



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
ENVIRONMENTAL TECHNICAL STUDIES OFFICE
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 741-3655**

Will Reed
COMMISSIONER OF TRANSPORTATION

BILL LEE
GOVERNOR

MEMORANDUM

To: Steve Sellers, Manager
Region 4 Alternative Delivery

From: Rita Thompson
Tech Studies Office, Ecology Unit *Rita M. Thompson*

Date: 7/24/2025

Subject: Environmental Boundaries Report for:
PIN 136185.04 (Old PIN 134876.00); SR-180 Bridge Replacement (Bridge
#31)
and
PIN 136185.05 (Old PIN 134877.00); SR-180 Bridge Replacement (Bridge
#32)
Lauderdale County, TN

An ecological evaluation of the subject projects has been conducted in response to a request for initial feature identification with the following results:

STREAMS: PIN 136185.04: Two (2) streams and three (3) wet weather conveyance/upland drainage features were noted within the project limits.

PIN 136185.05: Two (2) streams and one (1) wet weather conveyance/upland drainage feature were noted within the project limits

WETLANDS: PIN 136185.04: One (1) wetland was noted within the project limits.

PIN 136185.05: No wetlands were noted within the project limits.

OTHER FEATURES: No other features were noted in the project limits.

SPECIES:

- *USFWS*: USFWS coordination was completed for both PINs on May 22, 2025. USFWS did not have concerns for listed species. TDOT has determined there will be no effect to listed species as a result of this project.
- *TWRA*: TWRA coordination was completed for both PINs on May 21, 2025. TWRA did not have species concerns.
- *TDEC DNA*: This project fits Condition #1 of the TDEC DNA MOA

COMMITMENTS: There are no project commitments.

Please note the fieldwork and coordination for the project was completed under the old PINs referenced above. If you have any questions or comments, please contact me at (615) 253-2459 or rita.m.thompson@tn.gov.

xc: TDOT.Env.Ecology@tn.gov
TDOT.Env.Permits@tn.gov
TDOT.ENV.Mitigation@tn.gov
TDOT.ENV.NEPA@tn.gov
R4.EnvTechOffice@tn.gov

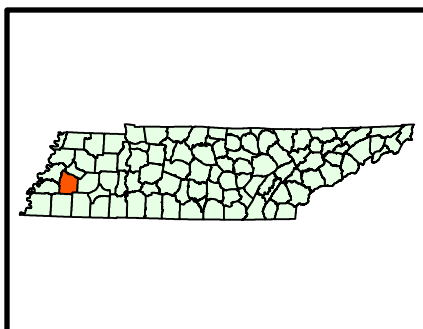
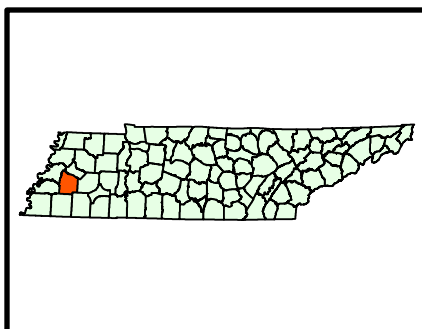
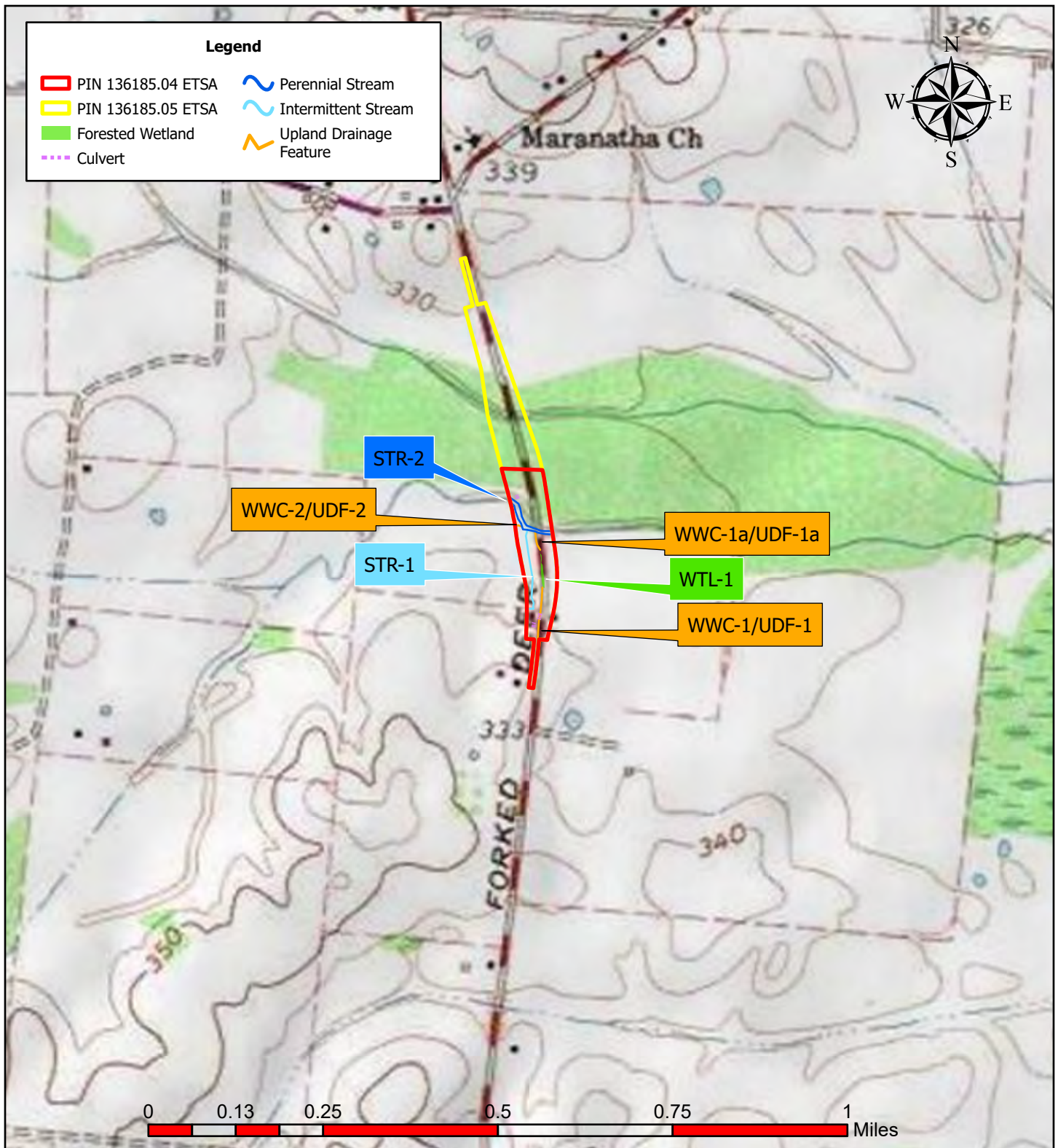


Figure 1: Vicinity Map
Haywood County, R4 Timber Bridge Bundle - Bridge 31

ESRI World Street Map Basemap
 July 1, 2025

PIN 136185.04

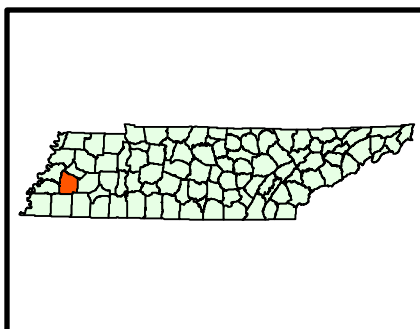
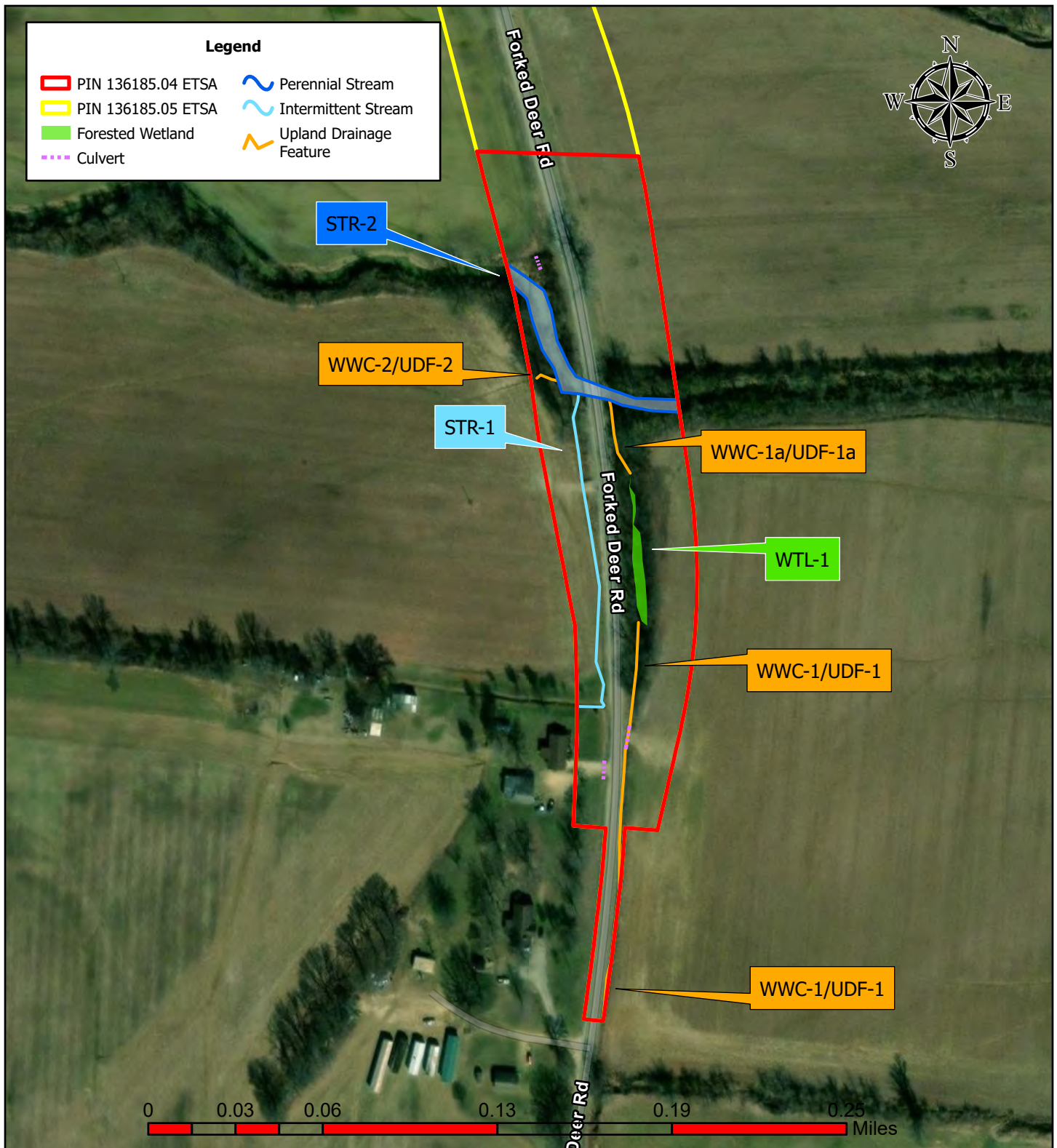




**Figure 2: Water Resources Topographic Map
Haywood County, R4 Timber Bridge Bundle - Bridge 31**

Gates, TN USGS Quadrangle
July 1, 2025

PIN 136185.04



**Figure 3: Water Resources Aerial Map
Haywood County, R4 Timber Bridge Bundle - Bridge 31**

2022 Maxar Vivid Standard Imagery
July 1, 2025

PIN 136185.04

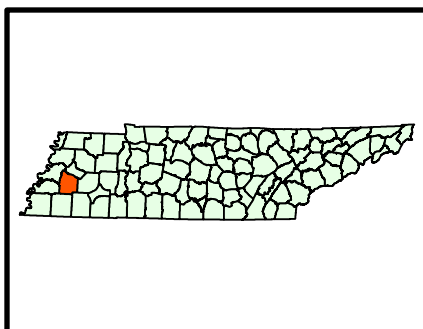
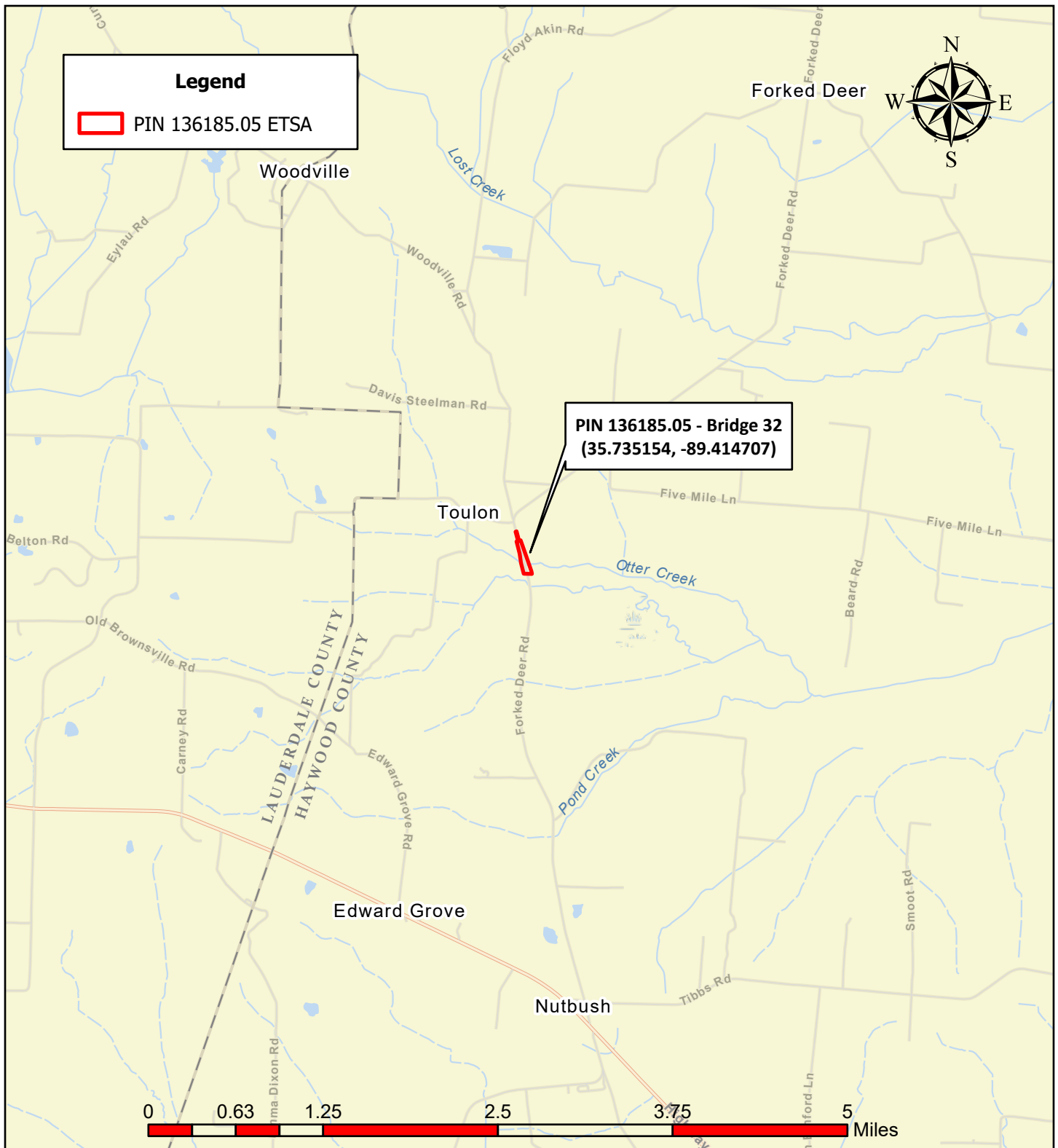
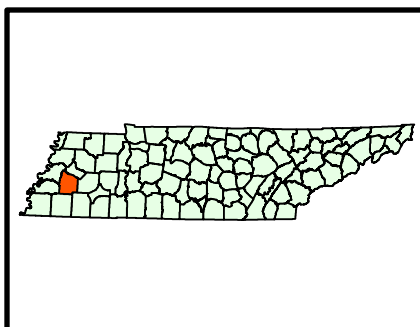
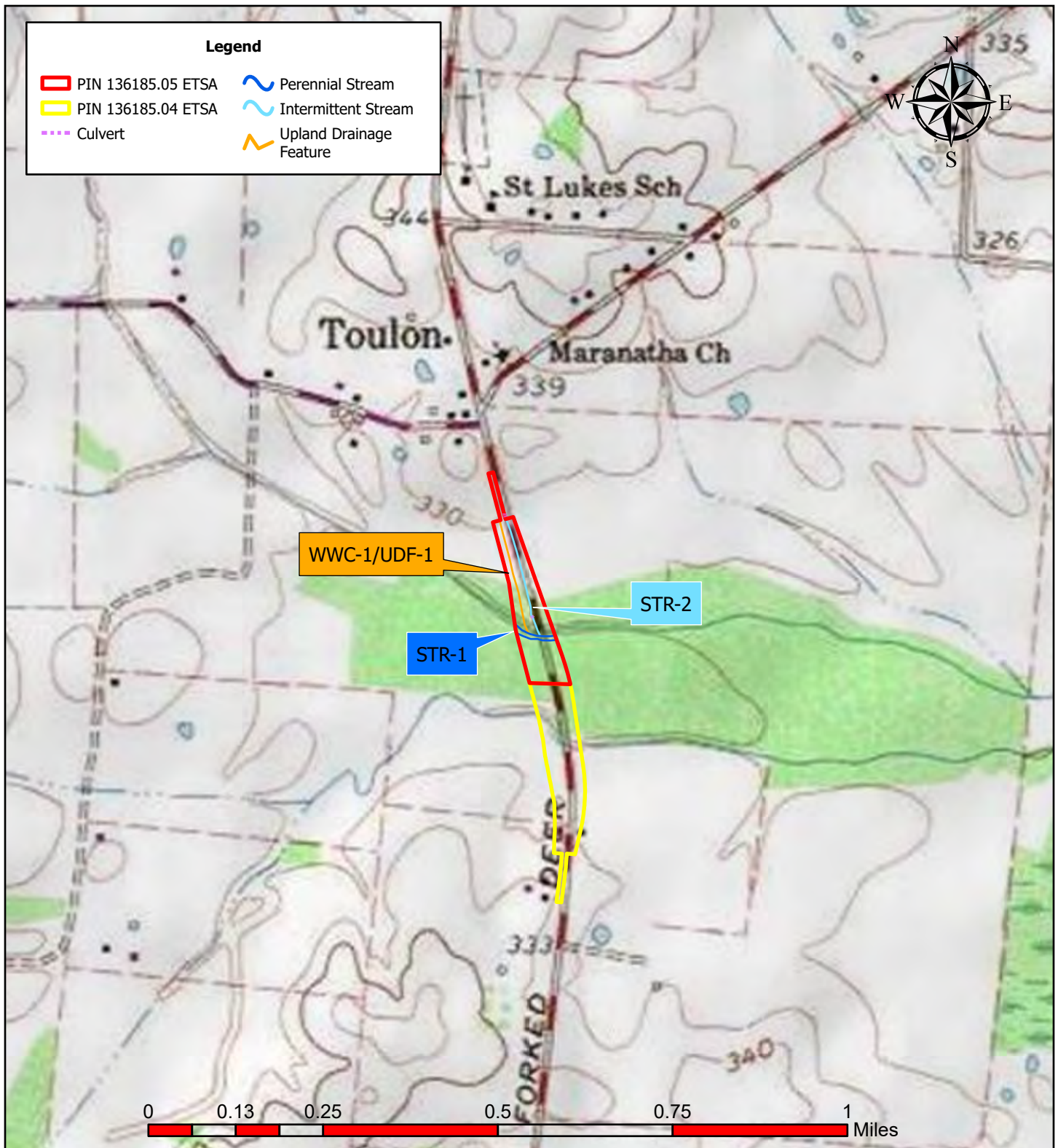


Figure 1: Vicinity Map
Haywood County, R4 Timber Bridge Bundle - Bridge 32

ESRI World Street Map Basemap
July 1, 2025

PIN 136185.05





**Figure 2: Water Resources Topographic Map
Haywood County, R4 Timber Bridge Bundle - Bridge 32**

Gates, TN USGS Quadrangle
July 1, 2025

PIN 136185.05

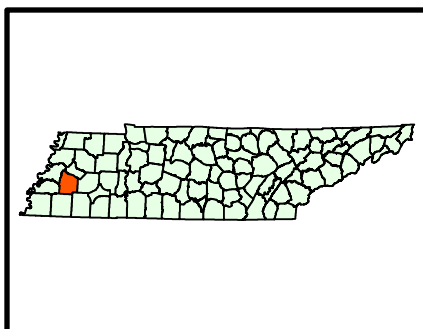
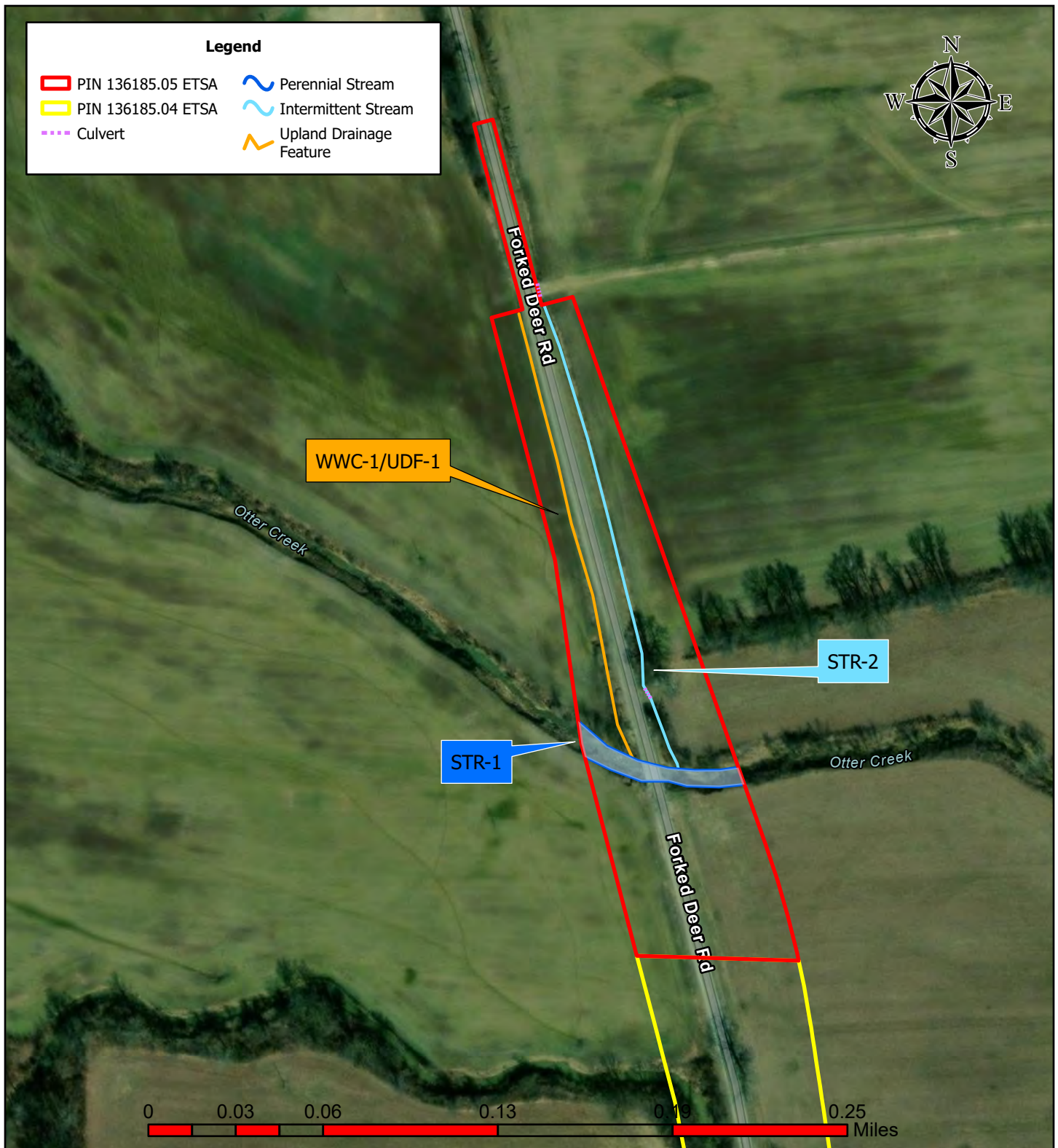


Figure 3: Water Resources Aerial Map
Haywood County, R4 Timber Bridge Bundle - Bridge 32

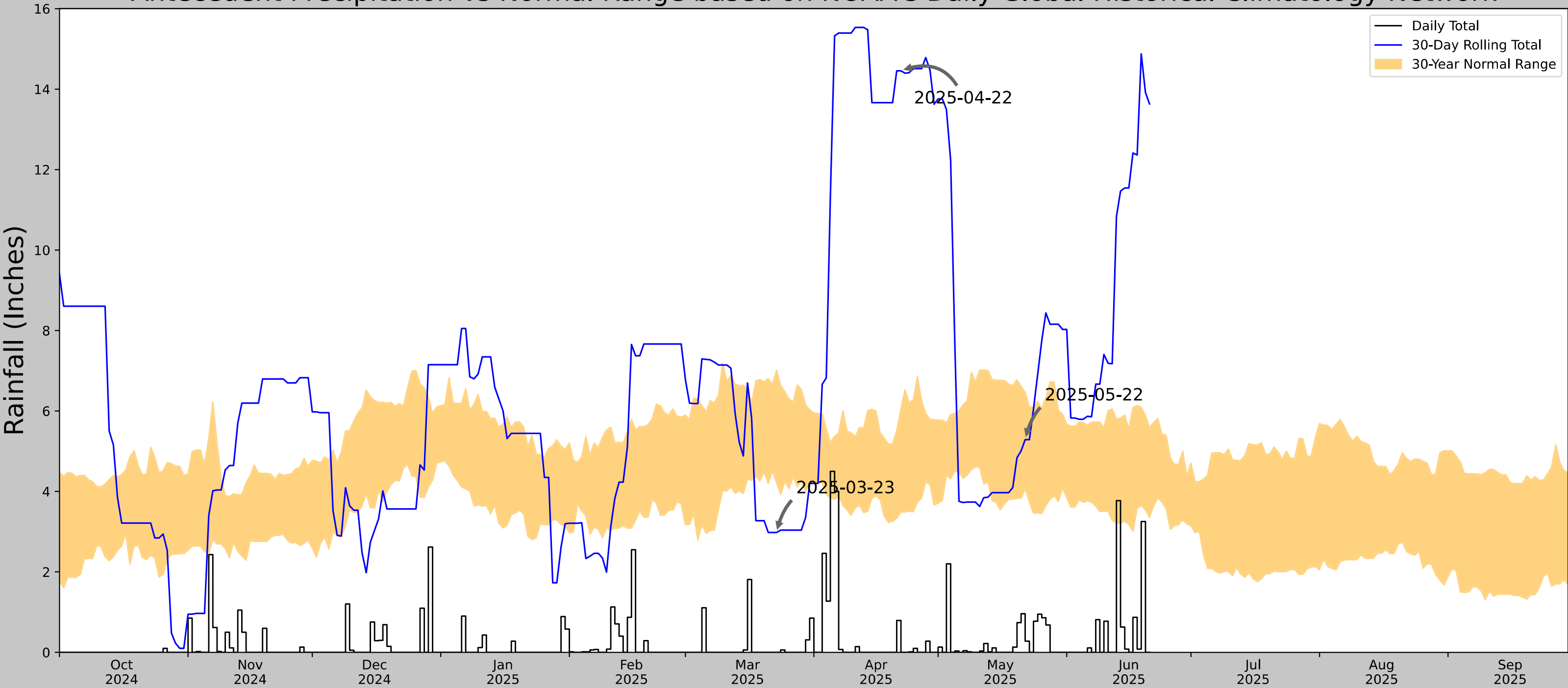
2022 Maxar Vivid Standard Imagery
 July 1, 2025

PIN 136185.05

Project Name:		Haywood County SR-180 R4 Timber Bridge Bundle Project		PIN: 136185.04					
<div>Water Resource Table for NEPA Documentation</div> <div>Based on: ETSA</div> <div>Date: 5/21/2025</div> <div>Table Amounts are based on (choose only one): Estimated extent of resource within ETSA</div>									
Water Resources (Non-Wetland)									
Label	Type	Latitude	Longitude	Receiving Waters		USACE Jurisdiction	Quality	Amount (Linear Feet)	Amount (Acres)
WWC-1/UDF-1	Wet Weather Conveyance/Upland Drainage	35.731019	-89.413933	Pond Creek		No	Not Applicable	518	0.03
STR-1	Intermittent Stream	35.732172	-89.414074	Pond Creek		Yes	Not Supporting	533	0.02
WWC-1a/UDF-1a	Wet Weather Conveyance/Upland Drainage	35.732647	-89.413964	Pond Creek		No	Not Applicable	120	0.01
STR-2	Perennial Stream	35.732988	-89.414265	Pond Creek		Yes	Not Supporting	377	0.19
WWC-2/UDF-2	Wet Weather Conveyance/Upland Drainage	35.732902	-89.414315	Pond Creek		No	Not Applicable	36	0.001
Total:								1,584	0.25
Water Resources (Wetland)*									
Label	Type	Latitude	Longitude	Receiving Waters	TDEC Jurisdiction	USACE Jurisdiction	Quality	Amount (Acres)	
WTL-1	Forested	35.732097	-89.413838	Pond Creek	Isolated	No	Low Resource Value	0.06	
Total:**								0.06	
*Unless described otherwise in the NEPA document; all wetlands are presumed to serve the following functions to varying degrees, based on location: wildlife habitat, flood storage, groundwater recharge, nutrient processing, contaminant filtering, and recreation.									
**For the purposes of the NEPA document, Amount is assumed to be Permanent Loss.									
Note- Features and estimated amounts referenced in this table are based on information available and may change as the project is further refined throughout project development.									


Project Name:		Haywood County SR-180 R4 Timber Bridge Bundle Project		PIN: 136185.05					
<div>Water Resource Table for NEPA Documentation</div> <div>Based on: ETSA</div> <div>Date: 5/21/2025</div> <div>Table Amounts are based on (choose only one): Estimated extent of resource within ETSA</div>									
Water Resources (Non-Wetland)									
Label	Type	Latitude	Longitude	Receiving Waters		USACE Jurisdiction	Quality	Amount	Amount
STR-1	Perennial Stream	35.734631	-89.414572	Pond Creek		Yes	Not Supporting	263	0.12
WWC-1/UDF-1	Wet Weather Conveyance/Upland Drainage	35.735629	-89.414999	Pond Creek		No	Not Applicable	709	0.02
STR-2	Intermittent Stream	35.735255	-89.414721	Pond Creek		Yes	Not Supporting	750	0.06
Total:								1,722	0.20
Note- Features and estimated amounts referenced in this table are based on information available and may change as the project is further refined throughout project development.									

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	35.735154, -89.414707
Observation Date	2025-05-22
Elevation (ft)	325.808
Drought Index (PDSI)	Mild wetness
WebWIMP H ₂ O Balance	Wet Season


30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-05-22	4.065748	6.454331	5.287402	Normal	2	3	6
2025-04-22	3.488976	6.054331	14.456693	Wet	3	2	6
2025-03-23	4.220079	7.014173	2.980315	Dry	1	1	1
Result							Normal Conditions - 13



**US Army Corps
of Engineers®**

Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center



ERDC

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
BROWNSVILLE	35.5908, -89.2597	374.016	13.236	48.208	6.594	11116	70
BROWNSVILLE 1.0 SE	35.5841, -89.2423	348.097	1.082	25.919	0.515	77	20
RIPLEY	35.7178, -89.4986	399.934	16.028	25.918	7.628	157	0
ALAMO 1 N	35.7978, -89.1175	348.097	16.378	25.919	7.795	1	0
SOMERVILLE 10N	35.365, -89.3475	342.848	16.365	31.168	7.874	1	0
JACKSON MCKELLAR- SIPES AP	35.5933, -88.9169	423.885	19.261	49.869	9.628	1	0

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.04									
Biologist:		I. Maldonado / L. Niven		Affiliation:		Athena EE		Date: 5/22/2025	
1-Station: from plans									
2-Map label and name WWC-1 / UDF-1									
3-Latitude/Longitude 35.731019, -89.413933									
4-Feature description:									
-channel identification		perennial stream <input type="checkbox"/>		intermittent stream <input type="checkbox"/>		ephemeral stream <input type="checkbox"/>		wwc <input checked="" type="checkbox"/>	
-HD score (if applicable)		10.00							
-OHWM indicators		bed & banks <input checked="" type="checkbox"/>		deposition <input type="checkbox"/>		presence of litter debris <input type="checkbox"/>		scour <input type="checkbox"/>	
		change in plant community <input type="checkbox"/>		destruction of terrestrial veg <input type="checkbox"/>		multiple observe flow events <input type="checkbox"/>		sediment sorting <input type="checkbox"/>	
		change in soil character <input type="checkbox"/>		leaf litter disturb or absent <input type="checkbox"/>		natural line impressed on bank <input type="checkbox"/>		shelving <input type="checkbox"/>	
-channel bottom width		2'			-top of bank width			3'	
-width and max depth at ordinary high water mark		2.5' and .4'							
-width at bankfull		3'							
-bank height		LDB - 1'				RDB - 1'			
-riffle/pool complex or other specialized habitat present?		N/A							
-dominant riparian species:		LDB: grasses							
------(LDB /RDB)-----		RDB: grasses							
-particle size distribution %		Silt/Sand: 100		Gravel: <input type="checkbox"/>		Cobble: <input type="checkbox"/>		Boulder: <input type="checkbox"/>	
								Bedrock: 0	
5-photo numbers		7-10							
6-HUC -8 Code & Name		08010205 - South Fork Forked Deer							
7-Assessed		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
8-ETW		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
9-303 (d) List		yes <input type="checkbox"/>		siltation <input type="checkbox"/>		habitat: <input type="checkbox"/>		other: <input type="checkbox"/>	
		no <input checked="" type="checkbox"/>							
10-Notes									



Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Pond Creek		Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven		Project ID :
Site Name/Description: Bridge Repair over SR-180		136185.04
Site Location: WWC-1/UDF-1		
HUC (12 digit): 080102050403 - Nixon Creek Lower	Latitude: 35.731019	
Previous Rainfall (7-days) : 2.87"	Longitude: -89.413933	
Precipitation this Season vs. Normal : average NOAA / weather.gov Source of recent & seasonal precip. data :		
Watershed Size : < 2.0 sq. mi.	County: Haywood	
Soil Type(s) / Geology : Ad - Adler silt loam 0-2 percent slopes, frequently flooded	Source: Web Soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Slight		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input type="checkbox"/> N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream
6. Presence of fish (except <i>Gambusia</i>)	<input checked="" type="checkbox"/>	Stream
7. Presence of naturally occurring ground water table connection	<input checked="" type="checkbox"/>	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	<input checked="" type="checkbox"/>	Stream
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in
TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = WET WEATHER CONVEYANCE

Secondary Indicator Score (if applicable) = 10.00

Justification / Notes :

Roadside ditch at top of hill, moderately vegetated

directs flow into treeline where wetland is located

Heavily filled with leaves

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 4.00)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	1.5
2. Sinuous channel	0	1	2	3	0
3. In-channel structure: riffle-pool sequences	0	1	2	3	0
4. Sorting of soil textures or other substrate	0	1	2	3	1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0.5
12. Natural valley or drainageway	0	0.5	1	1.5	0.5
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 3.50)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	0.5
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	0.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		1.5

C. Biology (Subtotal = 2.50)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	1
21. Rooted plants in the thalweg ¹	3	2	1	0	1.5
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macroinvertebrates (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 10.00

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

flows through PFO wetland

channel becomes more defined below wetland, deeper incised at confluence

recent precip left moderate sediment on plants

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.04									
Biologist:		I. Maldonado / L. Niven		Affiliation:		Athena EE		Date: 5/22/2025	
1-Station: from plans									
2-Map label and name STR-1									
3-Latitude/Longitude 35.732172, -89.414074									
4-Feature description:									
-channel identification		perennial stream <input type="checkbox"/>		intermittent stream <input type="checkbox"/>		ephemeral stream <input checked="" type="checkbox"/>		wwc <input type="checkbox"/>	
-HD score (if applicable)		18.25							
-OHWM indicators		bed & banks <input checked="" type="checkbox"/>		deposition <input type="checkbox"/>		presence of litter debris <input checked="" type="checkbox"/>		scour <input type="checkbox"/>	
		change in plant community <input type="checkbox"/>		destruction of terrestrial veg <input checked="" type="checkbox"/>		multiple observe flow events <input type="checkbox"/>		sediment sorting <input checked="" type="checkbox"/>	
		change in soil character <input type="checkbox"/>		leaf litter disturb or absent <input type="checkbox"/>		natural line impressed on bank <input checked="" type="checkbox"/>		shelving <input type="checkbox"/>	
-channel bottom width		0.8'			-top of bank width			3'	
-width and max depth at ordinary high water mark		1.5' and 0.5							
-width at bankfull		3'							
-bank height		LDB - 1.8'				RDB - 2.5'			
-riffle/pool complex or other specialized habitat present?		N/A							
-dominant riparian species:		LDB: Agricultural							
------(LDB /RDB)-----		RDB: grasses							
-particle size distribution %		Silt/Sand: 70		Gravel: 30		Cobble:		Boulder:	
								Bedrock: 0	
5-photo numbers		11-18							
6-HUC -8 Code & Name		08010205 - South Fork Forked Deer							
7-Assessed		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
8-ETW		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
9-303 (d) List		yes <input type="checkbox"/>		siltation <input type="checkbox"/>		habitat: <input type="checkbox"/>		other: <input type="checkbox"/>	
		no <input checked="" type="checkbox"/>							
10-Notes		Channel originates in property owners yard. altered from agricultural. Showed groundwater connection.							



Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Pond Creek		Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven		Project ID : 136185.04
Site Name/Description: Bridge Repair over SR-180		
Site Location: STR-1		
HUC (12 digit): 080102050403 - Nixon Creek Lower	Latitude: 35.732172	
Previous Rainfall (7-days) : 2.87"	Longitude: -89.414074	
Precipitation this Season vs. Normal : average Source of recent & seasonal precip. data : NOAA / weather.gov		
Watershed Size : < 2.0 sq. mi.	County: Haywood	
Soil Type(s) / Geology : Ad - Adler silt loam 0-2 percent slopes, frequently flooded	Source: Web Soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Moderate		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input type="checkbox"/> N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream
6. Presence of fish (except <i>Gambusia</i>)	<input checked="" type="checkbox"/>	Stream
7. Presence of naturally occurring ground water table connection	<input type="checkbox"/>	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	<input checked="" type="checkbox"/>	Stream
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in
TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 18.25

Justification / Notes :

determination made due to presence of aquatic life and shallow groundwater table

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 7.50)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	2
2. Sinuous channel	0	1	2	3	1
3. In-channel structure: riffle-pool sequences	0	1	2	3	1.5
4. Sorting of soil textures or other substrate	0	1	2	3	1.5
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0.5
12. Natural valley or drainageway	0	0.5	1	1.5	0.5
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 5.50)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	1.5
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		1.5

C. Biology (Subtotal = 5.25)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	3	2	1	0	1.5
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0.75
25. Macroinvertebrates (record type & abundance)	0	1	2	3	1
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 18.25

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Beetles (swimming), several tadpoles

moderate alteration from natural pathway. channel routed around home and agricultural field to reach main stream

Shallow groundwater table evident as stream had flowing water for the majority of reach

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.04									
Biologist:		I. Maldonado / L. Niven		Affiliation:		Athena EE		Date: 5/22/2025	
1-Station: from plans									
2-Map label and name STR-2									
3-Latitude/Longitude 35.732988, -89.414265									
4-Feature description:									
-channel identification		perennial stream <input checked="" type="checkbox"/>		intermittent stream <input type="checkbox"/>		ephemeral stream <input type="checkbox"/>		wwc <input type="checkbox"/>	
-HD score (if applicable)		25.75							
-OHWM indicators		bed & banks <input checked="" type="checkbox"/>		deposition <input type="checkbox"/>		presence of litter debris <input type="checkbox"/>		scour <input type="checkbox"/>	
		change in plant community <input checked="" type="checkbox"/>		destruction of terrestrial veg <input checked="" type="checkbox"/>		multiple observe flow events <input type="checkbox"/>		sediment sorting <input checked="" type="checkbox"/>	
		change in soil character <input type="checkbox"/>		leaf litter disturb or absent <input type="checkbox"/>		natural line impressed on bank <input checked="" type="checkbox"/>		shelving <input type="checkbox"/>	
-channel bottom width		20'			-top of bank width			30'	
-width and max depth at ordinary high water mark		22' and 3'							
-width at bankfull		30'							
-bank height		LDB - 15'				RDB - 15'			
-riffle/pool complex or other specialized habitat present?		N/A							
-dominant riparian species:		LDB: Agricultural							
------(LDB /RDB)-----		RDB: grasses							
-particle size distribution %		Silt/Sand: 70		Gravel: 30		Cobble: <input type="checkbox"/>		Boulder: <input type="checkbox"/>	
								Bedrock: 0	
5-photo numbers		25-28							
6-HUC -8 Code & Name		08010205 - South Fork Forked Deer							
7-Assessed		yes <input checked="" type="checkbox"/>		no <input type="checkbox"/>					
8-ETW		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
9-303 (d) List		yes <input checked="" type="checkbox"/>		siltation <input checked="" type="checkbox"/>		habitat: <input type="checkbox"/>		other: <input checked="" type="checkbox"/>	
		no <input type="checkbox"/>							
10-Notes									



Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Pond Creek		Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven		Project ID :
Site Name/Description: Bridge Repair over SR-180		136185.04
Site Location: STR-2		
HUC (12 digit): 080102050403 - Nixon Creek Lower	Latitude: 35.732988	
Previous Rainfall (7-days) : 2.87"	Longitude: -89.414265	
Precipitation this Season vs. Normal : average NOAA / weather.gov Source of recent & seasonal precip. data :		
Watershed Size : 2.1 sq. mi.	County: Haywood	
Soil Type(s) / Geology : Ad - Adler silt loam 0-2 percent slopes, frequently flooded	Source:	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Slight		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input type="checkbox"/> N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream
6. Presence of fish (except <i>Gambusia</i>)	<input checked="" type="checkbox"/>	Stream
7. Presence of naturally occurring ground water table connection	<input type="checkbox"/>	Stream
8. Flowing water in channel and 7 days since last precip >0.1 " in local watershed	<input checked="" type="checkbox"/>	Stream
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in
TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 25.75

Justification / Notes :

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 12.50)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	3
2. Sinuous channel	0	1	2	3	2
3. In-channel structure: riffle-pool sequences	0	1	2	3	1.5
4. Sorting of soil textures or other substrate	0	1	2	3	1.5
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	1.5
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	1
9. Natural levees	0	1	2	3	0.5
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0.5
12. Natural valley or drainageway	0	0.5	1	1.5	1
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 6.50)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	1
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

N/A

C. Biology (Subtotal = 6.75)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	3	2	1	0	3
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0.75
25. Macroinvertebrates (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 25.75

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Several frogs / Turtles noted

riprap added to bottom of bridge to support piers / created riffle sequence

heavy turbidity

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.04									
Biologist:		I. Maldonado / L. Niven		Affiliation:		Athena EE		Date: 5/22/2025	
1-Station: from plans									
2-Map label and name		WWC-2/UDF-2							
3-Latitude/Longitude		35.732748, -89.414019							
4-Feature description:									
-channel identification		perennial stream <input type="checkbox"/>		intermittent stream <input type="checkbox"/>		ephemeral stream <input type="checkbox"/>		wwc <input checked="" type="checkbox"/>	
-HD score (if applicable)		9.75							
-OHWM indicators		bed & banks <input checked="" type="checkbox"/>		deposition <input type="checkbox"/>		presence of litter debris <input type="checkbox"/>		scour <input type="checkbox"/>	
		change in plant community <input type="checkbox"/>		destruction of terrestrial veg <input type="checkbox"/>		multiple observe flow events <input type="checkbox"/>		sediment sorting <input type="checkbox"/>	
		change in soil character <input type="checkbox"/>		leaf litter disturb or absent <input type="checkbox"/>		natural line impressed on bank <input type="checkbox"/>		shelving <input type="checkbox"/>	
-channel bottom width		1'			-top of bank width			1'	
-width and max depth at ordinary high water mark		1' and .2'							
-width at bankfull		1'							
-bank height		LDB - .5'				RDB - .5'			
-riffle/pool complex or other specialized habitat present?		N/A							
-dominant riparian species:		LDB: agricultural							
------(LDB /RDB)-----		RDB: agricultural							
-particle size distribution %		Silt/Sand: 100		Gravel: <input type="checkbox"/>		Cobble: <input type="checkbox"/>		Boulder: <input type="checkbox"/>	
								Bedrock: 0	
5-photo numbers		29-32							
6-HUC -8 Code & Name		08010205 - South Fork Forked Deer							
7-Assessed		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
8-ETW		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
9-303 (d) List		yes <input type="checkbox"/>		siltation <input type="checkbox"/>		habitat: <input type="checkbox"/>		other: <input type="checkbox"/>	
		no <input checked="" type="checkbox"/>							
10-Notes									



Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Pond Creek		Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven		Project ID :
Site Name/Description: Bridge Repair over SR-180		136185.04
Site Location: WWC-2/UDF-2		
HUC (12 digit): 080102050403 - Nixon Creek Lower	Latitude: 35.732902	
Previous Rainfall (7-days) : 2.87"	Longitude: -89.414315	
Precipitation this Season vs. Normal : average NOAA / weather.gov Source of recent & seasonal precip. data :		
Watershed Size : < 2.0 sq. mi.	County: Haywood	
Soil Type(s) / Geology : Ad - Adler silt loam 0-2 percent slopes, frequently flooded	Source: Web Soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Moderate		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input type="checkbox"/> N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream
6. Presence of fish (except <i>Gambusia</i>)	<input checked="" type="checkbox"/>	Stream
7. Presence of naturally occurring ground water table connection	<input checked="" type="checkbox"/>	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	<input checked="" type="checkbox"/>	Stream
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in
TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = WET WEATHER CONVEYANCE

Secondary Indicator Score (if applicable) = 9.75

Justification / Notes :

Ag drainage

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 1.25)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	0.5
2. Sinuous channel	0	1	2	3	0
3. In-channel structure: riffle-pool sequences	0	1	2	3	0
4. Sorting of soil textures or other substrate	0	1	2	3	0.5
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0.25
12. Natural valley or drainageway	0	0.5	1	1.5	0
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 2.50)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	0
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

C. Biology (Subtotal = 6.00)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	3	2	1	0	3
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macroinvertebrates (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 9.75

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Riprap placed at confluence of STR-2 to prevent sediment from field into stream

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: PN136185.04 City/County: Haywood Sampling Date: 5/22/25
Applicant/Owner: JMT / TDOT State: TN Sampling Point: WTL-1-PFO-W
Investigator(s): I. Maldonado, L. Niven Section, Township, Range: _____
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): None
Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.73222 Long: -89.413847 Datum: NAD 1983
Soil Map Unit Name: Ad - Adler silt loam 0-2 percent slopes, frequently flooded NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:
Sparsely vegetated linear ditch adjacent to SR-180 and active ag field. Receives backflow from main stream. Receives flow from upgradient WWC.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>X</u> Surface Water (A1) _____ Aquatic Fauna (B13) <u>X</u> High Water Table (A2) _____ Marl Deposits (B15) (LRR U) <u>X</u> Saturation (A3) _____ Hydrogen Sulfide Odor (C1) _____ Water Marks (B1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) _____ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) _____ Iron Deposits (B5) _____ Other (Explain in Remarks) _____ Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) <u>X</u> Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) _____ Sphagnum Moss (D8) (LRR T, U)
--	--

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Receives water from main stream when it floods.

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: WTL-1-PFO-W

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. <u>Platanus occidentalis</u>	5	Yes	FACW																	
3. <u>Quercus nigra</u>	5	Yes	FAC																	
4. _____																				
5. _____																				
6. _____																				
20 =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>8</u></td> <td>x 3 = <u>24</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>23</u> (A)</td> <td><u>54</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.35</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>8</u>	x 3 = <u>24</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>23</u> (A)	<u>54</u> (B)	Prevalence Index = B/A = <u>2.35</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>15</u>	x 2 = <u>30</u>																			
FAC species <u>8</u>	x 3 = <u>24</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>23</u> (A)	<u>54</u> (B)																			
Prevalence Index = B/A = <u>2.35</u>																				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																				
Sapling Stratum (Plot size: _____)																				
1. _____				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
=Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: _____ 20% of total cover: _____																				
Shrub Stratum (Plot size: _____)																				
1. _____				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody Vine – All woody vines, regardless of height.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
=Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Toxicodendron radicans</u>	3	No	FAC	Hydrophytic Vegetation Present? Yes _____ No _____																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
3 =Total Cover																				
50% of total cover: <u>2</u> 20% of total cover: <u>1</u>																				
Woody Vine Stratum (Plot size: _____)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.) Sparse vegetated concave surface																				

SOIL

Sampling Point: WTL-1-PFO-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	2.5Y 6/2	80	7.5YR 5/8	20	C	M	Loamy/Clayey	Prominent redox concentrations
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)		
<input type="checkbox"/> Black Histic (A3)			(MLRA 153B, 153D)			<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 149A)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			(outside MLRA 150A, 150B)		
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			<input checked="" type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)		
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)		
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Depleted Dark Surface (F7)			(MLRA 153B)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Red Parent Material (F21)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Very Shallow Dark Surface (F22)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			(outside MLRA 138, 152A in FL, 154)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Iron Monosulfide (A18)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)					
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)					
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			(MLRA 149A, 153C, 153D)			³ Indicators of hydrophytic vegetation and		
<input type="checkbox"/> Polyvalue Below Surface (S8)			<input type="checkbox"/> Very Shallow Dark Surface (F22)			wetland hydrology must be present,		
(LRR S, T, U)			(MLRA 138, 152A in FL, 154)			unless disturbed or problematic.		
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: Saturated Soils.								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: PN136185.04 City/County: Haywood Sampling Date: 5/22/25
Applicant/Owner: JMT / TDOT State: TN Sampling Point: WTL-1-U
Investigator(s): I. Maldonado, L. Niven Section, Township, Range: _____
Landform (hillside, terrace, etc.): roadside Local relief (concave, convex, none): none Slope (%): None
Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.7321314 Long: -89.4139098 Datum: NAD 1983
Soil Map Unit Name: Ad - Adler silt loam 0-2 percent slopes, frequently flooded NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	

Remarks:
Datapoint taken at top of hillslope adjacent to roadway.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>_____</u> Surface Water (A1) <u>_____</u> Aquatic Fauna (B13) <u>_____</u> High Water Table (A2) <u>_____</u> Marl Deposits (B15) (LRR U) <u>_____</u> Saturation (A3) <u>_____</u> Hydrogen Sulfide Odor (C1) <u>_____</u> Water Marks (B1) <u>_____</u> Oxidized Rhizospheres on Living Roots (C3) <u>_____</u> Sediment Deposits (B2) <u>_____</u> Presence of Reduced Iron (C4) <u>_____</u> Drift Deposits (B3) <u>_____</u> Recent Iron Reduction in Tilled Soils (C6) <u>_____</u> Algal Mat or Crust (B4) <u>_____</u> Thin Muck Surface (C7) <u>_____</u> Iron Deposits (B5) <u>_____</u> Other (Explain in Remarks) <u>_____</u> Inundation Visible on Aerial Imagery (B7) <u>_____</u> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <u>_____</u> Surface Soil Cracks (B6) <u>_____</u> Sparsely Vegetated Concave Surface (B8) <u>_____</u> Drainage Patterns (B10) <u>_____</u> Moss Trim Lines (B16) <u>_____</u> Dry-Season Water Table (C2) <u>_____</u> Crayfish Burrows (C8) <u>_____</u> Saturation Visible on Aerial Imagery (C9) <u>_____</u> Geomorphic Position (D2) <u>_____</u> Shallow Aquitard (D3) <u>_____</u> FAC-Neutral Test (D5) <u>_____</u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Area in upland berm, not likely to flood.	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: WTL-1-U

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Albizia julibrissin</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Acer negundo</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	<u>40</u> =Total Cover		
50% of total cover: <u>20</u>		20% of total cover: <u>8</u>	

Sapling Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
	_____ =Total Cover		
50% of total cover: _____		20% of total cover: _____	

Shrub Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
	_____ =Total Cover		
50% of total cover: _____		20% of total cover: _____	

Herb Stratum (Plot size: <u>30</u>)			
1. <u>Commelina communis</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Poa palustris</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Campsis radicans</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
4. <u>Toxicodendron radicans</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5. <u>Ambrosia psilostachya</u>	<u>3</u>	<u>No</u>	<u>FAC</u>
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
	<u>63</u> =Total Cover		
50% of total cover: <u>32</u>		20% of total cover: <u>13</u>	

Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
	_____ =Total Cover		
50% of total cover: _____		20% of total cover: _____	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>48</u>	x 3 = <u>144</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>103</u> (A)	<u>354</u> (B)
Prevalence Index = B/A = <u>3.44</u>	

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is $\leq 3.0^1$
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes No X

Remarks: (If observed, list morphological adaptations below.)
herbaceous roadside shoulder

SOIL

Sampling Point: WTL-1-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/3	100					Loamy/Clayey	
4-18	10YR 5/4	90	10YR 6/2	10			Loamy/Clayey	Increased gravels

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Barrier Islands 1 cm Muck (S12)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	(MLRA 153B, 153D)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 149A)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(outside MLRA 150A, 150B)
<input checked="" type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, T)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Depleted Dark Surface (F7)	(MLRA 153B)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	(outside MLRA 138, 152A in FL, 154)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Iron Monosulfide (A18)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Floodplain Soils (F20)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	(MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Polyvalue Below Surface (S8)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
(LRR S, T, U)	(MLRA 138, 152A in FL, 154)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:
 No hydric indicators.

Quantitative Rating

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score.
Estimated areas should clearly place the wetland within the appropriate class.

6pts	>50 acres (west TN)	>25 acres (middle TN)	>10 acres (east TN *)	
5pts	25 - <50 acres (west TN)	10- 25 acres (middle TN)	7-<10 acres (east TN*)	
4pts	10 - <25 acres (west TN)	7-< 25acres (middle TN)	3-<7 acres (east TN*)	
3pts	3 - <10 acres(west TN)	3< 7 acres (middle TN)	1-<3 acres (east TN)	
2pts	0.3 - <3 acres (west TN)	0.5- <3 acres (middle TN)	0.5-<1 acres (east TN)	
1pt	0.1 - <0.3 acres(west TN)	<0.5 acres (middle TN)	<0.5 acres (east TN)	X

*More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

Table 2. Metric to English conversion table with visual estimation sizes.							
acres	ft ²	yd ²	ft on side	yd on side	ha	m ²	m on side
50	2,177,983	241,998	1476	492	20.2	202,000	449
25	1,088,992	120,999	1044	348	10.1	101,000	318
10	435,596	48,340	660	220	4.1	41,000	203
3	130,679	14,520	362	121	1.2	12,000	110
0.3	13,067	1,452	114	38	0.12	1,200	35
0.1	4,356	484	66	22	0.04	400	20

Metric 1 Total 1

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

2a. Average Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, estimate buffer width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 100m, 25m, 10m and 0m would be calculated as follows: $ABW = (50m + 25m + 10m + 0m)/4 = 21.25m$. Intensive land uses are not buffers, e.g. active row cropping, paved areas, housing developments, etc.		
7pts	WIDE. >50m (164ft) or more around perimeter.	
4pts	MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.	
1pt	NARROW. 10m to <25m (32 to <82ft) around the perimeter.	
0pts	VERY NARROW. <10m (<32ft) around perimeter.	X
2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.		
7pts	VERY LOW. 2 nd growth or older forest, prairie, barren, wildlife area, etc.	
5pts	LOW. Old fallow field, shrub land, early successional young forest, etc.	
3pts	MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.	X
1pt	HIGH. urban, industrial, row cropping, mining, construction, etc.	X

Metric 2 Total 2.5

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. **A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.**

3a. Sources of Water. Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values.

5pts	High pH groundwater (7.5-9.0)	
3pts	Other groundwater	
1pts	Precipitation	X
3pts	Seasonal surface water	
5pts	Perennial surface water (lake or stream)	X

3b. Connectivity. Select all that apply and sum score

1pt	100 year floodplain. "Floodplain" is defined as "...the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.	
1pt	Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses.	X
1pt	Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a part of other nearby wetland or upland habitat areas.	
1pt	Part of riparian corridor.	

3c. Maximum water depth. Select only one and assign score. The evaluator *does not* need to actually observe the wetland when its water depth is greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 Manual will be useful in answering this question.

3 pts	>0.7m (27.6in)	
2pts	0.4 to 0.7m (15.7 to 27.6in)	
1pt	<0.4m (<15.7in)	X

3d. Duration of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of ACOE 1987 Manual secondary indicators is necessary and expected in order to properly answer this question.

4pts	Semi-permanently to permanently inundated or saturated	
3pts	Regularly inundated or saturated	
2pts	Seasonally inundated	
1pt	Seasonally saturated in the upper 30cm (12in) of soil	X

3e. Modifications to natural hydrologic regime. Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the “intactness” of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

<input type="checkbox"/>	ditch(es), in or near the wetland	<input type="checkbox"/>	point source discharges to the (non-stormwater)
<input type="checkbox"/>	tile(s), in or near the wetland	<input type="checkbox"/>	filling/grading activities in or near the wetland
<input type="checkbox"/>	dike(s), in or near the wetland	<input checked="" type="checkbox"/>	road beds/RR beds in or near the wetland
<input type="checkbox"/>	weir(s), in or near the wetland	<input type="checkbox"/>	dredging activities in or near the wetland
<input type="checkbox"/>	stormwater inputs (addition of water)	<input type="checkbox"/>	other (specify)

Have any of the disturbances identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime.		<u>YES</u> Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance.	<u>NO</u> Assign a score of 12 since there are no or no apparent modifications.	<u>NOT SURE</u> Choose "recovered" and assign a score of 9.5.
Select one or double check adjoining numbers and average the score.				score
12pts	NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator.			
7pts	RECOVERED. The wetland appears to have recovered from past modifications.			
3pts	RECOVERING. The wetland appears to be in the process of recovering from past modifications.			<input checked="" type="checkbox"/>
1pt	RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing.			

Metric 3 Total 12

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

4a. Substrate/Soil Disturbance. Select one or double check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance.

Examples of substrate/soil disturbance include (circle all that apply):

- ☒ filling and grading
☐ plowing
☐ grazing (hooves)
☐ vehicle use (off-road vehicles, construction vehicles)
☐ sedimentation
☐ dredging, and other mechanical disturbances to the soil

Have any of soil or substrate disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils

YES

Assign a score 1, 2 or 3, or an intermediate score, depending on degree of recovery from the disturbance.

NO

Assign a score of 4 since there are no or no apparent modifications.

NOT SURE

Choose "recovered" and assign a score of 3.5.

Select one or double check adjoining numbers and average the score.

4pts NONE OR NONE APPARENT. There are no disturbances or no disturbances apparent to the evaluator.

3pts RECOVERED. The wetland appears to have recovered from past disturbances.

2pts RECOVERING. The wetland appears to be in the process of recovering from past disturbances.

☒

1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing.

4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.

7pts EXCELLENT. Wetland appears to represent the best of its type or class.

6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.

5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.

4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.

3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.

2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.

☒

1pt POOR. Wetland appears not to be a good example of its type or class because of past or present disturbances, successional state, etc.

4c. Habitat alteration. This question evaluates the “intactness” the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to “double check” and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.**

Check all that are observed present in or near the wetland

<input type="checkbox"/>	Mowing	<input type="checkbox"/>	Herbaceous layer/aquatic bed removal
<input type="checkbox"/>	Grazing (cattle, horses, etc.)	<input type="checkbox"/>	Sedimentation
<input type="checkbox"/>	Clearcutting	<input type="checkbox"/>	Dredging
<input type="checkbox"/>	Selective cutting	X	Row-crop or orchard farming
<input type="checkbox"/>	Woody debris removal	<input type="checkbox"/>	Nutrient enrichment, e.g. nuisance algae
<input type="checkbox"/>	Toxic pollutants	X	Other (specify): roadway
<input type="checkbox"/>	Shrub/sapling removal	<input type="checkbox"/>	Other (specify):

Have any of the disturbances identified above caused or appeared to cause more than trivial alterations to the wetland's natural habitat.	<u>YES</u> Assign a score 1, 3 or 6, or an intermediate score, depending on degree of recovery from the disturbance.	<u>NO</u> Assign a score of 9 since there are no or no apparent modifications.	<u>NOT SURE</u> Choose "recovered" and assign a score of 6.
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Select one score or double check adjoining numbers and average the score.		Score
9pts	NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.	
6pts	RECOVERED. The wetland appears to have recovered from past alterations.	
3pts	RECOVERING. The wetland appears to be in the process of recovering from past alterations.	X
1pt	RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing.	

Metric 4 Total 7

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

5pts	> 10m ² , sphagnum or other moss or vernal pools	5pts	Superior fish, waterfowl, bat, or amphibian breeding habitat
10pts 5pts 3pts	Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/ occurrence) (10 pts)	5pts	Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water quality of a 303(d) listed stream and/or to surface or and/or ground water
10pts	Older-aged mature forested wetland avg. DBH >= 30 inches	10 pts	Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC

Metric 5 Total 0

Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).		Score
6a. Wetland Vegetation Communities Check each community present <u>both vertically and horizontally</u> within the wetland with an area of at least 0.1 hectares or 1000m ² (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.		
1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed (<i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.		0
2)Emergent Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.		0
3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.		0
4)Forested Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools".		1
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.		0
6)Open water The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.		0

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of “low,” “moderate,” and “high” quality.

Cover Scale	Description
0	The vegetation community is either 1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland
1	Vegetation community is present and either, 1) comprises a significant part of the wetland’s vegetation and is of low or moderate quality, or 2) if it comprises a significant part of the wetland’s vegetation and is of low quality
2	Three vegetation community is present and either, 1) comprises a significant part of the wetland’s vegetation and is of moderate quality, or 2) the vegetation community comprises a small part of the wetland’s vegetation but is of high quality
3	The vegetation community is of high quality and comprises a significant part, or more, of the wetland’s vegetation

Table 4. Use this table in conjunction with Table 3 to determine what is a “low”, “moderate,” or “ high” quality community.

Narrative	Description
Low	Low species richness and a predominance of invasive, non-native, or disturbance tolerant “weedy” species.
Moderate	Native species are the dominant component of the vegetation, although non-native or disturbance tolerant “weedy” species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species.
High	A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.

Table 5. Mudflat and open water community cover scale.

0	Absent <0.1 ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 ha to < 4 ha (2.47 to 9.88 acres)
3	High 4 ha (9.88 acres) or more

6b. Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1.		Score
5pts	HIGH Wetland has a high degree of interspersion	
4pts	MODERATELY HIGH Wetland has a moderately high degree of interspersion	
3pts	MODERATE Wetland has a moderate degree of interspersion	
2pts	MODERATELY LOW Wetland has a moderately low degree of interspersion	
1pt	LOW Wetland has a low degree of interspersion.	X
0pt	NONE Wetland has no plan view interspersion	

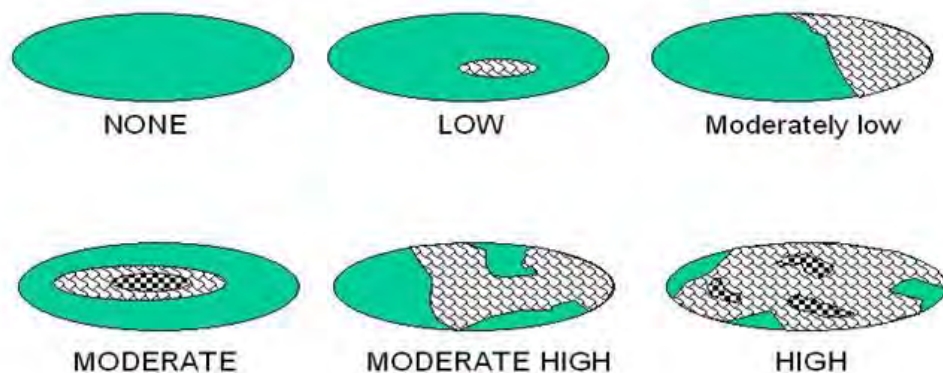


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.		Score
-5pts	Extensive >75% areal cover of invasive species	
-3pts	Moderate 25-75% areal cover of invasive species	
-1pts	Sparse 5-25% areal cover of invasive species	
0pt	Nearly absent. <5% areal cover of invasive species	X
1pt	Absent	
6d. Microtopography. Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopographic habitat features often present in wetlands.		Score
Vegetated hummocks and tussocks		0
Coarse woody debris >15cm (6in) in diameter		0
Standing dead trees >25cm (10in) diameter at breast height		0
Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction		0

Table 6. Cover scale for microtopographic habitat features	
Microtopographic habitat quality	Narrative description
0	Feature is absent or functionally absent from the wetland
1	Feature is present in the wetland in very small amounts or if more common, of low quality
2	Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of the highest quality

Metric 6 Total 2

NON-HGM TRAM Summary Worksheet

Non-HGM Quantitative Rating	Metric 1: Size	1
	Metric 2: Buffers and surrounding land use	2.5
	Metric 3: Hydrology	12
	Metric 4: Habitat	7
	Metric 5: Special Wetland Communities	0
	Metric 6: Plant communities, interspersion, microtopography	2
	TOTAL SCORE	24.5

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.05									
Biologist:		I. Maldonado / L. Niven		Affiliation:		Athena EE		Date: 5/22/2025	
1-Station: from plans									
2-Map label and name		STR-1							
3-Latitude/Longitude		35.734631, -89.414572							
4-Feature description:									
-channel identification		perennial stream <input checked="" type="checkbox"/>		intermittent stream <input type="checkbox"/>		ephemeral stream <input type="checkbox"/>		wwc <input type="checkbox"/>	
-HD score (if applicable)		N/A Otter Creek							
-OHWM indicators		bed & banks <input checked="" type="checkbox"/>		deposition <input type="checkbox"/>		presence of litter debris <input type="checkbox"/>		scour <input type="checkbox"/>	
		change in plant community <input checked="" type="checkbox"/>		destruction of terrestrial veg <input type="checkbox"/>		multiple observe flow events <input type="checkbox"/>		sediment sorting <input checked="" type="checkbox"/>	
		change in soil character <input checked="" type="checkbox"/>		leaf litter disturb or absent <input type="checkbox"/>		natural line impressed on bank <input checked="" type="checkbox"/>		shelving <input checked="" type="checkbox"/>	
-channel bottom width		16'				-top of bank width		40'	
-width and max depth at ordinary high water mark		20' and 2'							
-width at bankfull		40'							
-bank height		LDB - 15'				RDB - 15'			
-riffle/pool complex or other specialized habitat present?		N/A							
-dominant riparian species:		LDB: agricultural							
------(LDB /RDB)-----		RDB: agricultural							
-particle size distribution %		Silt/Sand: 60		Gravel: 20		Cobble: 20		Boulder: 0	
5-photo numbers		33-36							
6-HUC -8 Code & Name		08010205 - South Fork Forked Deer							
7-Assessed		yes <input checked="" type="checkbox"/>		no <input type="checkbox"/>					
8-ETW		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
9-303 (d) List		yes <input checked="" type="checkbox"/>		siltation <input checked="" type="checkbox"/>		habitat: <input type="checkbox"/>		other: <input checked="" type="checkbox"/>	
		no <input type="checkbox"/>							
10-Notes		impaired for channelization and sedimentation							

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.05									
Biologist:		I. Maldonado / L. Niven		Affiliation:		Athena EE		Date: 5/22/2025	
1-Station: from plans									
2-Map label and name WWC-1/UDF-1									
3-Latitude/Longitude 35.735629 -89.414999									
4-Feature description:									
-channel identification		perennial stream <input type="checkbox"/>		intermittent stream <input type="checkbox"/>		ephemeral stream <input type="checkbox"/>		wwc <input checked="" type="checkbox"/>	
-HD score (if applicable)		8.00							
-OHWM indicators		bed & banks <input checked="" type="checkbox"/>		deposition <input type="checkbox"/>		presence of litter debris <input type="checkbox"/>		scour <input type="checkbox"/>	
		change in plant community <input type="checkbox"/>		destruction of terrestrial veg <input type="checkbox"/>		multiple observe flow events <input type="checkbox"/>		sediment sorting <input type="checkbox"/>	
		change in soil character <input type="checkbox"/>		leaf litter disturb or absent <input type="checkbox"/>		natural line impressed on bank <input type="checkbox"/>		shelving <input type="checkbox"/>	
-channel bottom width		1.5'			-top of bank width			2'	
-width and max depth at ordinary high water mark		1.5' and .3'							
-width at bankfull		2'							
-bank height		LDB - 2'				RDB - 2'			
-riffle/pool complex or other specialized habitat present?		N/A							
-dominant riparian species:		LDB: agricultural							
------(LDB /RDB)-----		RDB: agricultural							
-particle size distribution %		Silt/Sand: 80		Gravel: 20		Cobble: 0		Boulder: 0	
5-photo numbers		37-40							
6-HUC -8 Code & Name		08010205 - South Fork Forked Deer							
7-Assessed		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
8-ETW		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
9-303 (d) List		yes <input type="checkbox"/>		siltation <input type="checkbox"/>		habitat: <input type="checkbox"/>		other: <input type="checkbox"/>	
		no <input checked="" type="checkbox"/>							
10-Notes									



Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Otter Creek		Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven		Project ID :
Site Name/Description: Bridge Repair over SR-180		136185.05
Site Location: WWC-1/UDF-1		
HUC (12 digit): 080102050403 - Nixon Creek Lower	Latitude: 35.735629	
Previous Rainfall (7-days) : 2.87"	Longitude: -89.414999	
Precipitation this Season vs. Normal : average NOAA / weather.gov Source of recent & seasonal precip. data :		
Watershed Size : < 2.0 sq mi.	County: Haywood	
Soil Type(s) / Geology : Ad - Adler silt loam 0-2 percent slopes, frequently flooded	Source: Web Soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Moderate		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input type="checkbox"/> N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream
6. Presence of fish (except <i>Gambusia</i>)	<input checked="" type="checkbox"/>	Stream
7. Presence of naturally occurring ground water table connection	<input checked="" type="checkbox"/>	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	<input checked="" type="checkbox"/>	Stream
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in
TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = WET WEATHER CONVEYANCE

Secondary Indicator Score (if applicable) = 8.00

Justification / Notes :

Moderate alteration / roadside ditch

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 3.50)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	1
2. Sinuous channel	0	1	2	3	0.5
3. In-channel structure: riffle-pool sequences	0	1	2	3	1
4. Sorting of soil textures or other substrate	0	1	2	3	0.5
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0
12. Natural valley or drainageway	0	0.5	1	1.5	0
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 1.50)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	0
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	0.5
17. Sediment on plants or on debris	0	0.5	1	1.5	0.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

C. Biology (Subtotal = 3.00)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	1.5
21. Rooted plants in the thalweg ¹	3	2	1	0	1.5
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macroinvertebrates (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 8.00

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

poor sinuosity

veg in channel for majority of reach.

received backflow from main channel, as is evidence of deeply incised channel and some sorting at the confluence.

Otherwise, channel was dry.

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.05									
Biologist:		I. Maldonado / L. Niven		Affiliation:		Athena EE		Date: 5/22/2025	
1-Station: from plans									
2-Map label and name STR-2									
3-Latitude/Longitude 35.735255, -89.414721									
4-Feature description:									
-channel identification		perennial stream <input type="checkbox"/>		intermittent stream <input type="checkbox"/>		ephemeral stream <input checked="" type="checkbox"/>		wwc <input type="checkbox"/>	
-HD score (if applicable)		18.25							
-OHWM indicators		bed & banks <input checked="" type="checkbox"/>		deposition <input type="checkbox"/>		presence of litter debris <input type="checkbox"/>		scour <input type="checkbox"/>	
		change in plant community <input checked="" type="checkbox"/>		destruction of terrestrial veg <input type="checkbox"/>		multiple observe flow events <input type="checkbox"/>		sediment sorting <input checked="" type="checkbox"/>	
		change in soil character <input checked="" type="checkbox"/>		leaf litter disturb or absent <input type="checkbox"/>		natural line impressed on bank <input type="checkbox"/>		shelving <input type="checkbox"/>	
-channel bottom width		2'			-top of bank width			14'	
-width and max depth at ordinary high water mark		3.5' and .5'							
-width at bankfull		8'							
-bank height		LDB - 1.5'				RDB - 2'			
-riffle/pool complex or other specialized habitat present?		N/A							
-dominant riparian species:		LDB: agricultural							
------(LDB /RDB)-----		RDB: agricultural							
-particle size distribution %		Silt/Sand: 80		Gravel: 20		Cobble: 0		Boulder: 0	
5-photo numbers		41-48							
6-HUC -8 Code & Name		08010205 - South Fork Forked Deer							
7-Assessed		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
8-ETW		yes <input type="checkbox"/>		no <input checked="" type="checkbox"/>					
9-303 (d) List		yes <input type="checkbox"/>		siltation <input type="checkbox"/>		habitat: <input type="checkbox"/>		other: <input type="checkbox"/>	
		no <input checked="" type="checkbox"/>							
10-Notes		heavily altered. developing sinuosity within dug trench. connection to water table							



Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Otter Creek		Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven		Project ID :
Site Name/Description: Bridge Repair over SR-180		136185.05
Site Location: STR-2		
HUC (12 digit): 080102050403 - Nixon Creek Lower	Latitude: 35.735255	
Previous Rainfall (7-days) : 2.87"	Longitude: -89.414721	
Precipitation this Season vs. Normal : average NOAA / weather.gov Source of recent & seasonal precip. data :		
Watershed Size : < 2.0 sq. mi.	County: Haywood	
Soil Type(s) / Geology : Ad - Adler silt loam 0-2 percent slopes, frequently flooded	Source: Web Soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Moderate		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input type="checkbox"/>	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream
6. Presence of fish (except <i>Gambusia</i>)	<input checked="" type="checkbox"/>	Stream
7. Presence of naturally occurring ground water table connection	<input checked="" type="checkbox"/>	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	<input checked="" type="checkbox"/>	Stream
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in
TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 18.25

Justification / Notes :

Moderate alteration to hydrological flow (straight line trench / multiple culverts), however, sinuosity is developing within this channel indicating developing channel morphology.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 8.00)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	2
2. Sinuous channel	0	1	2	3	1
3. In-channel structure: riffle-pool sequences	0	1	2	3	1.5
4. Sorting of soil textures or other substrate	0	1	2	3	1.5
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0.5
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0.5
12. Natural valley or drainageway	0	0.5	1	1.5	0.5
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 5.50)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	1.5
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1.5
17. Sediment on plants or on debris	0	0.5	1	1.5	0.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		1.5

C. Biology (Subtotal = 4.75)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	3	2	1	0	2
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0.75
25. Macroinvertebrates (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 18.25

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

several large tadpoles

moderate alteration from natural pathway. channel routed around home and agricultural field to reach main stream

Shallow groundwater table evident as stream had flowing water for the majority of reach



Photo 1: Start of Survey, Forked Deer Road (SR-180) WWC-1/UDF-1 on right side



Photo 2: Start of Survey facing away from survey area, WWC-1/UDF-1 on left side



Photo 3: Start of Survey West



Photo 4: Start of Survey East



Photo 5: Culvert 12" steel corrugated under driveway to house 2507 Forked Deer Road



Photo 6: Culvert 12" steel corrugated under driveway to house 2507 Forked Deer Road



Photo 7: WWC-1/UDF-1 upgradient



Photo 8: WWC-1/UDF-1 downgradient



Photo 9: WWC-1/UDF-1 Culvert under farm field access



Photo 10: WWC-1/UDF-1 Culvert under farm field access



Photo 11: STR-1 downgradient



Photo 12: STR-1 upgradient



Photo 13: STR-1 downstream loses channel



Photo 14: STR-1 right top bank



Photo 15: STR-1 downstream

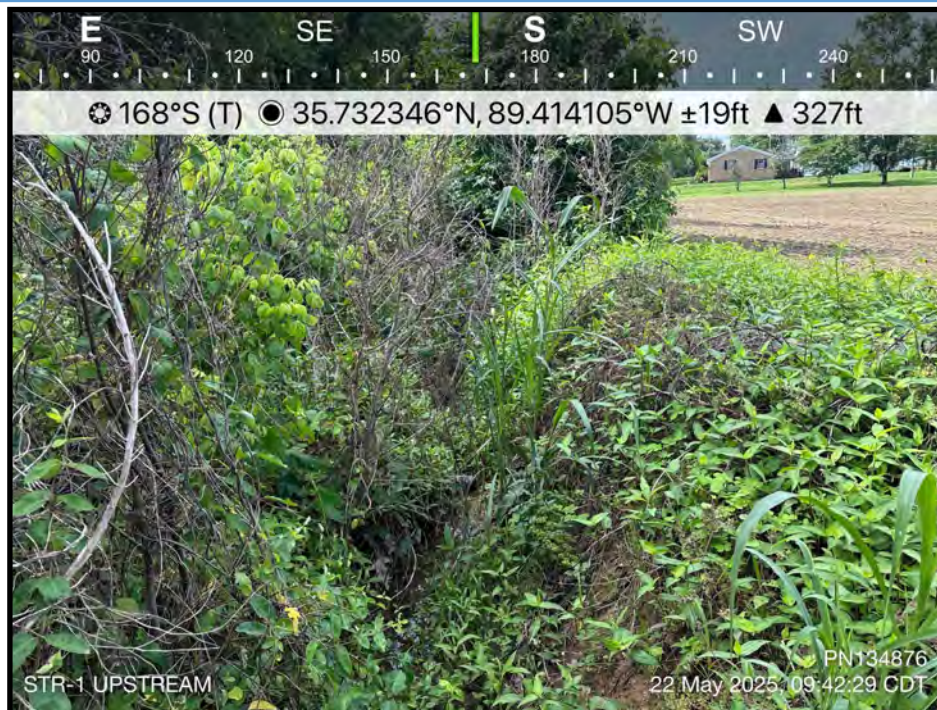


Photo 16: STR-1 upstream



Photo 17: STR-1 culvert under farm field access



Photo 18: STR-1 culvert under farm field access



Photo 19: WWC-1a/UDF-1a upgradient



Photo 20: WWC-1a/UDF-1a downgradient



Photo 21: WTL-1



Photo 22: WTL-1



Photo 23: WTL-1 wetland soil core



Photo 24: WTL-1 upland soil core



Photo 25: STR-2 downstream under Bridge 31



Photo 26: STR-2 upstream

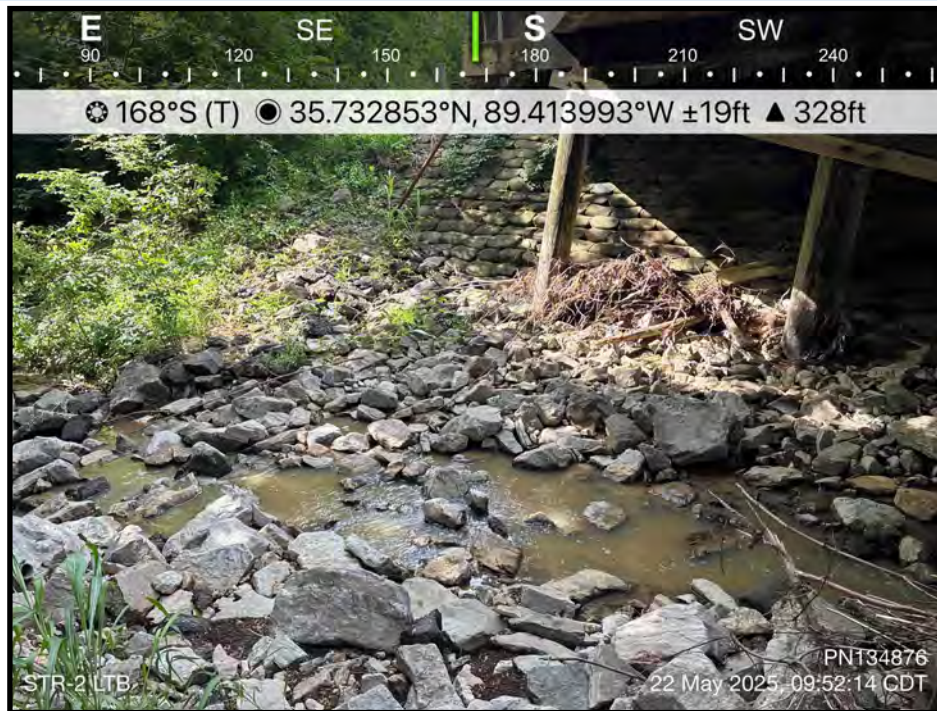


Photo 27: STR-2 left bank under Bridge 31

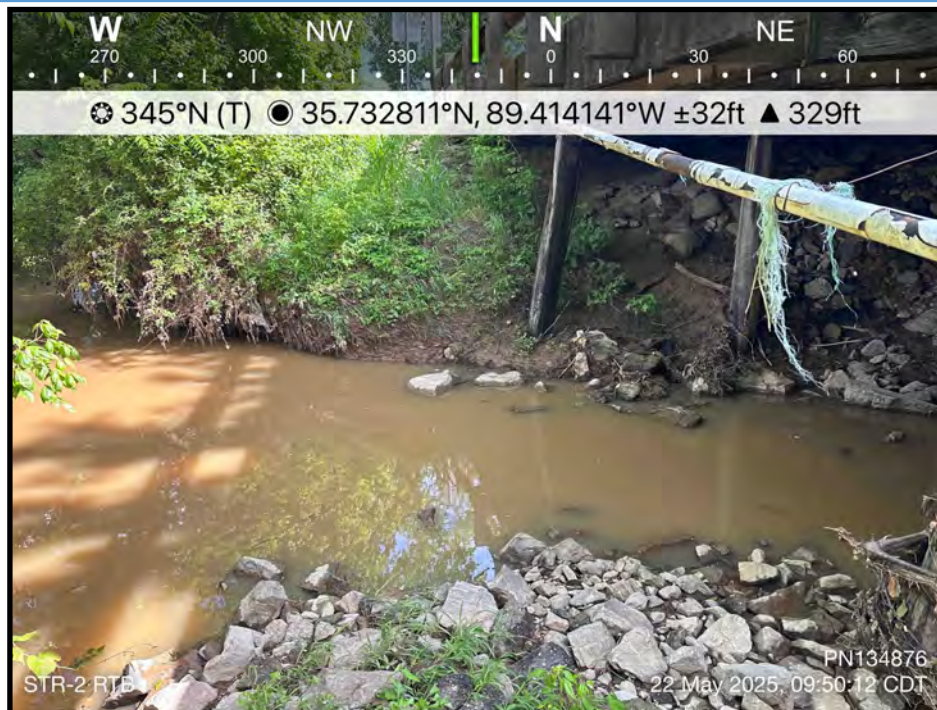


Photo 28: STR-2 right bank under Bridge 31



Photo 29: WWC-2/UDF-2 start downgradient



Photo 30: WWC-2/UDF-2 start upgradient

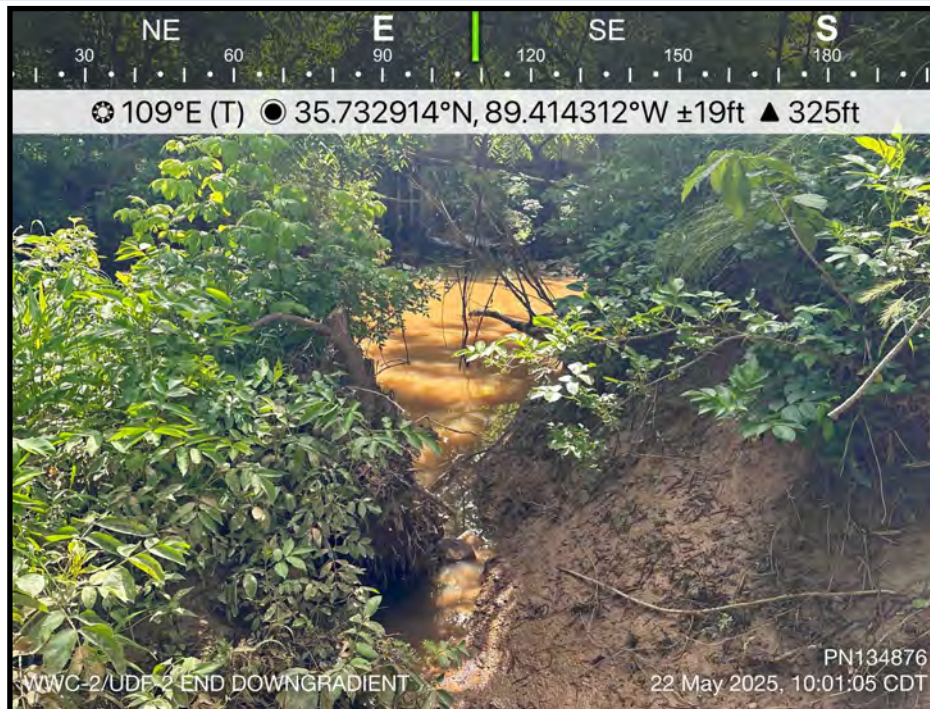


Photo 31: WWC-2/UDF-2 end downgradient confluence with STR-2



Photo 32: WWC-2/UDF-2 end upgradient

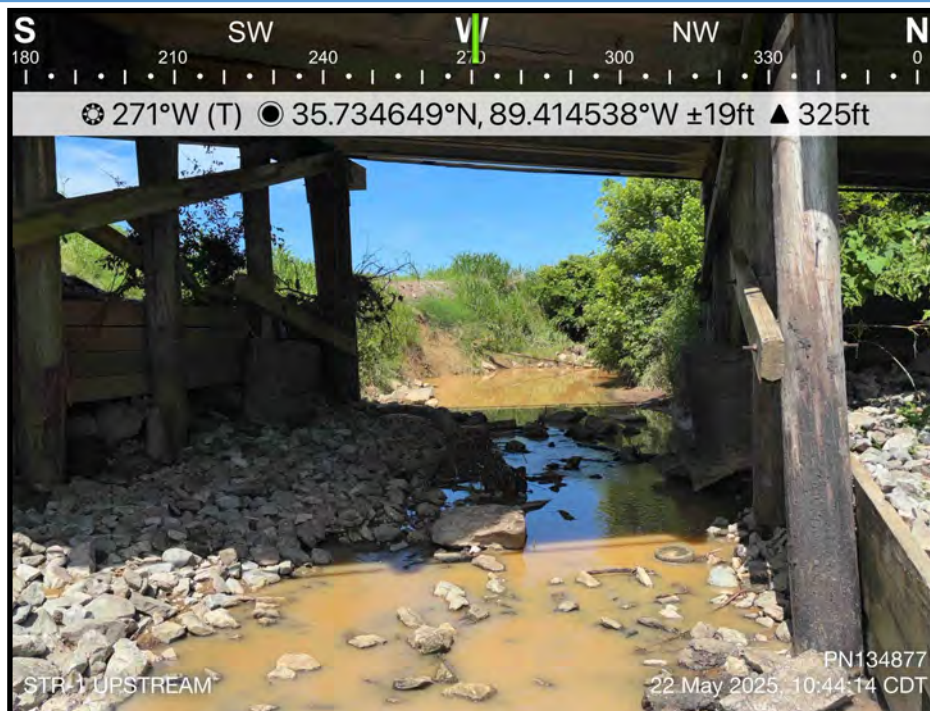


Photo 33: STR-1 (Otter Creek) upstream under Bridge 32



Photo 34: STR-1 (Otter Creek) downstream



Photo 35: STR-1 (Otter Creek) left bank near Bridge 32



Photo 36: STR-1 (Otter Creek) right bank near Bridge 32



Photo 37: WWC-1/UDF-1 start downgradient



Photo 38: WWC-1/UDF-1 start upgradient



Photo 39: WWC-1/UDF-1 end downgradient with confluence STR-1 (Otter Creek)



Photo 40: WWC-1/UDF-1 end upgradient



Photo 41: STR-2 end upstream at confluence with STR-1 (Otter Creek)



Photo 42: STR-2 end downstream at confluence with STR-1 (Otter Creek)



Photo 43: STR-2 downstream



Photo 44: STR-2 upstream



Photo 45: STR-2 left bank



Photo 46: STR-2 right bank



Photo 47: STR-2 culvert 30", under farm field access, 145' north of STR-1 (Otter Creek)



Photo 48: STR-2 culvert 36", under farm field access, 940' north of STR-1 (Otter Creek)



[EXTERNAL] Re: IPaC delivered Official Species List for project: Haywood County, 134876.00, SR-180 Timber Bridges replacement

From TDOT_USFWS <tdot_usfws@fws.gov>

Date Thu 5/22/2025 10:11 AM

To William Methvin <William.Methvin@tn.gov>

Cc Sikula, Nicole R <nicole_sikula@fws.gov>; Casey Parker <Casey.Parker@tn.gov>; david_giddens <david_giddens@fws.gov>; DeVore, Christopher <Christopher_DeVore@fws.gov>; Harris, Abigail N <abigail_harris@fws.gov>; Rita M. Thompson <Rita.M.Thompson@tn.gov>

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William,

Thank you for your correspondence regarding the proposed replacement of an existing timber frame bridge on SR-180 at LM 2.61 with a new bridge in Haywood County, Tennessee (PIN 134876.00). You are requesting a list of federally threatened or endangered species that may be present in the project area.

A review of our database does not indicate that any federally listed or proposed species or designated critical habitat would be impacted by the project. Therefore, based on the best information available at this time, we believe that the requirements of the Endangered Species Act (ESA) are fulfilled for all species that currently receive protection under the ESA. Obligations under section 7 of the ESA should be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

This email will serve as our official project response. Please let me know if we can offer further assistance.

Thank you,

Abigail Harris
Fish and Wildlife Biologist
Ecological Services
U.S. Fish and Wildlife Service
446 Neal St.
Cookeville, TN 38501
Mobile Phone: 931-357-1654

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Administrator Email <ecosphere_support@ecosphere.fws.gov>

Sent: Wednesday, April 30, 2025 8:16 AM

To: Griffith, John <John_Griffith@fws.gov>; Tennessee ES, FWS <tennesseeES@fws.gov>; Sykes, Robbie <robbie_sykes@fws.gov>; TDOT_USFWS <tdot_usfws@fws.gov>; Alexander, Steven <steven_alexander@fws.gov>

Subject: IPaC delivered Official Species List for project: Haywood County, 134876.00, SR-180 Timber Bridges replacement

To: IPaC point(s) of contact for Tennessee Ecological Services Field Office

Project Location: Haywood County, Tennessee

IPaC has delivered an official Section 7 species list on behalf of your office. For your convenience, IPaC has created an ETK project ([2025-0090105](#)) with a new associated 'Species List Provided' event. A PDF file of the species list document is attached to the event and contact information for the project can be found on the last page of the PDF.

IPaC has automatically set the Project status to "Closed". If you need to do any additional work in this project (e.g., add staff, add events, change lead office, etc.), you must first change the Project status to "active" so that you can edit the project. You can access the project via the link, above.

Lead FWS Office:

The Tennessee Ecological Services Field Office is currently designated as the lead office for Section 7 on this project. The following additional offices have jurisdiction and have been notified: None. If another office is the lead office on this project, please access the project (via the link above) and update it. IPaC will not reset the Lead Office once it has been updated by a biologist.

*Projects created in ETK by IPaC have not been assigned to an FWS staff member. To identify the staff assigned to this project, please access the project (via the link above) and add their name(s).



**TENNESSEE WILDLIFE
RESOURCES AGENCY**
WWW.TNWILDLIFE.ORG
(615) 781-6500

**STATE OF TENNESSEE
ELLINGTON AGRICULTURAL CENTER**
5107 EDMONDSON PIKE
NASHVILLE, TN 37211

May 21, 2025

Re: Haywood County; SR-180 Bridge Replacement Over Otter Creek, PIN 134876.00

Mr. William Methvin,

The Tennessee Wildlife Resources Agency has reviewed the information that you provided regarding the subject project in Haywood County, Tennessee. Your letter to us requested comments by our agency regarding potential impacts to endangered species, wetlands, and other areas of concern as we may think pertinent due to the proposed project.

This project involves the bridge replacement on the SR-180 Bridge over Otter Creek in Haywood County. The existing bridge has been categorized as a major failure of structural components. The initial information provided by TDOT and the data I have reviewed and compared to the proposed project, conclude that the project is not anticipated to adversely affect any federally or state-listed Endangered, Threatened, or Deemed-In-Need-of-Management species. Based upon these understandings, TWRA does not anticipate adverse impacts upon listed species under our authority due to the project and we have no concerns or objection to the proposed project. Re-coordination will be required if new species records are found or if the proposed project plans incorporate critical habitat for listed species of concern.

Thank you for the opportunity to review and comment on this proposed project. If you have further questions regarding this matter; please contact me at (731) 431-0012.

Sincerely,

Casey Parker
West TN Transportation Biologist



[EXTERNAL] Re: IPaC delivered Official Species List for project: Haywood County, 134877.00, SR-180 Timber Bridge replacement

From TDOT_USFWS <tdot_usfws@fws.gov>

Date Thu 5/22/2025 11:34 AM

To William Methvin <William.Methvin@tn.gov>

Cc Rita M. Thompson <Rita.M.Thompson@tn.gov>; Sikula, Nicole R <nicole_sikula@fws.gov>; david_giddens <david_giddens@fws.gov>; DeVore, Christopher <Christopher_DeVore@fws.gov>; Harris, Abigail N <abigail_harris@fws.gov>; Casey Parker <Casey.Parker@tn.gov>

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William,

Thank you for your correspondence regarding the SR-180 proposed bridge replacement over at LM 2.73 in Haywood County, Tennessee (PIN 134877.00). The proposed project will replace an existing timber frame bridge on SR-180 at LM 2.73 with a new bridge. You are requesting a list of federally threatened or endangered species that may be present in the project area.

A review of our database does not indicate that any federally listed or proposed species or designated critical habitat would be impacted by the project. Therefore, based on the best information available at this time, we believe that the requirements of the Endangered Species Act (ESA) are fulfilled for all species that currently receive protection under the ESA. Obligations under section 7 of the ESA should be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

This email will serve as our official project response. Please let me know if we can offer further assistance.

Thank you,

Abigail Harris
Fish and Wildlife Biologist
Ecological Services
U.S. Fish and Wildlife Service
446 Neal St.
Cookeville, TN 38501
Mobile Phone: 931-357-1654

Email: abigail_harris@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Administrator Email <ecosphere_support@ecosphere.fws.gov>

Sent: Wednesday, April 30, 2025 8:21 AM

To: Griffith, John <John_Griffith@fws.gov>; Tennessee ES, FWS <tennesseeES@fws.gov>; Sykes, Robbie <robbie_sykes@fws.gov>; TDOT_USFWS <tdot_usfws@fws.gov>; Alexander, Steven <steven_alexander@fws.gov>

Subject: IPaC delivered Official Species List for project: Haywood County, 134877.00, SR-180 Timber Bridge replacement

To: IPaC point(s) of contact for Tennessee Ecological Services Field Office

Project Location: Haywood County, Tennessee

IPaC has delivered an official Section 7 species list on behalf of your office. For your convenience, IPaC has created an ETK project ([2025-0090106](#)) with a new associated 'Species List Provided' event. A PDF file of the species list document is attached to the event and contact information for the project can be found on the last page of the PDF.

IPaC has automatically set the Project status to "Closed". If you need to do any additional work in this project (e.g., add staff, add events, change lead office, etc.), you must first change the Project status to "active" so that you can edit the project. You can access the project via the link, above.

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**STATE OF TENNESSEE
ELLINGTON AGRICULTURAL CENTER**
5107 EDMONDSON PIKE
NASHVILLE, TN 37211

May 21, 2025

Re: Haywood County; SR-180 Bridge Replacement Over Otter Creek, PIN 134877.00

Mr. William Methvin,

The Tennessee Wildlife Resources Agency has reviewed the information that you provided regarding the subject project in Haywood County, Tennessee. Your letter to us requested comments by our agency regarding potential impacts to endangered species, wetlands, and other areas of concern as we may think pertinent due to the proposed project.

This project involves the bridge replacement on the SR-180 Bridge over Otter Creek in Haywood County. The existing bridge has been categorized as a major failure of structural components. The initial information provided by TDOT and the data I have reviewed and compared to the proposed project, conclude that the project is not anticipated to adversely affect any federally or state-listed Endangered, Threatened, or Deemed-In-Need-of-Management species. Based upon these understandings, TWRA does not anticipate adverse impacts upon listed species under our authority due to the project and we have no concerns or objection to the proposed project. Re-coordination will be required if new species records are found or if the proposed project plans incorporate critical habitat for listed species of concern.

Thank you for the opportunity to review and comment on this proposed project. If you have further questions regarding this matter; please contact me at (731) 431-0012.

Sincerely,

Casey Parker
West TN Transportation Biologist