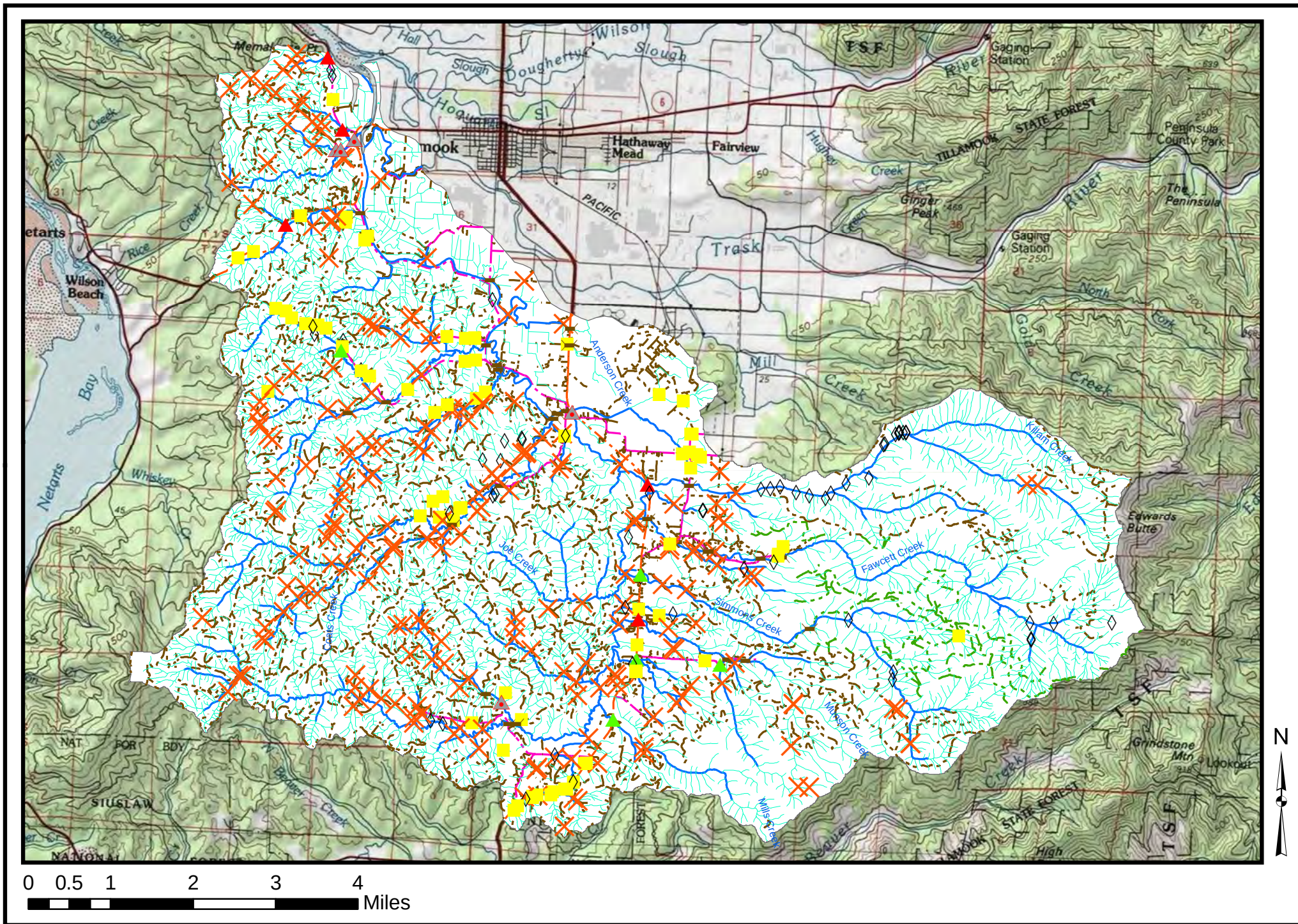

Tillamook River Basin Culverts



Tillamook Basin Crossings

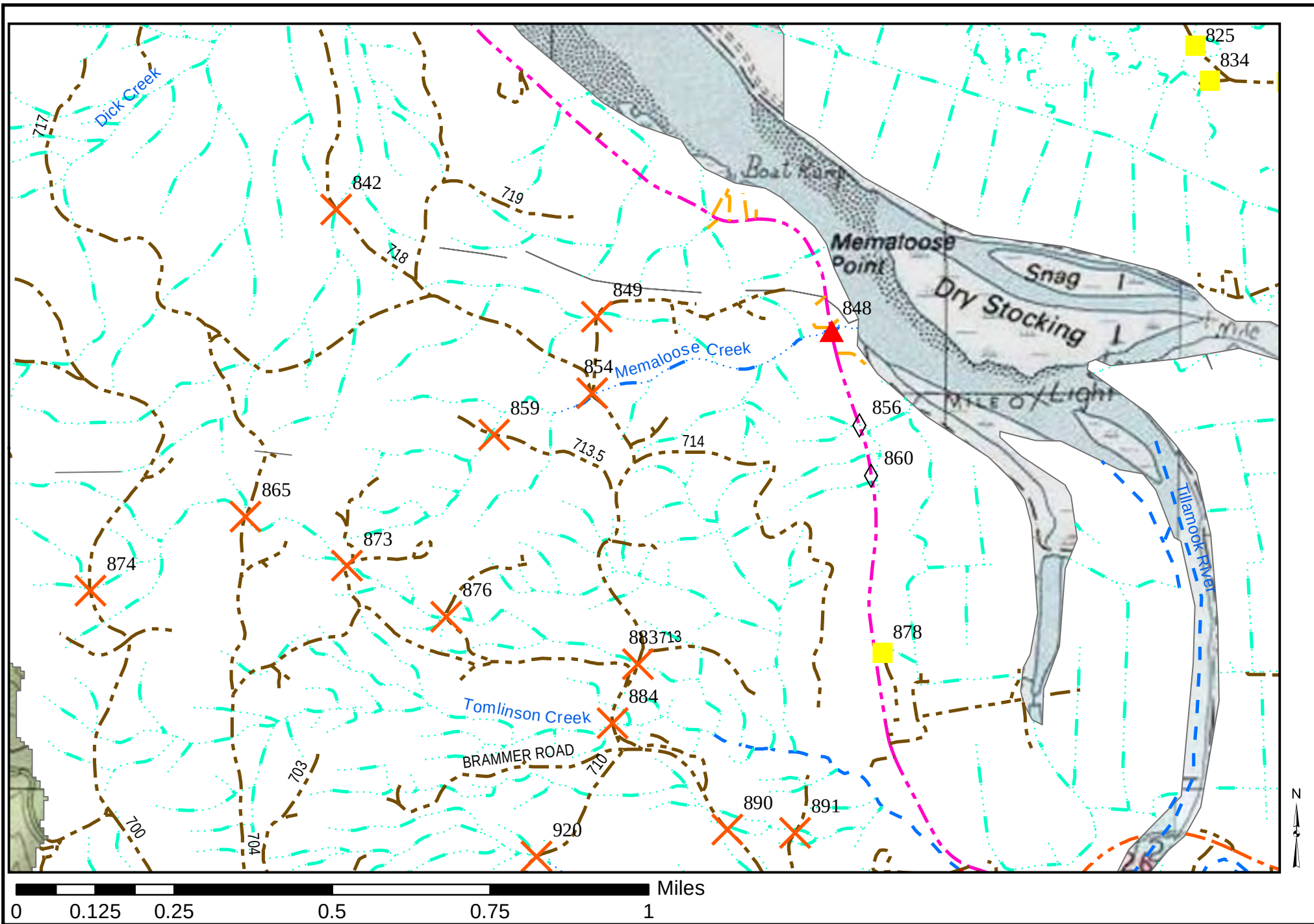
Tillamook River Basin Clusters

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			
Notes: 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

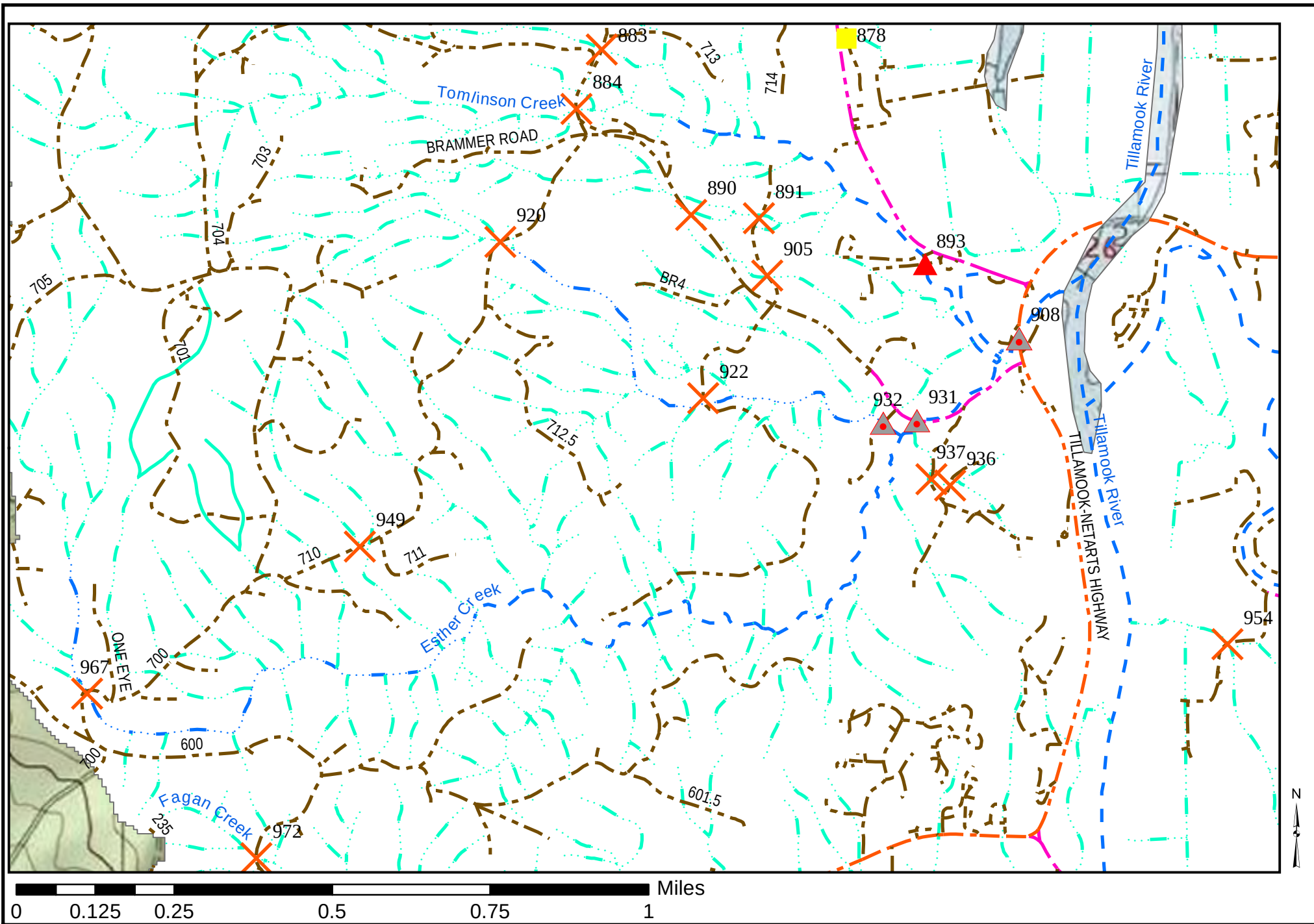
TOMLINSON AND ESTHER CREEKS CULVERTS

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				 Inlet  Outlet	
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	
Notes: 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.							

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				 Inlet –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							 Outlet	
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		
Notes: 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				 Inlet	
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						 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	2				
		Prioritization Total Points	10				
Notes: 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		

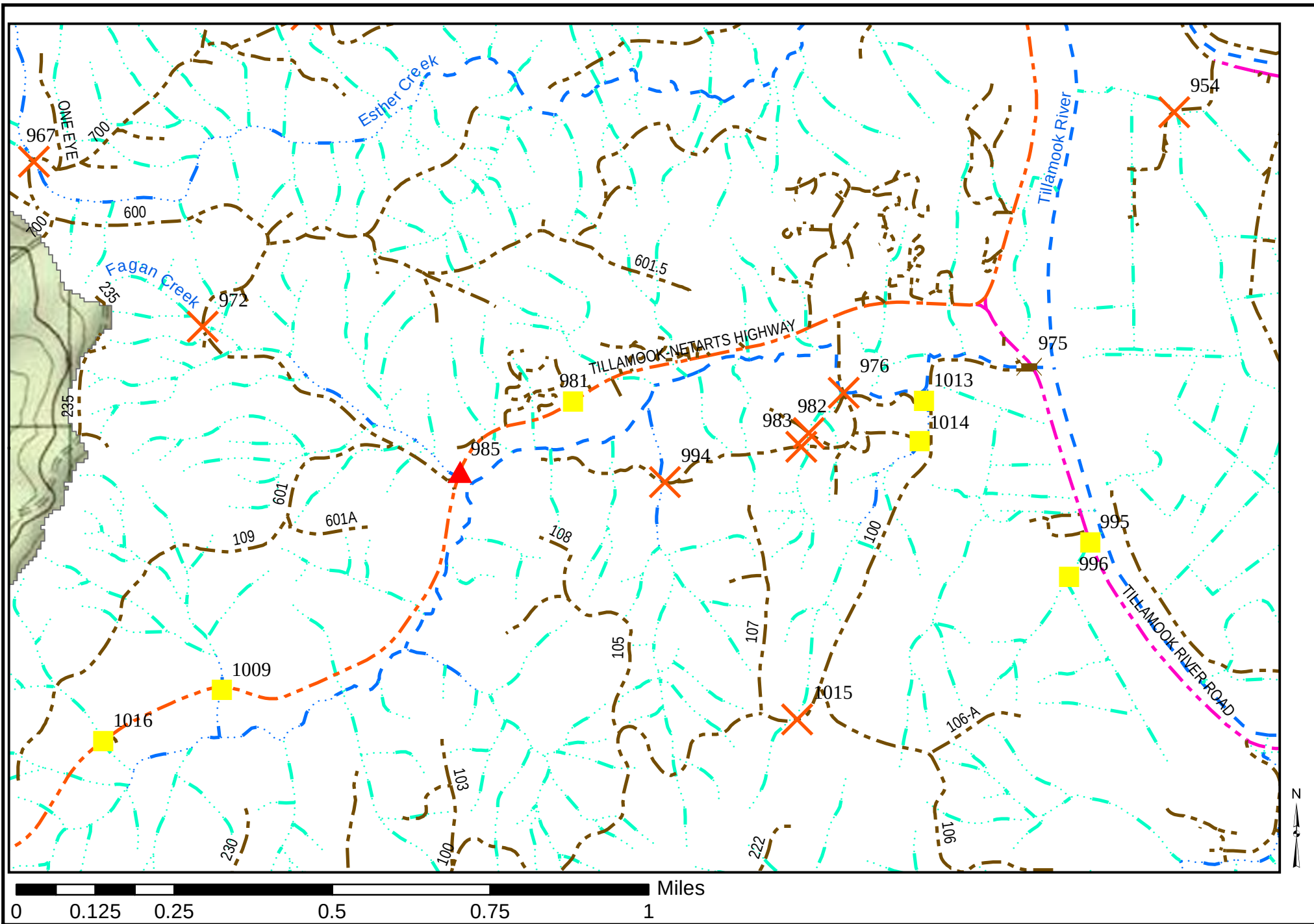


Inlet



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				 Inlet	
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					 Outlet	
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				
Notes: 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.							

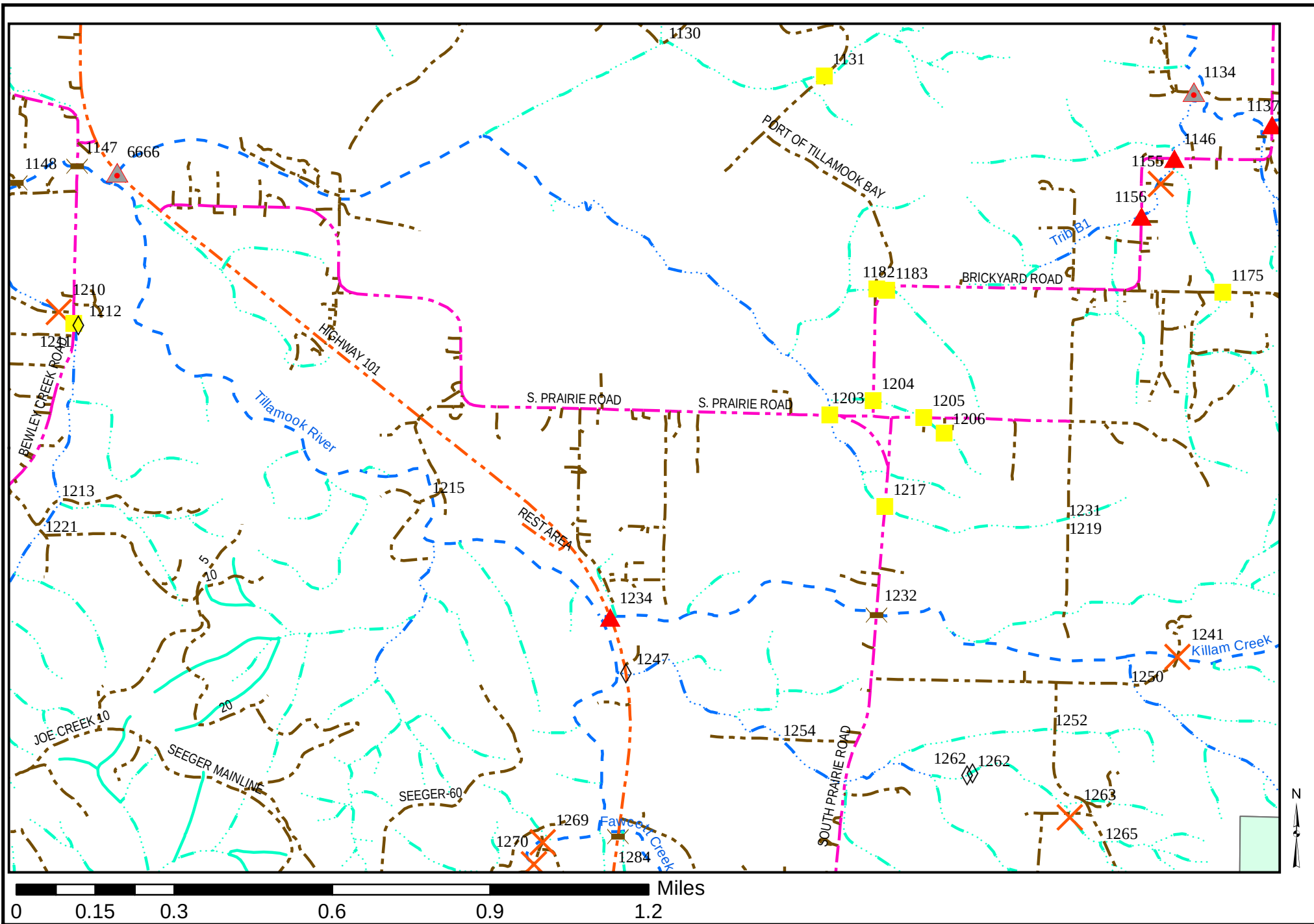


Beaver Creek Area Culverts, Tillamook River Basin

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:							

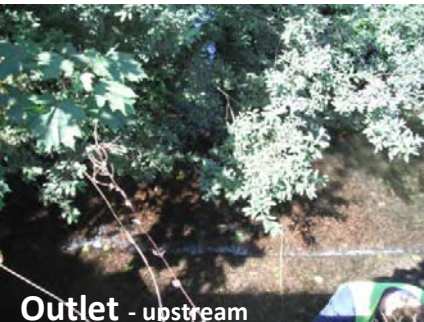
LOCATION INFO				Culvert #	1234	Priority	H
Watershed				Tillamook River			
Stream Name				Killam Creek			
Township-Range-Section-1/4				T2S, R9W, Sec. 16, NW¼ of SW¼			
UTM Easting/Northing (Zone 10, NAD 1983)				437142/5022712			
Road Name				Highway 101			
Road/Culvert Owner				Oregon Department of Transportation			
Adjacent Landowners				G. Stevens and Stimson Lumber Co.			
CULVERT INFO		CHANNEL INFO					
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							
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				
Notes: 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				 Inlet	
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						 Outlet	
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				
Notes: 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.							

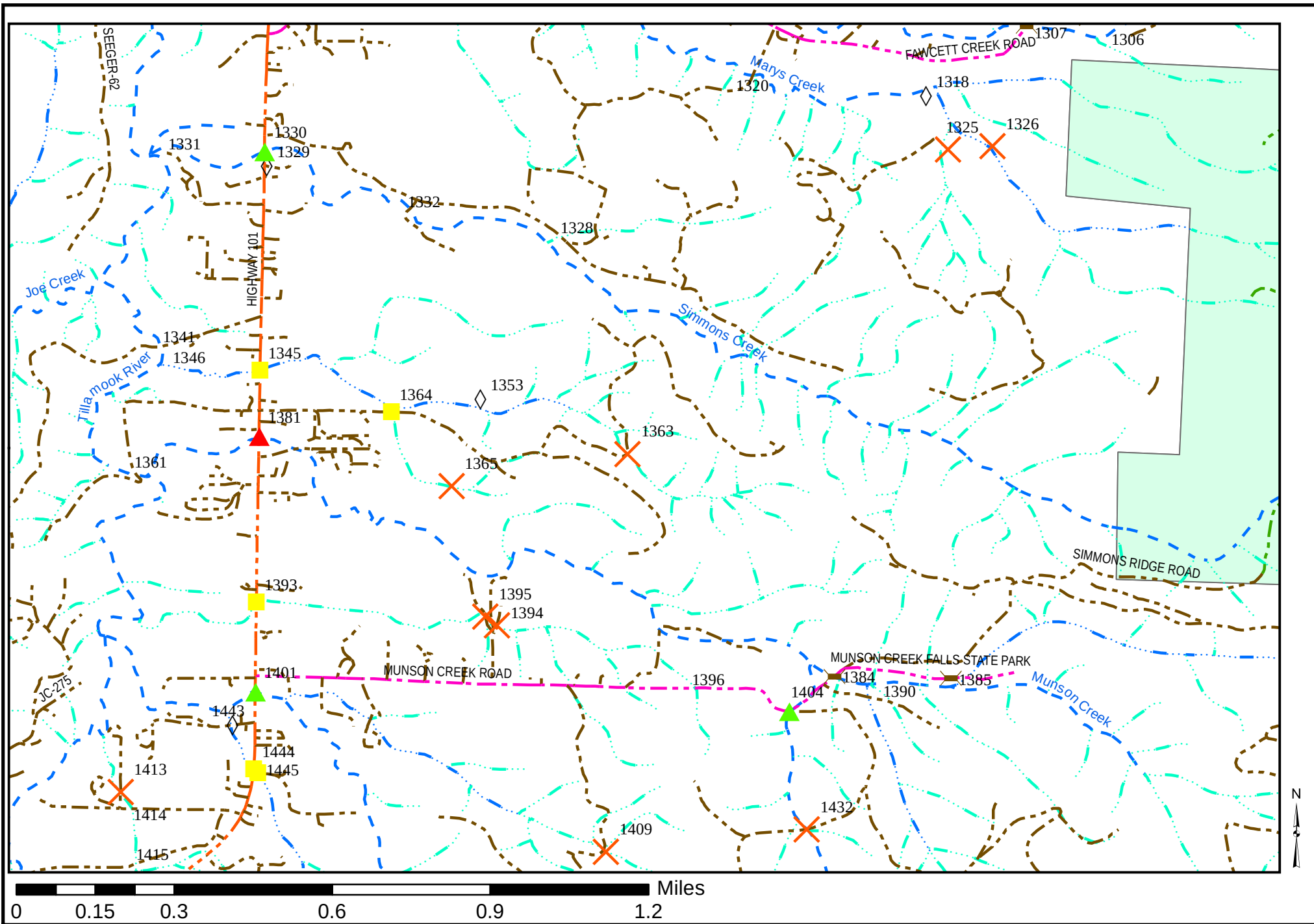
LOCATION INFO				Culvert #	1381	Priority	H
Watershed				Tillamook River			
Stream Name				Munson Creek			
Township-Range-Section-1/4				T2S, R9W, Sec. 28, SW ¹ / ₄ of NW ¹ / ₄			
UTM Easting/Northing (Zone 10, NAD 1983)				437008/5024593			
Road Name				Highway 101			
Road/Culvert Owner				Oregon Department of Transportation			
Adjacent Landowners				J. & J. Sheldon and T. & S. Marlin			
CULVERT INFO		CHANNEL INFO					
Shape	Box	Inlet Gradient (%)	1.4				
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						
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				
Notes: Rating based on perch and laminar flows across pipe invert (no natural substrate on culvert invert).							



Outlet



Outlet

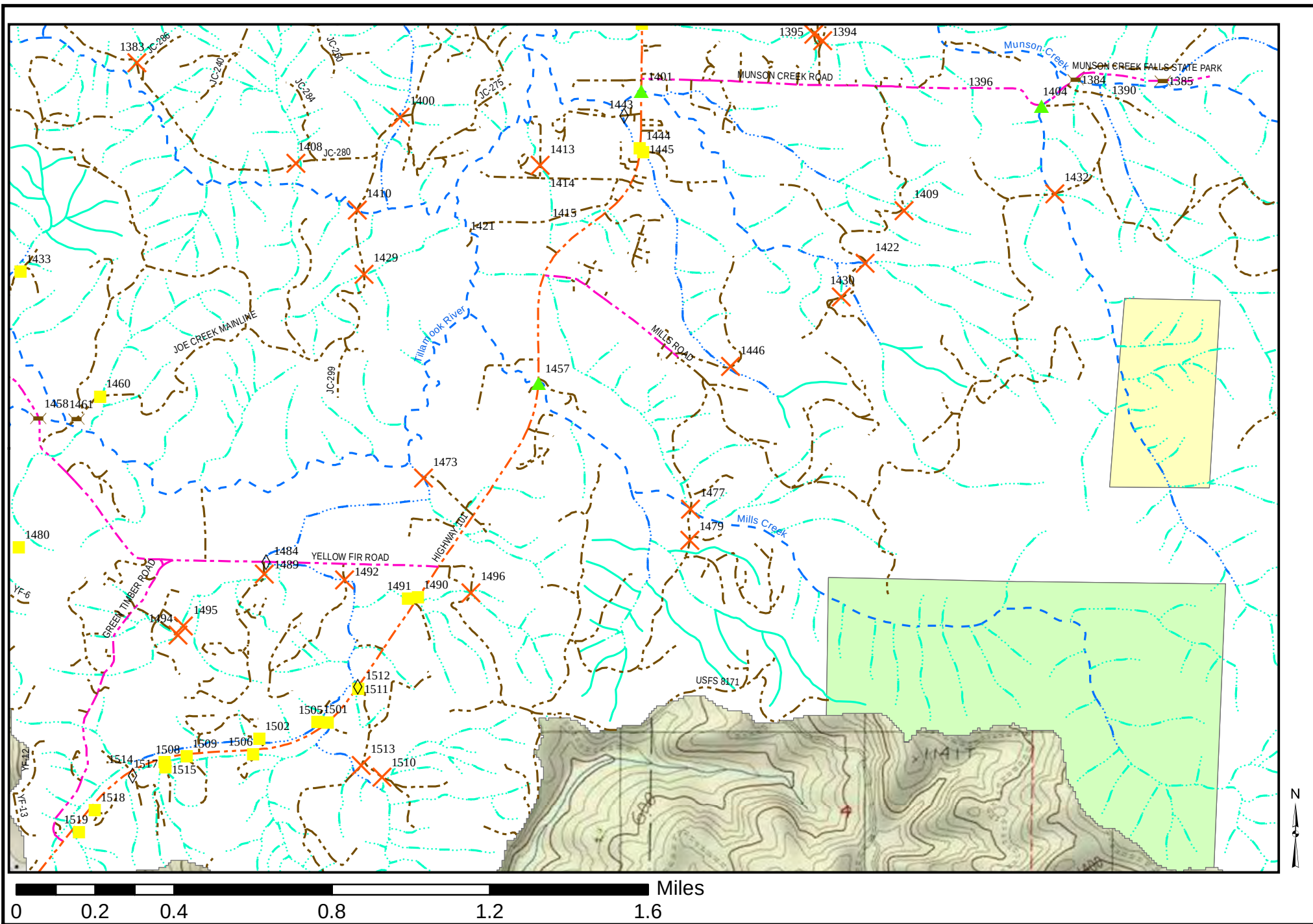


Munson Creek and Simmons Creek Area Culverts, Tillamook River Basin

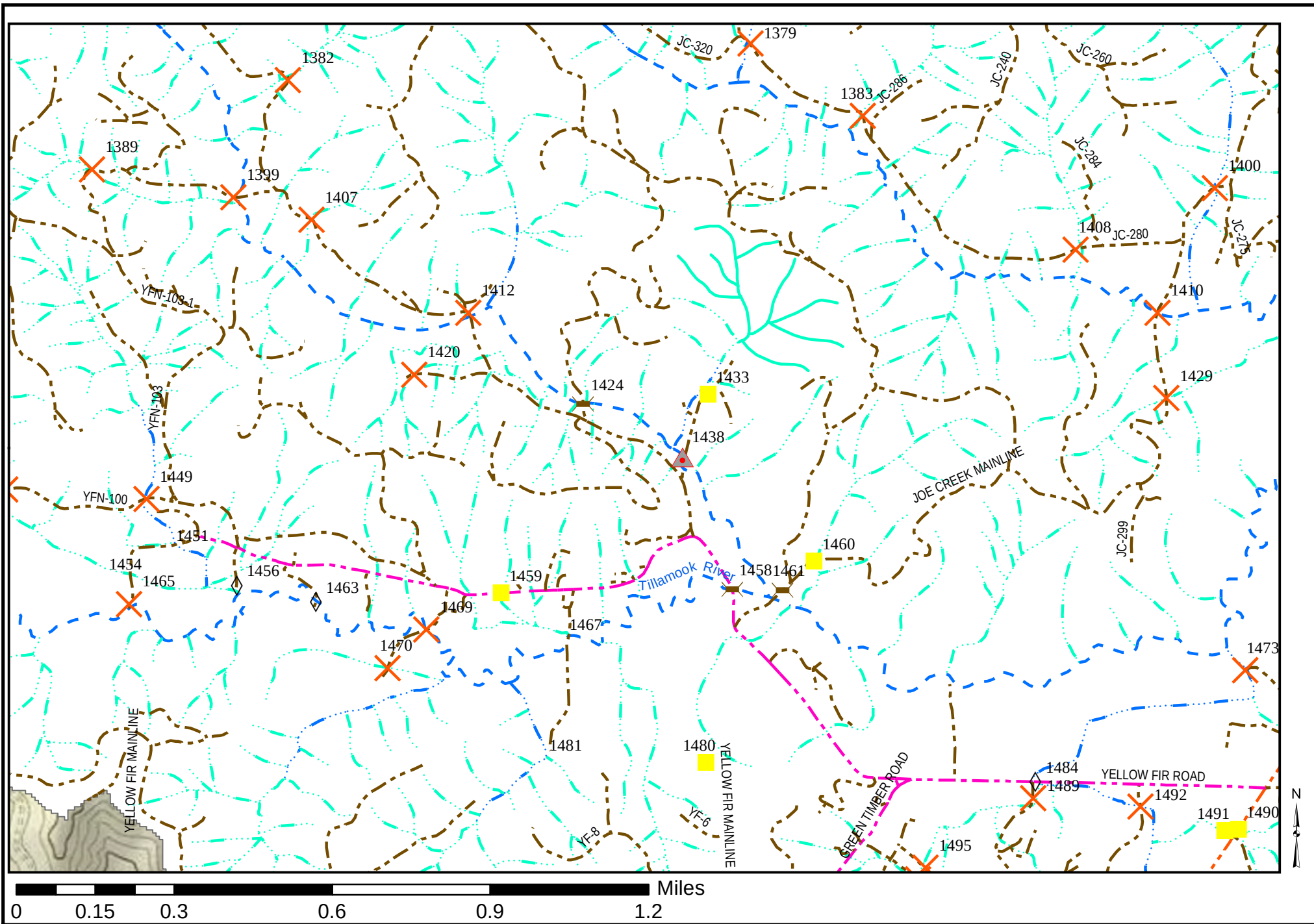
UPPER TILLAMOOK RIVER WATERSHED CULVERTS

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



Upper Yellow Fir Road Area Culverts, Tillamook River Basin