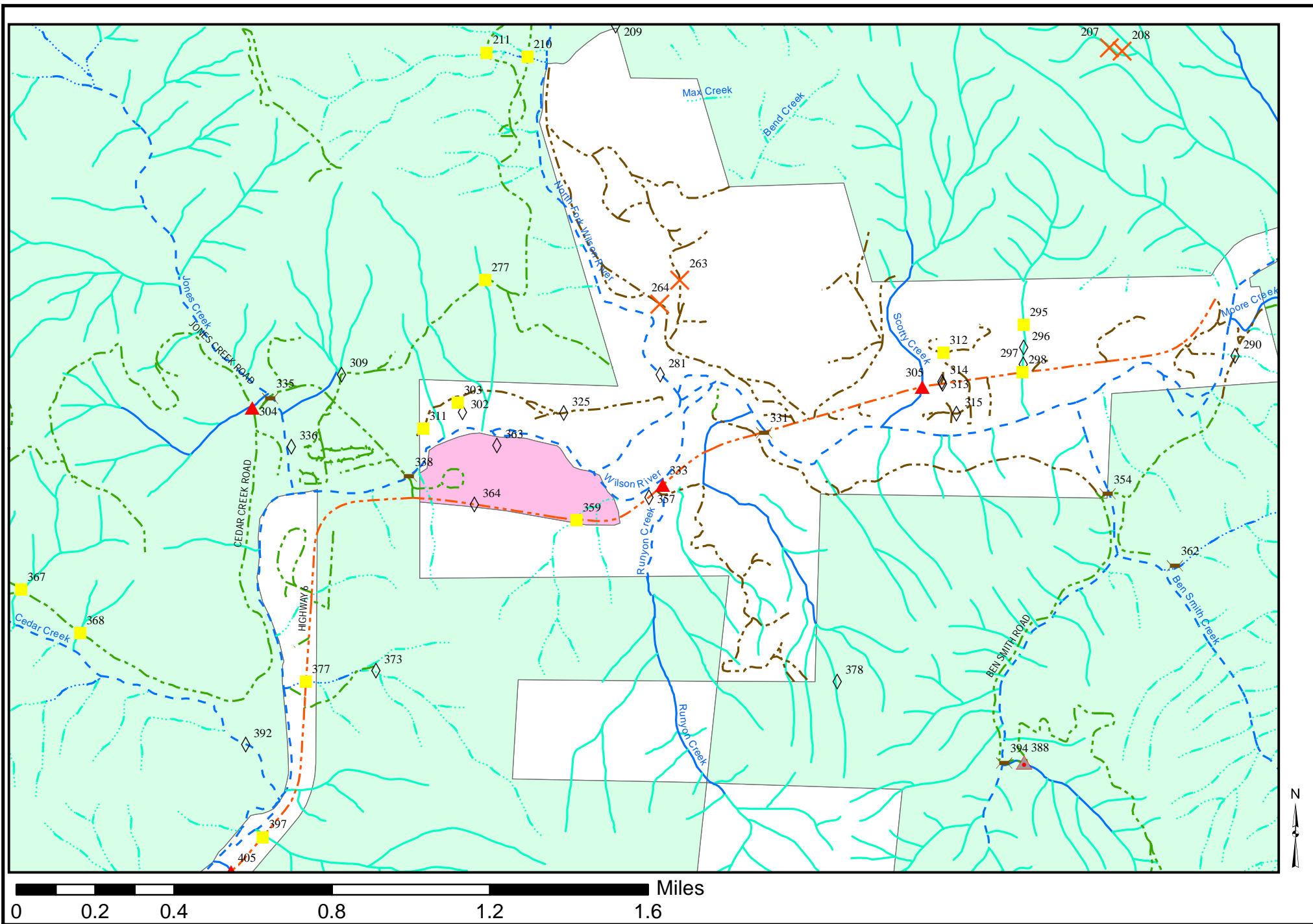
LOCATION INFO				Culvert #	388	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Ben Smith Creek					
Township-Range-Section-1/4		T1N, R7W, Sec. 10, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		459298/5047224					
Road Name		Ben Smith Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	13.8				
Material	Corrugated metal	Upstream Gradient (%)	3.2				
Length (ft)	63	Bankfull Width (ft)	4.7				
Width (in)	96	Bankfull:Culvert Ratio	1.7				
Height (in)	72						
Outlet Perch (ft)	None						
Gradient (%)	6.3						
Rustline Height (in)	None						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	2				
		Prioritization Total Points	8				
Notes: Barrier class based on culvert slope being greater than + 1 percent of stream gradient.							



Inlet


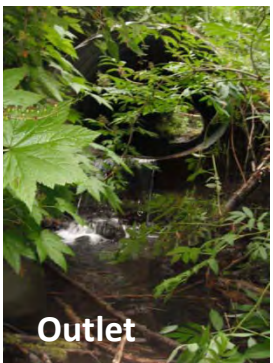




Outlet





Lees Camp Area Culverts, Wilson River Basin



## DOG CREEK AREA CULVERTS

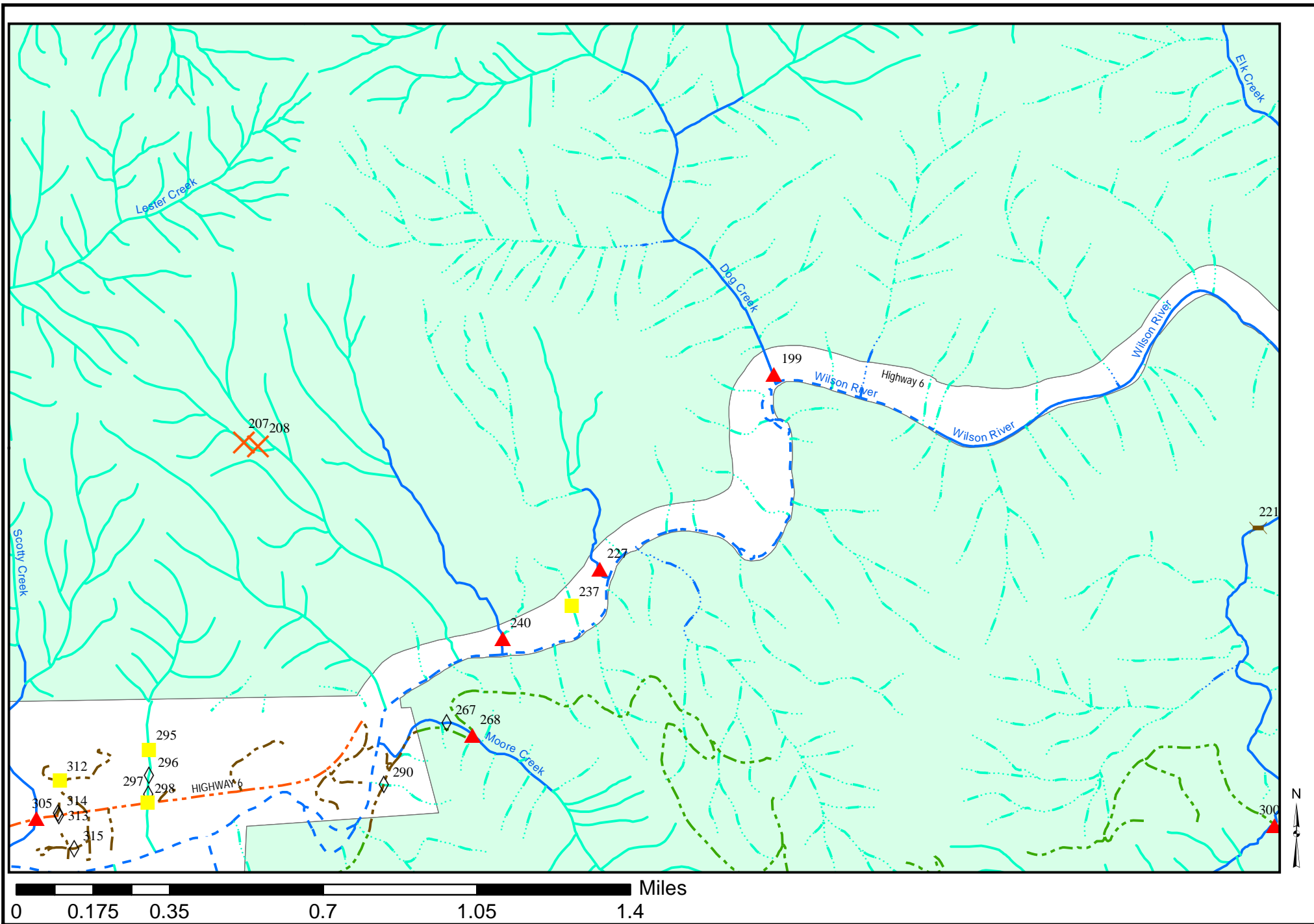
LOCATION INFO				Culvert #	268	Priority	L
Watershed				<div> <b>Inlet</b></div> <div> <b>Outlet</b></div>			
Stream Name		Wilson River					
Township-Range-Section-1/4		Moore Creek					
Township-Range-Section-1/4		T1N, R7W, Sec. 2, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		460473/5049046					
Road Name		East Ben Smith Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	9.7				
Material	Corrugated metal	Upstream Gradient (%)	7.5				
Length (ft)	43	Bankfull Width (ft)	6.1				
Width (in)	78	Bankfull:Culvert Ratio	1.1				
Height (in)	60						
Outlet Perch (ft)	2.6						
Gradient (%)	3.5						
Rustline Height (in)	19						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							

LOCATION INFO				Culvert #	240	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Wilson River					
Township-Range-Section-1/4		T1N R7W, Sec. 2, NW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		460589/5049407					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	14.0				
Material	Concrete	Upstream Gradient (%)	12.0				
Length (ft)	80	Bankfull Width (ft)	6.1				
Width (in)	24	Bankfull:Culvert Ratio	0.3				
Height (in)	24						
Outlet Perch (ft)	1.0						
Gradient (%)	9.0						
Rustline Height (in)	N/A						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.6	Habitat Points	2				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
<b>Notes:</b> Stream dry during summer 2011 site visit. This culvert has rock headwalls that may have been constructed by the Civilian Conservation Corps. The Oregon State Historical Preservation Office should be consulted regarding these features. Replacement of this culvert will likely require compliance with applicable cultural resources protection laws.							





LOCATION INFO				Culvert #	227	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Wilson River					
Township-Range-Section-1/4		T1N R7W, Sec. 2, NE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		460951/5049662					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)	20.5				
Material	Concrete	Upstream Gradient (%)	6.3				
Length (ft)	61	Bankfull Width (ft)	7.2				
Width (in)	36	Bankfull:Culvert Ratio	0.4				
Height (in)	36						
Outlet Perch (ft)	1.8						
Gradient (%)	4.3						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.2	Habitat Points	1				
Habitat Quality	Fair	Habitat Quality Points	2				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	9				
Notes:							



LOCATION INFO				Culvert #	199	Priority	H
Watershed		Wilson River					
Stream Name		Dog Creek					
Township-Range-Section-1/4		T1N R7W, Sec. 1, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		461602/5050380					
Road Name		Highway 6					
Road/Culvert Owner		Oregon Department of Transportation					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	42.7				
Material	Concrete	Upstream Gradient (%)	7.6				
Length (ft)	116	Bankfull Width (ft)	11.2				
Width (in)	96	Bankfull:Culvert Ratio	0.7				
Height (in)	96	*Outlets directly into Wilson River. Unable to measure tailwater control, but at summer flows it cascades over 2-3 ft step into river.					
Outlet Perch (ft)	*Not measured						
Gradient (%)	3.7						
Rustline Height (in)	N/A						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.1	Habitat Points	3				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
<b>Notes:</b> An I-beam across inlet creates an ~18 step. Culvert is paralleled by an attached fishway. However, at low flows this structure conveys insufficient flows to pass fish. Steps at either end of culvert are further impediments to passage.							





Dog Creek Area Culverts, Wilson River Basin

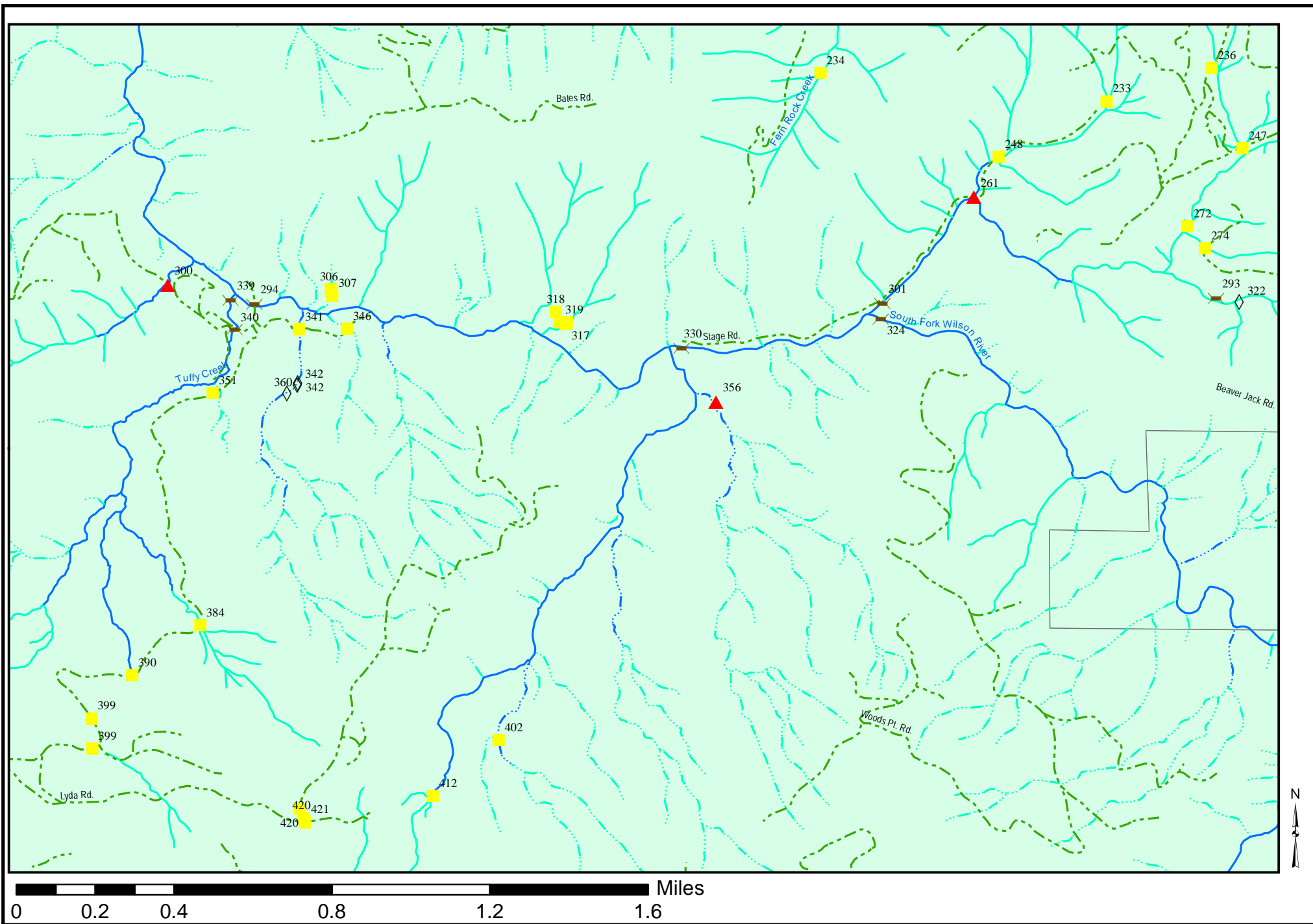
## SOUTH FORK WILSON RIVER TRIBUTARIES CULVERTS

LOCATION INFO				Culvert #	300	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of S. Fork Wilson River					
Township-Range-Section-1/4		T1N R6W, Sec. 7, NE¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		463422/5048729					
Road Name		Prison Camp Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				<div> Inlet</div> <div> Outlet</div>	
Shape	Pipe arch	Inlet Gradient (%)		5.1			
Material	Corrugated metal	Upstream Gradient (%)		4.0			
Length (ft)	43	Bankfull Width (ft)		9.2			
Width (in)	94	Bankfull:Culvert Ratio		0.9			
Height (in)	72						
Outlet Perch (ft)	2.2						
Gradient (%)	4.5						
Rustline Height (in)	6						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.2	Habitat Points		1		
Habitat Quality		Fair	Habitat Quality Points		2		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		9		
Notes:							

LOCATION INFO				Culvert #	356	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of S. Fork Wilson River					
Township-Range-Section-1/4		T1N R6W, Sec. 9, SW¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		465646/5048242					
Road Name		C-Line Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Pipe arch	Inlet Gradient (%)	5.2				
Material	Corrugated metal	Upstream Gradient (%)	6.5				
Length (ft)	67	Bankfull Width (ft)	11.1				
Width (in)	126	Bankfull:Culvert Ratio	0.9				
Height (in)	86						
Outlet Perch (ft)	4.3						
Gradient (%)	9.2						
Rustline Height (in)	4						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							





LOCATION INFO				Culvert #	261	Priority	L
Watershed		Wilson River		 <p>Inlet</p>			
Stream Name		Unnamed tributary of South Fork Wilson River					
Township-Range-Section-1/4		T1N R5W, Sec. 4, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		466347/5048623					
Road Name		Stage Road					
Road/Culvert Owner		Oregon Department of Forestry		 <p>Outlet</p>			
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	12.0				
Material	Corrugated metal	Upstream Gradient (%)	18.0				
Length (ft)	67	Bankfull Width (ft)	11.2				
Width (in)	57	Bankfull:Culvert Ratio	0.4				
Height (in)	57						
Outlet Perch (ft)	None						
Gradient (%)	6.0						
Rustline Height (in)	-						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.1	Habitat Points	1				
Habitat Quality	Poor	Habitat Quality Points	1				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	8				
Notes:							




South Fork Wilson River Tributaries Culverts, Wilson River Basin


## ELLIOT CREEK AREA CULVERTS

LOCATION INFO				Culvert #	231	Priority	H
Watershed				Wilson River			
Stream Name				Elliot Creek			
Township-Range-Section-1/4				T1N R6W, Sec. 2, NE¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				469275/5049565			
Road Name				University Falls Road			
Road/Culvert Owner				Oregon Department of Forestry			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	8.0				
Material	Corrugated metal	Upstream Gradient (%)	5.0				
Length (ft)	80	Bankfull Width (ft)	14.3				
Width (in)	76	Bankfull:Culvert Ratio	0.4				
Height (in)	76	Crossing approx 250 ft upstream of University Falls, a complete passage barrier. Beaver dam blocking inlet in summer 2011, creating large wetland above culvert. 2012 photos.					
Outlet Perch (ft)	1.5						
Gradient (%)	1.0						
Rustline Height (in)	24						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	3.3	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Resident	Fish Points	2				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	12				
<b>Notes:</b> Beaver dam gone in 2012, but small debris jam present. Inlet badly damaged and large holes on invert near inlet end of pipe.							

LOCATION INFO				Culvert #	265	Priority	L
Watershed		Wilson River					
Stream Name		Elliot Creek					
Township-Range-Section-1/4		T1N R6W, Sec. 2, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		470043/5049124					
Road Name		Unnamed off Beaver Dam Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	5.2				
Material	Corrugated metal	Upstream Gradient (%)	6.2				
Length (ft)	41	Bankfull Width (ft)	8.0				
Width (in)	102	Bankfull:Culvert Ratio	1.1				
Height (in)	72						
Outlet Perch (ft)	0.2						
Gradient (%)	2.6						
Rustline Height (in)	5						
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.2	Habitat Points	3				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Resident	Fish Points	2				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	9				
Notes:							



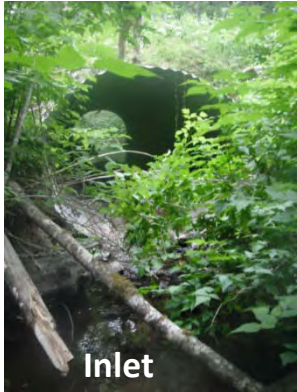

Inlet





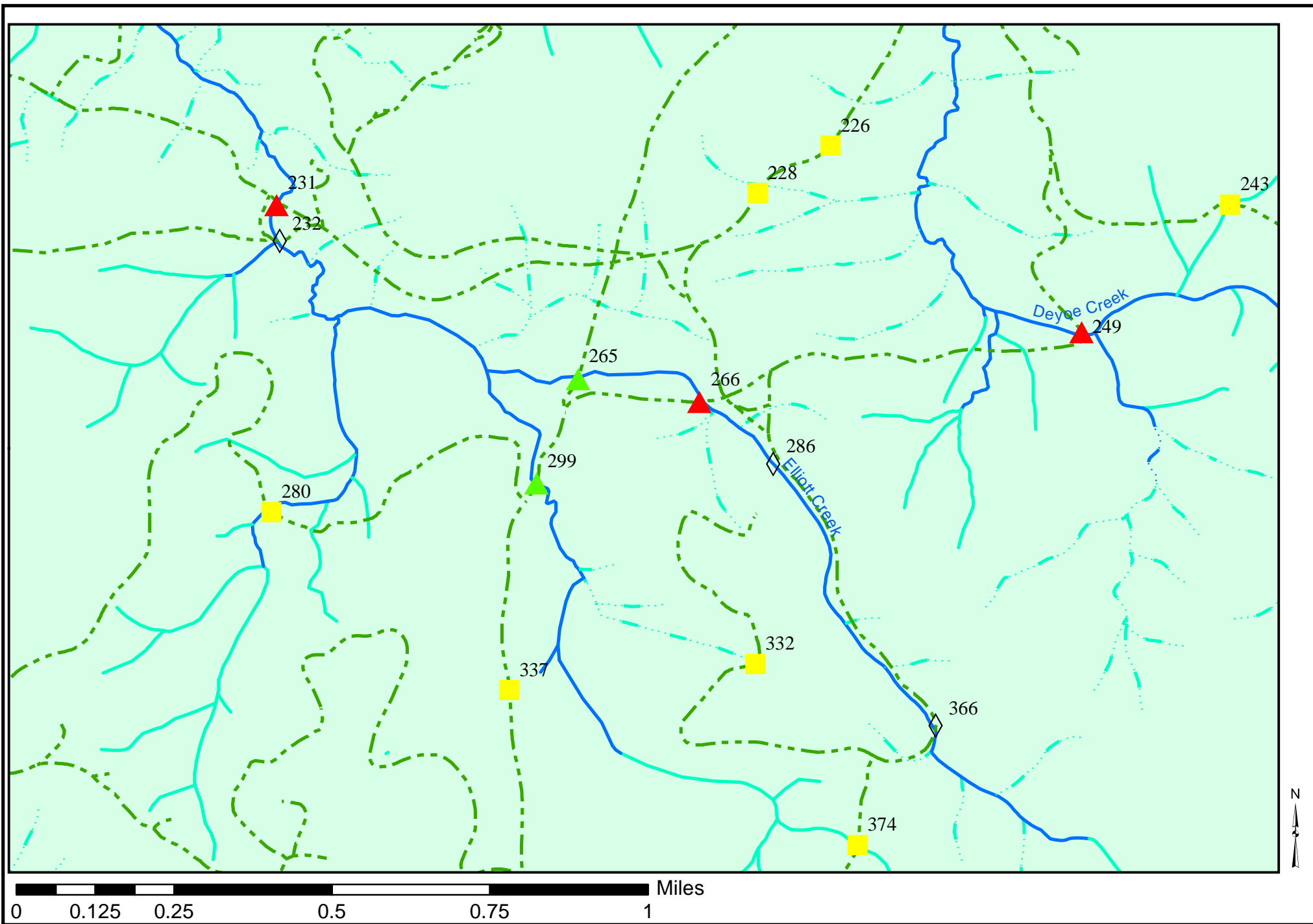
Outlet



LOCATION INFO				Culvert #	266	Priority	M
Watershed				Wilson River			
Stream Name				Elliot Creek			
Township-Range-Section-1/4				T1N R6W, Sec. 1, SW¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				470343/5049056			
Road Name				Beaver Dam Road			
Road/Culvert Owner				Oregon Department of Forestry			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	2.4				
Material	Corrugated metal	Upstream Gradient (%)	5.2				
Length (ft)	66	Bankfull Width (ft)	9.8				
Width (in)	120	Bankfull:Culvert Ratio	1.0				
Height (in)	96						
Outlet Perch (ft)	1.1						
Gradient (%)	2.7						
Rustline Height (in)	9						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.0	Habitat Points	2				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Resident	Fish Points	2				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
Notes:							








LOCATION INFO				Culvert #	299	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary to Elliot Creek					
Township-Range-Section-1/4		T1N R6W, Sec. 11, NW¼ of NE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		469924/5048854					
Road Name		Beaver Dam Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Pipe arch	Inlet Gradient (%)	1.1				
Material	Corrugated metal	Upstream Gradient (%)	0.7				
Length (ft)	56	Bankfull Width (ft)	12.2				
Width (in)	126	Bankfull:Culvert Ratio	0.9				
Height (in)	90						
Outlet Perch (ft)	0.1						
Gradient (%)	0.5						
Rustline Height (in)	26						
Overall Condition	Fair						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Resident	Fish Points	2				
Barrier Class	Green	Barrier Points	1				
		Prioritization Total Points	7				
<b>Notes:</b> Large beaver dams just upstream and downstream of this pipe during summer 2011.							



Elliott Creek Area Culverts, Wilson River Basin


## DEVILS LAKE FORK WILSON RIVER TRIBUTARIES CULVERTS

LOCATION INFO				Culvert #	249	Priority	H
Watershed		Wilson River					
Stream Name		Deyoe Creek					
Township-Range-Section-1/4		T1N R6W, Sec. 1, SW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		471310/5049236					
Road Name		Spur off of Saddle Mountain Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	4.8				
Material	Corrugated metal	Upstream Gradient (%)	5.1				
Length (ft)	50	Bankfull Width (ft)	10.6				
Width (in)	76	Bankfull:Culvert Ratio	0.6				
Height (in)	54						
Outlet Perch (ft)	0.6						
Gradient (%)	0.6						
Rustline Height (in)	12						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	1.7	Habitat Points	4				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	13				
Notes:							


LOCATION INFO				Culvert #	202	Priority	H
Watershed		Wilson River					
Stream Name		Lewis Creek					
Township-Range-Section-1/4		T2N R5W, Sec. 31, NE¼ of SW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		472642/5050895					
Road Name		Scoggins Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 Inlet	
Shape	Pipe arch	Inlet Gradient (%)	-8.6				
Material	Corrugated metal	Upstream Gradient (%)	0.5				
Length (ft)	54	Bankfull Width (ft)	7.8				
Width (in)	94	Bankfull:Culvert Ratio	1.0				
Height (in)	60	Crew couldn't find invert of pipe below substrate, but it appears to be a pipe arch and not an open-bottomed arch.					
Outlet Perch (ft)	None						
Gradient (%)	1.8						
Rustline Height (in)	12						
Overall Condition	Good						
PRIORITIZATION ANALYSIS						 Outlet	
Upstream Habitat Length (mi)	0.8	Habitat Points	2				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Gray	Barrier Points	3				
		Prioritization Total Points	11				
Notes:							



LOCATION INFO				Culvert #	150	Priority	L
Watershed		Wilson River					
Stream Name		Unnamed tributary of Devils Lake Fork Wilson River					
Township-Range-Section-1/4		T2N R5W, Sec. 31, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		472570/5051758					
Road Name		Powderhouse Loop Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)		9.0			
Material	Corrugated metal	Upstream Gradient (%)		0			
Length (ft)	68	Bankfull Width (ft)		Not measured			
Width (in)	78	Bankfull:Culvert Ratio		0.3			
Height (in)	54	Upstream channel width not measured.					
Outlet Perch (ft)	2.4	An ~35 ft long log formed a dam just upstream of inlet and created a pond					
Gradient (%)	4.7	upstream of the culvert. As a result no					
Rustline Height (in)	None	stream channel remained visible.					
Overall Condition	Good						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.2	Habitat Points		1		
Habitat Quality		Fair	Habitat Quality Points		2		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		9		







Inlet





Outlet



**Notes:** Log dam greatly restricting flows through pipe. Pipe outlets into riprap and water runs through this material before coming to the surface in the channel at the downstream end of this material. Tailwater control point was measured at the end of this placed material.

LOCATION INFO				Culvert #	178	Priority	H
Watershed		Wilson River					
Stream Name		Unnamed tributary of Devils Lake Fork Wilson River					
Township-Range-Section-1/4		T2N R5W, Sec. 31, SE¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		473094/5050767					
Road Name		Powerhouse Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO				 <b>Inlet</b>	
Shape	Circular	Inlet Gradient (%)		5.2			
Material	Corrugated metal	Upstream Gradient (%)		2.8			
Length (ft)	29	Bankfull Width (ft)		5.1			
Width (in)	36	Bankfull:Culvert Ratio		0.6			
Height (in)	36	According to ODF staff, this pipe is scheduled to be replaced in preparation for an upcoming timber sale.					
Outlet Perch (ft)	1.3						
Gradient (%)	2.3						
Rustline Height (in)	10						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS						 <b>Outlet</b>	
Upstream Habitat Length (mi)		0.6	Habitat Points		2		
Habitat Quality		Good	Habitat Quality Points		3		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		11		
<b>Notes:</b> Inlet was badly damaged, resulting in an ~12 inch cascade into the pipe							

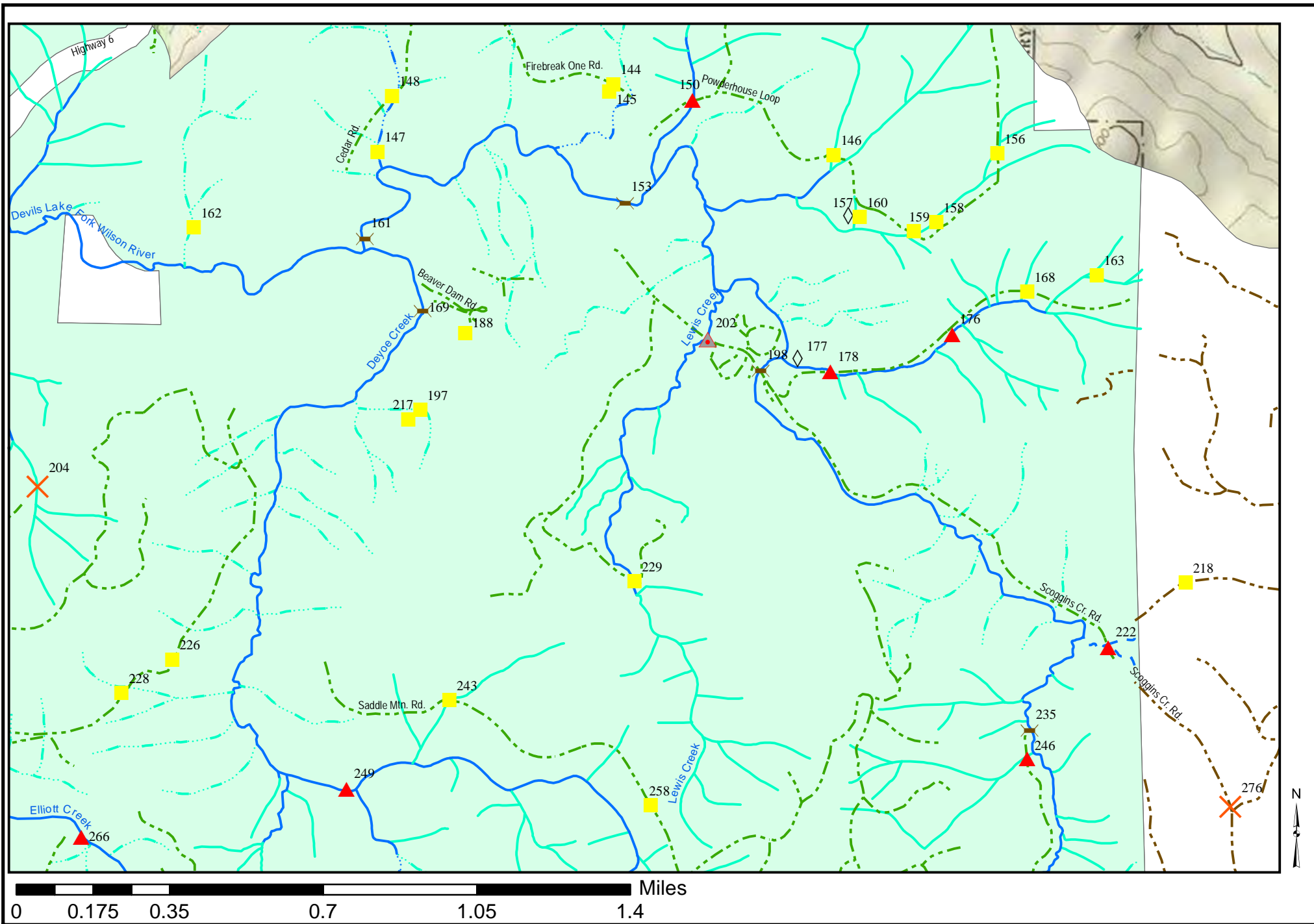
LOCATION INFO				Culvert #	176	Priority	M
Watershed		Wilson River					
Stream Name		Unnamed tributary of Devils Lake Fork Wilson River					
Township-Range-Section-1/4		T2N R5W, Sec. 31, NW¼ of SE¼					
UTM Easting/Northing (Zone 10, NAD 1983)		473526/5050908					
Road Name		#7 Clyde's Trail					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Circular	Inlet Gradient (%)	-31.8				
Material	Corrugated metal	Upstream Gradient (%)	0				
Length (ft)	34	Bankfull Width (ft)	44*				
Width (in)	48	Bankfull:Culvert Ratio	0.1				
Height (in)	48	According to ODF staff, this pipe is scheduled to be replaced in preparation for an upcoming timber sale.					
Outlet Perch (ft)	None						
Gradient (%)	8.3						
Rustline Height (in)	42						
Overall Condition	Critical						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.3	Habitat Points	1				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
<b>Notes:</b> Pipe barrel deformed and invert highly corroded. Inlet nearly completely blocked with wood and sediment. *Series of beaver ponds along this stream. Inlet drains one of these ponds, and the culvert blockage noted below likely due to beaver activities.							

LOCATION INFO				Culvert #	222	Priority	M
Watershed		Wilson River					
Stream Name		Unnamed tributary of Devils Lake Fork Wilson River					
Township-Range-Section-1/4		T1N R5W, Sec. 5, SE¼ of NW¼					
UTM Easting/Northing (Zone 10, NAD 1983)		474112/5049754					
Road Name		Scoggins Creek Road					
Road/Culvert Owner		Oregon Department of Forestry					
Adjacent Landowners		Oregon Department of Forestry					
CULVERT INFO		CHANNEL INFO					
Shape	Pipe arch	Inlet Gradient (%)	-18.1				
Material	Corrugated metal	Upstream Gradient (%)	-1.1				
Length (ft)	50	Bankfull Width (ft)	13.2				
Width (in)	108	Bankfull:Culvert Ratio	0.7				
Height (in)	74						
Outlet Perch (ft)	2.0						
Gradient (%)	-0.2						
Rustline Height (in)	34						
Overall Condition	Poor						
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)	0.5	Habitat Points	1				
Habitat Quality	Good	Habitat Quality Points	3				
Fish Species	Anad.	Fish Points	3				
Barrier Class	Red	Barrier Points	3				
		Prioritization Total Points	10				
<b>Notes:</b> As of September 2012, this culvert has been replaced with a rail car bridge and this crossing no longer impedes fish passage.							

LOCATION INFO				Culvert #	246	Priority	L
Watershed				Wilson River			
Stream Name				Unnamed tributary of Devils Lake Fork Wilson River			
Township-Range-Section-1/4				T1N R5W, Sec. 5, NW¼ of NW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				473811/5049357			
Road Name				OHV Trail off of Scoggins Creek Road			
Road/Culvert Owner				Oregon Department of Forestry			
Adjacent Landowners				Oregon Department of Forestry			
CULVERT INFO		CHANNEL INFO					
Shape		Circular	Inlet Gradient (%)	-15.0			
Material		Corrugated metal	Upstream Gradient (%)	8.5			
Length (ft)		34	Bankfull Width (ft)	4.4			
Width (in)		18	Bankfull:Culvert Ratio	0.3			
Height (in)		18					
Outlet Perch (ft)		2.6					
Gradient (%)		4.2					
Rustline Height (in)		8					
Overall Condition		Poor					
PRIORITIZATION ANALYSIS							
Upstream Habitat Length (mi)		0.1	Habitat Points		1		
Habitat Quality		Poor	Habitat Quality Points		1		
Fish Species		Anad.	Fish Points		3		
Barrier Class		Red	Barrier Points		3		
			Prioritization Total Points		8		
<b>Notes:</b> This stream designated nonfish. However, it is a tributary to a known fishbearing stream and the lower portion appears to provide suitable habitat for fish. Thus, for this project we considered this stream as capable of supporting fish upstream to where it branches into two smaller headwater tributaries.							





Devils Lake Fork Wilson River Tributaries Culverts, Wilson River Basin